Postbus 718, 6800 AS Arnhem, Nederland

Gemeente Waalwijk
T.a.v. College van B&W
Postbus 10150
5140 GB WAALWIJK
Nederland

CLASSIFICATIE C1 - Publieke Informatie
DATUM 29 juli 2020
ONZE REFERENTIE 002.760.40
BEHANDELD DOOR Symen Veldhuis
TELEFOON DIRECT 026 373 14 08
E-MAIL Symen.Veldhuis@tennet.eu

BETREFT Aanvraag omgevingsvergunning

Geacht College,

Hierbij ontvangt u de aanvraag voor een omgevingsvergunning voor de activiteit bouwen en een verzoek tot afwijken van het bestemmingsplan voor het aanpassen van het 150 kV station in Waalwijk gelegen aan de Valkenvoortweg 11 te Waalwijk. Voor dit project is op 3 juni 2020 een eerste bouwvergunning verleend. Deze nieuwe aanvraag omvat een aantal aanvullende werkzaamheden.

De onderhavige aanvraag omvat de volgende werkzaamheden:

- Het plaatsen van een 16tal bliksempieken met verschillende hoogten tot een maximum van 16,5 meter;
- Plaatsen van nieuw portaal 64b;
- Aanpassen bestaande portalen 64 en 65;

Ten behoeve van deze werkzaamheden wordt een vergunning aangevraagd voor de bouwwerkzaamheden en het afwijken van het bestemmingsplan.

Bouwwerkzaamheden

Ten behoeve van de werkzaamheden worden nieuwe bouwwerken gerealiseerd. De definitieve tekeningen en berekeningen worden 6 weken voor start bouw opgeleverd.

Afwijken bestemmingsplan

De locatie is gelegen in het bestemmingsplan Buitengebied, vastgesteld op 9 december 2010. De gehele locatie is hierin bestemd als bedrijf – nutsvoorziening (schakelstation). De werkzaamheden blijven binnen de bestaande bestemming.

Voor bouwwerken, geen gebouwen zijnde, geld binnen het bouwvlak een maximale bouwhoogte van 4

meter, waarbij erfafscheidingen tot 2,2 meter zijn toegestaan en verlichtingsarmaturen tot 6 meter. Omdat de voorgenomen ontwikkeling bouwwerken, geen gebouwen zijnde betreft die hoger zijn dan 4 meter ontstaat er een knelpunt ten aanzien van de toegestane bouwhoogten.

Net zoals op de bestaande velden wordt voor de uitbreiding een aantal bliksempieken geplaatst met een maximale hoogte van 16,5 meter. Deze zijn noodzakelijk om de gehele installatie te beschermen tegen blikseminslag.

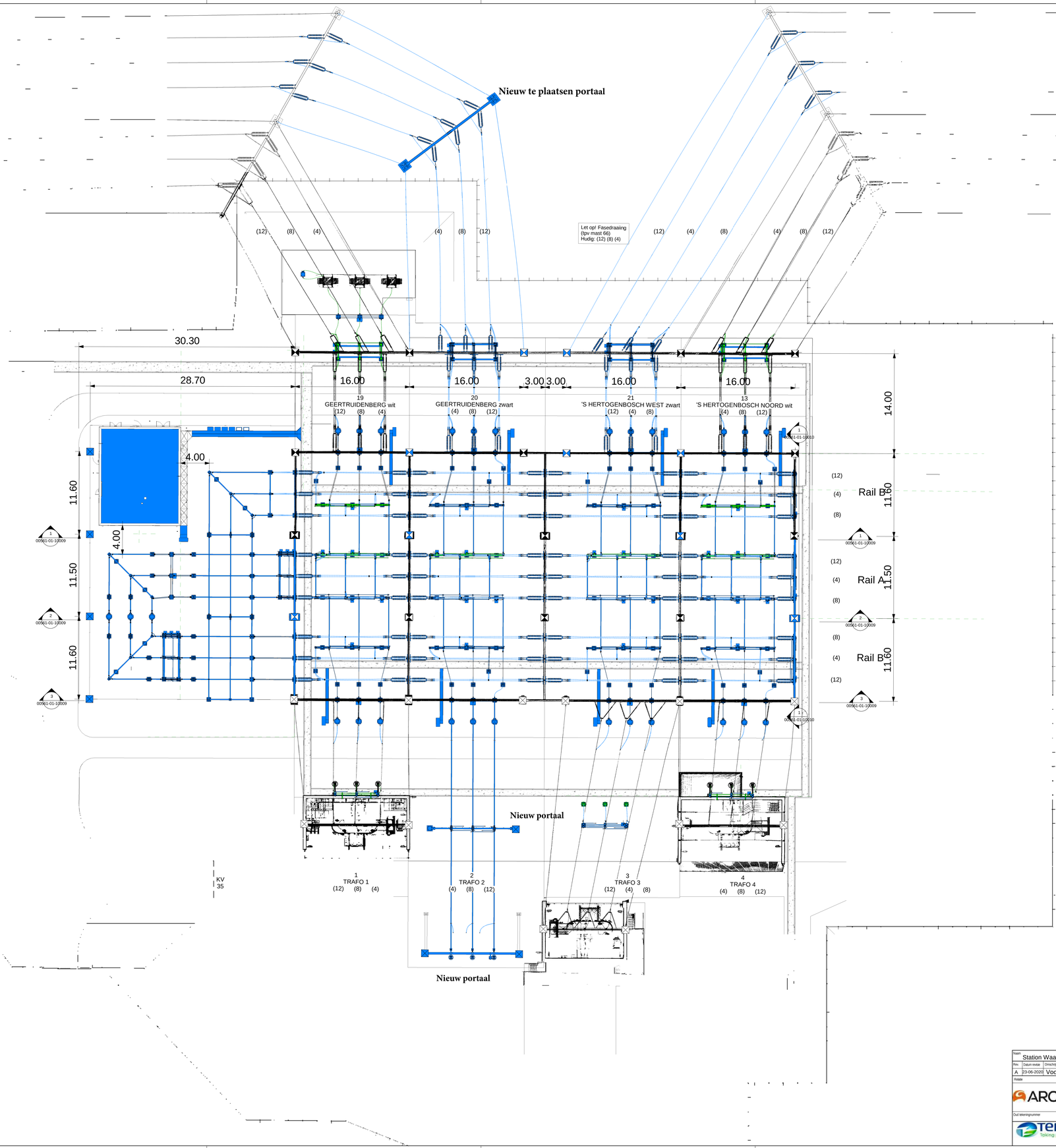
Ten behoeve van de hoogte van de bliksempieken wordt een afwijking van het bestemmingsplan aangevraagd. Naar onze mening heeft deze afwijking in ruimtelijke zin geen invloed op de aspecten milieu, water, bodem en flora en fauna. Omdat hoogte van de bliksempieken niet afwijkt van de hoogte van de reeds op het station aanwezige bliksempieken is de verwachting dat zichtbaarheid een verwaarloosbaar effect is.

Mocht u vragen hebben naar aanleiding van de inhoud van deze brief dan kunt u contact opnemen met Symen Veldhuis (per telefoon 026 - 373 14 08 of per e-mail symen.veldhuis@tennet.eu).

Met vriendelijke groet,
TenneT TSO B.V.



Symen Veldhuis
Adviseur vergunningen



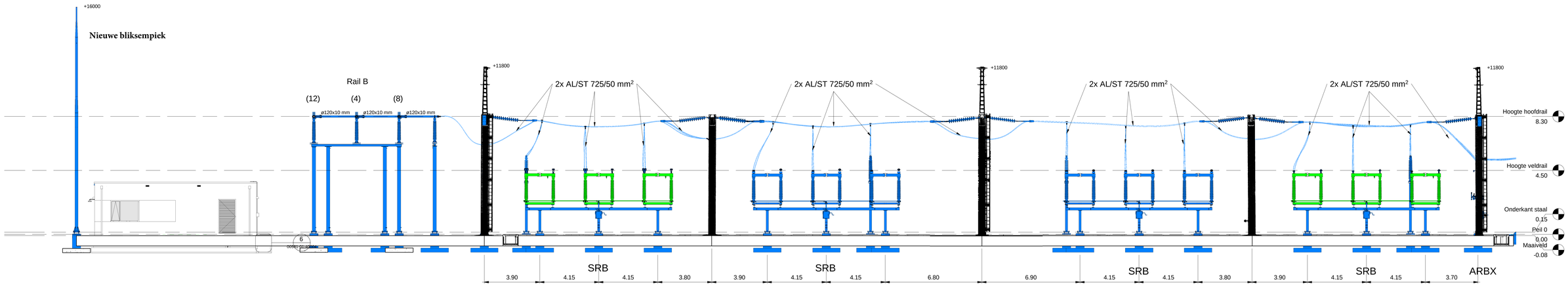
De blauwe vierkantjes met een zandloper erin betreffen de posities van de bliksempieken

Bliksempiek 11.8m
Bliksempiek 13.5m
Bliksempiek 16.0m

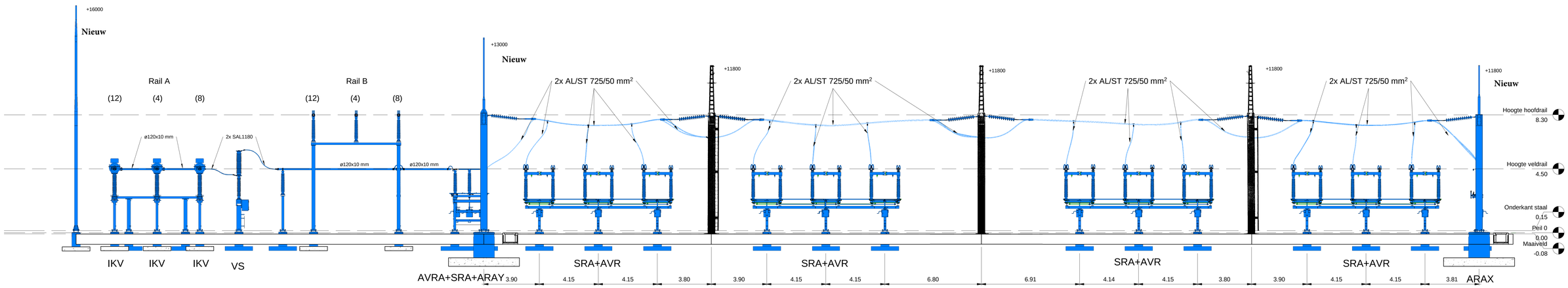
LEGENDA	
1	Bestaand
2	Nieuw
3	Aanpassen / verplaatsen

Naam: Station Waalwijk 150 kV				Tekeningstatus: Voor uitvoering	
Rev.	Datum revisie	Omschrijving revisie	Getekend	Datum As-Built	Schaal	Formaat
A	23-06-2023	Voor uitvoering	ARCADIS		1:200	A0

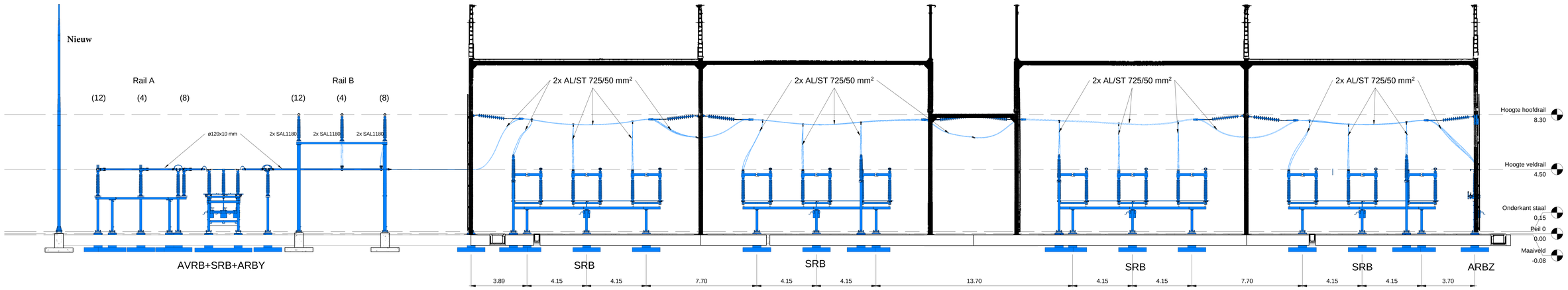
Revisie: ARCADIS	Thema	Primair
	Categorie	Algemeen
	Documentcode	Overzichtstekening
Oud tekeningnummer:	Object ID	STATION
TenneT Tyking power further	Omschrijving	Plattegrond station - eindfase
	Documentnummer	00561-01-10004



1 Doorsnede 1 - Rail B
1 : 100



2 Doorsnede 2 - Rail A
1 : 100



Doorsnedes van tekening 00561-01-10004

3 Doorsnede 3 - Rail B
1 : 100

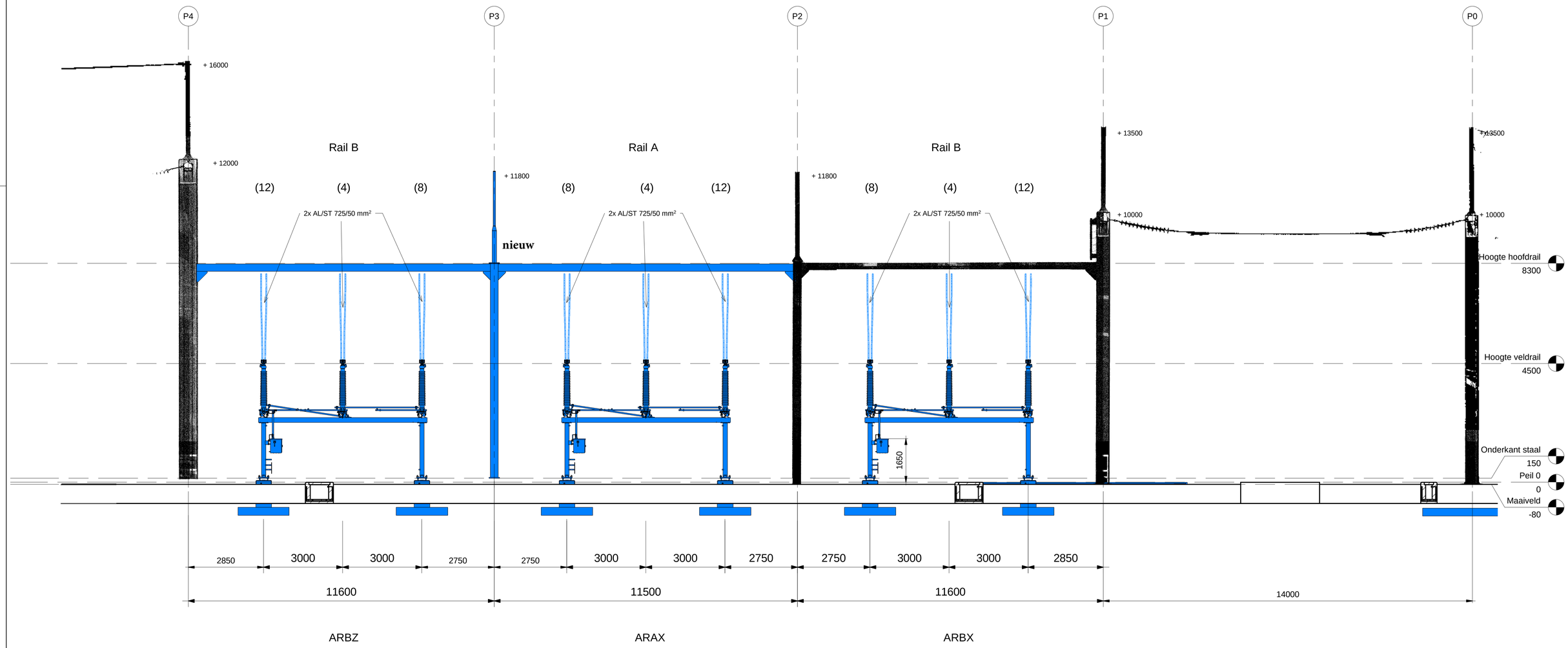
LEGENDA	
1	Bestaand
2	Nieuw
3	Aanpassen / verplaatsen

Naam: Station Waalwijk 150 kV
Tekenstatus: Voor uitvoering

Rev.	Datum revisie	Omschrijving revisie	Getekend	Datum As-Built	Schaal	Formaat
A	23-06-2023	Voor uitvoering	ARCADIS		1:100	A0

Revisie

Thema	Primair
Categorie	Algemeen
Documentcode	Aanzichttekening
Object ID	Rail
Oud tekeningnummer	
Omschrijving	Layout railsysteem doorsnedes
Documentnummer	00561-01-10009



Doorsnede van tekening 00561-01-10004

Naam: Station Waalwijk 150 kV					Tekeningstatus: Voor uitvoering	
Rev.	Datum revisie	Omschrijving revisie	Getekend	Datum As-Built	Schaal	Formaat
A	23-06-2020	Voor uitvoering	ARCADIS		1 : 75	A1

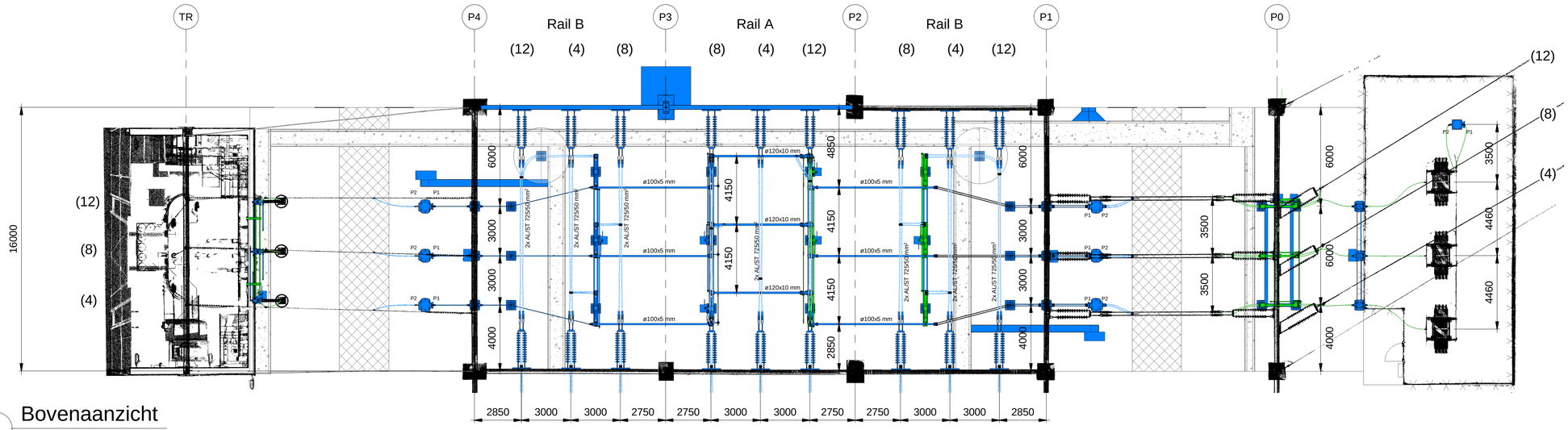
Relatie

ARCADIS

Oud tekeningnummer

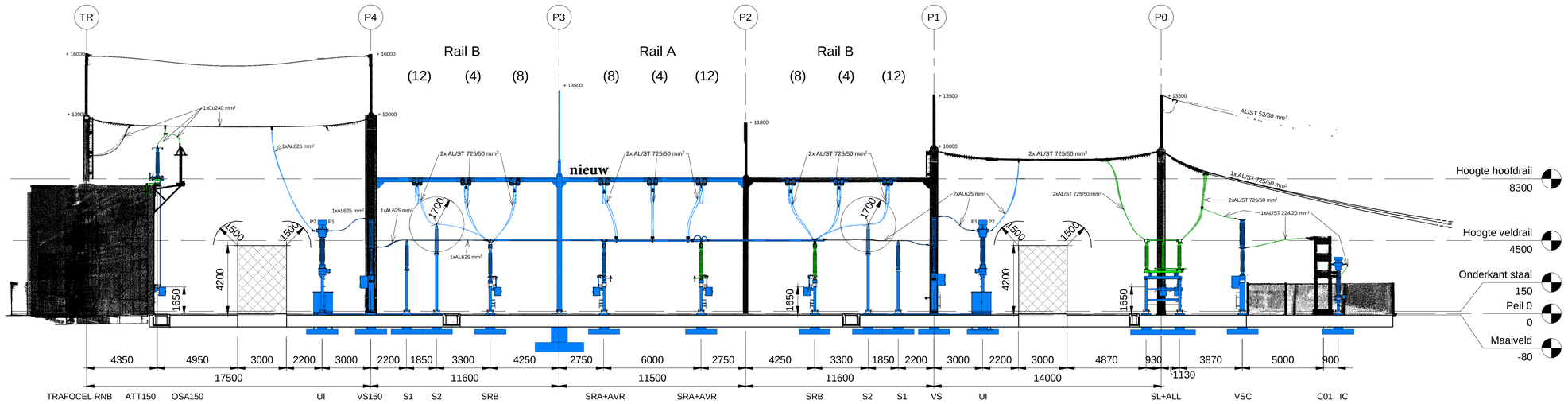
TenneT Taking power further

Thema	Primair
Categorie	Algemeen
Documentcode	Aanzichttekening
Object ID	RAIL
Omschrijving:	Layout railsysteem zijaanzicht
Documentnummer:	00561-01-10010



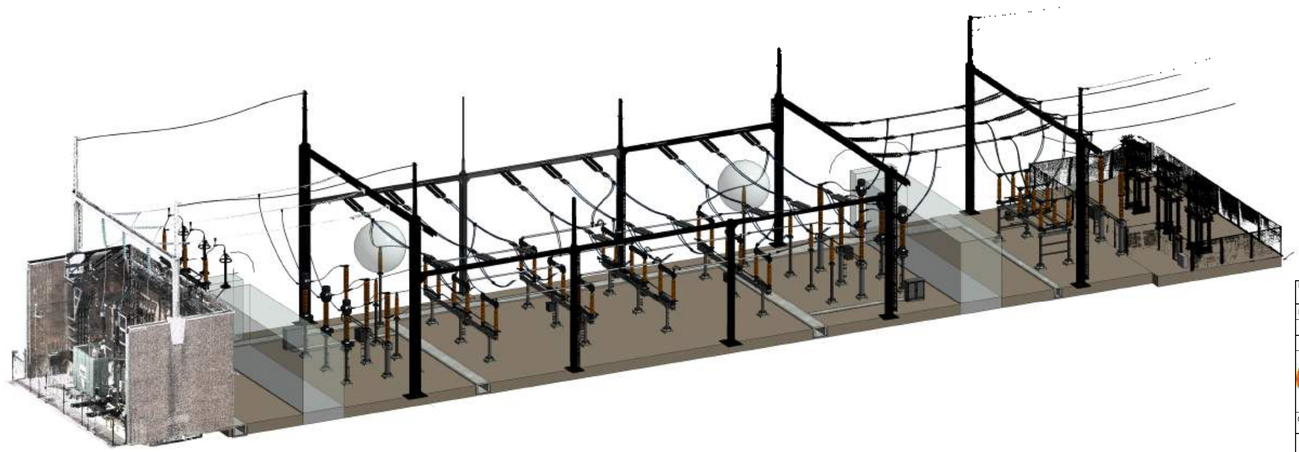
1 Bovenaanzicht

1 : 150



2 Doorsnede

1 : 150



3 3D Aanzicht

LEGENDA		
1.	■	Bestaand
2.	■	Nieuw
3.	■	Aanpassen / verplaatsen

Naam				Tekeningstatus
Station Waalwijk 150 kV				Voor uitvoering
Rev.	Datum revisie	Omschrijving revisie	Getekend	Datum As-Built / Schaal / Formaat
A	23-06-2020	Voor uitvoering	ARCADIS	1 : 150 / A1

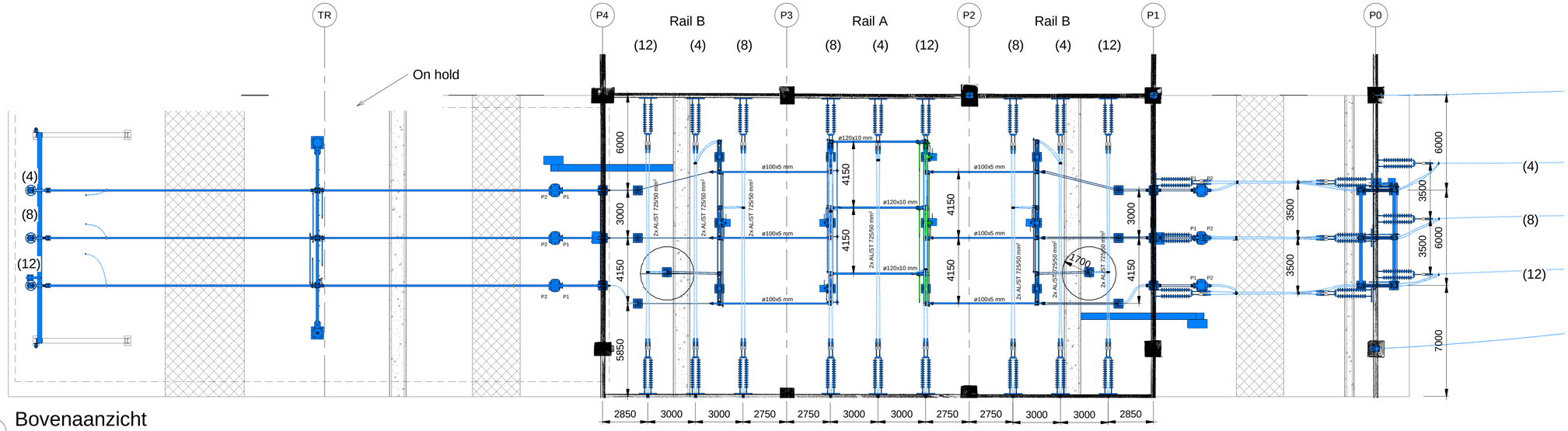
Relatie

ARCADIS

Oud tekeningnummer

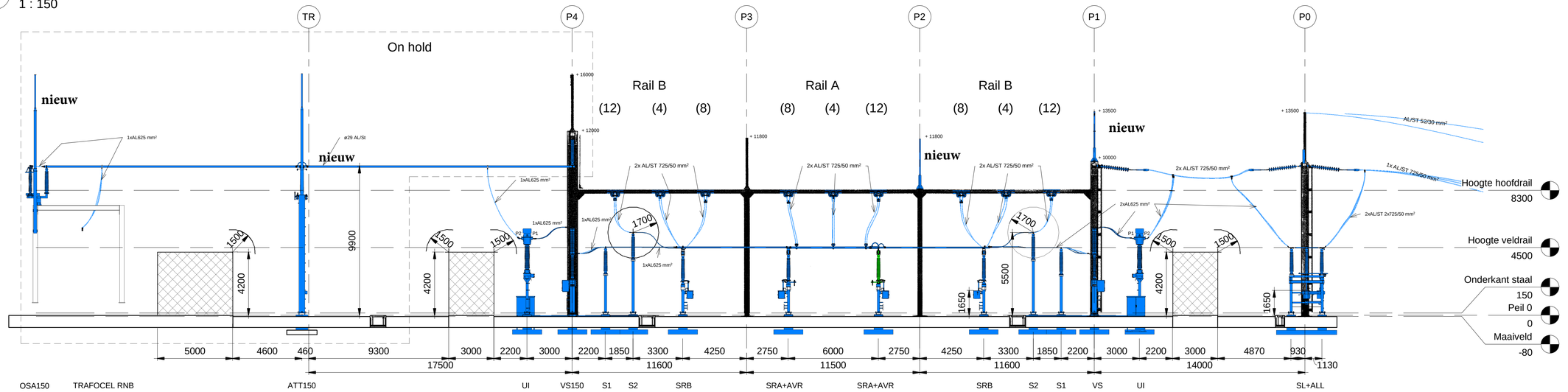
TenneT Taking power further

Thema	Primair
Categorie	Algemeen
Documentcode	Aanzichttekening
Object ID	VELD.RNB-veld + VELD.lijnveld
Omschrijving:	Boven- en zijaanzicht veld 1 - TR1 + veld 19 - GT150-w
Documentnummer:	00561-01-10011



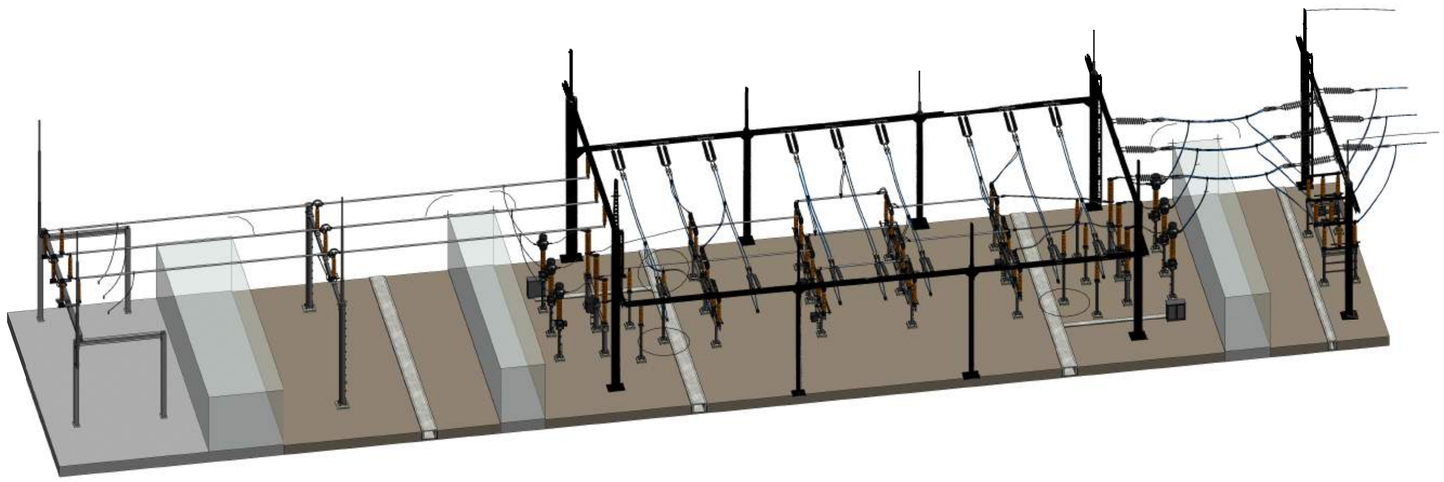
1 Bovenaanzicht

1 : 150



2 Doorsnede

1 : 150

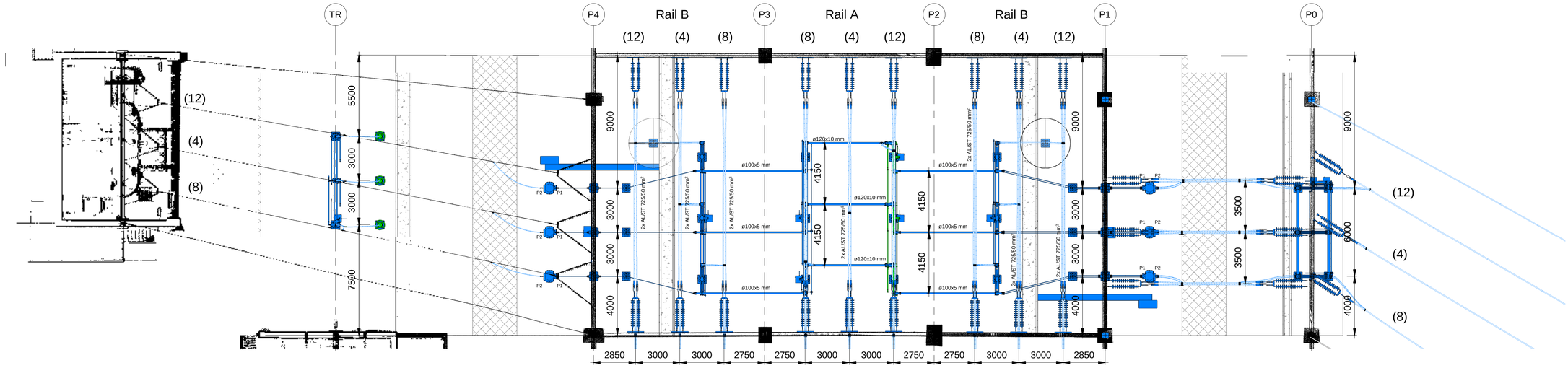


3 3D Aanzicht

LEGENDA	
1.	Bestaand
2.	Nieuw
3.	Aanpassen / verplaatsen

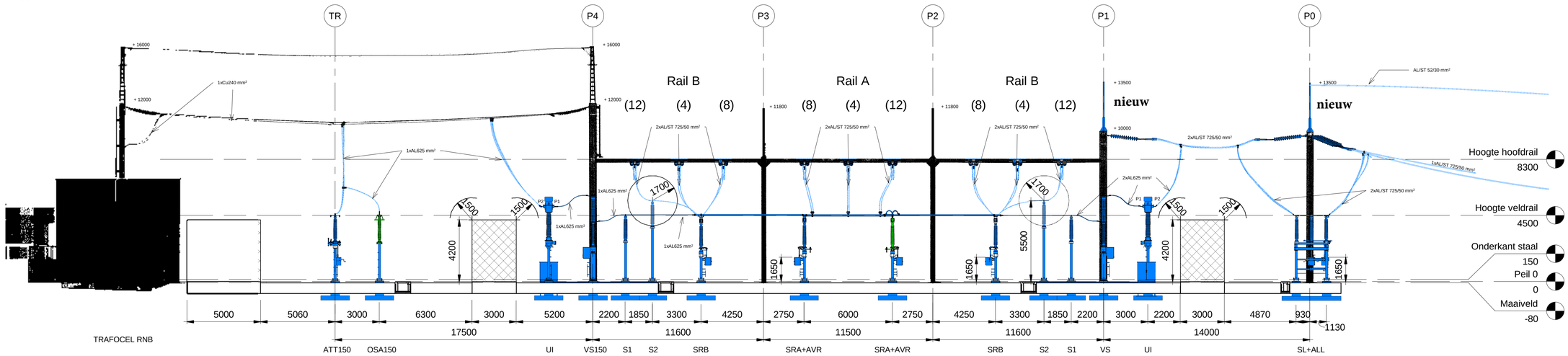
Naam				Tekeningstatus	
Station Waalwijk 150 kV				Voor uitvoering	
Rev.	Datum revisie	Omschrijving revisie	Getekend	Datum As-Built	Schaal / Formaat
A	23-06-2020	Voor uitvoering	ARCADIS		1 : 150 / A1

Relatie	
Oud tekeningnummer	
Thema	Primair
Categorie	Algemeen
Documentcode	Aanzichttekening
Object ID	VELD.RNB-veld + VELD.lijnveld
Omschrijving:	Boven- en zijaanzicht veld 2 - TR2 + veld 20 - GT150-z
Documentnummer:	00561-01-10012



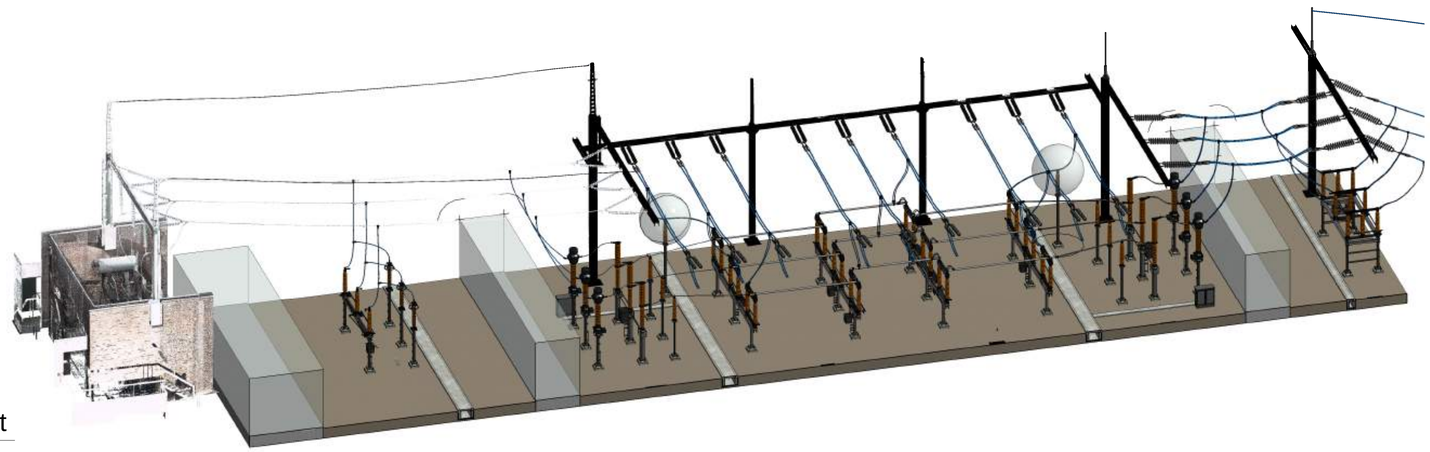
1 Bovenaanzicht

1 : 150



2 Doorsnede

1 : 150

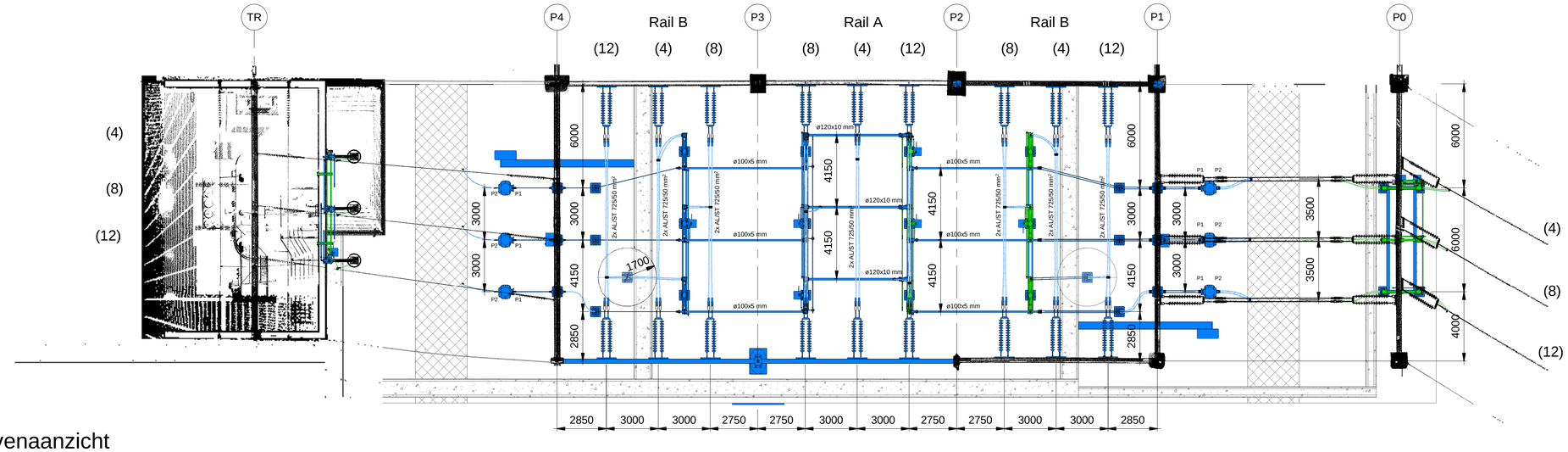


3 3D Aanzicht

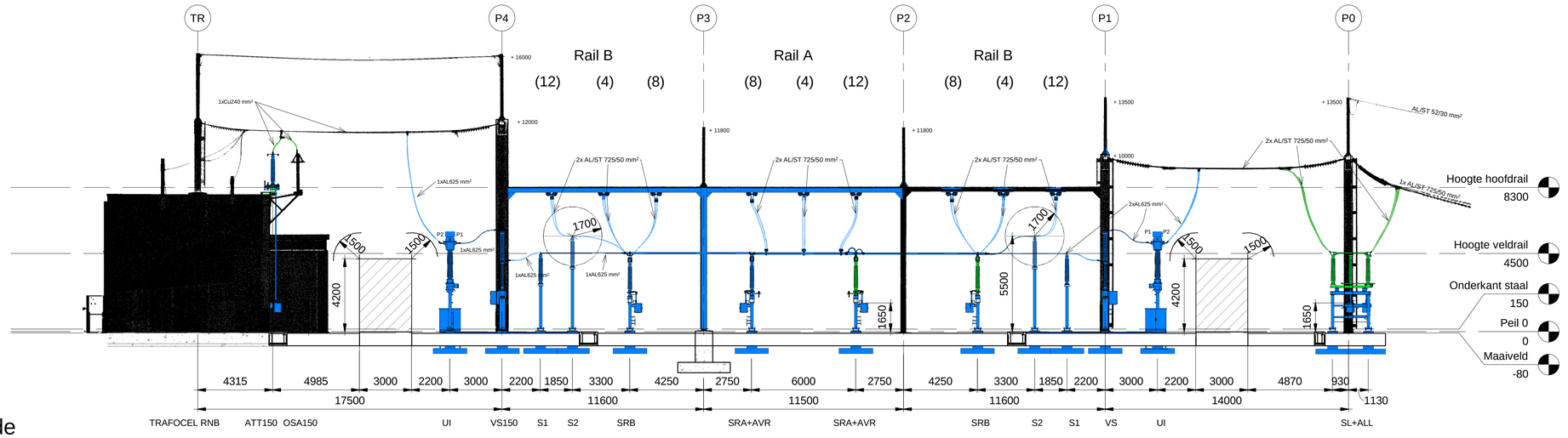
LEGENDA		
1.	■	Bestaand
2.	■	Nieuw
3.	■	Aanpassen / verplaatsen

Naam: Station Waalwijk 150 kV					Tekeningstatus: Voor uitvoering	
Rev.	Datum revisie	Omschrijving revisie	Getekend	Datum As-Built	Schaal	Formaat
A	23-06-2020	Voor uitvoering	ARCADIS		1 : 150	A1

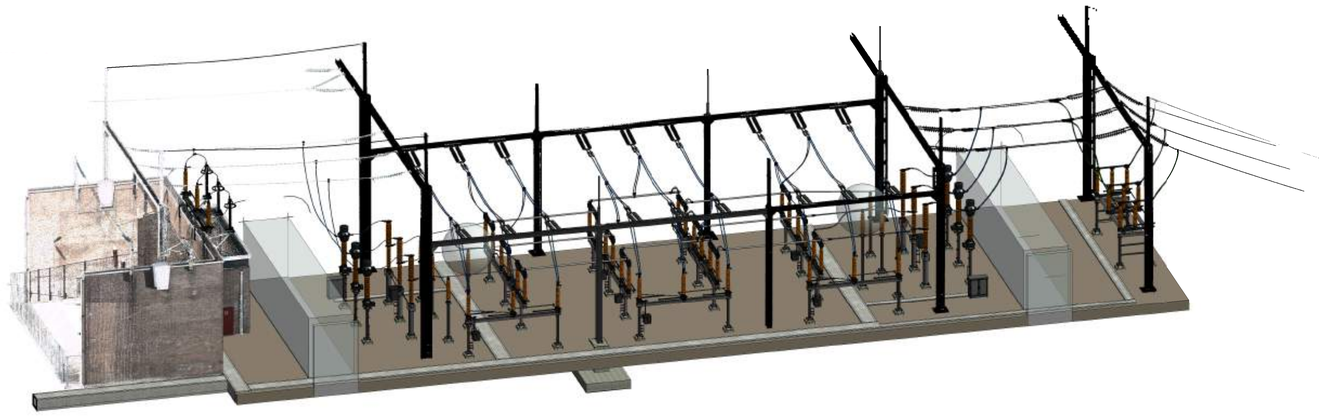
Relatie	
Oud tekeningnummer	
Thema	Primair
Categorie	Algemeen
Documentcode	Aanzichttekening
Object ID	VELD.RNB-veld + VELD.lijnveld
Omschrijving:	Boven- en zijaanzicht veld 3 - TR3 + veld 21 - HTN150-z
Documentnummer:	00561-01-10013



1 Bovenaanzicht
1 : 150



2 Doorsnede
1 : 150



3 3D Aanzicht

LEGENDA	
1.	Bestaand
2.	Nieuw
3.	Aanpassen / verplaatsen

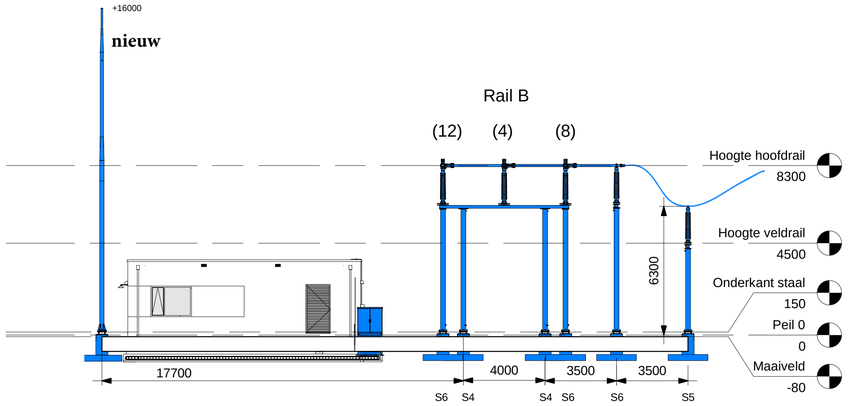
Naam: Station Waalwijk 150 kV					Tekeningstatus: Voor uitvoering	
Rev.	Datum revisie	Omschrijving revisie	Getekend	Datum As-Built	Schaal	Formaat
A	23-06-2020	Voor uitvoering	ARCADIS		1 : 150	A1

Relatie: ARCADIS

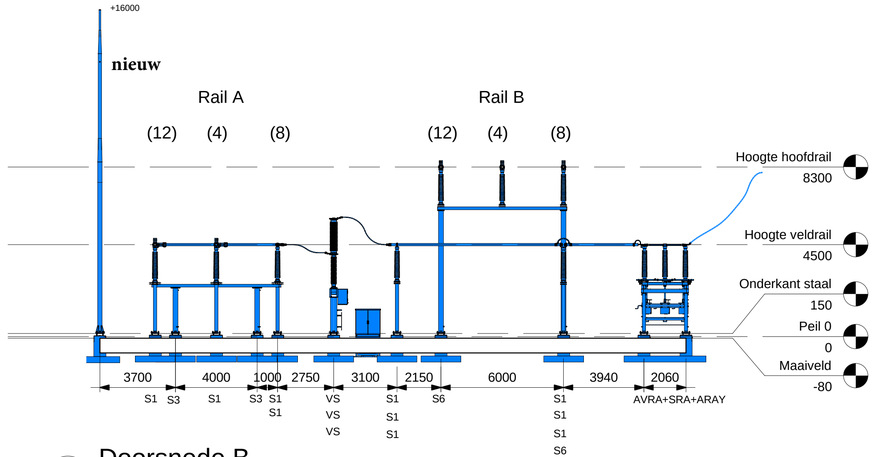
Oud tekeningnummer:

TenneT Taking power further

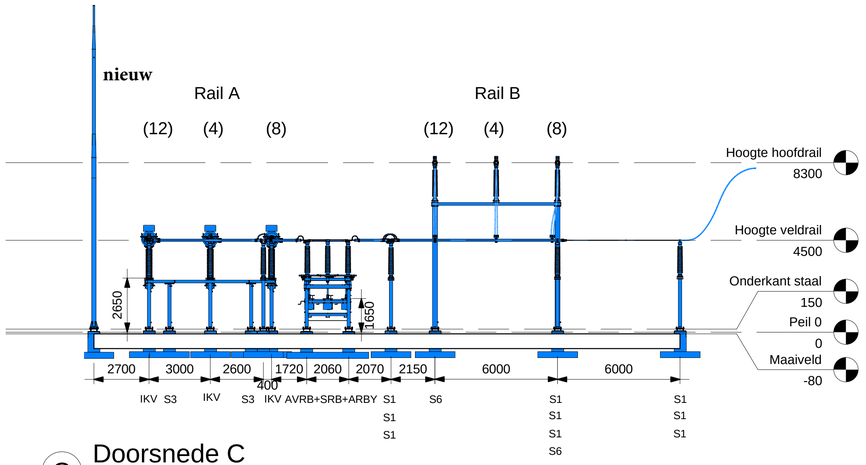
Thema	Primair
Categorie	Algemeen
Documentcode	Aanzichttekening
Object ID	VELD.RNB-veld + VELD.lijnveld
Omschrijving:	Boven- en zijaanzicht veld 4 - TR4 + veld 13 - HTN150-w
Documentnummer:	00561-01-10014



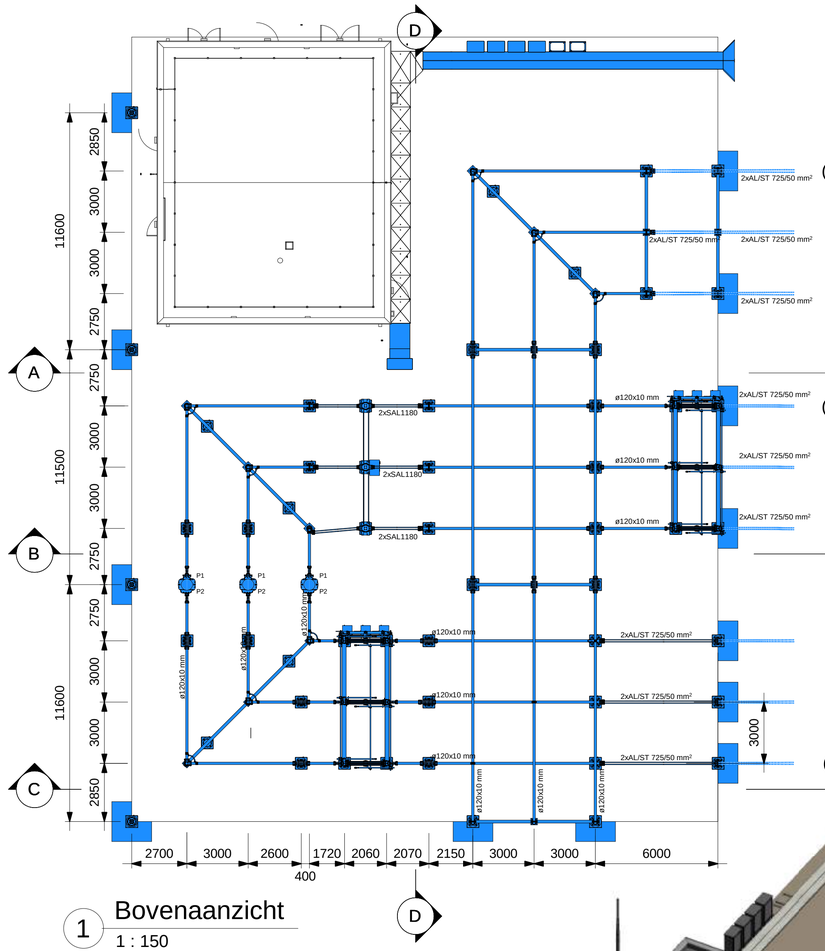
A Doorsnede A
1 : 150



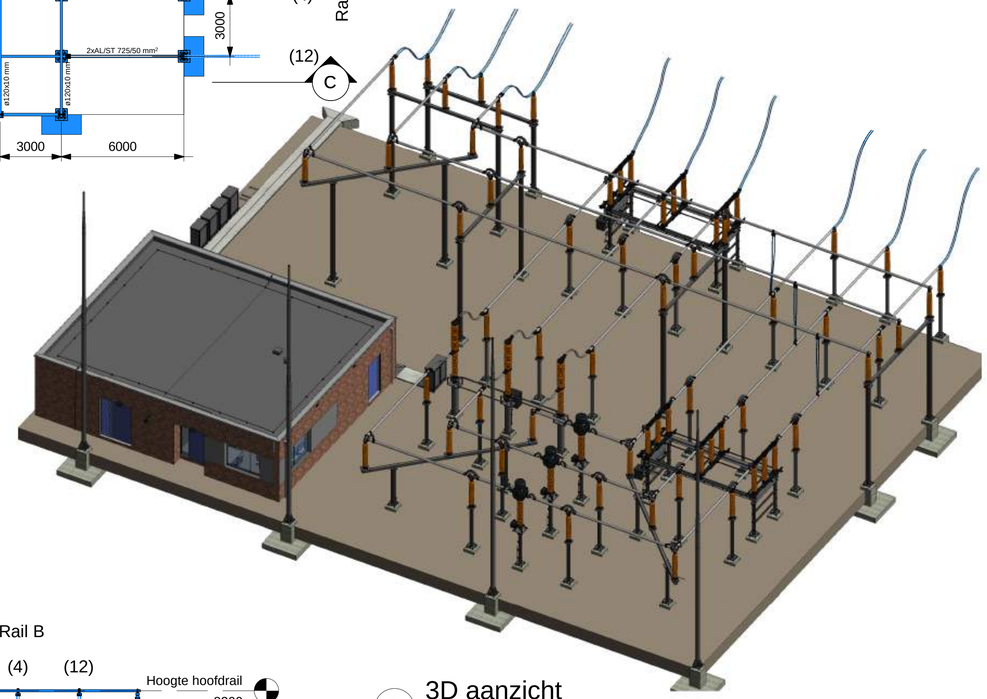
B Doorsnede B
1 : 150



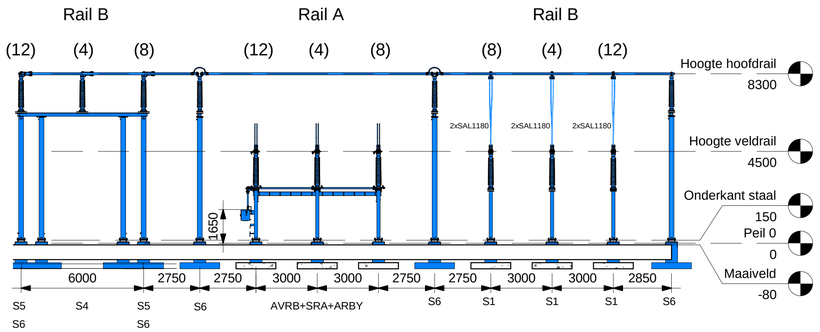
C Doorsnede C
1 : 150



1 Bovenaanzicht
1 : 150



2 3D aanzicht



D Doorsnede D
1 : 150

LEGENDA	
1.	Bestaand
2.	Nieuw
3.	Aanpassen / verplaatsen

Naam: Station Waalwijk 150 kV				Tekeningstatus: Voor uitvoering	
Rev.	Datum revisie	Omschrijving revisie	Getekend	Datum As-Built	Schaal / Formaat
A	23-06-2020	Voor uitvoering	Arcadis		1 : 150 / A1

Relatie: ARCADIS

Oud tekeningnummer:

TenneT Taking power further

Thema	Primair
Categorie	Algemeen
Documentcode	Aanzichttekening
Object ID	VELD.KOPPELVELD
Omschrijving:	Boven- en zijaanzicht veld 35 - koppelveld
Documentnummer:	00561-01-10015

GEERTRUIDENBERG
MAST Nr 63

's-HERTOGENBOSCH
MAST Nr 66

ZWART

WIT

St/Al 50/725 mm²

St/Al 30/52 mm²

JUK 64

JUK 65

HART AFSPANJUKKEN

10 kV GEBOUW

VELD 3

VELD 4

VELD 5

VELD 6

VELD 10

VELD 9

VELD 8

VELD 7

TRANSF 1

TRANSF 4

TRAFO 3

Sub Blok C

017-W---OSA-CON-00001

D-201718

SPLIT

HEK WEGNEEMBAAR

VOOR DOORSNEDEN ZIE TEK 7762

150KV station Waalwijk
Veld –
150 kV gedeelte

–
Plattegrond opstelling apparaten
Constructie

	Naam	Datum	Omschr. wijz.	Gec.
Ak	Hoex, Ro	30-04-2004	Nieuw subblok C	
Getekend	Datum	GedMap / Boekjesnr. – Mapregel / Onderw		
VDB	10-12-1997	036A – 01		

ENEXIS

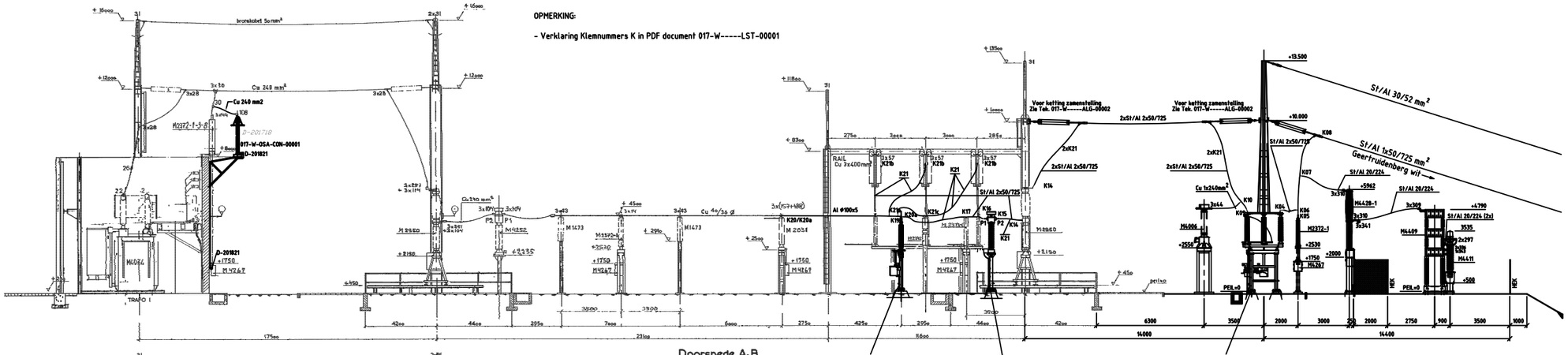
Document Codering:
P-007761-1

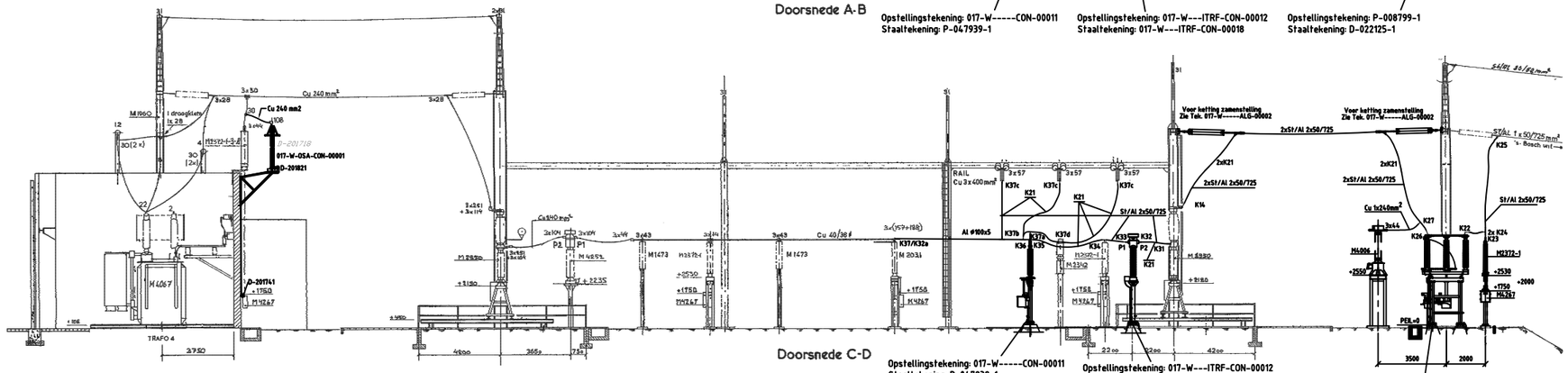
Schaal: 200 | FormAOh | Stat.code: 17 | Blad:

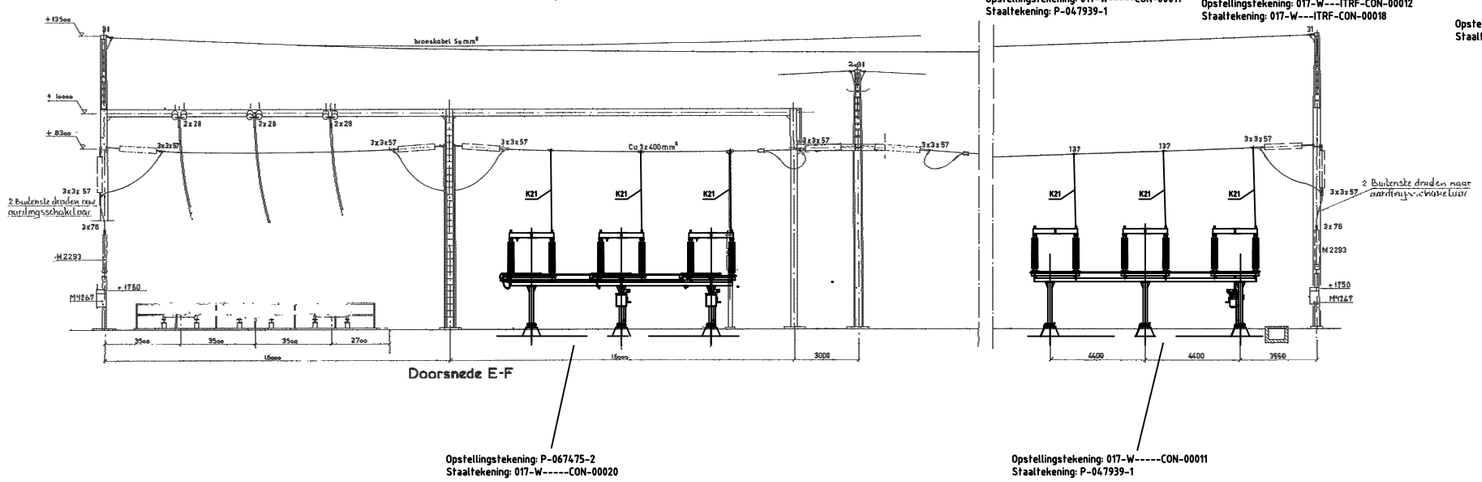
Originee! nummer P-007761-1

OPMERKING:

- Verklaring Klemnummers K in PDF document 017-W-----LST-00001

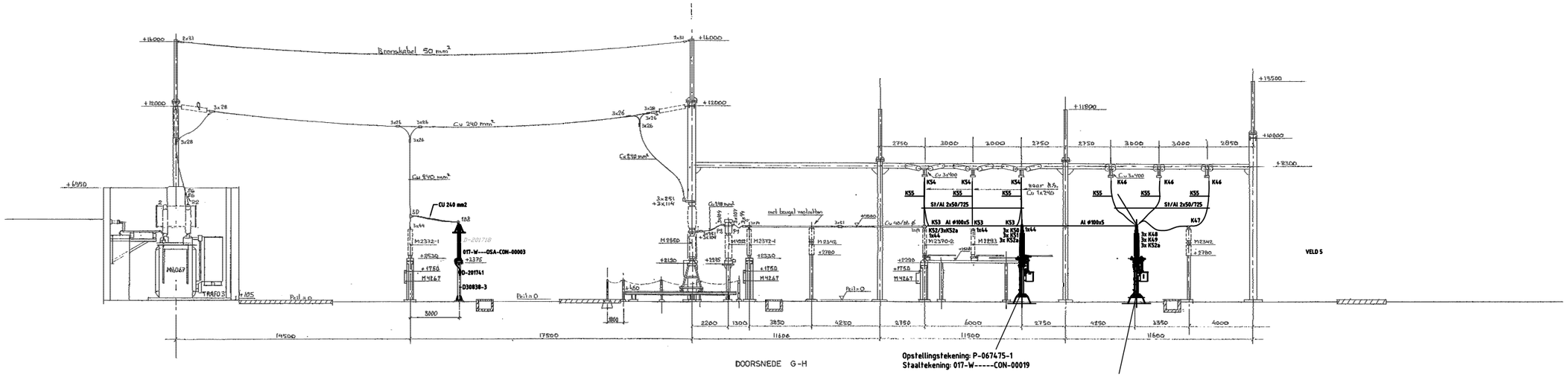


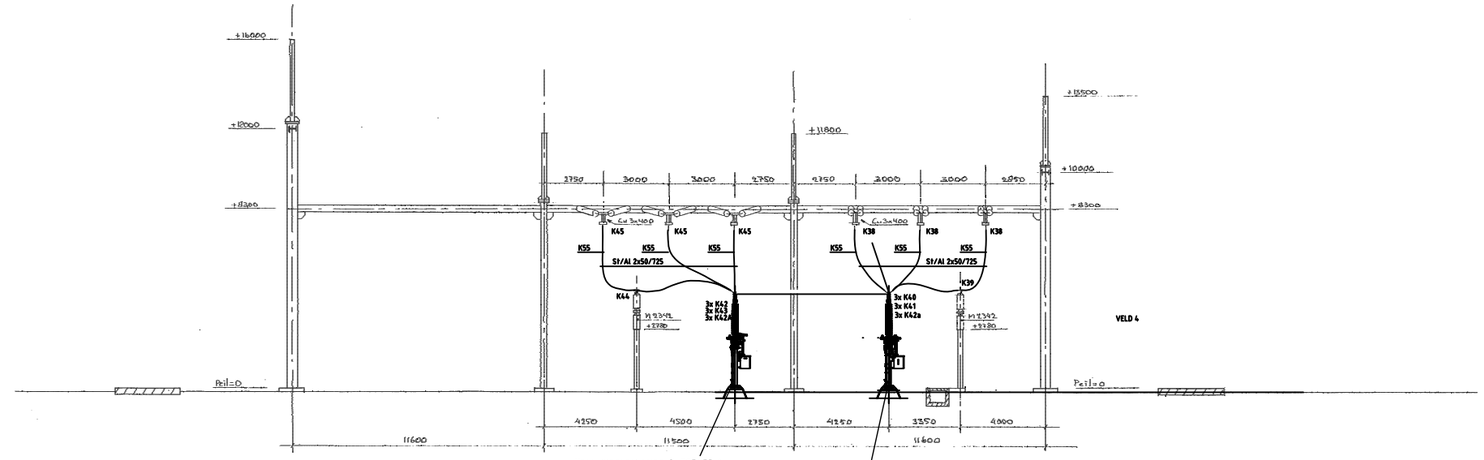


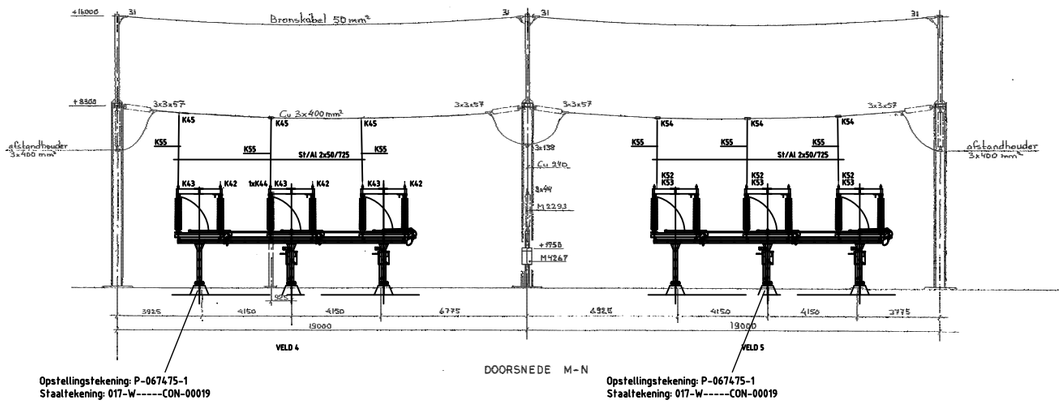


MAP: 21/2

150KV station Waalwijk Veld – –					–		
					Doorsnede opstelling apparaten Algemeen		
Rijksloom	Datum	Omschr. wijz	Gec.		Document Codering		=2903
AO/Ijs	07-03-2007	Ruit		ENEXIS	P-007762-1		+
Getekend	Datum	Gedolg	Boekjesnr. – Mapregel / Onderw		Schaal: 1	Formaat	Stat.code:
CVOB	10-12-1997		038A – 02		Original number: P-007762-1		







OPMERKING:

- Verklaring Klemnummers K in PDF document 017-W------LST-00001

150KV station Waalwijk Veld -					-		
					opstelling apparaten		
					Algemeen		
MSA/Naam	Datum	Gewijzigde wijz	Goedk.		Document Codering		*
0 Bandu, René	22-04-2019	As Built			P-007762-2		*
Gecontroleerd	Datum	Goedk.	Map / Bestandsnaam - Mapnaam / Bestandsnaam		Schaal: 1:50	Form. Atlb	Strat.code: 017	Blad:
CYDD	09-12-1997		63kA - 02		Ongewijzigd nummer: P-007762-2			

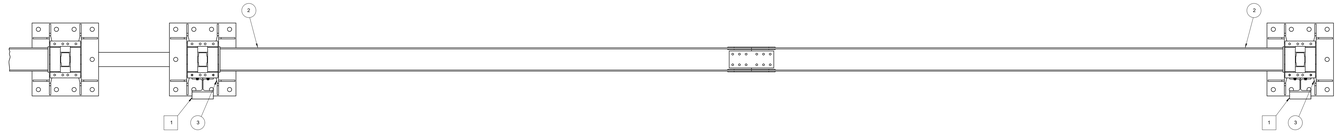
GTK-RasterCAD

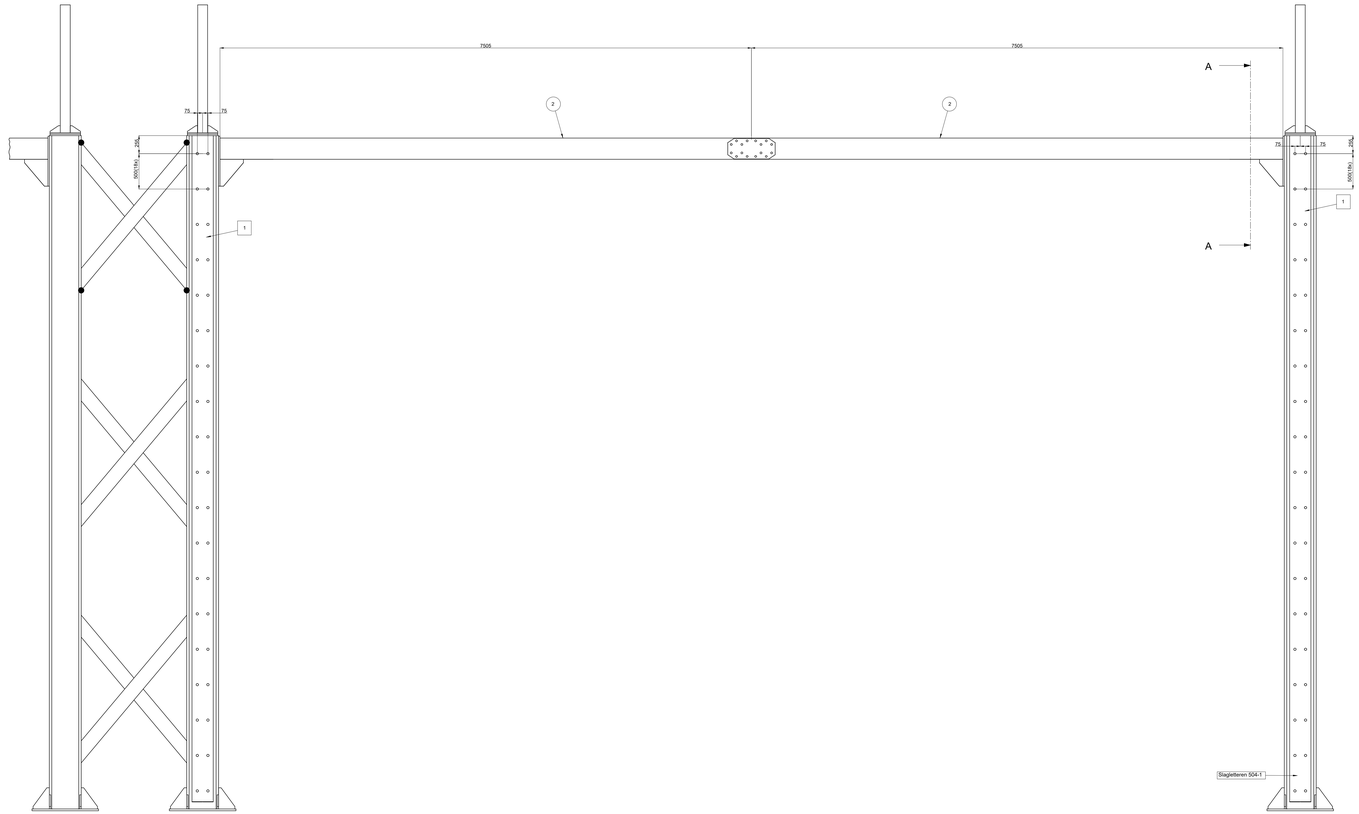
Bijlage L02 -Versterkingen staalconstructie juk 64 en 65

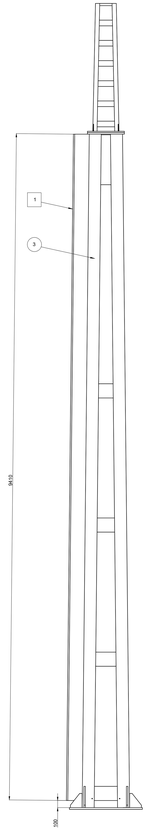
Station Waalwijk 150 kV

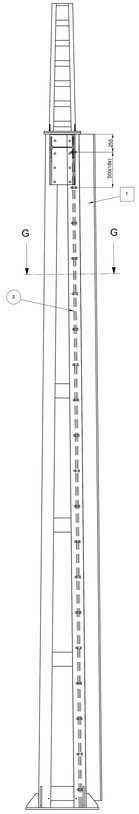
Datum: 3-7-2020

Inhoudsopgave	Tekeningnummer	Revisie	Datum
Rapport constructieberekening jukken 64_64b_65	MDR-00561-01-50505	A	24-6-2020
Principetek.Aanpassing portaal 64	MDR_00561-01-50004	A	3-7-2020
Principetek.Aanpassing portaal 65	MDR_00561-01-50005	A	3-7-2020

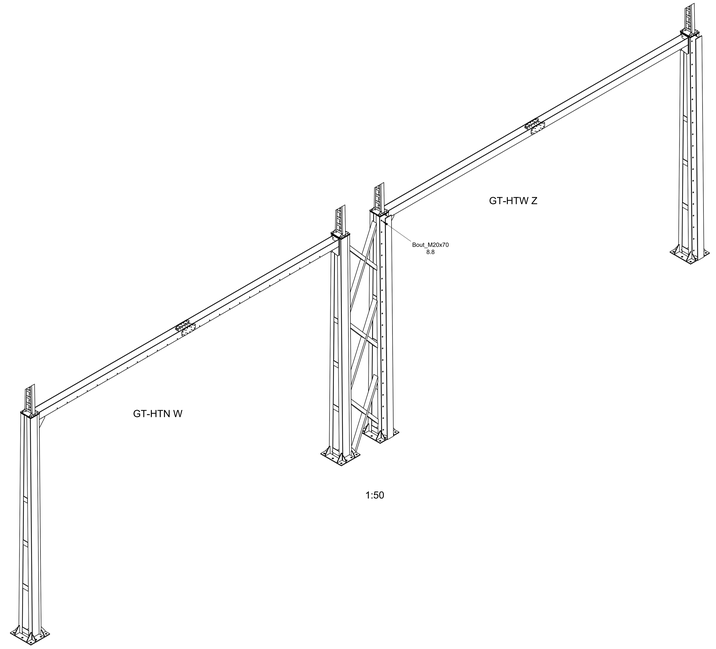








SECTIE A-A



1:50

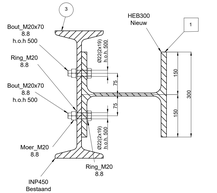
● Rand van de flens van de schetsplaat op het werk te lassen tegen de flens van de kolom, zie MDR-005661-01-50505
Rapport constructiebeoordeling zakken 64_545_05



DETAIL E
1:1



DETAIL F
1:1



SECTIE G-G
1:5

Algemene gegevens (Tenzij anders vermeld)		
Staalkwaliteit	Scherpe kanten breken.	
	Gaten soeverenen.	
	Lassen a = 4 mm.	
	Bij profielstaal voldoende openingen t.b.v. zinkuitloop.	
Staalkwaliteit	Merknummers □ / Positienummers ○	
	Profielstaal S355J2, dikte ≤ 16mm volgens NEN-EN 10025	
	Profielstaal S355J2, dikte > 16mm volgens NEN-EN 10025	
	Gesloten profiel S355J2H, dikte ≤ 16mm volgens NEN-EN 10210	
	Gesloten profiel S355J2H, dikte > 16mm volgens NEN-EN 10210	
	Voetplaat S355J2+N volgens NEN-EN 10025	
Toleranties	Alle toleranties voor hoekmaten moeten voldoen aan tolerantieklasse A Tabel 2, NEN-EN-ISO 13920	
	Alle toleranties voor lengtematen moeten voldoen aan tolerantieklasse A Tabel 1, NEN-EN-ISO 13920	
	Alle toleranties voor rechtheid, vlakheid, en evenwijdigheid moeten voldoen aan tolerantieklasse E Tabel 3, NEN-EN-ISO 13920.	
Bevestigingsartikelen	Onder elke moer en boutkop een sluitring	
	Bouten en moeren ISO passend	
Uitvoeringsklasse	Profielstaal: Thermisch verzinken volgens NEN-EN-ISO 1461	
	Aanvullend verfsysteem volgens SPE.00.903 in RAL 7033	
Totaalgewicht		
Uitvoeringsklasse	EXC3	

76	Bout M20x70	4017	8.8	THVZ
76	Moer M20	4032	8.8	THVZ
152	Ring M20	7091	8.8	THVZ

Aantal		Omschrijving	ISO	Kwaliteit	Opmerkingen
3	2	INP450	9510		Bestaand staalwerk
2	2	HEA340	7505		Bestaand staalwerk
1	2	HEB300	9410		

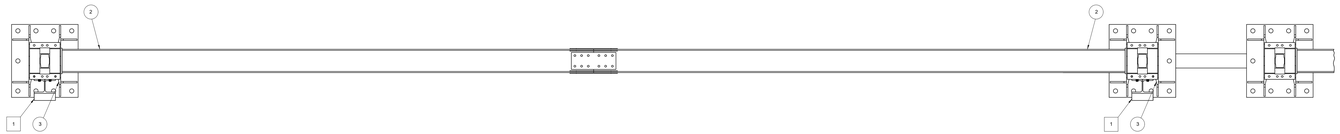
Pos. No.	Aantal	Omschrijving	Lengte in mm:	Gewicht in kg	Opmerkingen

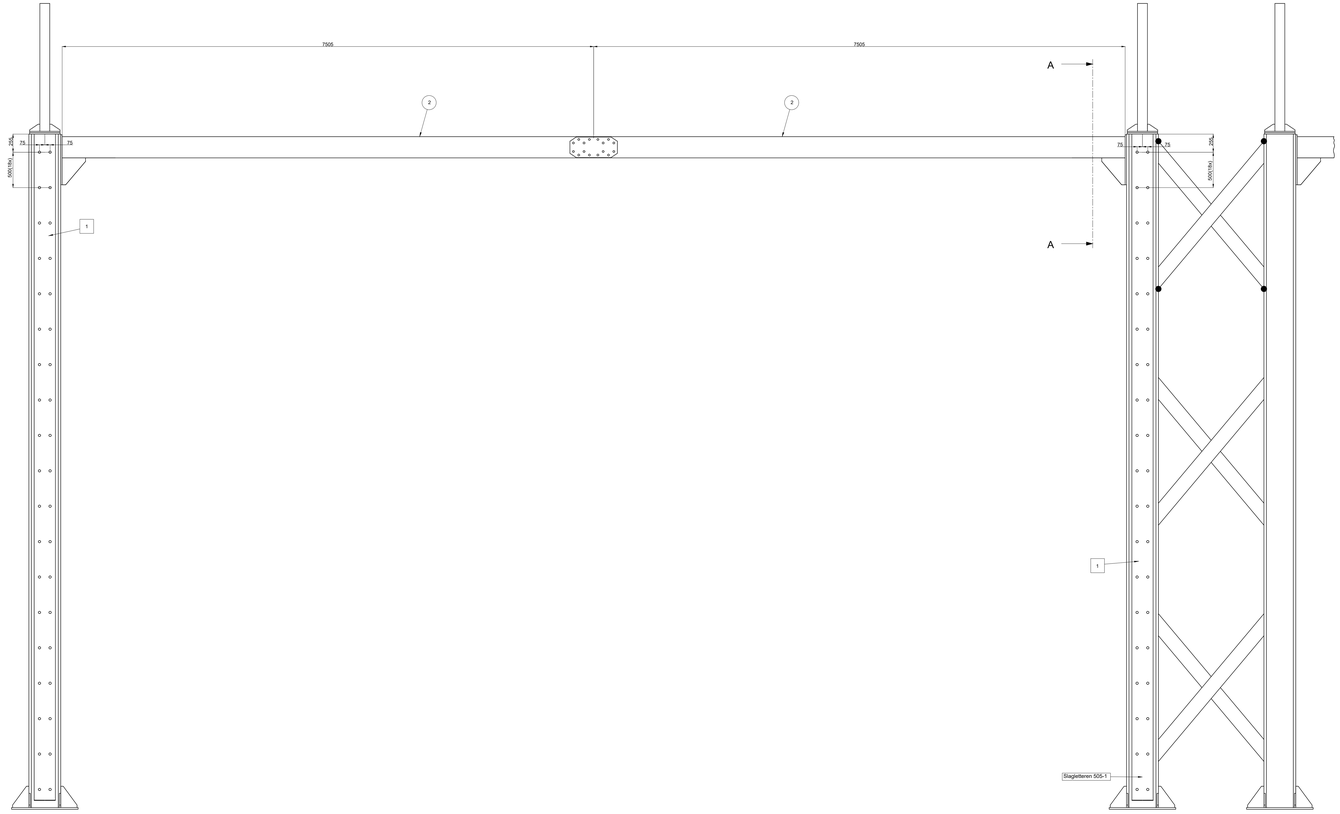
Station Waalwijk 50kV
Voor uitvoering

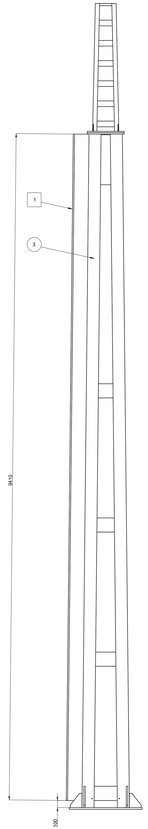
No.	Status revisie	Wijziging revisie	Ontwerp	Getoetst door Kwaliteit	Datum	Formaat
A	23-01-2026	Voor uitvoering	krudis/GB		31/3	A0

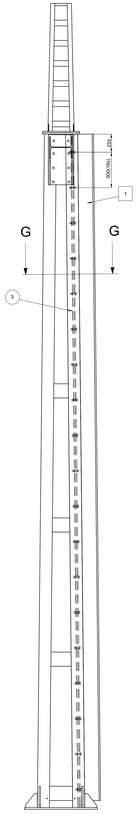
Tennet
Samen op weg naar Sterk Net

Naam: Prikker
Categorie: Algemeen
Documentsoort: Constructieberekening
Titel: MS1 portaal
Projectnaam: Principetek. Aanpassing portaal 64.
Documentnummer: 50561-01-50004

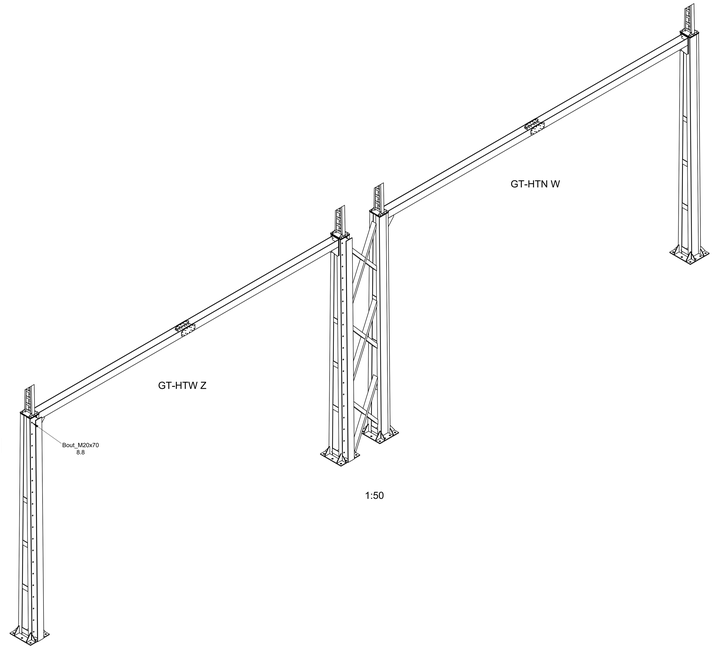






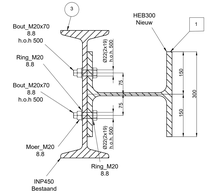


SECTIE A-A



1:50

● Rand van de flens van de schetsplaat op het werk te lassen tegen de flens van de kolom, zie MDR-00581-01-50005 Rapport constructiebeoordeling juiken 64_685_65



SECTIE G-G
1:5



DETAIL E
1:1



DETAIL F
1:1

Algemene gegevens (Tenzij anders vermeld)	
Staalkwaliteit	Scherpe kanten breken.
	Gaten soeverenren.
	Lassen a = 4 mm.
	Bij profielstaal voldoende openingen t.b.v. zinkuitloop.
	Merknummers □ / Positienummers ○
Staalkwaliteit	Profielstaal S355J2, dikte ≤ 16mm volgens NEN-EN 10025
	Profielstaal S355J2, dikte > 16mm volgens NEN-EN 10025
	Gesloten profiel S355J2H, dikte ≤ 16mm volgens NEN-EN 10210
	Gesloten profiel S355J2H, dikte > 16mm volgens NEN-EN 10210
	Voetplaat S355J2+N volgens NEN-EN 10025
Tolerantïes	Alle tolerantïes voor hoekmaten moeten voldoen aan tolerantieklasse A Tabel 2, NEN-EN-ISO 13920
	Alle tolerantïes voor lengtematen moeten voldoen aan tolerantieklasse A Tabel 1, NEN-EN-ISO 13920
	Alle tolerantïes voor rechtheid, vlakheid, en evenwijdigheid moeten voldoen aan tolerantieklasse B Tabel 3, NEN-EN-ISO 13920.
Bevestigingsartikelen	Onder elke moer en boutkop een sluitring
	Bouten en moeren ISO passend
Uitvoeringsklasse	Profielstaal: Thermisch verzinken volgens NEN-EN-ISO 1461
	Aanvullend verfsysteem volgens SPE.00.903 in RAL 7033.
Totaalgewicht	
Uitvoeringsklasse	EXC3

76		Bout M20x70	4017	8.8	THVZ
76		Moer M20	4032	8.8	THVZ
152		Ring M20	7091	8.8	THVZ
Aantal		Omschrijving	ISO	Kwaliteit	Opmerkingen
5	Z	INP450	9510		Bestaand staalwerk
2	Z	HEA340	7505		Bestaand staalwerk
1	Z	HEB300	9410		
Pos. No.	Aantal	Omschrijving	Lengte in mm	Gewicht in kg	Opmerkingen

Station Waalwijk 50kV				Voor uitvoering	
No.	Stand revisie	Wijziging revisie	Ontwerp	Datum tekening	Schaal
A	23-01-2025	Voor uitvoering	Arcadis/GB	31/01/2025	1:5

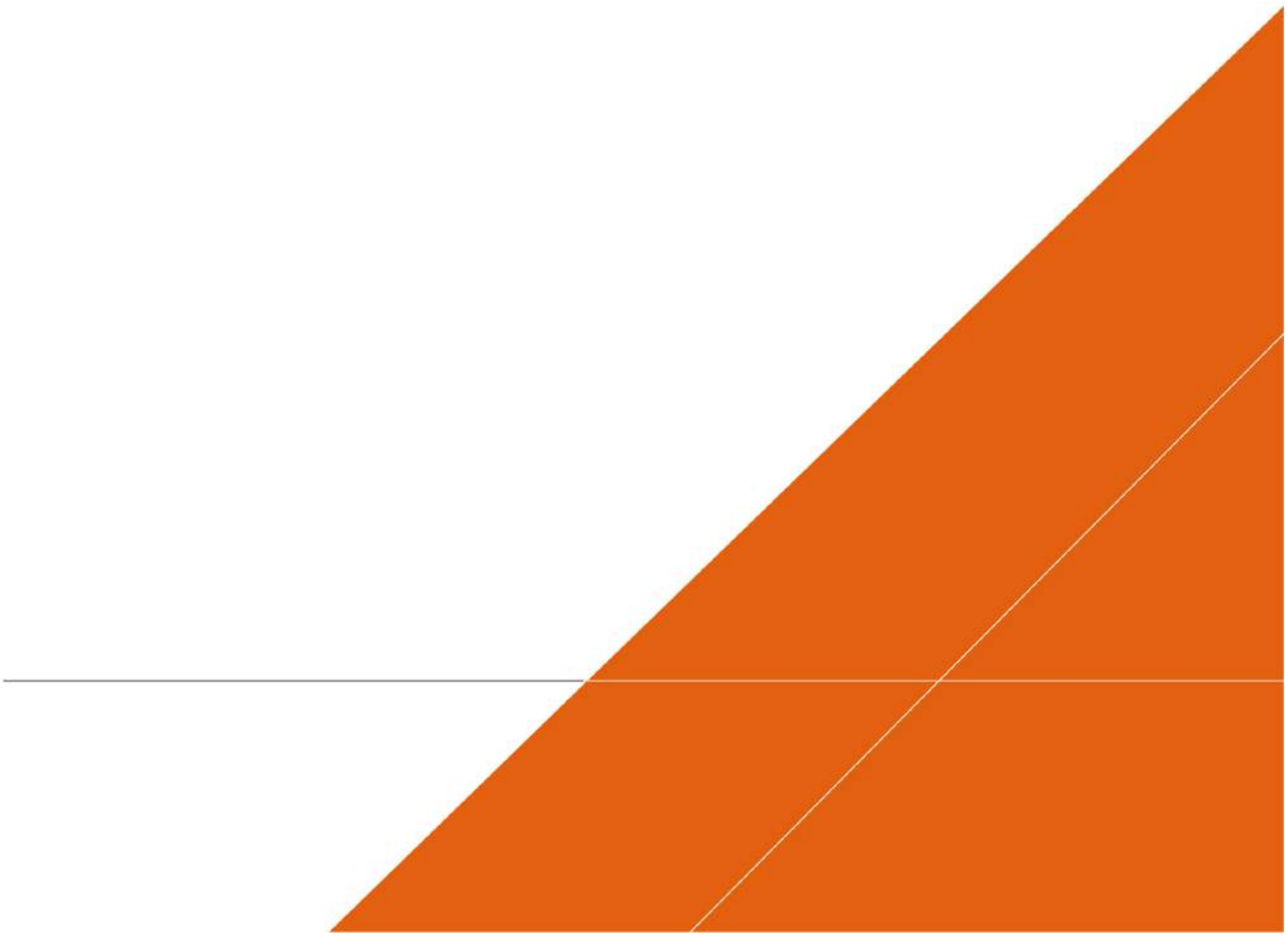
Revisie	Fase	Fase
ARCADIS	Categorie	Algemeen
Ontwerpfase	Tekeningtype/tekening	
Mast	MAST portaal	
Tekeningnummer	Principetek. Aanpassing portaal 65.	
Tennet	Revisie	00561-01-50005

ARCADIS Design & Consultancy for natural and built assets

TENNET STATION WAALWIJK

Verificatieberekening constructie jukken 64 en 65
Ontwerpberekening constructie juk 64b

24 JUNI 2020



Contactpersonen

HARRY BEERTSEN
Senior Specialist

T +31 (0)6 2706 0298
M +31 (0)6 2706 0298
E harry.beertsen@arcadis.com

Arcadis Nederland B.V.
Postbus 220
3800 AE Amersfoort
Nederland

Versie	Datum	Wijzigingen	Constructeur
0	31-12-2019	In concept gereed	H. Beertsen
1	24-06-2020	Definitief	H. Beertsen

INHOUDSOPGAVE

1 INLEIDING 7

1.1 Aanleiding 7

1.1.1 Huidige situatie 7

1.1.2 Eindsituatie 7

1.2 Vraagstelling 8

1.3 Te leveren producten 8

1.4 Doel van dit rapport 8

2 VOORSCHRIFTEN EN RICHTLIJNEN 9

2.1 Eurocode en Nationale Bijlagen 9

2.2 Overige voorschriften en richtlijnen 9

3 UITGANGSPUNTEN 10

3.1 Gehanteerde informatie 10

3.2 Gevolgklasse, belastingfactoren en ontwerplevensduur 10

3.3 Materiaaleigenschappen 11

3.4 Ankers en voetplaten 11

3.5 Vervormingen 11

3.6 Gehanteerde software 12

4 BELASTINGEN EN BELASTINGCOMBINATIES 13

4.1 Algemeen 13

4.2 Permanente belastingen 13

4.3 Veranderlijke belastingen 13

4.4 Belastingcombinaties 13

5 STAALCONSTRUCTIE JUK 64 15

5.1 Beschrijving constructie 15

5.2 Belastingen 16

5.2.1 BG2: grondgewicht op poer 16

5.2.2 BG3: wind op constructie, X-richting 17

5.2.3 BG4: wind op constructie, Y-richting 17
5.2.4 LC1001 t/m 1238: Belasting uit mastberekeningen 17
5.3 Resultaten 3D-raamwerkberekeningen 17

6 STAALCONSTRUCTIE JUK 64 VERSTERKT 19
6.1 Beschrijving versterkingen 19
6.2 Resultaten 3D-raamwerkberekeningen 19

7 STAALCONSTRUCTIE JUK 65 21
7.1 Beschrijving constructie 21
7.2 Belastingen 22
7.2.1 BG2: grondgewicht op poer 22
7.2.2 BG3: wind op constructie, X-richting 22
7.2.3 BG4: wind op constructie, Y-richting 22
7.2.4 LC1001 t/m 1238: Belasting uit mastberekeningen 23
7.3 Resultaten 3D-raamwerkberekeningen 23

8 STAALCONSTRUCTIE JUK 65 VERSTERKT 24
8.1 Beschrijving versterkingen 24
8.2 Resultaten 3D-raamwerkberekeningen 24

9 STAALCONSTRUCTIE JUK 64B 26
9.1 Beschrijving constructie 26
9.2 Belastingen 26
9.2.1 BG2: grondgewicht op poer 27
9.2.2 BG3: wind op constructie, X-richting 27
9.2.3 BG4: wind op constructie, Y-richting 27
9.2.4 LC1001 t/m 1167: Belasting uit mastberekeningen 27
9.3 Resultaten 3D-raamwerkberekeningen 27

10 FUNDERING VERSTERKTE JUKKEN 64 EN 65 28
10.1 Beschrijving constructie 28
10.2 Maximaal optredende grondspanningen/draagvermogen 28
10.3 Kantelveiligheid/stabiliteit 29
10.3.1 Poer links en rechts van versterkt juk 64 en 65 29
10.3.2 Middelste poer van versterkt juk 64 en 65 30

11 FUNDERING JUK 64B 32
11.1 Beschrijving constructie 32
11.2 Maximaal optredende grondspanningen/draagvermogen 32

11.3 Kantelveiligheid/stabiliteit 33

12 WAPENING IN POEREN 34

12.1 Poer links en rechts van versterkt juk 64 en 65 34
12.1.1 Beschrijving poer 34
12.1.2 Wapening in opstort 1400/2700 x 1400/2700 x 2000 35
12.1.3 Wapening in plaat 4200 x 4000 x 400 36
12.2 Middelste poer van versterkt juk 64 en 65 37
12.2.1 Beschrijving poer 37
12.2.2 Wapening in opstort 1400/2700 x 2900/4200 x 1800 (M_z) 38
12.2.3 Wapening in plaat 6200 x 6200 x 600 (M_z) 39
12.2.4 Wapening in opstort 1400/2700 x 2900/4200 x 1800 (M_y) 40
12.2.5 Wapening in plaat 6200 x 6200 x 600 (M_y) 41
12.3 Poeren van juk 64b 41
12.3.1 Wapening in opstort 1400 x 1400 x 2250 41
12.3.2 Wapening in plaat 4250 x 4250 x 600 42

13 DETAILBEREKENING STAALCONSTRUCTIE 43

13.1 Overzicht met detailnummering 43
13.2 Toets detail 1B 44
13.2.1 Bouten 45
13.2.2 Kopplaat 46
13.2.3 Lassen 46
13.3 Toets detail 2B 47
13.3.1 Bouten 48
13.3.2 Kopplaat 48
13.3.3 Lassen 49
13.3.4 Lijf kolom 49
13.4 Toets detail 3B 50
13.4.1 Bouten verbinding diagonaal aan schetsplaat 50
13.4.2 Bouten schetsplaat aan kolom INP45 51
13.4.3 Lijf schetsplaat 51
13.4.4 Flens schetsplaat 52
13.4.5 Flens schetsplaat 53
13.5 Toets detail 4B 54
13.5.1 Bouten 54
13.5.2 Kopplaat 55
13.5.3 Lassen 55
13.6 Toets detail 5B 56

13.6.1 Bouten 57
13.6.2 Kopplaat 57
13.6.3 Lassen 58
13.7 Toets detail 6B 59
13.8 Toets detail 7B 60
13.8.1 Bouten 61
13.9 Toets detail 8B 62
13.9.1 Ankers 62
13.9.2 Voetplaat 63
13.9.3 Lassen 63
13.9.4 Uitbreken ankergroep 64
13.10 Toets detail 1N 65
13.10.1 Bouten 65
13.10.2 Kopplaat 66
13.10.3 Lassen 66
13.11 Toets detail 5N 67
13.11.1 Bouten 68
13.11.2 Kopplaat 68
13.11.3 Lassen 68
13.12 Toets detail 8N 69
13.12.1 Ankers 69
13.12.2 Voetplaat 70
13.12.3 Lassen 70
13.12.4 Uitbreken ankergroep 71

COLOFON **82**

1 INLEIDING

1.1 Aanleiding

Het station Waalwijk is met twee circuits aangesloten op het 150 kV net en de belasting bedraagt meer dan 100 MW. Hierdoor voldoet Waalwijk niet aan het 100 MW/6h criterium zoals is gesteld in de Elektriciteitswet. In het Kwaliteits- en Capaciteits Document jaar 2016 is dit als nieuw risico aangemerkt. Waalwijk 150 zal daarom worden uitgebreid met een tweede hoofdrail (U-I), koppelveld, omloop, twee lijnvelden en een transformator veld. Het bestaande daknet zal hiervoor moeten worden uitgebreid.

1.1.1 Huidige situatie

Het huidige 150 kV station Waalwijk is aangesloten op het 150 kV net middels de lijnvelden Geertruidenberg wit en 's-Hertogenbosch Noord wit. Het station is uitgevoerd met een enkele rail (daknet) welke middels sectiescheiders verdeeld kan worden in de secties A t/m E. Op de secties A, C en E zijn de drie transformatoren van Enexis en op sectie A en E zijn de twee lijnvelden aangesloten. De secties B en D kunnen alleen als koppelsectie worden gebruikt.



Figuur 1: Huidige situatie TenneT station Waalwijk met op de voorgrond de jukken 65 (L) en 64 (R)

1.1.2 Eindsituatie

In de eindsituatie bestaat het station uit een dubbele rail in UI configuratie, een extra koppelveld en twee extra lijnvelden (Geertruidenberg zwart en 's-Hertogenbosch West zwart). Tevens is een nieuw Centraal Diensten Unit (CDU) geplaatst en ingericht en zijn de bestaande 150 kV velden secundair gerenoveerd. Voor wat betreft de elektrotechnische installatie wordt het bestaande CDG door TenneT verlaten.

Binnen het project 002.880.20 wordt op station Waalwijk een transformatorveld voor transformator TR2 gerealiseerd. Voor het redundant aan kunnen sluiten van transformator TR2 dient dit project voor of gelijktijdig met het project 002.880.20 te worden gerealiseerd. Uitvoering van het project 002.880.20 is dan ook onlosmakelijk verbonden met dit project.

1.2 Vraagstelling

De onderzoeksvraag is tweeledig:

1. Voldoen de bestaande jukken 64 en 65, alsmede funderingen en alle verbindingen, aan de geldende normen en TenneT standaarden?
2. Wat zijn de profielafmetingen van het nieuw te bouwen juk 64b, de afmetingen van kop- en voetplaten, de afmetingen van de ankers, bouten en lassen en de afmetingen van de funderingen?

1.3 Te leveren producten

Het opstellen van een berekeningsrapport waarin de bestaande jukken getoetst worden aan de hand van de belastingen in de toekomstige eindsituatie. Hierbij dient als uitgangspunt minimaal voldaan te worden aan de NEN 8700, verbouwniveau, met een restlevensduur (referentieperiode) van 30 jaar.

Het nieuw te bouwen juk wordt getoetst op nieuwbouwniveau met een levensduur van 50 jaar.

1.4 Doel van dit rapport

In dit rapport worden de resultaten beschreven die volgen uit de (verificatie-)berekeningen van bovengenoemde staalconstructies.

2 VOORSCHRIFTEN EN RICHTLIJNEN

2.1 Eurocode en Nationale Bijlagen

De in tabel 1 weergegeven Eurocodes met Nationale Bijlagen zijn gehanteerd.

Tabel 1: Overzicht Eurocodes met Nationale Bijlagen

Normen	Onderwerp
[1] NEN-EN 1990+A1+A1/C2;2011 + NB	Grondslagen van het constructief ontwerp.
[2] NEN-EN 1991-1-1+C1;2011 + NB	Belastingen op constructies – Deel 1-1: Algemene belastingen.
[3] NEN-EN 1991-1-4+A1+C2; 2011 + NB	Belastingen op constructies – Deel 1-4: Windbelasting.
[4] NEN-EN 1992-1-1+C2; 2011 + NBI	Ontwerp en berekening van betonconstructies – Deel 1-1: Algemene regels.
[5] NEN-EN 1993-1-1+C2+A1;2016 + NB	Ontwerp en berekening van staalconstructies – Deel 1-1: Algemene regels.
[6] NEN-EN 1993-1-8+C2;2011 + NB	Ontwerp en berekening van staalconstructies – Deel 1-8: Verbindingen.
[7] NEN-EN 1997-1+C1; 2012 + NBI	Geotechnisch ontwerp – Deel 1: Algemene regels.
[8] NEN-EN 50341-3+C1 t/m C4; 2010	Bovengrondse elektrische lijnen boven 45 KV wisselspanning Deel 3: Verzameling van nationale normatieve aspecten
[9] NEN-EN IEC 60865-1;2012	Short-circuits currents – Calculation of effects

2.2 Overige voorschriften en richtlijnen

Naast de Eurocode zijn de in tabel 2 weergegeven normen en richtlijnen gehanteerd.

Tabel 2: Overzicht overige normen en richtlijnen

Normen	Onderwerp
[10] NEN 8700; 2011	Beoordelen constructieve veiligheid van een bestaand bouwwerk bij verbouwen en afkeuren - Grondslagen.
[11] NEN 8701; 2011	Beoordelen constructieve veiligheid van een bestaand bouwwerk bij verbouwen en afkeuren - Belastingen.
[12] SPE.01.100 versie 12- 2017	Specificatie Staalwerk primaire ondersteuningen, portalen en bliksempieken
[13] SPE.04.004 versie 11- 2018	Specificatie Constructieberekeningen
[14] SPE.04.006, versie 12-2017	Eisen Bouwbesluit 2012

3 UITGANGSPUNTEN

3.1 Gehanteerde informatie

De in tabel 3 genoemde documenten zijn geraadpleegd bij het opstellen van deze rapportage:

Tabel 3: Overzicht gehanteerde documenten

Titel	
[15] p-007877-1	Tekening: Plaatsing afspanjukken
[16] p-007893-1	Tekening: Hoofdconstructie
[17] p-036043-1	Tekening: Overzicht hoofdstaalconstructie (inclusief statische trekkracht in geleiders)
[18] d-006142-1	Tekening: Afspanjukken lang 16200
[19] d-15484-1	Tekening: Verzwaring afspanjukken
[20] p-134655-1	Tekening: Afspanjukken, wijziging afspanconstructie geleiders
[21] p-134655-2	Tekening: Afspanjukken, wijziging afspanconstructie geleiders
[22] v01-v-----con-00001	Tekening: afspanjuk 65, wijziging en uitbreiding 1962
[23] d-006143-1	Tekening: Langsjukken (5 portalen)
[24] d-006528-1	Tekening: Afspanjukken lang 14500
[25] p-047293-1	Tekening: Bij te plaatsen dwarsjukken
[26] p-047294-1	Tekening: Onderdelen voor afspanning
[27] p-065887-1	Tekening: Uitbreiding hoofdstaalconstructie
[28] p-134659-1	Tekening: Afspanbalkjes voor geleiders
[29] d-043886-1	Funderingsadvies uitbreiding 150 kV station Waalwijk
[30] d-006150-1	Tekening: Details poeren
[31] d-006515-1	Tekening: Kleine fundaties
[32] p-026872-1	Tekening: Afspanjuk, verzwaring fundatie
[33] BOU.04.004.03.009A	Tekening: Overzicht ankers met stelhoogten
[34] 43122-108	Tekening verzwaring afspanjukken

3.2 Gevolgklasse, belastingfactoren en ontwerplevensduur

Zowel de nieuw te bouwen constructiedelen als de bestaande constructie vallen in gevolgklasse CC2, zie tabel NB.21-B1 van [1]. De bestaande constructie zal in de nieuwe situatie worden getoetst op verbouwniveau. De nieuw te bouwen onderdelen worden getoetst op nieuwbouwniveau. De te hanteren belastingfactoren zijn in onderstaande tabel opgenomen.

Tabel 4: Partiële belastingfactoren

Belasting	verbouwniveau γ	nieuwbouw γ
Permanent, ongunstig	1.15	1.20
Permanent, gunstig	0.90	0.90
Windbelasting	1.40	1.50
Overige veranderlijke belastingen	1.30	1.50

De nieuw te bouwen constructiedelen dienen een ontwerplevensduur van 50 jaar te hebben.

3.3 Materiaaleigenschappen

Voor de onderdelen worden de volgende staalsoorten en –kwaliteiten toegepast:

Tabel 5: Staalsoorten

Onderdeel	(Wand-)dikte	Staalsoort	f_y MPa	f_u MPa
Bestaande profielen	t ≤ 40 mm	S235	235	360
Bestaande kop- en voetplaten	t ≤ 40 mm	S235	235	360
Bestaande bouten	---	kwal. 8.8	640	800
Bestaande ankers	---	n.v.t.	n.v.t.	n.v.t.
Nieuwe profielen	t ≤ 40 mm	S355	355	490
Nieuwe kop- en voetplaten	t ≤ 40 mm	S355	355	490
Nieuwe bouten	---	kwal. 8.8	640	800
Nieuwe ankers	---	kwal. 8.8	640	800

3.4 Ankers en voetplaten

De diameters van de toe te passen ankers volgen uit de berekening, maar dienen minimaal M24 te zijn. De ankers dienen thermisch te worden verzinkt, isometrisch passend. De ankers moeten zijn voorzien van een gerolde draad.

De voetplaten worden niet ondersabeld. De stelhoogte dient conform tekening BOU.04.004.03.009A te worden toegepast. De ankers en voetplaten dienen hierop te worden gedimensioneerd.

3.5 Vervormingen

Voor ondersteunende constructies in veldopstellingen gelden de volgende waarden ten aanzien van de maximale verplaatsing:

Constructie	Maximale horizontale verplaatsing
Schakelende apparatuur (vermogensschakelaar, aarder en scheider)	1/300 van de hoogte
Ondersteunende apparatuur (steunisolator, stroom/spanningstransformator en railsteunen)	1/150 van de hoogte
Bliksempieken	1/50 van de hoogte

Constructie	Maximale verticale doorbuiging
Portalen	1/500 van de overspanning

3.6 Gehanteerde software

De volgende software is toegepast bij het opstellen van deze rapportage:

Tabel 6: Gehanteerde software

Programma	Omschrijving
SCIA Engineer 17.1.2029 / 19.0.60	3D raamwerk- en platenprogramma
Technosoft Construct 6.07a	Bepaling grondspanningen en kantelveiligheid funderingen op staal
Excel 2016 / Office 365	Spreadsheets; vrijgegeven door ARCADIS
Word 2016 / Office 365	Tekstverwerkingsprogramma

4 BELASTINGEN EN BELASTINGCOMBINATIES

4.1 Algemeen

In dit hoofdstuk worden alle belastingen beschreven die werken op de constructie van de lijnjukken. De grootte van de diverse belastingen zijn terug te vinden in de hoofdstukken 5 tot en met 9.

4.2 Permanente belastingen

De volgende permanente belastingen worden in rekening gebracht:

- Eigen gewicht van de beton- en staalconstructie.
- Eigen gewicht van de grond op de poeren.
- Eigen gewicht van de geleiders en isolatoren.
- Eigen gewicht van de diverse componenten.
- Statische trekkrachten op bliksempieken.

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

4.3 Veranderlijke belastingen

De volgende veranderlijke belastingen worden in rekening gebracht:

- Windbelasting op de constructie.
- Windbelasting op de geleiders, isolatoren, componenten en bliksemdraden.
- Windbelasting op de be-ijsde geleiders, isolatoren, componenten en bliksemdraden.
- IJsbelasting.
- Kortsluitkrachten.

4.4 Belastingcombinaties

De volgende belastingcombinaties worden in rekening gebracht voor de toetsing van de sterkte/stabiliteit:

Toets bestaande constructie in nieuwe situatie, UGT:

maximale ijslast:	1.15 ∗ permanent	+	1.30 ∗ ijs	+	1.40 ∗ 0.30 ∗wind X (be-ijsd)
	1.15 ∗ permanent	+	1.30 ∗ ijs	+	1.40 ∗ 0.30 ∗wind Y (be-ijsd)
maximale wind:	1.15 ∗ permanent	+	1.40 ∗ wind X		
	1.15 ∗ permanent	+	1.40 ∗ wind Y		
kortsluiting:	1.15 ∗ permanent	+	0.30 ∗wind X	+	1.30 ∗ kortsluiting
	1.15 ∗ permanent	+	0.30 ∗wind Y	+	1.30 ∗ kortsluiting

Toets nieuwe constructie, UGT:

maximale ijslast:	1.20 ∗ permanent	+	1.50 ∗ ijs	+	1.50 ∗ 0.30 ∗wind X (be-ijsd)
	1.20 ∗ permanent	+	1.50 ∗ ijs	+	1.50 ∗ 0.30 ∗wind Y (be-ijsd)
maximale wind:	1.20 ∗ permanent	+	1.50 ∗ wind X		
	1.20 ∗ permanent	+	1.50 ∗ wind Y		
kortsluiting:	1.20 ∗ permanent	+	0.30 ∗wind X	+	1.50 ∗ kortsluiting
	1.20 ∗ permanent	+	0.30 ∗wind Y	+	1.50 ∗ kortsluiting

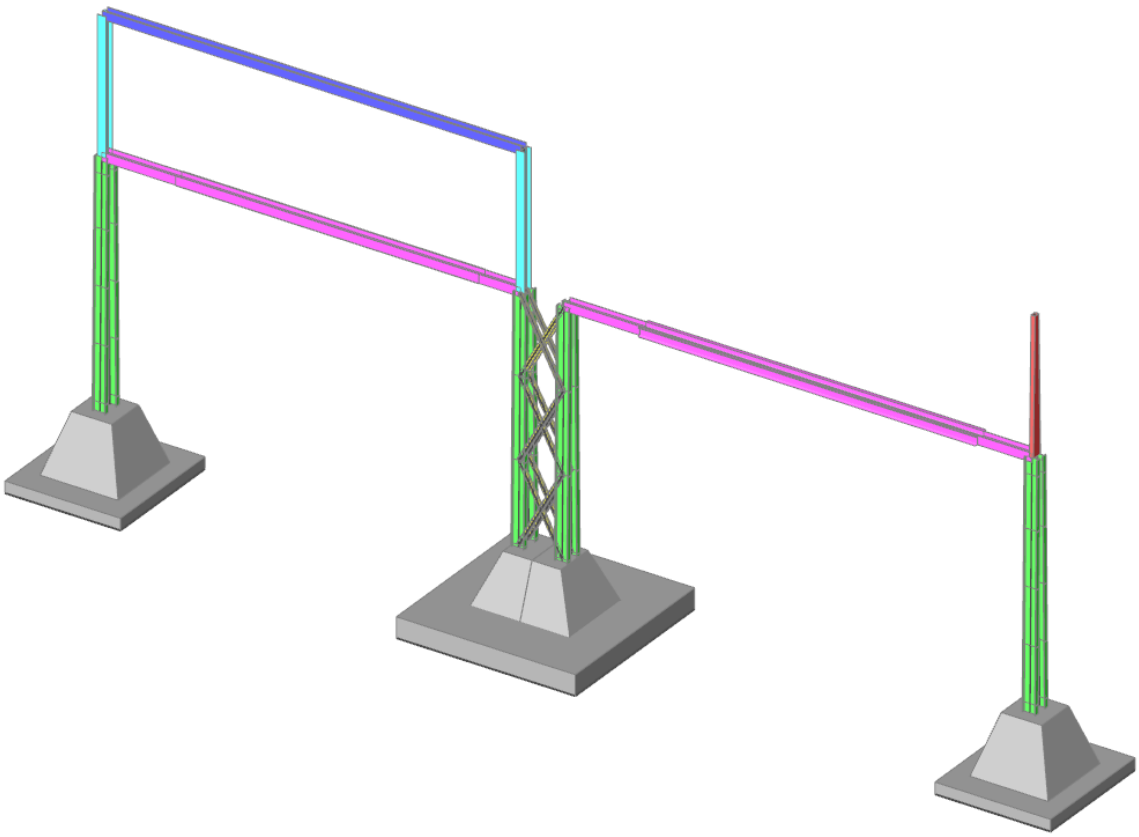
De volgende belastingcombinaties worden in rekening gebracht voor de toetsing van de stijfheid:

Bestaand en nieuw, BGT:

maximale ijslast:	1.00 ∗ permanent	+	1.00 ∗ ijs	+	0.30 ∗wind X (be-ijsd)
	1.00 ∗ permanent	+	1.00 ∗ ijs	+	0.30 ∗wind Y (be-ijsd)
maximale wind:	1.00 ∗ permanent	+	1.00 ∗ wind X		
	1.00 ∗ permanent	+	1.00 ∗ wind Y		

5 STAALCONSTRUCTIE JUK 64

5.1 Beschrijving constructie



Figuur 2; Rekenmodel huidig lijnjuk 64 in SCIA-Engineer

In bovenstaande afbeelding is het rekenmodel uit SCIA gegeven. De volgende stalen onderdelen zijn gehanteerd:

Tabel 7: In berekening toegepaste profielen

Profiel volgens tekening	Profiel ingevoerd	Staalkwaliteit	Kleur in figuur
Kolom INP45	INP450	S235	Groen
Kolom DIE36	HEA360	S235	Cyaan
Ligger DIE34	HEA340	S235	Lila
Ligger DIE34 + strippen	HEA340+ 2x strip 320x12	S235	Lila
Ligger DIE34 + UNP's	HEA340+ 2x UNP300	S235	Lila
Ligger DIN28	HEB280	S235	Donkerblauw
Koppelplaat 2x14x200 (tussen kolommen)	28x200	S235	Donkergroen
Diagonaal UNP14	UNP140	S235	Geel
Bliksempiek	Koker 140x354	S235	Rood

Origineel zijn de flexibele geleiders afgespannen aan een “kaal” DIE34 profiel. In een later stadium is dit profiel voorzien van versterkingen in de vorm van dubbele strippen of dubbele UNP-profielen gebout tegen de flensen.



Figuur 3: Versterkingen met strippen (links) en UNP-profielen (rechts)

5.2 Belastingen

De volgende belastingen zijn in de berekening gehanteerd:

- BG1: Het eigengewicht van het stalen portaal en de funderingen.
- BG2: Grondgewicht op de poer.
- BG3: Windbelasting op het afspanjuk, X-richting.
- BG4: Windbelasting op het afspanjuk, Y-richting.
- LC1001 t/m LC1238: Krachten uit de lijn.
  (LC1001 t/m LC1238 zijn de **rekenwaarden** van de belastingcombinaties uit de mastberekeningen)

5.2.1 BG2: grondgewicht op poer

Poer links en rechts:

lengte plaat	: 4.40 m
breedte plaat	: 4.00 m
lengte opstort	: 2.05 m (gemiddeld)
breedte opstort	: 2.05 m (gemiddeld)
gronddekking	: 1.50 m
soortelijke massa grond	: 18.00 kNm^3

$$Q_{grond} = (4.40 * 4.00 - 2.05 * 2.05) * 1.50 * 18.00 = 361.73\ kN$$

Poer midden:
lengte plaat : 6.20 m
breedte plaat : 6.20 m
lengte opstort : 2.05 m (gemiddeld)
breedte opstort : 2.75 m (gemiddeld)
gronddekking : 1.10 m
soortelijke massa grond : 18.00 kNm^3

$Q_{grond} = (6.20 * 6.20 - 2.05 * 2.75) * 1.10 * 18.00 = 649.49\ kN$

5.2.2 BG3: wind op constructie, X-richting

stuwdruk : 0.63 kPa; profielfactor : 2.00

kolom INP45 : $q_{wind} = 2.00 * 0.63 * 0.17 = 0.21\ kN/m$
kolom DIE36 : $q_{wind} = 2.00 * 0.63 * 0.35 = 0.44\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$

5.2.3 BG4: wind op constructie, Y-richting

stuwdruk : 0.63 kPa; profielfactor : 2.00

kolom INP45 : $q_{wind} = 2.00 * 0.63 * 0.45 = 0.57\ kN/m$
kolom DIE36 : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$
ligger DIE34 : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$
ligger DIN28 : $q_{wind} = 2.00 * 0.63 * 0.28 = 0.35\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.63 * 0.14 = 0.18\ kN/m$

5.2.4 LC1001 t/m 1238: Belasting uit mastberekeningen

De krachten die op het lijnportaal (afspanjuk) werken, zijn overgenomen uit de hoofdberekening van de masten. Een lijst van alle belastingcombinaties met krachten is weergegeven in Bijlage A. Dit zijn rekenwaarden (inclusief belastingfactor) van de krachten uit de geleiders en de bliksemdraden. In de bijlage is een overzicht gegeven van de knoopnummers waarop de krachten aangrijpen volgens de berekening van de mast. Deze knoopnummers corresponderen met knoopnummering in SCIA. De opgegeven krachten werken in het X, Y, Z-coördinaatsysteem van de constructie.

5.3 Resultaten 3D-raamwerkberekeningen

In tabel 8 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld.
Voor de in- en uitvoergegevens, zie Bijlage D.

Tabel 8: Maximaal optredende UC-waarde (verbouwniveau)

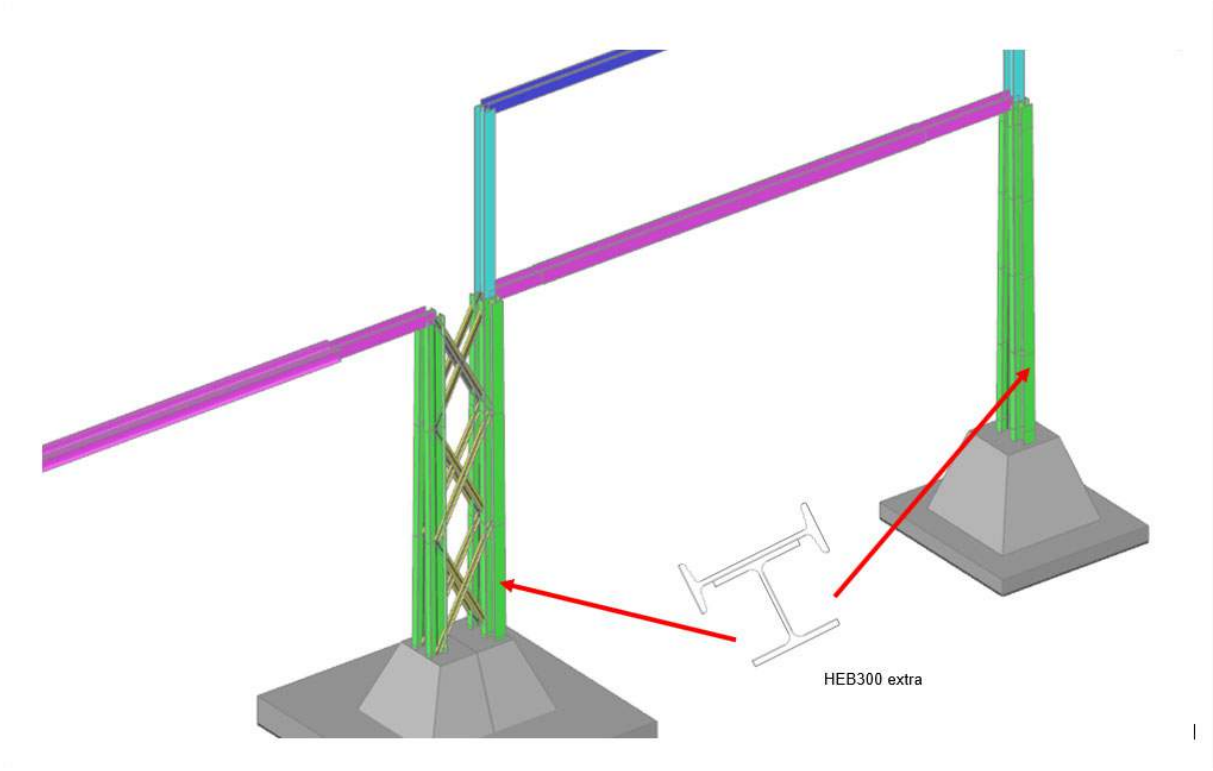
Profiel	Staalkwaliteit	UC_{max}
Kolom INP45	S235	1.50
Kolom DIE36	S235	0.27
Ligger DIE34	S235	0.62
Ligger DIE34 + strippen	S235	0.98
Ligger DIE34 + UNP's	S235	0.82
Ligger DIN28	S235	0.23

Profiel	Staalkwaliteit	UC_{max}
Koppelplaat 2x14x200 (tussen kolommen)	S235	1.14
Diagonaal UNP14	S235	0.82
Bliksempiek	S235	0.45

Conclusie: bepaalde onderdelen van de constructie dienen te worden versterkt, zie hoofdstuk 6.

6 STAALCONSTRUCTIE JUK 64 VERSTERKT

6.1 Beschrijving versterkingen



Figuur 4; Versterkingen aan lijnjuk 64 in SCIA-Engineer (achteraanzicht juk)

Twee van de vier samengestelde kolommen dienen te worden versterkt en dan alleen die INP-profielen die onder druk staan (aan de zijde van de naast gelegen mast). Hiertoe moeten in het werk extra HEB300 profielen tegen het lijf van de INP-kolommen worden gemonteerd.

Door het toepassen van bovenstaand beschreven versterkingen worden de optredende spanningen in de overbelaste koppelplaten gereduceerd en is een versterking hiervan niet noodzakelijk.

6.2 Resultaten 3D-raamwerkberekeningen

In tabel 9 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld.
Voor de in- en uitvoergegevens, zie Bijlage E.

Tabel 9: Maximaal optredende UC-waarde (verbouwniveau)

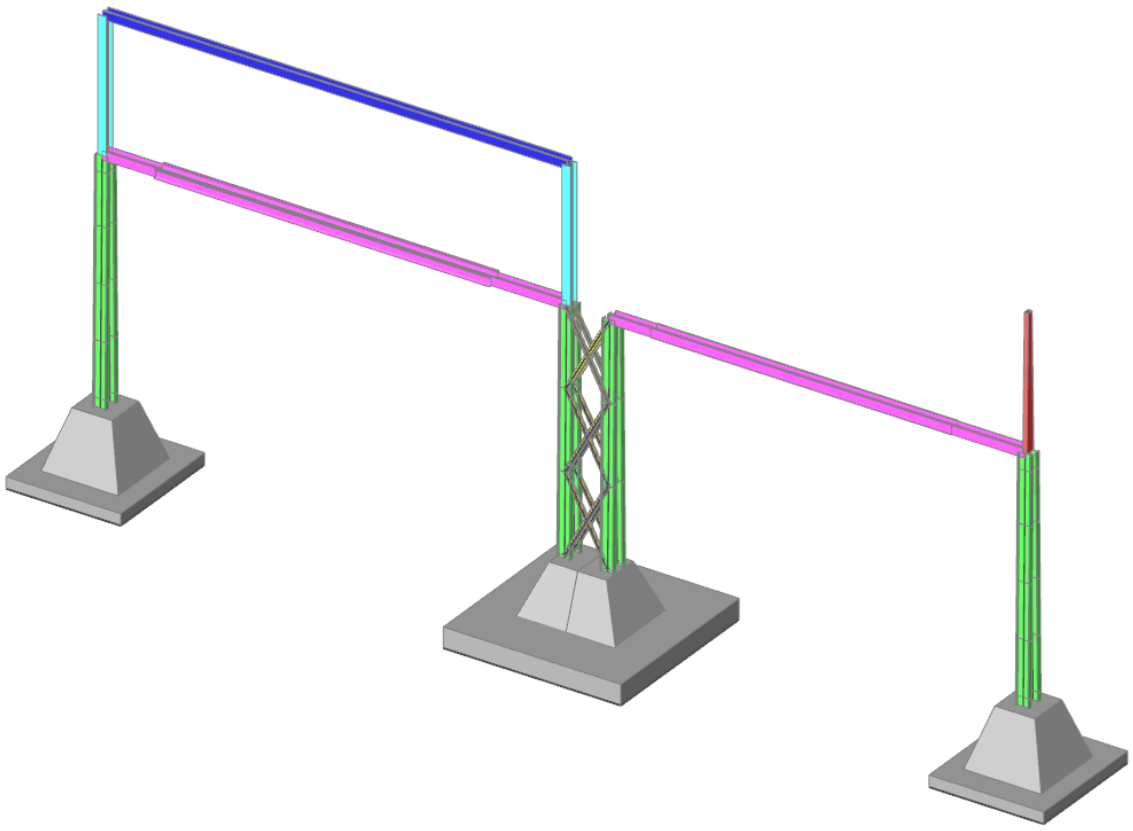
Profiel	Staalkwaliteit	UC_{max}
Kolom INP45	S235	0.87
Kolom INP45 + HEB300	S235 / S355	0.71
Kolom DIE36	S235	0.27
Ligger DIE34	S235	0.61
Ligger DIE34 + strippen	S235	0.98
Ligger DIE34 + UNP's	S235	0.81

Profiel	Staalkwaliteit	UC_{max}
Ligger DIN28	S235	0.23
Koppelplaat 2x14x200 (tussen kolommen)	S235	1.00
Diagonaal UNP14	S235	0.73
Bliksempiek	S235	0.45

Alle profielen voldoen aan de eisen van sterkte en stabiliteit.

7 STAALCONSTRUCTIE JUK 65

7.1 Beschrijving constructie



Figuur 5; Rekenmodel huidig lijnjuk 65 in SCIA-Engineer

In bovenstaande afbeelding is het rekenmodel uit SCIA gegeven. De volgende stalen onderdelen zijn gehanteerd:

Tabel 10: In berekening toegepaste profielen

Profiel volgens tekening	Profiel ingevoerd	Staalkwaliteit	Kleur in figuur
Kolom INP45	INP450	S235	Groen
Kolom DIE36	HEA360	S235	Cyaan
Ligger DIE34	HEA340	S235	Lila
Ligger DIE34 + strippen	HEA340+ 2x strip 320x12	S235	Lila
Ligger DIE34 + UNP's	HEA340+ 2x UNP300	S235	Lila
Ligger DIN28	HEB280	S235	Donkerblauw
Koppelplaat 2x14x200 (tussen kolommen)	28x200	S235	Donkergroen
Diagonaal UNP14	UNP140	S235	Geel
Bliksempiek	Koker 140x354	S235	Rood

Origineel zijn de flexibele geleiders afgespannen aan een “kaal” DIE34 profiel. In een later stadium is dit profiel voorzien van versterkingen in de vorm van dubbele strippen of dubbele UNP-profielen gebout tegen de flensen. Zie ook juk 64, figuur 3.

7.2 Belastingen

De volgende belastingen zijn in de berekening gehanteerd:

- BG1: Het eigengewicht van het stalen portaal en de funderingen.
- BG2: Grondgewicht op de poer.
- BG3: Windbelasting op het afspanjuk, X-richting.
- BG4: Windbelasting op het afspanjuk, Y-richting.
- LC1001 t/m LC1238: Krachten uit de lijn.
  (LC1001 t/m LC1238 zijn de **rekenwaarden** van de belastingcombinaties uit de mastberekeningen)

7.2.1 BG2: grondgewicht op poer

Poer links en rechts:

lengte plaat	: 4.40 m
breedte plaat	: 4.00 m
lengte opstort	: 2.05 m (gemiddeld)
breedte opstort	: 2.05 m (gemiddeld)
gronddekking	: 1.50 m
soortelijke massa grond	: 18.00 kNm^3

$$Q_{grond} = (4.40 * 4.00 - 2.05 * 2.05) * 1.50 * 18.00 = 361.73\ kN$$

Poer midden:

lengte plaat	: 6.20 m
breedte plaat	: 6.20 m
lengte opstort	: 2.05 m (gemiddeld)
breedte opstort	: 2.75 m (gemiddeld)
gronddekking	: 1.10 m
soortelijke massa grond	: 18.00 kNm^3

$$Q_{grond} = (6.20 * 6.20 - 2.05 * 2.75) * 1.10 * 18.00 = 649.49\ kN$$

7.2.2 BG3: wind op constructie, X-richting

stuwdruk : 0.63 kPa; profielfactor : 2.00

kolom INP45 : $q_{wind} = 2.00 * 0.63 * 0.17 = 0.21\ kN/m$
kolom DIE36 : $q_{wind} = 2.00 * 0.63 * 0.35 = 0.44\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$

7.2.3 BG4: wind op constructie, Y-richting

stuwdruk : 0.63 kPa; profielfactor : 2.00

kolom INP45 : $q_{wind} = 2.00 * 0.63 * 0.45 = 0.57\ kN/m$
kolom DIE36 : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$
ligger DIE34 : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$
ligger DIN28 : $q_{wind} = 2.00 * 0.63 * 0.28 = 0.35\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.63 * 0.14 = 0.18\ kN/m$

7.2.4 LC1001 t/m 1238: Belasting uit mastberekeningen

De krachten die op het lijnportaal (afspanjuk) werken, zijn overgenomen uit de hoofdberekening van de masten. Een lijst van alle belastingcombinaties met krachten is weergegeven in Bijlage B. Dit zijn rekenwaarden (inclusief belastingfactor) van de krachten uit de geleiders en de bliksemdraden. In de bijlage is een overzicht gegeven van de knoopnummers waarop de krachten aangrijpen volgens de berekening van de mast. Deze knoopnummers corresponderen met knoopnummering in SCIA. De opgegeven krachten werken in het X, Y, Z-coördinaatsysteem van de constructie.

7.3 Resultaten 3D-raamwerkberekeningen

In tabel 11 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld.
Voor de in- en uitvoergegevens, zie Bijlage F.

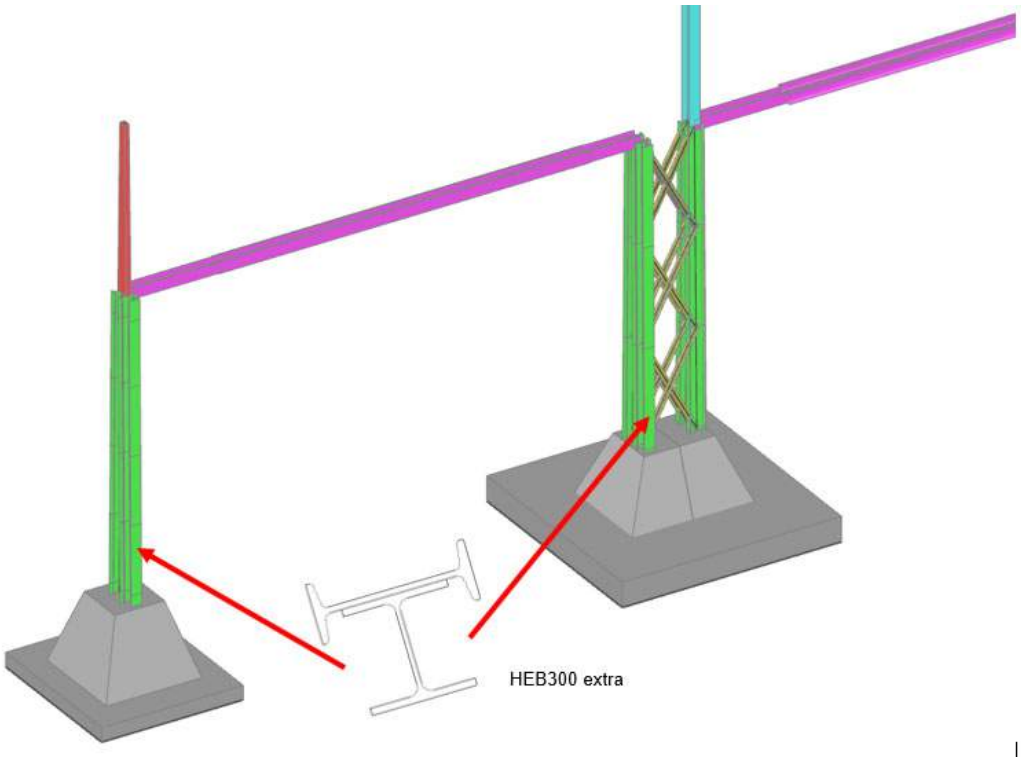
Tabel 11: Maximaal optredende UC-waarde (verbouwniveau)

Profiel	Staalkwaliteit	UC_{max}
Kolom INP45	S235	1.51
Kolom DIE36	S235	0.28
Ligger DIE34	S235	0.66
Ligger DIE34 + strippen	S235	0.94
Ligger DIE34 + UNP's	S235	0.87
Ligger DIN28	S235	0.93
Koppelplaat 2x14x200 (tussen kolommen)	S235	1.02
Diagonaal UNP14	S235	0.83
Bliksempiek	S235	0.53

Conclusie: bepaalde onderdelen van de constructie dienen te worden versterkt, zie hoofdstuk 8.

8 STAALCONSTRUCTIE JUK 65 VERSTERKT

8.1 Beschrijving versterkingen



Figuur 6; Versterkingen aan lijnjuk 65 in SCIA-Engineer(achteraanzicht juk)

Twee van de vier samengestelde kolommen dienen te worden versterkt en dan alleen die INP-profielen die onder druk staan (aan de zijde van de naast gelegen mast). Hiertoe moeten in het werk extra HEB300 profielen tegen het lijf van de INP-kolommen worden gemonteerd.

Door het toepassen van bovenstaand beschreven versterkingen worden de optredende spanningen in de overbelaste koppelplaten en diagonalen gereduceerd en is een versterking hiervan niet noodzakelijk.

8.2 Resultaten 3D-raamwerkberekeningen

In tabel 12 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld.
Voor de in- en uitvoergegevens, zie Bijlage G.

Tabel 12: Maximaal optredende UC-waarde (verbouwniveau)

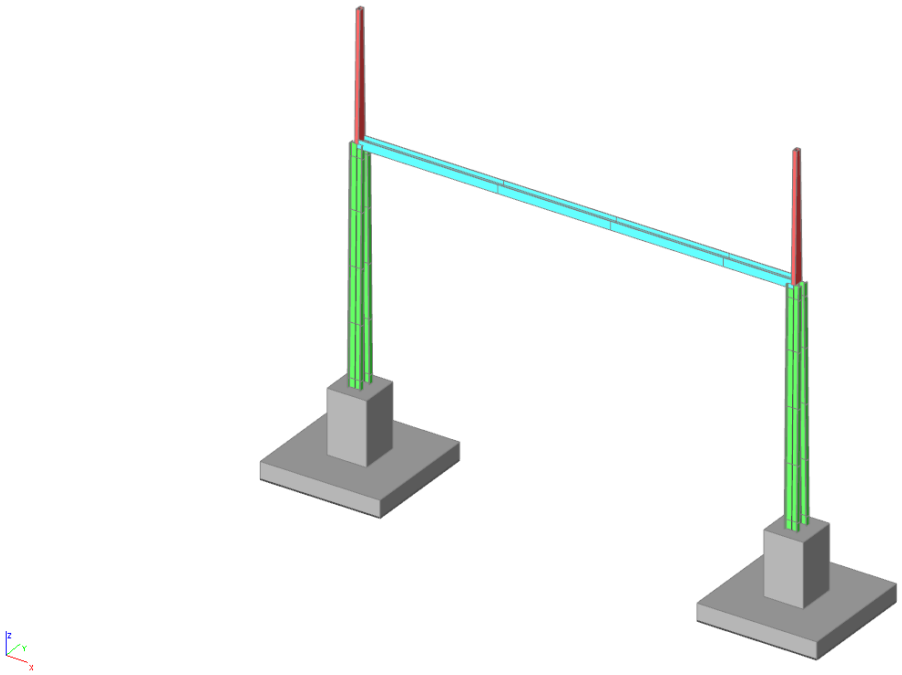
Profiel	Staalkwaliteit	UC_{max}
Kolom INP45	S235	0.98
Kolom INP45 + HEB300	S235 / S355	0.67
Kolom DIE36	S235	0.29
Ligger DIE34	S235	0.67
Ligger DIE34 + strippen	S235	0.95
Ligger DIE34 + UNP's	S235	0.86

Profiel	Staalkwaliteit	UC_{max}
Ligger DIN28	S235	0.94
Koppelplaat 2x14x200 (tussen kolommen)	S235	0.93
Diagonaal UNP14	S235	1.00
Bliksempiek	S235	0.53

Alle profielen voldoen aan de eisen van sterkte en stabiliteit.

9 STAALCONSTRUCTIE JUK 64B

9.1 Beschrijving constructie



Figuur 7; Rekenmodel nieuw lijnjuk 64b in SCIA-Engineer

In bovenstaande afbeelding is het rekenmodel uit SCIA gegeven. De volgende stalen onderdelen zijn gehanteerd:

Tabel 13: In berekening toegepaste profielen

Profiel volgens tekening	Profiel ingevoerd	Staalkwaliteit	Kleur in figuur
Kolom INP450	INP450	S355	Groen
Ligger HEA340	HEA340	S355	Cyaan
Koppelplaat 2x14x200 (tussen kolommen)	28x200	S355	Donkergroen
Bliksempiek	Koker 140x354	S355	Rood

9.2 Belastingen

De volgende belastingen zijn in de berekening gehanteerd:

- BG1: Het eigengewicht van het stalen portaal en de funderingen.
- BG2: Grondgewicht op de poer.
- BG3: Windbelasting op het afspanjuk, X-richting.
- BG4: Windbelasting op het afspanjuk, Y-richting.
- LC1001 t/m LC1167: Krachten uit de lijn.
  (LC1001 t/m LC1167 zijn de **rekenwaarden** van de belastingcombinaties uit de mastberekeningen)

9.2.1 BG2: grondgewicht op poer

Poer links en rechts:
lengte plaat : 4.25 m
breedte plaat : 4.25 m
lengte opstort : 1.40 m
breedte opstort : 1.40 m
gronddekking : 1.50 m
soortelijke massa grond : 18.00 kNm^3

$Q_{grond} = (4.25 * 4.25 - 1.40 * 1.40) * 1.50 * 18.00 = 434.77\ kN$

9.2.2 BG3: wind op constructie, X-richting

stuwdruk : 0.68 kPa; profielfactor : 2.00

kolom INP450 : $q_{wind} = 2.00 * 0.68 * 0.17 = 0.23\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.68 * 0.30 = 0.41\ kN/m$

9.2.3 BG4: wind op constructie, Y-richting

stuwdruk : 0.68 kPa; profielfactor : 2.00

kolom INP450 : $q_{wind} = 2.00 * 0.68 * 0.45 = 0.61\ kN/m$
ligger HEA340 : $q_{wind} = 2.00 * 0.68 * 0.30 = 0.41\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.68 * 0.14 = 0.19\ kN/m$

9.2.4 LC1001 t/m 1167: Belasting uit mastberekeningen

De krachten die op het lijnportaal (afspanjuk) werken, zijn overgenomen uit de hoofdberekening van de masten. Een lijst van alle belastingcombinaties met krachten is weergegeven in Bijlage C. Dit zijn rekenwaarden (inclusief belastingfactor) van de krachten uit de geleiders. In de bijlage is een overzicht gegeven van de knoopnummers waarop de krachten aangrijpen volgens de berekening van de mast. Deze knoopnummers corresponderen met knoopnummering in SCIA. De opgegeven krachten werken in het X, Y, Z-coördinaatsysteem van de constructie.

9.3 Resultaten 3D-raamwerkberekeningen

In tabel 14 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld. De staalkwaliteit is niet bekend (staat niet op de beschikbare tekeningen). Aangenomen is dat een staalkwaliteit S235 is toegepast.

Voor de in- en uitvoergegevens, zie Bijlage H.

Tabel 14: Maximaal optredende UC-waarde (nieuwbouwniveau)

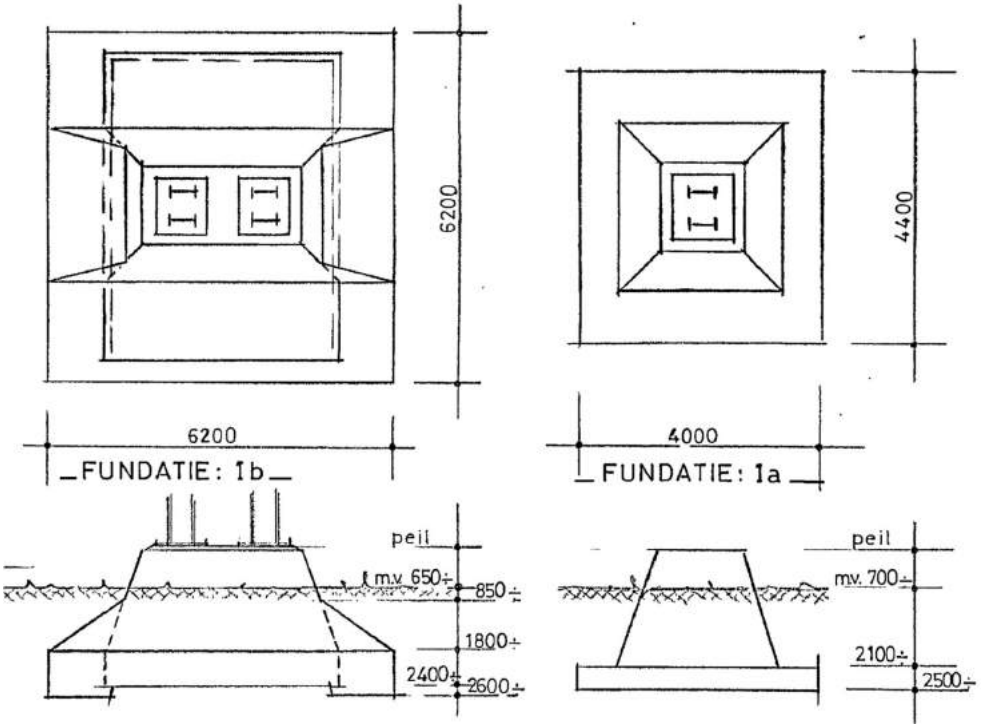
Profiel	Staalkwaliteit	UC_{max}
Kolom INP450	S355	0.47
Ligger HEA340	S355	0.48
Koppelplaat 2x14x200 (tussen kolommen)	S355	0.08
Bliksempiek	S355	0.39

Alle profielen voldoen aan de eisen van sterkte en stabiliteit.

10 FUNDERING VERSTERKTE JUKKEN 64 EN 65

10.1 Beschrijving constructie

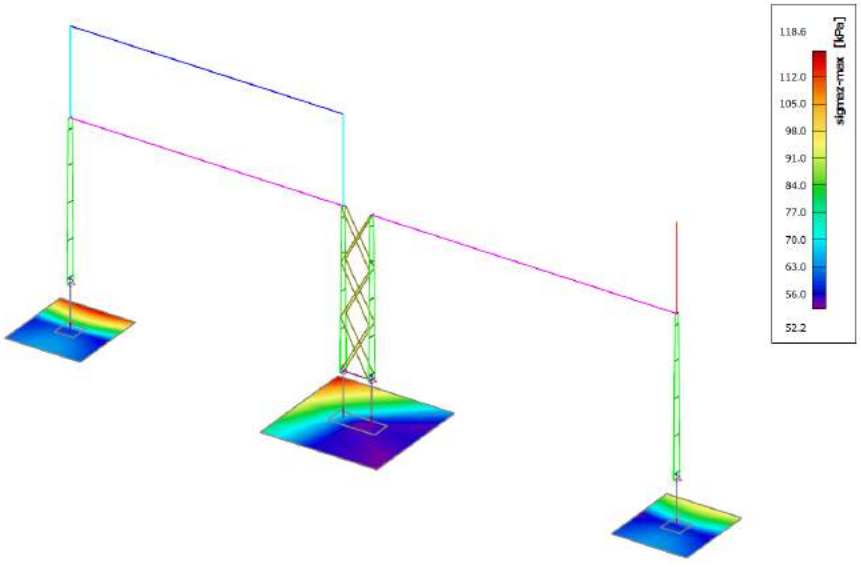
De kolommen van de jukken 64 en 65 zijn met ankers 2,25 inch verankerd in de betonnen poer. De poeren zijn in onderstaande afbeelding weergegeven:



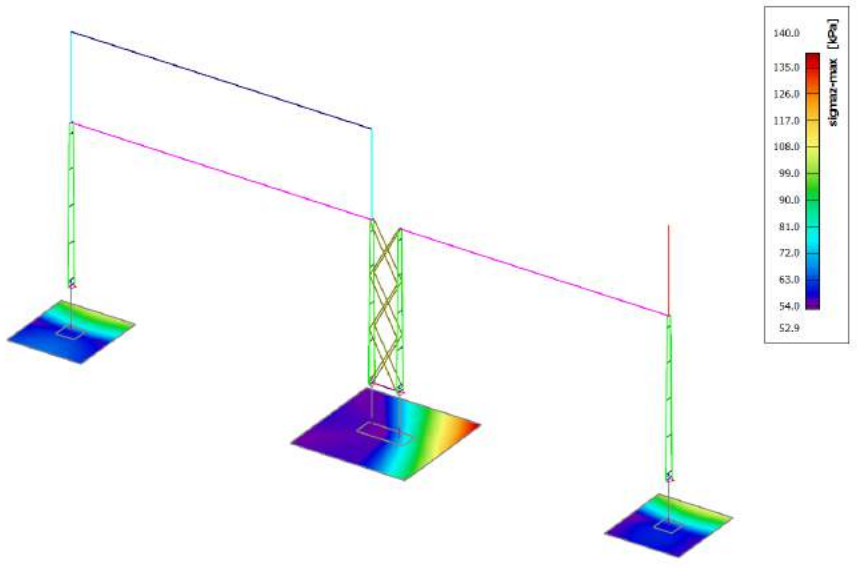
Figuur 8; Poeren 1b (uitgebreid) en 1a

Ten behoeve van de uitbreiding van het portaal in 1961 is de middelste poer (poer 1b) verzwaard. In bovenstaande afbeelding zijn de maten gegeven na deze verzwaring.

10.2 Maximaal optredende grondspanningen/draagvermogen



Figuur 9; Grondspanningen onder fundering juk 64 versterkt



Figuur 10; Grondspanningen onder fundering juk 65 versterkt

De maximale grondspanning bedraagt 140 MPa. Dat is minder dan de toelaatbare waarde van 175 MPa zoals berekend in document “Fundaties primaire componenten, uitbreiding Waalwijk 150”.

10.3 Kantelveiligheid/stabiliteit

10.3.1 Poer links en rechts van versterkt juk 64 en 65

Krachten uit versterkt juk 64.

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC1	K6	S246	**-1.63**	-0.02	**64.94**	4.12	**-2.10**	**0.05**
UGT-2/2	FC1	K6	S246	**7.09**	-60.53	77.25	521.09	17.74	-1.36
UGT-1/3	FC1	K6	S246	3.69	**-81.47**	73.76	**695.34**	12.13	-1.35
UGT-2/4	FC1	K6	S246	1.05	**16.51**	65.79	**-129.43**	0.67	0.00
UGT-2/5	FC1	K6	S246	6.75	-26.05	**80.54**	205.81	**19.34**	-0.81
UGT-2/6	FC1	K6	S246	6.44	-64.75	74.68	559.76	15.34	**-1.41**

5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/13	FC4	K513	S322	**-8.99**	-14.85	46.34	123.08	-0.05	0.40
UGT-2/14	FC4	K513	S322	**1.59**	-5.34	35.73	69.67	12.70	0.02
UGT-1/9	FC4	K513	S322	-4.17	**-61.04**	43.52	**502.70**	6.49	**1.24**
UGT-2/15	FC4	K513	S322	-5.36	**18.11**	44.79	-134.08	4.61	**-0.17**
UGT-2/16	FC4	K513	S322	-0.17	4.46	**35.39**	-57.76	10.45	0.07
UGT-1/17	FC4	K513	S322	-8.22	0.62	**47.68**	-5.67	2.73	0.00
UGT-2/18	FC4	K513	S322	-2.16	16.96	35.71	**-139.36**	7.60	-0.02
UGT-1/1	FC4	K513	S322	-5.08	-0.02	36.60	0.13	**-3.34**	0.00
UGT-2/5	FC4	K513	S322	-4.15	-8.64	45.97	59.75	**13.05**	0.33

Krachten uit versterkt juk 65.

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC1	K6	S246	**-4.78**	-49.81	59.97	422.15	**-26.07**	-0.62
UGT-2/19	FC1	K6	S246	**3.61**	0.01	56.71	-0.05	**2.69**	0.00
UGT-1/1	FC1	K6	S246	-1.78	**-67.95**	59.25	**574.42**	-19.45	-0.64
UGT-2/9	FC1	K6	S246	1.04	**17.52**	56.04	**-144.01**	0.05	**0.02**
UGT-1/20	FC1	K6	S246	-1.45	-0.01	**55.40**	0.04	-2.20	0.00
UGT-2/21	FC1	K6	S246	2.47	-17.87	**65.35**	148.53	-10.74	-0.22
UGT-1/8	FC1	K6	S246	-2.10	-67.75	60.86	570.12	-22.71	**-0.65**

5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC4	K513	S322	**-9.85**	-56.41	61.02	482.47	**-28.31**	1.42
UGT-2/19	FC4	K513	S322	**0.30**	0.00	**53.06**	3.99	**1.87**	**-0.01**
UGT-1/1	FC4	K513	S322	-6.49	**-72.67**	59.09	**595.59**	-21.74	1.44
UGT-2/9	FC4	K513	S322	-2.24	**11.71**	53.45	**-68.31**	-0.73	0.02
UGT-1/24	FC4	K513	S322	-8.20	-13.46	**62.19**	116.40	-17.08	0.55
UGT-1/25	FC4	K513	S322	-9.07	-60.92	59.50	522.87	-24.52	**1.47**

Het maximaal moment om de X-as van juk 64 is maatgevend.
Het moment om de Y-as is verwaarloosbaar klein.

Voor in- en uitvoergegevens stabiliteitsberekening, zie Bijlage I-1.

De kantelveiligheid bedraagt: 1.82 > 1.50 ⇒ akkoord

10.3.2 Middelste poer van versterkt juk 64 en 65

Krachten uit versterkt juk 64.

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC2	K8	S244	**24.27**	-0.18	**-26.93**	2.59	**-6.95**	-0.17
UGT-2/5	FC2	K8	S244	**120.69**	-47.40	**950.45**	357.66	**210.14**	10.62
UGT-1/7	FC2	K8	S244	98.72	**-119.14**	761.30	770.25	167.37	23.27
UGT-2/4	FC2	K8	S244	35.94	**17.04**	68.80	**-128.02**	14.61	**-2.65**
UGT-1/3	FC2	K8	S244	90.98	-115.56	669.05	**957.58**	146.75	20.82
UGT-1/8	FC2	K8	S244	98.56	-119.00	757.43	771.62	166.52	**23.29**

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	**-45.40**	0.21	**135.89**	1.07	**-29.71**	0.25
UGT-2/5	FC3	K438	S250	**50.04**	-7.41	**-825.71**	116.74	**185.34**	-2.02
UGT-1/9	FC3	K438	S250	23.47	**-49.74**	-560.10	429.12	126.21	-6.70
UGT-2/10	FC3	K438	S250	28.11	**22.63**	-642.21	83.68	143.89	5.29
UGT-2/4	FC3	K438	S250	-34.26	10.88	39.54	**-68.80**	-8.13	1.33
UGT-1/3	FC3	K438	S250	22.43	-49.70	-549.09	**429.40**	123.76	-6.66
UGT-1/11	FC3	K438	S250	-1.20	-47.05	-286.09	341.07	65.02	**-6.79**
UGT-2/12	FC3	K438	S250	27.45	22.62	-635.08	83.53	142.30	**5.30**

Krachten uit versterkt juk 65.

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC2	K8	S244	**-92.18**	-46.43	**-1263.07**	361.21	**-282.27**	4.90
UGT-2/19	FC2	K8	S244	**47.02**	0.14	**157.62**	0.64	**34.50**	0.11
UGT-1/22	FC2	K8	S244	-42.04	**-70.22**	-744.53	431.67	-166.04	**9.57**
UGT-2/9	FC2	K8	S244	35.71	**20.72**	62.04	**-108.01**	12.84	**-3.15**
UGT-1/1	FC2	K8	S244	-63.83	-66.87	-985.60	**487.28**	-220.02	8.06

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC3	K438	S250	**-159.49**	-76.54	**1393.89**	676.32	**-308.62**	-11.36
UGT-2/19	FC3	K438	S250	**-23.09**	-0.15	**-42.33**	3.33	**10.50**	-0.17
UGT-1/14	FC3	K438	S250	-131.51	**-91.02**	1120.16	813.31	-247.14	-13.23
UGT-2/9	FC3	K438	S250	-34.51	**7.77**	53.54	**-95.50**	-11.14	**0.35**
UGT-1/1	FC3	K438	S250	-130.78	-90.99	1112.34	**814.14**	-245.39	-13.22
UGT-1/23	FC3	K438	S250	-115.85	-87.49	945.61	736.20	-208.03	**-13.50**

Omdat er twee kolommen op de fundering staan dienen boven vermelde krachten en momenten te worden samengesteld.
Voor de momenten om de X-as is juk 64 maatgevend, juk 65 voor momenten om de Y-as.

Maximaal moment om de X-as van juk 64.
$M_{x,max} = 957.58 + 429.40 = 1386.98\ kNm$
$V_y = 115.56 + 49.70 = 165.26\ kN$
$N_c = 669.05 - 549.09 = 119.96\ kN$

Voor in- en uitvoergegevens stabiliteitsberekening, zie Bijlage I-2.

De kantelveiligheid bedraagt: 2.72 > 1.50 ⇒ akkoord

Maximaal moment om de Y-as van juk 65.
$M_{y,max} = 282.27 + 308.62 = 590.89\ kNm$
$V_x = 92.18 + 159.49 = 251.67\ kN$
$N_c = 1393.89 - 1263.07 = 130.82\ kN$

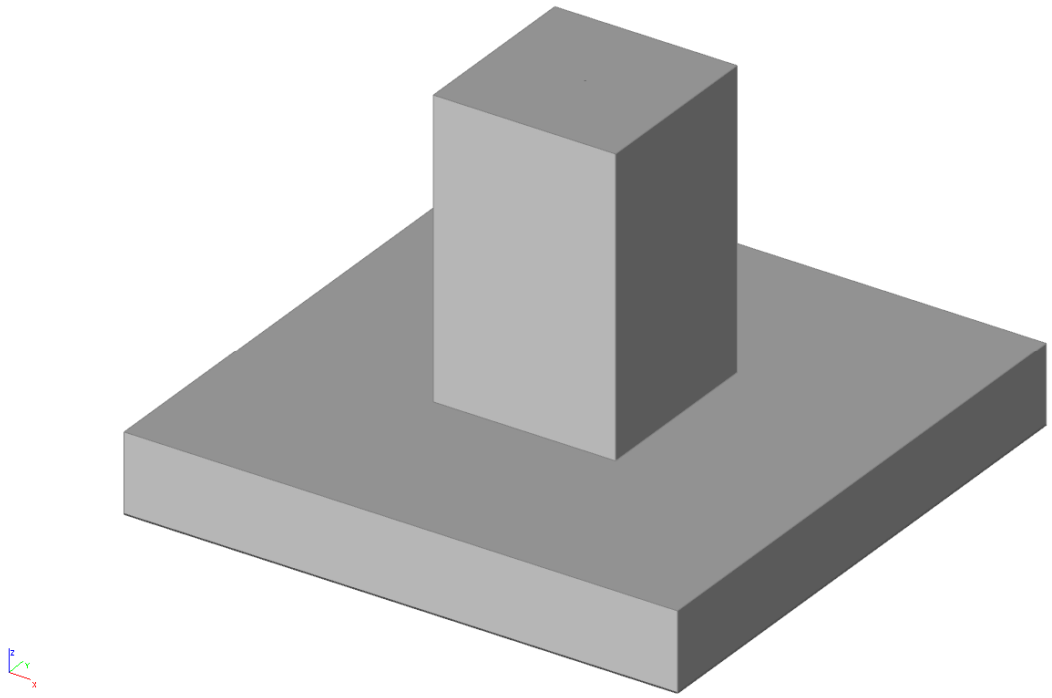
De twee kolommen staan op een afstand van 1.51 m.
Dit levert een extra M_y moment van:
$\Delta M_y = (1393.89 - 0.5 * 130.82) * 1.51 = 2006.00\ kNm$
$M_{y,tot} = 590.89 + 2006.00 = 2596.89\ kNm$

Voor in- en uitvoergegevens stabiliteitsberekening, zie Bijlage I-3.

De kantelveiligheid bedraagt: 1.53 > 1.50 ⇒ akkoord

11 FUNDERING JUK 64B

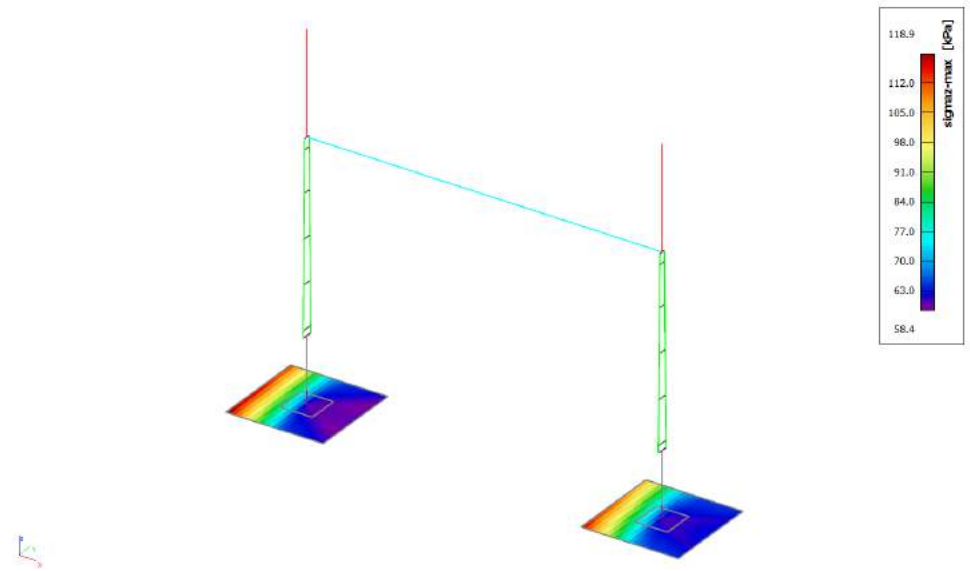
11.1 Beschrijving constructie



Figuur 11; Betonpoer voor nieuw juk 64b

De plaat is 4250 mm lang, 4250 mm breed en 600 mm dik.
De opstort heeft een doorsnede van 1400x1400 mm^2. en is 2250 mm hoog.

11.2 Maximaal optredende grondspanningen/draagvermogen



Figuur 12; Grondspanningen onder fundering juk 65 versterkt

De maximale grondspanning bedraagt 119 MPa. Dat is minder dan de toelaatbare waarde van 175 MPa zoals berekend in document “Fundaties primaire componenten, uitbreiding Waalwijk 150”.

11.3 Kantelveiligheid/stabiliteit

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : Alle UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC1	K1	S7	**-4.68**	0.00	**34.98**	0.00	**-39.26**	0.00
Combi2/11	FC1	K1	S7	**83.46**	4.97	**53.23**	-42.60	**571.63**	0.23
Combi1/19	FC1	K1	S7	25.83	**-16.38**	43.99	**110.79**	161.20	**-0.23**
Combi2/20	FC1	K1	S7	71.44	**19.21**	50.06	**-132.31**	504.54	0.40
Combi2/14	FC1	K1	S7	72.22	19.21	50.16	-132.22	510.26	**0.40**

5.2. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : Alle UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC2	K3	S8	**-12.24**	0.00	36.60	0.00	**-53.33**	0.00
Combi2/11	FC2	K3	S8	**68.32**	8.25	36.27	-70.48	**543.67**	-0.21
Combi1/19	FC2	K3	S8	12.40	**-16.69**	41.01	**112.98**	136.26	**0.23**
Combi2/14	FC2	K3	S8	59.38	**22.70**	34.30	**-161.78**	486.58	**-0.38**
Combi2/12	FC2	K3	S8	68.18	9.04	**33.44**	-77.33	535.50	-0.23
Combi1/13	FC2	K3	S8	8.08	0.32	**45.11**	-2.72	129.60	0.00

Het maximaal moment om de Y-as is maatgevend.

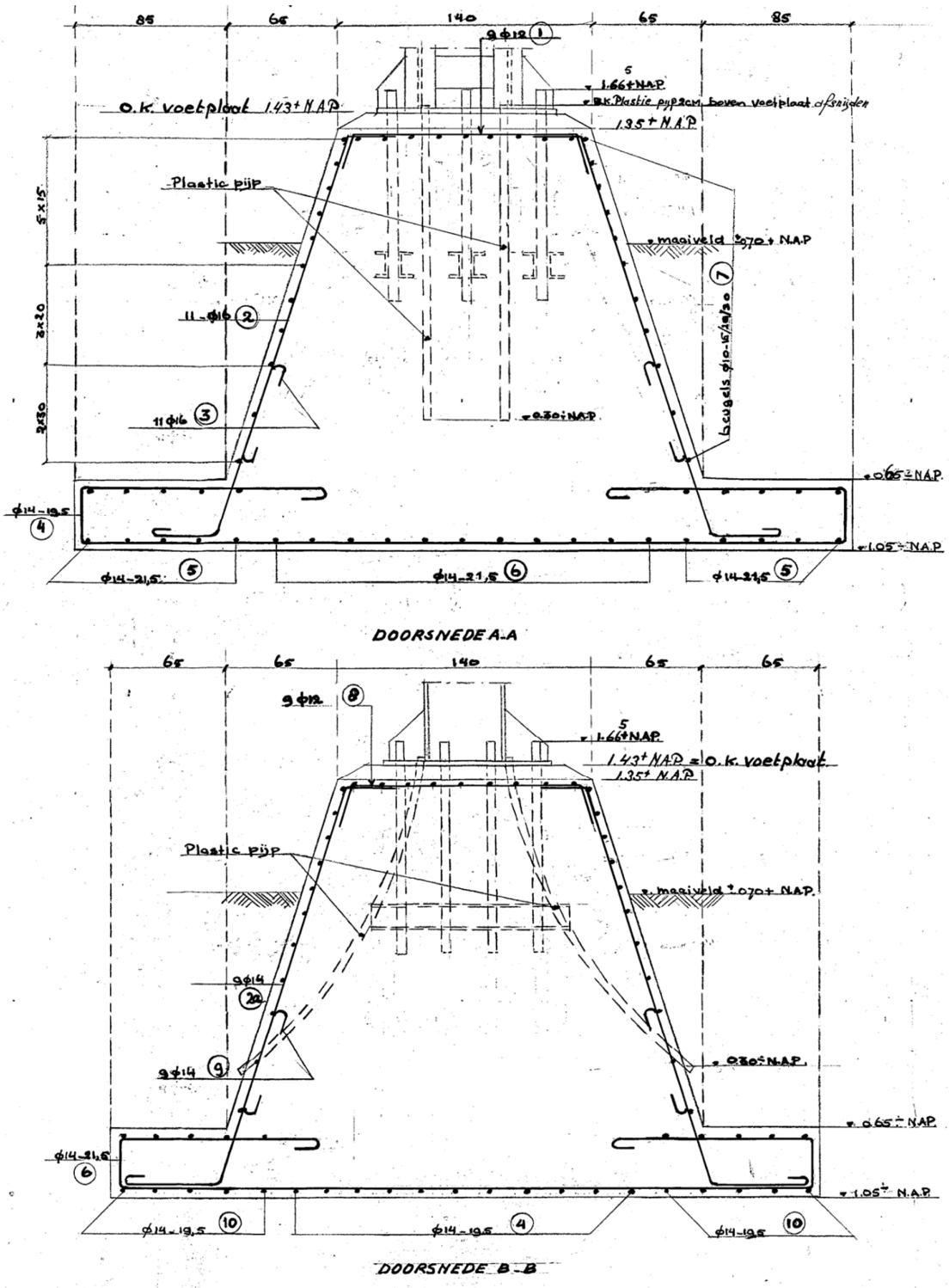
Voor in- en uitvoergegevens stabiliteitsberekening, zie Bijlage I-4.

De kantelveiligheid bedraagt: 2.24 > 1.50 ⇒ akkoord

12 WAPENING IN POEREN

12.1 Poer links en rechts van versterkt juk 64 en 65

12.1.1 Beschrijving poer



Figuur 13; Randpoer Type 1A

12.1.2 Wapening in opstort 1400/2700 x 1400/2700 x 2000

Vanwege de relatief geringe normaalkracht in de opstort, wordt deze berekend als zijnde een balk.

Belastingen op de opstort, juk 64:

7.10. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer boven-IA - Rechthoek	1600	UGT-2/5	**-303.31**	22.24	-6.15	-0.81	-29.78	245.22
S246	Poer boven-IA - Rechthoek	0	UGT-1/1	**-64.94**	0.02	**1.63**	**0.05**	2.10	4.12
S246	Poer boven-IA - Rechthoek	0	UGT-2/4	-65.79	**-16.51**	-1.05	0.00	-0.67	-129.43
S246	Poer boven-IA - Rechthoek	0	UGT-1/3	-73.76	**81.47**	-3.69	-1.35	-12.13	695.34
S246	Poer boven-IA - Rechthoek	0	UGT-2/2	-77.25	60.53	**-7.09**	-1.36	-17.74	521.09
S246	Poer boven-IA - Rechthoek	0	UGT-2/6	-74.68	64.75	-6.44	**-1.41**	-15.34	559.76
S246	Poer boven-IA - Rechthoek	2000	UGT-2/5	-303.31	22.24	-6.15	-0.81	**-32.24**	254.11
S246	Poer boven-IA - Rechthoek	2000	UGT-1/1	-287.71	-0.04	1.53	0.05	**5.26**	4.10
S246	Poer boven-IA - Rechthoek	2000	UGT-2/4	-288.56	-14.12	-1.00	0.00	-2.72	**-160.07**
S246	Poer boven-IA - Rechthoek	2000	UGT-1/3	-296.53	68.86	-3.34	-1.35	-19.17	**845.72**

7.13. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer boven-IA - Rechthoek	1600	UGT-1/17	**-270.45**	-0.52	7.91	0.00	10.25	-6.60
S322	Poer boven-IA - Rechthoek	0	UGT-2/16	**-35.39**	-4.46	0.17	0.07	-10.45	-57.76
S322	Poer boven-IA - Rechthoek	0	UGT-2/15	-44.79	**-18.11**	5.36	**-0.17**	-4.61	-134.08
S322	Poer boven-IA - Rechthoek	0	UGT-1/9	-43.52	**61.04**	4.17	**1.24**	-6.49	502.70
S322	Poer boven-IA - Rechthoek	0	UGT-2/14	-35.73	5.34	**-1.59**	0.02	-12.70	69.67
S322	Poer boven-IA - Rechthoek	0	UGT-1/13	-46.34	14.85	**8.99**	0.40	0.05	123.08
S322	Poer boven-IA - Rechthoek	2000	UGT-2/14	-258.50	4.18	-1.32	0.02	**-15.61**	79.19
S322	Poer boven-IA - Rechthoek	2000	UGT-1/41	-268.84	-2.05	8.08	-0.02	**18.64**	-28.89
S322	Poer boven-IA - Rechthoek	2000	UGT-2/18	-258.48	-14.41	2.19	-0.02	-3.25	**-170.75**
S322	Poer boven-IA - Rechthoek	2000	UGT-1/9	-266.29	51.85	4.09	1.24	1.77	**615.63**

Belastingen op de opstort, juk 65:

7.10. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer onder-IV - Rechthoek	1600	UGT-2/21	**-288.12**	15.16	-2.54	-0.22	6.74	175.51
S246	Poer onder-IV - Rechthoek	0	UGT-1/20	**-55.40**	0.01	1.45	0.00	2.20	0.04
S246	Poer onder-IV - Rechthoek	0	UGT-2/9	-56.04	**-17.52**	-1.04	**0.02**	-0.05	-144.01
S246	Poer onder-IV - Rechthoek	0	UGT-1/1	-59.25	**67.95**	1.78	-0.64	19.45	574.42
S246	Poer onder-IV - Rechthoek	0	UGT-2/19	-56.71	-0.01	**-3.61**	0.00	-2.69	-0.05
S246	Poer onder-IV - Rechthoek	0	UGT-1/5	-59.97	49.81	**4.78**	-0.62	26.07	422.15
S246	Poer onder-IV - Rechthoek	0	UGT-1/8	-60.86	67.75	2.10	**-0.65**	22.71	570.12
S246	Poer onder-IV - Rechthoek	2000	UGT-2/19	-279.48	-0.01	-3.41	0.00	**-9.71**	-0.06
S246	Poer onder-IV - Rechthoek	2000	UGT-1/5	-282.74	42.14	4.16	-0.62	**35.02**	514.14
S246	Poer onder-IV - Rechthoek	2000	UGT-2/9	-278.81	-14.88	-1.00	0.02	-2.09	**-176.42**
S246	Poer onder-IV - Rechthoek	2000	UGT-1/1	-282.02	57.51	1.39	-0.64	22.62	**699.93**

7.13. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer onder-IV - Rechthoek	1600	UGT-1/24	**-284.96**	11.36	7.58	0.55	29.83	136.69
S322	Poer onder-IV - Rechthoek	0	UGT-2/19	**-53.06**	0.00	**-0.30**	**-0.01**	-1.87	3.99
S322	Poer onder-IV - Rechthoek	0	UGT-2/9	-53.45	**-11.71**	2.24	0.02	0.73	-68.31
S322	Poer onder-IV - Rechthoek	0	UGT-1/1	-59.09	**72.67**	6.49	1.44	21.74	595.59
S322	Poer onder-IV - Rechthoek	0	UGT-1/5	-61.02	56.41	**9.85**	1.42	28.31	482.47
S322	Poer onder-IV - Rechthoek	0	UGT-1/25	-59.50	60.92	9.07	**1.47**	24.52	522.87
S322	Poer onder-IV - Rechthoek	2000	UGT-2/19	-275.83	-0.05	-0.26	-0.01	**-2.43**	3.94
S322	Poer onder-IV - Rechthoek	2000	UGT-1/5	-283.79	47.67	8.97	1.42	**47.14**	586.58
S322	Poer onder-IV - Rechthoek	2000	UGT-2/9	-276.22	-10.33	2.13	0.02	5.10	**-90.37**
S322	Poer onder-IV - Rechthoek	2000	UGT-1/1	-281.86	61.76	5.86	1.44	34.11	**730.07**

Staaf S246, Combi 1/3 t.p.v. bovenzijde opstort maatgevend.

Berekening wapening in de opstort:

Opstort								
invoer			sterkte			scheurwijdte		
hoogte	1400	mm	f_a	240	MPa	f_a	200	MPa
breedte	1400	mm	h_{netto}	1284	mm	w_k	0.2	mm
dekking	30	mm	A_{wap}	201	mm^2	A_{wap}	201	mm^2
beugel	10	mm	M_{ULS}	695.34	kNm	M_{SLS}	556.27	kNm
beton	C60/75		A_{ben}	2256	mm^2	A_{ben}	2165	mm^2
wapening	16	mm	n_{staaf}	11.2	stuks	n_{staaf}	10.8	stuks

Toegepast: 11 staven rond 16 mm (per zijde) $\Rightarrow$ akkoord

Beugels: rond 10 mm om de 150 mm (praktisch)

12.1.3 Wapening in plaat 4200 x 4000 x 400

Berekening wapening in de plaat: (voor σ_{grond} zie Bijlage I-1).

Plaat								
invoer			sterkte			scheurwijdte		
hoogte	400	mm	f_a	240	MPa	f_a	220	MPa
breedte	4000	mm	h_{netto}	345	mm	w_k	0.2	mm
dekking	30	mm	A_{wap}	154	mm^2	A_{wap}	154	mm^2
beugel	0	mm	b_{eff}	3390	mm	b_{eff}	3390	mm
wapening	14	mm	M_{ULS}	150.28	kNm	M_{SLS}	120.22	kNm
σ_{grond}	104	MPa	A_{ben}	1816	mm^2	A_{ben}	1585	mm^2
$\ell_{overstek}$	850	mm	n_{staaf}	11.8	stuks	n_{staaf}	10.3	stuks

$$staven\ h.o.h. \leq \frac{3390}{11.8} = 287\ mm$$

Toegepast: rond 14 om de 195 mm (in beide richtingen) $\Rightarrow$ akkoord

Toetsing van de plaat op dwarskracht:

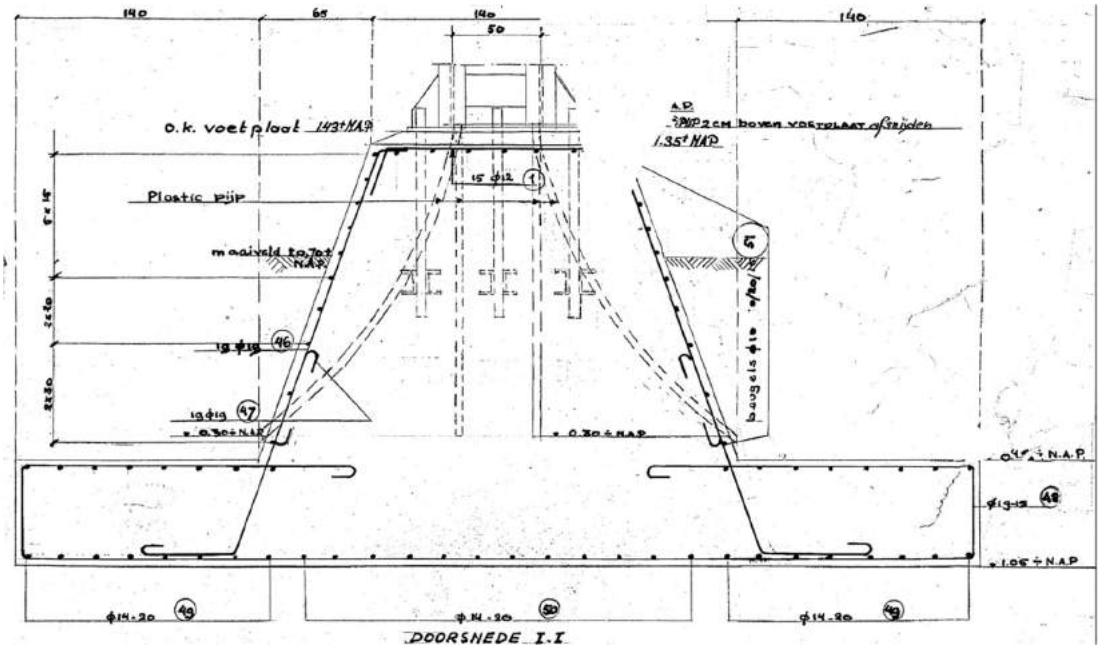
Dwarskracht plaat					
invoer			sterkte		
h_{netto}	345	mm	V_{Ed}	353.60	kN
breedte	4000	mm	A_V	1.38	m^2
σ_{grond}	104	MPa	ν_d	0.26	MPa
$\ell_{overstek}$	850	mm	$\nu_{Rd,c}$	0.60	MPa

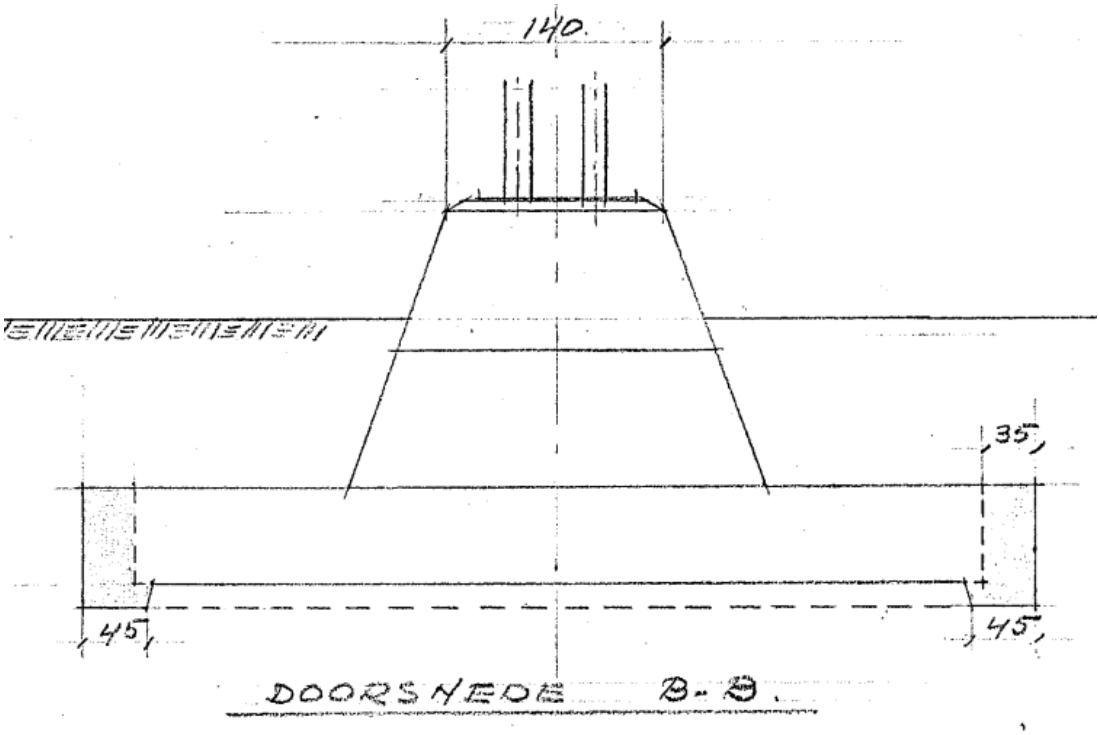
De maximale UC bedraagt:

$$UC = \frac{0.26}{0.60} = 0.42 \ < \ 1.00 \ \Rightarrow \ akkoord$$

12.2 Middelste poer van versterkt juk 64 en 65

12.2.1 Beschrijving poer





Figuur 14; Middenpoer Type 1B, Doorsnede I-I is origineel formaat, doorsnede B-B is de verzwaarde poer.

12.2.2 Wapening in opstort 1400/2700 x 2900/4200 x 1800 (M_z)

Vanwege de relatief geringe normaalkracht in de opstort, wordt deze berekend als zijnde een balk.

Belastingen op de opstort, juk 64:

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/5	**-1083.62**	45.59	-115.99	-3.44	-78.27	425.02
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**26.93**	0.18	**-24.27**	-0.17	**6.95**	2.59
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-68.80	**-17.04**	-35.94	-2.65	-14.61	-128.02
S244	Poer onder-IV - Rechthoek	0	UGT-1/7	-761.30	**119.14**	-98.72	23.27	-167.37	770.25
S244	Poer onder-IV - Rechthoek	0	UGT-2/5	-950.45	47.40	**-120.69**	10.62	-210.14	357.66
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	-802.22	110.32	-87.80	**-13.39**	-57.26	1121.41
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	-757.43	119.00	-98.56	**23.29**	-166.52	771.62
S244	Poer onder-IV - Rechthoek	360	UGT-2/5	-968.04	47.40	-120.69	10.62	**-253.59**	374.72
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-201.97	-16.26	-35.89	2.39	-40.39	**-158.02**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	-802.22	110.32	-87.80	-13.39	-88.87	**1161.13**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-269.06**	-0.22	44.95	0.19	35.87	0.76
S250	Poer onder-IV - Rechthoek	0	UGT-2/5	**825.71**	7.41	**-50.04**	-2.02	-185.34	116.74
S250	Poer onder-IV - Rechthoek	1440	UGT-2/10	509.04	**-24.58**	-24.43	-1.67	-8.13	50.14
S250	Poer onder-IV - Rechthoek	0	UGT-1/9	560.10	**49.74**	-23.47	-6.70	-126.21	429.12
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-135.89	-0.21	**45.40**	0.25	29.71	1.07
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	286.09	47.05	1.20	**-6.79**	-65.02	341.07
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	415.92	44.74	-19.21	**7.82**	-7.98	498.53
S250	Poer onder-IV - Rechthoek	360	UGT-2/5	808.12	7.41	-50.04	-2.02	**-203.36**	119.41
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-227.84	-0.22	45.04	0.21	**54.38**	0.76
S250	Poer onder-IV - Rechthoek	1800	UGT-2/15	187.92	-17.69	2.06	-3.04	7.41	**-95.98**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	415.92	44.74	-19.21	7.82	-14.89	**514.64**

Belastingen op de opstort, juk 65:

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/19	**-290.79**	-0.15	-46.47	0.15	-36.43	0.43
S244	Poer onder-IV - Rechthoek	0	UGT-1/5	**1263.07**	46.43	**92.18**	4.90	282.27	361.21
S244	Poer onder-IV - Rechthoek	0	UGT-2/9	-62.04	**-20.72**	-35.71	-3.15	-12.84	-108.01
S244	Poer onder-IV - Rechthoek	0	UGT-1/22	744.53	**70.22**	42.04	**9.57**	166.04	431.67
S244	Poer onder-IV - Rechthoek	0	UGT-2/19	-157.62	-0.14	**-47.02**	0.11	-34.50	0.64
S244	Poer onder-IV - Rechthoek	1440	UGT-1/1	852.43	62.14	58.30	**-11.59**	31.77	581.26
S244	Poer onder-IV - Rechthoek	1080	UGT-2/19	-215.10	-0.15	-46.76	0.13	**-57.10**	0.48
S244	Poer onder-IV - Rechthoek	360	UGT-1/5	1245.48	46.43	92.18	4.90	**315.46**	377.92
S244	Poer onder-IV - Rechthoek	1800	UGT-2/9	-195.21	-19.93	-35.71	3.00	-40.27	**-144.64**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/1	852.43	62.14	58.30	-11.59	52.76	**603.63**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/5	**-1527.06**	72.66	152.49	11.26	98.46	784.63
S250	Poer onder-IV - Rechthoek	0	UGT-2/19	**42.33**	0.15	**23.09**	-0.17	**-10.50**	3.33
S250	Poer onder-IV - Rechthoek	0	UGT-2/9	-53.54	**-7.77**	34.51	0.35	11.14	-95.50
S250	Poer onder-IV - Rechthoek	0	UGT-1/14	-1120.16	**91.02**	131.51	-13.23	247.14	813.31
S250	Poer onder-IV - Rechthoek	0	UGT-1/5	-1393.89	76.54	**159.49**	-11.36	308.62	676.32
S250	Poer onder-IV - Rechthoek	0	UGT-1/23	-945.61	87.49	115.85	**-13.50**	208.03	736.20
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-1245.52	86.10	125.30	**13.65**	79.10	942.76
S250	Poer onder-IV - Rechthoek	360	UGT-1/5	-1411.48	76.54	159.49	-11.36	**366.03**	703.88
S250	Poer onder-IV - Rechthoek	1800	UGT-2/9	-186.71	-7.00	34.56	-1.91	39.02	**-108.82**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/1	-1245.52	86.10	125.30	13.65	124.21	**973.76**

Staaf S244, Combi 1/8 t.p.v. bovenzijde opstort maatgevend.

Omdat er twee kolommen aangrijpen op de opstorting, wordt conservatief de belasting uit de zwaarst belaste kolom verdubbeld.

Berekening wapening in de opstort:

Opstort								
invoer			sterkte			scheurwijdte		
hoogte	1400	mm	f_a	240	MPa	f_a	173	MPa
breedte	2900	mm	h_{netto}	1283	mm	w_k	0.2	mm
dekking	30	mm	A_{wap}	284	mm^2	A_{wap}	284	mm^2
beugel	10	mm	M_{ULS}	1543.24	kNm	M_{SLS}	1234.59	kNm
beton	C60/75		A_{ben}	5012	mm^2	A_{ben}	5562	mm^2
wapening	19	mm	n_{staaf}	17.7	stuks	n_{staaf}	19.6	stuks

Toegepast: 19 staven rond 19 mm (per zijde) $\Rightarrow$ akkoord

Beugels: rond 10 mm om de 150 mm (praktisch)

12.2.3 Wapening in plaat 6200 x 6200 x 600 (M_z)

Berekening wapening in de plaat: ($\sigma_{grond} = \sqrt{64^2 + 118^2} = 134\ MPa$, zie Bijlage I-2 en I-3).

Plaat								
invoer			sterkte			scheurwijdte		
hoogte	600	mm	f_a	240	MPa	f_a	173	MPa
breedte	6200	mm	h_{netto}	532	mm	w_k	0.2	mm
dekking	30	mm	A_{wap}	284	mm^2	A_{wap}	284	mm^2
beugel	0	mm	b_{eff}	4365	mm	b_{eff}	4365	mm
wapening	19	mm	M_{ULS}	873.38	kNm	M_{SLS}	698.70	kNm
σ_{grond}	134	MPa	A_{ben}	6834	mm^2	A_{ben}	7585	mm^2
$\ell_{overstek}$	1450	mm	n_{staaf}	24.1	stuks	n_{staaf}	26.8	stuks

$$staven\ h.o.h. \leq \frac{4368}{26.8} = 162\ mm$$

Toegepast: rond 19 om de 150 mm $\Rightarrow$ akkoord

Toetsing van de plaat op dwarskracht:

Dwarskracht plaat					
invoer			sterkte		
h_{netto}	532	mm	V_{Ed}	1204.66	kN
breedte	6200	mm	A_V	3.30	m^2
σ_{grond}	134	MPa	ν_d	0.36	MPa
$\ell_{overstek}$	1450	mm	$\nu_{Rd,c}$	0.53	MPa

De maximale UC bedraagt:

$$UC = \frac{0.36}{0.53} = 0.68 \ < \ 1.00 \ \Rightarrow \ akkoord$$

12.2.4 Wapening in opstort 1400/2700 x 2900/4200 x 1800 (M_y)

Vanwege de relatief geringe normaalkracht in de opstort, wordt deze berekend als zijnde een balk.

Belastingen op de opstort, juk 64:

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/5	**-1083.62**	45.59	-115.99	-3.44	-78.27	425.02
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**26.93**	0.18	**-24.27**	-0.17	**6.95**	2.59
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-68.80	**-17.04**	-35.94	-2.65	-14.61	-128.02
S244	Poer onder-IV - Rechthoek	0	UGT-1/7	-761.30	**119.14**	-98.72	23.27	-167.37	770.25
S244	Poer onder-IV - Rechthoek	0	UGT-2/5	-950.45	47.40	**-120.69**	10.62	-210.14	357.66
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	-802.22	110.32	-87.80	**-13.39**	-57.26	1121.41
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	-757.43	119.00	-98.56	**23.29**	-166.52	771.62
S244	Poer onder-IV - Rechthoek	360	UGT-2/5	-968.04	47.40	-120.69	10.62	**-253.59**	374.72
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-201.97	-16.26	-35.89	2.39	-40.39	**-158.02**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	-802.22	110.32	-87.80	-13.39	-88.87	**1161.13**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-269.06**	-0.22	44.95	0.19	35.87	0.76
S250	Poer onder-IV - Rechthoek	0	UGT-2/5	**825.71**	7.41	**-50.04**	-2.02	-185.34	116.74
S250	Poer onder-IV - Rechthoek	1440	UGT-2/10	509.04	**-24.58**	-24.43	-1.67	-8.13	50.14
S250	Poer onder-IV - Rechthoek	0	UGT-1/9	560.10	**49.74**	-23.47	-6.70	-126.21	429.12
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-135.89	-0.21	**45.40**	0.25	29.71	1.07
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	286.09	47.05	1.20	**-6.79**	-65.02	341.07
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	415.92	44.74	-19.21	**7.82**	-7.98	498.53
S250	Poer onder-IV - Rechthoek	360	UGT-2/5	808.12	7.41	-50.04	-2.02	**-203.36**	119.41
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-227.84	-0.22	45.04	0.21	**54.38**	0.76
S250	Poer onder-IV - Rechthoek	1800	UGT-2/15	187.92	-17.69	2.06	-3.04	7.41	**-95.98**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	415.92	44.74	-19.21	7.82	-14.89	**514.64**

Belastingen op de opstort, juk 65:

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/19	**-290.79**	-0.15	-46.47	0.15	-36.43	0.43
S244	Poer onder-IV - Rechthoek	0	UGT-1/5	**1263.07**	46.43	**92.18**	4.90	282.27	361.21
S244	Poer onder-IV - Rechthoek	0	UGT-2/9	-62.04	**-20.72**	-35.71	-3.15	-12.84	-108.01
S244	Poer onder-IV - Rechthoek	0	UGT-1/22	744.53	**70.22**	42.04	**9.57**	166.04	431.67
S244	Poer onder-IV - Rechthoek	0	UGT-2/19	-157.62	-0.14	**-47.02**	0.11	-34.50	0.64
S244	Poer onder-IV - Rechthoek	1440	UGT-1/1	852.43	62.14	58.30	**-11.59**	31.77	581.26
S244	Poer onder-IV - Rechthoek	1080	UGT-2/19	-215.10	-0.15	-46.76	0.13	**-57.10**	0.48
S244	Poer onder-IV - Rechthoek	360	UGT-1/5	1245.48	46.43	92.18	4.90	**315.46**	377.92
S244	Poer onder-IV - Rechthoek	1800	UGT-2/9	-195.21	-19.93	-35.71	3.00	-40.27	**-144.64**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/1	852.43	62.14	58.30	-11.59	52.76	**603.63**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/5	**-1527.06**	72.66	152.49	11.26	98.46	784.63
S250	Poer onder-IV - Rechthoek	0	UGT-2/19	**42.33**	0.15	**23.09**	-0.17	**-10.50**	3.33
S250	Poer onder-IV - Rechthoek	0	UGT-2/9	-53.54	**-7.77**	34.51	0.35	11.14	-95.50
S250	Poer onder-IV - Rechthoek	0	UGT-1/14	-1120.16	**91.02**	131.51	-13.23	247.14	813.31
S250	Poer onder-IV - Rechthoek	0	UGT-1/5	-1393.89	76.54	**159.49**	-11.36	308.62	676.32
S250	Poer onder-IV - Rechthoek	0	UGT-1/23	-945.61	87.49	115.85	**-13.50**	208.03	736.20
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-1245.52	86.10	125.30	**13.65**	79.10	942.76
S250	Poer onder-IV - Rechthoek	360	UGT-1/5	-1411.48	76.54	159.49	-11.36	**366.03**	703.88
S250	Poer onder-IV - Rechthoek	1800	UGT-2/9	-186.71	-7.00	34.56	-1.91	39.02	**-108.82**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/1	-1245.52	86.10	125.30	13.65	124.21	**973.76**

Omdat er twee kolommen op de fundering staan dienen boven vermelde krachten en momenten te worden samengesteld.

Maximaal moment om de Y-as van juk 65.
$M_{y,max} = 282.27 + 308.62 = 590.89\ kNm$
$V_z = 92.18 + 159.49 = 251.67\ kN$
$N_c = 1393.89 - 1263.07 = 130.82\ kN$

De twee kolommen staan op een afstand van 1.51 m.
Dit levert een extra M_y moment van:
$\Delta M_y = (1393.89 - 0.5 * 130.82) * 1.51 = 2006.00\ kNm$
$M_{y,tot} = 590.89 + 2006.00 = 2596.89\ kNm$

Staaf S244+250, Combi 1/5 t.p.v. bovenzijde opstort maatgevend.

Berekening wapening in de opstort:

Opstort								
invoer			sterkte			scheurwijdte		
hoogte	2900	mm	f_a	240	MPa	f_a	173	MPa
breedte	1400	mm	h_{netto}	2594	mm	w_k	0.2	mm
dekking	150	mm	A_{wap}	284	mm^2	A_{wap}	284	mm^2
beugel	10	mm	M_{ULS}	2596.89	kNm	M_{SLS}	2077.51	kNm
beton	C60/75		A_{ben}	4171	mm^2	A_{ben}	4629	mm^2
wapening	19	mm	n_{staaf}	14.7	stuks	n_{staaf}	16.3	stuks

Toegepast: 15 staven rond 19 mm (per zijde) $\Rightarrow$ $\approx$ akkoord

Beugels: rond 10 mm om de 150 mm (praktisch)

12.2.5 Wapening in plaat 6200 x 6200 x 600 (M_y)

Door de uitgevoerde versterking van de poer is de plaatdikte zodanig toegenomen dat een toets op sterkte en scheurwijdte hier achterwege kan blijven.

12.3 Poeren van juk 64b

12.3.1 Wapening in opstort 1400 x 1400 x 2250

Vanwege de relatief geringe normaalkracht in de opstort, wordt deze berekend als zijnde een balk.

Belastingen op de opstort:

7.5. Staafkrachten betonopstort; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S7, S8
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S7	Poer - Rechthoek	0.000	Combi2/11	**-139.33**	3.51	**-83.46**	0.23	**759.41**	**-**51.98
S8	Poer - Rechthoek	2.250	Combi2/12	**-33.44**	9.04	-68.18	-0.23	535.50	-77.33
S8	Poer - Rechthoek	1.688	Combi1/19	-73.45	**-16.69**	-12.40	0.23	143.23	122.37
S8	Poer - Rechthoek	1.688	Combi2/14	-66.74	**22.70**	-59.38	-0.38	519.98	-174.55
S8	Poer - Rechthoek	0.000	Combi1/18	-123.01	0.00	**12.24**	0.00	**-80.87**	0.00
S8	Poer - Rechthoek	0.000	Combi2/14	-120.76	16.90	-59.38	**-0.38**	620.18	**-205.68**
S7	Poer - Rechthoek	0.000	Combi2/14	-136.32	14.42	-72.22	**0.40**	672.75	-169.52
S8	Poer - Rechthoek	0.000	Combi1/19	-127.34	-12.58	-12.40	0.23	164.15	**145.46**

Staaf S7, Combi 2/11 maatgevend.

Berekening wapening in de opstort:

Opstort								
invoer			sterkte			scheurwijdte		
hoogte	1400	mm	f_a	435	MPa	f_a	200	MPa
breedte	1400	mm	h_{netto}	1197	mm	w_k	0.2	mm
dekking	50	mm	A_{wap}	201	mm^2	A_{wap}	201	mm^2
beugel	12	mm	M_{ULS}	759.41	kNm	M_{SLS}	584.16	kNm
beton	C35/45		A_{ben}	1458	mm^2	A_{ben}	2440	mm^2
wapening	16	mm	n_{staaf}	7.3	stuks	n_{staaf}	12.1	stuks

Toegepast: 13 staven rond 16 mm (per zijde) $\Rightarrow$ akkoord

Beugels: rond 12 mm om de 200 mm (praktisch)

12.3.2 Wapening in plaat 4250 x 4250 x 600

Berekening wapening in de plaat: (voor σ_{grond} zie Bijlage I-4).

Plaat								
invoer			sterkte			scheurwijdte		
hoogte	600	mm	f_a	435	MPa	f_a	200	MPa
breedte	4250	mm	h_{netto}	488	mm	w_k	0.2	mm
dekking	50	mm	A_{wap}	201	mm^2	A_{wap}	201	mm^2
beugel	0	mm	b_{eff}	2376	mm	b_{eff}	2376	mm
wapening	16	mm	M_{ULS}	366.78	kNm	M_{SLS}	282.14	kNm
σ_{grond}	85	MPa	A_{ben}	1729	mm^2	A_{ben}	2892	mm^2
$\ell_{overstek}$	1425	mm	n_{staaf}	8.6	stuks	n_{staaf}	14.4	stuks

$$staven\ h.o.h. \leq \frac{2376}{14.4} = 165\ mm$$

Toegepast: rond 16 om de 150 mm (in beide richtingen)

Toetsing van de plaat op dwarskracht:

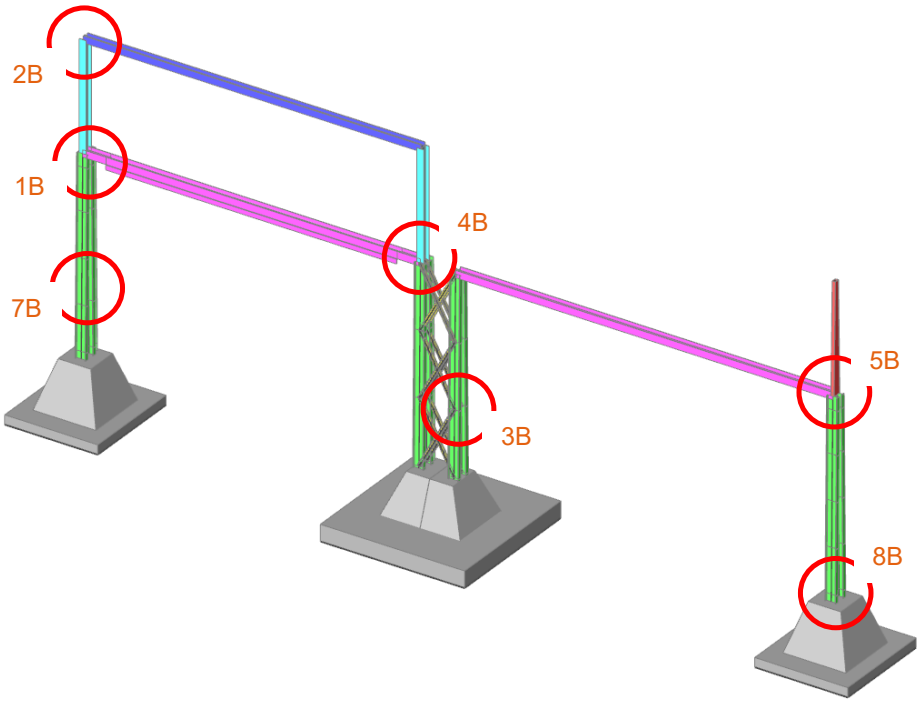
Dwarskracht plaat					
invoer			sterkte		
h_{netto}	488	mm	V_{Ed}	514.78	kN
breedte	4250	mm	A_V	2.07	m^2
σ_{grond}	85	MPa	ν_d	0.25	MPa
$\ell_{overstek}$	1425	mm	$\nu_{Rd,c}$	0.41	MPa

De maximale UC bedraagt:

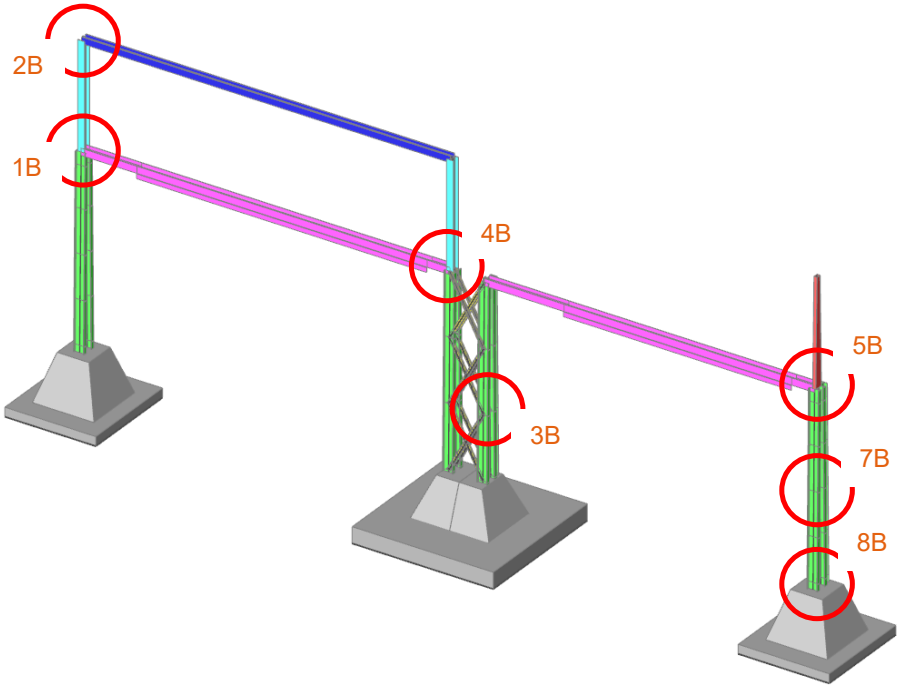
$$UC = \frac{0.25}{0.41} = 0.61 \ < \ 1.00 \ \Rightarrow \ akkoord$$

13 DETAILBEREKENING STAALCONSTRUCTIE

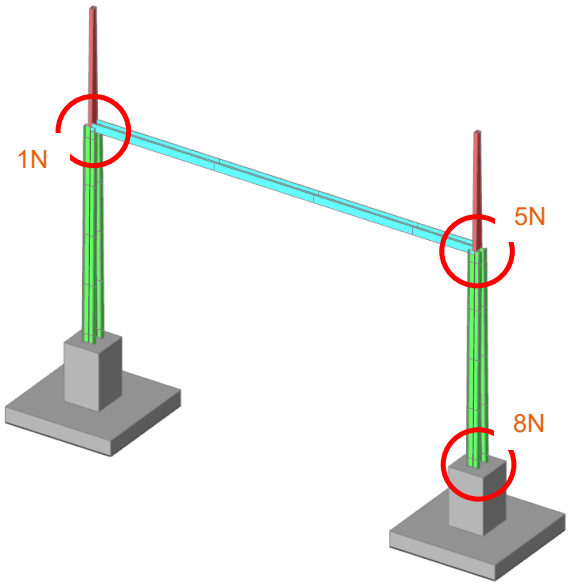
13.1 Overzicht met detailnummering



Figuur 15: Overzicht detailnummers juk 64

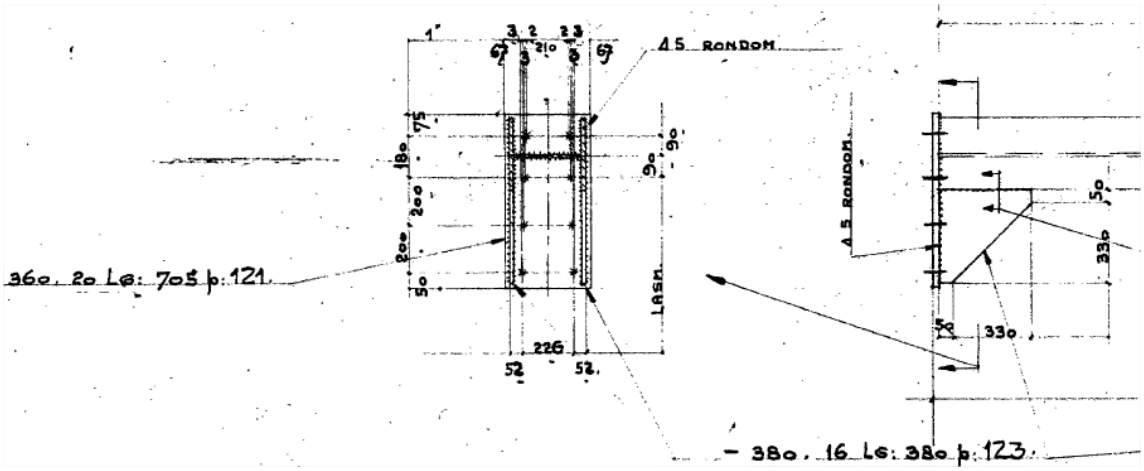


Figuur 16: Overzicht detailnummers juk 65



Figuur 17: Overzicht detailnummers juk 64

13.2 Toets detail 1B



Figuur 18; Detail kolom-ligger verbinding

1B: Verbindingskrachten ligger DIE34 - kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-2/2	FC6	K7	S404	-136.78	83.49	-23.61	0.04	-13.42	-26.36
UGT-2/5	FC5	K5	S33	17.81	29.37	-28.32	-0.03	64.65	0.74
UGT-2/15	FC8	K11	S40	6.78	-8.61	-18.15	-0.01	-42.79	0.17
UGT-1/3	FC6	K7	S404	-118.84	92.67	-21.79	0.39	-17.86	-30.69
UGT-2/16	FC8	K11	S40	10.53	-0.03	-8.54	-0.02	-12.76	-0.07
UGT-2/30	FC5	K5	S33	7.46	32.66	-20.54	-0.47	36.09	0.98
UGT-1/51	FC6	K7	S404	-57.82	56.44	-20.02	0.44	-22.31	-20.84
UGT-1/17	FC8	K11	S40	1.99	-0.53	-20.67	0.00	-51.24	0.00
UGT-1/9	FC7	K9	S40	-0.86	45.24	-16.23	-0.02	45.32	26.97

1B: Verbindingskrachten ligger DIE34 - kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/19	FC6	K7	S404	-13.40	0.01	-17.82	0.00	-26.55	-0.10
UGT-1/32	FC7	K9	S40	130.13	77.63	-18.30	-0.03	16.67	16.91
UGT-2/9	FC6	K7	S404	-8.24	-4.54	-18.25	-0.48	-30.70	3.80
UGT-1/1	FC7	K9	S40	110.09	87.24	-16.76	0.10	15.47	18.27
UGT-1/11	FC6	K7	S404	96.01	28.73	-29.87	-0.02	-83.13	-10.41
UGT-1/20	FC7	K9	S40	2.73	0.00	-13.55	0.00	19.80	-0.05
UGT-2/33	FC6	K7	S404	88.76	39.51	-27.39	-0.52	-66.45	-13.95
UGT-1/13	FC6	K7	S404	26.57	36.52	-23.95	0.49	-52.93	-18.16
UGT-2/46	FC5	K5	S33	13.23	17.26	-25.34	0.01	40.38	0.32
UGT-1/1	FC6	K7	S404	70.49	48.41	-25.62	0.46	-62.24	-22.79
UGT-2/34	FC7	K9	S40	109.97	79.57	-16.69	-0.16	14.90	18.81

13.2.1 Bouten

$I_{boutgroep,My} = 2 * (40^2 + 240^2 + 440^2 + 620^2) = 1274400\ mm^4$

$I_{boutgroep,Mz} = 4 * (46^2 + 264^2) = 287248\ mm^4$

$$F_{t,Ed,64} = \frac{118.84}{8} + \frac{17.86 * 10^3 * 620}{1274400} + \frac{30.69 * 10^3 * 264}{287248} = 51.75\ kN$$

$$F_{t,Ed,65} = \frac{96.01}{8} + \frac{83.13 * 10^3 * 620}{1274400} + \frac{10.41 * 10^3 * 264}{287248} = 62.01\ kN$$

$$F_{v,Ed,64} = \frac{\sqrt{92.67^2 + 21.79^2}}{8} = 11.90\ kN$$

$$F_{v,Ed,65} = \frac{\sqrt{28.73^2 + 29.87^2}}{8} = 5.18\ kN$$

$F_{t,Rd} = 203.33\ kN$

$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$$UC_1 = \frac{51.75}{203.33} = 0.26 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{62.01}{203.33} = 0.31 < 1.00 \Rightarrow akkoord$$

$$UC_3 = \frac{11.90}{135.55} = 0.09 < 1.00 \Rightarrow akkoord$$

$$UC_4 = \frac{5.18}{135.55} = 0.04 < 1.00 \Rightarrow akkoord$$

$$UC_5 = 0.09 + \frac{0.26}{1.40} = 0.28 < 1.00 \Rightarrow akkoord$$

$$UC_6 = 0.04 + \frac{0.31}{1.40} = 0.26 < 1.00 \Rightarrow akkoord$$

De flensdikte van een INP45 en de dikte van de kopplaat zijn groter dan 15.7 mm, waardoor stuik niet maatgevend is (zie Bijlage J)

13.2.2 Kopplaat

$m = 0.5 * 180 - 0.5 * 10 - 0.8 * 5 * \sqrt{2} = 79.3\ mm$

$e = \min(75\ ;\ 1.25 * 79.3) =\ 75.0\ mm$

$m_2 = 0.5 * (330 - 2 * 17 - 218) - 0.8 * 5 * \sqrt{2} = 41.8\ mm$

$\lambda_1 = \dfrac{79.3}{79.3 + 75.0} = 0.51$

$\lambda_2 = \dfrac{41.8}{79.3 + 75.0} = 0.27 \quad \Rightarrow \quad \alpha \cong 2 * \pi$

$\ell_{eff,1} = 2 * \pi * 79.3 = 498\ mm$

$\ell_{eff,2} = 2 * \pi * 79.3 = 498\ mm$

$\ell_{eff,3} =\ \pi * 79.3 + 218 = 467\ mm$

$\ell_{eff,4} = 0.5 * 218 + 2 * \pi * 79.3 - (2 * 79.3 + 0.625 * 75) = 481\ mm$

$M_{plt,Rd} = 0.25 * 360 * 20^2 * 235 * 10^{-6} =\ 8.46\ kNm$

$F_{T,1,Rd} = \dfrac{4 * 8.46 * 10^3}{79.3} = 426.73\ kN$

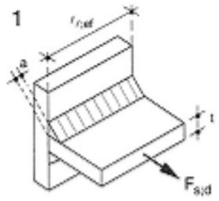
$F_{T,2,Rd} = \dfrac{2 * 8.46 * 10^3 + 75.0 * 2 * 203.33}{79.3 + 75.0} = 307.32\ kN$

$F_{T,3,Rd} = 2 * 203.33 = 406.66\ kN$

$UC_7 = \dfrac{2 * 62.01}{307.32} = 0.40 \ < \ 1.00 \quad \Rightarrow \quad akkoord$

13.2.3 Lassen

Basisgeval 1 (kracht haaks op las):



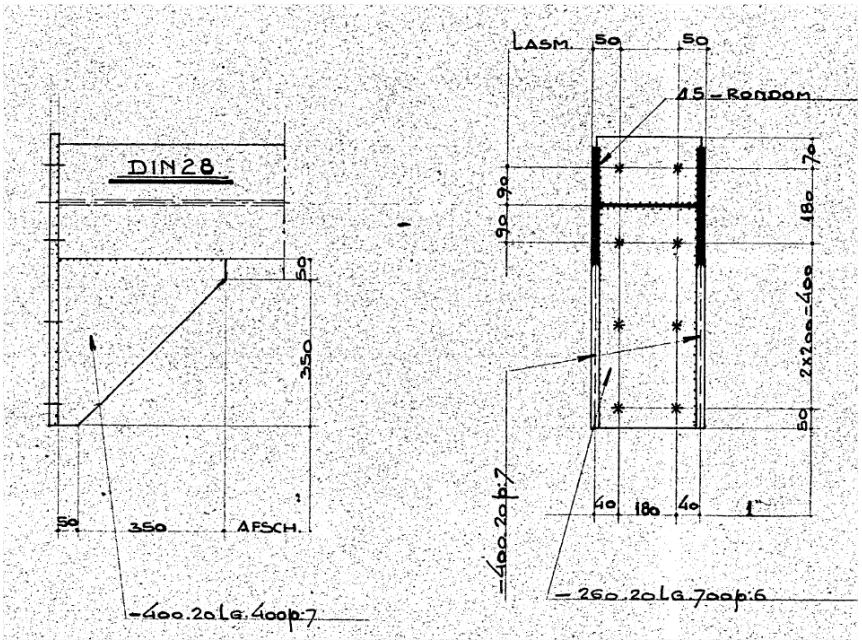
$F_{las,Ed} \cong 2 * 62.01 = 124.02\ kN$
$\ell_{las} = 150\ mm\ , a_{las} = 5\ mm$

$\sigma_1 = \tau_{h,1} = \dfrac{124.02 * \sqrt{2} * 10^3}{4 * 5 * 150} = 58\ MPa$

$UC_8 = \dfrac{\sqrt{58^2 + 3 * (0^2 + 58^2)}}{\left[\dfrac{360}{0.8 * 1.25}\right]} = 0.32 \ < \ 1.00 \quad \Rightarrow \quad akkoord$

$UC_9 = \dfrac{58}{\left[\dfrac{0.8 * 360}{1.25}\right]} = 0.25 \ < \ 1.00 \quad \Rightarrow \quad akkoord$

13.3 Toets detail 2B



Figuur 19; Detail kolom-ligger verbinding

2B: Verbindingskrachten ligger DIN28 - kolom DIE36 juk 64

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/32	FC9	K5:1	S331	-9.30	-3.86	-9.31	0.00	25.04	-0.14
UGT-2/32	FC10	K4:1	S331	9.30	-3.86	-7.56	0.00	-12.38	0.14
UGT-2/30	FC10	K4:1	S331	8.61	-3.86	-7.90	0.03	-14.82	0.23
UGT-1/51	FC9	K5:1	S331	-8.58	3.86	-8.96	-0.03	22.45	-0.11
UGT-2/5	FC9	K5:1	S331	-8.75	0.00	-10.85	-0.01	36.48	-0.13
UGT-2/5	FC10	K4:1	S331	8.75	0.00	-6.02	0.01	-1.43	0.15
UGT-2/30	FC9	K5:1	S331	-8.61	-3.85	-8.97	-0.03	22.57	-0.17
UGT-1/1	FC10	K4:1	S331	7.40	0.00	-8.71	0.00	-20.54	0.00
UGT-2/26	FC9	K5:1	S331	-7.60	-3.86	-9.26	-0.02	24.71	-0.30
UGT-2/26	FC10	K4:1	S331	7.60	-3.86	-7.62	0.02	-12.82	0.33

2B: Verbindingskrachten ligger DIN28 - kolom DIE36 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-1/26	FC9	K5:2	S331	-12.02	0.00	-8.82	0.01	18.97	-0.09
UGT-1/26	FC10	K4:1	S331	12.02	0.00	-10.04	-0.01	-28.87	0.07
UGT-2/53	FC9	K5:2	S331	-11.32	-4.31	-8.42	0.01	15.88	-0.33
UGT-1/22	FC10	K4:1	S331	11.32	4.32	-10.42	-0.02	-32.07	0.16
UGT-1/11	FC10	K4:1	S331	11.91	0.00	-11.66	-0.01	-42.29	0.15
UGT-1/11	FC9	K5:2	S331	-11.91	0.00	-7.19	0.01	6.02	-0.19
UGT-1/36	FC10	K4:1	S331	11.32	4.32	-10.43	-0.02	-32.11	0.16
UGT-1/36	FC9	K5:2	S331	-11.32	4.30	-8.42	0.02	15.89	-0.26
UGT-2/19	FC9	K5:2	S331	-9.24	0.00	-9.68	0.00	25.37	0.00
UGT-2/30	FC9	K5:2	S331	-11.31	-4.31	-8.43	0.01	15.93	-0.33
UGT-2/29	FC10	K4:1	S331	11.55	-4.31	-10.53	-0.01	-32.98	0.27

13.3.1 Bouten

$I_{boutgroep,My} = 2 * (50^2 + 250^2 + 450^2 + 630^2) = 1328800\ mm^4$

$F_{t,Ed} = \frac{11.91}{8} + \frac{42.29 * 10^3 * 620}{1328800} = 21.22\ kN$

$F_{v,Ed} = \frac{11.66}{8} = 1.46\ kN$

$F_{t,Rd} = 203.33\ kN$

$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$UC_1 = \frac{21.22}{203.33} = 0.10 < 1.00 \Rightarrow akkoord$

$UC_2 = \frac{1.46}{135.55} = 0.01 < 1.00 \Rightarrow akkoord$

$UC_3 = 0.01 + \frac{0.10}{1.40} = 0.09 < 1.00 \Rightarrow akkoord$

Gezien de bijzonder lage schuifkracht wordt er niet getoetst op stuik.

13.3.2 Kopplaat

$m = 0.5 * 180 - 0.5 * 12 - 0.8 * 5 * \sqrt{2} = 78.3\ mm$

$e = \min(70\ ;1.25 * 78.3) = 70.0\ mm$

$m_2 = 0.5 * (280 - 2 * 20 - 180) - 0.8 * 5 * \sqrt{2} = 24.3\ mm$

$\lambda_1 = \frac{78.3}{78.3 + 70.0} = 0.53$

$\lambda_2 = \frac{24.3}{78.3 + 70.0} = 0.16 \Rightarrow \alpha \cong 7.50$

$\ell_{eff,1} = 2 * \pi * 78.3 = 492\ mm$

$\ell_{eff,2} = 7.50 * 78.3 = 498\ mm$

$\ell_{eff,3} = \pi * 79.3 + 218 = 587\ mm$

$\ell_{eff,4} = 0.5 * 180 + 2 * \pi * 78.3 - (2 * 78.3 + 0.625 * 70) = 382\ mm$

$M_{plt,Rd} = 0.25 * 260 * 20^2 * 235 * 10^{-6} = 6.11\ kNm$

$F_{T,1,Rd} = \frac{4 * 6.11 * 10^3}{78.3} = 312.13\ kN$

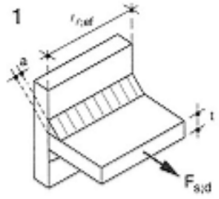
$F_{T,2,Rd} = \frac{2 * 6.11 * 10^3 + 70.0 * 2 * 203.33}{78.3 + 70.0} = 274.35\ kN$

$F_{T,3,Rd} = 2 * 203.33 = 406.66\ kN$

$UC_4 = \frac{2 * 21.22}{274.35} = 0.16 < 1.00 \Rightarrow akkoord$

13.3.3 Lassen

Basisgeval 1 (kracht haaks op las):



$F_{las,Ed} \cong 2 * 21.22 = 42.44\ kN$
$\ell_{las} = 150\ mm\ , a_{las} = 5\ mm$

$$\sigma_1 = \tau_{h,1} = \frac{42.44 * \sqrt{2} * 10^3}{4 * 5 * 150} = 20\ MPa$$

$$UC_5 = \frac{\sqrt{20^2 + 3 * (0^2 + 20^2)}}{\left[\frac{360}{0.8 * 1.25}\right]} = 0.11 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_6 = \frac{20}{\left[\frac{0.8 * 360}{1.25}\right]} = 0.09 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

13.3.4 Lijf kolom

$F_{t,Ed} = 21.22\ kN$

$e = 0.5 * (348 - 2 * (18 + 21) - 180) = 45.0\ mm$

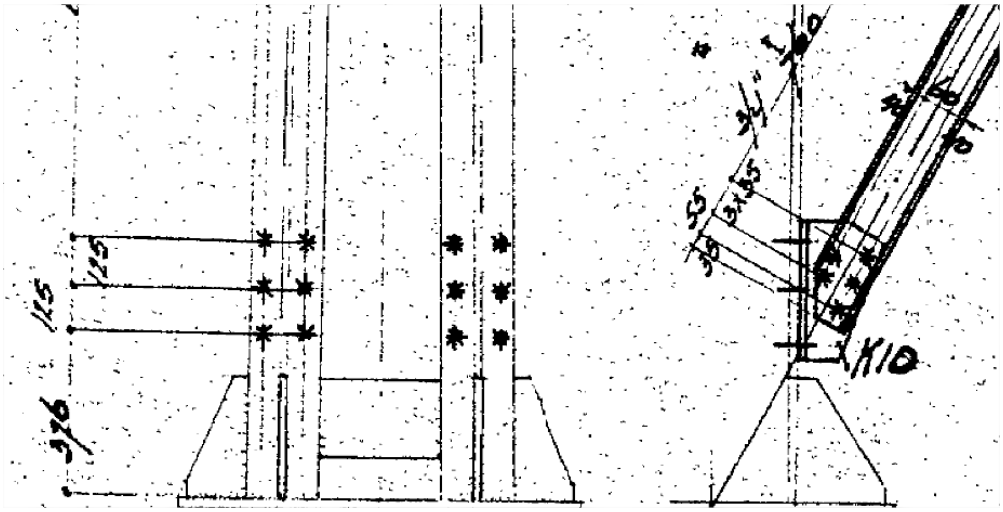
$M_{lijf,Ed} \cong 0.5 * 21.22 * 45.0 * 10^{-3} = 0.48\ kNm$

$b_{eff} = 70 + 0.5 * 180 = 160\ mm$

$M_{lijf,Rd} = 0.25 * 160 * 10.5^2 * 235 * 10^{-6} = 1.04\ kNm$

$$UC_7 = \frac{0.48}{1.04} = 0.46 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

13.4 Toets detail 3B



Figuur 20; Detail kolom-schetsplaat verbinding

3B: Verbindingskrachten diagonalen UPE14 - kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/4	FC11	K453	S271	-5.26	0.12	9.62	0.00	0.00	0.00
UGT-1/34	FC11	K453	S271	110.45	-2.42	-201.85	0.00	0.00	0.00
UGT-1/35	FC11	K453	S271	0.08	0.00	-0.15	0.00	0.00	0.00

3B: Verbindingskrachten diagonalen UPE14 - kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/38	FC11	K454	S270	-101.99	-2.23	-186.38	0.00	0.00	0.00
UGT-1/45	FC11	K454	S270	3.00	0.07	5.49	0.00	0.00	0.00
UGT-1/39	FC11	K454	S270	-1.85	-0.04	-3.38	0.00	0.00	0.00

13.4.1 Bouten verbinding diagonaal aan schetsplaat

$$F_{v,R,Ed} = \frac{\sqrt{110.45^2 + 201.85^2}}{5} = 46.02\ kN$$

$F_{t,Rd} = 141.12\ kN$

$F_{v,Rd} = 94.08\ kN$ (bouten M20-8.8, zie Bijlage J)

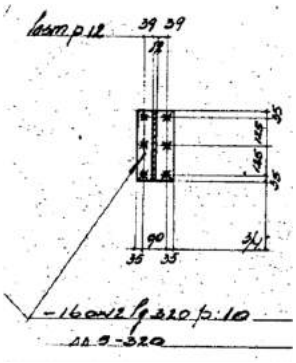
$$UC_1 = \frac{46.02}{94.08} = 0.49 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

De lijfdikte van een UNP14 (7 mm) is kleiner dan 13.1 mm, waardoor stuik maatgevend is (zie Bijlage J)

$$F_{b,Rd} = \frac{2.50 * 0.50 * 360 * 20 * 7}{1.25} * 10^{-3} = 50.40\ kN$$

$$UC_2 = \frac{46.02}{50.40} = 0.91 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

13.4.2 Bouten schetsplaat aan kolom INP45



Figuur 21; Detail schetsplaat

$$I_{boutgroep,My} = 2 * (35^2 + 160^2 + 285^2) = 216100\ mm^4$$

$$F_{t,Ed} = \frac{110.45}{6} + \frac{110.45 * 125 * 285}{216100} = 36.62\ kN$$

$$F_{v,Ed} = \frac{201.85}{6} = 33.64\ kN$$

$$F_{t,Rd} = 141.12\ kN$$

$$F_{v,Rd} = 94.08\ kN$$ (bouten M20-8.8, zie Bijlage J)

$$UC_3 = \frac{36.62}{141.12} = 0.26 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_4 = \frac{33.64}{94.08} = 0.36 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_5 = 0.36 + \frac{0.26}{1.40} = 0.55 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

De plaatdikte (12 mm) is kleiner dan 13.1 mm, waardoor stuik maatgevend is (zie Bijlage J)

$$F_{b,Rd} = \frac{2.50 * 0.50 * 360 * 20 * 12}{1.25} * 10^{-3} = 86.40\ kN$$

$$UC_6 = \frac{33.64}{86.40} = 0.39 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

13.4.3 Lijf schetsplaat

$$F_{t,Ed} = 110.45\ kN$$

$$M_{y,Ed} = \ 110.45 * 125 * 10^{-3} = 13.81\ kNm$$

$$V_{Ed} = 201.85\ kN$$

$$F_{t,Rd} = \ 12 * 320 * 235 * 10^{-3} = 902.40\ kN$$

$$M_{y,Rd} = 1/6 * 12 * 320^2 * 235 * 10^{-6} = \ 48.13\ kNm$$

$$V_{Rd} = 12 * 320 * \frac{235}{\sqrt{3}} * 10^{-3} = 521.00\ kN$$

$$UC_7 = \frac{110.45}{902.40} + \frac{13.81}{48.13} = 0.41 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_8 = \frac{201.85}{521.00} = 0.39 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_9 = \sqrt{0.41^2 + 0.39^2} = 0.57 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

13.4.4 Flens schetsplaat

$$F_{t,Ed} = \frac{110.45}{6} + \frac{110.45 * 125 * 285}{216100} = 36.62\ kN$$

$$e = 0.5 * 90 - 0.5 * 12 - 0.8 * 5 * \sqrt{2} = 33.3\ mm$$

$$M_{flens,Ed} = 36.62 * 33.3 * 10^{-3} = 1.22\ kNm$$

$$b_{eff} = 35 + 0.5 * 125 = 97.5\ mm$$

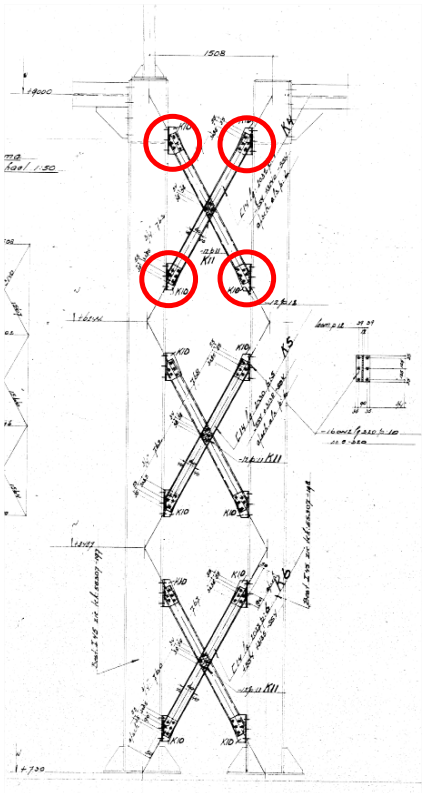
$$M_{lijf,Rd} = 0.25 * 97.5 * 12^2 * 235 * 10^{-6} = 0.83\ kNm$$

$$UC_{10} = \frac{1.22}{0.83} = 1.47 \quad > \quad 1.00 \quad \Rightarrow \quad niet\ akkoord$$

Maximaal toelaatbare kracht in diagonaal:

$$F_{t,Ed} = \frac{\sqrt{110.45^2 + 201.85^2}}{1.47} = 156.53\ kN$$

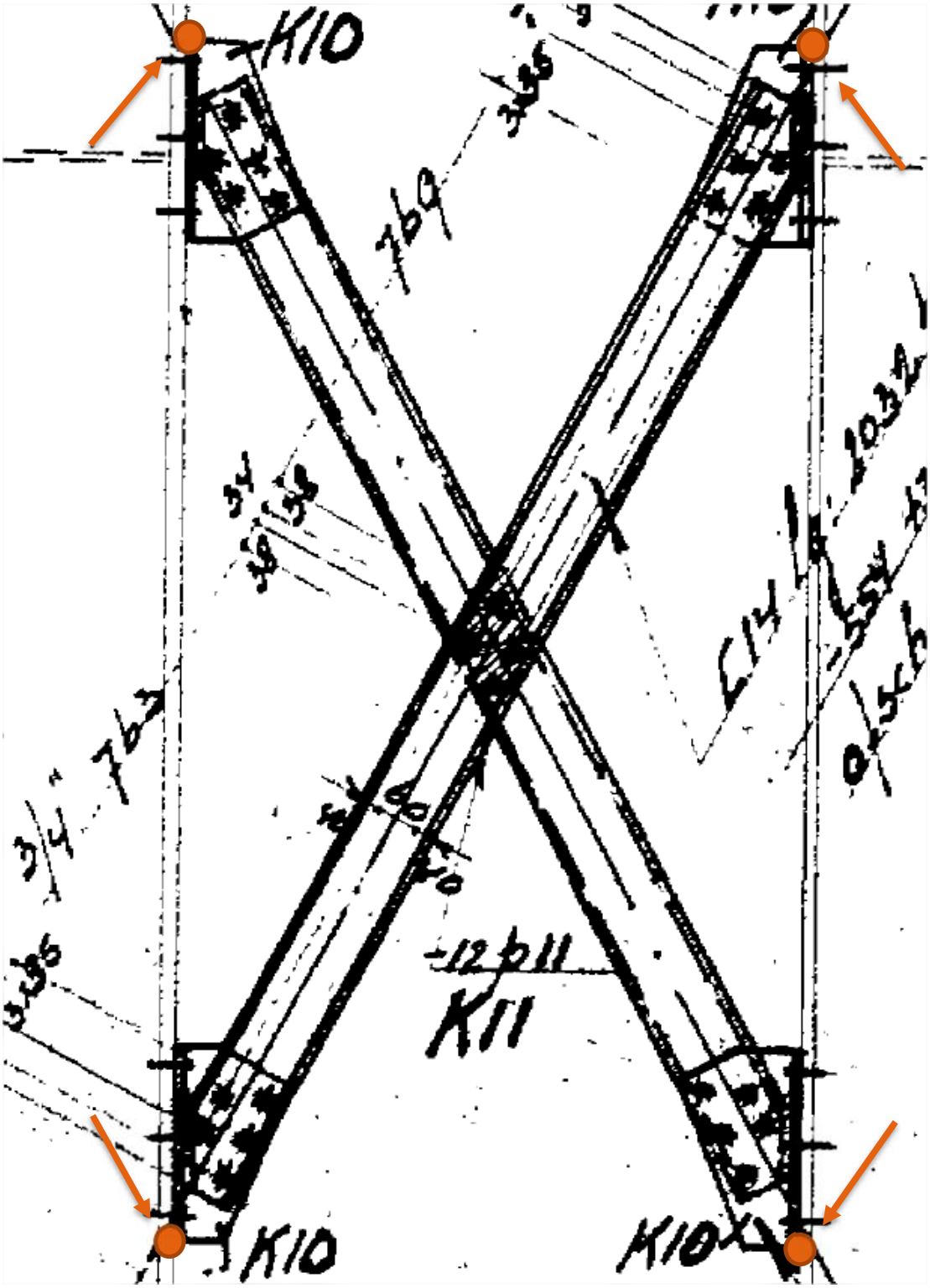
Dat betekent dat de volgende verbindingen moeten worden versterkt:



Figuur 22; te versterken verbindingen

13.4.5 Flens schetsplaat

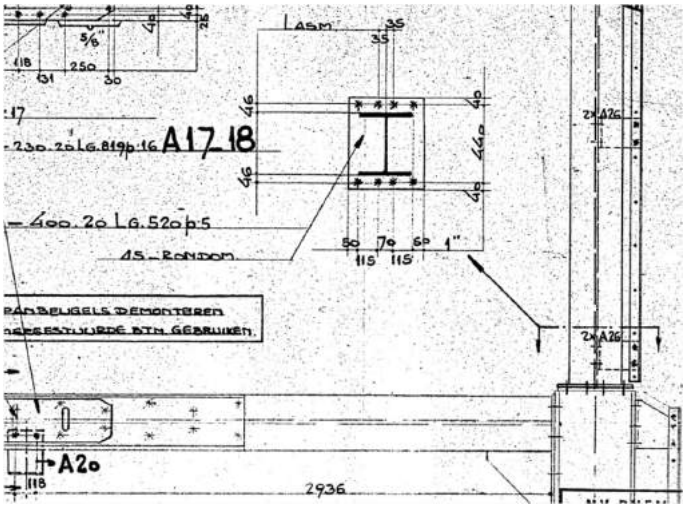
Het versterken kan worden uitgevoerd door de rand van de op trek belaste flens van de schetsplaat op het werk te lassen tegen de flens van de kolom. Dat moet op onderstaande posities gebeuren:



Figuur 23; Positie versterkingslassen

Las: a = 5 mm, lang 160 mm (UC = 0.36)

13.5 Toets detail 4B



Figuur 24; Detail kolom-kolom verbinding

4B: Verbindingskrachten kolom DIE36 - kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/5	FC5	K5	S329	-19.65	-3.32	-17.04	15.67	-48.11	-0.13
UGT-1/24	FC6	K7	S330	10.68	1.98	-16.36	-9.08	24.21	0.06
UGT-2/27	FC5	K5	S329	-10.81	-11.21	-14.91	46.35	-26.16	-0.12
UGT-1/9	FC6	K7	S330	5.39	14.05	-13.78	-59.29	12.24	0.27
UGT-2/52	FC6	K7	S330	1.22	1.81	-12.69	-8.27	3.74	0.06
UGT-2/26	FC5	K5	S329	-10.85	-2.93	-15.41	8.09	-25.64	-0.30
UGT-2/26	FC6	K7	S330	5.48	1.37	-13.78	-11.82	12.62	0.33

4B: Verbindingskrachten kolom DIE36 - kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-1/26	FC9	K5:2	S331	-12.02	0.00	-8.82	0.01	18.97	-0.09
UGT-1/26	FC10	K4:1	S331	12.02	0.00	-10.04	-0.01	-28.87	0.07
UGT-2/53	FC9	K5:2	S331	-11.32	-4.31	-8.42	0.01	15.88	-0.33
UGT-1/22	FC10	K4:1	S331	11.32	4.32	-10.42	-0.02	-32.07	0.16
UGT-1/11	FC10	K4:1	S331	11.91	0.00	-11.66	-0.01	-42.29	0.15
UGT-1/11	FC9	K5:2	S331	-11.91	0.00	-7.19	0.01	6.02	-0.19
UGT-1/36	FC10	K4:1	S331	11.32	4.32	-10.43	-0.02	-32.11	0.16
UGT-1/36	FC9	K5:2	S331	-11.32	4.30	-8.42	0.02	15.89	-0.26
UGT-2/19	FC9	K5:2	S331	-9.24	0.00	-9.68	0.00	25.37	0.00
UGT-2/30	FC9	K5:2	S331	-11.31	-4.31	-8.43	0.01	15.93	-0.33
UGT-2/29	FC10	K4:1	S331	11.55	-4.31	-10.53	-0.01	-32.98	0.27

De voetplaat van de kolom DIE36 is maatgevend ten opzichte van de kopplaat van de kolommen INP45.

13.5.1 Bouten

$I_{boutgroep,Mx} = 2 * (60^2 + 175^2 + 245^2 + 360^2) = 447700\ mm^4$

$I_{boutgroep,My} = 4 * (40^2 + 480^2) = 928000\ mm^4$

$$F_{t,Ed} = \frac{59.29 * 10^3 * 360}{447700} + \frac{12.24 * 10^3 * 480}{928000} = 54.00\ kN$$

$$F_{v,Ed} = \frac{\sqrt{5.39^2 + 14.05^2}}{8} = 1.88\ kN$$

$F_{t,Rd} = 203.33\ kN$
$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$$UC_1 = \frac{54.00}{203.33} = 0.27 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{1.88}{135.55} = 0.01 < 1.00 \Rightarrow akkoord$$

$$UC_3 = 0.01 + \frac{0.27}{1.40} = 0.20 < 1.00 \Rightarrow akkoord$$

De plaatdikte is groter dan 15.7 mm, waardoor stuik niet maatgevend is. (zie Bijlage J)

13.5.2 Kopplaat

$F_{t,Ed} = 54.00\ kN$

$e = 46 - 0.8 * 5 * \sqrt{2} = 40.3\ mm$

$M_{Ed} = 54.00 * 40.3 * 10^{-3} = 2.18\ kNm$

$b_e = 2.5 * 40.3 = 100\ mm$

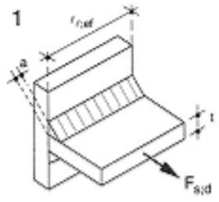
$M_{Rd} = 0.25 * 100 * 20^2 * 235 * 10^{-6} = 2.35\ kNm$

$$UC_4 = \frac{2.18}{2.35} = 0.93 < 1.00 \Rightarrow akkoord$$

13.5.3 Lassen

$F_{las,Ed} \cong 2 * 54.00 = 108.00\ kN$
$\ell_{las} = 100\ mm\ , a_{las} = 5\ mm$

Basisgeval 1 (kracht haaks op las):

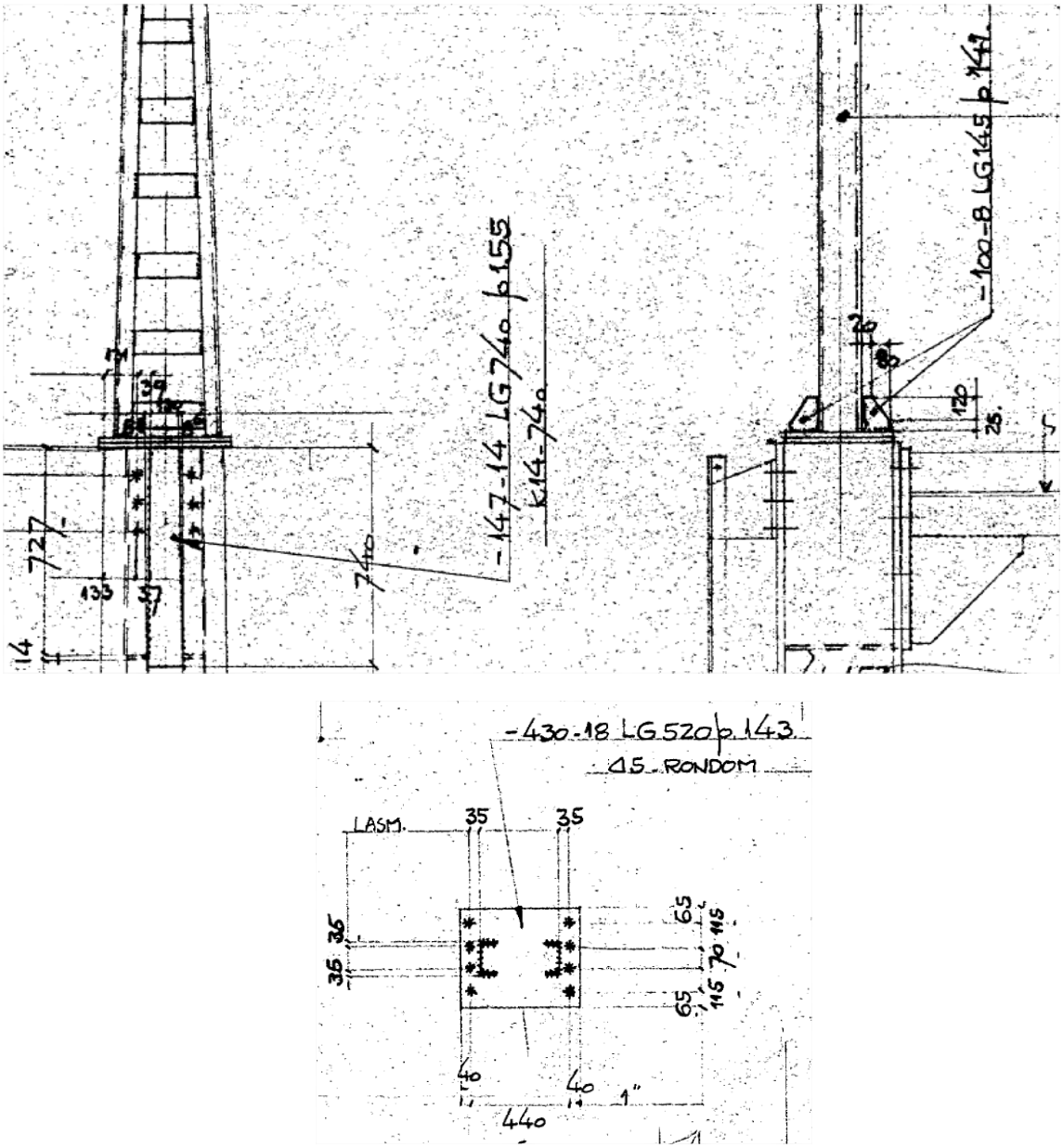


$$\sigma_1 = \tau_{h,1} = \frac{108.00 * \sqrt{2} * 10^3}{4 * 5 * 100} = 76\ MPa$$

$$UC_5 = \frac{\sqrt{76^2 + 3 * (0^2 + 76^2)}}{\left[\frac{360}{0.8 * 1.25}\right]} = 0.42 < 1.00 \Rightarrow akkoord$$

$$UC_6 = \frac{76}{\left[\frac{0.8 * 360}{1.25}\right]} = 0.33 < 1.00 \Rightarrow akkoord$$

13.6 Toets detail 5B



Figuur 25; Details kolom-bliksempiek verbinding

5B: Verbindingskrachten bliksempiek - kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-2/5	FC8	K11	S332	-7.80	-2.60	-3.11	12.38	-30.53	0.00
UGT-1/38	FC8	K11	S332	2.77	5.46	-2.81	-25.09	7.12	0.00
UGT-2/18	FC8	K11	S332	-2.07	-6.09	-2.70	25.58	-9.62	0.00
UGT-1/8	FC8	K11	S332	0.26	6.63	-2.81	-27.82	1.21	0.00
UGT-1/36	FC8	K11	S332	0.10	2.00	-3.77	-9.21	0.47	0.00
UGT-1/53	FC8	K11	S332	-0.25	-0.82	-2.35	3.98	-6.93	0.00
UGT-1/40	FC8	K11	S332	-0.86	4.21	-2.84	-16.57	-4.02	0.00
UGT-2/39	FC8	K11	S332	-0.86	1.86	-2.84	-11.12	-4.02	0.00

5B: Verbindingskrachten bliksempiek - kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/19	FC8	K11	S332	-2.47	0.00	-2.71	0.00	-5.75	0.00
UGT-1/11	FC8	K11	S332	9.79	-1.01	-2.28	4.71	39.80	0.00
UGT-2/42	FC8	K11	S332	2.18	-2.77	-2.25	10.14	10.14	0.00
UGT-1/1	FC8	K11	S332	2.65	3.41	-2.65	-13.12	12.33	0.00
UGT-1/40	FC8	K11	S332	0.00	0.00	-4.71	0.00	0.00	0.00
UGT-1/54	FC8	K11	S332	3.62	0.83	-2.22	-1.14	16.85	0.00
UGT-2/55	FC8	K11	S332	4.55	-1.20	-2.39	2.83	21.16	0.00

De voetplaat van de bliksempiek is maatgevend ten opzichte van de kopplaat van de kolommen INP45.

13.6.1 Bouten

$I_{boutgroep,Mx} = 2 * (60^2 + 175^2 + 245^2 + 360^2) = 447700\ mm^4$

$I_{boutgroep,My} = 4 * (40^2 + 480^2) = 928000\ mm^4$

$$F_{t,Ed} = \frac{12.38 * 10^3 * 360}{447700} + \frac{30.53 * 10^3 * 480}{928000} = 25.75\ kN$$

$$F_{v,Ed} = \frac{\sqrt{7.80^2 + 3.60^2}}{8} = 1.07\ kN$$

$F_{t,Rd} = 203.33\ kN$

$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$$UC_1 = \frac{25.75}{203.33} = 0.13 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{1.07}{135.55} = 0.01 < 1.00 \Rightarrow akkoord$$

$$UC_3 = 0.01 + \frac{0.13}{1.40} = 0.10 < 1.00 \Rightarrow akkoord$$

De plaatdikte is groter dan 15.7 mm, waardoor stuik niet maatgevend is. (zie Bijlage J)

13.6.2 Kopplaat

$F_{t,Ed} = 25.75\ kN$

$e = 35 - 0.8 * 5 * \sqrt{2} = 29.3\ mm$

$M_{Ed} = 25.75 * 29.3 * 10^{-3} = 0.76\ kNm$

$b_e = 2.5 * 29.3 = 73\ mm$

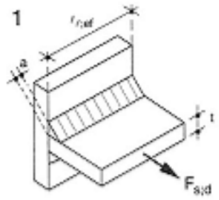
$M_{Rd} = 0.25 * 73 * 18^2 * 235 * 10^{-6} = 1.39\ kNm$

$$UC_4 = \frac{0.76}{1.39} = 0.55 < 1.00 \Rightarrow akkoord$$

13.6.3 Lassen

$F_{las,Ed} \cong 2 * 25.75 = 51.50\ kN$
$\ell_{las} = 73\ mm\ , a_{las} = 5\ mm$

Basisgeval 1 (kracht haaks op las):



$$\sigma_1 = \tau_{h,1} = \frac{51.50 * \sqrt{2} * 10^3}{4 * 5 * 73} = 50\ MPa$$

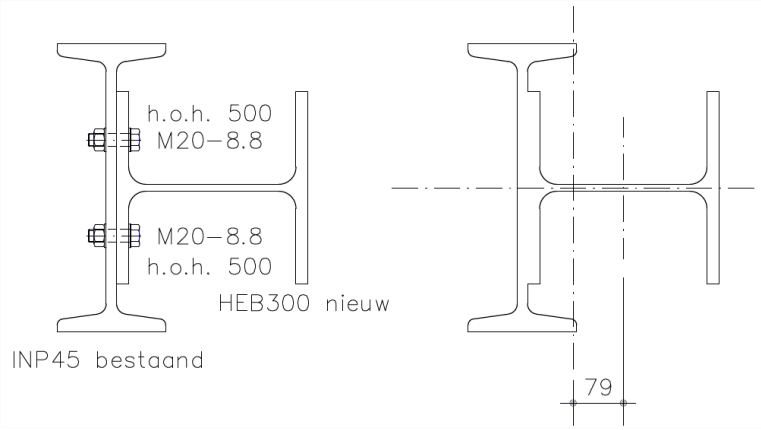
$$UC_5 = \frac{\sqrt{50^2 + 3 * (0^2 + 50^2)}}{\left[\frac{360}{0.8 * 1.25}\right]} = 0.28 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_6 = \frac{50}{\left[\frac{0.8 * 360}{1.25}\right]} = 0.22 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

13.7 Toets detail 6B

Dit detail is komen te vervallen !!!

13.8 Toets detail 7B



Figuur 26; Doorsnede versterkt profiel

7B: Verbindingskrachten versterking kolom INP45 juk 64

Staaf	css	dx	BG	N	Vy	Vz	Mx	My	Mz
		[mm]		[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
S276	samenges	80	UGT-1/19	-1604.03	-58.36	-32.49	2.41	-4.11	155.74
S248	samenges	0	UGT-2/4	139.68	0.46	-0.52	0.03	-0.13	-28.42
S276	samenges	80	UGT-2/2	-1450.71	-61.13	-40.33	3.64	-4.72	110.42
S282	samenges	565	UGT-1/3	-538.47	80.05	15.96	2.34	-5.12	-81.22
S282	samenges	2360	UGT-1/3	-788.44	70.29	27.13	-0.80	23.12	-13.72
S282	samenges	2360	UGT-1/22	-536.89	46.06	24.09	-0.97	23.16	-2.23
S276	samenges	0	UGT-2/5	-938.75	-50.14	-39.60	4.38	-1.07	32.41
S282	samenges	2756	UGT-2/15	-67.39	3.32	-6.48	0.47	-20.56	-7.78
S282	samenges	2756	UGT-1/3	-789.48	70.28	27.13	-0.80	33.86	14.11
S282	samenges	565	UGT-1/23	-540.60	74.37	0.30	1.47	-8.13	-81.48
S275	samenges	2532	UGT-1/3	-1473.16	69.14	-5.81	-0.42	-0.44	205.86

7B: Verbindingskrachten versterking kolom INP45 juk 65

Staaf	css	dx	BG	N	Vy	Vz	Mx	My	Mz
		[mm]		[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
S273	samenges	80	UGT-1/2	-1661.25	-71.93	71.81	-3.79	7.67	93.08
S273	samenges	0	UGT-2/9	105.26	-0.28	-8.34	0.21	0.18	-18.91
S273	samenges	80	UGT-1/5	-1572.88	-73.35	68.29	-3.84	7.83	71.82
S284	samenges	565	UGT-1/1	-389.37	68.55	-18.60	-2.33	9.89	-73.17
S284	samenges	2360	UGT-1/10	-354.28	41.64	-29.68	1.72	-29.74	3.99
S273	samenges	0	UGT-1/2	-1661.04	-71.93	71.81	-3.79	1.92	98.84
S273	samenges	0	UGT-1/5	-1572.67	-73.35	68.27	-3.84	2.37	77.69
S272	samenges	0	UGT-1/11	-912.64	26.77	-3.53	2.05	-1.50	13.34
S284	samenges	2756	UGT-1/12	-355.17	41.58	-29.66	1.72	-41.50	20.49
S284	samenges	0	UGT-1/13	-256.59	46.89	-11.32	-2.89	18.89	-66.12
S284	samenges	565	UGT-1/14	-389.88	68.54	-18.51	-2.33	9.87	-73.19
S272	samenges	2532	UGT-1/1	-1451.56	59.58	8.15	0.42	-0.29	160.90

13.8.1 Bouten

$S_{z,versterking} = 14910 * 79 = 1177890\ mm^3$

$I_{z,samen} = 45466 * 10^4\ mm^4$

bouten h.o.h. 500 mm

$$F_{v,Ed} = \frac{80.05 * 500 * 1177890}{2 * 45466 * 10^4} = 51.85\ kN$$

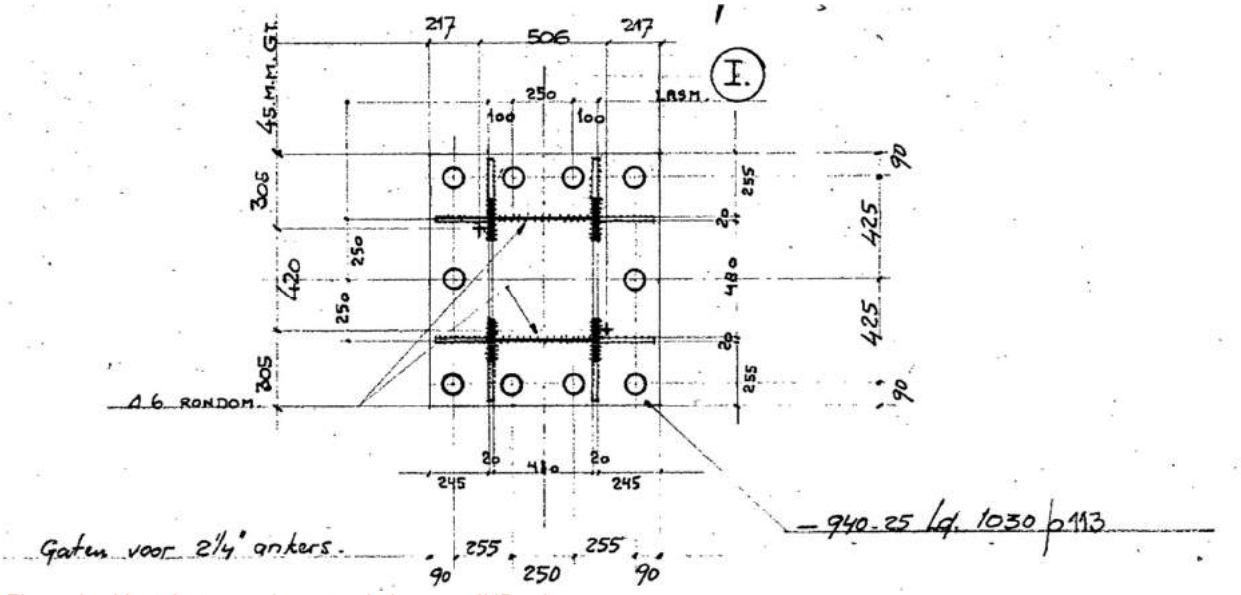
$F_{t,Rd} = 141.12\ kN$

$F_{v,Rd} = 94.08\ kN$ (bouten M20-8.8, zie Bijlage J)

$$UC_1 = \frac{51.85}{94.08} = 0.55 < 1.00 \Rightarrow akkoord$$

De flensdikte van de versterking is groter dan 11.5 mm (S355) en de lijfdikte van de INP-kolom is groter dan 15.7 mm (S235), waardoor stuik niet maatgevend is. (zie Bijlage J)

13.9 Toets detail 8B



Figuur 27; Voetplaat en ankergaten kolommen INP450

8B: Krachten op voet kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	-45.40	0.21	135.89	1.07	-29.71	0.25
UGT-2/5	FC2	K8	S244	120.69	-47.40	950.45	357.66	210.14	10.62
UGT-1/7	FC2	K8	S244	98.72	-119.14	761.30	770.25	167.37	23.27
UGT-2/10	FC3	K438	S250	28.11	22.63	-642.21	83.68	143.89	5.29
UGT-2/5	FC3	K438	S250	50.04	-7.41	-825.71	116.74	185.34	-2.02
UGT-2/18	FC4	K513	S322	-2.16	16.96	35.71	-139.36	7.60	-0.02
UGT-1/3	FC2	K8	S244	90.98	-115.56	669.05	957.58	146.75	20.82
UGT-1/11	FC3	K438	S250	-1.20	-47.05	-286.09	341.07	65.02	-6.79
UGT-1/8	FC2	K8	S244	98.56	-119.00	757.43	771.62	166.52	23.29

8B: Krachten op voet kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC3	K438	S250	-159.49	-76.54	1393.89	676.32	-308.62	-11.36
UGT-2/19	FC2	K8	S244	47.02	0.14	157.62	0.64	34.50	0.11
UGT-1/14	FC3	K438	S250	-131.51	-91.02	1120.16	813.31	-247.14	-13.23
UGT-2/9	FC2	K8	S244	35.71	20.72	62.04	-108.01	12.84	-3.15
UGT-1/5	FC2	K8	S244	-92.18	-46.43	-1263.07	361.21	-282.27	4.90
UGT-2/9	FC1	K6	S246	1.04	17.52	56.04	-144.01	0.05	0.02
UGT-1/1	FC3	K438	S250	-130.78	-90.99	1112.34	814.14	-245.39	-13.22
UGT-1/23	FC3	K438	S250	-115.85	-87.49	945.61	736.20	-208.03	-13.50
UGT-1/22	FC2	K8	S244	-42.04	-70.22	-744.53	431.67	-166.04	9.57

13.9.1 Ankers

$I_{boutgroep,Mx} = 2 * 255^2 + 2 * 505^2 + 3 * 760^2 = 2372900\ mm^4$

$I_{boutgroep,My} = 2 * 425^2 + 4 * 850^2 = 3251250\ mm^4$

$$F_{t,Ed,max} = \frac{1263.07}{10} + \frac{361.21 * 10^3 * 760}{2372900} + \frac{282.27 * 10^3 * 850}{3251250} = 315.79\ kN$$

$$F_{v,Ed,max} = \frac{\sqrt{159.49^2 + 76.54^2}}{10} = 17.69\ kN$$

$F_{t,Rd} = 584.64\ kN$ (bouten M56-8.8, zie Bijlage J)

$$F_{v,Rd} = \frac{0.248 * 400 * 2030 * 10^{-3}}{1.25} = 161.10\ kN$$

$$UC_1 = \frac{315.79}{584.64} = 0.54 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{17.69}{161.10} = 0.11 < 1.00 \Rightarrow akkoord$$

13.9.2 Voetplaat

$m = m_2 = 245 - 90 - 0.8 * 6 * \sqrt{2} = 148.2\ mm$

$e = \min(90\ ;\ 1.25 * 148.2) = 90.0\ mm$

$$\lambda_1 = \lambda_2 = \frac{148.2}{148.2 + 90.0} = 0.62 \Rightarrow \alpha \cong 5.00$$

$\ell_{eff,1} = 2 * \pi * 148.2 = 931\ mm$

$\ell_{eff,2} = 5.00 * 148.2 = 741\ mm$

$\ell_{eff,3} = \pi * 148.2 + 255 = 721\ mm$

$\ell_{eff,4} = 0.5 * 255 + 2 * \pi * 148.2 - (2 * 148.2 + 0.625 * 90) = 706\ mm$

$M_{plt,Rd} = 0.25 * 706 * 25^2 * 235 * 10^{-6} = 25.92\ kNm$

$$F_{T,1,Rd} = \frac{4 * 25.92 * 10^3}{148.2} = 699.69\ kN$$

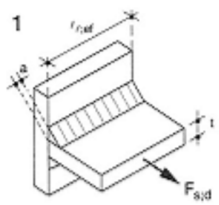
$$F_{T,2,Rd} = \frac{2 * 25.92 * 10^3 + 90.0 * 2 * 584.64}{148.2 + 90.0} = 659.43\ kN$$

$F_{T,3,Rd} = 2 * 584.64 = 1169.28\ kN$

$$UC_3 = \frac{2 * 315.79}{659.43} = 0.96 < 1.00 \Rightarrow akkoord$$

13.9.3 Lassen

Basisgeval 1 (kracht haaks op las):



$F_{las,Ed} \cong 2 * 315.79 = 631.58\ kN$
$\ell_{las} \cong 2 * 245 = 490\ mm\ ,\ a_{las} = 6\ mm$

$$\sigma_1 = \tau_{h,1} = \frac{631.58 * \sqrt{2} * 10^3}{4 * 6 * 490} = 76\ MPa$$

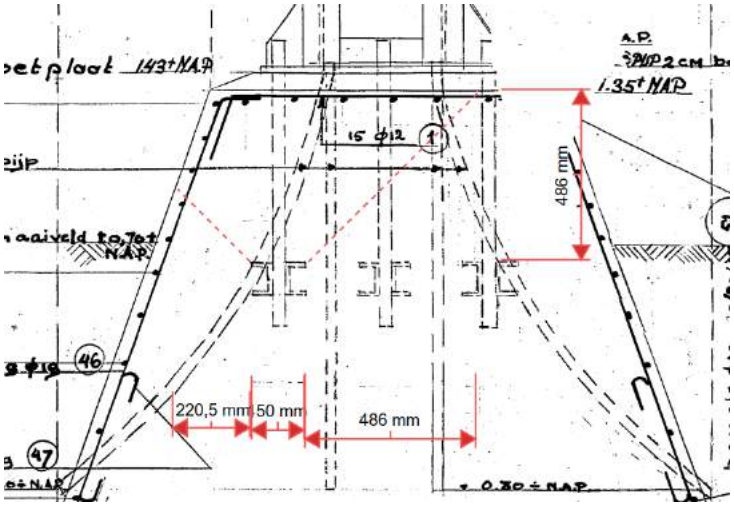
$$UC_4 = \frac{\sqrt{76^2 + 3 * (0^2 + 76^2)}}{\left[\frac{360}{0.8 * 1.25}\right]} = 0.42 < 1.00 \Rightarrow akkoord$$

$$UC_5 = \frac{76}{\left[\frac{0.8 * 360}{1.25}\right]} = 0.33 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

13.9.4 Uitbreken ankergroep

De verankering van de middenpoer is maatgevend.

De verankeringsplaat (2 U-profielen) onderaan de ankers moet de kracht inleiden in het beton. Getoetst wordt het afschuifvlak van de beton'kegel'.



Figuur 28; Afschuifvlak ankers

Het grootte van het afschuifoppervlak bedraagt:

$$A_{schuif} = \left(220 * \sqrt{2} + 150 + 486 * \sqrt{2}\right) * (0.5 * 2900) = 1665 * 10^3\ mm^2$$

De grootte van de trekkracht bedraagt:

$$F_{t,Ed,max} = 6 * \frac{1263.07}{10} + 4 * \frac{282.27 * 10^3 * 850}{3251250} + 2 * \frac{282.27 * 10^3 * 425}{3251250} = 1126.82\ kN$$

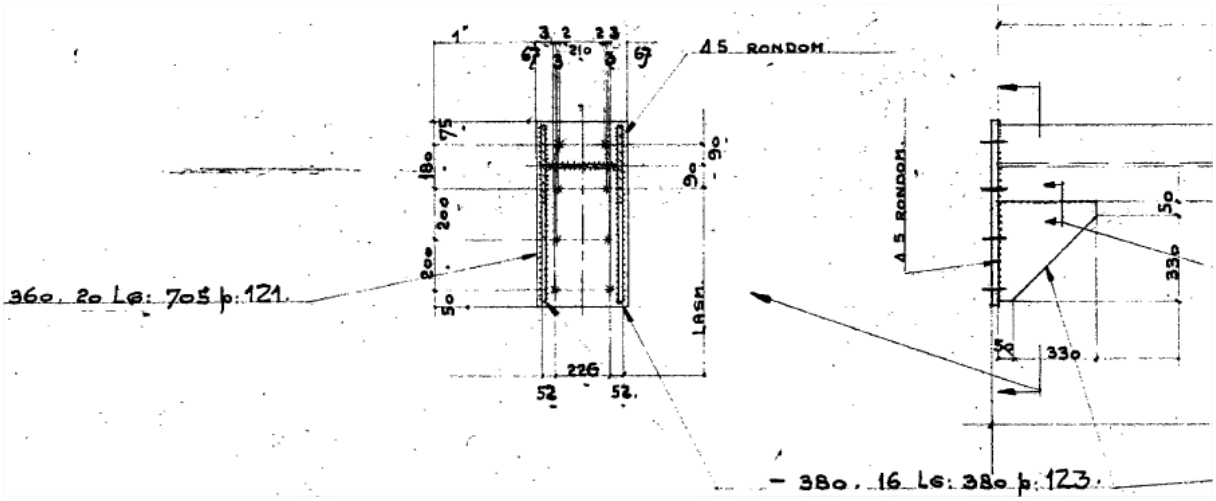
(de tweede rij ankers wordt conservatief ook meegerekend in de belasting)

$$\tau = \frac{1126.82 * 10^3}{1665 * 10^3} = 0.68\ MPa \quad < \quad 0.86\ MPa \quad \Rightarrow \quad akkoord$$

Opmerking bij toelaatbare afschuifspanning

In rapport 2018-0542-001 zijn de resultaten gegeven van het betononderzoek dat is uitgevoerd op de poeren van het lijnportaal. Hieruit wordt geconcludeerd dat de betondruksterkte een karakteristieke waarde heeft van 69,8N/mm², waarmee het beton in een klasse C60/75 valt. Voor deze toetsing wordt aangehouden een betonsterkteklasse B65 conform de VBC, waarbij de afschuifsterkte τ_1 = 0,86N/mm².

13.10 Toets detail 1N



Figuur 29; Detail kolom-ligger verbinding

1N: Verbindingskrachten ligger DIE34 - kolommen INP45 juk 64b

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
Combi1/21	FC3	K5	S11	-68.86	0.16	-25.98	0.00	121.04	-0.08
Combi1/29	FC4	K9	S6	8.26	4.77	-8.92	0.00	-18.60	-0.15
Combi2/14	FC4	K9	S6	-54.20	-13.24	-7.91	0.00	26.58	0.38
Combi1/19	FC4	K9	S6	-10.15	7.07	-14.65	0.00	-23.88	-0.23
Combi2/11	FC3	K5	S11	-68.86	-4.61	-26.78	0.00	127.29	-0.23
Combi2/12	FC4	K9	S6	-54.50	-8.44	-7.06	0.00	33.22	0.23
Combi1/23	FC4	K9	S6	-54.20	-8.48	-7.91	0.00	26.58	0.23
Combi1/23	FC3	K5	S11	-66.24	-5.17	-23.77	0.00	112.44	-0.26
Combi1/13	FC4	K9	S6	-14.20	-0.30	-18.72	0.00	-35.19	0.00
Combi2/14	FC3	K5	S11	-66.24	-9.94	-23.77	0.00	112.44	-0.40

13.10.1 Bouten

$I_{boutgroep,My} = 2 * (40^2 + 240^2 + 440^2 + 620^2) = 1274400\ mm^4$

$$F_{t,Ed} = \frac{68.86}{8} + \frac{127.29 * 10^3 * 620}{1274400} = 70.54\ kN$$

$$F_{v,Ed} = \frac{\sqrt{4.61^2 + 26.78^2}}{8} = 3.39\ kN$$

$F_{t,Rd} = 203.33\ kN$
$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$$UC_1 = \frac{70.54}{203.33} = 0.35 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{3.39}{135.55} = 0.03 < 1.00 \Rightarrow akkoord$$

$$UC_3 = 0.03 + \frac{0.35}{1.40} = 0.28 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

De flensdikte van een INP45 en de dikte van de kopplaat zijn groter dan 15.7 mm, waardoor stuik niet maatgevend is (zie Bijlage J)

13.10.2 Kopplaat

$m = 0.5 * 180 - 0.5 * 10 - 0.8 * 5 * \sqrt{2} = 79.3\ mm$

$e = \min(75\ ; 1.25 * 79.3) = \ 75.0\ mm$

$m_2 = 0.5 * (330 - 2 * 17 - 218) - 0.8 * 5 * \sqrt{2} = 41.8\ mm$

$\lambda_1 = \frac{79.3}{79.3 + 75.0} = 0.51$

$\lambda_2 = \frac{41.8}{79.3 + 75.0} = 0.27 \quad \Rightarrow \quad \alpha \cong 2 * \pi$

$\ell_{eff,1} = 2 * \pi * 79.3 = 498\ mm$

$\ell_{eff,2} = 2 * \pi * 79.3 = 498\ mm$

$\ell_{eff,3} = \ \pi * 79.3 + 218 = 467\ mm$

$\ell_{eff,4} = 0.5 * 218 + 2 * \pi * 79.3 - (2 * 79.3 + 0.625 * 75) = 481\ mm$

$M_{plt,Rd} = 0.25 * 360 * 20^2 * 355 * 10^{-6} = \ 12.78\ kNm$

$F_{T,1,Rd} = \frac{4 * 12.78 * 10^3}{79.3} = 644.64\ kN$

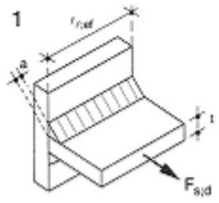
$F_{T,2,Rd} = \frac{2 * 12.78 * 10^3 + 75.0 * 2 * 203.33}{79.3 + 75.0} = 363.32\ kN$

$F_{T,3,Rd} = 2 * 203.33 = 406.66\ kN$

$UC_4 = \frac{2 * 70.54}{363.32} = 0.39 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$

13.10.3 Lassen

Basisgeval 1 (kracht haaks op las):



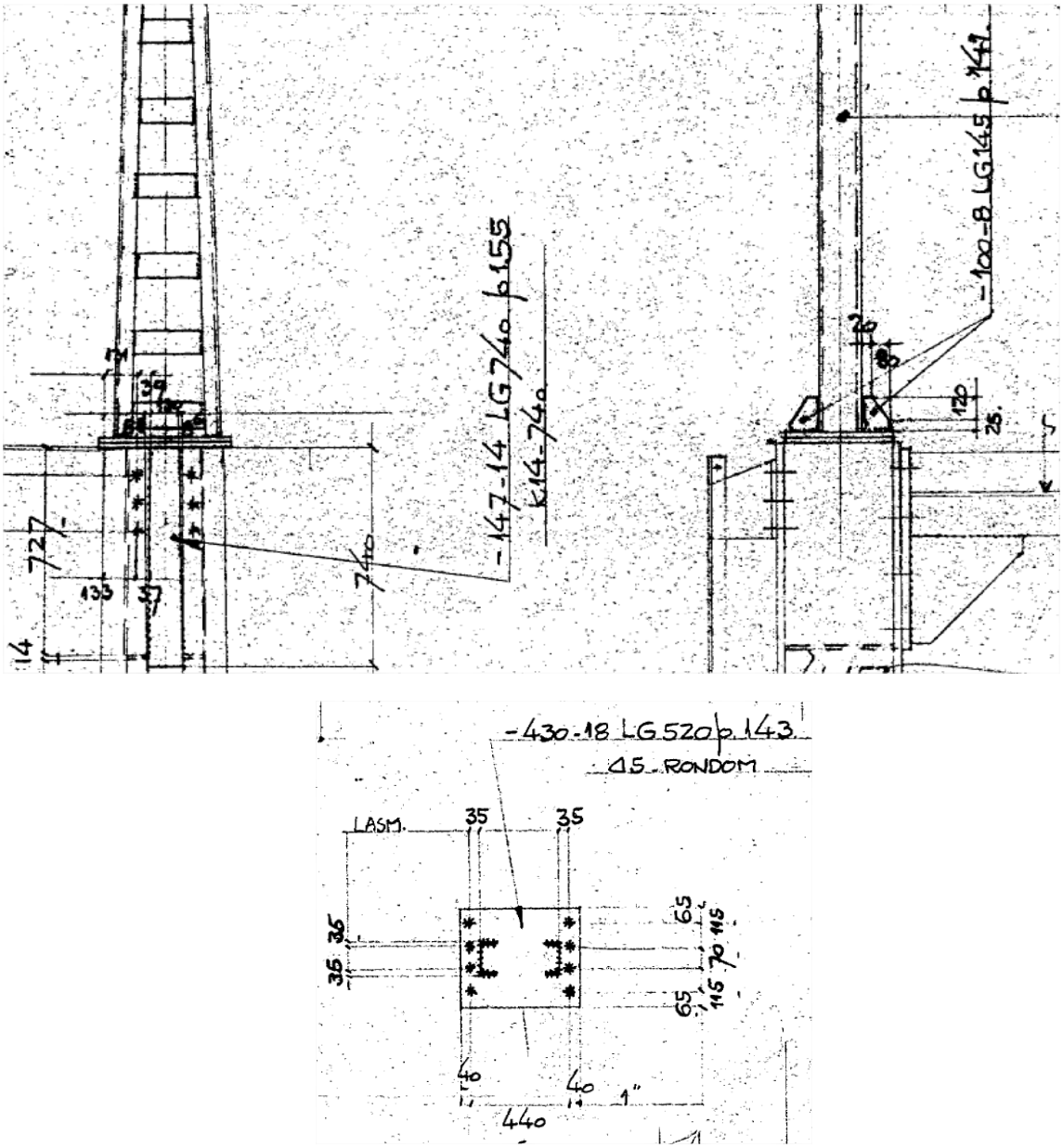
$F_{las,Ed} \cong 2 * 70.54 = 141.08\ kN$
$\ell_{las} = 150\ mm\ , a_{las} = 5\ mm$

$\sigma_1 = \tau_{h,1} = \frac{141.05 * \sqrt{2} * 10^3}{4 * 5 * 150} = 67\ MPa$

$UC_5 = \frac{\sqrt{67^2 + 3 * (0^2 + 67^2)}}{\left[\frac{490}{0.9 * 1.25}\right]} = 0.31 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$

$UC_6 = \frac{67}{\left[\frac{0.9 * 490}{1.25}\right]} = 0.19 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$

13.11 Toets detail 5N



Figuur 30; Details kolom-bliksempiek verbinding

5N: Verbindingskrachten bliksempiek - kolommen INP45 juk 64b

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi2/15	FC3	K5	S51	-10.60	0.49	-3.49	-2.23	-41.48	0.00
Combi1/27	FC3	K5	S51	2.77	0.00	-4.74	0.00	6.23	0.00
Combi2/5	FC4	K9	S52	-2.29	-2.30	-2.87	7.46	-10.30	0.00
Combi1/19	FC3	K5	S51	-2.65	2.16	-2.90	-6.82	-11.91	0.00
Combi1/25	FC3	K5	S51	0.00	1.28	-4.74	-2.89	0.00	0.00
Combi1/30	FC3	K5	S51	2.77	0.00	-2.74	0.00	6.23	0.00
Combi2/31	FC3	K5	S51	-2.85	-2.14	-2.85	6.76	-12.81	0.00

De voetplaat van de bliksempiek is maatgevend ten opzichte van de kopplaat van de kolommen INP45.

13.11.1 Bouten

$I_{boutgroep,Mx} = 2 * (60^2 + 175^2 + 245^2 + 360^2) = 447700\ mm^4$

$I_{boutgroep,My} = 4 * (40^2 + 480^2) = 928000\ mm^4$

$F_{t,Ed} = \frac{2.23 * 10^3 * 360}{447700} + \frac{41.48 * 10^3 * 480}{928000} = 23.25\ kN$

$F_{v,Ed} = \frac{\sqrt{10.60^2 + 0.49^2}}{8} = 1.33\ kN$

$F_{t,Rd} = 203.33\ kN$

$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$UC_1 = \frac{23.25}{203.33} = 0.11 < 1.00 \Rightarrow akkoord$

$UC_2 = \frac{1.33}{135.55} = 0.01 < 1.00 \Rightarrow akkoord$

$UC_3 = 0.01 + \frac{0.11}{1.40} = 0.09 < 1.00 \Rightarrow akkoord$

De plaatdikte is groter dan 15.7 mm, waardoor stuik niet maatgevend is. (zie Bijlage J)

13.11.2 Kopplaat

$F_{t,Ed} = 23.25\ kN$

$e = 35 - 0.8 * 5 * \sqrt{2} = 29.3\ mm$

$M_{Ed} = 23.25 * 29.3 * 10^{-3} = 0.68\ kNm$

$b_e = 2.5 * 29.3 = 73\ mm$

$M_{Rd} = 0.25 * 73 * 18^2 * 355 * 10^{-6} = 2.10\ kNm$

$UC_4 = \frac{0.68}{2.10} = 0.32 < 1.00 \Rightarrow akkoord$

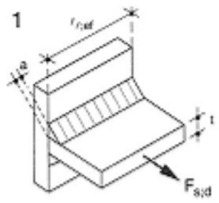
13.11.3 Lassen

$F_{las,Ed} \cong 2 * 23.25 = 46.50\ kN$
$\ell_{las} = 73\ mm\ , a_{las} = 5\ mm$

Basisgeval 1 (kracht haaks op las):

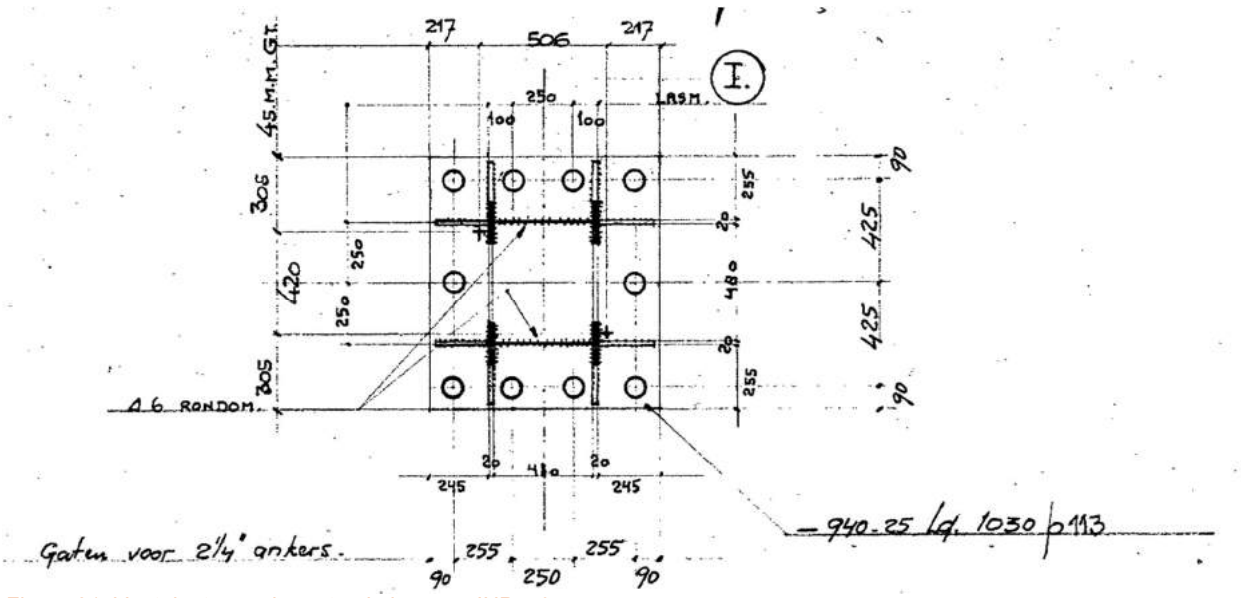
$\sigma_1 = \tau_{h,1} = \frac{46.50 * \sqrt{2} * 10^3}{4 * 5 * 73} = 45\ MPa$

$UC_5 = \frac{\sqrt{45^2 + 3 * (0^2 + 45^2)}}{\left[\frac{490}{0.9 * 1.25}\right]} = 0.21 < 1.00 \Rightarrow akkoord$



$$UC_6 = \frac{45}{\left[\frac{0.9 * 490}{1.25}\right]} = 0.13 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

13.12 Toets detail 8N



Figuur 31; Voetplaat en ankergaten kolommen INP450

8N: Krachten op voet kolommen INP45 juk 64b

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC2	K3	S8	-12.24	0.00	36.60	0.00	-53.33	0.00
Combi2/11	FC1	K1	S7	83.46	4.97	53.23	-42.60	571.63	0.23
Combi1/19	FC2	K3	S8	12.40	-16.69	41.01	112.98	136.26	0.23
Combi2/14	FC2	K3	S8	59.38	22.70	34.30	-161.78	486.58	-0.38
Combi2/12	FC2	K3	S8	68.18	9.04	33.44	-77.33	535.50	-0.23
Combi2/14	FC1	K1	S7	72.22	19.21	50.16	-132.22	510.26	0.40

13.12.1 Ankers

$$I_{boutgroep,Mx} = 2 * 255^2 + 2 * 505^2 + 3 * 760^2 = 2372900\ mm^4$$

$$I_{boutgroep,My} = 2 * 425^2 + 4 * 850^2 = 3251250\ mm^4$$

$$F_{t,Ed,max} = \frac{161.78 * 10^3 * 760}{2372900} + \frac{486.58 * 10^3 * 850}{3251250} = 179.03\ kN$$

$$F_{v,Ed,max} = \frac{\sqrt{83.46^2 + 4.97^2}}{10} = 8.36\ kN$$

$$e = 160 + 0.5 * (56 + 25) = 201\ mm$$

$$M_{Ed} = \frac{8.36 * 201 * 10^{-3}}{2} = 0.84\ kNm$$

$F_{t,Rd} = 1169.28\ kN$

$F_{v,Rd} = 779.52\ kN$ (bouten M56-8.8, zie Bijlage J)

$$M_{Rd} = \frac{\pi * 50.8^3}{32} * 640 * 10^{-6} = 8.26\ kNm$$

$$UC_1 = \frac{179.03}{1169.28} + \frac{0.84}{8.26} = 0.26 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{8.36}{779.52} = 0.01 < 1.00 \Rightarrow akkoord$$

$$UC_3 = 0.01 + \frac{0.26}{1.40} = 0.19 < 1.00 \Rightarrow akkoord$$

13.12.2 Voetplaat

$m = m_2 = 245 - 90 - 0.8 * 6 * \sqrt{2} = 148.2\ mm$

$e = \min(90\ ;\ 1.25 * 148.2) = 90.0\ mm$

$$\lambda_1 = \lambda_2 = \frac{148.2}{148.2 + 90.0} = 0.62 \Rightarrow \alpha \cong 5.00$$

$\ell_{eff,1} = 2 * \pi * 148.2 = 931\ mm$

$\ell_{eff,2} = 5.00 * 148.2 = 741\ mm$

$\ell_{eff,3} = \pi * 148.2 + 255 = 721\ mm$

$\ell_{eff,4} = 0.5 * 255 + 2 * \pi * 148.2 - (2 * 148.2 + 0.625 * 90) = 706\ mm$

$M_{plt,Rd} = 0.25 * 706 * 25^2 * 355 * 10^{-6} = 39.16\ kNm$

$$F_{T,1,Rd} = \frac{4 * 39.16 * 10^3}{148.2} = 1056.98\ kN$$

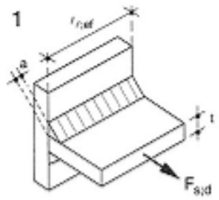
$$F_{T,2,Rd} = \frac{2 * 39.16 * 10^3 + 90.0 * 2 * 1169.28}{148.2 + 90.0} = 1212.39\ kN$$

$F_{T,3,Rd} = 2 * 1169.28 = 2338.56\ kN$

$$UC_4 = \frac{2 * 179.03}{1056.98} = 0.34 < 1.00 \Rightarrow akkoord$$

13.12.3 Lassen

Basisgeval 1 (kracht haaks op las):



$F_{las,Ed} \cong 2 * 179.03 = 358.06\ kN$
$\ell_{las} \cong 2 * 245 = 490\ mm\ ,\ a_{las} = 6\ mm$

$$\sigma_1 = \tau_{h,1} = \frac{358.06 * \sqrt{2} * 10^3}{4 * 6 * 490} = 43\ MPa$$

$$UC_5 = \frac{\sqrt{43^2 + 3 * (0^2 + 43^2)}}{\left[\frac{490}{0.9 * 1.25}\right]} = 0.20 < 1.00 \Rightarrow akkoord$$

$$UC_6 = \frac{43}{\left[\frac{0.9 * 490}{1.25}\right]} = 0.12 < 1.00 \Rightarrow akkoord$$

13.12.4 Uitbreken ankergroep

In de betonnen opstort is ruim voldoende ophangwapening aanwezig om uitbreken van de ankergroep te voorkomen.

BIJLAGE A

Belastingen uit lijn op juk 64

Projectnaam: TenneT 150 kV Station Waalwijk
Onderdeel: Juk 64; Belastingen uit lijn
Documentnummer: ---
Revisie: A
Bijlage: A-1

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1	LC 1001	K4:1NL.1#1a,Wind/10C,+90 degST	-4.752	-1.068	0.133
2	LC 1001	K5:1NL.1#1a,Wind/10C,+90 degST	-2.888	-3.915	0.417
3	LC 1001	K5:2NL.1#1a,Wind/10C,+90 degST	-2.931	-3.903	0.306
4	LC 1001	K6:1NL.1#1a,Wind/10C,+90 degST	-25.798	9.667	-5.955
5	LC 1001	K6:2NL.1#1a,Wind/10C,+90 degST	-25.476	9.985	-5.707
6	LC 1001	K6:3NL.1#1a,Wind/10C,+90 degST	-25.046	10.360	-5.451
7	LC 1001	K7:1NL.1#1a,Wind/10C,+90 degST	-8.263	-0.966	-5.515
8	LC 1001	K7:2NL.1#1a,Wind/10C,+90 degST	-9.130	-0.826	-5.580
9	LC 1001	K7:3NL.1#1a,Wind/10C,+90 degST	-9.906	-0.750	-5.646
10	LC 1001	K11:1NL.1#1a,Wind/10C,+90 degST	0.437	2.895	-0.076
11	LC 1001	K11:2NL.1#1a,Wind/10C,+90 degST	0.056	2.928	-0.086
12	LC 1001	K12:1NL.1#1a,Wind/10C,+90 degST	-1.385	2.532	-0.191
13	LC 1002	K4:1NL.1#1b,Wind/-20C,+90 degST	-3.856	1.740	-0.233
14	LC 1002	K5:1NL.1#1b,Wind/-20C,+90 degST	-1.406	-2.307	0.055
15	LC 1002	K5:2NL.1#1b,Wind/-20C,+90 degST	-1.408	-2.307	-0.025
16	LC 1002	K6:1NL.1#1b,Wind/-20C,+90 degST	-42.263	46.541	-6.050
17	LC 1002	K6:2NL.1#1b,Wind/-20C,+90 degST	-41.480	47.102	-5.771
18	LC 1002	K6:3NL.1#1b,Wind/-20C,+90 degST	-40.425	47.799	-5.471
19	LC 1002	K7:1NL.1#1b,Wind/-20C,+90 degST	0.842	24.181	-5.952
20	LC 1002	K7:2NL.1#1b,Wind/-20C,+90 degST	-1.535	24.610	-6.017
21	LC 1002	K7:3NL.1#1b,Wind/-20C,+90 degST	-3.653	24.856	-6.083
22	LC 1002	K11:1NL.1#1b,Wind/-20C,+90 degST	0.932	5.382	-0.098
23	LC 1002	K11:2NL.1#1b,Wind/-20C,+90 degST	0.260	5.455	-0.103
24	LC 1002	K12:1NL.1#1b,Wind/-20C,+90 degST	-2.513	4.878	-0.311
25	LC 1003	K4:1NL.1#3,Wind / Ice / -5C,+90 degST	-8.953	-2.649	-0.586
26	LC 1003	K5:1NL.1#3,Wind / Ice / -5C,+90 degST	-5.443	-8.157	0.172
27	LC 1003	K5:2NL.1#3,Wind / Ice / -5C,+90 degST	-5.484	-8.145	-0.119
28	LC 1003	K6:1NL.1#3,Wind / Ice / -5C,+90 degST	-34.989	23.253	-6.951
29	LC 1003	K6:2NL.1#3,Wind / Ice / -5C,+90 degST	-34.485	23.696	-6.607
30	LC 1003	K6:3NL.1#3,Wind / Ice / -5C,+90 degST	-33.795	24.233	-6.249
31	LC 1003	K7:1NL.1#3,Wind / Ice / -5C,+90 degST	-5.429	6.905	-6.383
32	LC 1003	K7:2NL.1#3,Wind / Ice / -5C,+90 degST	-6.982	7.174	-6.475
33	LC 1003	K7:3NL.1#3,Wind / Ice / -5C,+90 degST	-8.368	7.324	-6.569
34	LC 1003	K11:1NL.1#3,Wind / Ice / -5C,+90 degST	0.868	5.479	-0.236
35	LC 1003	K11:2NL.1#3,Wind / Ice / -5C,+90 degST	0.160	5.545	-0.284
36	LC 1003	K12:1NL.1#3,Wind / Ice / -5C,+90 degST	-2.592	4.836	-0.465
37	LC 1004	K4:1NL.1#4,Construction/Maintenance +5C,+90 degST	-2.691	0.016	-0.195
38	LC 1004	K5:1NL.1#4,Construction/Maintenance +5C,+90 degST	-1.342	-2.188	0.032
39	LC 1004	K5:2NL.1#4,Construction/Maintenance +5C,+90 degST	-1.344	-2.189	-0.046
40	LC 1004	K6:1NL.1#4,Construction/Maintenance +5C,+90 degST	-21.822	13.317	-6.489
41	LC 1004	K6:2NL.1#4,Construction/Maintenance +5C,+90 degST	-21.529	13.586	-6.253
42	LC 1004	K6:3NL.1#4,Construction/Maintenance +5C,+90 degST	-21.122	13.914	-6.009
43	LC 1004	K7:1NL.1#4,Construction/Maintenance +5C,+90 degST	-3.641	2.938	-6.051
44	LC 1004	K7:2NL.1#4,Construction/Maintenance +5C,+90 degST	-4.577	3.100	-6.116
45	LC 1004	K7:3NL.1#4,Construction/Maintenance +5C,+90 degST	-5.411	3.190	-6.182
46	LC 1004	K11:1NL.1#4,Construction/Maintenance +5C,+90 degST	0.440	2.582	-0.074
47	LC 1004	K11:2NL.1#4,Construction/Maintenance +5C,+90 degST	0.115	2.617	-0.084
48	LC 1004	K12:1NL.1#4,Construction/Maintenance +5C,+90 degST	-1.207	2.325	-0.178
49	LC 1005	K4:1NL.1#1a,Wind/10C,-90 degST	-3.309	-1.587	0.133
50	LC 1005	K5:1NL.1#1a,Wind/10C,-90 degST	-1.730	-4.547	0.417
51	LC 1005	K5:2NL.1#1a,Wind/10C,-90 degST	-1.658	-4.591	0.306
52	LC 1005	K6:1NL.1#1a,Wind/10C,-90 degST	-18.636	8.435	-5.955
53	LC 1005	K6:2NL.1#1a,Wind/10C,-90 degST	-18.478	8.649	-5.707
54	LC 1005	K6:3NL.1#1a,Wind/10C,-90 degST	-18.210	8.920	-5.451
55	LC 1005	K7:1NL.1#1a,Wind/10C,-90 degST	-1.737	-2.947	-5.515
56	LC 1005	K7:2NL.1#1a,Wind/10C,-90 degST	-2.503	-2.807	-5.580
57	LC 1005	K7:3NL.1#1a,Wind/10C,-90 degST	-3.179	-2.732	-5.646
58	LC 1005	K11:1NL.1#1a,Wind/10C,-90 degST	0.577	2.870	-0.076
59	LC 1005	K11:2NL.1#1a,Wind/10C,-90 degST	0.243	2.918	-0.086
60	LC 1005	K12:1NL.1#1a,Wind/10C,-90 degST	-1.243	2.605	-0.191
61	LC 1006	K4:1NL.1#1b,Wind/-20C,-90 degST	-3.573	1.638	-0.233
62	LC 1006	K5:1NL.1#1b,Wind/-20C,-90 degST	-1.179	-2.431	0.055
63	LC 1006	K5:2NL.1#1b,Wind/-20C,-90 degST	-1.158	-2.442	-0.025
64	LC 1006	K6:1NL.1#1b,Wind/-20C,-90 degST	-40.854	46.299	-6.050
65	LC 1006	K6:2NL.1#1b,Wind/-20C,-90 degST	-40.103	46.839	-5.771
66	LC 1006	K6:3NL.1#1b,Wind/-20C,-90 degST	-39.080	47.516	-5.471
67	LC 1006	K7:1NL.1#1b,Wind/-20C,-90 degST	2.126	23.792	-5.952
68	LC 1006	K7:2NL.1#1b,Wind/-20C,-90 degST	-0.231	24.221	-6.017
69	LC 1006	K7:3NL.1#1b,Wind/-20C,-90 degST	-2.330	24.466	-6.083
70	LC 1006	K11:1NL.1#1b,Wind/-20C,-90 degST	0.960	5.377	-0.098
71	LC 1006	K11:2NL.1#1b,Wind/-20C,-90 degST	0.297	5.454	-0.103
72	LC 1006	K12:1NL.1#1b,Wind/-20C,-90 degST	-2.486	4.893	-0.311
73	LC 1007	K4:1NL.1#3,Wind / Ice / -5C,-90 degST	-7.050	-3.333	-0.586
74	LC 1007	K5:1NL.1#3,Wind / Ice / -5C,-90 degST	-3.915	-8.991	0.172
75	LC 1007	K5:2NL.1#3,Wind / Ice / -5C,-90 degST	-3.806	-9.052	-0.119
76	LC 1007	K6:1NL.1#3,Wind / Ice / -5C,-90 degST	-31.677	22.578	-6.951
77	LC 1007	K6:2NL.1#3,Wind / Ice / -5C,-90 degST	-31.262	22.963	-6.607
78	LC 1007	K6:3NL.1#3,Wind / Ice / -5C,-90 degST	-30.662	23.444	-6.249
79	LC 1007	K7:1NL.1#3,Wind / Ice / -5C,-90 degST	-2.466	5.818	-6.383
80	LC 1007	K7:2NL.1#3,Wind / Ice / -5C,-90 degST	-3.965	6.087	-6.475
81	LC 1007	K7:3NL.1#3,Wind / Ice / -5C,-90 degST	-5.295	6.236	-6.569

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
82	LC 1007	K11:1NL.1#3,Wind / Ice / -5C,-90 degST	1.053	5.446	-0.236
83	LC 1007	K11:2NL.1#3,Wind / Ice / -5C,-90 degST	0.407	5.533	-0.284
84	LC 1007	K12:1NL.1#3,Wind / Ice / -5C,-90 degST	-2.405	4.931	-0.465
85	LC 1008	K4:1NL.1#4,Construction/Maintenance +5C,-90 degST	-2.408	-0.085	-0.195
86	LC 1008	K5:1NL.1#4,Construction/Maintenance +5C,-90 degST	-1.114	-2.313	0.032
87	LC 1008	K5:2NL.1#4,Construction/Maintenance +5C,-90 degST	-1.094	-2.324	-0.046
88	LC 1008	K6:1NL.1#4,Construction/Maintenance +5C,-90 degST	-20.413	13.075	-6.489
89	LC 1008	K6:2NL.1#4,Construction/Maintenance +5C,-90 degST	-20.152	13.324	-6.253
90	LC 1008	K6:3NL.1#4,Construction/Maintenance +5C,-90 degST	-19.777	13.632	-6.009
91	LC 1008	K7:1NL.1#4,Construction/Maintenance +5C,-90 degST	-2.357	2.548	-6.051
92	LC 1008	K7:2NL.1#4,Construction/Maintenance +5C,-90 degST	-3.274	2.711	-6.116
93	LC 1008	K7:3NL.1#4,Construction/Maintenance +5C,-90 degST	-4.088	2.801	-6.182
94	LC 1008	K11:1NL.1#4,Construction/Maintenance +5C,-90 degST	0.467	2.578	-0.074
95	LC 1008	K11:2NL.1#4,Construction/Maintenance +5C,-90 degST	0.152	2.615	-0.084
96	LC 1008	K12:1NL.1#4,Construction/Maintenance +5C,-90 degST	-1.179	2.339	-0.178
97	LC 1009	K4:1NL.1#1a,Wind/10C,+45 degST	-3.139	0.672	-0.226
98	LC 1009	K5:1NL.1#1a,Wind/10C,+45 degST	-1.297	-2.144	0.021
99	LC 1009	K5:2NL.1#1a,Wind/10C,+45 degST	-1.302	-2.147	-0.055
100	LC 1009	K6:1NL.1#1a,Wind/10C,+45 degST	-22.245	12.052	-6.528
101	LC 1009	K6:2NL.1#1a,Wind/10C,+45 degST	-21.887	12.314	-6.295
102	LC 1009	K6:3NL.1#1a,Wind/10C,+45 degST	-21.419	12.635	-6.056
103	LC 1009	K7:1NL.1#1a,Wind/10C,+45 degST	-4.925	0.488	-6.074
104	LC 1009	K7:2NL.1#1a,Wind/10C,+45 degST	-5.703	0.693	-6.138
105	LC 1009	K7:3NL.1#1a,Wind/10C,+45 degST	-6.407	0.837	-6.204
106	LC 1009	K11:1NL.1#1a,Wind/10C,+45 degST	0.380	2.353	-0.072
107	LC 1009	K11:2NL.1#1a,Wind/10C,+45 degST	0.072	2.495	-0.084
108	LC 1009	K12:1NL.1#1a,Wind/10C,+45 degST	-1.371	2.510	-0.189
109	LC 1010	K4:1NL.1#1b,Wind/-20C,+45 degST	-3.680	1.806	-0.256
110	LC 1010	K5:1NL.1#1b,Wind/-20C,+45 degST	-1.241	-2.227	0.029
111	LC 1010	K5:2NL.1#1b,Wind/-20C,+45 degST	-1.233	-2.231	-0.048
112	LC 1010	K6:1NL.1#1b,Wind/-20C,+45 degST	-41.844	46.537	-6.077
113	LC 1010	K6:2NL.1#1b,Wind/-20C,+45 degST	-41.061	47.095	-5.798
114	LC 1010	K6:3NL.1#1b,Wind/-20C,+45 degST	-40.005	47.790	-5.499
115	LC 1010	K7:1NL.1#1b,Wind/-20C,+45 degST	1.284	24.180	-5.978
116	LC 1010	K7:2NL.1#1b,Wind/-20C,+45 degST	-1.089	24.609	-6.043
117	LC 1010	K7:3NL.1#1b,Wind/-20C,+45 degST	-3.204	24.855	-6.109
118	LC 1010	K11:1NL.1#1b,Wind/-20C,+45 degST	0.939	5.380	-0.098
119	LC 1010	K11:2NL.1#1b,Wind/-20C,+45 degST	0.268	5.455	-0.103
120	LC 1010	K12:1NL.1#1b,Wind/-20C,+45 degST	-2.513	4.879	-0.311
121	LC 1011	K4:1NL.1#1a,Wind/10C,+45 degST	-7.621	-1.785	-0.802
122	LC 1011	K5:1NL.1#1a,Wind/10C,+45 degST	-4.138	-7.273	-0.066
123	LC 1011	K5:2NL.1#1a,Wind/10C,+45 degST	-4.123	-7.284	-0.336
124	LC 1011	K6:1NL.1#1a,Wind/10C,+45 degST	-33.674	23.606	-7.090
125	LC 1011	K6:2NL.1#1a,Wind/10C,+45 degST	-33.168	24.040	-6.750
126	LC 1011	K6:3NL.1#1a,Wind/10C,+45 degST	-32.476	24.567	-6.396
127	LC 1011	K7:1NL.1#1a,Wind/10C,+45 degST	-4.095	7.113	-6.519
128	LC 1011	K7:2NL.1#1a,Wind/10C,+45 degST	-5.630	7.381	-6.610
129	LC 1011	K7:3NL.1#1a,Wind/10C,+45 degST	-6.999	7.531	-6.705
130	LC 1011	K11:1NL.1#1a,Wind/10C,+45 degST	0.872	5.216	-0.234
131	LC 1011	K11:2NL.1#1a,Wind/10C,+45 degST	0.200	5.331	-0.282
132	LC 1011	K12:1NL.1#1a,Wind/10C,+45 degST	-2.580	4.819	-0.464
133	LC 1012	K4:1NL.1#4,Construction/Maintenance +5C,+45 degST	-2.525	0.088	-0.217
134	LC 1012	K5:1NL.1#4,Construction/Maintenance +5C,+45 degST	-1.179	-2.115	0.007
135	LC 1012	K5:2NL.1#4,Construction/Maintenance +5C,+45 degST	-1.173	-2.119	-0.068
136	LC 1012	K6:1NL.1#4,Construction/Maintenance +5C,+45 degST	-21.404	13.309	-6.515
137	LC 1012	K6:2NL.1#4,Construction/Maintenance +5C,+45 degST	-21.112	13.576	-6.280
138	LC 1012	K6:3NL.1#4,Construction/Maintenance +5C,+45 degST	-20.705	13.901	-6.036
139	LC 1012	K7:1NL.1#4,Construction/Maintenance +5C,+45 degST	-3.218	2.856	-6.077
140	LC 1012	K7:2NL.1#4,Construction/Maintenance +5C,+45 degST	-4.140	3.056	-6.142
141	LC 1012	K7:3NL.1#4,Construction/Maintenance +5C,+45 degST	-4.968	3.146	-6.208
142	LC 1012	K11:1NL.1#4,Construction/Maintenance +5C,+45 degST	0.443	2.555	-0.074
143	LC 1012	K11:2NL.1#4,Construction/Maintenance +5C,+45 degST	0.122	2.590	-0.084
144	LC 1012	K12:1NL.1#4,Construction/Maintenance +5C,+45 degST	-1.207	2.325	-0.178
145	LC 1013	K4:1NL.1#1a,Wind/10C,+45 degST	-2.703	0.695	-0.226
146	LC 1013	K5:1NL.1#1a,Wind/10C,+45 degST	-1.101	-2.251	0.021
147	LC 1013	K5:2NL.1#1a,Wind/10C,+45 degST	-1.082	-2.266	-0.055
148	LC 1013	K6:1NL.1#1a,Wind/10C,+45 degST	-18.485	12.426	-6.528
149	LC 1013	K6:2NL.1#1a,Wind/10C,+45 degST	-18.277	12.603	-6.295
150	LC 1013	K6:3NL.1#1a,Wind/10C,+45 degST	-17.958	12.839	-6.056
151	LC 1013	K7:1NL.1#1a,Wind/10C,+45 degST	-2.065	0.106	-6.074
152	LC 1013	K7:2NL.1#1a,Wind/10C,+45 degST	-2.780	0.309	-6.138
153	LC 1013	K7:3NL.1#1a,Wind/10C,+45 degST	-3.420	0.455	-6.204
154	LC 1013	K11:1NL.1#1a,Wind/10C,+45 degST	0.445	2.341	-0.072
155	LC 1013	K11:2NL.1#1a,Wind/10C,+45 degST	0.182	2.490	-0.084
156	LC 1013	K12:1NL.1#1a,Wind/10C,+45 degST	-1.233	2.580	-0.189
157	LC 1014	K4:1NL.1#1b,Wind/-20C,+45 degST	-3.594	1.810	-0.256
158	LC 1014	K5:1NL.1#1b,Wind/-20C,+45 degST	-1.202	-2.248	0.029
159	LC 1014	K5:2NL.1#1b,Wind/-20C,+45 degST	-1.190	-2.255	-0.048
160	LC 1014	K6:1NL.1#1b,Wind/-20C,+45 degST	-41.103	46.610	-6.077
161	LC 1014	K6:2NL.1#1b,Wind/-20C,+45 degST	-40.350	47.152	-5.798
162	LC 1014	K6:3NL.1#1b,Wind/-20C,+45 degST	-39.324	47.830	-5.499

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
163	LC 1014	K7:1NL.1#1b,Wind/-20C,+45 degST	1.848	24.105	-5.978
164	LC 1014	K7:2NL.1#1b,Wind/-20C,+45 degST	-0.513	24.533	-6.043
165	LC 1014	K7:3NL.1#1b,Wind/-20C,+45 degST	-2.616	24.780	-6.109
166	LC 1014	K11:1NL.1#1b,Wind/-20C,+45 degST	0.952	5.378	-0.098
167	LC 1014	K11:2NL.1#1b,Wind/-20C,+45 degST	0.290	5.454	-0.103
168	LC 1014	K12:1NL.1#1b,Wind/-20C,+45 degST	-2.486	4.892	-0.311
169	LC 1015	K4:1NL.1#3,Wind / Ice / -5C,+45 degST	-7.045	-1.754	-0.802
170	LC 1015	K5:1NL.1#3,Wind / Ice / -5C,+45 degST	-3.878	-7.415	-0.066
171	LC 1015	K5:2NL.1#3,Wind / Ice / -5C,+45 degST	-3.832	-7.441	-0.336
172	LC 1015	K6:1NL.1#3,Wind / Ice / -5C,+45 degST	-32.108	23.812	-7.090
173	LC 1015	K6:2NL.1#3,Wind / Ice / -5C,+45 degST	-31.684	24.198	-6.750
174	LC 1015	K6:3NL.1#3,Wind / Ice / -5C,+45 degST	-31.075	24.679	-6.396
175	LC 1015	K7:1NL.1#3,Wind / Ice / -5C,+45 degST	-3.024	6.903	-6.519
176	LC 1015	K7:2NL.1#3,Wind / Ice / -5C,+45 degST	-4.524	7.171	-6.610
177	LC 1015	K7:3NL.1#3,Wind / Ice / -5C,+45 degST	-5.858	7.321	-6.705
178	LC 1015	K11:1NL.1#3,Wind / Ice / -5C,+45 degST	0.959	5.200	-0.234
179	LC 1015	K11:2NL.1#3,Wind / Ice / -5C,+45 degST	0.345	5.324	-0.282
180	LC 1015	K12:1NL.1#3,Wind / Ice / -5C,+45 degST	-2.399	4.912	-0.464
181	LC 1016	K4:1NL.1#4,Construction/Maintenance +5C,+45 degST	-2.439	0.093	-0.217
182	LC 1016	K5:1NL.1#4,Construction/Maintenance +5C,+45 degST	-1.140	-2.136	0.007
183	LC 1016	K5:2NL.1#4,Construction/Maintenance +5C,+45 degST	-1.130	-2.143	-0.068
184	LC 1016	K6:1NL.1#4,Construction/Maintenance +5C,+45 degST	-20.664	13.382	-6.515
185	LC 1016	K6:2NL.1#4,Construction/Maintenance +5C,+45 degST	-20.401	13.632	-6.280
186	LC 1016	K6:3NL.1#4,Construction/Maintenance +5C,+45 degST	-20.023	13.941	-6.036
187	LC 1016	K7:1NL.1#4,Construction/Maintenance +5C,+45 degST	-2.654	2.781	-6.077
188	LC 1016	K7:2NL.1#4,Construction/Maintenance +5C,+45 degST	-3.564	2.981	-6.142
189	LC 1016	K7:3NL.1#4,Construction/Maintenance +5C,+45 degST	-4.380	3.071	-6.208
190	LC 1016	K11:1NL.1#4,Construction/Maintenance +5C,+45 degST	0.455	2.553	-0.074
191	LC 1016	K11:2NL.1#4,Construction/Maintenance +5C,+45 degST	0.143	2.589	-0.084
192	LC 1016	K12:1NL.1#4,Construction/Maintenance +5C,+45 degST	-1.180	2.339	-0.178
193	LC 1017	K4:1NL.1#1a,Wind/10C,-45 degST	-3.674	-1.506	0.072
194	LC 1017	K5:1NL.1#1a,Wind/10C,-45 degST	-2.510	-3.457	0.317
195	LC 1017	K5:2NL.1#1a,Wind/10C,-45 degST	-2.537	-3.439	0.213
196	LC 1017	K6:1NL.1#1a,Wind/10C,-45 degST	-22.252	7.956	-6.145
197	LC 1017	K6:2NL.1#1a,Wind/10C,-45 degST	-22.059	8.169	-5.898
198	LC 1017	K6:3NL.1#1a,Wind/10C,-45 degST	-21.765	8.441	-5.645
199	LC 1017	K7:1NL.1#1a,Wind/10C,-45 degST	-6.996	-0.971	-5.690
200	LC 1017	K7:2NL.1#1a,Wind/10C,-45 degST	-7.786	-0.910	-5.756
201	LC 1017	K7:3NL.1#1a,Wind/10C,-45 degST	-8.481	-0.908	-5.824
202	LC 1017	K11:1NL.1#1a,Wind/10C,-45 degST	0.387	2.419	-0.072
203	LC 1017	K11:2NL.1#1a,Wind/10C,-45 degST	0.081	2.342	-0.083
204	LC 1017	K12:1NL.1#1a,Wind/10C,-45 degST	-0.985	1.920	-0.157
205	LC 1018	K4:1NL.1#1b,Wind/-20C,-45 degST	-3.771	1.750	-0.239
206	LC 1018	K5:1NL.1#1b,Wind/-20C,-45 degST	-1.365	-2.276	0.047
207	LC 1018	K5:2NL.1#1b,Wind/-20C,-45 degST	-1.363	-2.277	-0.033
208	LC 1018	K6:1NL.1#1b,Wind/-20C,-45 degST	-41.891	46.489	-6.059
209	LC 1018	K6:2NL.1#1b,Wind/-20C,-45 degST	-41.124	47.040	-5.780
210	LC 1018	K6:3NL.1#1b,Wind/-20C,-45 degST	-40.085	47.728	-5.481
211	LC 1018	K7:1NL.1#1b,Wind/-20C,-45 degST	1.050	24.199	-5.961
212	LC 1018	K7:2NL.1#1b,Wind/-20C,-45 degST	-1.321	24.627	-6.026
213	LC 1018	K7:3NL.1#1b,Wind/-20C,-45 degST	-3.433	24.873	-6.092
214	LC 1018	K11:1NL.1#1b,Wind/-20C,-45 degST	0.938	5.380	-0.098
215	LC 1018	K11:2NL.1#1b,Wind/-20C,-45 degST	0.271	5.455	-0.103
216	LC 1018	K12:1NL.1#1b,Wind/-20C,-45 degST	-2.500	4.886	-0.311
217	LC 1019	K4:1NL.1#3,Wind / Ice / -5C,-45 degST	-8.208	-2.687	-0.638
218	LC 1019	K5:1NL.1#3,Wind / Ice / -5C,-45 degST	-5.111	-7.859	0.101
219	LC 1019	K5:2NL.1#3,Wind / Ice / -5C,-45 degST	-5.135	-7.847	-0.185
220	LC 1019	K6:1NL.1#3,Wind / Ice / -5C,-45 degST	-33.951	23.127	-6.998
221	LC 1019	K6:2NL.1#3,Wind / Ice / -5C,-45 degST	-33.497	23.533	-6.654
222	LC 1019	K6:3NL.1#3,Wind / Ice / -5C,-45 degST	-32.858	24.036	-6.297
223	LC 1019	K7:1NL.1#3,Wind / Ice / -5C,-45 degST	-4.942	6.917	-6.429
224	LC 1019	K7:2NL.1#3,Wind / Ice / -5C,-45 degST	-6.469	7.183	-6.520
225	LC 1019	K7:3NL.1#3,Wind / Ice / -5C,-45 degST	-7.827	7.337	-6.615
226	LC 1019	K11:1NL.1#3,Wind / Ice / -5C,-45 degST	0.871	5.243	-0.234
227	LC 1019	K11:2NL.1#3,Wind / Ice / -5C,-45 degST	0.218	5.264	-0.282
228	LC 1019	K12:1NL.1#3,Wind / Ice / -5C,-45 degST	-2.360	4.606	-0.450
229	LC 1020	K4:1NL.1#4,Construction/Maintenance +5C,-45 degST	-2.593	0.002	-0.201
230	LC 1020	K5:1NL.1#4,Construction/Maintenance +5C,-45 degST	-1.301	-2.160	0.024
231	LC 1020	K5:2NL.1#4,Construction/Maintenance +5C,-45 degST	-1.301	-2.161	-0.053
232	LC 1020	K6:1NL.1#4,Construction/Maintenance +5C,-45 degST	-21.452	13.261	-6.497
233	LC 1020	K6:2NL.1#4,Construction/Maintenance +5C,-45 degST	-21.175	13.521	-6.262
234	LC 1020	K6:3NL.1#4,Construction/Maintenance +5C,-45 degST	-20.785	13.839	-6.018
235	LC 1020	K7:1NL.1#4,Construction/Maintenance +5C,-45 degST	-3.444	2.913	-6.060
236	LC 1020	K7:2NL.1#4,Construction/Maintenance +5C,-45 degST	-4.372	3.074	-6.124
237	LC 1020	K7:3NL.1#4,Construction/Maintenance +5C,-45 degST	-5.197	3.164	-6.191
238	LC 1020	K11:1NL.1#4,Construction/Maintenance +5C,-45 degST	0.442	2.555	-0.074
239	LC 1020	K11:2NL.1#4,Construction/Maintenance +5C,-45 degST	0.125	2.590	-0.084
240	LC 1020	K12:1NL.1#4,Construction/Maintenance +5C,-45 degST	-1.178	2.302	-0.177
241	LC 1021	K4:1NL.1#1a,Wind/10C,-45 degST	-2.669	-2.048	0.072
242	LC 1021	K5:1NL.1#1a,Wind/10C,-45 degST	-1.549	-3.981	0.317
243	LC 1021	K5:2NL.1#1a,Wind/10C,-45 degST	-1.486	-4.007	0.213

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
244	LC 1021	K6:1NL.1#1a,Wind/10C,-45 degST	-17.811	6.351	-6.145
245	LC 1021	K6:2NL.1#1a,Wind/10C,-45 degST	-17.631	6.546	-5.898
246	LC 1021	K6:3NL.1#1a,Wind/10C,-45 degST	-17.351	6.800	-5.645
247	LC 1021	K7:1NL.1#1a,Wind/10C,-45 degST	-2.290	-2.569	-5.690
248	LC 1021	K7:2NL.1#1a,Wind/10C,-45 degST	-3.043	-2.506	-5.756
249	LC 1021	K7:3NL.1#1a,Wind/10C,-45 degST	-3.701	-2.506	-5.824
250	LC 1021	K11:1NL.1#1a,Wind/10C,-45 degST	0.462	2.406	-0.072
251	LC 1021	K11:2NL.1#1a,Wind/10C,-45 degST	0.158	2.338	-0.083
252	LC 1021	K12:1NL.1#1a,Wind/10C,-45 degST	-0.981	1.922	-0.157
253	LC 1022	K4:1NL.1#1b,Wind/-20C,-45 degST	-3.573	1.643	-0.239
254	LC 1022	K5:1NL.1#1b,Wind/-20C,-45 degST	-1.176	-2.379	0.047
255	LC 1022	K5:2NL.1#1b,Wind/-20C,-45 degST	-1.157	-2.389	-0.033
256	LC 1022	K6:1NL.1#1b,Wind/-20C,-45 degST	-41.017	46.173	-6.059
257	LC 1022	K6:2NL.1#1b,Wind/-20C,-45 degST	-40.253	46.721	-5.780
258	LC 1022	K6:3NL.1#1b,Wind/-20C,-45 degST	-39.217	47.405	-5.481
259	LC 1022	K7:1NL.1#1b,Wind/-20C,-45 degST	1.976	23.884	-5.961
260	LC 1022	K7:2NL.1#1b,Wind/-20C,-45 degST	-0.387	24.313	-6.026
261	LC 1022	K7:3NL.1#1b,Wind/-20C,-45 degST	-2.493	24.559	-6.092
262	LC 1022	K11:1NL.1#1b,Wind/-20C,-45 degST	0.953	5.378	-0.098
263	LC 1022	K11:2NL.1#1b,Wind/-20C,-45 degST	0.286	5.454	-0.103
264	LC 1022	K12:1NL.1#1b,Wind/-20C,-45 degST	-2.499	4.886	-0.311
265	LC 1023	K4:1NL.1#3,Wind / Ice / -5C,-45 degST	-6.882	-3.402	-0.638
266	LC 1023	K5:1NL.1#3,Wind / Ice / -5C,-45 degST	-3.844	-8.551	0.101
267	LC 1023	K5:2NL.1#3,Wind / Ice / -5C,-45 degST	-3.749	-8.596	-0.185
268	LC 1023	K6:1NL.1#3,Wind / Ice / -5C,-45 degST	-31.889	22.246	-6.998
269	LC 1023	K6:2NL.1#3,Wind / Ice / -5C,-45 degST	-31.443	22.642	-6.654
270	LC 1023	K6:3NL.1#3,Wind / Ice / -5C,-45 degST	-30.812	23.135	-6.297
271	LC 1023	K7:1NL.1#3,Wind / Ice / -5C,-45 degST	-2.736	6.040	-6.429
272	LC 1023	K7:2NL.1#3,Wind / Ice / -5C,-45 degST	-4.242	6.307	-6.520
273	LC 1023	K7:3NL.1#3,Wind / Ice / -5C,-45 degST	-5.579	6.460	-6.615
274	LC 1023	K11:1NL.1#3,Wind / Ice / -5C,-45 degST	0.970	5.225	-0.234
275	LC 1023	K11:2NL.1#3,Wind / Ice / -5C,-45 degST	0.320	5.258	-0.282
276	LC 1023	K12:1NL.1#3,Wind / Ice / -5C,-45 degST	-2.354	4.609	-0.450
277	LC 1024	K4:1NL.1#4,Construction/Maintenance +5C,-45 degST	-2.395	-0.105	-0.201
278	LC 1024	K5:1NL.1#4,Construction/Maintenance +5C,-45 degST	-1.113	-2.263	0.024
279	LC 1024	K5:2NL.1#4,Construction/Maintenance +5C,-45 degST	-1.094	-2.272	-0.053
280	LC 1024	K6:1NL.1#4,Construction/Maintenance +5C,-45 degST	-20.578	12.945	-6.497
281	LC 1024	K6:2NL.1#4,Construction/Maintenance +5C,-45 degST	-20.304	13.201	-6.262
282	LC 1024	K6:3NL.1#4,Construction/Maintenance +5C,-45 degST	-19.917	13.516	-6.018
283	LC 1024	K7:1NL.1#4,Construction/Maintenance +5C,-45 degST	-2.518	2.598	-6.060
284	LC 1024	K7:2NL.1#4,Construction/Maintenance +5C,-45 degST	-3.438	2.760	-6.124
285	LC 1024	K7:3NL.1#4,Construction/Maintenance +5C,-45 degST	-4.257	2.850	-6.191
286	LC 1024	K11:1NL.1#4,Construction/Maintenance +5C,-45 degST	0.456	2.553	-0.074
287	LC 1024	K11:2NL.1#4,Construction/Maintenance +5C,-45 degST	0.140	2.589	-0.084
288	LC 1024	K12:1NL.1#4,Construction/Maintenance +5C,-45 degST	-1.178	2.303	-0.177
289	LC 1025	K4:1NL.1#1a,Wind/10C,+0 degST	-2.428	-0.070	-0.211
290	LC 1025	K5:1NL.1#1a,Wind/10C,+0 degST	-1.103	-2.192	0.013
291	LC 1025	K5:2NL.1#1a,Wind/10C,+0 degST	-1.088	-2.197	-0.064
292	LC 1025	K6:1NL.1#1a,Wind/10C,+0 degST	-19.172	9.733	-6.556
293	LC 1025	K6:2NL.1#1a,Wind/10C,+0 degST	-18.870	9.907	-6.326
294	LC 1025	K6:3NL.1#1a,Wind/10C,+0 degST	-18.510	10.199	-6.087
295	LC 1025	K7:1NL.1#1a,Wind/10C,+0 degST	-3.484	-0.003	-6.087
296	LC 1025	K7:2NL.1#1a,Wind/10C,+0 degST	-4.223	0.125	-6.152
297	LC 1025	K7:3NL.1#1a,Wind/10C,+0 degST	-4.877	0.199	-6.219
298	LC 1025	K11:1NL.1#1a,Wind/10C,+0 degST	0.374	2.125	-0.070
299	LC 1025	K11:2NL.1#1a,Wind/10C,+0 degST	0.109	2.155	-0.081
300	LC 1025	K12:1NL.1#1a,Wind/10C,+0 degST	-1.057	2.009	-0.162
301	LC 1026	K4:1NL.1#1b,Wind/-20C+,0 degST	-3.617	1.774	-0.255
302	LC 1026	K5:1NL.1#1b,Wind/-20C+,0 degST	-1.206	-2.243	0.029
303	LC 1026	K5:2NL.1#1b,Wind/-20C+,0 degST	-1.196	-2.249	-0.049
304	LC 1026	K6:1NL.1#1b,Wind/-20C+,0 degST	-41.429	46.388	-6.078
305	LC 1026	K6:2NL.1#1b,Wind/-20C+,0 degST	-40.656	46.940	-5.800
306	LC 1026	K6:3NL.1#1b,Wind/-20C+,0 degST	-39.611	47.628	-5.501
307	LC 1026	K7:1NL.1#1b,Wind/-20C+,0 degST	1.574	24.125	-5.979
308	LC 1026	K7:2NL.1#1b,Wind/-20C+,0 degST	-0.793	24.554	-6.044
309	LC 1026	K7:3NL.1#1b,Wind/-20C+,0 degST	-2.902	24.800	-6.110
310	LC 1026	K11:1NL.1#1b,Wind/-20C+,0 degST	0.944	5.366	-0.098
311	LC 1026	K11:2NL.1#1b,Wind/-20C+,0 degST	0.278	5.441	-0.103
312	LC 1026	K12:1NL.1#1b,Wind/-20C+,0 degST	-2.504	4.884	-0.311
313	LC 1027	K4:1NL.1#3,Wind / Ice / -5C,+0 degST	-7.078	-2.185	-0.795
314	LC 1027	K5:1NL.1#3,Wind / Ice / -5C,+0 degST	-3.902	-7.376	-0.070
315	LC 1027	K5:2NL.1#3,Wind / Ice / -5C,+0 degST	-3.864	-7.396	-0.340
316	LC 1027	K6:1NL.1#3,Wind / Ice / -5C,+0 degST	-32.704	23.171	-7.095
317	LC 1027	K6:2NL.1#3,Wind / Ice / -5C,+0 degST	-32.227	23.583	-6.755
318	LC 1027	K6:3NL.1#3,Wind / Ice / -5C,+0 degST	-31.564	24.092	-6.401
319	LC 1027	K7:1NL.1#3,Wind / Ice / -5C,+0 degST	-3.491	6.965	-6.521
320	LC 1027	K7:2NL.1#3,Wind / Ice / -5C,+0 degST	-5.009	7.234	-6.613
321	LC 1027	K7:3NL.1#3,Wind / Ice / -5C,+0 degST	-6.360	7.383	-6.707
322	LC 1027	K11:1NL.1#3,Wind / Ice / -5C,+0 degST	0.903	5.136	-0.234
323	LC 1027	K11:2NL.1#3,Wind / Ice / -5C,+0 degST	0.265	5.208	-0.282
324	LC 1027	K12:1NL.1#3,Wind / Ice / -5C,+0 degST	-2.403	4.621	-0.452

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
325	LC 1028	K4:1NL.1#4,Construction/Maintenance +5C,+0 degST	-2.445	0.028	-0.216
326	LC 1028	K5:1NL.1#4,Construction/Maintenance +5C,+0 degST	-1.145	-2.131	0.007
327	LC 1028	K5:2NL.1#4,Construction/Maintenance +5C,+0 degST	-1.135	-2.137	-0.069
328	LC 1028	K6:1NL.1#4,Construction/Maintenance +5C,+0 degST	-20.990	13.160	-6.516
329	LC 1028	K6:2NL.1#4,Construction/Maintenance +5C,+0 degST	-20.707	13.420	-6.281
330	LC 1028	K6:3NL.1#4,Construction/Maintenance +5C,+0 degST	-20.310	13.739	-6.038
331	LC 1028	K7:1NL.1#4,Construction/Maintenance +5C,+0 degST	-2.930	2.797	-6.077
332	LC 1028	K7:2NL.1#4,Construction/Maintenance +5C,+0 degST	-3.852	2.959	-6.142
333	LC 1028	K7:3NL.1#4,Construction/Maintenance +5C,+0 degST	-4.672	3.048	-6.208
334	LC 1028	K11:1NL.1#4,Construction/Maintenance +5C,+0 degST	0.447	2.541	-0.073
335	LC 1028	K11:2NL.1#4,Construction/Maintenance +5C,+0 degST	0.132	2.576	-0.084
336	LC 1028	K12:1NL.1#4,Construction/Maintenance +5C,+0 degST	-1.186	2.306	-0.177
337	LC 1029	K4:1NL.1#1a,Wind/10C,-0 degST	-2.484	0.065	-0.211
338	LC 1029	K5:1NL.1#1a,Wind/10C,-0 degST	-1.246	-2.114	0.013
339	LC 1029	K5:2NL.1#1a,Wind/10C,-0 degST	-1.241	-2.114	-0.064
340	LC 1029	K6:1NL.1#1a,Wind/10C,-0 degST	-18.808	10.256	-6.556
341	LC 1029	K6:2NL.1#1a,Wind/10C,-0 degST	-18.580	10.396	-6.326
342	LC 1029	K6:3NL.1#1a,Wind/10C,-0 degST	-18.294	10.655	-6.087
343	LC 1029	K7:1NL.1#1a,Wind/10C,-0 degST	-3.543	0.214	-6.087
344	LC 1029	K7:2NL.1#1a,Wind/10C,-0 degST	-4.282	0.342	-6.152
345	LC 1029	K7:3NL.1#1a,Wind/10C,-0 degST	-4.937	0.415	-6.219
346	LC 1029	K11:1NL.1#1a,Wind/10C,-0 degST	0.374	2.125	-0.070
347	LC 1029	K11:2NL.1#1a,Wind/10C,-0 degST	0.111	2.155	-0.081
348	LC 1029	K12:1NL.1#1a,Wind/10C,-0 degST	-1.010	2.033	-0.162
349	LC 1030	K4:1NL.1#1b,Wind/-20C,-0 degST	-3.628	1.801	-0.255
350	LC 1030	K5:1NL.1#1b,Wind/-20C,-0 degST	-1.234	-2.228	0.029
351	LC 1030	K5:2NL.1#1b,Wind/-20C,-0 degST	-1.226	-2.233	-0.049
352	LC 1030	K6:1NL.1#1b,Wind/-20C,-0 degST	-41.358	46.490	-6.078
353	LC 1030	K6:2NL.1#1b,Wind/-20C,-0 degST	-40.599	47.036	-5.800
354	LC 1030	K6:3NL.1#1b,Wind/-20C,-0 degST	-39.568	47.718	-5.501
355	LC 1030	K7:1NL.1#1b,Wind/-20C,-0 degST	1.563	24.168	-5.979
356	LC 1030	K7:2NL.1#1b,Wind/-20C,-0 degST	-0.804	24.597	-6.044
357	LC 1030	K7:3NL.1#1b,Wind/-20C,-0 degST	-2.914	24.843	-6.110
358	LC 1030	K11:1NL.1#1b,Wind/-20C,-0 degST	0.943	5.366	-0.098
359	LC 1030	K11:2NL.1#1b,Wind/-20C,-0 degST	0.278	5.441	-0.103
360	LC 1030	K12:1NL.1#1b,Wind/-20C,-0 degST	-2.495	4.888	-0.311
361	LC 1031	K4:1NL.1#3,Wind / Ice / -5C,-0 degST	-7.152	-2.008	-0.795
362	LC 1031	K5:1NL.1#3,Wind / Ice / -5C,-0 degST	-4.092	-7.273	-0.070
363	LC 1031	K5:2NL.1#3,Wind / Ice / -5C,-0 degST	-4.068	-7.286	-0.340
364	LC 1031	K6:1NL.1#3,Wind / Ice / -5C,-0 degST	-32.591	23.458	-7.095
365	LC 1031	K6:2NL.1#3,Wind / Ice / -5C,-0 degST	-32.155	23.851	-6.755
366	LC 1031	K6:3NL.1#3,Wind / Ice / -5C,-0 degST	-31.532	24.342	-6.401
367	LC 1031	K7:1NL.1#3,Wind / Ice / -5C,-0 degST	-3.610	7.084	-6.521
368	LC 1031	K7:2NL.1#3,Wind / Ice / -5C,-0 degST	-5.128	7.352	-6.613
369	LC 1031	K7:3NL.1#3,Wind / Ice / -5C,-0 degST	-6.479	7.502	-6.707
370	LC 1031	K11:1NL.1#3,Wind / Ice / -5C,-0 degST	0.903	5.136	-0.234
371	LC 1031	K11:2NL.1#3,Wind / Ice / -5C,-0 degST	0.267	5.208	-0.282
372	LC 1031	K12:1NL.1#3,Wind / Ice / -5C,-0 degST	-2.341	4.652	-0.452
373	LC 1032	K4:1NL.1#4,Construction/Maintenance +5C,-0 degST	-2.456	0.054	-0.216
374	LC 1032	K5:1NL.1#4,Construction/Maintenance +5C,-0 degST	-1.173	-2.116	0.007
375	LC 1032	K5:2NL.1#4,Construction/Maintenance +5C,-0 degST	-1.165	-2.121	-0.069
376	LC 1032	K6:1NL.1#4,Construction/Maintenance +5C,-0 degST	-20.918	13.263	-6.516
377	LC 1032	K6:2NL.1#4,Construction/Maintenance +5C,-0 degST	-20.650	13.517	-6.281
378	LC 1032	K6:3NL.1#4,Construction/Maintenance +5C,-0 degST	-20.268	13.829	-6.038
379	LC 1032	K7:1NL.1#4,Construction/Maintenance +5C,-0 degST	-2.942	2.840	-6.077
380	LC 1032	K7:2NL.1#4,Construction/Maintenance +5C,-0 degST	-3.863	3.001	-6.142
381	LC 1032	K7:3NL.1#4,Construction/Maintenance +5C,-0 degST	-4.684	3.091	-6.208
382	LC 1032	K11:1NL.1#4,Construction/Maintenance +5C,-0 degST	0.447	2.541	-0.073
383	LC 1032	K11:2NL.1#4,Construction/Maintenance +5C,-0 degST	0.132	2.576	-0.084
384	LC 1032	K12:1NL.1#4,Construction/Maintenance +5C,-0 degST	-1.176	2.311	-0.177
385	LC 1033	K4:1NL.1#1a,gunstig,Wind/10C,+90 degST	-4.494	-0.949	0.284
386	LC 1033	K5:1NL.1#1a,gunstig,Wind/10C,+90 degST	-2.732	-3.626	0.514
387	LC 1033	K5:2NL.1#1a,gunstig,Wind/10C,+90 degST	-2.775	-3.614	0.423
388	LC 1033	K6:1NL.1#1a,gunstig,Wind/10C,+90 degST	-22.035	8.804	-3.983
389	LC 1033	K6:2NL.1#1a,gunstig,Wind/10C,+90 degST	-21.746	9.079	-3.810
390	LC 1033	K6:3NL.1#1a,gunstig,Wind/10C,+90 degST	-21.365	9.402	-3.630
391	LC 1033	K7:1NL.1#1a,gunstig,Wind/10C,+90 degST	-7.129	0.188	-3.767
392	LC 1033	K7:2NL.1#1a,gunstig,Wind/10C,+90 degST	-7.889	0.311	-3.808
393	LC 1033	K7:3NL.1#1a,gunstig,Wind/10C,+90 degST	-8.571	0.377	-3.849
394	LC 1033	K11:1NL.1#1a,gunstig,Wind/10C,+90 degST	0.412	2.758	-0.056
395	LC 1033	K11:2NL.1#1a,gunstig,Wind/10C,+90 degST	0.049	2.789	-0.060
396	LC 1033	K12:1NL.1#1a,gunstig,Wind/10C,+90 degST	-1.324	2.414	-0.163
397	LC 1034	K4:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-3.327	2.262	-0.160
398	LC 1034	K5:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-1.004	-1.569	0.064
399	LC 1034	K5:2NL.1#1b,gunstig,Wind/-20C,+90 degST	-1.009	-1.569	0.011
400	LC 1034	K6:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-38.981	49.386	-4.322
401	LC 1034	K6:2NL.1#1b,gunstig,Wind/-20C,+90 degST	-38.188	49.917	-4.121
402	LC 1034	K6:3NL.1#1b,gunstig,Wind/-20C,+90 degST	-37.128	50.580	-3.901
403	LC 1034	K7:1NL.1#1b,gunstig,Wind/-20C,+90 degST	3.060	28.164	-4.461
404	LC 1034	K7:2NL.1#1b,gunstig,Wind/-20C,+90 degST	0.698	28.594	-4.501
405	LC 1034	K7:3NL.1#1b,gunstig,Wind/-20C,+90 degST	-1.408	28.842	-4.543

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
406	LC 1034	K11:1NL.1#1b,gunstig,Wind/-20C,+90 degST	0.918	5.303	-0.078
407	LC 1034	K11:2NL.1#1b,gunstig,Wind/-20C,+90 degST	0.256	5.376	-0.077
408	LC 1034	K12:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-2.483	4.819	-0.286
409	LC 1035	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-8.519	-2.350	-0.477
410	LC 1035	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-5.151	-7.622	0.221
411	LC 1035	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-5.195	-7.609	-0.046
412	LC 1035	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-30.783	23.737	-5.168
413	LC 1035	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-30.299	24.135	-4.904
414	LC 1035	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-29.646	24.618	-4.626
415	LC 1035	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-3.608	9.646	-4.823
416	LC 1035	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-5.090	9.905	-4.890
417	LC 1035	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-6.413	10.051	-4.960
418	LC 1035	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	0.835	5.296	-0.216
419	LC 1035	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	0.150	5.360	-0.257
420	LC 1035	K12:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-2.510	4.676	-0.435
421	LC 1036	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-2.047	0.284	-0.110
422	LC 1036	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-0.958	-1.485	0.047
423	LC 1036	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-0.963	-1.484	-0.004
424	LC 1036	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-16.584	12.460	-4.757
425	LC 1036	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-16.334	12.670	-4.603
426	LC 1036	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-15.992	12.927	-4.443
427	LC 1036	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-1.876	5.128	-4.527
428	LC 1036	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-2.691	5.271	-4.568
429	LC 1036	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-3.418	5.351	-4.609
430	LC 1036	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	0.394	2.321	-0.052
431	LC 1036	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	0.102	2.352	-0.057
432	LC 1036	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-1.092	2.100	-0.145
433	LC 1037	K4:1NL.1#1a,gunstig,Wind/10C,-90 degST	-3.049	-1.468	0.284
434	LC 1037	K5:1NL.1#1a,gunstig,Wind/10C,-90 degST	-1.572	-4.259	0.514
435	LC 1037	K5:2NL.1#1a,gunstig,Wind/10C,-90 degST	-1.501	-4.302	0.423
436	LC 1037	K6:1NL.1#1a,gunstig,Wind/10C,-90 degST	-14.869	7.569	-3.983
437	LC 1037	K6:2NL.1#1a,gunstig,Wind/10C,-90 degST	-14.743	7.741	-3.810
438	LC 1037	K6:3NL.1#1a,gunstig,Wind/10C,-90 degST	-14.525	7.960	-3.630
439	LC 1037	K7:1NL.1#1a,gunstig,Wind/10C,-90 degST	-0.598	-1.795	-3.767
440	LC 1037	K7:2NL.1#1a,gunstig,Wind/10C,-90 degST	-1.258	-1.673	-3.808
441	LC 1037	K7:3NL.1#1a,gunstig,Wind/10C,-90 degST	-1.839	-1.607	-3.849
442	LC 1037	K11:1NL.1#1a,gunstig,Wind/10C,-90 degST	0.553	2.733	-0.056
443	LC 1037	K11:2NL.1#1a,gunstig,Wind/10C,-90 degST	0.236	2.779	-0.060
444	LC 1037	K12:1NL.1#1a,gunstig,Wind/10C,-90 degST	-1.183	2.487	-0.163
445	LC 1038	K4:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-3.043	2.160	-0.160
446	LC 1038	K5:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-0.777	-1.694	0.064
447	LC 1038	K5:2NL.1#1b,gunstig,Wind/-20C,-90 degST	-0.759	-1.704	0.011
448	LC 1038	K6:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-37.572	49.144	-4.322
449	LC 1038	K6:2NL.1#1b,gunstig,Wind/-20C,-90 degST	-36.810	49.654	-4.121
450	LC 1038	K6:3NL.1#1b,gunstig,Wind/-20C,-90 degST	-35.783	50.297	-3.901
451	LC 1038	K7:1NL.1#1b,gunstig,Wind/-20C,-90 degST	4.344	27.775	-4.461
452	LC 1038	K7:2NL.1#1b,gunstig,Wind/-20C,-90 degST	2.002	28.204	-4.501
453	LC 1038	K7:3NL.1#1b,gunstig,Wind/-20C,-90 degST	-0.085	28.452	-4.543
454	LC 1038	K11:1NL.1#1b,gunstig,Wind/-20C,-90 degST	0.946	5.298	-0.078
455	LC 1038	K11:2NL.1#1b,gunstig,Wind/-20C,-90 degST	0.293	5.374	-0.077
456	LC 1038	K12:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-2.455	4.833	-0.286
457	LC 1039	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-6.615	-3.034	-0.477
458	LC 1039	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-3.623	-8.455	0.221
459	LC 1039	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-3.517	-8.516	-0.046
460	LC 1039	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-27.470	23.061	-5.168
461	LC 1039	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-27.076	23.402	-4.904
462	LC 1039	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-26.512	23.828	-4.626
463	LC 1039	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-0.645	8.559	-4.823
464	LC 1039	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-2.072	8.818	-4.890
465	LC 1039	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-3.340	8.963	-4.960
466	LC 1039	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	1.021	5.263	-0.216
467	LC 1039	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	0.397	5.347	-0.257
468	LC 1040	K12:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-2.323	4.772	-0.435
469	LC 1040	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-1.763	0.182	-0.110
470	LC 1040	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-0.730	-1.609	0.047
471	LC 1040	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-0.713	-1.619	-0.004
472	LC 1040	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-15.175	12.218	-4.757
473	LC 1040	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-14.957	12.408	-4.603
474	LC 1040	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-14.647	12.644	-4.443
475	LC 1040	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-0.592	4.738	-4.527
476	LC 1040	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-1.387	4.881	-4.568
477	LC 1040	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-2.094	4.962	-4.609
478	LC 1040	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	0.422	2.316	-0.052
479	LC 1040	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	0.139	2.350	-0.057
480	LC 1040	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-1.064	2.115	-0.145
481	LC 1041	K4:1NL.1#1a,gunstig,Wind/10C,+45 degST	-2.650	1.214	-0.150
482	LC 1041	K5:1NL.1#1a,gunstig,Wind/10C,+45 degST	-0.908	-1.430	0.035
483	LC 1041	K5:2NL.1#1a,gunstig,Wind/10C,+45 degST	-0.917	-1.434	-0.014
484	LC 1041	K6:1NL.1#1a,gunstig,Wind/10C,+45 degST	-17.731	12.395	-4.782
485	LC 1041	K6:2NL.1#1a,gunstig,Wind/10C,+45 degST	-17.414	12.646	-4.631
486	LC 1041	K6:3NL.1#1a,gunstig,Wind/10C,+45 degST	-17.006	12.943	-4.473

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
487	LC 1041	K7:1NL.1#1a,gunstig,Wind/10C,+45 degST	-3.232	2.384	-4.545
488	LC 1041	K7:2NL.1#1a,gunstig,Wind/10C,+45 degST	-3.866	2.605	-4.585
489	LC 1041	K7:3NL.1#1a,gunstig,Wind/10C,+45 degST	-4.442	2.817	-4.626
490	LC 1041	K11:1NL.1#1a,gunstig,Wind/10C,+45 degST	0.337	2.111	-0.050
491	LC 1041	K11:2NL.1#1a,gunstig,Wind/10C,+45 degST	0.061	2.277	-0.057
492	LC 1041	K12:1NL.1#1a,gunstig,Wind/10C,+45 degST	-1.307	2.386	-0.161
493	LC 1042	K4:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-3.117	2.414	-0.197
494	LC 1042	K5:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.797	-1.415	0.023
495	LC 1042	K5:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.794	-1.418	-0.025
496	LC 1042	K6:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-38.505	49.482	-4.366
497	LC 1042	K6:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-37.711	50.010	-4.167
498	LC 1042	K6:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-36.651	50.670	-3.948
499	LC 1042	K7:1NL.1#1b,gunstig,Wind/-20C,+45 degST	3.551	28.256	-4.503
500	LC 1042	K7:2NL.1#1b,gunstig,Wind/-20C,+45 degST	1.192	28.685	-4.544
501	LC 1042	K7:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.911	28.934	-4.585
502	LC 1042	K11:1NL.1#1b,gunstig,Wind/-20C,+45 degST	0.926	5.302	-0.078
503	LC 1042	K11:2NL.1#1b,gunstig,Wind/-20C,+45 degST	0.264	5.376	-0.077
504	LC 1042	K12:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-2.483	4.819	-0.286
505	LC 1043	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-7.112	-1.360	-0.717
506	LC 1043	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.773	-6.604	-0.044
507	LC 1043	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.761	-6.613	-0.288
508	LC 1043	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-29.312	24.369	-5.356
509	LC 1043	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-28.825	24.756	-5.097
510	LC 1043	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-28.166	25.233	-4.825
511	LC 1043	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-2.144	10.056	-5.006
512	LC 1043	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.592	10.391	-5.074
513	LC 1043	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-4.898	10.537	-5.143
514	LC 1043	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	0.836	5.007	-0.213
515	LC 1043	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	0.189	5.119	-0.256
516	LC 1043	K12:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-2.499	4.660	-0.434
517	LC 1044	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.839	0.420	-0.144
518	LC 1044	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.756	-1.340	0.009
519	LC 1044	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.753	-1.343	-0.039
520	LC 1044	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-16.118	12.539	-4.798
521	LC 1044	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-15.867	12.746	-4.646
522	LC 1044	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-15.525	13.000	-4.486
523	LC 1044	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.408	5.130	-4.567
524	LC 1044	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.215	5.272	-4.608
525	LC 1044	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.934	5.352	-4.649
526	LC 1044	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	0.394	2.281	-0.052
527	LC 1044	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	0.107	2.312	-0.057
528	LC 1044	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.092	2.101	-0.145
529	LC 1045	K4:1NL.1#1a,gunstig,Wind/10C,+45 degST	-2.214	1.238	-0.150
530	LC 1045	K5:1NL.1#1a,gunstig,Wind/10C,+45 degST	-0.711	-1.538	0.035
531	LC 1045	K5:2NL.1#1a,gunstig,Wind/10C,+45 degST	-0.697	-1.553	-0.014
532	LC 1045	K6:1NL.1#1a,gunstig,Wind/10C,+45 degST	-13.970	12.769	-4.782
533	LC 1045	K6:2NL.1#1a,gunstig,Wind/10C,+45 degST	-13.803	12.934	-4.631
534	LC 1045	K6:3NL.1#1a,gunstig,Wind/10C,+45 degST	-13.545	13.146	-4.473
535	LC 1045	K7:1NL.1#1a,gunstig,Wind/10C,+45 degST	-0.372	2.002	-4.545
536	LC 1045	K7:2NL.1#1a,gunstig,Wind/10C,+45 degST	-0.943	2.221	-4.585
537	LC 1045	K7:3NL.1#1a,gunstig,Wind/10C,+45 degST	-1.455	2.434	-4.626
538	LC 1045	K11:1NL.1#1a,gunstig,Wind/10C,+45 degST	0.403	2.099	-0.050
539	LC 1045	K11:2NL.1#1a,gunstig,Wind/10C,+45 degST	0.171	2.271	-0.057
540	LC 1045	K12:1NL.1#1a,gunstig,Wind/10C,+45 degST	-1.170	2.456	-0.161
541	LC 1046	K4:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-3.031	2.419	-0.197
542	LC 1046	K5:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.758	-1.436	0.023
543	LC 1046	K5:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.750	-1.441	-0.025
544	LC 1046	K6:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-37.765	49.556	-4.366
545	LC 1046	K6:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-37.000	50.067	-4.167
546	LC 1046	K6:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-35.970	50.710	-3.948
547	LC 1046	K7:1NL.1#1b,gunstig,Wind/-20C,+45 degST	4.114	28.180	-4.503
548	LC 1046	K7:2NL.1#1b,gunstig,Wind/-20C,+45 degST	1.768	28.610	-4.544
549	LC 1046	K7:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.322	28.859	-4.585
550	LC 1046	K11:1NL.1#1b,gunstig,Wind/-20C,+45 degST	0.938	5.300	-0.078
551	LC 1046	K11:2NL.1#1b,gunstig,Wind/-20C,+45 degST	0.286	5.375	-0.077
552	LC 1046	K12:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-2.456	4.833	-0.286
553	LC 1047	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-6.535	-1.329	-0.717
554	LC 1047	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.513	-6.746	-0.044
555	LC 1047	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.470	-6.770	-0.288
556	LC 1047	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-27.746	24.575	-5.356
557	LC 1047	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-27.341	24.915	-5.097
558	LC 1047	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-26.764	25.345	-4.825
559	LC 1047	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-1.073	9.846	-5.006
560	LC 1047	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-2.486	10.180	-5.074
561	LC 1047	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.757	10.327	-5.143
562	LC 1047	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	0.922	4.991	-0.213
563	LC 1047	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	0.334	5.112	-0.256
564	LC 1047	K12:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-2.317	4.753	-0.434
565	LC 1048	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.753	0.425	-0.144
566	LC 1048	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.718	-1.361	0.009
567	LC 1048	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.710	-1.366	-0.039

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
568	LC 1048	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-15.377	12.613	-4.798
569	LC 1048	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-15.156	12.803	-4.646
570	LC 1048	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-14.843	13.040	-4.486
571	LC 1048	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.845	5.054	-4.567
572	LC 1048	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.639	5.197	-4.608
573	LC 1048	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.346	5.277	-4.649
574	LC 1048	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	0.407	2.278	-0.052
575	LC 1048	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	0.129	2.311	-0.057
576	LC 1048	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.065	2.114	-0.145
577	LC 1049	K4:1NL.1#1a,gunstig,Wind/10C,-45 degST	-3.190	-1.664	0.224
578	LC 1049	K5:1NL.1#1a,gunstig,Wind/10C,-45 degST	-2.325	-3.117	0.404
579	LC 1049	K5:2NL.1#1a,gunstig,Wind/10C,-45 degST	-2.353	-3.097	0.320
580	LC 1049	K6:1NL.1#1a,gunstig,Wind/10C,-45 degST	-17.329	5.637	-4.235
581	LC 1049	K6:2NL.1#1a,gunstig,Wind/10C,-45 degST	-17.194	5.788	-4.066
582	LC 1049	K6:3NL.1#1a,gunstig,Wind/10C,-45 degST	-16.989	5.976	-3.890
583	LC 1049	K7:1NL.1#1a,gunstig,Wind/10C,-45 degST	-5.790	0.096	-3.993
584	LC 1049	K7:2NL.1#1a,gunstig,Wind/10C,-45 degST	-6.461	0.058	-4.035
585	LC 1049	K7:3NL.1#1a,gunstig,Wind/10C,-45 degST	-7.038	-0.022	-4.079
586	LC 1049	K11:1NL.1#1a,gunstig,Wind/10C,-45 degST	0.346	2.190	-0.051
587	LC 1049	K11:2NL.1#1a,gunstig,Wind/10C,-45 degST	0.068	2.077	-0.056
588	LC 1049	K12:1NL.1#1a,gunstig,Wind/10C,-45 degST	-0.828	1.613	-0.120
589	LC 1050	K4:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-3.222	2.283	-0.170
590	LC 1050	K5:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.950	-1.517	0.051
591	LC 1050	K5:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.952	-1.516	-0.001
592	LC 1050	K6:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-38.669	49.502	-4.336
593	LC 1050	K6:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-37.892	50.020	-4.135
594	LC 1050	K6:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-36.849	50.670	-3.914
595	LC 1050	K7:1NL.1#1b,gunstig,Wind/-20C,-45 degST	3.283	28.211	-4.475
596	LC 1050	K7:2NL.1#1b,gunstig,Wind/-20C,-45 degST	0.930	28.645	-4.516
597	LC 1050	K7:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-1.170	28.893	-4.558
598	LC 1050	K11:1NL.1#1b,gunstig,Wind/-20C,-45 degST	0.925	5.302	-0.078
599	LC 1050	K11:2NL.1#1b,gunstig,Wind/-20C,-45 degST	0.267	5.375	-0.077
600	LC 1050	K12:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-2.464	4.815	-0.285
601	LC 1051	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-7.721	-2.411	-0.534
602	LC 1051	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-4.800	-7.289	0.142
603	LC 1051	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-4.826	-7.275	-0.119
604	LC 1051	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-29.581	23.489	-5.231
605	LC 1051	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-29.151	23.847	-4.967
606	LC 1051	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-28.554	24.290	-4.691
607	LC 1051	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-3.075	9.747	-4.884
608	LC 1051	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-4.528	10.008	-4.952
609	LC 1051	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-5.832	10.075	-5.021
610	LC 1051	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	0.834	5.034	-0.213
611	LC 1051	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	0.207	5.052	-0.255
612	LC 1051	K12:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-2.257	4.405	-0.418
613	LC 1052	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.910	0.244	-0.117
614	LC 1052	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.906	-1.435	0.035
615	LC 1052	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.908	-1.434	-0.015
616	LC 1052	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-16.118	12.299	-4.772
617	LC 1052	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-15.886	12.498	-4.619
618	LC 1052	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-15.563	12.743	-4.459
619	LC 1052	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.674	5.089	-4.540
620	LC 1052	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-2.476	5.236	-4.581
621	LC 1052	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-3.192	5.316	-4.623
622	LC 1052	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	0.393	2.281	-0.052
623	LC 1052	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	0.110	2.299	-0.057
624	LC 1052	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.055	2.060	-0.143
625	LC 1053	K4:1NL.1#1a,gunstig,Wind/10C,-45 degST	-2.183	-2.207	0.224
626	LC 1053	K5:1NL.1#1a,gunstig,Wind/10C,-45 degST	-1.363	-3.642	0.404
627	LC 1053	K5:2NL.1#1a,gunstig,Wind/10C,-45 degST	-1.301	-3.666	0.320
628	LC 1053	K6:1NL.1#1a,gunstig,Wind/10C,-45 degST	-12.884	4.030	-4.235
629	LC 1053	K6:2NL.1#1a,gunstig,Wind/10C,-45 degST	-12.763	4.163	-4.066
630	LC 1053	K6:3NL.1#1a,gunstig,Wind/10C,-45 degST	-12.570	4.333	-3.890
631	LC 1053	K7:1NL.1#1a,gunstig,Wind/10C,-45 degST	-1.081	-1.504	-3.993
632	LC 1053	K7:2NL.1#1a,gunstig,Wind/10C,-45 degST	-1.714	-1.541	-4.035
633	LC 1053	K7:3NL.1#1a,gunstig,Wind/10C,-45 degST	-2.254	-1.622	-4.079
634	LC 1053	K11:1NL.1#1a,gunstig,Wind/10C,-45 degST	0.421	2.177	-0.051
635	LC 1053	K11:2NL.1#1a,gunstig,Wind/10C,-45 degST	0.145	2.073	-0.056
636	LC 1053	K12:1NL.1#1a,gunstig,Wind/10C,-45 degST	-0.823	1.615	-0.120
637	LC 1054	K4:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-3.025	2.177	-0.170
638	LC 1054	K5:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.762	-1.620	0.051
639	LC 1054	K5:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.746	-1.628	-0.001
640	LC 1054	K6:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-37.795	49.187	-4.336
641	LC 1054	K6:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-37.021	49.701	-4.135
642	LC 1054	K6:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-35.981	50.347	-3.914
643	LC 1054	K7:1NL.1#1b,gunstig,Wind/-20C,-45 degST	4.209	27.897	-4.475
644	LC 1054	K7:2NL.1#1b,gunstig,Wind/-20C,-45 degST	1.863	28.331	-4.516
645	LC 1054	K7:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.230	28.579	-4.558
646	LC 1054	K11:1NL.1#1b,gunstig,Wind/-20C,-45 degST	0.939	5.299	-0.078
647	LC 1054	K11:2NL.1#1b,gunstig,Wind/-20C,-45 degST	0.282	5.375	-0.077
648	LC 1054	K12:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-2.463	4.815	-0.285

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
649	LC 1055	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-6.395	-3.126	-0.534
650	LC 1055	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-3.533	-7.981	0.142
651	LC 1055	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-3.440	-8.024	-0.119
652	LC 1055	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-27.519	22.608	-5.231
653	LC 1055	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-27.096	22.956	-4.967
654	LC 1055	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-26.507	23.389	-4.691
655	LC 1055	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-0.868	8.869	-4.884
656	LC 1055	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-2.301	9.131	-4.952
657	LC 1055	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-3.585	9.198	-5.021
658	LC 1055	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	0.933	5.016	-0.213
659	LC 1055	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	0.309	5.047	-0.255
660	LC 1055	K12:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-2.252	4.408	-0.418
661	LC 1056	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.712	0.137	-0.117
662	LC 1056	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.717	-1.538	0.035
663	LC 1056	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.702	-1.546	-0.015
664	LC 1056	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-15.244	11.984	-4.772
665	LC 1056	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-15.014	12.179	-4.619
666	LC 1056	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-14.694	12.421	-4.459
667	LC 1056	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.748	4.775	-4.540
668	LC 1056	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.542	4.922	-4.581
669	LC 1056	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-2.251	5.002	-4.623
670	LC 1056	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	0.408	2.278	-0.052
671	LC 1056	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	0.125	2.298	-0.057
672	LC 1056	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.054	2.061	-0.143
673	LC 1057	K4:1NL.1#1a,gunstig,Wind/10C,+0 degST	-1.808	0.307	-0.134
674	LC 1057	K5:1NL.1#1a,gunstig,Wind/10C,+0 degST	-0.700	-1.454	0.021
675	LC 1057	K5:2NL.1#1a,gunstig,Wind/10C,+0 degST	-0.687	-1.455	-0.028
676	LC 1057	K6:1NL.1#1a,gunstig,Wind/10C,+0 degST	-13.889	8.821	-4.827
677	LC 1057	K6:2NL.1#1a,gunstig,Wind/10C,+0 degST	-13.671	8.999	-4.677
678	LC 1057	K6:3NL.1#1a,gunstig,Wind/10C,+0 degST	-13.321	9.112	-4.523
679	LC 1057	K7:1NL.1#1a,gunstig,Wind/10C,+0 degST	-1.807	1.753	-4.567
680	LC 1057	K7:2NL.1#1a,gunstig,Wind/10C,+0 degST	-2.394	1.857	-4.607
681	LC 1057	K7:3NL.1#1a,gunstig,Wind/10C,+0 degST	-2.917	1.914	-4.649
682	LC 1057	K11:1NL.1#1a,gunstig,Wind/10C,+0 degST	0.314	1.785	-0.048
683	LC 1057	K11:2NL.1#1a,gunstig,Wind/10C,+0 degST	0.092	1.810	-0.054
684	LC 1057	K12:1NL.1#1a,gunstig,Wind/10C,+0 degST	-0.930	1.760	-0.128
685	LC 1058	K4:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-3.046	2.373	-0.196
686	LC 1058	K5:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-0.762	-1.430	0.023
687	LC 1058	K5:2NL.1#1b,gunstig,Wind/-20C+,0 degST	-0.755	-1.434	-0.026
688	LC 1058	K6:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-38.171	49.468	-4.366
689	LC 1058	K6:2NL.1#1b,gunstig,Wind/-20C+,0 degST	-37.385	49.990	-4.167
690	LC 1058	K6:3NL.1#1b,gunstig,Wind/-20C+,0 degST	-36.332	50.645	-3.948
691	LC 1058	K7:1NL.1#1b,gunstig,Wind/-20C+,0 degST	3.843	28.205	-4.505
692	LC 1058	K7:2NL.1#1b,gunstig,Wind/-20C+,0 degST	1.490	28.635	-4.545
693	LC 1058	K7:3NL.1#1b,gunstig,Wind/-20C+,0 degST	-0.606	28.883	-4.586
694	LC 1058	K11:1NL.1#1b,gunstig,Wind/-20C+,0 degST	0.932	5.301	-0.078
695	LC 1058	K11:2NL.1#1b,gunstig,Wind/-20C+,0 degST	0.275	5.375	-0.077
696	LC 1058	K12:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-2.468	4.813	-0.285
697	LC 1059	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-6.538	-1.801	-0.708
698	LC 1059	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-3.536	-6.705	-0.048
699	LC 1059	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-3.501	-6.723	-0.292
700	LC 1059	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-28.260	23.804	-5.364
701	LC 1059	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-27.804	24.168	-5.104
702	LC 1059	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-27.178	24.621	-4.832
703	LC 1059	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-1.535	9.917	-5.010
704	LC 1059	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-2.978	10.174	-5.078
705	LC 1059	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-4.262	10.320	-5.147
706	LC 1059	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	0.864	4.914	-0.212
707	LC 1059	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	0.254	4.983	-0.255
708	LC 1059	K12:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-2.306	4.432	-0.420
709	LC 1060	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-1.741	0.332	-0.142
710	LC 1060	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-0.721	-1.356	0.008
711	LC 1060	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-0.715	-1.359	-0.039
712	LC 1060	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-15.664	12.323	-4.800
713	LC 1060	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-15.424	12.524	-4.648
714	LC 1060	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-15.093	12.770	-4.489
715	LC 1060	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-1.116	5.079	-4.569
716	LC 1060	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-1.917	5.222	-4.609
717	LC 1060	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-2.630	5.302	-4.651
718	LC 1060	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	0.399	2.267	-0.052
719	LC 1060	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	0.117	2.298	-0.057
720	LC 1060	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-1.059	2.058	-0.143
721	LC 1061	K4:1NL.1#1a,gunstig,Wind/10C,-0 degST	-1.865	0.441	-0.134
722	LC 1061	K5:1NL.1#1a,gunstig,Wind/10C,-0 degST	-0.844	-1.375	0.021
723	LC 1061	K5:2NL.1#1a,gunstig,Wind/10C,-0 degST	-0.841	-1.372	-0.028
724	LC 1061	K6:1NL.1#1a,gunstig,Wind/10C,-0 degST	-13.524	9.343	-4.827
725	LC 1061	K6:2NL.1#1a,gunstig,Wind/10C,-0 degST	-13.381	9.488	-4.677
726	LC 1061	K6:3NL.1#1a,gunstig,Wind/10C,-0 degST	-13.106	9.568	-4.523
727	LC 1061	K7:1NL.1#1a,gunstig,Wind/10C,-0 degST	-1.865	1.970	-4.567
728	LC 1061	K7:2NL.1#1a,gunstig,Wind/10C,-0 degST	-2.453	2.073	-4.607
729	LC 1061	K7:3NL.1#1a,gunstig,Wind/10C,-0 degST	-2.976	2.130	-4.649

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
730	LC 1061	K11:1NL.1#1a,gunstig,Wind/10C,-0 degST	0.314	1.785	-0.048
731	LC 1061	K11:2NL.1#1a,gunstig,Wind/10C,-0 degST	0.093	1.810	-0.054
732	LC 1061	K12:1NL.1#1a,gunstig,Wind/10C,-0 degST	-0.883	1.784	-0.128
733	LC 1062	K4:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-3.057	2.399	-0.196
734	LC 1062	K5:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-0.790	-1.415	0.023
735	LC 1062	K5:2NL.1#1b,gunstig,Wind/-20C,-0 degST	-0.785	-1.418	-0.026
736	LC 1062	K6:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-38.099	49.571	-4.366
737	LC 1062	K6:2NL.1#1b,gunstig,Wind/-20C,-0 degST	-37.327	50.086	-4.167
738	LC 1062	K6:3NL.1#1b,gunstig,Wind/-20C,-0 degST	-36.289	50.735	-3.948
739	LC 1062	K7:1NL.1#1b,gunstig,Wind/-20C,-0 degST	3.831	28.248	-4.505
740	LC 1062	K7:2NL.1#1b,gunstig,Wind/-20C,-0 degST	1.479	28.677	-4.545
741	LC 1062	K7:3NL.1#1b,gunstig,Wind/-20C,-0 degST	-0.618	28.926	-4.586
742	LC 1062	K11:1NL.1#1b,gunstig,Wind/-20C,-0 degST	0.932	5.301	-0.078
743	LC 1062	K11:2NL.1#1b,gunstig,Wind/-20C,-0 degST	0.275	5.375	-0.077
744	LC 1062	K12:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-2.459	4.817	-0.285
745	LC 1063	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-6.613	-1.623	-0.708
746	LC 1063	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-3.726	-6.602	-0.048
747	LC 1063	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-3.704	-6.613	-0.292
748	LC 1063	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-28.147	24.091	-5.364
749	LC 1063	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-27.731	24.437	-5.104
750	LC 1063	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-27.146	24.871	-4.832
751	LC 1063	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-1.655	10.036	-5.010
752	LC 1063	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-3.097	10.293	-5.078
753	LC 1063	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-4.382	10.439	-5.147
754	LC 1063	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	0.864	4.914	-0.212
755	LC 1063	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	0.256	4.983	-0.255
756	LC 1063	K12:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-2.245	4.464	-0.420
757	LC 1064	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-1.752	0.359	-0.142
758	LC 1064	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-0.750	-1.340	0.008
759	LC 1064	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-0.745	-1.343	-0.039
760	LC 1064	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-15.592	12.426	-4.800
761	LC 1064	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-15.367	12.620	-4.648
762	LC 1064	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-15.050	12.860	-4.489
763	LC 1064	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-1.128	5.122	-4.569
764	LC 1064	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-1.928	5.264	-4.609
765	LC 1064	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-2.641	5.345	-4.651
766	LC 1064	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	0.398	2.267	-0.052
767	LC 1064	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	0.118	2.298	-0.057
768	LC 1064	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-1.050	2.063	-0.143
769	LC 1065	K4:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-0.001	-0.001	-2.000
770	LC 1065	K5:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-0.961	-1.761	0.004
771	LC 1065	K5:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-0.954	-1.765	-0.051
772	LC 1065	K6:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-16.275	9.116	-5.465
773	LC 1065	K6:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-16.073	9.313	-5.298
774	LC 1065	K6:3NL.1#5a,Break Shield wire 1, Ahead,+10CST	-15.786	9.555	-5.124
775	LC 1065	K7:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-2.732	0.964	-5.131
776	LC 1065	K7:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-3.405	1.081	-5.178
777	LC 1065	K7:3NL.1#5a,Break Shield wire 1, Ahead,+10CST	-4.004	1.145	-5.226
778	LC 1065	K11:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	0.347	1.975	-0.052
779	LC 1065	K11:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	0.102	2.002	-0.060
780	LC 1065	K12:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-0.916	1.791	-0.122
781	LC 1066	K4:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-1.987	-0.041	-0.156
782	LC 1066	K5:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-0.001	-0.001	-1.000
783	LC 1066	K5:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-0.954	-1.765	-0.051
784	LC 1066	K6:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-16.275	9.116	-5.465
785	LC 1066	K6:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-16.073	9.313	-5.298
786	LC 1066	K6:3NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-15.786	9.555	-5.124
787	LC 1066	K7:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-2.732	0.964	-5.131
788	LC 1066	K7:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-3.405	1.081	-5.178
789	LC 1066	K7:3NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-4.004	1.145	-5.226
790	LC 1066	K11:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	0.347	1.975	-0.052
791	LC 1066	K11:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	0.102	2.002	-0.060
792	LC 1066	K12:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-0.916	1.791	-0.122
793	LC 1067	K4:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-1.987	-0.041	-0.156
794	LC 1067	K5:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-0.961	-1.761	0.004
795	LC 1067	K5:2NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-0.001	-0.001	-1.000
796	LC 1067	K6:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-16.275	9.116	-5.465
797	LC 1067	K6:2NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-16.073	9.313	-5.298
798	LC 1067	K6:3NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-15.786	9.555	-5.124
799	LC 1067	K7:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-2.732	0.964	-5.131
800	LC 1067	K7:2NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-3.405	1.081	-5.178
801	LC 1067	K7:3NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-4.004	1.145	-5.226
802	LC 1067	K11:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	0.347	1.975	-0.052
803	LC 1067	K11:2NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	0.102	2.002	-0.060
804	LC 1067	K12:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-0.916	1.791	-0.122
805	LC 1068	K4:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-1.987	-0.041	-0.156
806	LC 1068	K5:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-0.961	-1.761	0.004
807	LC 1068	K5:2NL.1#5a,Break Shield wire 4, Ahead,+10CST	-0.954	-1.765	-0.051
808	LC 1068	K6:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-16.275	9.116	-5.465
809	LC 1068	K6:2NL.1#5a,Break Shield wire 4, Ahead,+10CST	-16.073	9.313	-5.298
810	LC 1068	K6:3NL.1#5a,Break Shield wire 4, Ahead,+10CST	-15.786	9.555	-5.124

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
811	LC 1068	K7:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-2.732	0.964	-5.131
812	LC 1068	K7:2NL.1#5a,Break Shield wire 4, Ahead,+10CST	-3.405	1.081	-5.178
813	LC 1068	K7:3NL.1#5a,Break Shield wire 4, Ahead,+10CST	-4.004	1.145	-5.226
814	LC 1068	K11:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	0.347	1.975	-0.052
815	LC 1068	K11:2NL.1#5a,Break Shield wire 4, Ahead,+10CST	0.102	2.002	-0.060
816	LC 1068	K12:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-0.001	-0.001	-1.000
817	LC 1069	K4:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-1.987	-0.041	-0.156
818	LC 1069	K5:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-0.961	-1.761	0.004
819	LC 1069	K5:2NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-0.954	-1.765	-0.051
820	LC 1069	K6:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-16.275	9.116	-5.465
821	LC 1069	K6:2NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-16.073	9.313	-5.298
822	LC 1069	K6:3NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-15.786	9.555	-5.124
823	LC 1069	K7:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-2.732	0.964	-5.131
824	LC 1069	K7:2NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-3.405	1.081	-5.178
825	LC 1069	K7:3NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-4.004	1.145	-5.226
826	LC 1069	K11:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-0.001	-0.001	-1.000
827	LC 1069	K11:2NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	0.102	2.002	-0.060
828	LC 1069	K12:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-0.916	1.791	-0.122
829	LC 1070	K4:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-1.987	-0.041	-0.156
830	LC 1070	K5:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-0.961	-1.761	0.004
831	LC 1070	K5:2NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-0.954	-1.765	-0.051
832	LC 1070	K6:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-16.275	9.116	-5.465
833	LC 1070	K6:2NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-16.073	9.313	-5.298
834	LC 1070	K6:3NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-15.786	9.555	-5.124
835	LC 1070	K7:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-2.732	0.964	-5.131
836	LC 1070	K7:2NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-3.405	1.081	-5.178
837	LC 1070	K7:3NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-4.004	1.145	-5.226
838	LC 1070	K11:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	0.347	1.975	-0.052
839	LC 1070	K11:2NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-0.001	-0.001	-1.000
840	LC 1070	K12:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-0.916	1.791	-0.122
841	LC 1071	K4:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-1.987	-0.041	-0.156
842	LC 1071	K5:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-0.961	-1.761	0.004
843	LC 1071	K5:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-0.954	-1.765	-0.051
844	LC 1071	K6:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-16.275	9.116	-5.465
845	LC 1071	K6:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-16.073	9.313	-5.298
846	LC 1071	K6:3NL.1#5a,Break Conductor 1, Ahead,+10CST	-15.786	9.555	-5.124
847	LC 1071	K7:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-0.001	-0.001	-2.000
848	LC 1071	K7:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-3.405	1.081	-5.178
849	LC 1071	K7:3NL.1#5a,Break Conductor 1, Ahead,+10CST	-4.004	1.145	-5.226
850	LC 1071	K11:1NL.1#5a,Break Conductor 1, Ahead,+10CST	0.347	1.975	-0.052
851	LC 1071	K11:2NL.1#5a,Break Conductor 1, Ahead,+10CST	0.102	2.002	-0.060
852	LC 1071	K12:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-0.916	1.791	-0.122
853	LC 1072	K4:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-1.987	-0.041	-0.156
854	LC 1072	K5:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-0.961	-1.761	0.004
855	LC 1072	K5:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	-0.954	-1.765	-0.051
856	LC 1072	K6:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-16.275	9.116	-5.465
857	LC 1072	K6:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	-16.073	9.313	-5.298
858	LC 1072	K6:3NL.1#5a,Break Conductor 2 , Ahead,+10CST	-15.786	9.555	-5.124
859	LC 1072	K7:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-2.732	0.964	-5.131
860	LC 1072	K7:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	-0.001	-0.001	-2.000
861	LC 1072	K7:3NL.1#5a,Break Conductor 2 , Ahead,+10CST	-4.004	1.145	-5.226
862	LC 1072	K11:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	0.347	1.975	-0.052
863	LC 1072	K11:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	0.102	2.002	-0.060
864	LC 1072	K12:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-0.916	1.791	-0.122
865	LC 1073	K4:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-1.987	-0.041	-0.156
866	LC 1073	K5:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-0.961	-1.761	0.004
867	LC 1073	K5:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-0.954	-1.765	-0.051
868	LC 1073	K6:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-16.275	9.116	-5.465
869	LC 1073	K6:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-16.073	9.313	-5.298
870	LC 1073	K6:3NL.1#5a,Break Conductor 3 , Ahead,+10CST	-15.786	9.555	-5.124
871	LC 1073	K7:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-2.732	0.964	-5.131
872	LC 1073	K7:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-3.405	1.081	-5.178
873	LC 1073	K7:3NL.1#5a,Break Conductor 3 , Ahead,+10CST	-0.001	-0.001	-2.000
874	LC 1073	K11:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	0.347	1.975	-0.052
875	LC 1073	K11:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	0.102	2.002	-0.060
876	LC 1073	K12:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-0.916	1.791	-0.122
877	LC 1074	K4:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-1.987	-0.041	-0.156
878	LC 1074	K5:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-0.961	-1.761	0.004
879	LC 1074	K5:2NL.1#5a,Break Conductor 4, Ahead,+10CST	-0.954	-1.765	-0.051
880	LC 1074	K6:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-5.508	9.280	-4.488
881	LC 1074	K6:2NL.1#5a,Break Conductor 4, Ahead,+10CST	-16.073	9.313	-5.298
882	LC 1074	K6:3NL.1#5a,Break Conductor 4, Ahead,+10CST	-15.786	9.555	-5.124
883	LC 1074	K7:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-2.732	0.964	-5.131
884	LC 1074	K7:2NL.1#5a,Break Conductor 4, Ahead,+10CST	-3.405	1.081	-5.178
885	LC 1074	K7:3NL.1#5a,Break Conductor 4, Ahead,+10CST	-4.004	1.145	-5.226
886	LC 1074	K11:1NL.1#5a,Break Conductor 4, Ahead,+10CST	0.347	1.975	-0.052
887	LC 1074	K11:2NL.1#5a,Break Conductor 4, Ahead,+10CST	0.102	2.002	-0.060
888	LC 1074	K12:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-0.916	1.791	-0.122
889	LC 1075	K4:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-1.987	-0.041	-0.156
890	LC 1075	K5:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-0.961	-1.761	0.004
891	LC 1075	K5:2NL.1#5a,Break Conductor 5, Ahead,+10CST	-0.954	-1.765	-0.051

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
892	LC 1075	K6:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-16.275	9.116	-5.465
893	LC 1075	K6:2NL.1#5a,Break Conductor 5, Ahead,+10CST	-5.372	9.360	-4.432
894	LC 1075	K6:3NL.1#5a,Break Conductor 5, Ahead,+10CST	-15.786	9.555	-5.124
895	LC 1075	K7:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-2.732	0.964	-5.131
896	LC 1075	K7:2NL.1#5a,Break Conductor 5, Ahead,+10CST	-3.405	1.081	-5.178
897	LC 1075	K7:3NL.1#5a,Break Conductor 5, Ahead,+10CST	-4.004	1.145	-5.226
898	LC 1075	K11:1NL.1#5a,Break Conductor 5, Ahead,+10CST	0.347	1.975	-0.052
899	LC 1075	K11:2NL.1#5a,Break Conductor 5, Ahead,+10CST	0.102	2.002	-0.060
900	LC 1075	K12:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-0.916	1.791	-0.122
901	LC 1076	K4:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-1.987	-0.041	-0.156
902	LC 1076	K5:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-0.961	-1.761	0.004
903	LC 1076	K5:2NL.1#5a,Break Conductor 6, Ahead,+10CST	-0.954	-1.765	-0.051
904	LC 1076	K6:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-16.275	9.116	-5.465
905	LC 1076	K6:2NL.1#5a,Break Conductor 6, Ahead,+10CST	-16.073	9.313	-5.298
906	LC 1076	K6:3NL.1#5a,Break Conductor 6, Ahead,+10CST	-5.193	9.460	-4.374
907	LC 1076	K7:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-2.732	0.964	-5.131
908	LC 1076	K7:2NL.1#5a,Break Conductor 6, Ahead,+10CST	-3.405	1.081	-5.178
909	LC 1076	K7:3NL.1#5a,Break Conductor 6, Ahead,+10CST	-4.004	1.145	-5.226
910	LC 1076	K11:1NL.1#5a,Break Conductor 6, Ahead,+10CST	0.347	1.975	-0.052
911	LC 1076	K11:2NL.1#5a,Break Conductor 6, Ahead,+10CST	0.102	2.002	-0.060
912	LC 1076	K12:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-0.916	1.791	-0.122
913	LC 1077	K4:1NL.1#6,Permanent,+10CST	-2.525	-0.273	-0.207
914	LC 1077	K5:1NL.1#6,Permanent,+10CST	-1.284	-2.354	0.001
915	LC 1077	K5:2NL.1#6,Permanent,+10CST	-1.274	-2.359	-0.073
916	LC 1077	K6:1NL.1#6,Permanent,+10CST	-20.393	9.831	-7.414
917	LC 1077	K6:2NL.1#6,Permanent,+10CST	-20.158	10.076	-7.191
918	LC 1077	K6:3NL.1#6,Permanent,+10CST	-19.819	10.374	-6.961
919	LC 1077	K7:1NL.1#6,Permanent,+10CST	-4.053	-0.472	-6.939
920	LC 1077	K7:2NL.1#6,Permanent,+10CST	-4.839	-0.337	-7.002
921	LC 1077	K7:3NL.1#6,Permanent,+10CST	-5.538	-0.263	-7.067
922	LC 1077	K11:1NL.1#6,Permanent,+10CST	0.394	2.242	-0.067
923	LC 1077	K11:2NL.1#6,Permanent,+10CST	0.116	2.274	-0.079
924	LC 1077	K12:1NL.1#6,Permanent,+10CST	-1.031	2.015	-0.147
925	LC 1078	K4:1NL.1#6,gunstig,Permanent,+10CST	-1.828	0.019	-0.141
926	LC 1078	K5:1NL.1#6,gunstig,Permanent,+10CST	-0.868	-1.590	0.004
927	LC 1078	K5:2NL.1#6,gunstig,Permanent,+10CST	-0.861	-1.594	-0.045
928	LC 1078	K6:1NL.1#6,gunstig,Permanent,+10CST	-15.061	8.868	-4.910
929	LC 1078	K6:2NL.1#6,gunstig,Permanent,+10CST	-14.870	9.052	-4.759
930	LC 1078	K6:3NL.1#6,gunstig,Permanent,+10CST	-14.599	9.277	-4.601
931	LC 1078	K7:1NL.1#6,gunstig,Permanent,+10CST	-2.357	1.363	-4.614
932	LC 1078	K7:2NL.1#6,gunstig,Permanent,+10CST	-2.997	1.475	-4.657
933	LC 1078	K7:3NL.1#6,gunstig,Permanent,+10CST	-3.566	1.536	-4.700
934	LC 1078	K11:1NL.1#6,gunstig,Permanent,+10CST	0.335	1.903	-0.048
935	LC 1078	K11:2NL.1#6,gunstig,Permanent,+10CST	0.099	1.929	-0.055
936	LC 1078	K12:1NL.1#6,gunstig,Permanent,+10CST	-0.880	1.720	-0.115
937	LC 1079	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-3.495	-0.526	-0.060
938	LC 1079	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-2.005	-2.861	0.186
939	LC 1079	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-2.027	-2.854	0.095
940	LC 1079	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-22.141	9.744	-6.337
941	LC 1079	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-21.864	10.015	-6.100
942	LC 1079	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-21.486	10.339	-5.856
943	LC 1079	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-5.991	-0.064	-5.874
944	LC 1079	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-6.789	0.069	-5.939
945	LC 1079	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-7.502	0.141	-6.005
946	LC 1079	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	0.392	2.472	-0.073
947	LC 1079	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	0.073	2.502	-0.084
948	LC 1079	K12:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-1.169	2.182	-0.172
949	LC 1080	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-3.828	1.744	-0.236
950	LC 1080	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-1.387	-2.292	0.051
951	LC 1080	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-1.387	-2.293	-0.029
952	LC 1080	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-42.198	46.552	-6.054
953	LC 1080	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-41.416	47.112	-5.774
954	LC 1080	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-40.361	47.809	-5.475
955	LC 1080	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	0.905	24.192	-5.956
956	LC 1080	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-1.471	24.620	-6.021
957	LC 1080	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-3.589	24.866	-6.087
958	LC 1080	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	0.933	5.381	-0.098
959	LC 1080	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	0.262	5.455	-0.103
960	LC 1080	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-2.512	4.879	-0.311
961	LC 1081	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-5.368	-0.587	-0.256
962	LC 1081	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-2.954	-4.431	0.163
963	LC 1081	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-2.977	-4.425	0.012
964	LC 1081	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-30.851	23.737	-6.498
965	LC 1081	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-30.377	24.131	-6.218
966	LC 1081	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-29.731	24.612	-5.925
967	LC 1081	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-3.405	9.268	-6.099
968	LC 1081	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-4.889	9.528	-6.172
969	LC 1081	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-6.211	9.674	-6.247
970	LC 1081	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	0.692	4.231	-0.131
971	LC 1081	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	0.152	4.285	-0.151
972	LC 1081	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-1.997	3.778	-0.302

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
973	LC 1082	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-2.667	0.025	-0.198
974	LC 1082	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-1.323	-2.175	0.028
975	LC 1082	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-1.324	-2.175	-0.050
976	LC 1082	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-21.756	13.328	-6.492
977	LC 1082	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-21.465	13.597	-6.257
978	LC 1082	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-21.059	13.924	-6.013
979	LC 1082	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-3.578	2.948	-6.055
980	LC 1082	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-4.514	3.111	-6.120
981	LC 1082	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-5.347	3.201	-6.186
982	LC 1082	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	0.441	2.582	-0.074
983	LC 1082	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	0.117	2.617	-0.084
984	LC 1082	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-1.206	2.325	-0.178
985	LC 1083	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.644	-0.832	-0.060
986	LC 1083	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-1.321	-3.234	0.186
987	LC 1083	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-1.276	-3.260	0.095
988	LC 1083	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-17.912	9.017	-6.337
989	LC 1083	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-17.731	9.227	-6.100
990	LC 1083	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-17.449	9.490	-5.856
991	LC 1083	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.137	-1.233	-5.874
992	LC 1083	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.876	-1.101	-5.939
993	LC 1083	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-3.530	-1.029	-6.005
994	LC 1083	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	0.475	2.457	-0.073
995	LC 1083	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	0.183	2.496	-0.084
996	LC 1083	K12:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-1.085	2.225	-0.172
997	LC 1084	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-3.567	1.650	-0.236
998	LC 1084	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-1.177	-2.406	0.051
999	LC 1084	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-1.157	-2.417	-0.029
1000	LC 1084	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-40.897	46.329	-6.054
1001	LC 1084	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-40.145	46.870	-5.774
1002	LC 1084	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-39.120	47.548	-5.475
1003	LC 1084	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	2.090	23.832	-5.956
1004	LC 1084	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-0.268	24.261	-6.021
1005	LC 1084	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-2.367	24.507	-6.087
1006	LC 1084	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	0.959	5.377	-0.098
1007	LC 1084	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	0.296	5.454	-0.103
1008	LC 1084	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-2.487	4.892	-0.311
1009	LC 1085	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-4.338	-0.957	-0.256
1010	LC 1085	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-2.128	-4.882	0.163
1011	LC 1085	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-2.069	-4.915	0.012
1012	LC 1085	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-28.371	23.261	-6.498
1013	LC 1085	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-27.960	23.615	-6.218
1014	LC 1085	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-27.377	24.056	-5.925
1015	LC 1085	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-1.171	8.503	-6.099
1016	LC 1085	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-2.615	8.763	-6.172
1017	LC 1085	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-3.899	8.909	-6.247
1018	LC 1085	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	0.793	4.213	-0.131
1019	LC 1085	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	0.286	4.278	-0.151
1020	LC 1085	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-1.895	3.830	-0.302
1021	LC 1086	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-2.405	-0.069	-0.198
1022	LC 1086	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-1.113	-2.289	0.028
1023	LC 1086	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-1.094	-2.300	-0.050
1024	LC 1086	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-20.455	13.105	-6.492
1025	LC 1086	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-20.193	13.355	-6.257
1026	LC 1086	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-19.817	13.663	-6.013
1027	LC 1086	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-2.393	2.589	-6.055
1028	LC 1086	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-3.310	2.751	-6.120
1029	LC 1086	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-4.126	2.841	-6.186
1030	LC 1086	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	0.466	2.578	-0.074
1031	LC 1086	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	0.151	2.615	-0.084
1032	LC 1086	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-1.180	2.339	-0.178
1033	LC 1087	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.703	0.216	-0.220
1034	LC 1087	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.223	-2.103	0.009
1035	LC 1087	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.222	-2.106	-0.066
1036	LC 1087	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-20.403	10.450	-6.556
1037	LC 1087	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-20.121	10.713	-6.326
1038	LC 1087	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-19.739	11.024	-6.087
1039	LC 1087	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-4.337	0.303	-6.088
1040	LC 1087	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-5.094	0.471	-6.153
1041	LC 1087	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-5.773	0.580	-6.219
1042	LC 1087	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	0.370	2.220	-0.071
1043	LC 1087	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	0.084	2.289	-0.082
1044	LC 1087	K12:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.162	2.171	-0.171
1045	LC 1088	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-3.677	1.807	-0.256
1046	LC 1088	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.239	-2.227	0.029
1047	LC 1088	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.231	-2.232	-0.048
1048	LC 1088	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-41.815	46.539	-6.077
1049	LC 1088	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-41.034	47.097	-5.798
1050	LC 1088	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-39.979	47.791	-5.499
1051	LC 1088	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	1.306	24.177	-5.978
1052	LC 1088	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.067	24.606	-6.043
1053	LC 1088	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-3.182	24.852	-6.109

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1054	LC 1088	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	0.940	5.380	-0.098
1055	LC 1088	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	0.269	5.455	-0.103
1056	LC 1088	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-2.512	4.879	-0.311
1057	LC 1089	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.578	0.002	-0.395
1058	LC 1089	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.180	-3.827	0.010
1059	LC 1089	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.172	-3.833	-0.128
1060	LC 1089	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-29.940	23.934	-6.587
1061	LC 1089	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-29.427	24.254	-6.310
1062	LC 1089	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-28.781	24.728	-6.020
1063	LC 1089	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.476	9.387	-6.184
1064	LC 1089	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-3.948	9.648	-6.258
1065	LC 1089	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-5.260	9.794	-6.332
1066	LC 1089	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	0.694	4.083	-0.129
1067	LC 1089	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	0.173	4.164	-0.150
1068	LC 1089	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-1.989	3.767	-0.301
1069	LC 1090	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.515	0.077	-0.217
1070	LC 1090	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.178	-2.115	0.007
1071	LC 1090	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.171	-2.119	-0.068
1072	LC 1090	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-21.336	13.244	-6.515
1073	LC 1090	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-21.046	13.510	-6.281
1074	LC 1090	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-20.641	13.834	-6.037
1075	LC 1090	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-3.196	2.853	-6.077
1076	LC 1090	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-4.118	3.053	-6.142
1077	LC 1090	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-4.946	3.143	-6.208
1078	LC 1090	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	0.443	2.555	-0.074
1079	LC 1090	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	0.122	2.590	-0.084
1080	LC 1090	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.206	2.326	-0.178
1081	LC 1091	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.445	0.230	-0.220
1082	LC 1091	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.107	-2.167	0.009
1083	LC 1091	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.092	-2.177	-0.066
1084	LC 1091	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-18.181	10.671	-6.556
1085	LC 1091	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-17.987	10.884	-6.326
1086	LC 1091	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-17.694	11.144	-6.087
1087	LC 1091	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.647	0.078	-6.088
1088	LC 1091	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-3.367	0.245	-6.153
1089	LC 1091	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-4.008	0.354	-6.219
1090	LC 1091	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	0.409	2.213	-0.071
1091	LC 1091	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	0.149	2.285	-0.082
1092	LC 1091	K12:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.081	2.212	-0.171
1093	LC 1092	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-3.597	1.811	-0.256
1094	LC 1092	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.203	-2.247	0.029
1095	LC 1092	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.191	-2.253	-0.048
1096	LC 1092	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-41.131	46.607	-6.077
1097	LC 1092	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-40.377	47.150	-5.798
1098	LC 1092	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-39.350	47.828	-5.499
1099	LC 1092	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	1.826	24.108	-5.978
1100	LC 1092	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-0.535	24.536	-6.043
1101	LC 1092	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-2.638	24.782	-6.109
1102	LC 1092	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	0.952	5.378	-0.098
1103	LC 1092	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	0.289	5.454	-0.103
1104	LC 1092	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-2.487	4.892	-0.311
1105	LC 1093	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.266	0.019	-0.395
1106	LC 1093	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.039	-3.903	0.010
1107	LC 1093	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.015	-3.918	-0.128
1108	LC 1093	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-28.718	24.079	-6.587
1109	LC 1093	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-28.262	24.366	-6.310
1110	LC 1093	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-27.674	24.807	-6.020
1111	LC 1093	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-1.601	9.240	-6.184
1112	LC 1093	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-3.049	9.499	-6.258
1113	LC 1093	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.337	9.646	-6.332
1114	LC 1093	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	0.740	4.074	-0.129
1115	LC 1093	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	0.252	4.160	-0.150
1116	LC 1093	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-1.891	3.817	-0.301
1117	LC 1094	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.435	0.081	-0.217
1118	LC 1094	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.142	-2.135	0.007
1119	LC 1094	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.131	-2.141	-0.068
1120	LC 1094	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-20.652	13.312	-6.515
1121	LC 1094	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-20.389	13.562	-6.281
1122	LC 1094	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-20.012	13.871	-6.037
1123	LC 1094	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.676	2.784	-6.077
1124	LC 1094	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-3.586	2.984	-6.142
1125	LC 1094	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-4.403	3.074	-6.208
1126	LC 1094	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	0.455	2.553	-0.074
1127	LC 1094	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	0.142	2.589	-0.084
1128	LC 1094	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.181	2.338	-0.178
1129	LC 1095	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.968	-0.693	-0.092
1130	LC 1095	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-1.807	-2.636	0.137
1131	LC 1095	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-1.820	-2.627	0.049
1132	LC 1095	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-20.495	9.150	-6.412
1133	LC 1095	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-20.280	9.377	-6.177
1134	LC 1095	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-19.971	9.650	-5.934

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1135	LC 1095	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-5.311	-0.107	-5.945
1136	LC 1095	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-6.073	-0.014	-6.010
1137	LC 1095	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-6.745	0.056	-6.076
1138	LC 1095	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	0.371	2.240	-0.071
1139	LC 1095	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	0.091	2.229	-0.082
1140	LC 1095	K12:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-0.984	1.920	-0.157
1141	LC 1096	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-3.756	1.759	-0.242
1142	LC 1096	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.350	-2.267	0.044
1143	LC 1096	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.348	-2.268	-0.035
1144	LC 1096	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-41.848	46.493	-6.062
1145	LC 1096	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-41.081	47.044	-5.783
1146	LC 1096	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-40.042	47.732	-5.484
1147	LC 1096	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	1.094	24.203	-5.964
1148	LC 1096	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.276	24.632	-6.029
1149	LC 1096	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-3.388	24.878	-6.095
1150	LC 1096	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	0.939	5.380	-0.098
1151	LC 1096	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	0.272	5.455	-0.103
1152	LC 1096	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-2.500	4.886	-0.311
1153	LC 1097	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.903	-0.643	-0.288
1154	LC 1097	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.755	-4.234	0.118
1155	LC 1097	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.768	-4.227	-0.030
1156	LC 1097	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-30.095	23.632	-6.529
1157	LC 1097	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-29.658	23.997	-6.249
1158	LC 1097	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-29.049	24.453	-5.956
1159	LC 1097	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-3.038	9.286	-6.127
1160	LC 1097	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.505	9.545	-6.200
1161	LC 1097	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-5.808	9.696	-6.276
1162	LC 1097	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	0.693	4.096	-0.129
1163	LC 1097	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	0.183	4.124	-0.150
1164	LC 1097	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-1.863	3.639	-0.294
1165	LC 1098	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.578	0.010	-0.203
1166	LC 1098	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.287	-2.151	0.021
1167	LC 1098	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.285	-2.151	-0.056
1168	LC 1098	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-21.409	13.265	-6.500
1169	LC 1098	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-21.132	13.525	-6.265
1170	LC 1098	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-20.742	13.843	-6.021
1171	LC 1098	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-3.399	2.917	-6.063
1172	LC 1098	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-4.327	3.079	-6.127
1173	LC 1098	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-5.156	3.130	-6.194
1174	LC 1098	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	0.442	2.555	-0.074
1175	LC 1098	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	0.125	2.590	-0.084
1176	LC 1098	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.178	2.302	-0.177
1177	LC 1099	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.375	-1.013	-0.092
1178	LC 1099	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-1.240	-2.946	0.137
1179	LC 1099	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-1.200	-2.962	0.049
1180	LC 1099	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-17.872	8.203	-6.412
1181	LC 1099	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-17.665	8.419	-6.177
1182	LC 1099	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-17.364	8.681	-5.934
1183	LC 1099	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.532	-1.051	-5.945
1184	LC 1099	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-3.272	-0.956	-6.010
1185	LC 1099	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-3.923	-0.887	-6.076
1186	LC 1099	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	0.415	2.232	-0.071
1187	LC 1099	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	0.137	2.226	-0.082
1188	LC 1099	K12:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-0.981	1.921	-0.157
1189	LC 1100	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-3.574	1.661	-0.242
1190	LC 1100	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.176	-2.362	0.044
1191	LC 1100	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.158	-2.371	-0.035
1192	LC 1100	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-41.041	46.202	-6.062
1193	LC 1100	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-40.277	46.750	-5.783
1194	LC 1100	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-39.241	47.434	-5.484
1195	LC 1100	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	1.949	23.913	-5.964
1196	LC 1100	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-0.414	24.342	-6.029
1197	LC 1100	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-2.520	24.588	-6.095
1198	LC 1100	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	0.953	5.378	-0.098
1199	LC 1100	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	0.286	5.454	-0.103
1200	LC 1100	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-2.499	4.886	-0.311
1201	LC 1101	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.186	-1.029	-0.288
1202	LC 1101	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.070	-4.608	0.118
1203	LC 1101	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.018	-4.632	-0.030
1204	LC 1101	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-28.553	23.012	-6.529
1205	LC 1101	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-28.122	23.370	-6.249
1206	LC 1101	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-27.518	23.819	-5.956
1207	LC 1101	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-1.394	8.669	-6.127
1208	LC 1101	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.846	8.928	-6.200
1209	LC 1101	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.136	9.078	-6.276
1210	LC 1101	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	0.746	4.087	-0.129
1211	LC 1101	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	0.238	4.121	-0.150
1212	LC 1101	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-1.860	3.640	-0.294
1213	LC 1102	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.396	-0.088	-0.203
1214	LC 1102	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.112	-2.246	0.021
1215	LC 1102	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.095	-2.254	-0.056

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1216	LC 1102	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-20.602	12.974	-6.500
1217	LC 1102	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-20.328	13.230	-6.265
1218	LC 1102	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-19.940	13.545	-6.021
1219	LC 1102	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.544	2.627	-6.063
1220	LC 1102	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-3.465	2.789	-6.127
1221	LC 1102	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-4.288	2.840	-6.194
1222	LC 1102	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	0.456	2.553	-0.074
1223	LC 1102	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	0.139	2.589	-0.084
1224	LC 1102	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.178	2.303	-0.177
1225	LC 1103	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-2.340	-0.146	-0.212
1226	LC 1103	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-1.114	-2.143	0.006
1227	LC 1103	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-1.102	-2.148	-0.070
1228	LC 1103	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-18.875	9.546	-6.567
1229	LC 1103	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-18.630	9.782	-6.337
1230	LC 1103	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-18.287	10.068	-6.100
1231	LC 1103	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-3.478	0.075	-6.093
1232	LC 1103	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-4.218	0.203	-6.157
1233	LC 1103	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-4.874	0.273	-6.224
1234	LC 1103	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	0.374	2.125	-0.070
1235	LC 1103	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	0.110	2.155	-0.081
1236	LC 1103	K12:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-1.015	1.949	-0.159
1237	LC 1104	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-3.617	1.775	-0.255
1238	LC 1104	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-1.207	-2.243	0.029
1239	LC 1104	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-1.197	-2.248	-0.049
1240	LC 1104	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-41.424	46.396	-6.079
1241	LC 1104	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-40.654	46.943	-5.800
1242	LC 1104	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-39.609	47.632	-5.501
1243	LC 1104	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	1.574	24.127	-5.979
1244	LC 1104	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-0.793	24.556	-6.044
1245	LC 1104	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-2.902	24.802	-6.110
1246	LC 1104	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	0.944	5.366	-0.098
1247	LC 1104	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	0.278	5.441	-0.103
1248	LC 1104	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-2.504	4.884	-0.311
1249	LC 1105	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-4.248	-0.268	-0.389
1250	LC 1105	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-2.052	-3.881	0.007
1251	LC 1105	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-2.031	-3.891	-0.130
1252	LC 1105	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-29.260	23.704	-6.589
1253	LC 1105	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-28.803	24.080	-6.311
1254	LC 1105	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-28.174	24.543	-6.021
1255	LC 1105	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-2.019	9.204	-6.186
1256	LC 1105	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-3.475	9.463	-6.259
1257	LC 1105	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-4.770	9.609	-6.334
1258	LC 1105	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	0.708	4.026	-0.129
1259	LC 1105	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	0.208	4.083	-0.150
1260	LC 1105	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-1.891	3.654	-0.295
1261	LC 1106	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-2.445	0.029	-0.216
1262	LC 1106	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-1.146	-2.131	0.007
1263	LC 1106	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-1.136	-2.136	-0.069
1264	LC 1106	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-20.987	13.164	-6.516
1265	LC 1106	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-20.705	13.424	-6.281
1266	LC 1106	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-20.309	13.743	-6.038
1267	LC 1106	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-2.931	2.799	-6.077
1268	LC 1106	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-3.852	2.960	-6.142
1269	LC 1106	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-4.672	3.050	-6.208
1270	LC 1106	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	0.447	2.541	-0.073
1271	LC 1106	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	0.132	2.576	-0.084
1272	LC 1106	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-1.185	2.306	-0.177
1273	LC 1107	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-2.373	-0.066	-0.212
1274	LC 1107	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-1.199	-2.096	0.006
1275	LC 1107	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-1.193	-2.099	-0.070
1276	LC 1107	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-18.660	9.855	-6.567
1277	LC 1107	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-18.458	10.071	-6.337
1278	LC 1107	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-18.160	10.338	-6.100
1279	LC 1107	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-3.513	0.203	-6.093
1280	LC 1107	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-4.252	0.331	-6.157
1281	LC 1107	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-4.909	0.401	-6.224
1282	LC 1107	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	0.374	2.125	-0.070
1283	LC 1107	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	0.111	2.155	-0.081
1284	LC 1107	K12:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-0.987	1.963	-0.159
1285	LC 1108	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-3.628	1.800	-0.255
1286	LC 1108	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-1.233	-2.229	0.029
1287	LC 1108	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-1.225	-2.233	-0.049
1288	LC 1108	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-41.358	46.491	-6.079
1289	LC 1108	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-40.601	47.032	-5.800
1290	LC 1108	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-39.570	47.715	-5.501
1291	LC 1108	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	1.563	24.166	-5.979
1292	LC 1108	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-0.804	24.595	-6.044
1293	LC 1108	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-2.913	24.841	-6.110
1294	LC 1108	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	0.943	5.366	-0.098
1295	LC 1108	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	0.278	5.441	-0.103
1296	LC 1108	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-2.495	4.888	-0.311

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1297	LC 1109	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-4.289	-0.172	-0.389
1298	LC 1109	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-2.154	-3.825	0.007
1299	LC 1109	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-2.141	-3.832	-0.130
1300	LC 1109	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-29.159	23.906	-6.589
1301	LC 1109	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-28.731	24.269	-6.311
1302	LC 1109	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-28.131	24.719	-6.021
1303	LC 1109	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-2.082	9.288	-6.186
1304	LC 1109	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-3.537	9.547	-6.259
1305	LC 1109	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-4.833	9.692	-6.334
1306	LC 1109	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	0.708	4.026	-0.129
1307	LC 1109	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	0.209	4.083	-0.150
1308	LC 1109	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-1.857	3.671	-0.295
1309	LC 1110	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-2.456	0.053	-0.216
1310	LC 1110	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-1.172	-2.117	0.007
1311	LC 1110	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-1.164	-2.121	-0.069
1312	LC 1110	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-20.921	13.259	-6.516
1313	LC 1110	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-20.652	13.513	-6.281
1314	LC 1110	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-20.270	13.826	-6.038
1315	LC 1110	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-2.941	2.838	-6.077
1316	LC 1110	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-3.863	2.999	-6.142
1317	LC 1110	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-4.683	3.089	-6.208
1318	LC 1110	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	0.447	2.541	-0.073
1319	LC 1110	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	0.132	2.576	-0.084
1320	LC 1110	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-1.177	2.311	-0.177
1321	LC 1111	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-3.495	-0.526	-0.060
1322	LC 1111	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-2.005	-2.861	0.186
1323	LC 1111	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-22.141	9.744	-6.337
1324	LC 1111	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-21.864	10.015	-6.100
1325	LC 1111	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-21.486	10.339	-5.856
1326	LC 1111	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	0.392	2.472	-0.073
1327	LC 1111	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	0.073	2.502	-0.084
1328	LC 1111	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-1.169	2.182	-0.172
1329	LC 1112	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-3.828	1.744	-0.236
1330	LC 1112	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-1.387	-2.292	0.051
1331	LC 1112	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-42.198	46.552	-6.054
1332	LC 1112	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-41.416	47.112	-5.774
1333	LC 1112	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-40.361	47.809	-5.475
1334	LC 1112	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	0.933	5.381	-0.098
1335	LC 1112	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	0.262	5.455	-0.103
1336	LC 1112	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-2.512	4.879	-0.311
1337	LC 1113	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-5.368	-0.587	-0.256
1338	LC 1113	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-2.954	-4.431	0.163
1339	LC 1113	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-30.851	23.737	-6.498
1340	LC 1113	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-30.377	24.131	-6.218
1341	LC 1113	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-29.731	24.612	-5.925
1342	LC 1113	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	0.692	4.231	-0.131
1343	LC 1113	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	0.152	4.285	-0.151
1344	LC 1113	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-1.997	3.778	-0.302
1345	LC 1114	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-2.667	0.025	-0.198
1346	LC 1114	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-1.323	-2.175	0.028
1347	LC 1114	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-21.756	13.328	-6.492
1348	LC 1114	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-21.465	13.597	-6.257
1349	LC 1114	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-21.059	13.924	-6.013
1350	LC 1114	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	0.441	2.582	-0.074
1351	LC 1114	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	0.117	2.617	-0.084
1352	LC 1114	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-1.206	2.325	-0.178
1353	LC 1115	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-2.644	-0.832	-0.060
1354	LC 1115	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-1.321	-3.234	0.186
1355	LC 1115	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-17.912	9.017	-6.337
1356	LC 1115	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-17.731	9.227	-6.100
1357	LC 1115	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-17.449	9.490	-5.856
1358	LC 1115	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	0.475	2.457	-0.073
1359	LC 1115	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	0.183	2.496	-0.084
1360	LC 1115	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-1.085	2.225	-0.172
1361	LC 1116	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-3.567	1.650	-0.236
1362	LC 1116	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-1.177	-2.406	0.051
1363	LC 1116	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-40.897	46.329	-6.054
1364	LC 1116	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-40.145	46.870	-5.774
1365	LC 1116	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-39.120	47.548	-5.475
1366	LC 1116	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	0.959	5.377	-0.098
1367	LC 1116	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	0.296	5.454	-0.103
1368	LC 1116	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-2.487	4.892	-0.311
1369	LC 1117	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-4.338	-0.957	-0.256
1370	LC 1117	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-2.128	-4.882	0.163
1371	LC 1117	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-28.371	23.261	-6.498
1372	LC 1117	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-27.960	23.615	-6.218
1373	LC 1117	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-27.377	24.056	-5.925
1374	LC 1117	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	0.793	4.213	-0.131
1375	LC 1117	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	0.286	4.278	-0.151
1376	LC 1117	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-1.895	3.830	-0.302
1377	LC 1118	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-2.405	-0.069	-0.198

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1378	LC 1118	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-1.113	-2.289	0.028
1379	LC 1118	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-20.455	13.105	-6.492
1380	LC 1118	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-20.193	13.355	-6.257
1381	LC 1118	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-19.817	13.663	-6.013
1382	LC 1118	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	0.466	2.578	-0.074
1383	LC 1118	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	0.151	2.615	-0.084
1384	LC 1118	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-1.180	2.339	-0.178
1385	LC 1119	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-2.703	0.216	-0.220
1386	LC 1119	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-1.223	-2.103	0.009
1387	LC 1119	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-20.403	10.450	-6.556
1388	LC 1119	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-20.121	10.713	-6.326
1389	LC 1119	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-19.739	11.024	-6.087
1390	LC 1119	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	0.370	2.220	-0.071
1391	LC 1119	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	0.084	2.289	-0.082
1392	LC 1119	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-1.162	2.171	-0.171
1393	LC 1120	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-3.677	1.807	-0.256
1394	LC 1120	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-1.239	-2.227	0.029
1395	LC 1120	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-41.815	46.539	-6.077
1396	LC 1120	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-41.034	47.097	-5.798
1397	LC 1120	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-39.979	47.791	-5.499
1398	LC 1120	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	0.940	5.380	-0.098
1399	LC 1120	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	0.269	5.455	-0.103
1400	LC 1120	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-2.512	4.879	-0.311
1401	LC 1121	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-4.578	0.002	-0.395
1402	LC 1121	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-2.180	-3.827	0.010
1403	LC 1121	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-29.940	23.934	-6.587
1404	LC 1121	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-29.427	24.254	-6.310
1405	LC 1121	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-28.781	24.728	-6.020
1406	LC 1121	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	0.694	4.083	-0.129
1407	LC 1121	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	0.173	4.164	-0.150
1408	LC 1121	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-1.989	3.767	-0.301
1409	LC 1122	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-2.515	0.077	-0.217
1410	LC 1122	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-1.178	-2.115	0.007
1411	LC 1122	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-21.336	13.244	-6.515
1412	LC 1122	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-21.046	13.510	-6.281
1413	LC 1122	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-20.641	13.834	-6.037
1414	LC 1122	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	0.443	2.555	-0.074
1415	LC 1122	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	0.122	2.590	-0.084
1416	LC 1122	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-1.206	2.326	-0.178
1417	LC 1123	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-2.445	0.230	-0.220
1418	LC 1123	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-1.107	-2.167	0.009
1419	LC 1123	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-18.181	10.671	-6.556
1420	LC 1123	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-17.987	10.884	-6.326
1421	LC 1123	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-17.694	11.144	-6.087
1422	LC 1123	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	0.409	2.213	-0.071
1423	LC 1123	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	0.149	2.285	-0.082
1424	LC 1123	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-1.081	2.212	-0.171
1425	LC 1124	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-3.597	1.811	-0.256
1426	LC 1124	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-1.203	-2.247	0.029
1427	LC 1124	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-41.131	46.607	-6.077
1428	LC 1124	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-40.377	47.150	-5.798
1429	LC 1124	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-39.350	47.828	-5.499
1430	LC 1124	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	0.952	5.378	-0.098
1431	LC 1124	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	0.289	5.454	-0.103
1432	LC 1124	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-2.487	4.892	-0.311
1433	LC 1125	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-4.266	0.019	-0.395
1434	LC 1125	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-2.039	-3.903	0.010
1435	LC 1125	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-28.718	24.079	-6.587
1436	LC 1125	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-28.262	24.366	-6.310
1437	LC 1125	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-27.674	24.807	-6.020
1438	LC 1125	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	0.740	4.074	-0.129
1439	LC 1125	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	0.252	4.160	-0.150
1440	LC 1125	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-1.891	3.817	-0.301
1441	LC 1126	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-2.435	0.081	-0.217
1442	LC 1126	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-1.142	-2.135	0.007
1443	LC 1126	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-20.652	13.312	-6.515
1444	LC 1126	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-20.389	13.562	-6.281
1445	LC 1126	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-20.012	13.871	-6.037
1446	LC 1126	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	0.455	2.553	-0.074
1447	LC 1126	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	0.142	2.589	-0.084
1448	LC 1126	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-1.181	2.338	-0.178
1449	LC 1127	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-2.968	-0.693	-0.092
1450	LC 1127	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-1.807	-2.636	0.137
1451	LC 1127	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-20.495	9.150	-6.412
1452	LC 1127	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-20.280	9.377	-6.177
1453	LC 1127	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-19.971	9.650	-5.934
1454	LC 1127	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	0.371	2.240	-0.071
1455	LC 1127	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	0.091	2.229	-0.082
1456	LC 1127	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-0.984	1.920	-0.157
1457	LC 1128	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-3.756	1.759	-0.242
1458	LC 1128	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-1.350	-2.267	0.044

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1459	LC 1128	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-41.848	46.493	-6.062
1460	LC 1128	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-41.081	47.044	-5.783
1461	LC 1128	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-40.042	47.732	-5.484
1462	LC 1128	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	0.939	5.380	-0.098
1463	LC 1128	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	0.272	5.455	-0.103
1464	LC 1128	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-2.500	4.886	-0.311
1465	LC 1129	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-4.903	-0.643	-0.288
1466	LC 1129	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-2.755	-4.234	0.118
1467	LC 1129	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-30.095	23.632	-6.529
1468	LC 1129	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-29.658	23.997	-6.249
1469	LC 1129	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-29.049	24.453	-5.956
1470	LC 1129	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	0.693	4.096	-0.129
1471	LC 1129	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	0.183	4.124	-0.150
1472	LC 1129	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-1.863	3.639	-0.294
1473	LC 1130	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-2.578	0.010	-0.203
1474	LC 1130	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-1.287	-2.151	0.021
1475	LC 1130	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-21.409	13.265	-6.500
1476	LC 1130	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-21.132	13.525	-6.265
1477	LC 1130	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-20.742	13.843	-6.021
1478	LC 1130	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	0.442	2.555	-0.074
1479	LC 1130	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	0.125	2.590	-0.084
1480	LC 1130	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-1.178	2.302	-0.177
1481	LC 1131	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-2.375	-1.013	-0.092
1482	LC 1131	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-1.240	-2.946	0.137
1483	LC 1131	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-17.872	8.203	-6.412
1484	LC 1131	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-17.665	8.419	-6.177
1485	LC 1131	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-17.364	8.681	-5.934
1486	LC 1131	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	0.415	2.232	-0.071
1487	LC 1131	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	0.137	2.226	-0.082
1488	LC 1131	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-0.981	1.921	-0.157
1489	LC 1132	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-3.574	1.661	-0.242
1490	LC 1132	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-1.176	-2.362	0.044
1491	LC 1132	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-41.041	46.202	-6.062
1492	LC 1132	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-40.277	46.750	-5.783
1493	LC 1132	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-39.241	47.434	-5.484
1494	LC 1132	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	0.953	5.378	-0.098
1495	LC 1132	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	0.286	5.454	-0.103
1496	LC 1132	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-2.499	4.886	-0.311
1497	LC 1133	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-4.186	-1.029	-0.288
1498	LC 1133	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-2.070	-4.608	0.118
1499	LC 1133	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-28.553	23.012	-6.529
1500	LC 1133	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-28.122	23.370	-6.249
1501	LC 1133	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-27.518	23.819	-5.956
1502	LC 1133	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	0.746	4.087	-0.129
1503	LC 1133	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	0.238	4.121	-0.150
1504	LC 1133	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-1.860	3.640	-0.294
1505	LC 1134	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-2.396	-0.088	-0.203
1506	LC 1134	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-1.112	-2.246	0.021
1507	LC 1134	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-20.602	12.974	-6.500
1508	LC 1134	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-20.328	13.230	-6.265
1509	LC 1134	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-19.940	13.545	-6.021
1510	LC 1134	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	0.456	2.553	-0.074
1511	LC 1134	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	0.139	2.589	-0.084
1512	LC 1134	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-1.178	2.303	-0.177
1513	LC 1135	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-2.340	-0.146	-0.212
1514	LC 1135	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-1.114	-2.143	0.006
1515	LC 1135	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-18.875	9.546	-6.567
1516	LC 1135	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-18.630	9.782	-6.337
1517	LC 1135	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-18.287	10.068	-6.100
1518	LC 1135	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	0.374	2.125	-0.070
1519	LC 1135	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	0.110	2.155	-0.081
1520	LC 1135	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-1.015	1.949	-0.159
1521	LC 1136	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-3.617	1.775	-0.255
1522	LC 1136	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-1.207	-2.243	0.029
1523	LC 1136	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-41.424	46.396	-6.079
1524	LC 1136	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-40.654	46.943	-5.800
1525	LC 1136	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-39.609	47.632	-5.501
1526	LC 1136	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	0.944	5.366	-0.098
1527	LC 1136	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	0.278	5.441	-0.103
1528	LC 1136	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-2.504	4.884	-0.311
1529	LC 1137	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-4.248	-0.268	-0.389
1530	LC 1137	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-2.052	-3.881	0.007
1531	LC 1137	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-29.260	23.704	-6.589
1532	LC 1137	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-28.803	24.080	-6.311
1533	LC 1137	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-28.174	24.543	-6.021
1534	LC 1137	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	0.708	4.026	-0.129
1535	LC 1137	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	0.208	4.083	-0.150
1536	LC 1137	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-1.891	3.654	-0.295
1537	LC 1138	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-2.445	0.029	-0.216
1538	LC 1138	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-1.146	-2.131	0.007
1539	LC 1138	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-20.987	13.164	-6.516

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1540	LC 1138	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-20.705	13.424	-6.281
1541	LC 1138	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-20.309	13.743	-6.038
1542	LC 1138	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	0.447	2.541	-0.073
1543	LC 1138	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	0.132	2.576	-0.084
1544	LC 1138	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-1.185	2.306	-0.177
1545	LC 1139	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-2.373	-0.066	-0.212
1546	LC 1139	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-1.199	-2.096	0.006
1547	LC 1139	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-18.660	9.855	-6.567
1548	LC 1139	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-18.458	10.071	-6.337
1549	LC 1139	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-18.160	10.338	-6.100
1550	LC 1139	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	0.374	2.125	-0.070
1551	LC 1139	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	0.111	2.155	-0.081
1552	LC 1139	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-0.987	1.963	-0.159
1553	LC 1140	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-3.628	1.800	-0.255
1554	LC 1140	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-1.233	-2.229	0.029
1555	LC 1140	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-41.358	46.491	-6.079
1556	LC 1140	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-40.601	47.032	-5.800
1557	LC 1140	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-39.570	47.715	-5.501
1558	LC 1140	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	0.943	5.366	-0.098
1559	LC 1140	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	0.278	5.441	-0.103
1560	LC 1140	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-2.495	4.888	-0.311
1561	LC 1141	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-4.289	-0.172	-0.389
1562	LC 1141	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-2.154	-3.825	0.007
1563	LC 1141	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-29.159	23.906	-6.589
1564	LC 1141	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-28.731	24.269	-6.311
1565	LC 1141	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-28.131	24.719	-6.021
1566	LC 1141	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	0.708	4.026	-0.129
1567	LC 1141	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	0.209	4.083	-0.150
1568	LC 1141	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-1.857	3.671	-0.295
1569	LC 1142	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-2.456	0.053	-0.216
1570	LC 1142	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-1.172	-2.117	0.007
1571	LC 1142	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-20.921	13.259	-6.516
1572	LC 1142	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-20.652	13.513	-6.281
1573	LC 1142	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-20.270	13.826	-6.038
1574	LC 1142	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	0.447	2.541	-0.073
1575	LC 1142	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	0.132	2.576	-0.084
1576	LC 1142	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-1.177	2.311	-0.177
1577	LC 1142	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-3.495	-0.526	-0.060
1578	LC 1143	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-2.027	-2.854	0.095
1579	LC 1143	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-7.060	10.872	-2.939
1580	LC 1143	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-6.881	10.980	-2.862
1581	LC 1143	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-6.651	11.112	-2.783
1582	LC 1143	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-5.991	-0.064	-5.874
1583	LC 1143	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-6.789	0.069	-5.939
1584	LC 1143	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-7.502	0.141	-6.005
1585	LC 1143	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	0.392	2.472	-0.073
1586	LC 1143	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	0.073	2.502	-0.084
1587	LC 1143	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-1.169	2.182	-0.172
1588	LC 1144	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-3.828	1.744	-0.236
1589	LC 1144	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-1.387	-2.293	-0.029
1590	LC 1144	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-17.557	29.267	-2.762
1591	LC 1144	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-17.123	29.521	-2.663
1592	LC 1144	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-16.552	29.843	-2.555
1593	LC 1144	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	0.905	24.192	-5.956
1594	LC 1144	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-1.471	24.620	-6.021
1595	LC 1144	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-3.589	24.866	-6.087
1596	LC 1144	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	0.933	5.381	-0.098
1597	LC 1144	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	0.262	5.455	-0.103
1598	LC 1144	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-2.512	4.879	-0.311
1599	LC 1145	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-5.368	-0.587	-0.256
1600	LC 1145	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-2.977	-4.425	0.012
1601	LC 1145	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-11.300	18.491	-2.939
1602	LC 1145	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-11.017	18.658	-2.845
1603	LC 1145	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-10.647	18.868	-2.745
1604	LC 1145	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-3.405	9.268	-6.099
1605	LC 1145	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-4.889	9.528	-6.172
1606	LC 1145	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-6.211	9.674	-6.247
1607	LC 1145	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	0.692	4.231	-0.131
1608	LC 1145	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	0.152	4.285	-0.151
1609	LC 1145	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-1.997	3.778	-0.302
1610	LC 1146	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-2.667	0.025	-0.198
1611	LC 1146	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-1.324	-2.175	-0.050
1612	LC 1146	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-7.511	12.341	-2.925
1613	LC 1146	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-7.325	12.451	-2.847
1614	LC 1146	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-7.081	12.589	-2.765
1615	LC 1146	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-3.578	2.948	-6.055
1616	LC 1146	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-4.514	3.111	-6.120
1617	LC 1146	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-5.347	3.201	-6.186
1618	LC 1146	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	0.441	2.582	-0.074
1619	LC 1146	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	0.117	2.617	-0.084
1620	LC 1146	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-1.206	2.325	-0.178

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1621	LC 1147	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-2.644	-0.832	-0.060
1622	LC 1147	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-1.276	-3.260	0.095
1623	LC 1147	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-5.968	11.078	-2.939
1624	LC 1147	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-5.826	11.158	-2.862
1625	LC 1147	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-5.632	11.264	-2.783
1626	LC 1147	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-2.137	-1.233	-5.874
1627	LC 1147	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-2.876	-1.101	-5.939
1628	LC 1147	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-3.530	-1.029	-6.005
1629	LC 1147	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	0.475	2.457	-0.073
1630	LC 1147	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	0.183	2.496	-0.084
1631	LC 1147	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-1.085	2.225	-0.172
1632	LC 1148	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-3.567	1.650	-0.236
1633	LC 1148	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-1.157	-2.417	-0.029
1634	LC 1148	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-17.222	29.330	-2.762
1635	LC 1148	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-16.799	29.576	-2.663
1636	LC 1148	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-16.239	29.889	-2.555
1637	LC 1148	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	2.090	23.832	-5.956
1638	LC 1148	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-0.268	24.261	-6.021
1639	LC 1148	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-2.367	24.507	-6.087
1640	LC 1148	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	0.959	5.377	-0.098
1641	LC 1148	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	0.296	5.454	-0.103
1642	LC 1148	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-2.487	4.892	-0.311
1643	LC 1149	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-4.338	-0.957	-0.256
1644	LC 1149	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-2.069	-4.915	0.012
1645	LC 1149	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-10.729	18.626	-2.939
1646	LC 1149	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-10.470	18.775	-2.845
1647	LC 1149	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-10.123	18.967	-2.745
1648	LC 1149	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-1.171	8.503	-6.099
1649	LC 1149	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-2.615	8.763	-6.172
1650	LC 1149	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-3.899	8.909	-6.247
1651	LC 1149	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	0.793	4.213	-0.131
1652	LC 1149	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	0.286	4.278	-0.151
1653	LC 1149	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-1.895	3.830	-0.302
1654	LC 1150	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-2.405	-0.069	-0.198
1655	LC 1150	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-1.094	-2.300	-0.050
1656	LC 1150	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-7.176	12.404	-2.925
1657	LC 1150	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-7.000	12.506	-2.847
1658	LC 1150	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-6.767	12.636	-2.765
1659	LC 1150	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-2.393	2.589	-6.055
1660	LC 1150	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-3.310	2.751	-6.120
1661	LC 1150	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-4.126	2.841	-6.186
1662	LC 1150	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	0.466	2.578	-0.074
1663	LC 1150	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	0.151	2.615	-0.084
1664	LC 1150	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-1.180	2.339	-0.178
1665	LC 1151	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-2.703	0.216	-0.220
1666	LC 1151	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-1.222	-2.106	-0.066
1667	LC 1151	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-6.966	10.840	-2.939
1668	LC 1151	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-6.787	10.947	-2.863
1669	LC 1151	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-6.558	11.080	-2.783
1670	LC 1151	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-4.337	0.303	-6.088
1671	LC 1151	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-5.094	0.471	-6.153
1672	LC 1151	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-5.773	0.580	-6.219
1673	LC 1151	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	0.370	2.220	-0.071
1674	LC 1151	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	0.084	2.289	-0.082
1675	LC 1151	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-1.162	2.171	-0.171
1676	LC 1152	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-3.677	1.807	-0.256
1677	LC 1152	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-1.231	-2.232	-0.048
1678	LC 1152	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-17.535	29.267	-2.762
1679	LC 1152	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-17.101	29.522	-2.663
1680	LC 1152	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-16.529	29.843	-2.555
1681	LC 1152	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	1.306	24.177	-5.978
1682	LC 1152	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-1.067	24.606	-6.043
1683	LC 1152	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-3.182	24.852	-6.109
1684	LC 1152	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	0.940	5.380	-0.098
1685	LC 1152	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	0.269	5.455	-0.103
1686	LC 1152	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-2.512	4.879	-0.311
1687	LC 1153	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-4.578	0.002	-0.395
1688	LC 1153	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-2.172	-3.833	-0.128
1689	LC 1153	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-11.266	18.492	-2.939
1690	LC 1153	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.963	18.625	-2.845
1691	LC 1153	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.593	18.835	-2.746
1692	LC 1153	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-2.476	9.387	-6.184
1693	LC 1153	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-3.948	9.648	-6.258
1694	LC 1153	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-5.260	9.794	-6.332
1695	LC 1153	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	0.694	4.083	-0.129
1696	LC 1153	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	0.173	4.164	-0.150
1697	LC 1153	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-1.989	3.767	-0.301
1698	LC 1154	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-2.515	0.077	-0.217
1699	LC 1154	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-1.171	-2.119	-0.068
1700	LC 1154	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.469	12.308	-2.925
1701	LC 1154	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.283	12.417	-2.848

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1702	LC 1154	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.039	12.555	-2.766
1703	LC 1154	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-3.196	2.853	-6.077
1704	LC 1154	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-4.118	3.053	-6.142
1705	LC 1154	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-4.946	3.143	-6.208
1706	LC 1154	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	0.443	2.555	-0.074
1707	LC 1154	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	0.122	2.590	-0.084
1708	LC 1154	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-1.206	2.326	-0.178
1709	LC 1155	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-2.445	0.230	-0.220
1710	LC 1155	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-1.092	-2.177	-0.066
1711	LC 1155	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-6.023	11.044	-2.939
1712	LC 1155	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-5.881	11.123	-2.863
1713	LC 1155	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-5.688	11.228	-2.783
1714	LC 1155	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-2.647	0.078	-6.088
1715	LC 1155	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-3.367	0.245	-6.153
1716	LC 1155	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-4.008	0.354	-6.219
1717	LC 1155	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	0.409	2.213	-0.071
1718	LC 1155	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	0.149	2.285	-0.082
1719	LC 1155	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-1.081	2.212	-0.171
1720	LC 1156	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-3.597	1.811	-0.256
1721	LC 1156	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-1.191	-2.253	-0.048
1722	LC 1156	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-17.244	29.330	-2.762
1723	LC 1156	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-16.822	29.576	-2.663
1724	LC 1156	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-16.262	29.889	-2.555
1725	LC 1156	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	1.826	24.108	-5.978
1726	LC 1156	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-0.535	24.536	-6.043
1727	LC 1156	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-2.638	24.782	-6.109
1728	LC 1156	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	0.952	5.378	-0.098
1729	LC 1156	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	0.289	5.454	-0.103
1730	LC 1156	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-2.487	4.892	-0.311
1731	LC 1157	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-4.266	0.019	-0.395
1732	LC 1157	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-2.015	-3.918	-0.128
1733	LC 1157	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.764	18.625	-2.939
1734	LC 1157	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.485	18.740	-2.845
1735	LC 1157	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.140	18.932	-2.746
1736	LC 1157	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-1.601	9.240	-6.184
1737	LC 1157	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-3.049	9.499	-6.258
1738	LC 1157	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-4.337	9.646	-6.332
1739	LC 1157	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	0.740	4.074	-0.129
1740	LC 1157	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	0.252	4.160	-0.150
1741	LC 1157	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-1.891	3.817	-0.301
1742	LC 1158	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-2.435	0.081	-0.217
1743	LC 1158	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-1.131	-2.141	-0.068
1744	LC 1158	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.178	12.371	-2.925
1745	LC 1158	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.004	12.472	-2.848
1746	LC 1158	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-6.771	12.601	-2.766
1747	LC 1158	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-2.676	2.784	-6.077
1748	LC 1158	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-3.586	2.984	-6.142
1749	LC 1158	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-4.403	3.074	-6.208
1750	LC 1158	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	0.455	2.553	-0.074
1751	LC 1158	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	0.142	2.589	-0.084
1752	LC 1158	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-1.181	2.338	-0.178
1753	LC 1159	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-2.968	-0.693	-0.092
1754	LC 1159	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-1.820	-2.627	0.049
1755	LC 1159	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.424	10.437	-2.944
1756	LC 1159	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.271	10.526	-2.868
1757	LC 1159	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.070	10.639	-2.789
1758	LC 1159	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-5.311	-0.107	-5.945
1759	LC 1159	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.073	-0.014	-6.010
1760	LC 1159	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.745	0.056	-6.076
1761	LC 1159	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	0.371	2.240	-0.071
1762	LC 1159	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	0.091	2.229	-0.082
1763	LC 1159	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-0.984	1.920	-0.157
1764	LC 1160	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-3.756	1.759	-0.242
1765	LC 1160	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-1.348	-2.268	-0.035
1766	LC 1160	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-17.420	29.231	-2.762
1767	LC 1160	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-16.992	29.481	-2.664
1768	LC 1160	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-16.428	29.797	-2.556
1769	LC 1160	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	1.094	24.203	-5.964
1770	LC 1160	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-1.276	24.632	-6.029
1771	LC 1160	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-3.388	24.878	-6.095
1772	LC 1160	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	0.939	5.380	-0.098
1773	LC 1160	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	0.272	5.455	-0.103
1774	LC 1160	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-2.500	4.886	-0.311
1775	LC 1161	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-4.903	-0.643	-0.288
1776	LC 1161	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-2.768	-4.227	-0.030
1777	LC 1161	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-11.021	18.390	-2.940
1778	LC 1161	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.752	18.547	-2.847
1779	LC 1161	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.398	18.746	-2.748
1780	LC 1161	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-3.038	9.286	-6.127
1781	LC 1161	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-4.505	9.545	-6.200
1782	LC 1161	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-5.808	9.696	-6.276

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1783	LC 1161	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	0.693	4.096	-0.129
1784	LC 1161	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	0.183	4.124	-0.150
1785	LC 1161	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-1.863	3.639	-0.294
1786	LC 1162	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-2.578	0.010	-0.203
1787	LC 1162	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-1.285	-2.151	-0.056
1788	LC 1162	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-7.374	12.305	-2.926
1789	LC 1162	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-7.194	12.410	-2.848
1790	LC 1162	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-6.957	12.543	-2.766
1791	LC 1162	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-3.399	2.917	-6.063
1792	LC 1162	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-4.327	3.079	-6.127
1793	LC 1162	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-5.156	3.130	-6.194
1794	LC 1162	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	0.442	2.555	-0.074
1795	LC 1162	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	0.125	2.590	-0.084
1796	LC 1162	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-1.178	2.302	-0.177
1797	LC 1163	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-2.375	-1.013	-0.092
1798	LC 1163	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-1.200	-2.962	0.049
1799	LC 1163	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-5.967	10.440	-2.944
1800	LC 1163	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-5.814	10.529	-2.868
1801	LC 1163	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-5.612	10.642	-2.789
1802	LC 1163	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-2.532	-1.051	-5.945
1803	LC 1163	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-3.272	-0.956	-6.010
1804	LC 1163	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-3.923	-0.887	-6.076
1805	LC 1163	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	0.415	2.232	-0.071
1806	LC 1163	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	0.137	2.226	-0.082
1807	LC 1163	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-0.981	1.921	-0.157
1808	LC 1164	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-3.574	1.661	-0.242
1809	LC 1164	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-1.158	-2.371	-0.035
1810	LC 1164	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-17.279	29.232	-2.762
1811	LC 1164	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-16.852	29.481	-2.664
1812	LC 1164	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-16.288	29.798	-2.556
1813	LC 1164	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	1.949	23.913	-5.964
1814	LC 1164	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-0.414	24.342	-6.029
1815	LC 1164	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-2.520	24.588	-6.095
1816	LC 1164	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	0.953	5.378	-0.098
1817	LC 1164	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	0.286	5.454	-0.103
1818	LC 1164	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-2.499	4.886	-0.311
1819	LC 1165	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-4.186	-1.029	-0.288
1820	LC 1165	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-2.018	-4.632	-0.030
1821	LC 1165	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.810	18.391	-2.940
1822	LC 1165	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.540	18.548	-2.847
1823	LC 1165	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.185	18.748	-2.748
1824	LC 1165	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-1.394	8.669	-6.127
1825	LC 1165	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-2.846	8.928	-6.200
1826	LC 1165	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-4.136	9.078	-6.276
1827	LC 1165	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	0.746	4.087	-0.129
1828	LC 1165	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	0.238	4.121	-0.150
1829	LC 1165	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-1.860	3.640	-0.294
1830	LC 1166	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-2.396	-0.088	-0.203
1831	LC 1166	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-1.095	-2.254	-0.056
1832	LC 1166	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-7.233	12.306	-2.926
1833	LC 1166	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-7.053	12.411	-2.848
1834	LC 1166	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-6.816	12.544	-2.766
1835	LC 1166	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-2.544	2.627	-6.063
1836	LC 1166	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-3.465	2.789	-6.127
1837	LC 1166	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-4.288	2.840	-6.194
1838	LC 1166	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	0.456	2.553	-0.074
1839	LC 1166	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	0.139	2.589	-0.084
1840	LC 1166	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-1.178	2.303	-0.177
1841	LC 1167	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-2.340	-0.146	-0.212
1842	LC 1167	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-1.102	-2.148	-0.070
1843	LC 1167	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-6.355	10.465	-2.943
1844	LC 1167	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-6.193	10.561	-2.867
1845	LC 1167	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-5.980	10.682	-2.788
1846	LC 1167	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-3.478	0.075	-6.093
1847	LC 1167	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-4.218	0.203	-6.157
1848	LC 1167	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-4.874	0.273	-6.224
1849	LC 1167	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	0.374	2.125	-0.070
1850	LC 1167	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	0.110	2.155	-0.081
1851	LC 1167	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-1.015	1.949	-0.159
1852	LC 1168	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-3.617	1.775	-0.255
1853	LC 1168	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-1.197	-2.248	-0.049
1854	LC 1168	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-17.387	29.219	-2.762
1855	LC 1168	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-16.956	29.471	-2.664
1856	LC 1168	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-16.389	29.789	-2.556
1857	LC 1168	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	1.574	24.127	-5.979
1858	LC 1168	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-0.793	24.556	-6.044
1859	LC 1168	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-2.902	24.802	-6.110
1860	LC 1168	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	0.944	5.366	-0.098
1861	LC 1168	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	0.278	5.441	-0.103
1862	LC 1168	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-2.504	4.884	-0.311
1863	LC 1169	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-4.248	-0.268	-0.389

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1864	LC 1169	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-2.031	-3.891	-0.130
1865	LC 1169	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-11.024	18.431	-2.940
1866	LC 1169	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-10.748	18.593	-2.846
1867	LC 1169	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-10.385	18.798	-2.747
1868	LC 1169	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-2.019	9.204	-6.186
1869	LC 1169	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-3.475	9.463	-6.259
1870	LC 1169	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-4.770	9.609	-6.334
1871	LC 1169	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	0.708	4.026	-0.129
1872	LC 1169	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	0.208	4.083	-0.150
1873	LC 1169	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-1.891	3.654	-0.295
1874	LC 1170	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-2.445	0.029	-0.216
1875	LC 1170	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-1.136	-2.136	-0.069
1876	LC 1170	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-7.341	12.293	-2.926
1877	LC 1170	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-7.158	12.400	-2.848
1878	LC 1170	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-6.917	12.536	-2.766
1879	LC 1170	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-2.931	2.799	-6.077
1880	LC 1170	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-3.852	2.960	-6.142
1881	LC 1170	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-4.672	3.050	-6.208
1882	LC 1170	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	0.447	2.541	-0.073
1883	LC 1170	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	0.132	2.576	-0.084
1884	LC 1170	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-1.185	2.306	-0.177
1885	LC 1171	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-2.373	-0.066	-0.212
1886	LC 1171	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-1.193	-2.099	-0.070
1887	LC 1171	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-6.115	10.546	-2.943
1888	LC 1171	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-5.971	10.629	-2.867
1889	LC 1171	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-5.777	10.736	-2.788
1890	LC 1171	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-3.513	0.203	-6.093
1891	LC 1171	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-4.252	0.331	-6.157
1892	LC 1171	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-4.909	0.401	-6.224
1893	LC 1171	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	0.374	2.125	-0.070
1894	LC 1171	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	0.111	2.155	-0.081
1895	LC 1171	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-0.987	1.963	-0.159
1896	LC 1172	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-3.628	1.800	-0.255
1897	LC 1172	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-1.225	-2.233	-0.049
1898	LC 1172	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-17.313	29.244	-2.762
1899	LC 1172	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-16.888	29.491	-2.664
1900	LC 1172	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-16.327	29.806	-2.556
1901	LC 1172	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	1.563	24.166	-5.979
1902	LC 1172	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-0.804	24.595	-6.044
1903	LC 1172	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-2.913	24.841	-6.110
1904	LC 1172	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	0.943	5.366	-0.098
1905	LC 1172	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	0.278	5.441	-0.103
1906	LC 1172	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-2.495	4.888	-0.311
1907	LC 1173	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-4.289	-0.172	-0.389
1908	LC 1173	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-2.141	-3.832	-0.130
1909	LC 1173	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-10.887	18.484	-2.940
1910	LC 1173	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-10.623	18.637	-2.846
1911	LC 1173	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-10.273	18.833	-2.747
1912	LC 1173	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-2.082	9.288	-6.186
1913	LC 1173	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-3.537	9.547	-6.259
1914	LC 1173	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-4.833	9.692	-6.334
1915	LC 1173	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	0.708	4.026	-0.129
1916	LC 1173	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	0.209	4.083	-0.150
1917	LC 1173	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-1.857	3.671	-0.295
1918	LC 1174	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-2.456	0.053	-0.216
1919	LC 1174	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-1.164	-2.121	-0.069
1920	LC 1174	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-7.267	12.318	-2.926
1921	LC 1174	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-7.090	12.421	-2.848
1922	LC 1174	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-6.855	12.552	-2.766
1923	LC 1174	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-2.941	2.838	-6.077
1924	LC 1174	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-3.863	2.999	-6.142
1925	LC 1174	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-4.683	3.089	-6.208
1926	LC 1174	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	0.447	2.541	-0.073
1927	LC 1174	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	0.132	2.576	-0.084
1928	LC 1174	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-1.177	2.311	-0.177
1929	LC 1175	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-3.495	-0.526	-0.060
1930	LC 1175	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-2.005	-2.861	0.186
1931	LC 1175	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-2.027	-2.854	0.095
1932	LC 1175	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-22.141	9.744	-6.337
1933	LC 1175	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-21.864	10.015	-6.100
1934	LC 1175	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-21.486	10.339	-5.856
1935	LC 1175	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	0.392	2.472	-0.073
1936	LC 1175	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-1.169	2.182	-0.172
1937	LC 1176	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-3.828	1.744	-0.236
1938	LC 1176	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-1.387	-2.292	0.051
1939	LC 1176	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-1.387	-2.293	-0.029
1940	LC 1176	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-42.198	46.552	-6.054
1941	LC 1176	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-41.416	47.112	-5.774
1942	LC 1176	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-40.361	47.809	-5.475
1943	LC 1176	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	0.933	5.381	-0.098
1944	LC 1176	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-2.512	4.879	-0.311

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1945	LC 1177	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-5.368	-0.587	-0.256
1946	LC 1177	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-2.954	-4.431	0.163
1947	LC 1177	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-2.977	-4.425	0.012
1948	LC 1177	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-30.851	23.737	-6.498
1949	LC 1177	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-30.377	24.131	-6.218
1950	LC 1177	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-29.731	24.612	-5.925
1951	LC 1177	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	0.692	4.231	-0.131
1952	LC 1177	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-1.997	3.778	-0.302
1953	LC 1178	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-2.667	0.025	-0.198
1954	LC 1178	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-1.323	-2.175	0.028
1955	LC 1178	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-1.324	-2.175	-0.050
1956	LC 1178	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-21.756	13.328	-6.492
1957	LC 1178	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-21.465	13.597	-6.257
1958	LC 1178	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-21.059	13.924	-6.013
1959	LC 1178	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	0.441	2.582	-0.074
1960	LC 1178	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-1.206	2.325	-0.178
1961	LC 1179	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-2.644	-0.832	-0.060
1962	LC 1179	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-1.321	-3.234	0.186
1963	LC 1179	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-1.276	-3.260	0.095
1964	LC 1179	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-17.912	9.017	-6.337
1965	LC 1179	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-17.731	9.227	-6.100
1966	LC 1179	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-17.449	9.490	-5.856
1967	LC 1179	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	0.475	2.457	-0.073
1968	LC 1179	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-1.085	2.225	-0.172
1969	LC 1180	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-3.567	1.650	-0.236
1970	LC 1180	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-1.177	-2.406	0.051
1971	LC 1180	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-1.157	-2.417	-0.029
1972	LC 1180	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-40.897	46.329	-6.054
1973	LC 1180	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-40.145	46.870	-5.774
1974	LC 1180	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-39.120	47.548	-5.475
1975	LC 1180	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	0.959	5.377	-0.098
1976	LC 1180	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-2.487	4.892	-0.311
1977	LC 1181	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-4.338	-0.957	-0.256
1978	LC 1181	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-2.128	-4.882	0.163
1979	LC 1181	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-2.069	-4.915	0.012
1980	LC 1181	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-28.371	23.261	-6.498
1981	LC 1181	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-27.960	23.615	-6.218
1982	LC 1181	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-27.377	24.056	-5.925
1983	LC 1181	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	0.793	4.213	-0.131
1984	LC 1181	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-1.895	3.830	-0.302
1985	LC 1182	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-2.405	-0.069	-0.198
1986	LC 1182	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-1.113	-2.289	0.028
1987	LC 1182	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-1.094	-2.300	-0.050
1988	LC 1182	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-20.455	13.105	-6.492
1989	LC 1182	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-20.193	13.355	-6.257
1990	LC 1182	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-19.817	13.663	-6.013
1991	LC 1182	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	0.466	2.578	-0.074
1992	LC 1182	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-1.180	2.339	-0.178
1993	LC 1183	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-2.703	0.216	-0.220
1994	LC 1183	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.223	-2.103	0.009
1995	LC 1183	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.222	-2.106	-0.066
1996	LC 1183	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-20.403	10.450	-6.556
1997	LC 1183	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-20.121	10.713	-6.326
1998	LC 1183	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-19.739	11.024	-6.087
1999	LC 1183	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	0.370	2.220	-0.071
2000	LC 1183	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.162	2.171	-0.171
2001	LC 1184	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-3.677	1.807	-0.256
2002	LC 1184	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-1.239	-2.227	0.029
2003	LC 1184	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-1.231	-2.232	-0.048
2004	LC 1184	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-41.815	46.539	-6.077
2005	LC 1184	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-41.034	47.097	-5.798
2006	LC 1184	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-39.979	47.791	-5.499
2007	LC 1184	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	0.940	5.380	-0.098
2008	LC 1184	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-2.512	4.879	-0.311
2009	LC 1185	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-4.578	0.002	-0.395
2010	LC 1185	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-2.180	-3.827	0.010
2011	LC 1185	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-2.172	-3.833	-0.128
2012	LC 1185	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-29.940	23.934	-6.587
2013	LC 1185	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-29.427	24.254	-6.310
2014	LC 1185	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-28.781	24.728	-6.020
2015	LC 1185	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	0.694	4.083	-0.129
2016	LC 1185	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-1.989	3.767	-0.301
2017	LC 1186	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-2.515	0.077	-0.217
2018	LC 1186	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.178	-2.115	0.007
2019	LC 1186	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.171	-2.119	-0.068
2020	LC 1186	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-21.336	13.244	-6.515
2021	LC 1186	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-21.046	13.510	-6.281
2022	LC 1186	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-20.641	13.834	-6.037
2023	LC 1186	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	0.443	2.555	-0.074
2024	LC 1186	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.206	2.326	-0.178
2025	LC 1187	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-2.445	0.230	-0.220

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2026	LC 1187	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.107	-2.167	0.009
2027	LC 1187	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.092	-2.177	-0.066
2028	LC 1187	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-18.181	10.671	-6.556
2029	LC 1187	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-17.987	10.884	-6.326
2030	LC 1187	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-17.694	11.144	-6.087
2031	LC 1187	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	0.409	2.213	-0.071
2032	LC 1187	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.081	2.212	-0.171
2033	LC 1188	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-3.597	1.811	-0.256
2034	LC 1188	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-1.203	-2.247	0.029
2035	LC 1188	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-1.191	-2.253	-0.048
2036	LC 1188	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-41.131	46.607	-6.077
2037	LC 1188	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-40.377	47.150	-5.798
2038	LC 1188	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-39.350	47.828	-5.499
2039	LC 1188	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	0.952	5.378	-0.098
2040	LC 1188	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-2.487	4.892	-0.311
2041	LC 1189	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-4.266	0.019	-0.395
2042	LC 1189	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-2.039	-3.903	0.010
2043	LC 1189	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-2.015	-3.918	-0.128
2044	LC 1189	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-28.718	24.079	-6.587
2045	LC 1189	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-28.262	24.366	-6.310
2046	LC 1189	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-27.674	24.807	-6.020
2047	LC 1189	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	0.740	4.074	-0.129
2048	LC 1189	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-1.891	3.817	-0.301
2049	LC 1190	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-2.435	0.081	-0.217
2050	LC 1190	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.142	-2.135	0.007
2051	LC 1190	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.131	-2.141	-0.068
2052	LC 1190	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-20.652	13.312	-6.515
2053	LC 1190	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-20.389	13.562	-6.281
2054	LC 1190	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-20.012	13.871	-6.037
2055	LC 1190	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	0.455	2.553	-0.074
2056	LC 1190	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.181	2.338	-0.178
2057	LC 1191	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-2.968	-0.693	-0.092
2058	LC 1191	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-1.807	-2.636	0.137
2059	LC 1191	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-1.820	-2.627	0.049
2060	LC 1191	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-20.495	9.150	-6.412
2061	LC 1191	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-20.280	9.377	-6.177
2062	LC 1191	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-19.971	9.650	-5.934
2063	LC 1191	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	0.371	2.240	-0.071
2064	LC 1191	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-0.984	1.920	-0.157
2065	LC 1192	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-3.756	1.759	-0.242
2066	LC 1192	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-1.350	-2.267	0.044
2067	LC 1192	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-1.348	-2.268	-0.035
2068	LC 1192	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-41.848	46.493	-6.062
2069	LC 1192	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-41.081	47.044	-5.783
2070	LC 1192	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-40.042	47.732	-5.484
2071	LC 1192	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	0.939	5.380	-0.098
2072	LC 1192	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-2.500	4.886	-0.311
2073	LC 1193	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-4.903	-0.643	-0.288
2074	LC 1193	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-2.755	-4.234	0.118
2075	LC 1193	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-2.768	-4.227	-0.030
2076	LC 1193	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-30.095	23.632	-6.529
2077	LC 1193	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-29.658	23.997	-6.249
2078	LC 1193	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-29.049	24.453	-5.956
2079	LC 1193	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	0.693	4.096	-0.129
2080	LC 1193	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-1.863	3.639	-0.294
2081	LC 1194	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-2.578	0.010	-0.203
2082	LC 1194	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.287	-2.151	0.021
2083	LC 1194	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.285	-2.151	-0.056
2084	LC 1194	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-21.409	13.265	-6.500
2085	LC 1194	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-21.132	13.525	-6.265
2086	LC 1194	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-20.742	13.843	-6.021
2087	LC 1194	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	0.442	2.555	-0.074
2088	LC 1194	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.178	2.302	-0.177
2089	LC 1195	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-2.375	-1.013	-0.092
2090	LC 1195	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-1.240	-2.946	0.137
2091	LC 1195	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-1.200	-2.962	0.049
2092	LC 1195	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-17.872	8.203	-6.412
2093	LC 1195	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-17.665	8.419	-6.177
2094	LC 1195	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-17.364	8.681	-5.934
2095	LC 1195	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	0.415	2.232	-0.071
2096	LC 1195	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-0.981	1.921	-0.157
2097	LC 1196	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-3.574	1.661	-0.242
2098	LC 1196	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-1.176	-2.362	0.044
2099	LC 1196	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-1.158	-2.371	-0.035
2100	LC 1196	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-41.041	46.202	-6.062
2101	LC 1196	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-40.277	46.750	-5.783
2102	LC 1196	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-39.241	47.434	-5.484
2103	LC 1196	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	0.953	5.378	-0.098
2104	LC 1196	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-2.499	4.886	-0.311
2105	LC 1197	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-4.186	-1.029	-0.288
2106	LC 1197	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-2.070	-4.608	0.118

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2107	LC 1197	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-2.018	-4.632	-0.030
2108	LC 1197	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-28.553	23.012	-6.529
2109	LC 1197	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-28.122	23.370	-6.249
2110	LC 1197	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-27.518	23.819	-5.956
2111	LC 1197	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	0.746	4.087	-0.129
2112	LC 1197	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-1.860	3.640	-0.294
2113	LC 1198	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-2.396	-0.088	-0.203
2114	LC 1198	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.112	-2.246	0.021
2115	LC 1198	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.095	-2.254	-0.056
2116	LC 1198	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-20.602	12.974	-6.500
2117	LC 1198	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-20.328	13.230	-6.265
2118	LC 1198	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-19.940	13.545	-6.021
2119	LC 1198	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	0.456	2.553	-0.074
2120	LC 1198	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.178	2.303	-0.177
2121	LC 1199	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-2.340	-0.146	-0.212
2122	LC 1199	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-1.114	-2.143	0.006
2123	LC 1199	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-1.102	-2.148	-0.070
2124	LC 1199	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-18.875	9.546	-6.567
2125	LC 1199	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-18.630	9.782	-6.337
2126	LC 1199	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-18.287	10.068	-6.100
2127	LC 1199	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	0.374	2.125	-0.070
2128	LC 1199	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-1.015	1.949	-0.159
2129	LC 1200	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-3.617	1.775	-0.255
2130	LC 1200	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-1.207	-2.243	0.029
2131	LC 1200	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-1.197	-2.248	-0.049
2132	LC 1200	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-41.424	46.396	-6.079
2133	LC 1200	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-40.654	46.943	-5.800
2134	LC 1200	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-39.609	47.632	-5.501
2135	LC 1200	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	0.944	5.366	-0.098
2136	LC 1200	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-2.504	4.884	-0.311
2137	LC 1201	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-4.248	-0.268	-0.389
2138	LC 1201	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-2.052	-3.881	0.007
2139	LC 1201	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-2.031	-3.891	-0.130
2140	LC 1201	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-29.260	23.704	-6.589
2141	LC 1201	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-28.803	24.080	-6.311
2142	LC 1201	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-28.174	24.543	-6.021
2143	LC 1201	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	0.708	4.026	-0.129
2144	LC 1201	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-1.891	3.654	-0.295
2145	LC 1202	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-2.445	0.029	-0.216
2146	LC 1202	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-1.146	-2.131	0.007
2147	LC 1202	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-1.136	-2.136	-0.069
2148	LC 1202	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-20.987	13.164	-6.516
2149	LC 1202	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-20.705	13.424	-6.281
2150	LC 1202	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-20.309	13.743	-6.038
2151	LC 1202	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	0.447	2.541	-0.073
2152	LC 1202	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-1.185	2.306	-0.177
2153	LC 1203	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-2.373	-0.066	-0.212
2154	LC 1203	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-1.199	-2.096	0.006
2155	LC 1203	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-1.193	-2.099	-0.070
2156	LC 1203	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-18.660	9.855	-6.567
2157	LC 1203	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-18.458	10.071	-6.337
2158	LC 1203	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-18.160	10.338	-6.100
2159	LC 1203	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	0.374	2.125	-0.070
2160	LC 1203	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-0.987	1.963	-0.159
2161	LC 1204	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-3.628	1.800	-0.255
2162	LC 1204	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-1.233	-2.229	0.029
2163	LC 1204	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-1.225	-2.233	-0.049
2164	LC 1204	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-41.358	46.491	-6.079
2165	LC 1204	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-40.601	47.032	-5.800
2166	LC 1204	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-39.570	47.715	-5.501
2167	LC 1204	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	0.943	5.366	-0.098
2168	LC 1204	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-2.495	4.888	-0.311
2169	LC 1205	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-4.289	-0.172	-0.389
2170	LC 1205	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-2.154	-3.825	0.007
2171	LC 1205	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-2.141	-3.832	-0.130
2172	LC 1205	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-29.159	23.906	-6.589
2173	LC 1205	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-28.731	24.269	-6.311
2174	LC 1205	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-28.131	24.719	-6.021
2175	LC 1205	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	0.708	4.026	-0.129
2176	LC 1205	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-1.857	3.671	-0.295
2177	LC 1206	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-2.456	0.053	-0.216
2178	LC 1206	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-1.172	-2.117	0.007
2179	LC 1206	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-1.164	-2.121	-0.069
2180	LC 1206	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-20.921	13.259	-6.516
2181	LC 1206	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-20.652	13.513	-6.281
2182	LC 1206	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-20.270	13.826	-6.038
2183	LC 1206	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	0.447	2.541	-0.073
2184	LC 1206	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-1.177	2.311	-0.177
2185	LC 1207	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-3.495	-0.526	-0.060
2186	LC 1207	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-2.005	-2.861	0.186
2187	LC 1207	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-2.027	-2.854	0.095

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2188	LC 1207	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-7.060	10.872	-2.939
2189	LC 1207	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-6.881	10.980	-2.862
2190	LC 1207	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-6.651	11.112	-2.783
2191	LC 1207	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-5.991	-0.064	-5.874
2192	LC 1207	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-6.789	0.069	-5.939
2193	LC 1207	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-7.502	0.141	-6.005
2194	LC 1207	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	0.392	2.472	-0.073
2195	LC 1207	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	0.073	2.502	-0.084
2196	LC 1208	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-3.828	1.744	-0.236
2197	LC 1208	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-1.387	-2.292	0.051
2198	LC 1208	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-1.387	-2.293	-0.029
2199	LC 1208	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-17.557	29.267	-2.762
2200	LC 1208	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-17.123	29.521	-2.663
2201	LC 1208	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-16.552	29.843	-2.555
2202	LC 1208	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	0.905	24.192	-5.956
2203	LC 1208	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-1.471	24.620	-6.021
2204	LC 1208	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-3.589	24.866	-6.087
2205	LC 1208	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	0.933	5.381	-0.098
2206	LC 1208	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	0.262	5.455	-0.103
2207	LC 1209	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-5.368	-0.587	-0.256
2208	LC 1209	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-2.954	-4.431	0.163
2209	LC 1209	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-2.977	-4.425	0.012
2210	LC 1209	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-11.300	18.491	-2.939
2211	LC 1209	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-11.017	18.658	-2.845
2212	LC 1209	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-10.647	18.868	-2.745
2213	LC 1209	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-3.405	9.268	-6.099
2214	LC 1209	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-4.889	9.528	-6.172
2215	LC 1209	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-6.211	9.674	-6.247
2216	LC 1209	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	0.692	4.231	-0.131
2217	LC 1209	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	0.152	4.285	-0.151
2218	LC 1210	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-2.667	0.025	-0.198
2219	LC 1210	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-1.323	-2.175	0.028
2220	LC 1210	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-1.324	-2.175	-0.050
2221	LC 1210	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-7.511	12.341	-2.925
2222	LC 1210	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-7.325	12.451	-2.847
2223	LC 1210	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-7.081	12.589	-2.765
2224	LC 1210	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-3.578	2.948	-6.055
2225	LC 1210	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-4.514	3.111	-6.120
2226	LC 1210	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-5.347	3.201	-6.186
2227	LC 1210	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	0.441	2.582	-0.074
2228	LC 1210	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	0.117	2.617	-0.084
2229	LC 1211	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-2.644	-0.832	-0.060
2230	LC 1211	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-1.321	-3.234	0.186
2231	LC 1211	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-1.276	-3.260	0.095
2232	LC 1211	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-5.968	11.078	-2.939
2233	LC 1211	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-5.826	11.158	-2.862
2234	LC 1211	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-5.632	11.264	-2.783
2235	LC 1211	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-2.137	-1.233	-5.874
2236	LC 1211	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-2.876	-1.101	-5.939
2237	LC 1211	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-3.530	-1.029	-6.005
2238	LC 1211	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	0.475	2.457	-0.073
2239	LC 1211	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	0.183	2.496	-0.084
2240	LC 1212	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-3.567	1.650	-0.236
2241	LC 1212	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-1.177	-2.406	0.051
2242	LC 1212	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-1.157	-2.417	-0.029
2243	LC 1212	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-17.222	29.330	-2.762
2244	LC 1212	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-16.799	29.576	-2.663
2245	LC 1212	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-16.239	29.889	-2.555
2246	LC 1212	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	2.090	23.832	-5.956
2247	LC 1212	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-0.268	24.261	-6.021
2248	LC 1212	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-2.367	24.507	-6.087
2249	LC 1212	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	0.959	5.377	-0.098
2250	LC 1212	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	0.296	5.454	-0.103
2251	LC 1213	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-4.338	-0.957	-0.256
2252	LC 1213	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-2.128	-4.882	0.163
2253	LC 1213	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-2.069	-4.915	0.012
2254	LC 1213	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-10.729	18.626	-2.939
2255	LC 1213	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-10.470	18.775	-2.845
2256	LC 1213	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-10.123	18.967	-2.745
2257	LC 1213	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-1.171	8.503	-6.099
2258	LC 1213	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-2.615	8.763	-6.172
2259	LC 1213	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-3.899	8.909	-6.247
2260	LC 1213	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	0.793	4.213	-0.131
2261	LC 1213	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	0.286	4.278	-0.151
2262	LC 1214	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-2.405	-0.069	-0.198
2263	LC 1214	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-1.113	-2.289	0.028
2264	LC 1214	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-1.094	-2.300	-0.050
2265	LC 1214	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-7.176	12.404	-2.925
2266	LC 1214	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-7.000	12.506	-2.847
2267	LC 1214	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-6.767	12.636	-2.765
2268	LC 1214	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-2.393	2.589	-6.055

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2269	LC 1214	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-3.310	2.751	-6.120
2270	LC 1214	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-4.126	2.841	-6.186
2271	LC 1214	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	0.466	2.578	-0.074
2272	LC 1214	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	0.151	2.615	-0.084
2273	LC 1215	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-2.703	0.216	-0.220
2274	LC 1215	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-1.223	-2.103	0.009
2275	LC 1215	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-1.222	-2.106	-0.066
2276	LC 1215	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-6.966	10.840	-2.939
2277	LC 1215	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-6.787	10.947	-2.863
2278	LC 1215	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-6.558	11.080	-2.783
2279	LC 1215	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-4.337	0.303	-6.088
2280	LC 1215	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-5.094	0.471	-6.153
2281	LC 1215	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-5.773	0.580	-6.219
2282	LC 1215	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	0.370	2.220	-0.071
2283	LC 1215	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	0.084	2.289	-0.082
2284	LC 1216	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-3.677	1.807	-0.256
2285	LC 1216	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.239	-2.227	0.029
2286	LC 1216	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.231	-2.232	-0.048
2287	LC 1216	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-17.535	29.267	-2.762
2288	LC 1216	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-17.101	29.522	-2.663
2289	LC 1216	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-16.529	29.843	-2.555
2290	LC 1216	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	1.306	24.177	-5.978
2291	LC 1216	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.067	24.606	-6.043
2292	LC 1216	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-3.182	24.852	-6.109
2293	LC 1216	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	0.940	5.380	-0.098
2294	LC 1216	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	0.269	5.455	-0.103
2295	LC 1217	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-4.578	0.002	-0.395
2296	LC 1217	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.180	-3.827	0.010
2297	LC 1217	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.172	-3.833	-0.128
2298	LC 1217	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-11.266	18.492	-2.939
2299	LC 1217	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.963	18.625	-2.845
2300	LC 1217	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.593	18.835	-2.746
2301	LC 1217	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.476	9.387	-6.184
2302	LC 1217	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-3.948	9.648	-6.258
2303	LC 1217	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-5.260	9.794	-6.332
2304	LC 1217	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	0.694	4.083	-0.129
2305	LC 1217	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	0.173	4.164	-0.150
2306	LC 1218	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-2.515	0.077	-0.217
2307	LC 1218	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-1.178	-2.115	0.007
2308	LC 1218	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-1.171	-2.119	-0.068
2309	LC 1218	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.469	12.308	-2.925
2310	LC 1218	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.283	12.417	-2.848
2311	LC 1218	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.039	12.555	-2.766
2312	LC 1218	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-3.196	2.853	-6.077
2313	LC 1218	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-4.118	3.053	-6.142
2314	LC 1218	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-4.946	3.143	-6.208
2315	LC 1218	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	0.443	2.555	-0.074
2316	LC 1218	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	0.122	2.590	-0.084
2317	LC 1219	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-2.445	0.230	-0.220
2318	LC 1219	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-1.107	-2.167	0.009
2319	LC 1219	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-1.092	-2.177	-0.066
2320	LC 1219	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-6.023	11.044	-2.939
2321	LC 1219	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-5.881	11.123	-2.863
2322	LC 1219	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-5.688	11.228	-2.783
2323	LC 1219	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-2.647	0.078	-6.088
2324	LC 1219	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-3.367	0.245	-6.153
2325	LC 1219	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-4.008	0.354	-6.219
2326	LC 1219	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	0.409	2.213	-0.071
2327	LC 1219	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	0.149	2.285	-0.082
2328	LC 1220	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-3.597	1.811	-0.256
2329	LC 1220	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.203	-2.247	0.029
2330	LC 1220	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.191	-2.253	-0.048
2331	LC 1220	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-17.244	29.330	-2.762
2332	LC 1220	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-16.822	29.576	-2.663
2333	LC 1220	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-16.262	29.889	-2.555
2334	LC 1220	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	1.826	24.108	-5.978
2335	LC 1220	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-0.535	24.536	-6.043
2336	LC 1220	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-2.638	24.782	-6.109
2337	LC 1220	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	0.952	5.378	-0.098
2338	LC 1220	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	0.289	5.454	-0.103
2339	LC 1221	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-4.266	0.019	-0.395
2340	LC 1221	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.039	-3.903	0.010
2341	LC 1221	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.015	-3.918	-0.128
2342	LC 1221	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.764	18.625	-2.939
2343	LC 1221	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.485	18.740	-2.845
2344	LC 1221	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.140	18.932	-2.746
2345	LC 1221	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-1.601	9.240	-6.184
2346	LC 1221	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-3.049	9.499	-6.258
2347	LC 1221	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-4.337	9.646	-6.332
2348	LC 1221	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	0.740	4.074	-0.129
2349	LC 1221	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	0.252	4.160	-0.150

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2350	LC 1222	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-2.435	0.081	-0.217
2351	LC 1222	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-1.142	-2.135	0.007
2352	LC 1222	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-1.131	-2.141	-0.068
2353	LC 1222	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.178	12.371	-2.925
2354	LC 1222	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.004	12.472	-2.848
2355	LC 1222	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-6.771	12.601	-2.766
2356	LC 1222	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-2.676	2.784	-6.077
2357	LC 1222	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-3.586	2.984	-6.142
2358	LC 1222	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-4.403	3.074	-6.208
2359	LC 1222	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	0.455	2.553	-0.074
2360	LC 1222	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	0.142	2.589	-0.084
2361	LC 1223	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-2.968	-0.693	-0.092
2362	LC 1223	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-1.807	-2.636	0.137
2363	LC 1223	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-1.820	-2.627	0.049
2364	LC 1223	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.424	10.437	-2.944
2365	LC 1223	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.271	10.526	-2.868
2366	LC 1223	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.070	10.639	-2.789
2367	LC 1223	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-5.311	-0.107	-5.945
2368	LC 1223	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.073	-0.014	-6.010
2369	LC 1223	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.745	0.056	-6.076
2370	LC 1223	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	0.371	2.240	-0.071
2371	LC 1223	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	0.091	2.229	-0.082
2372	LC 1224	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-3.756	1.759	-0.242
2373	LC 1224	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.350	-2.267	0.044
2374	LC 1224	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.348	-2.268	-0.035
2375	LC 1224	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-17.420	29.231	-2.762
2376	LC 1224	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-16.992	29.481	-2.664
2377	LC 1224	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-16.428	29.797	-2.556
2378	LC 1224	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	1.094	24.203	-5.964
2379	LC 1224	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.276	24.632	-6.029
2380	LC 1224	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-3.388	24.878	-6.095
2381	LC 1224	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	0.939	5.380	-0.098
2382	LC 1224	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	0.272	5.455	-0.103
2383	LC 1225	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-4.903	-0.643	-0.288
2384	LC 1225	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.755	-4.234	0.118
2385	LC 1225	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.768	-4.227	-0.030
2386	LC 1225	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-11.021	18.390	-2.940
2387	LC 1225	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.752	18.547	-2.847
2388	LC 1225	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.398	18.746	-2.748
2389	LC 1225	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-3.038	9.286	-6.127
2390	LC 1225	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-4.505	9.545	-6.200
2391	LC 1225	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-5.808	9.696	-6.276
2392	LC 1225	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	0.693	4.096	-0.129
2393	LC 1225	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	0.183	4.124	-0.150
2394	LC 1226	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-2.578	0.010	-0.203
2395	LC 1226	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-1.287	-2.151	0.021
2396	LC 1226	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-1.285	-2.151	-0.056
2397	LC 1226	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-7.374	12.305	-2.926
2398	LC 1226	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-7.194	12.410	-2.848
2399	LC 1226	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-6.957	12.543	-2.766
2400	LC 1226	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-3.399	2.917	-6.063
2401	LC 1226	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-4.327	3.079	-6.127
2402	LC 1226	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-5.156	3.130	-6.194
2403	LC 1226	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	0.442	2.555	-0.074
2404	LC 1226	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	0.125	2.590	-0.084
2405	LC 1227	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-2.375	-1.013	-0.092
2406	LC 1227	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-1.240	-2.946	0.137
2407	LC 1227	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-1.200	-2.962	0.049
2408	LC 1227	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-5.967	10.440	-2.944
2409	LC 1227	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-5.814	10.529	-2.868
2410	LC 1227	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-5.612	10.642	-2.789
2411	LC 1227	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-2.532	-1.051	-5.945
2412	LC 1227	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-3.272	-0.956	-6.010
2413	LC 1227	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-3.923	-0.887	-6.076
2414	LC 1227	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	0.415	2.232	-0.071
2415	LC 1227	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	0.137	2.226	-0.082
2416	LC 1228	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-3.574	1.661	-0.242
2417	LC 1228	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.176	-2.362	0.044
2418	LC 1228	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.158	-2.371	-0.035
2419	LC 1228	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-17.279	29.232	-2.762
2420	LC 1228	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-16.852	29.481	-2.664
2421	LC 1228	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-16.288	29.798	-2.556
2422	LC 1228	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	1.949	23.913	-5.964
2423	LC 1228	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-0.414	24.342	-6.029
2424	LC 1228	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-2.520	24.588	-6.095
2425	LC 1228	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	0.953	5.378	-0.098
2426	LC 1228	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	0.286	5.454	-0.103
2427	LC 1229	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-4.186	-1.029	-0.288
2428	LC 1229	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.070	-4.608	0.118
2429	LC 1229	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.018	-4.632	-0.030
2430	LC 1229	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.810	18.391	-2.940

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2431	LC 1229	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.540	18.548	-2.847
2432	LC 1229	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.185	18.748	-2.748
2433	LC 1229	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-1.394	8.669	-6.127
2434	LC 1229	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.846	8.928	-6.200
2435	LC 1229	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-4.136	9.078	-6.276
2436	LC 1229	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	0.746	4.087	-0.129
2437	LC 1229	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	0.238	4.121	-0.150
2438	LC 1230	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-2.396	-0.088	-0.203
2439	LC 1230	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-1.112	-2.246	0.021
2440	LC 1230	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-1.095	-2.254	-0.056
2441	LC 1230	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-7.233	12.306	-2.926
2442	LC 1230	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-7.053	12.411	-2.848
2443	LC 1230	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-6.816	12.544	-2.766
2444	LC 1230	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-2.544	2.627	-6.063
2445	LC 1230	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-3.465	2.789	-6.127
2446	LC 1230	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-4.288	2.840	-6.194
2447	LC 1230	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	0.456	2.553	-0.074
2448	LC 1230	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	0.139	2.589	-0.084
2449	LC 1231	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-2.340	-0.146	-0.212
2450	LC 1231	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-1.114	-2.143	0.006
2451	LC 1231	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-1.102	-2.148	-0.070
2452	LC 1231	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-6.355	10.465	-2.943
2453	LC 1231	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-6.193	10.561	-2.867
2454	LC 1231	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-5.980	10.682	-2.788
2455	LC 1231	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-3.478	0.075	-6.093
2456	LC 1231	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-4.218	0.203	-6.157
2457	LC 1231	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-4.874	0.273	-6.224
2458	LC 1231	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	0.374	2.125	-0.070
2459	LC 1231	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	0.110	2.155	-0.081
2460	LC 1232	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-3.617	1.775	-0.255
2461	LC 1232	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-1.207	-2.243	0.029
2462	LC 1232	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-1.197	-2.248	-0.049
2463	LC 1232	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-17.387	29.219	-2.762
2464	LC 1232	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-16.956	29.471	-2.664
2465	LC 1232	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-16.389	29.789	-2.556
2466	LC 1232	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	1.574	24.127	-5.979
2467	LC 1232	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-0.793	24.556	-6.044
2468	LC 1232	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-2.902	24.802	-6.110
2469	LC 1232	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	0.944	5.366	-0.098
2470	LC 1232	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	0.278	5.441	-0.103
2471	LC 1233	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-4.248	-0.268	-0.389
2472	LC 1233	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-2.052	-3.881	0.007
2473	LC 1233	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-2.031	-3.891	-0.130
2474	LC 1233	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-11.024	18.431	-2.940
2475	LC 1233	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-10.748	18.593	-2.846
2476	LC 1233	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-10.385	18.798	-2.747
2477	LC 1233	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-2.019	9.204	-6.186
2478	LC 1233	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-3.475	9.463	-6.259
2479	LC 1233	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-4.770	9.609	-6.334
2480	LC 1233	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	0.708	4.026	-0.129
2481	LC 1233	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	0.208	4.083	-0.150
2482	LC 1234	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-2.445	0.029	-0.216
2483	LC 1234	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-1.146	-2.131	0.007
2484	LC 1234	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-1.136	-2.136	-0.069
2485	LC 1234	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-7.341	12.293	-2.926
2486	LC 1234	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-7.158	12.400	-2.848
2487	LC 1234	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-6.917	12.536	-2.766
2488	LC 1234	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-2.931	2.799	-6.077
2489	LC 1234	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-3.852	2.960	-6.142
2490	LC 1234	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-4.672	3.050	-6.208
2491	LC 1234	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	0.447	2.541	-0.073
2492	LC 1234	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	0.132	2.576	-0.084
2493	LC 1235	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-2.373	-0.066	-0.212
2494	LC 1235	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-1.199	-2.096	0.006
2495	LC 1235	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-1.193	-2.099	-0.070
2496	LC 1235	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-6.115	10.546	-2.943
2497	LC 1235	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-5.971	10.629	-2.867
2498	LC 1235	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-5.777	10.736	-2.788
2499	LC 1235	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-3.513	0.203	-6.093
2500	LC 1235	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-4.252	0.331	-6.157
2501	LC 1235	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-4.909	0.401	-6.224
2502	LC 1235	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	0.374	2.125	-0.070
2503	LC 1235	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	0.111	2.155	-0.081
2504	LC 1236	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-3.628	1.800	-0.255
2505	LC 1236	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-1.233	-2.229	0.029
2506	LC 1236	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-1.225	-2.233	-0.049
2507	LC 1236	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-17.313	29.244	-2.762
2508	LC 1236	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-16.888	29.491	-2.664
2509	LC 1236	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-16.327	29.806	-2.556
2510	LC 1236	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	1.563	24.166	-5.979
2511	LC 1236	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-0.804	24.595	-6.044

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2512	LC 1236	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-2.913	24.841	-6.110
2513	LC 1236	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	0.943	5.366	-0.098
2514	LC 1236	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	0.278	5.441	-0.103
2515	LC 1237	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-4.289	-0.172	-0.389
2516	LC 1237	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-2.154	-3.825	0.007
2517	LC 1237	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-2.141	-3.832	-0.130
2518	LC 1237	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-10.887	18.484	-2.940
2519	LC 1237	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-10.623	18.637	-2.846
2520	LC 1237	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-10.273	18.833	-2.747
2521	LC 1237	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-2.082	9.288	-6.186
2522	LC 1237	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-3.537	9.547	-6.259
2523	LC 1237	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-4.833	9.692	-6.334
2524	LC 1237	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	0.708	4.026	-0.129
2525	LC 1237	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	0.209	4.083	-0.150
2526	LC 1238	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-2.456	0.053	-0.216
2527	LC 1238	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-1.172	-2.117	0.007
2528	LC 1238	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-1.164	-2.121	-0.069
2529	LC 1238	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-7.267	12.318	-2.926
2530	LC 1238	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-7.090	12.421	-2.848
2531	LC 1238	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-6.855	12.552	-2.766
2532	LC 1238	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-2.941	2.838	-6.077
2533	LC 1238	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-3.863	2.999	-6.142
2534	LC 1238	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-4.683	3.089	-6.208
2535	LC 1238	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	0.447	2.541	-0.073
2536	LC 1238	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	0.132	2.576	-0.084

BIJLAGE B

Belastingen uit lijn op juk 65

Projectnaam: TenneT 150 kV Station Waalwijk
Onderdeel: Juk 65; Belastingen uit lijn
Documentnummer: ---
Revisie: A
Bijlage: B-1

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1	LC 1001	K4:1NL.1#1a,Wind/10C,+90 deg	4.148	-0.558	0.299
2	LC 1001	K5:1NL.1#1a,Wind/10C,+90 deg	3.847	-0.401	0.443
3	LC 1001	K5:2NL.1#1a,Wind/10C,+90 deg	4.318	-0.655	0.262
4	LC 1001	K6:1NL.1#1a,Wind/10C,+90 deg	24.949	10.376	-4.671
5	LC 1001	K6:2NL.1#1a,Wind/10C,+90 deg	24.780	10.730	-4.367
6	LC 1001	K6:3NL.1#1a,Wind/10C,+90 deg	24.544	11.128	-4.052
7	LC 1001	K7:1NL.1#1a,Wind/10C,+90 deg	24.072	11.986	-5.086
8	LC 1001	K7:2NL.1#1a,Wind/10C,+90 deg	24.821	11.508	-5.283
9	LC 1001	K7:3NL.1#1a,Wind/10C,+90 deg	25.449	11.080	-5.479
10	LC 1002	K4:1NL.1#1b,Wind/-20C,+90 deg	3.743	1.448	0.068
11	LC 1002	K5:1NL.1#1b,Wind/-20C,+90 deg	3.404	1.622	0.156
12	LC 1002	K5:2NL.1#1b,Wind/-20C,+90 deg	3.892	1.353	0.039
13	LC 1002	K6:1NL.1#1b,Wind/-20C,+90 deg	43.220	43.535	-4.217
14	LC 1002	K6:2NL.1#1b,Wind/-20C,+90 deg	42.711	44.095	-3.868
15	LC 1002	K6:3NL.1#1b,Wind/-20C,+90 deg	42.031	44.750	-3.498
16	LC 1002	K7:1NL.1#1b,Wind/-20C,+90 deg	32.000	31.505	-4.932
17	LC 1002	K7:2NL.1#1b,Wind/-20C,+90 deg	33.225	30.770	-5.142
18	LC 1002	K7:3NL.1#1b,Wind/-20C,+90 deg	34.235	30.120	-5.348
19	LC 1003	K4:1NL.1#3,Wind / Ice / -5C,+90 deg	7.858	-1.321	0.041
20	LC 1003	K5:1NL.1#3,Wind / Ice / -5C,+90 deg	7.319	-1.013	0.427
21	LC 1003	K5:2NL.1#3,Wind / Ice / -5C,+90 deg	8.130	-1.471	-0.138
22	LC 1003	K6:1NL.1#3,Wind / Ice / -5C,+90 deg	35.187	22.755	-4.876
23	LC 1003	K6:2NL.1#3,Wind / Ice / -5C,+90 deg	34.915	23.233	-4.456
24	LC 1003	K6:3NL.1#3,Wind / Ice / -5C,+90 deg	34.528	23.783	-4.018
25	LC 1003	K7:1NL.1#3,Wind / Ice / -5C,+90 deg	30.903	20.784	-5.541
26	LC 1003	K7:2NL.1#3,Wind / Ice / -5C,+90 deg	31.942	20.131	-5.822
27	LC 1003	K7:3NL.1#3,Wind / Ice / -5C,+90 deg	32.800	19.551	-6.100
28	LC 1004	K4:1NL.1#4,Construction/Maintenance +5C,+90 deg	2.546	0.098	0.032
29	LC 1004	K5:1NL.1#4,Construction/Maintenance +5C,+90 deg	2.356	0.203	0.134
30	LC 1004	K5:2NL.1#4,Construction/Maintenance +5C,+90 deg	2.632	0.044	-0.011
31	LC 1004	K6:1NL.1#4,Construction/Maintenance +5C,+90 deg	22.006	13.247	-5.072
32	LC 1004	K6:2NL.1#4,Construction/Maintenance +5C,+90 deg	21.862	13.542	-4.786
33	LC 1004	K6:3NL.1#4,Construction/Maintenance +5C,+90 deg	21.647	13.882	-4.490
34	LC 1004	K7:1NL.1#4,Construction/Maintenance +5C,+90 deg	19.759	12.822	-5.512
35	LC 1004	K7:2NL.1#4,Construction/Maintenance +5C,+90 deg	20.407	12.411	-5.708
36	LC 1004	K7:3NL.1#4,Construction/Maintenance +5C,+90 deg	20.939	12.046	-5.902
37	LC 1005	K4:1NL.1#1a,Wind/10C,-90 deg	3.303	-0.771	0.299
38	LC 1005	K5:1NL.1#1a,Wind/10C,-90 deg	3.143	-0.651	0.443
39	LC 1005	K5:2NL.1#1a,Wind/10C,-90 deg	3.326	-0.835	0.262
40	LC 1005	K6:1NL.1#1a,Wind/10C,-90 deg	19.605	10.095	-4.671
41	LC 1005	K6:2NL.1#1a,Wind/10C,-90 deg	19.597	10.352	-4.367
42	LC 1005	K6:3NL.1#1a,Wind/10C,-90 deg	19.522	10.654	-4.052
43	LC 1005	K7:1NL.1#1a,Wind/10C,-90 deg	18.318	11.821	-5.086
44	LC 1005	K7:2NL.1#1a,Wind/10C,-90 deg	18.885	11.442	-5.283
45	LC 1005	K7:3NL.1#1a,Wind/10C,-90 deg	19.330	11.112	-5.479
46	LC 1006	K4:1NL.1#1b,Wind/-20C,-90 deg	3.576	1.406	0.068
47	LC 1006	K5:1NL.1#1b,Wind/-20C,-90 deg	3.265	1.573	0.156
48	LC 1006	K5:2NL.1#1b,Wind/-20C,-90 deg	3.697	1.318	0.039
49	LC 1006	K6:1NL.1#1b,Wind/-20C,-90 deg	42.168	43.480	-4.217
50	LC 1006	K6:2NL.1#1b,Wind/-20C,-90 deg	41.690	44.020	-3.868
51	LC 1006	K6:3NL.1#1b,Wind/-20C,-90 deg	41.042	44.656	-3.498
52	LC 1006	K7:1NL.1#1b,Wind/-20C,-90 deg	30.866	31.472	-4.932
53	LC 1006	K7:2NL.1#1b,Wind/-20C,-90 deg	32.056	30.757	-5.142
54	LC 1006	K7:3NL.1#1b,Wind/-20C,-90 deg	33.030	30.126	-5.348
55	LC 1007	K4:1NL.1#3,Wind / Ice / -5C,-90 deg	6.742	-1.602	0.041
56	LC 1007	K5:1NL.1#3,Wind / Ice / -5C,-90 deg	6.390	-1.342	0.427
57	LC 1007	K5:2NL.1#3,Wind / Ice / -5C,-90 deg	6.820	-1.708	-0.138
58	LC 1007	K6:1NL.1#3,Wind / Ice / -5C,-90 deg	32.868	22.600	-4.876
59	LC 1007	K6:2NL.1#3,Wind / Ice / -5C,-90 deg	32.684	23.026	-4.456
60	LC 1007	K6:3NL.1#3,Wind / Ice / -5C,-90 deg	32.386	23.523	-4.018
61	LC 1007	K7:1NL.1#3,Wind / Ice / -5C,-90 deg	28.359	20.694	-5.541
62	LC 1007	K7:2NL.1#3,Wind / Ice / -5C,-90 deg	29.298	20.095	-5.822
63	LC 1007	K7:3NL.1#3,Wind / Ice / -5C,-90 deg	30.056	19.569	-6.100
64	LC 1008	K4:1NL.1#4,Construction/Maintenance +5C,-90 deg	2.380	0.057	0.032
65	LC 1008	K5:1NL.1#4,Construction/Maintenance +5C,-90 deg	2.217	0.154	0.134
66	LC 1008	K5:2NL.1#4,Construction/Maintenance +5C,-90 deg	2.437	0.008	-0.011
67	LC 1008	K6:1NL.1#4,Construction/Maintenance +5C,-90 deg	20.954	13.191	-5.072
68	LC 1008	K6:2NL.1#4,Construction/Maintenance +5C,-90 deg	20.841	13.468	-4.786
69	LC 1008	K6:3NL.1#4,Construction/Maintenance +5C,-90 deg	20.658	13.788	-4.490
70	LC 1008	K7:1NL.1#4,Construction/Maintenance +5C,-90 deg	18.626	12.790	-5.512
71	LC 1008	K7:2NL.1#4,Construction/Maintenance +5C,-90 deg	19.238	12.398	-5.708
72	LC 1008	K7:3NL.1#4,Construction/Maintenance +5C,-90 deg	19.734	12.053	-5.902
73	LC 1009	K4:1NL.1#1a,Wind/10C,+45 deg	3.195	-1.155	0.250
74	LC 1009	K5:1NL.1#1a,Wind/10C,+45 deg	3.042	-1.076	0.400
75	LC 1009	K5:2NL.1#1a,Wind/10C,+45 deg	3.272	-1.192	0.203
76	LC 1009	K6:1NL.1#1a,Wind/10C,+45 deg	21.579	8.502	-4.834
77	LC 1009	K6:2NL.1#1a,Wind/10C,+45 deg	21.539	8.739	-4.530
78	LC 1009	K6:3NL.1#1a,Wind/10C,+45 deg	21.435	9.025	-4.217
79	LC 1009	K7:1NL.1#1a,Wind/10C,+45 deg	20.193	9.446	-5.276
80	LC 1009	K7:2NL.1#1a,Wind/10C,+45 deg	20.762	9.098	-5.473
81	LC 1009	K7:3NL.1#1a,Wind/10C,+45 deg	21.225	8.797	-5.669

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
82	LC 1010	K4:1NL.1#1b,Wind/-20C,+45 deg	3.669	1.456	0.062
83	LC 1010	K5:1NL.1#1b,Wind/-20C,+45 deg	3.339	1.607	0.151
84	LC 1010	K5:2NL.1#1b,Wind/-20C,+45 deg	3.800	1.356	0.033
85	LC 1010	K6:1NL.1#1b,Wind/-20C,+45 deg	42.948	43.630	-4.225
86	LC 1010	K6:2NL.1#1b,Wind/-20C,+45 deg	42.458	44.173	-3.875
87	LC 1010	K6:3NL.1#1b,Wind/-20C,+45 deg	41.792	44.820	-3.505
88	LC 1010	K7:1NL.1#1b,Wind/-20C,+45 deg	31.653	31.544	-4.941
89	LC 1010	K7:2NL.1#1b,Wind/-20C,+45 deg	32.863	30.822	-5.151
90	LC 1010	K7:3NL.1#1b,Wind/-20C,+45 deg	33.852	30.193	-5.359
91	LC 1011	K4:1NL.1#1a,Wind/10C,+45 deg	7.238	-1.476	0.005
92	LC 1011	K5:1NL.1#1a,Wind/10C,+45 deg	6.809	-1.232	0.391
93	LC 1011	K5:2NL.1#1a,Wind/10C,+45 deg	7.421	-1.571	-0.179
94	LC 1011	K6:1NL.1#1a,Wind/10C,+45 deg	34.196	22.554	-4.917
95	LC 1011	K6:2NL.1#1a,Wind/10C,+45 deg	33.972	22.997	-4.497
96	LC 1011	K6:3NL.1#1a,Wind/10C,+45 deg	33.641	23.502	-4.059
97	LC 1011	K7:1NL.1#1a,Wind/10C,+45 deg	29.682	20.350	-5.590
98	LC 1011	K7:2NL.1#1a,Wind/10C,+45 deg	30.653	19.751	-5.871
99	LC 1011	K7:3NL.1#1a,Wind/10C,+45 deg	31.454	19.214	-6.149
100	LC 1012	K4:1NL.1#4,Construction/Maintenance +5C,+45 deg	2.463	0.078	0.028
101	LC 1012	K5:1NL.1#4,Construction/Maintenance +5C,+45 deg	2.287	0.175	0.130
102	LC 1012	K5:2NL.1#4,Construction/Maintenance +5C,+45 deg	2.535	0.032	-0.016
103	LC 1012	K6:1NL.1#4,Construction/Maintenance +5C,+45 deg	21.694	13.274	-5.080
104	LC 1012	K6:2NL.1#4,Construction/Maintenance +5C,+45 deg	21.570	13.553	-4.793
105	LC 1012	K6:3NL.1#4,Construction/Maintenance +5C,+45 deg	21.370	13.883	-4.498
106	LC 1012	K7:1NL.1#4,Construction/Maintenance +5C,+45 deg	19.360	12.753	-5.521
107	LC 1012	K7:2NL.1#4,Construction/Maintenance +5C,+45 deg	19.989	12.356	-5.717
108	LC 1012	K7:3NL.1#4,Construction/Maintenance +5C,+45 deg	20.504	12.006	-5.911
109	LC 1013	K4:1NL.1#1a,Wind/10C,+45 deg	2.704	-1.435	0.250
110	LC 1013	K5:1NL.1#1a,Wind/10C,+45 deg	2.588	-1.336	0.400
111	LC 1013	K5:2NL.1#1a,Wind/10C,+45 deg	2.737	-1.494	0.203
112	LC 1013	K6:1NL.1#1a,Wind/10C,+45 deg	18.745	7.674	-4.834
113	LC 1013	K6:2NL.1#1a,Wind/10C,+45 deg	18.721	7.893	-4.530
114	LC 1013	K6:3NL.1#1a,Wind/10C,+45 deg	18.633	8.162	-4.217
115	LC 1013	K7:1NL.1#1a,Wind/10C,+45 deg	17.312	8.693	-5.276
116	LC 1013	K7:2NL.1#1a,Wind/10C,+45 deg	17.846	8.326	-5.473
117	LC 1013	K7:3NL.1#1a,Wind/10C,+45 deg	18.272	8.007	-5.669
118	LC 1014	K4:1NL.1#1b,Wind/-20C,+45 deg	3.572	1.401	0.062
119	LC 1014	K5:1NL.1#1b,Wind/-20C,+45 deg	3.250	1.556	0.151
120	LC 1014	K5:2NL.1#1b,Wind/-20C,+45 deg	3.695	1.296	0.033
121	LC 1014	K6:1NL.1#1b,Wind/-20C,+45 deg	42.390	43.467	-4.225
122	LC 1014	K6:2NL.1#1b,Wind/-20C,+45 deg	41.903	44.006	-3.875
123	LC 1014	K6:3NL.1#1b,Wind/-20C,+45 deg	41.241	44.650	-3.505
124	LC 1014	K7:1NL.1#1b,Wind/-20C,+45 deg	31.086	31.395	-4.941
125	LC 1014	K7:2NL.1#1b,Wind/-20C,+45 deg	32.288	30.669	-5.151
126	LC 1014	K7:3NL.1#1b,Wind/-20C,+45 deg	33.270	30.037	-5.359
127	LC 1015	K4:1NL.1#3,Wind / Ice / -5C,+45 deg	6.588	-1.845	0.005
128	LC 1015	K5:1NL.1#3,Wind / Ice / -5C,+45 deg	6.210	-1.575	0.391
129	LC 1015	K5:2NL.1#3,Wind / Ice / -5C,+45 deg	6.715	-1.970	-0.179
130	LC 1015	K6:1NL.1#3,Wind / Ice / -5C,+45 deg	32.998	22.099	-4.917
131	LC 1015	K6:2NL.1#3,Wind / Ice / -5C,+45 deg	32.783	22.532	-4.497
132	LC 1015	K6:3NL.1#3,Wind / Ice / -5C,+45 deg	32.461	23.028	-4.059
133	LC 1015	K7:1NL.1#3,Wind / Ice / -5C,+45 deg	28.458	19.936	-5.590
134	LC 1015	K7:2NL.1#3,Wind / Ice / -5C,+45 deg	29.411	19.327	-5.871
135	LC 1015	K7:3NL.1#3,Wind / Ice / -5C,+45 deg	30.190	18.780	-6.149
136	LC 1016	K4:1NL.1#4,Construction/Maintenance +5C,+45 deg	2.366	0.023	0.028
137	LC 1016	K5:1NL.1#4,Construction/Maintenance +5C,+45 deg	2.198	0.123	0.130
138	LC 1016	K5:2NL.1#4,Construction/Maintenance +5C,+45 deg	2.430	-0.028	-0.016
139	LC 1016	K6:1NL.1#4,Construction/Maintenance +5C,+45 deg	21.136	13.111	-5.080
140	LC 1016	K6:2NL.1#4,Construction/Maintenance +5C,+45 deg	21.015	13.386	-4.793
141	LC 1016	K6:3NL.1#4,Construction/Maintenance +5C,+45 deg	20.819	13.713	-4.498
142	LC 1016	K7:1NL.1#4,Construction/Maintenance +5C,+45 deg	18.793	12.605	-5.521
143	LC 1016	K7:2NL.1#4,Construction/Maintenance +5C,+45 deg	19.415	12.204	-5.717
144	LC 1016	K7:3NL.1#4,Construction/Maintenance +5C,+45 deg	19.922	11.850	-5.911
145	LC 1017	K4:1NL.1#1a,Wind/10C,-45 deg	2.967	0.863	-0.006
146	LC 1017	K5:1NL.1#1a,Wind/10C,-45 deg	2.656	0.989	0.081
147	LC 1017	K5:2NL.1#1a,Wind/10C,-45 deg	3.127	0.784	-0.042
148	LC 1017	K6:1NL.1#1a,Wind/10C,-45 deg	22.482	12.540	-5.165
149	LC 1017	K6:2NL.1#1a,Wind/10C,-45 deg	22.280	12.863	-4.886
150	LC 1017	K6:3NL.1#1a,Wind/10C,-45 deg	21.986	13.202	-4.600
151	LC 1017	K7:1NL.1#1a,Wind/10C,-45 deg	21.635	14.166	-5.565
152	LC 1017	K7:2NL.1#1a,Wind/10C,-45 deg	22.395	13.722	-5.762
153	LC 1017	K7:3NL.1#1a,Wind/10C,-45 deg	23.040	13.317	-5.955
154	LC 1018	K4:1NL.1#1b,Wind/-20C,-45 deg	3.630	1.532	0.046
155	LC 1018	K5:1NL.1#1b,Wind/-20C,-45 deg	3.289	1.694	0.132
156	LC 1018	K5:2NL.1#1b,Wind/-20C,-45 deg	3.768	1.424	0.018
157	LC 1018	K6:1NL.1#1b,Wind/-20C,-45 deg	42.964	43.584	-4.242
158	LC 1018	K6:2NL.1#1b,Wind/-20C,-45 deg	42.455	44.140	-3.894
159	LC 1018	K6:3NL.1#1b,Wind/-20C,-45 deg	41.775	44.791	-3.525
160	LC 1018	K7:1NL.1#1b,Wind/-20C,-45 deg	31.740	31.573	-4.958
161	LC 1018	K7:2NL.1#1b,Wind/-20C,-45 deg	32.963	30.836	-5.167
162	LC 1018	K7:3NL.1#1b,Wind/-20C,-45 deg	33.969	30.185	-5.373

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
163	LC 1019	K4:1NL.1#3,Wind / Ice / -5C,-45 deg	7.043	-0.691	-0.118
164	LC 1019	K5:1NL.1#3,Wind / Ice / -5C,-45 deg	6.515	-0.391	0.238
165	LC 1019	K5:2NL.1#3,Wind / Ice / -5C,-45 deg	7.293	-0.836	-0.297
166	LC 1019	K6:1NL.1#3,Wind / Ice / -5C,-45 deg	34.364	23.154	-4.996
167	LC 1019	K6:2NL.1#3,Wind / Ice / -5C,-45 deg	34.088	23.619	-4.581
168	LC 1019	K6:3NL.1#3,Wind / Ice / -5C,-45 deg	33.691	24.164	-4.152
169	LC 1019	K7:1NL.1#3,Wind / Ice / -5C,-45 deg	30.059	21.152	-5.658
170	LC 1019	K7:2NL.1#3,Wind / Ice / -5C,-45 deg	31.090	20.496	-5.938
171	LC 1019	K7:3NL.1#3,Wind / Ice / -5C,-45 deg	31.959	19.947	-6.216
172	LC 1020	K4:1NL.1#4,Construction/Maintenance +5C,-45 deg	2.440	0.172	0.013
173	LC 1020	K5:1NL.1#4,Construction/Maintenance +5C,-45 deg	2.249	0.272	0.111
174	LC 1020	K5:2NL.1#4,Construction/Maintenance +5C,-45 deg	2.521	0.115	-0.030
175	LC 1020	K6:1NL.1#4,Construction/Maintenance +5C,-45 deg	21.755	13.287	-5.095
176	LC 1020	K6:2NL.1#4,Construction/Maintenance +5C,-45 deg	21.611	13.579	-4.811
177	LC 1020	K6:3NL.1#4,Construction/Maintenance +5C,-45 deg	21.396	13.916	-4.516
178	LC 1020	K7:1NL.1#4,Construction/Maintenance +5C,-45 deg	19.493	12.834	-5.534
179	LC 1020	K7:2NL.1#4,Construction/Maintenance +5C,-45 deg	20.137	12.422	-5.730
180	LC 1020	K7:3NL.1#4,Construction/Maintenance +5C,-45 deg	20.665	12.057	-5.924
181	LC 1021	K4:1NL.1#1a,Wind/10C,-45 deg	2.615	0.929	-0.006
182	LC 1021	K5:1NL.1#1a,Wind/10C,-45 deg	2.406	1.000	0.081
183	LC 1021	K5:2NL.1#1a,Wind/10C,-45 deg	2.671	0.907	-0.042
184	LC 1021	K6:1NL.1#1a,Wind/10C,-45 deg	18.936	13.087	-5.165
185	LC 1021	K6:2NL.1#1a,Wind/10C,-45 deg	18.879	13.331	-4.886
186	LC 1021	K6:3NL.1#1a,Wind/10C,-45 deg	18.729	13.591	-4.600
187	LC 1021	K7:1NL.1#1a,Wind/10C,-45 deg	17.725	14.756	-5.565
188	LC 1021	K7:2NL.1#1a,Wind/10C,-45 deg	18.339	14.428	-5.762
189	LC 1021	K7:3NL.1#1a,Wind/10C,-45 deg	18.838	14.140	-5.955
190	LC 1022	K4:1NL.1#1b,Wind/-20C,-45 deg	3.560	1.545	0.046
191	LC 1022	K5:1NL.1#1b,Wind/-20C,-45 deg	3.240	1.696	0.132
192	LC 1022	K5:2NL.1#1b,Wind/-20C,-45 deg	3.679	1.448	0.018
193	LC 1022	K6:1NL.1#1b,Wind/-20C,-45 deg	42.266	43.691	-4.242
194	LC 1022	K6:2NL.1#1b,Wind/-20C,-45 deg	41.785	44.232	-3.894
195	LC 1022	K6:3NL.1#1b,Wind/-20C,-45 deg	41.134	44.868	-3.525
196	LC 1022	K7:1NL.1#1b,Wind/-20C,-45 deg	30.970	31.689	-4.958
197	LC 1022	K7:2NL.1#1b,Wind/-20C,-45 deg	32.164	30.975	-5.167
198	LC 1022	K7:3NL.1#1b,Wind/-20C,-45 deg	33.142	30.347	-5.373
199	LC 1023	K4:1NL.1#3,Wind / Ice / -5C,-45 deg	6.577	-0.603	-0.118
200	LC 1023	K5:1NL.1#3,Wind / Ice / -5C,-45 deg	6.185	-0.377	0.238
201	LC 1023	K5:2NL.1#3,Wind / Ice / -5C,-45 deg	6.690	-0.674	-0.297
202	LC 1023	K6:1NL.1#3,Wind / Ice / -5C,-45 deg	32.929	23.454	-4.996
203	LC 1023	K6:2NL.1#3,Wind / Ice / -5C,-45 deg	32.732	23.877	-4.581
204	LC 1023	K6:3NL.1#3,Wind / Ice / -5C,-45 deg	32.415	24.378	-4.152
205	LC 1023	K7:1NL.1#3,Wind / Ice / -5C,-45 deg	28.424	21.475	-5.658
206	LC 1023	K7:2NL.1#3,Wind / Ice / -5C,-45 deg	29.374	20.884	-5.938
207	LC 1023	K7:3NL.1#3,Wind / Ice / -5C,-45 deg	30.163	20.399	-6.216
208	LC 1024	K4:1NL.1#4,Construction/Maintenance +5C,-45 deg	2.370	0.185	0.013
209	LC 1024	K5:1NL.1#4,Construction/Maintenance +5C,-45 deg	2.200	0.274	0.111
210	LC 1024	K5:2NL.1#4,Construction/Maintenance +5C,-45 deg	2.431	0.139	-0.030
211	LC 1024	K6:1NL.1#4,Construction/Maintenance +5C,-45 deg	21.056	13.395	-5.095
212	LC 1024	K6:2NL.1#4,Construction/Maintenance +5C,-45 deg	20.941	13.672	-4.811
213	LC 1024	K6:3NL.1#4,Construction/Maintenance +5C,-45 deg	20.754	13.992	-4.516
214	LC 1024	K7:1NL.1#4,Construction/Maintenance +5C,-45 deg	18.723	12.951	-5.534
215	LC 1024	K7:2NL.1#4,Construction/Maintenance +5C,-45 deg	19.338	12.562	-5.730
216	LC 1024	K7:3NL.1#4,Construction/Maintenance +5C,-45 deg	19.838	12.219	-5.924
217	LC 1025	K4:1NL.1#1a,Wind/10C,+0 deg	2.336	0.179	0.009
218	LC 1025	K5:1NL.1#1a,Wind/10C,+0 deg	2.155	0.183	0.111
219	LC 1025	K5:2NL.1#1a,Wind/10C,+0 deg	2.402	0.184	-0.036
220	LC 1025	K6:1NL.1#1a,Wind/10C,+0 deg	18.980	10.766	-5.191
221	LC 1025	K6:2NL.1#1a,Wind/10C,+0 deg	18.907	10.967	-4.912
222	LC 1025	K6:3NL.1#1a,Wind/10C,+0 deg	18.773	11.207	-4.624
223	LC 1025	K7:1NL.1#1a,Wind/10C,+0 deg	17.631	11.704	-5.605
224	LC 1025	K7:2NL.1#1a,Wind/10C,+0 deg	18.209	11.433	-5.799
225	LC 1025	K7:3NL.1#1a,Wind/10C,+0 deg	18.703	11.239	-5.991
226	LC 1026	K4:1NL.1#1b,Wind/-20C+,0 deg	3.573	1.515	0.047
227	LC 1026	K5:1NL.1#1b,Wind/-20C+,0 deg	3.256	1.677	0.133
228	LC 1026	K5:2NL.1#1b,Wind/-20C+,0 deg	3.703	1.428	0.018
229	LC 1026	K6:1NL.1#1b,Wind/-20C+,0 deg	42.543	43.680	-4.242
230	LC 1026	K6:2NL.1#1b,Wind/-20C+,0 deg	42.055	44.225	-3.894
231	LC 1026	K6:3NL.1#1b,Wind/-20C+,0 deg	41.397	44.866	-3.525
232	LC 1026	K7:1NL.1#1b,Wind/-20C+,0 deg	31.233	31.609	-4.960
233	LC 1026	K7:2NL.1#1b,Wind/-20C+,0 deg	32.431	30.892	-5.169
234	LC 1026	K7:3NL.1#1b,Wind/-20C+,0 deg	33.413	30.260	-5.375
235	LC 1027	K4:1NL.1#3,Wind / Ice / -5C,+0 deg	6.591	-0.949	-0.110
236	LC 1027	K5:1NL.1#3,Wind / Ice / -5C,+0 deg	6.191	-0.732	0.253
237	LC 1027	K5:2NL.1#3,Wind / Ice / -5C,+0 deg	6.731	-1.026	-0.293
238	LC 1027	K6:1NL.1#3,Wind / Ice / -5C,+0 deg	33.256	23.027	-5.001
239	LC 1027	K6:2NL.1#3,Wind / Ice / -5C,+0 deg	33.050	23.451	-4.586
240	LC 1027	K6:3NL.1#3,Wind / Ice / -5C,+0 deg	32.726	23.954	-4.155
241	LC 1027	K7:1NL.1#3,Wind / Ice / -5C,+0 deg	28.696	20.754	-5.667
242	LC 1027	K7:2NL.1#3,Wind / Ice / -5C,+0 deg	29.680	20.229	-5.947
243	LC 1027	K7:3NL.1#3,Wind / Ice / -5C,+0 deg	30.451	19.706	-6.224

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
244	LC 1028	K4:1NL.1#4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
245	LC 1028	K5:1NL.1#4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
246	LC 1028	K5:2NL.1#4,Construction/Maintenance +5C,+0 deg	2.442	0.096	-0.029
247	LC 1028	K6:1NL.1#4,Construction/Maintenance +5C,+0 deg	21.294	13.316	-5.096
248	LC 1028	K6:2NL.1#4,Construction/Maintenance +5C,+0 deg	21.172	13.597	-4.811
249	LC 1028	K6:3NL.1#4,Construction/Maintenance +5C,+0 deg	20.980	13.922	-4.516
250	LC 1028	K7:1NL.1#4,Construction/Maintenance +5C,+0 deg	18.952	12.797	-5.536
251	LC 1028	K7:2NL.1#4,Construction/Maintenance +5C,+0 deg	19.569	12.405	-5.731
252	LC 1028	K7:3NL.1#4,Construction/Maintenance +5C,+0 deg	20.072	12.060	-5.925
253	LC 1029	K4:1NL.1#1a,Wind/10C,-0 deg	2.359	0.091	0.009
254	LC 1029	K5:1NL.1#1a,Wind/10C,-0 deg	2.136	0.125	0.111
255	LC 1029	K5:2NL.1#1a,Wind/10C,-0 deg	2.465	0.065	-0.036
256	LC 1029	K6:1NL.1#1a,Wind/10C,-0 deg	19.716	10.336	-5.191
257	LC 1029	K6:2NL.1#1a,Wind/10C,-0 deg	19.567	10.569	-4.912
258	LC 1029	K6:3NL.1#1a,Wind/10C,-0 deg	19.359	10.840	-4.624
259	LC 1029	K7:1NL.1#1a,Wind/10C,-0 deg	18.455	11.313	-5.605
260	LC 1029	K7:2NL.1#1a,Wind/10C,-0 deg	19.120	10.973	-5.799
261	LC 1029	K7:3NL.1#1a,Wind/10C,-0 deg	19.701	10.706	-5.991
262	LC 1030	K4:1NL.1#1b,Wind/-20C,-0 deg	3.577	1.498	0.047
263	LC 1030	K5:1NL.1#1b,Wind/-20C,-0 deg	3.253	1.665	0.133
264	LC 1030	K5:2NL.1#1b,Wind/-20C,-0 deg	3.715	1.404	0.018
265	LC 1030	K6:1NL.1#1b,Wind/-20C,-0 deg	42.687	43.595	-4.242
266	LC 1030	K6:2NL.1#1b,Wind/-20C,-0 deg	42.185	44.146	-3.894
267	LC 1030	K6:3NL.1#1b,Wind/-20C,-0 deg	41.512	44.793	-3.525
268	LC 1030	K7:1NL.1#1b,Wind/-20C,-0 deg	31.395	31.532	-4.960
269	LC 1030	K7:2NL.1#1b,Wind/-20C,-0 deg	32.610	30.801	-5.169
270	LC 1030	K7:3NL.1#1b,Wind/-20C,-0 deg	33.610	30.155	-5.375
271	LC 1031	K4:1NL.1#3,Wind / Ice / -5C,-0 deg	6.621	-1.065	-0.110
272	LC 1031	K5:1NL.1#3,Wind / Ice / -5C,-0 deg	6.167	-0.809	0.253
273	LC 1031	K5:2NL.1#3,Wind / Ice / -5C,-0 deg	6.814	-1.184	-0.293
274	LC 1031	K6:1NL.1#3,Wind / Ice / -5C,-0 deg	33.552	22.790	-5.001
275	LC 1031	K6:2NL.1#3,Wind / Ice / -5C,-0 deg	33.304	23.232	-4.586
276	LC 1031	K6:3NL.1#3,Wind / Ice / -5C,-0 deg	32.939	23.752	-4.155
277	LC 1031	K7:1NL.1#3,Wind / Ice / -5C,-0 deg	29.039	20.539	-5.667
278	LC 1031	K7:2NL.1#3,Wind / Ice / -5C,-0 deg	30.072	19.976	-5.947
279	LC 1031	K7:3NL.1#3,Wind / Ice / -5C,-0 deg	30.891	19.414	-6.224
280	LC 1032	K4:1NL.1#4,Construction/Maintenance +5C,-0 deg	2.379	0.118	0.014
281	LC 1032	K5:1NL.1#4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
282	LC 1032	K5:2NL.1#4,Construction/Maintenance +5C,-0 deg	2.455	0.072	-0.029
283	LC 1032	K6:1NL.1#4,Construction/Maintenance +5C,-0 deg	21.438	13.232	-5.096
284	LC 1032	K6:2NL.1#4,Construction/Maintenance +5C,-0 deg	21.302	13.519	-4.811
285	LC 1032	K6:3NL.1#4,Construction/Maintenance +5C,-0 deg	21.095	13.850	-4.516
286	LC 1032	K7:1NL.1#4,Construction/Maintenance +5C,-0 deg	19.114	12.720	-5.536
287	LC 1032	K7:2NL.1#4,Construction/Maintenance +5C,-0 deg	19.749	12.314	-5.731
288	LC 1032	K7:3NL.1#4,Construction/Maintenance +5C,-0 deg	20.268	11.955	-5.925
289	LC 1033	K4:1NL.1#1a,gunstig,Wind/10C,+90 deg	3.907	-0.498	0.379
290	LC 1033	K5:1NL.1#1a,gunstig,Wind/10C,+90 deg	3.622	-0.342	0.495
291	LC 1033	K5:2NL.1#1a,gunstig,Wind/10C,+90 deg	4.074	-0.584	0.363
292	LC 1033	K6:1NL.1#1a,gunstig,Wind/10C,+90 deg	21.141	9.225	-3.178
293	LC 1033	K6:2NL.1#1a,gunstig,Wind/10C,+90 deg	20.978	9.528	-2.959
294	LC 1033	K6:3NL.1#1a,gunstig,Wind/10C,+90 deg	20.757	9.869	-2.731
295	LC 1033	K7:1NL.1#1a,gunstig,Wind/10C,+90 deg	20.031	9.841	-3.470
296	LC 1033	K7:2NL.1#1a,gunstig,Wind/10C,+90 deg	20.657	9.444	-3.597
297	LC 1033	K7:3NL.1#1a,gunstig,Wind/10C,+90 deg	21.184	9.087	-3.722
298	LC 1034	K4:1NL.1#1b,gunstig,Wind/-20C,+90 deg	3.185	1.922	0.057
299	LC 1034	K5:1NL.1#1b,gunstig,Wind/-20C,+90 deg	2.863	2.080	0.101
300	LC 1034	K5:2NL.1#1b,gunstig,Wind/-20C,+90 deg	3.330	1.831	0.050
301	LC 1034	K6:1NL.1#1b,gunstig,Wind/-20C,+90 deg	39.592	46.589	-3.070
302	LC 1034	K6:2NL.1#1b,gunstig,Wind/-20C,+90 deg	39.031	47.095	-2.822
303	LC 1034	K6:3NL.1#1b,gunstig,Wind/-20C,+90 deg	38.302	47.691	-2.554
304	LC 1034	K7:1NL.1#1b,gunstig,Wind/-20C,+90 deg	26.824	31.085	-3.660
305	LC 1034	K7:2NL.1#1b,gunstig,Wind/-20C,+90 deg	27.930	30.438	-3.799
306	LC 1034	K7:3NL.1#1b,gunstig,Wind/-20C,+90 deg	28.844	29.867	-3.934
307	LC 1035	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	7.485	-1.178	0.093
308	LC 1035	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	6.965	-0.881	0.446
309	LC 1035	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	7.750	-1.321	-0.066
310	LC 1035	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	30.848	22.740	-3.574
311	LC 1035	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	30.565	23.159	-3.248
312	LC 1035	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	30.176	23.641	-2.907
313	LC 1035	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	25.692	18.542	-4.123
314	LC 1035	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	26.581	17.990	-4.332
315	LC 1035	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	27.317	17.500	-4.539
316	LC 1036	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	1.922	0.275	0.043
317	LC 1036	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	1.767	0.356	0.107
318	LC 1036	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	1.995	0.229	0.019
319	LC 1036	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	16.631	12.023	-3.835
320	LC 1036	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	16.490	12.244	-3.648
321	LC 1036	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	16.292	12.500	-3.454
322	LC 1036	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	13.838	9.712	-4.144
323	LC 1036	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	14.306	9.419	-4.268
324	LC 1036	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	14.691	9.159	-4.391

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
325	LC 1037	K4:1NL.1#1a,gunstig,Wind/10C,-90 deg	3.062	-0.711	0.379
326	LC 1037	K5:1NL.1#1a,gunstig,Wind/10C,-90 deg	2.917	-0.592	0.495
327	LC 1037	K5:2NL.1#1a,gunstig,Wind/10C,-90 deg	3.082	-0.765	0.363
328	LC 1037	K6:1NL.1#1a,gunstig,Wind/10C,-90 deg	15.796	8.943	-3.178
329	LC 1037	K6:2NL.1#1a,gunstig,Wind/10C,-90 deg	15.793	9.150	-2.959
330	LC 1037	K6:3NL.1#1a,gunstig,Wind/10C,-90 deg	15.734	9.394	-2.731
331	LC 1037	K7:1NL.1#1a,gunstig,Wind/10C,-90 deg	14.275	9.675	-3.470
332	LC 1037	K7:2NL.1#1a,gunstig,Wind/10C,-90 deg	14.719	9.377	-3.597
333	LC 1037	K7:3NL.1#1a,gunstig,Wind/10C,-90 deg	15.064	9.118	-3.722
334	LC 1038	K4:1NL.1#1b,gunstig,Wind/-20C,-90 deg	3.019	1.880	0.057
335	LC 1038	K5:1NL.1#1b,gunstig,Wind/-20C,-90 deg	2.725	2.031	0.101
336	LC 1038	K5:2NL.1#1b,gunstig,Wind/-20C,-90 deg	3.135	1.796	0.050
337	LC 1038	K6:1NL.1#1b,gunstig,Wind/-20C,-90 deg	38.539	46.534	-3.070
338	LC 1038	K6:2NL.1#1b,gunstig,Wind/-20C,-90 deg	38.010	47.020	-2.822
339	LC 1038	K6:3NL.1#1b,gunstig,Wind/-20C,-90 deg	37.313	47.598	-2.554
340	LC 1038	K7:1NL.1#1b,gunstig,Wind/-20C,-90 deg	25.691	31.052	-3.660
341	LC 1038	K7:2NL.1#1b,gunstig,Wind/-20C,-90 deg	26.761	30.425	-3.799
342	LC 1038	K7:3NL.1#1b,gunstig,Wind/-20C,-90 deg	27.639	29.874	-3.934
343	LC 1039	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	6.369	-1.458	0.093
344	LC 1039	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	6.035	-1.210	0.446
345	LC 1039	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	6.440	-1.558	-0.066
346	LC 1039	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	28.529	22.586	-3.574
347	LC 1039	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	28.334	22.951	-3.248
348	LC 1039	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	28.034	23.380	-2.907
349	LC 1039	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	23.148	18.452	-4.123
350	LC 1039	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	23.936	17.954	-4.332
351	LC 1039	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	24.572	17.517	-4.539
352	LC 1040	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	1.756	0.233	0.043
353	LC 1040	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	1.629	0.307	0.107
354	LC 1040	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	1.799	0.194	0.019
355	LC 1040	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	15.578	11.967	-3.835
356	LC 1040	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	15.469	12.170	-3.648
357	LC 1040	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	15.303	12.407	-3.454
358	LC 1040	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	12.705	9.679	-4.144
359	LC 1040	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	13.137	9.406	-4.268
360	LC 1040	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	13.487	9.166	-4.391
361	LC 1041	K4:1NL.1#1a,gunstig,Wind/10C,+45 deg	2.744	-1.389	0.330
362	LC 1041	K5:1NL.1#1a,gunstig,Wind/10C,+45 deg	2.636	-1.335	0.457
363	LC 1041	K5:2NL.1#1a,gunstig,Wind/10C,+45 deg	2.803	-1.415	0.301
364	LC 1041	K6:1NL.1#1a,gunstig,Wind/10C,+45 deg	16.568	5.820	-3.406
365	LC 1041	K6:2NL.1#1a,gunstig,Wind/10C,+45 deg	16.561	5.975	-3.188
366	LC 1041	K6:3NL.1#1a,gunstig,Wind/10C,+45 deg	16.513	6.161	-2.961
367	LC 1041	K7:1NL.1#1a,gunstig,Wind/10C,+45 deg	14.881	5.500	-3.732
368	LC 1041	K7:2NL.1#1a,gunstig,Wind/10C,+45 deg	15.264	5.274	-3.859
369	LC 1041	K7:3NL.1#1a,gunstig,Wind/10C,+45 deg	15.578	5.077	-3.984
370	LC 1042	K4:1NL.1#1b,gunstig,Wind/-20C,+45 deg	3.091	1.942	0.047
371	LC 1042	K5:1NL.1#1b,gunstig,Wind/-20C,+45 deg	2.784	2.090	0.090
372	LC 1042	K5:2NL.1#1b,gunstig,Wind/-20C,+45 deg	3.224	1.859	0.039
373	LC 1042	K6:1NL.1#1b,gunstig,Wind/-20C,+45 deg	39.295	46.725	-3.086
374	LC 1042	K6:2NL.1#1b,gunstig,Wind/-20C,+45 deg	38.753	47.214	-2.837
375	LC 1042	K6:3NL.1#1b,gunstig,Wind/-20C,+45 deg	38.042	47.793	-2.568
376	LC 1042	K7:1NL.1#1b,gunstig,Wind/-20C,+45 deg	26.423	31.088	-3.676
377	LC 1042	K7:2NL.1#1b,gunstig,Wind/-20C,+45 deg	27.512	30.455	-3.815
378	LC 1042	K7:3NL.1#1b,gunstig,Wind/-20C,+45 deg	28.408	29.898	-3.950
379	LC 1043	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.816	-1.360	0.052
380	LC 1043	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.415	-1.136	0.406
381	LC 1043	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.992	-1.450	-0.111
382	LC 1043	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	29.728	22.487	-3.632
383	LC 1043	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	29.499	22.860	-3.306
384	LC 1043	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	29.173	23.287	-2.963
385	LC 1043	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	24.244	17.846	-4.189
386	LC 1043	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	25.056	17.353	-4.398
387	LC 1043	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	25.722	16.919	-4.606
388	LC 1044	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.802	0.228	0.036
389	LC 1044	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.663	0.294	0.100
390	LC 1044	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.856	0.188	0.011
391	LC 1044	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	16.188	11.869	-3.849
392	LC 1044	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	16.066	12.076	-3.663
393	LC 1044	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	15.889	12.317	-3.468
394	LC 1044	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	13.352	9.534	-4.160
395	LC 1044	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	13.794	9.262	-4.285
396	LC 1044	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	14.159	9.018	-4.407
397	LC 1045	K4:1NL.1#1a,gunstig,Wind/10C,+45 deg	2.252	-1.669	0.330
398	LC 1045	K5:1NL.1#1a,gunstig,Wind/10C,+45 deg	2.181	-1.595	0.457
399	LC 1045	K5:2NL.1#1a,gunstig,Wind/10C,+45 deg	2.267	-1.717	0.301
400	LC 1045	K6:1NL.1#1a,gunstig,Wind/10C,+45 deg	13.733	4.991	-3.406
401	LC 1045	K6:2NL.1#1a,gunstig,Wind/10C,+45 deg	13.742	5.128	-3.188
402	LC 1045	K6:3NL.1#1a,gunstig,Wind/10C,+45 deg	13.710	5.297	-2.961
403	LC 1045	K7:1NL.1#1a,gunstig,Wind/10C,+45 deg	11.999	4.745	-3.732
404	LC 1045	K7:2NL.1#1a,gunstig,Wind/10C,+45 deg	12.347	4.501	-3.859
405	LC 1045	K7:3NL.1#1a,gunstig,Wind/10C,+45 deg	12.623	4.286	-3.984

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
406	LC 1046	K4:1NL.1#1b,gunstig,Wind/-20C,+45 deg	2.994	1.887	0.047
407	LC 1046	K5:1NL.1#1b,gunstig,Wind/-20C,+45 deg	2.695	2.039	0.090
408	LC 1046	K5:2NL.1#1b,gunstig,Wind/-20C,+45 deg	3.119	1.800	0.039
409	LC 1046	K6:1NL.1#1b,gunstig,Wind/-20C,+45 deg	38.737	46.562	-3.086
410	LC 1046	K6:2NL.1#1b,gunstig,Wind/-20C,+45 deg	38.197	47.047	-2.837
411	LC 1046	K6:3NL.1#1b,gunstig,Wind/-20C,+45 deg	37.490	47.623	-2.568
412	LC 1046	K7:1NL.1#1b,gunstig,Wind/-20C,+45 deg	25.856	30.939	-3.676
413	LC 1046	K7:2NL.1#1b,gunstig,Wind/-20C,+45 deg	26.937	30.303	-3.815
414	LC 1046	K7:3NL.1#1b,gunstig,Wind/-20C,+45 deg	27.826	29.742	-3.950
415	LC 1047	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.167	-1.729	0.052
416	LC 1047	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	5.815	-1.479	0.406
417	LC 1047	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.286	-1.849	-0.111
418	LC 1047	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	28.530	22.032	-3.632
419	LC 1047	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	28.310	22.395	-3.306
420	LC 1047	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	27.993	22.813	-2.963
421	LC 1047	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	23.021	17.432	-4.189
422	LC 1047	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	23.813	16.929	-4.398
423	LC 1047	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	24.459	16.485	-4.606
424	LC 1048	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.705	0.173	0.036
425	LC 1048	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.574	0.243	0.100
426	LC 1048	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.750	0.129	0.011
427	LC 1048	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	15.630	11.706	-3.849
428	LC 1048	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	15.511	11.909	-3.663
429	LC 1048	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	15.337	12.147	-3.468
430	LC 1048	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	12.784	9.385	-4.160
431	LC 1048	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	13.220	9.110	-4.285
432	LC 1048	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	13.577	8.862	-4.407
433	LC 1049	K4:1NL.1#1a,gunstig,Wind/10C,-45 deg	2.494	1.324	-0.003
434	LC 1049	K5:1NL.1#1a,gunstig,Wind/10C,-45 deg	2.187	1.435	0.040
435	LC 1049	K5:2NL.1#1a,gunstig,Wind/10C,-45 deg	2.652	1.249	-0.018
436	LC 1049	K6:1NL.1#1a,gunstig,Wind/10C,-45 deg	17.930	12.544	-3.900
437	LC 1049	K6:2NL.1#1a,gunstig,Wind/10C,-45 deg	17.692	12.777	-3.720
438	LC 1049	K6:3NL.1#1a,gunstig,Wind/10C,-45 deg	17.415	13.079	-3.531
439	LC 1049	K7:1NL.1#1a,gunstig,Wind/10C,-45 deg	16.921	13.177	-4.164
440	LC 1049	K7:2NL.1#1a,gunstig,Wind/10C,-45 deg	17.587	12.843	-4.288
441	LC 1049	K7:3NL.1#1a,gunstig,Wind/10C,-45 deg	18.135	12.513	-4.411
442	LC 1050	K4:1NL.1#1b,gunstig,Wind/-20C,-45 deg	3.026	2.085	0.020
443	LC 1050	K5:1NL.1#1b,gunstig,Wind/-20C,-45 deg	2.701	2.233	0.058
444	LC 1050	K5:2NL.1#1b,gunstig,Wind/-20C,-45 deg	3.167	1.996	0.013
445	LC 1050	K6:1NL.1#1b,gunstig,Wind/-20C,-45 deg	39.266	46.752	-3.117
446	LC 1050	K6:2NL.1#1b,gunstig,Wind/-20C,-45 deg	38.704	47.253	-2.871
447	LC 1050	K6:3NL.1#1b,gunstig,Wind/-20C,-45 deg	37.973	47.844	-2.606
448	LC 1050	K7:1NL.1#1b,gunstig,Wind/-20C,-45 deg	26.514	31.245	-3.702
449	LC 1050	K7:2NL.1#1b,gunstig,Wind/-20C,-45 deg	27.618	30.597	-3.841
450	LC 1050	K7:3NL.1#1b,gunstig,Wind/-20C,-45 deg	28.529	30.025	-3.976
451	LC 1051	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.613	-0.438	-0.086
452	LC 1051	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.099	-0.166	0.234
453	LC 1051	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.853	-0.582	-0.245
454	LC 1051	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	29.861	23.409	-3.745
455	LC 1051	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	29.570	23.811	-3.428
456	LC 1051	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	29.173	24.277	-3.095
457	LC 1051	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	24.706	19.170	-4.286
458	LC 1051	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	25.625	18.684	-4.494
459	LC 1051	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	26.355	18.191	-4.701
460	LC 1052	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.776	0.415	0.011
461	LC 1052	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.619	0.486	0.069
462	LC 1052	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.845	0.370	-0.013
463	LC 1052	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	16.332	12.141	-3.873
464	LC 1052	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	16.187	12.363	-3.689
465	LC 1052	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	15.989	12.614	-3.496
466	LC 1052	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	13.524	9.812	-4.182
467	LC 1052	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	13.988	9.519	-4.306
468	LC 1052	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	14.392	9.288	-4.428
469	LC 1053	K4:1NL.1#1a,gunstig,Wind/10C,-45 deg	2.141	1.391	-0.003
470	LC 1053	K5:1NL.1#1a,gunstig,Wind/10C,-45 deg	1.938	1.445	0.040
471	LC 1053	K5:2NL.1#1a,gunstig,Wind/10C,-45 deg	2.196	1.371	-0.018
472	LC 1053	K6:1NL.1#1a,gunstig,Wind/10C,-45 deg	14.384	13.091	-3.900
473	LC 1053	K6:2NL.1#1a,gunstig,Wind/10C,-45 deg	14.291	13.246	-3.720
474	LC 1053	K6:3NL.1#1a,gunstig,Wind/10C,-45 deg	14.159	13.468	-3.531
475	LC 1053	K7:1NL.1#1a,gunstig,Wind/10C,-45 deg	13.011	13.767	-4.164
476	LC 1053	K7:2NL.1#1a,gunstig,Wind/10C,-45 deg	13.530	13.550	-4.288
477	LC 1053	K7:3NL.1#1a,gunstig,Wind/10C,-45 deg	13.934	13.336	-4.411
478	LC 1054	K4:1NL.1#1b,gunstig,Wind/-20C,-45 deg	2.957	2.098	0.020
479	LC 1054	K5:1NL.1#1b,gunstig,Wind/-20C,-45 deg	2.652	2.235	0.058
480	LC 1054	K5:2NL.1#1b,gunstig,Wind/-20C,-45 deg	3.077	2.020	0.013
481	LC 1054	K6:1NL.1#1b,gunstig,Wind/-20C,-45 deg	38.568	46.860	-3.117
482	LC 1054	K6:2NL.1#1b,gunstig,Wind/-20C,-45 deg	38.034	47.345	-2.871
483	LC 1054	K6:3NL.1#1b,gunstig,Wind/-20C,-45 deg	37.331	47.921	-2.606
484	LC 1054	K7:1NL.1#1b,gunstig,Wind/-20C,-45 deg	25.744	31.361	-3.702
485	LC 1054	K7:2NL.1#1b,gunstig,Wind/-20C,-45 deg	26.819	30.736	-3.841
486	LC 1054	K7:3NL.1#1b,gunstig,Wind/-20C,-45 deg	27.701	30.187	-3.976

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
487	LC 1055	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.147	-0.350	-0.086
488	LC 1055	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	5.769	-0.151	0.234
489	LC 1055	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.250	-0.420	-0.245
490	LC 1055	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	28.426	23.709	-3.745
491	LC 1055	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	28.214	24.069	-3.428
492	LC 1055	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	27.897	24.491	-3.095
493	LC 1055	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	23.070	19.493	-4.286
494	LC 1055	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	23.909	19.072	-4.494
495	LC 1055	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	24.559	18.643	-4.701
496	LC 1056	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.707	0.429	0.011
497	LC 1056	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.570	0.488	0.069
498	LC 1056	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.755	0.394	-0.013
499	LC 1056	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	15.634	12.248	-3.873
500	LC 1056	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	15.517	12.455	-3.689
501	LC 1056	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	15.347	12.691	-3.496
502	LC 1056	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	12.754	9.928	-4.182
503	LC 1056	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	13.189	9.658	-4.306
504	LC 1056	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	13.565	9.450	-4.428
505	LC 1057	K4:1NL.1#1a,gunstig,Wind/10C,+0 deg	1.736	0.460	0.012
506	LC 1057	K5:1NL.1#1a,gunstig,Wind/10C,+0 deg	1.566	0.395	0.077
507	LC 1057	K5:2NL.1#1a,gunstig,Wind/10C,+0 deg	1.800	0.492	-0.013
508	LC 1057	K6:1NL.1#1a,gunstig,Wind/10C,+0 deg	13.686	9.542	-3.941
509	LC 1057	K6:2NL.1#1a,gunstig,Wind/10C,+0 deg	13.601	9.628	-3.759
510	LC 1057	K6:3NL.1#1a,gunstig,Wind/10C,+0 deg	13.472	9.743	-3.569
511	LC 1057	K7:1NL.1#1a,gunstig,Wind/10C,+0 deg	12.022	9.108	-4.226
512	LC 1057	K7:2NL.1#1a,gunstig,Wind/10C,+0 deg	12.470	9.020	-4.349
513	LC 1057	K7:3NL.1#1a,gunstig,Wind/10C,+0 deg	12.851	8.955	-4.470
514	LC 1058	K4:1NL.1#1b,gunstig,Wind/-20C+,0 deg	2.969	2.069	0.020
515	LC 1058	K5:1NL.1#1b,gunstig,Wind/-20C+,0 deg	2.662	2.206	0.059
516	LC 1058	K5:2NL.1#1b,gunstig,Wind/-20C+,0 deg	3.088	1.976	0.013
517	LC 1058	K6:1NL.1#1b,gunstig,Wind/-20C+,0 deg	38.844	46.848	-3.117
518	LC 1058	K6:2NL.1#1b,gunstig,Wind/-20C+,0 deg	38.304	47.338	-2.871
519	LC 1058	K6:3NL.1#1b,gunstig,Wind/-20C+,0 deg	37.595	47.919	-2.606
520	LC 1058	K7:1NL.1#1b,gunstig,Wind/-20C+,0 deg	25.971	31.211	-3.704
521	LC 1058	K7:2NL.1#1b,gunstig,Wind/-20C+,0 deg	27.048	30.584	-3.843
522	LC 1058	K7:3NL.1#1b,gunstig,Wind/-20C+,0 deg	27.933	30.032	-3.979
523	LC 1059	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	6.132	-0.746	-0.077
524	LC 1059	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	5.752	-0.549	0.250
525	LC 1059	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	6.267	-0.809	-0.240
526	LC 1059	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	28.680	23.139	-3.750
527	LC 1059	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	28.455	23.507	-3.433
528	LC 1059	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	28.127	23.939	-3.102
529	LC 1059	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	23.193	18.504	-4.299
530	LC 1059	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	23.983	18.016	-4.507
531	LC 1059	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	24.664	17.655	-4.713
532	LC 1060	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	1.689	0.339	0.013
533	LC 1060	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	1.556	0.404	0.072
534	LC 1060	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	1.742	0.311	-0.012
535	LC 1060	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	15.789	12.039	-3.876
536	LC 1060	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	15.671	12.245	-3.691
537	LC 1060	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	15.497	12.484	-3.499
538	LC 1060	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	12.929	9.671	-4.185
539	LC 1060	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	13.363	9.399	-4.308
540	LC 1060	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	13.737	9.194	-4.431
541	LC 1061	K4:1NL.1#1a,gunstig,Wind/10C,-0 deg	1.759	0.372	0.012
542	LC 1061	K5:1NL.1#1a,gunstig,Wind/10C,-0 deg	1.547	0.336	0.077
543	LC 1061	K5:2NL.1#1a,gunstig,Wind/10C,-0 deg	1.863	0.373	-0.013
544	LC 1061	K6:1NL.1#1a,gunstig,Wind/10C,-0 deg	14.421	9.111	-3.941
545	LC 1061	K6:2NL.1#1a,gunstig,Wind/10C,-0 deg	14.262	9.230	-3.759
546	LC 1061	K6:3NL.1#1a,gunstig,Wind/10C,-0 deg	14.058	9.376	-3.569
547	LC 1061	K7:1NL.1#1a,gunstig,Wind/10C,-0 deg	12.845	8.717	-4.226
548	LC 1061	K7:2NL.1#1a,gunstig,Wind/10C,-0 deg	13.381	8.559	-4.349
549	LC 1061	K7:3NL.1#1a,gunstig,Wind/10C,-0 deg	13.849	8.422	-4.470
550	LC 1062	K4:1NL.1#1b,gunstig,Wind/-20C,-0 deg	2.973	2.052	0.020
551	LC 1062	K5:1NL.1#1b,gunstig,Wind/-20C,-0 deg	2.658	2.194	0.059
552	LC 1062	K5:2NL.1#1b,gunstig,Wind/-20C,-0 deg	3.100	1.952	0.013
553	LC 1062	K6:1NL.1#1b,gunstig,Wind/-20C,-0 deg	38.989	46.763	-3.117
554	LC 1062	K6:2NL.1#1b,gunstig,Wind/-20C,-0 deg	38.434	47.260	-2.871
555	LC 1062	K6:3NL.1#1b,gunstig,Wind/-20C,-0 deg	37.710	47.847	-2.606
556	LC 1062	K7:1NL.1#1b,gunstig,Wind/-20C,-0 deg	26.133	31.134	-3.704
557	LC 1062	K7:2NL.1#1b,gunstig,Wind/-20C,-0 deg	27.228	30.493	-3.843
558	LC 1062	K7:3NL.1#1b,gunstig,Wind/-20C,-0 deg	28.130	29.927	-3.979
559	LC 1063	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	6.162	-0.862	-0.077
560	LC 1063	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	5.728	-0.627	0.250
561	LC 1063	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	6.350	-0.967	-0.240
562	LC 1063	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	28.975	22.902	-3.750
563	LC 1063	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	28.709	23.289	-3.433
564	LC 1063	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	28.340	23.737	-3.102
565	LC 1063	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	23.537	18.289	-4.299
566	LC 1063	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	24.374	17.763	-4.507
567	LC 1063	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	25.104	17.363	-4.713

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
568	LC 1064	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	1.694	0.322	0.013
569	LC 1064	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	1.553	0.392	0.072
570	LC 1064	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	1.755	0.288	-0.012
571	LC 1064	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	15.934	11.954	-3.876
572	LC 1064	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	15.801	12.166	-3.691
573	LC 1064	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	15.612	12.411	-3.499
574	LC 1064	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	13.091	9.594	-4.185
575	LC 1064	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	13.543	9.309	-4.308
576	LC 1064	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	13.934	9.089	-4.431
577	LC 1065	K4:1NL.1#5a,Break Shield wire 1, Ahead,+10C	0.000	0.000	-2.000
578	LC 1065	K5:1NL.1#5a,Break Shield wire 1, Ahead,+10C	1.787	0.126	0.081
579	LC 1065	K5:2NL.1#5a,Break Shield wire 1, Ahead,+10C	1.980	0.008	-0.024
580	LC 1065	K6:1NL.1#5a,Break Shield wire 1, Ahead,+10C	16.566	9.367	-4.460
581	LC 1065	K6:2NL.1#5a,Break Shield wire 1, Ahead,+10C	16.478	9.588	-4.258
582	LC 1065	K6:3NL.1#5a,Break Shield wire 1, Ahead,+10C	16.338	9.843	-4.048
583	LC 1065	K7:1NL.1#5a,Break Shield wire 1, Ahead,+10C	15.189	9.694	-4.764
584	LC 1065	K7:2NL.1#5a,Break Shield wire 1, Ahead,+10C	15.680	9.379	-4.905
585	LC 1065	K7:3NL.1#5a,Break Shield wire 1, Ahead,+10C	16.081	9.101	-5.045
586	LC 1066	K4:1NL.1#5a,Break Shieldwire 2 , Ahead,+10C	1.925	0.047	0.009
587	LC 1066	K5:1NL.1#5a,Break Shieldwire 2 , Ahead,+10C	0.000	0.000	-2.000
588	LC 1066	K5:2NL.1#5a,Break Shieldwire 2 , Ahead,+10C	1.980	0.008	-0.024
589	LC 1066	K6:1NL.1#5a,Break Shieldwire 2 , Ahead,+10C	16.566	9.367	-4.460
590	LC 1066	K6:2NL.1#5a,Break Shieldwire 2 , Ahead,+10C	16.478	9.588	-4.258
591	LC 1066	K6:3NL.1#5a,Break Shieldwire 2 , Ahead,+10C	16.338	9.843	-4.048
592	LC 1066	K7:1NL.1#5a,Break Shieldwire 2 , Ahead,+10C	15.189	9.694	-4.764
593	LC 1066	K7:2NL.1#5a,Break Shieldwire 2 , Ahead,+10C	15.680	9.379	-4.905
594	LC 1066	K7:3NL.1#5a,Break Shieldwire 2 , Ahead,+10C	16.081	9.101	-5.045
595	LC 1067	K4:1NL.1#5a,Break Shieldwire 3 , Ahead,+10C	1.925	0.047	0.009
596	LC 1067	K5:1NL.1#5a,Break Shieldwire 3 , Ahead,+10C	1.787	0.126	0.081
597	LC 1067	K5:2NL.1#5a,Break Shieldwire 3 , Ahead,+10C	0.000	0.000	-2.000
598	LC 1067	K6:1NL.1#5a,Break Shieldwire 3 , Ahead,+10C	16.566	9.367	-4.460
599	LC 1067	K6:2NL.1#5a,Break Shieldwire 3 , Ahead,+10C	16.478	9.588	-4.258
600	LC 1067	K6:3NL.1#5a,Break Shieldwire 3 , Ahead,+10C	16.338	9.843	-4.048
601	LC 1067	K7:1NL.1#5a,Break Shieldwire 3 , Ahead,+10C	15.189	9.694	-4.764
602	LC 1067	K7:2NL.1#5a,Break Shieldwire 3 , Ahead,+10C	15.680	9.379	-4.905
603	LC 1067	K7:3NL.1#5a,Break Shieldwire 3 , Ahead,+10C	16.081	9.101	-5.045
604	LC 1068	K4:1NL.1#5a,Break Shield wire 4, Ahead,+10C	1.925	0.047	0.009
605	LC 1068	K5:1NL.1#5a,Break Shield wire 4, Ahead,+10C	1.787	0.126	0.081
606	LC 1068	K5:2NL.1#5a,Break Shield wire 4, Ahead,+10C	1.980	0.008	-0.024
607	LC 1068	K6:1NL.1#5a,Break Shield wire 4, Ahead,+10C	16.566	9.367	-4.460
608	LC 1068	K6:2NL.1#5a,Break Shield wire 4, Ahead,+10C	16.478	9.588	-4.258
609	LC 1068	K6:3NL.1#5a,Break Shield wire 4, Ahead,+10C	16.338	9.843	-4.048
610	LC 1068	K7:1NL.1#5a,Break Shield wire 4, Ahead,+10C	15.189	9.694	-4.764
611	LC 1068	K7:2NL.1#5a,Break Shield wire 4, Ahead,+10C	15.680	9.379	-4.905
612	LC 1068	K7:3NL.1#5a,Break Shield wire 4, Ahead,+10C	16.081	9.101	-5.045
613	LC 1069	K4:1NL.1#5a,Break Shieldwire 5 , Ahead,+10C	1.925	0.047	0.009
614	LC 1069	K5:1NL.1#5a,Break Shieldwire 5 , Ahead,+10C	1.787	0.126	0.081
615	LC 1069	K5:2NL.1#5a,Break Shieldwire 5 , Ahead,+10C	1.980	0.008	-0.024
616	LC 1069	K6:1NL.1#5a,Break Shieldwire 5 , Ahead,+10C	16.566	9.367	-4.460
617	LC 1069	K6:2NL.1#5a,Break Shieldwire 5 , Ahead,+10C	16.478	9.588	-4.258
618	LC 1069	K6:3NL.1#5a,Break Shieldwire 5 , Ahead,+10C	16.338	9.843	-4.048
619	LC 1069	K7:1NL.1#5a,Break Shieldwire 5 , Ahead,+10C	15.189	9.694	-4.764
620	LC 1069	K7:2NL.1#5a,Break Shieldwire 5 , Ahead,+10C	15.680	9.379	-4.905
621	LC 1069	K7:3NL.1#5a,Break Shieldwire 5 , Ahead,+10C	16.081	9.101	-5.045
622	LC 1070	K4:1NL.1#5a,Break Shieldwire 6 , Ahead,+10C	1.925	0.047	0.009
623	LC 1070	K5:1NL.1#5a,Break Shieldwire 6 , Ahead,+10C	1.787	0.126	0.081
624	LC 1070	K5:2NL.1#5a,Break Shieldwire 6 , Ahead,+10C	1.980	0.008	-0.024
625	LC 1070	K6:1NL.1#5a,Break Shieldwire 6 , Ahead,+10C	16.566	9.367	-4.460
626	LC 1070	K6:2NL.1#5a,Break Shieldwire 6 , Ahead,+10C	16.478	9.588	-4.258
627	LC 1070	K6:3NL.1#5a,Break Shieldwire 6 , Ahead,+10C	16.338	9.843	-4.048
628	LC 1070	K7:1NL.1#5a,Break Shieldwire 6 , Ahead,+10C	15.189	9.694	-4.764
629	LC 1070	K7:2NL.1#5a,Break Shieldwire 6 , Ahead,+10C	15.680	9.379	-4.905
630	LC 1070	K7:3NL.1#5a,Break Shieldwire 6 , Ahead,+10C	16.081	9.101	-5.045
631	LC 1071	K4:1NL.1#5a,Break Conductor 1, Ahead,+10C	1.925	0.047	0.009
632	LC 1071	K5:1NL.1#5a,Break Conductor 1, Ahead,+10C	1.787	0.126	0.081
633	LC 1071	K5:2NL.1#5a,Break Conductor 1, Ahead,+10C	1.980	0.008	-0.024
634	LC 1071	K6:1NL.1#5a,Break Conductor 1, Ahead,+10C	16.566	9.367	-4.460
635	LC 1071	K6:2NL.1#5a,Break Conductor 1, Ahead,+10C	16.478	9.588	-4.258
636	LC 1071	K6:3NL.1#5a,Break Conductor 1, Ahead,+10C	16.338	9.843	-4.048
637	LC 1071	K7:1NL.1#5a,Break Conductor 1, Ahead,+10C	4.994	9.584	-4.604
638	LC 1071	K7:2NL.1#5a,Break Conductor 1, Ahead,+10C	15.680	9.379	-4.905
639	LC 1071	K7:3NL.1#5a,Break Conductor 1, Ahead,+10C	16.081	9.101	-5.045
640	LC 1072	K4:1NL.1#5a,Break Conductor 2 , Ahead,+10C	1.925	0.047	0.009
641	LC 1072	K5:1NL.1#5a,Break Conductor 2 , Ahead,+10C	1.787	0.126	0.081
642	LC 1072	K5:2NL.1#5a,Break Conductor 2 , Ahead,+10C	1.980	0.008	-0.024
643	LC 1072	K6:1NL.1#5a,Break Conductor 2 , Ahead,+10C	16.566	9.367	-4.460
644	LC 1072	K6:2NL.1#5a,Break Conductor 2 , Ahead,+10C	16.478	9.588	-4.258
645	LC 1072	K6:3NL.1#5a,Break Conductor 2 , Ahead,+10C	16.338	9.843	-4.048
646	LC 1072	K7:1NL.1#5a,Break Conductor 2 , Ahead,+10C	15.189	9.694	-4.764
647	LC 1072	K7:2NL.1#5a,Break Conductor 2 , Ahead,+10C	5.263	9.439	-4.658
648	LC 1072	K7:3NL.1#5a,Break Conductor 2 , Ahead,+10C	16.081	9.101	-5.045

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
649	LC 1073	K4:1NL.1#5a,Break Conductor 3 , Ahead,+10C	1.925	0.047	0.009
650	LC 1073	K5:1NL.1#5a,Break Conductor 3 , Ahead,+10C	1.787	0.126	0.081
651	LC 1073	K5:2NL.1#5a,Break Conductor 3 , Ahead,+10C	1.980	0.008	-0.024
652	LC 1073	K6:1NL.1#5a,Break Conductor 3 , Ahead,+10C	16.566	9.367	-4.460
653	LC 1073	K6:2NL.1#5a,Break Conductor 3 , Ahead,+10C	16.478	9.588	-4.258
654	LC 1073	K6:3NL.1#5a,Break Conductor 3 , Ahead,+10C	16.338	9.843	-4.048
655	LC 1073	K7:1NL.1#5a,Break Conductor 3 , Ahead,+10C	15.189	9.694	-4.764
656	LC 1073	K7:2NL.1#5a,Break Conductor 3 , Ahead,+10C	15.680	9.379	-4.905
657	LC 1073	K7:3NL.1#5a,Break Conductor 3 , Ahead,+10C	5.485	9.312	-4.712
658	LC 1074	K4:1NL.1#5a,Break Conductor 4, Ahead,+10C	1.925	0.047	0.009
659	LC 1074	K5:1NL.1#5a,Break Conductor 4, Ahead,+10C	1.787	0.126	0.081
660	LC 1074	K5:2NL.1#5a,Break Conductor 4, Ahead,+10C	1.980	0.008	-0.024
661	LC 1074	K6:1NL.1#5a,Break Conductor 4, Ahead,+10C	5.474	9.300	-4.500
662	LC 1074	K6:2NL.1#5a,Break Conductor 4, Ahead,+10C	16.478	9.588	-4.258
663	LC 1074	K6:3NL.1#5a,Break Conductor 4, Ahead,+10C	16.338	9.843	-4.048
664	LC 1074	K7:1NL.1#5a,Break Conductor 4, Ahead,+10C	15.189	9.694	-4.764
665	LC 1074	K7:2NL.1#5a,Break Conductor 4, Ahead,+10C	15.680	9.379	-4.905
666	LC 1074	K7:3NL.1#5a,Break Conductor 4, Ahead,+10C	16.081	9.101	-5.045
667	LC 1075	K4:1NL.1#5a,Break Conductor 5, Ahead,+10C	1.925	0.047	0.009
668	LC 1075	K5:1NL.1#5a,Break Conductor 5, Ahead,+10C	1.787	0.126	0.081
669	LC 1075	K5:2NL.1#5a,Break Conductor 5, Ahead,+10C	1.980	0.008	-0.024
670	LC 1075	K6:1NL.1#5a,Break Conductor 5, Ahead,+10C	16.566	9.367	-4.460
671	LC 1075	K6:2NL.1#5a,Break Conductor 5, Ahead,+10C	5.360	9.367	-4.447
672	LC 1075	K6:3NL.1#5a,Break Conductor 5, Ahead,+10C	16.338	9.843	-4.048
673	LC 1075	K7:1NL.1#5a,Break Conductor 5, Ahead,+10C	15.189	9.694	-4.764
674	LC 1075	K7:2NL.1#5a,Break Conductor 5, Ahead,+10C	15.680	9.379	-4.905
675	LC 1075	K7:3NL.1#5a,Break Conductor 5, Ahead,+10C	16.081	9.101	-5.045
676	LC 1076	K4:1NL.1#5a,Break Conductor 6, Ahead,+10C	1.925	0.047	0.009
677	LC 1076	K5:1NL.1#5a,Break Conductor 6, Ahead,+10C	1.787	0.126	0.081
678	LC 1076	K5:2NL.1#5a,Break Conductor 6, Ahead,+10C	1.980	0.008	-0.024
679	LC 1076	K6:1NL.1#5a,Break Conductor 6, Ahead,+10C	16.566	9.367	-4.460
680	LC 1076	K6:2NL.1#5a,Break Conductor 6, Ahead,+10C	16.478	9.588	-4.258
681	LC 1076	K6:3NL.1#5a,Break Conductor 6, Ahead,+10C	5.216	9.447	-4.392
682	LC 1076	K7:1NL.1#5a,Break Conductor 6, Ahead,+10C	15.189	9.694	-4.764
683	LC 1076	K7:2NL.1#5a,Break Conductor 6, Ahead,+10C	15.680	9.379	-4.905
684	LC 1076	K7:3NL.1#5a,Break Conductor 6, Ahead,+10C	16.081	9.101	-5.045
685	LC 1077	K4:1NL.1#6,Permanent,+10C	2.435	-0.093	0.005
686	LC 1077	K5:1NL.1#6,Permanent,+10C	2.267	0.006	0.103
687	LC 1077	K5:2NL.1#6,Permanent,+10C	2.500	-0.139	-0.040
688	LC 1077	K6:1NL.1#6,Permanent,+10C	20.701	10.444	-6.093
689	LC 1077	K6:2NL.1#6,Permanent,+10C	20.609	10.722	-5.825
690	LC 1077	K6:3NL.1#6,Permanent,+10C	20.454	11.041	-5.547
691	LC 1077	K7:1NL.1#6,Permanent,+10C	19.561	11.845	-6.485
692	LC 1077	K7:2NL.1#6,Permanent,+10C	20.183	11.444	-6.675
693	LC 1077	K7:3NL.1#6,Permanent,+10C	20.691	11.089	-6.863
694	LC 1078	K4:1NL.1#6,gunstig,Permanent,+10C	1.772	0.084	0.009
695	LC 1078	K5:1NL.1#6,gunstig,Permanent,+10C	1.643	0.157	0.073
696	LC 1078	K5:2NL.1#6,gunstig,Permanent,+10C	1.823	0.048	-0.020
697	LC 1078	K6:1NL.1#6,gunstig,Permanent,+10C	15.309	8.984	-3.999
698	LC 1078	K6:2NL.1#6,gunstig,Permanent,+10C	15.224	9.188	-3.816
699	LC 1078	K6:3NL.1#6,gunstig,Permanent,+10C	15.089	9.423	-3.626
700	LC 1078	K7:1NL.1#6,gunstig,Permanent,+10C	13.886	9.033	-4.277
701	LC 1078	K7:2NL.1#6,gunstig,Permanent,+10C	14.338	8.744	-4.405
702	LC 1078	K7:3NL.1#6,gunstig,Permanent,+10C	14.707	8.489	-4.531
703	LC 1079	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
704	LC 1079	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	2.916	-0.128	0.258
705	LC 1079	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	3.267	-0.321	0.097
706	LC 1079	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.828	10.211	-5.002
707	LC 1079	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.691	10.513	-4.715
708	LC 1079	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.491	10.856	-4.418
709	LC 1079	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	20.741	11.358	-5.413
710	LC 1079	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.396	10.940	-5.609
711	LC 1079	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.941	10.567	-5.803
712	LC 1080	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
713	LC 1080	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	3.384	1.625	0.153
714	LC 1080	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	3.868	1.357	0.036
715	LC 1080	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	43.170	43.549	-4.220
716	LC 1080	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	42.662	44.108	-3.871
717	LC 1080	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	41.983	44.762	-3.501
718	LC 1080	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	31.906	31.459	-4.937
719	LC 1080	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	33.128	30.726	-5.147
720	LC 1080	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	34.135	30.078	-5.353
721	LC 1081	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
722	LC 1081	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	4.549	-0.023	0.320
723	LC 1081	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	5.087	-0.325	0.042
724	LC 1081	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	31.145	22.845	-4.783
725	LC 1081	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	30.876	23.263	-4.440
726	LC 1081	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	30.499	23.744	-4.081
727	LC 1081	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	26.058	18.931	-5.358
728	LC 1081	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	26.952	18.373	-5.583
729	LC 1081	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	27.691	17.878	-5.805

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
730	LC 1082	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
731	LC 1082	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	2.340	0.209	0.131
732	LC 1082	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	2.613	0.051	-0.013
733	LC 1082	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	21.953	13.265	-5.075
734	LC 1082	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	21.810	13.559	-4.790
735	LC 1082	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	21.596	13.898	-4.494
736	LC 1082	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	19.686	12.807	-5.516
737	LC 1082	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	20.331	12.397	-5.712
738	LC 1082	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	20.862	12.034	-5.906
739	LC 1083	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139
740	LC 1083	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	2.500	-0.275	0.258
741	LC 1083	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	2.682	-0.427	0.097
742	LC 1083	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	18.671	10.045	-5.002
743	LC 1083	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	18.628	10.290	-4.715
744	LC 1083	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	18.524	10.576	-4.418
745	LC 1083	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	17.341	11.261	-5.413
746	LC 1083	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	17.889	10.901	-5.609
747	LC 1083	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	18.326	10.586	-5.803
748	LC 1084	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
749	LC 1084	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	3.256	1.579	0.153
750	LC 1084	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	3.688	1.325	0.036
751	LC 1084	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	42.198	43.498	-4.220
752	LC 1084	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	41.720	44.039	-3.871
753	LC 1084	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	41.070	44.676	-3.501
754	LC 1084	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	30.860	31.430	-4.937
755	LC 1084	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	32.049	30.714	-5.147
756	LC 1084	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	33.023	30.084	-5.353
757	LC 1085	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
758	LC 1085	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	4.046	-0.201	0.320
759	LC 1085	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	4.379	-0.454	0.042
760	LC 1085	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	29.365	22.737	-4.783
761	LC 1085	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	29.157	23.117	-4.440
762	LC 1085	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	28.843	23.561	-4.081
763	LC 1085	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	24.118	18.867	-5.358
764	LC 1085	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	24.943	18.348	-5.583
765	LC 1085	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	25.611	17.891	-5.805
766	LC 1086	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
767	LC 1086	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	2.212	0.163	0.131
768	LC 1086	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	2.433	0.018	-0.013
769	LC 1086	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	20.982	13.214	-5.075
770	LC 1086	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	20.868	13.491	-4.790
771	LC 1086	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	20.683	13.812	-4.494
772	LC 1086	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	18.640	12.777	-5.516
773	LC 1086	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	19.252	12.386	-5.712
774	LC 1086	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	19.750	12.040	-5.906
775	LC 1087	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112
776	LC 1087	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.522	-0.409	0.233
777	LC 1087	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.748	-0.530	0.065
778	LC 1087	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	20.255	9.556	-5.069
779	LC 1087	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	20.185	9.799	-4.781
780	LC 1087	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	20.051	10.091	-4.484
781	LC 1087	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.955	10.474	-5.489
782	LC 1087	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	19.524	10.121	-5.685
783	LC 1087	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	19.991	9.810	-5.879
784	LC 1088	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
785	LC 1088	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.328	1.619	0.148
786	LC 1088	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.790	1.365	0.031
787	LC 1088	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	42.922	43.632	-4.227
788	LC 1088	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	42.427	44.182	-3.878
789	LC 1088	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	41.761	44.829	-3.508
790	LC 1088	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	31.622	31.555	-4.945
791	LC 1088	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	32.831	30.833	-5.154
792	LC 1088	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	33.825	30.195	-5.360
793	LC 1089	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
794	LC 1089	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.215	-0.188	0.296
795	LC 1089	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.635	-0.417	0.013
796	LC 1089	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	30.403	22.678	-4.812
797	LC 1089	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	30.174	23.059	-4.467
798	LC 1089	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	29.830	23.521	-4.110
799	LC 1089	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	25.191	18.642	-5.389
800	LC 1089	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	26.042	18.115	-5.613
801	LC 1089	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	26.736	17.659	-5.837
802	LC 1090	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
803	LC 1090	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.278	0.182	0.127
804	LC 1090	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.524	0.041	-0.018
805	LC 1090	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.668	13.276	-5.082
806	LC 1090	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.539	13.562	-4.797
807	LC 1090	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.339	13.893	-4.501
808	LC 1090	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	19.334	12.756	-5.523
809	LC 1090	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	19.963	12.359	-5.719
810	LC 1090	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	20.477	12.008	-5.913

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
811	LC 1091	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
812	LC 1091	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.254	-0.563	0.233
813	LC 1091	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.432	-0.708	0.065
814	LC 1091	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.581	9.067	-5.069
815	LC 1091	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.520	9.300	-4.781
816	LC 1091	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.396	9.581	-4.484
817	LC 1091	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	17.253	10.029	-5.489
818	LC 1091	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	17.802	9.665	-5.685
819	LC 1091	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.246	9.344	-5.879
820	LC 1092	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060
821	LC 1092	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.245	1.572	0.148
822	LC 1092	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.692	1.310	0.031
823	LC 1092	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	42.407	43.481	-4.227
824	LC 1092	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	41.914	44.029	-3.878
825	LC 1092	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	41.251	44.672	-3.508
826	LC 1092	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	31.098	31.418	-4.945
827	LC 1092	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	32.301	30.692	-5.154
828	LC 1092	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	33.288	30.052	-5.360
829	LC 1093	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
830	LC 1093	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	3.891	-0.373	0.296
831	LC 1093	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.253	-0.632	0.013
832	LC 1093	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	29.473	22.358	-4.812
833	LC 1093	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	29.251	22.732	-4.467
834	LC 1093	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	28.913	23.187	-4.110
835	LC 1093	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	24.243	18.350	-5.389
836	LC 1093	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	25.081	17.817	-5.613
837	LC 1093	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	25.760	17.354	-5.837
838	LC 1094	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
839	LC 1094	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.195	0.135	0.127
840	LC 1094	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.427	-0.014	-0.018
841	LC 1094	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.153	13.126	-5.082
842	LC 1094	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.026	13.409	-4.797
843	LC 1094	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	20.829	13.736	-4.501
844	LC 1094	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	18.810	12.619	-5.523
845	LC 1094	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	19.433	12.218	-5.719
846	LC 1094	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	19.940	11.864	-5.913
847	LC 1095	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
848	LC 1095	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.343	0.478	0.094
849	LC 1095	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.688	0.309	-0.041
850	LC 1095	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.698	10.952	-5.191
851	LC 1095	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.527	11.212	-4.915
852	LC 1095	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.299	11.502	-4.628
853	LC 1095	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	19.617	12.122	-5.597
854	LC 1095	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.269	11.697	-5.791
855	LC 1095	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.826	11.355	-5.985
856	LC 1096	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046
857	LC 1096	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.287	1.694	0.132
858	LC 1096	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.765	1.425	0.018
859	LC 1096	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	42.937	43.588	-4.242
860	LC 1096	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	42.429	44.143	-3.894
861	LC 1096	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	41.745	44.802	-3.527
862	LC 1096	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	31.674	31.508	-4.958
863	LC 1096	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	32.894	30.773	-5.168
864	LC 1096	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	33.898	30.124	-5.374
865	LC 1097	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
866	LC 1097	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.028	0.441	0.187
867	LC 1097	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.549	0.150	-0.071
868	LC 1097	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	30.570	23.100	-4.862
869	LC 1097	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	30.297	23.509	-4.523
870	LC 1097	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	29.918	23.982	-4.169
871	LC 1097	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	25.496	19.203	-5.433
872	LC 1097	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	26.386	18.643	-5.658
873	LC 1097	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	27.119	18.146	-5.880
874	LC 1098	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
875	LC 1098	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.245	0.266	0.111
876	LC 1098	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.514	0.112	-0.030
877	LC 1098	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	21.728	13.292	-5.095
878	LC 1098	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	21.585	13.583	-4.811
879	LC 1098	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	21.371	13.919	-4.516
880	LC 1098	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	19.463	12.839	-5.534
881	LC 1098	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	20.106	12.428	-5.730
882	LC 1098	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	20.633	12.063	-5.924
883	LC 1099	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
884	LC 1099	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.195	0.485	0.094
885	LC 1099	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.418	0.382	-0.041
886	LC 1099	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	18.602	11.275	-5.191
887	LC 1099	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	18.517	11.488	-4.915
888	LC 1099	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	18.375	11.733	-4.628
889	LC 1099	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	17.307	12.470	-5.597
890	LC 1099	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	17.872	12.115	-5.791
891	LC 1099	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	18.343	11.842	-5.985

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
892	LC 1100	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
893	LC 1100	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.242	1.696	0.132
894	LC 1100	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.682	1.447	0.018
895	LC 1100	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	42.293	43.687	-4.242
896	LC 1100	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	41.811	44.228	-3.894
897	LC 1100	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	41.153	44.873	-3.527
898	LC 1100	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	30.963	31.615	-4.958
899	LC 1100	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	32.157	30.902	-5.168
900	LC 1100	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	33.134	30.274	-5.374
901	LC 1101	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008
902	LC 1101	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	3.850	0.448	0.187
903	LC 1101	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.223	0.238	-0.071
904	LC 1101	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	29.436	23.312	-4.862
905	LC 1101	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	29.219	23.690	-4.523
906	LC 1101	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	28.896	24.133	-4.169
907	LC 1101	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	24.221	19.431	-5.433
908	LC 1101	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	25.054	18.916	-5.658
909	LC 1101	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	25.732	18.464	-5.880
910	LC 1102	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
911	LC 1102	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.199	0.268	0.111
912	LC 1102	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.431	0.134	-0.030
913	LC 1102	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	21.083	13.391	-5.095
914	LC 1102	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	20.966	13.668	-4.811
915	LC 1102	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	20.779	13.989	-4.516
916	LC 1102	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	18.752	12.946	-5.534
917	LC 1102	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	19.368	12.556	-5.730
918	LC 1102	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	19.870	12.213	-5.924
919	LC 1103	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
920	LC 1103	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	2.099	0.109	0.109
921	LC 1103	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	2.321	0.038	-0.037
922	LC 1103	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.888	10.349	-5.202
923	LC 1103	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.803	10.553	-4.924
924	LC 1103	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.673	10.838	-4.638
925	LC 1103	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	17.590	11.265	-5.611
926	LC 1103	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.156	10.951	-5.805
927	LC 1103	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.618	10.680	-5.998
928	LC 1104	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
929	LC 1104	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	3.249	1.667	0.133
930	LC 1104	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	3.703	1.427	0.018
931	LC 1104	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	42.543	43.685	-4.244
932	LC 1104	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	42.060	44.222	-3.894
933	LC 1104	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	41.401	44.863	-3.525
934	LC 1104	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	31.239	31.606	-4.960
935	LC 1104	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	32.438	30.888	-5.169
936	LC 1104	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	33.421	30.256	-5.375
937	LC 1105	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014
938	LC 1105	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	3.823	0.195	0.197
939	LC 1105	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	4.213	-0.003	-0.068
940	LC 1105	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	29.722	23.028	-4.866
941	LC 1105	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	29.501	23.406	-4.526
942	LC 1105	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	29.168	23.855	-4.172
943	LC 1105	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	24.463	18.925	-5.440
944	LC 1105	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	25.294	18.408	-5.664
945	LC 1105	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	26.011	18.021	-5.886
946	LC 1106	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
947	LC 1106	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
948	LC 1106	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	2.440	0.089	-0.029
949	LC 1106	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	21.299	13.313	-5.096
950	LC 1106	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	21.177	13.594	-4.811
951	LC 1106	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	20.984	13.919	-4.516
952	LC 1106	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	18.958	12.794	-5.536
953	LC 1106	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	19.576	12.402	-5.731
954	LC 1106	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	20.079	12.056	-5.925
955	LC 1107	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008
956	LC 1107	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	2.088	0.074	0.109
957	LC 1107	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	2.358	-0.033	-0.037
958	LC 1107	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	19.323	10.095	-5.202
959	LC 1107	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	19.194	10.318	-4.924
960	LC 1107	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	19.020	10.621	-4.638
961	LC 1107	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	18.077	11.034	-5.611
962	LC 1107	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	18.694	10.679	-5.805
963	LC 1107	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	19.208	10.365	-5.998
964	LC 1108	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
965	LC 1108	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	3.246	1.656	0.133
966	LC 1108	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	3.715	1.405	0.018
967	LC 1108	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	42.677	43.607	-4.244
968	LC 1108	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	42.180	44.150	-3.894
969	LC 1108	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	41.508	44.796	-3.525
970	LC 1108	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	31.389	31.535	-4.960
971	LC 1108	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	32.604	30.804	-5.169
972	LC 1108	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	33.602	30.159	-5.375

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
973	LC 1109	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
974	LC 1109	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	3.809	0.153	0.197
975	LC 1109	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	4.258	-0.089	-0.068
976	LC 1109	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	29.956	22.862	-4.866
977	LC 1109	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	29.706	23.252	-4.526
978	LC 1109	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	29.344	23.713	-4.172
979	LC 1109	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	24.731	18.774	-5.440
980	LC 1109	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	25.596	18.230	-5.664
981	LC 1109	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	26.346	17.815	-5.886
982	LC 1110	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014
983	LC 1110	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
984	LC 1110	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	2.451	0.067	-0.029
985	LC 1110	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	21.433	13.235	-5.096
986	LC 1110	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	21.297	13.522	-4.811
987	LC 1110	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	21.091	13.852	-4.516
988	LC 1110	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	19.108	12.723	-5.536
989	LC 1110	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	19.742	12.318	-5.731
990	LC 1110	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	20.261	11.959	-5.925
991	LC 1111	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
992	LC 1111	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	2.916	-0.128	0.258
993	LC 1111	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.828	10.211	-5.002
994	LC 1111	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.691	10.513	-4.715
995	LC 1111	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.491	10.856	-4.418
996	LC 1111	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.741	11.682	-3.096
997	LC 1111	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.090	11.486	-3.171
998	LC 1111	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.381	11.311	-3.245
999	LC 1112	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
1000	LC 1112	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.384	1.625	0.153
1001	LC 1112	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	43.170	43.549	-4.220
1002	LC 1112	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	42.662	44.108	-3.871
1003	LC 1112	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	41.983	44.762	-3.501
1004	LC 1112	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	12.027	22.695	-3.014
1005	LC 1112	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	12.669	22.346	-3.096
1006	LC 1112	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	13.202	22.038	-3.176
1007	LC 1113	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
1008	LC 1113	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.549	-0.023	0.320
1009	LC 1113	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	31.145	22.845	-4.783
1010	LC 1113	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	30.876	23.263	-4.440
1011	LC 1113	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	30.499	23.744	-4.081
1012	LC 1113	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	8.952	16.495	-3.151
1013	LC 1113	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	9.428	16.233	-3.238
1014	LC 1113	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	9.824	16.000	-3.324
1015	LC 1114	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
1016	LC 1114	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.340	0.209	0.131
1017	LC 1114	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.953	13.265	-5.075
1018	LC 1114	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.810	13.559	-4.790
1019	LC 1114	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.596	13.898	-4.494
1020	LC 1114	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	6.558	12.200	-3.093
1021	LC 1114	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	6.907	12.009	-3.168
1022	LC 1114	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.196	11.841	-3.242
1023	LC 1115	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139
1024	LC 1115	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.500	-0.275	0.258
1025	LC 1115	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.671	10.045	-5.002
1026	LC 1115	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.628	10.290	-4.715
1027	LC 1115	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.524	10.576	-4.418
1028	LC 1115	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.554	11.915	-3.096
1029	LC 1115	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.868	11.755	-3.171
1030	LC 1115	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	6.124	11.616	-3.245
1031	LC 1116	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
1032	LC 1116	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.256	1.579	0.153
1033	LC 1116	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	42.198	43.498	-4.220
1034	LC 1116	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	41.720	44.039	-3.871
1035	LC 1116	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	41.070	44.676	-3.501
1036	LC 1116	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	11.662	22.766	-3.014
1037	LC 1116	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	12.293	22.428	-3.096
1038	LC 1116	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	12.815	22.132	-3.176
1039	LC 1117	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
1040	LC 1117	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.046	-0.201	0.320
1041	LC 1117	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	29.365	22.737	-4.783
1042	LC 1117	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	29.157	23.117	-4.440
1043	LC 1117	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	28.843	23.561	-4.081
1044	LC 1117	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	8.318	16.647	-3.151
1045	LC 1117	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	8.771	16.409	-3.238
1046	LC 1117	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	9.143	16.200	-3.324
1047	LC 1118	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
1048	LC 1118	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.212	0.163	0.131
1049	LC 1118	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.982	13.214	-5.075
1050	LC 1118	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.868	13.491	-4.790
1051	LC 1118	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.683	13.812	-4.494
1052	LC 1118	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.193	12.272	-3.093
1053	LC 1118	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.531	12.092	-3.168

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1054	LC 1118	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.809	11.935	-3.242
1055	LC 1119	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112
1056	LC 1119	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.522	-0.409	0.233
1057	LC 1119	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.255	9.556	-5.069
1058	LC 1119	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.185	9.799	-4.781
1059	LC 1119	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.051	10.091	-4.484
1060	LC 1119	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.998	11.087	-3.101
1061	LC 1119	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.307	10.920	-3.176
1062	LC 1119	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.563	10.773	-3.249
1063	LC 1120	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
1064	LC 1120	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.328	1.619	0.148
1065	LC 1120	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.922	43.632	-4.227
1066	LC 1120	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.427	44.182	-3.878
1067	LC 1120	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.761	44.829	-3.508
1068	LC 1120	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	11.912	22.730	-3.014
1069	LC 1120	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.549	22.387	-3.096
1070	LC 1120	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	13.075	22.085	-3.176
1071	LC 1121	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
1072	LC 1121	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.215	-0.188	0.296
1073	LC 1121	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	30.403	22.678	-4.812
1074	LC 1121	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	30.174	23.059	-4.467
1075	LC 1121	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.830	23.521	-4.110
1076	LC 1121	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.592	16.293	-3.153
1077	LC 1121	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.048	16.047	-3.240
1078	LC 1121	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.426	15.831	-3.325
1079	LC 1122	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
1080	LC 1122	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.278	0.182	0.127
1081	LC 1122	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.668	13.276	-5.082
1082	LC 1122	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.539	13.562	-4.797
1083	LC 1122	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.339	13.893	-4.501
1084	LC 1122	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.407	12.166	-3.093
1085	LC 1122	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.748	11.982	-3.168
1086	LC 1122	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.030	11.821	-3.243
1087	LC 1123	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
1088	LC 1123	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.254	-0.563	0.233
1089	LC 1123	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.581	9.067	-5.069
1090	LC 1123	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.520	9.300	-4.781
1091	LC 1123	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.396	9.581	-4.484
1092	LC 1123	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.559	11.091	-3.101
1093	LC 1123	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.871	10.923	-3.176
1094	LC 1123	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.129	10.775	-3.249
1095	LC 1124	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060
1096	LC 1124	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.245	1.572	0.148
1097	LC 1124	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.407	43.481	-4.227
1098	LC 1124	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.914	44.029	-3.878
1099	LC 1124	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.251	44.672	-3.508
1100	LC 1124	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	11.777	22.731	-3.014
1101	LC 1124	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.414	22.388	-3.096
1102	LC 1124	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.942	22.085	-3.176
1103	LC 1125	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
1104	LC 1125	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	3.891	-0.373	0.296
1105	LC 1125	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.473	22.358	-4.812
1106	LC 1125	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.251	22.732	-4.467
1107	LC 1125	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	28.913	23.187	-4.110
1108	LC 1125	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.389	16.295	-3.153
1109	LC 1125	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.846	16.049	-3.240
1110	LC 1125	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.225	15.832	-3.325
1111	LC 1126	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
1112	LC 1126	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.195	0.135	0.127
1113	LC 1126	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.153	13.126	-5.082
1114	LC 1126	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.026	13.409	-4.797
1115	LC 1126	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	20.829	13.736	-4.501
1116	LC 1126	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.272	12.167	-3.093
1117	LC 1126	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.614	11.983	-3.168
1118	LC 1126	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.896	11.821	-3.243
1119	LC 1127	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
1120	LC 1127	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.343	0.478	0.094
1121	LC 1127	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.698	10.952	-5.191
1122	LC 1127	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.527	11.212	-4.915
1123	LC 1127	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.299	11.502	-4.628
1124	LC 1127	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.666	11.667	-3.096
1125	LC 1127	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	7.015	11.470	-3.171
1126	LC 1127	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	7.317	11.312	-3.245
1127	LC 1128	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046
1128	LC 1128	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.287	1.694	0.132
1129	LC 1128	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.937	43.588	-4.242
1130	LC 1128	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.429	44.143	-3.894
1131	LC 1128	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.745	44.802	-3.527
1132	LC 1128	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.007	22.695	-3.014
1133	LC 1128	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.650	22.346	-3.096
1134	LC 1128	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	13.182	22.038	-3.176

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1135	LC 1129	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
1136	LC 1129	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.028	0.441	0.187
1137	LC 1129	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	30.570	23.100	-4.862
1138	LC 1129	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	30.297	23.509	-4.523
1139	LC 1129	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.918	23.982	-4.169
1140	LC 1129	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.921	16.496	-3.151
1141	LC 1129	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.397	16.233	-3.238
1142	LC 1129	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.794	16.001	-3.324
1143	LC 1130	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
1144	LC 1130	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.245	0.266	0.111
1145	LC 1130	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.728	13.292	-5.095
1146	LC 1130	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.585	13.583	-4.811
1147	LC 1130	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.371	13.919	-4.516
1148	LC 1130	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.538	12.200	-3.093
1149	LC 1130	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.887	12.010	-3.168
1150	LC 1130	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.176	11.841	-3.242
1151	LC 1131	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
1152	LC 1131	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.195	0.485	0.094
1153	LC 1131	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.602	11.275	-5.191
1154	LC 1131	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.517	11.488	-4.915
1155	LC 1131	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.375	11.733	-4.628
1156	LC 1131	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.611	11.896	-3.096
1157	LC 1131	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.923	11.736	-3.171
1158	LC 1131	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.187	11.615	-3.245
1159	LC 1132	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
1160	LC 1132	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.242	1.696	0.132
1161	LC 1132	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.293	43.687	-4.242
1162	LC 1132	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.811	44.228	-3.894
1163	LC 1132	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.153	44.873	-3.527
1164	LC 1132	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	11.682	22.766	-3.014
1165	LC 1132	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.313	22.428	-3.096
1166	LC 1132	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.835	22.131	-3.176
1167	LC 1133	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008
1168	LC 1133	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	3.850	0.448	0.187
1169	LC 1133	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.436	23.312	-4.862
1170	LC 1133	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.219	23.690	-4.523
1171	LC 1133	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	28.896	24.133	-4.169
1172	LC 1133	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.349	16.646	-3.151
1173	LC 1133	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.801	16.408	-3.238
1174	LC 1133	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.173	16.199	-3.324
1175	LC 1134	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
1176	LC 1134	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.199	0.268	0.111
1177	LC 1134	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.083	13.391	-5.095
1178	LC 1134	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.966	13.668	-4.811
1179	LC 1134	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.779	13.989	-4.516
1180	LC 1134	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.213	12.271	-3.093
1181	LC 1134	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.551	12.092	-3.168
1182	LC 1134	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.829	11.935	-3.242
1183	LC 1135	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
1184	LC 1135	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.099	0.109	0.109
1185	LC 1135	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.888	10.349	-5.202
1186	LC 1135	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.803	10.553	-4.924
1187	LC 1135	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.673	10.838	-4.638
1188	LC 1135	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.684	11.236	-3.100
1189	LC 1135	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.994	11.095	-3.175
1190	LC 1135	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	6.251	10.973	-3.249
1191	LC 1136	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
1192	LC 1136	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.249	1.667	0.133
1193	LC 1136	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	42.543	43.685	-4.244
1194	LC 1136	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	42.060	44.222	-3.894
1195	LC 1136	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	41.401	44.863	-3.525
1196	LC 1136	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	11.799	22.744	-3.014
1197	LC 1136	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	12.432	22.404	-3.096
1198	LC 1136	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	12.955	22.105	-3.176
1199	LC 1137	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014
1200	LC 1137	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	3.823	0.195	0.197
1201	LC 1137	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.722	23.028	-4.866
1202	LC 1137	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.501	23.406	-4.526
1203	LC 1137	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.168	23.855	-4.172
1204	LC 1137	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	8.424	16.357	-3.153
1205	LC 1137	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	8.873	16.117	-3.240
1206	LC 1137	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	9.263	15.941	-3.325
1207	LC 1138	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
1208	LC 1138	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
1209	LC 1138	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	21.299	13.313	-5.096
1210	LC 1138	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	21.177	13.594	-4.811
1211	LC 1138	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	20.984	13.919	-4.516
1212	LC 1138	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.294	12.180	-3.093
1213	LC 1138	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.631	11.999	-3.168
1214	LC 1138	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.909	11.841	-3.243
1215	LC 1139	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1216	LC 1139	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.088	0.074	0.109
1217	LC 1139	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.323	10.095	-5.202
1218	LC 1139	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.194	10.318	-4.924
1219	LC 1139	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.020	10.621	-4.638
1220	LC 1139	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	5.981	11.150	-3.100
1221	LC 1139	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.317	10.987	-3.175
1222	LC 1139	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.600	10.844	-3.249
1223	LC 1140	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
1224	LC 1140	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.246	1.656	0.133
1225	LC 1140	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	42.677	43.607	-4.244
1226	LC 1140	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	42.180	44.150	-3.894
1227	LC 1140	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	41.508	44.796	-3.525
1228	LC 1140	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	11.890	22.717	-3.014
1229	LC 1140	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	12.531	22.371	-3.096
1230	LC 1140	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	13.062	22.065	-3.176
1231	LC 1141	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
1232	LC 1141	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	3.809	0.153	0.197
1233	LC 1141	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.956	22.862	-4.866
1234	LC 1141	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.706	23.252	-4.526
1235	LC 1141	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.344	23.713	-4.172
1236	LC 1141	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	8.593	16.300	-3.153
1237	LC 1141	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	9.059	16.047	-3.240
1238	LC 1141	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	9.466	15.856	-3.325
1239	LC 1142	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014
1240	LC 1142	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
1241	LC 1142	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.433	13.235	-5.096
1242	LC 1142	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.297	13.522	-4.811
1243	LC 1142	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.091	13.852	-4.516
1244	LC 1142	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.385	12.153	-3.093
1245	LC 1142	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.730	11.966	-3.168
1246	LC 1142	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.016	11.801	-3.243
1247	LC 1143	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
1248	LC 1143	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.267	-0.321	0.097
1249	LC 1143	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.042	10.927	-2.955
1250	LC 1143	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.889	11.019	-2.882
1251	LC 1143	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.701	11.128	-2.806
1252	LC 1143	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	20.741	11.358	-5.413
1253	LC 1143	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.396	10.940	-5.609
1254	LC 1143	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.941	10.567	-5.803
1255	LC 1144	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
1256	LC 1144	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.868	1.357	0.036
1257	LC 1144	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	17.174	28.858	-2.787
1258	LC 1144	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	16.813	29.069	-2.694
1259	LC 1144	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	16.362	29.323	-2.594
1260	LC 1144	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	31.906	31.459	-4.937
1261	LC 1144	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	33.128	30.726	-5.147
1262	LC 1144	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	34.135	30.078	-5.353
1263	LC 1145	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
1264	LC 1145	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	5.087	-0.325	0.042
1265	LC 1145	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	11.136	18.361	-2.960
1266	LC 1145	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	10.897	18.501	-2.871
1267	LC 1145	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	10.602	18.669	-2.777
1268	LC 1145	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	26.058	18.931	-5.358
1269	LC 1145	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	26.952	18.373	-5.583
1270	LC 1145	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	27.691	17.878	-5.805
1271	LC 1146	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
1272	LC 1146	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.613	0.051	-0.013
1273	LC 1146	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.428	12.299	-2.942
1274	LC 1146	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.270	12.392	-2.868
1275	LC 1146	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.075	12.502	-2.791
1276	LC 1146	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	19.686	12.807	-5.516
1277	LC 1146	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	20.331	12.397	-5.712
1278	LC 1146	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	20.862	12.034	-5.906
1279	LC 1147	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139
1280	LC 1147	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.682	-0.427	0.097
1281	LC 1147	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.946	11.137	-2.955
1282	LC 1147	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.827	11.203	-2.882
1283	LC 1147	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.675	11.286	-2.806
1284	LC 1147	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	17.341	11.261	-5.413
1285	LC 1147	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	17.889	10.901	-5.609
1286	LC 1147	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.326	10.586	-5.803
1287	LC 1148	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
1288	LC 1148	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.688	1.325	0.036
1289	LC 1148	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.837	28.923	-2.787
1290	LC 1148	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.486	29.125	-2.694
1291	LC 1148	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.047	29.371	-2.594
1292	LC 1148	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	30.860	31.430	-4.937
1293	LC 1148	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	32.049	30.714	-5.147
1294	LC 1148	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	33.023	30.084	-5.353
1295	LC 1149	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
1296	LC 1149	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.379	-0.454	0.042

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1297	LC 1149	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.561	18.498	-2.960
1298	LC 1149	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.345	18.622	-2.871
1299	LC 1149	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.073	18.773	-2.777
1300	LC 1149	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	24.118	18.867	-5.358
1301	LC 1149	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	24.943	18.348	-5.583
1302	LC 1149	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	25.611	17.891	-5.805
1303	LC 1150	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
1304	LC 1150	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.433	0.018	-0.013
1305	LC 1150	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	7.090	12.364	-2.942
1306	LC 1150	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.943	12.448	-2.868
1307	LC 1150	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.759	12.551	-2.791
1308	LC 1150	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	18.640	12.777	-5.516
1309	LC 1150	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	19.252	12.386	-5.712
1310	LC 1150	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	19.750	12.040	-5.906
1311	LC 1151	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112
1312	LC 1151	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.748	-0.530	0.065
1313	LC 1151	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.384	10.477	-2.960
1314	LC 1151	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.255	10.552	-2.888
1315	LC 1151	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.094	10.642	-2.813
1316	LC 1151	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.955	10.474	-5.489
1317	LC 1151	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	19.524	10.121	-5.685
1318	LC 1151	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	19.991	9.810	-5.879
1319	LC 1152	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
1320	LC 1152	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.790	1.365	0.031
1321	LC 1152	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	17.072	28.890	-2.787
1322	LC 1152	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.716	29.097	-2.694
1323	LC 1152	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.271	29.347	-2.594
1324	LC 1152	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	31.622	31.555	-4.945
1325	LC 1152	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	32.831	30.833	-5.154
1326	LC 1152	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	33.825	30.195	-5.360
1327	LC 1153	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
1328	LC 1153	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.635	-0.417	0.013
1329	LC 1153	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.830	18.227	-2.962
1330	LC 1153	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.605	18.358	-2.874
1331	LC 1153	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.324	18.516	-2.780
1332	LC 1153	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.191	18.642	-5.389
1333	LC 1153	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	26.042	18.115	-5.613
1334	LC 1153	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	26.736	17.659	-5.837
1335	LC 1154	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
1336	LC 1154	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.524	0.041	-0.018
1337	LC 1154	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.306	12.298	-2.943
1338	LC 1154	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.154	12.386	-2.869
1339	LC 1154	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.965	12.492	-2.791
1340	LC 1154	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.334	12.756	-5.523
1341	LC 1154	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.963	12.359	-5.719
1342	LC 1154	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	20.477	12.008	-5.913
1343	LC 1155	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
1344	LC 1155	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.432	-0.708	0.065
1345	LC 1155	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.951	10.478	-2.960
1346	LC 1155	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.821	10.553	-2.888
1347	LC 1155	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.660	10.644	-2.813
1348	LC 1155	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	17.253	10.029	-5.489
1349	LC 1155	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	17.802	9.665	-5.685
1350	LC 1155	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.246	9.344	-5.879
1351	LC 1156	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060
1352	LC 1156	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.692	1.310	0.031
1353	LC 1156	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.939	28.890	-2.787
1354	LC 1156	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.583	29.097	-2.694
1355	LC 1156	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.138	29.347	-2.594
1356	LC 1156	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	31.098	31.418	-4.945
1357	LC 1156	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	32.301	30.692	-5.154
1358	LC 1156	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	33.288	30.052	-5.360
1359	LC 1157	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
1360	LC 1157	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.253	-0.632	0.013
1361	LC 1157	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.629	18.228	-2.962
1362	LC 1157	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.404	18.359	-2.874
1363	LC 1157	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.124	18.517	-2.780
1364	LC 1157	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	24.243	18.350	-5.389
1365	LC 1157	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.081	17.817	-5.613
1366	LC 1157	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.760	17.354	-5.837
1367	LC 1158	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
1368	LC 1158	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.427	-0.014	-0.018
1369	LC 1158	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.172	12.298	-2.943
1370	LC 1158	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.021	12.386	-2.869
1371	LC 1158	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.831	12.493	-2.791
1372	LC 1158	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	18.810	12.619	-5.523
1373	LC 1158	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.433	12.218	-5.719
1374	LC 1158	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.940	11.864	-5.913
1375	LC 1159	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
1376	LC 1159	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.688	0.309	-0.041
1377	LC 1159	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.979	10.928	-2.955

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1378	LC 1159	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.815	11.003	-2.882
1379	LC 1159	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.618	11.094	-2.806
1380	LC 1159	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	19.617	12.122	-5.597
1381	LC 1159	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.269	11.697	-5.791
1382	LC 1159	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.826	11.355	-5.985
1383	LC 1160	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046
1384	LC 1160	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.765	1.425	0.018
1385	LC 1160	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	17.155	28.858	-2.787
1386	LC 1160	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.793	29.069	-2.694
1387	LC 1160	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.343	29.323	-2.594
1388	LC 1160	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	31.674	31.508	-4.958
1389	LC 1160	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	32.894	30.773	-5.168
1390	LC 1160	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	33.898	30.124	-5.374
1391	LC 1161	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
1392	LC 1161	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.549	0.150	-0.071
1393	LC 1161	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	11.106	18.361	-2.960
1394	LC 1161	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.867	18.502	-2.871
1395	LC 1161	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.572	18.670	-2.777
1396	LC 1161	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.496	19.203	-5.433
1397	LC 1161	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	26.386	18.643	-5.658
1398	LC 1161	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	27.119	18.146	-5.880
1399	LC 1162	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
1400	LC 1162	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.514	0.112	-0.030
1401	LC 1162	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.408	12.300	-2.942
1402	LC 1162	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.251	12.392	-2.868
1403	LC 1162	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.055	12.503	-2.791
1404	LC 1162	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.463	12.839	-5.534
1405	LC 1162	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.106	12.428	-5.730
1406	LC 1162	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.633	12.063	-5.924
1407	LC 1163	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
1408	LC 1163	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.418	0.382	-0.041
1409	LC 1163	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.009	11.137	-2.955
1410	LC 1163	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.881	11.186	-2.882
1411	LC 1163	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.720	11.251	-2.806
1412	LC 1163	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	17.307	12.470	-5.597
1413	LC 1163	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	17.872	12.115	-5.791
1414	LC 1163	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.343	11.842	-5.985
1415	LC 1164	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
1416	LC 1164	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.682	1.447	0.018
1417	LC 1164	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.856	28.922	-2.787
1418	LC 1164	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.506	29.125	-2.694
1419	LC 1164	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.066	29.371	-2.594
1420	LC 1164	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	30.963	31.615	-4.958
1421	LC 1164	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	32.157	30.902	-5.168
1422	LC 1164	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	33.134	30.274	-5.374
1423	LC 1165	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008
1424	LC 1165	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.223	0.238	-0.071
1425	LC 1165	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.590	18.498	-2.960
1426	LC 1165	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.375	18.621	-2.871
1427	LC 1165	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.102	18.772	-2.777
1428	LC 1165	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	24.221	19.431	-5.433
1429	LC 1165	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.054	18.916	-5.658
1430	LC 1165	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.732	18.464	-5.880
1431	LC 1166	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
1432	LC 1166	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.431	0.134	-0.030
1433	LC 1166	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.110	12.364	-2.942
1434	LC 1166	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.963	12.448	-2.868
1435	LC 1166	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.779	12.551	-2.791
1436	LC 1166	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	18.752	12.946	-5.534
1437	LC 1166	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.368	12.556	-5.730
1438	LC 1166	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.870	12.213	-5.924
1439	LC 1167	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
1440	LC 1167	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.321	0.038	-0.037
1441	LC 1167	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	6.086	10.623	-2.959
1442	LC 1167	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.955	10.675	-2.887
1443	LC 1167	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.802	10.760	-2.812
1444	LC 1167	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	17.590	11.265	-5.611
1445	LC 1167	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.156	10.951	-5.805
1446	LC 1167	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.618	10.680	-5.998
1447	LC 1168	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
1448	LC 1168	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.703	1.427	0.018
1449	LC 1168	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.962	28.904	-2.787
1450	LC 1168	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.609	29.109	-2.694
1451	LC 1168	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.167	29.357	-2.594
1452	LC 1168	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	31.239	31.606	-4.960
1453	LC 1168	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	32.438	30.888	-5.169
1454	LC 1168	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	33.421	30.256	-5.375
1455	LC 1169	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014
1456	LC 1169	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.213	-0.003	-0.068
1457	LC 1169	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.690	18.324	-2.961
1458	LC 1169	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.470	18.451	-2.873

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1459	LC 1169	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.195	18.605	-2.779
1460	LC 1169	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	24.463	18.925	-5.440
1461	LC 1169	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	25.294	18.408	-5.664
1462	LC 1169	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	26.011	18.021	-5.886
1463	LC 1170	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
1464	LC 1170	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.440	0.089	-0.029
1465	LC 1170	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	7.196	12.312	-2.943
1466	LC 1170	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	7.047	12.398	-2.869
1467	LC 1170	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.861	12.502	-2.791
1468	LC 1170	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	18.958	12.794	-5.536
1469	LC 1170	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	19.576	12.402	-5.731
1470	LC 1170	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	20.079	12.056	-5.925
1471	LC 1171	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008
1472	LC 1171	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.358	-0.033	-0.037
1473	LC 1171	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.367	10.534	-2.959
1474	LC 1171	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.218	10.599	-2.887
1475	LC 1171	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.046	10.697	-2.812
1476	LC 1171	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	18.077	11.034	-5.611
1477	LC 1171	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	18.694	10.679	-5.805
1478	LC 1171	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.208	10.365	-5.998
1479	LC 1172	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
1480	LC 1172	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.715	1.405	0.018
1481	LC 1172	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	17.049	28.877	-2.787
1482	LC 1172	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	16.690	29.085	-2.694
1483	LC 1172	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	16.242	29.337	-2.594
1484	LC 1172	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	31.389	31.535	-4.960
1485	LC 1172	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	32.604	30.804	-5.169
1486	LC 1172	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	33.602	30.159	-5.375
1487	LC 1173	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
1488	LC 1173	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.258	-0.089	-0.068
1489	LC 1173	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.848	18.266	-2.961
1490	LC 1173	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.617	18.401	-2.873
1491	LC 1173	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.329	18.564	-2.779
1492	LC 1173	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	24.731	18.774	-5.440
1493	LC 1173	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	25.596	18.230	-5.664
1494	LC 1173	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	26.346	17.815	-5.886
1495	LC 1174	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014
1496	LC 1174	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.451	0.067	-0.029
1497	LC 1174	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.282	12.285	-2.943
1498	LC 1174	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.128	12.375	-2.869
1499	LC 1174	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.935	12.483	-2.791
1500	LC 1174	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	19.108	12.723	-5.536
1501	LC 1174	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	19.742	12.318	-5.731
1502	LC 1174	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	20.261	11.959	-5.925
1503	LC 1175	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
1504	LC 1175	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	2.916	-0.128	0.258
1505	LC 1175	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.267	-0.321	0.097
1506	LC 1175	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.828	10.211	-5.002
1507	LC 1175	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.691	10.513	-4.715
1508	LC 1175	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.491	10.856	-4.418
1509	LC 1175	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.741	11.682	-3.096
1510	LC 1175	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.090	11.486	-3.171
1511	LC 1175	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.381	11.311	-3.245
1512	LC 1176	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
1513	LC 1176	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.384	1.625	0.153
1514	LC 1176	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.868	1.357	0.036
1515	LC 1176	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	43.170	43.549	-4.220
1516	LC 1176	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	42.662	44.108	-3.871
1517	LC 1176	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	41.983	44.762	-3.501
1518	LC 1176	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	12.027	22.695	-3.014
1519	LC 1176	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	12.669	22.346	-3.096
1520	LC 1176	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	13.202	22.038	-3.176
1521	LC 1177	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
1522	LC 1177	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.549	-0.023	0.320
1523	LC 1177	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	5.087	-0.325	0.042
1524	LC 1177	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	31.145	22.845	-4.783
1525	LC 1177	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	30.876	23.263	-4.440
1526	LC 1177	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	30.499	23.744	-4.081
1527	LC 1177	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	8.952	16.495	-3.151
1528	LC 1177	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	9.428	16.233	-3.238
1529	LC 1177	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	9.824	16.000	-3.324
1530	LC 1178	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
1531	LC 1178	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.340	0.209	0.131
1532	LC 1178	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.613	0.051	-0.013
1533	LC 1178	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.953	13.265	-5.075
1534	LC 1178	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.810	13.559	-4.790
1535	LC 1178	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.596	13.898	-4.494
1536	LC 1178	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	6.558	12.200	-3.093
1537	LC 1178	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	6.907	12.009	-3.168
1538	LC 1178	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.196	11.841	-3.242
1539	LC 1179	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1540	LC 1179	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.500	-0.275	0.258
1541	LC 1179	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.682	-0.427	0.097
1542	LC 1179	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.671	10.045	-5.002
1543	LC 1179	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.628	10.290	-4.715
1544	LC 1179	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.524	10.576	-4.418
1545	LC 1179	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.554	11.915	-3.096
1546	LC 1179	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.868	11.755	-3.171
1547	LC 1179	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	6.124	11.616	-3.245
1548	LC 1180	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
1549	LC 1180	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.256	1.579	0.153
1550	LC 1180	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.688	1.325	0.036
1551	LC 1180	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	42.198	43.498	-4.220
1552	LC 1180	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	41.720	44.039	-3.871
1553	LC 1180	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	41.070	44.676	-3.501
1554	LC 1180	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	11.662	22.766	-3.014
1555	LC 1180	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	12.293	22.428	-3.096
1556	LC 1180	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	12.815	22.132	-3.176
1557	LC 1181	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
1558	LC 1181	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.046	-0.201	0.320
1559	LC 1181	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.379	-0.454	0.042
1560	LC 1181	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	29.365	22.737	-4.783
1561	LC 1181	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	29.157	23.117	-4.440
1562	LC 1181	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	28.843	23.561	-4.081
1563	LC 1181	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	8.318	16.647	-3.151
1564	LC 1181	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	8.771	16.409	-3.238
1565	LC 1181	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	9.143	16.200	-3.324
1566	LC 1182	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
1567	LC 1182	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.212	0.163	0.131
1568	LC 1182	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.433	0.018	-0.013
1569	LC 1182	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.982	13.214	-5.075
1570	LC 1182	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.868	13.491	-4.790
1571	LC 1182	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.683	13.812	-4.494
1572	LC 1182	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.193	12.272	-3.093
1573	LC 1182	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.531	12.092	-3.168
1574	LC 1182	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.809	11.935	-3.242
1575	LC 1183	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112
1576	LC 1183	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.522	-0.409	0.233
1577	LC 1183	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.748	-0.530	0.065
1578	LC 1183	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.255	9.556	-5.069
1579	LC 1183	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.185	9.799	-4.781
1580	LC 1183	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.051	10.091	-4.484
1581	LC 1183	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.998	11.087	-3.101
1582	LC 1183	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.307	10.920	-3.176
1583	LC 1183	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.563	10.773	-3.249
1584	LC 1184	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
1585	LC 1184	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.328	1.619	0.148
1586	LC 1184	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.790	1.365	0.031
1587	LC 1184	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.922	43.632	-4.227
1588	LC 1184	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.427	44.182	-3.878
1589	LC 1184	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.761	44.829	-3.508
1590	LC 1184	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	11.912	22.730	-3.014
1591	LC 1184	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.549	22.387	-3.096
1592	LC 1184	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	13.075	22.085	-3.176
1593	LC 1185	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
1594	LC 1185	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.215	-0.188	0.296
1595	LC 1185	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.635	-0.417	0.013
1596	LC 1185	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	30.403	22.678	-4.812
1597	LC 1185	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	30.174	23.059	-4.467
1598	LC 1185	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.830	23.521	-4.110
1599	LC 1185	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.592	16.293	-3.153
1600	LC 1185	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.048	16.047	-3.240
1601	LC 1185	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.426	15.831	-3.325
1602	LC 1186	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
1603	LC 1186	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.278	0.182	0.127
1604	LC 1186	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.524	0.041	-0.018
1605	LC 1186	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.668	13.276	-5.082
1606	LC 1186	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.539	13.562	-4.797
1607	LC 1186	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.339	13.893	-4.501
1608	LC 1186	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.407	12.166	-3.093
1609	LC 1186	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.748	11.982	-3.168
1610	LC 1186	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.030	11.821	-3.243
1611	LC 1187	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
1612	LC 1187	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.254	-0.563	0.233
1613	LC 1187	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.432	-0.708	0.065
1614	LC 1187	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.581	9.067	-5.069
1615	LC 1187	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.520	9.300	-4.781
1616	LC 1187	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.396	9.581	-4.484
1617	LC 1187	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.559	11.091	-3.101
1618	LC 1187	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.871	10.923	-3.176
1619	LC 1187	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.129	10.775	-3.249
1620	LC 1188	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1621	LC 1188	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.245	1.572	0.148
1622	LC 1188	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.692	1.310	0.031
1623	LC 1188	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.407	43.481	-4.227
1624	LC 1188	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.914	44.029	-3.878
1625	LC 1188	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.251	44.672	-3.508
1626	LC 1188	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	11.777	22.731	-3.014
1627	LC 1188	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.414	22.388	-3.096
1628	LC 1188	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.942	22.085	-3.176
1629	LC 1189	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
1630	LC 1189	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	3.891	-0.373	0.296
1631	LC 1189	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.253	-0.632	0.013
1632	LC 1189	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.473	22.358	-4.812
1633	LC 1189	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.251	22.732	-4.467
1634	LC 1189	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	28.913	23.187	-4.110
1635	LC 1189	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.389	16.295	-3.153
1636	LC 1189	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.846	16.049	-3.240
1637	LC 1189	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.225	15.832	-3.325
1638	LC 1190	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
1639	LC 1190	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.195	0.135	0.127
1640	LC 1190	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.427	-0.014	-0.018
1641	LC 1190	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.153	13.126	-5.082
1642	LC 1190	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.026	13.409	-4.797
1643	LC 1190	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	20.829	13.736	-4.501
1644	LC 1190	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.272	12.167	-3.093
1645	LC 1190	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.614	11.983	-3.168
1646	LC 1190	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.896	11.821	-3.243
1647	LC 1191	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
1648	LC 1191	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.343	0.478	0.094
1649	LC 1191	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.688	0.309	-0.041
1650	LC 1191	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.698	10.952	-5.191
1651	LC 1191	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.527	11.212	-4.915
1652	LC 1191	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.299	11.502	-4.628
1653	LC 1191	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.666	11.667	-3.096
1654	LC 1191	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	7.015	11.470	-3.171
1655	LC 1191	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	7.317	11.312	-3.245
1656	LC 1192	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046
1657	LC 1192	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.287	1.694	0.132
1658	LC 1192	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.765	1.425	0.018
1659	LC 1192	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.937	43.588	-4.242
1660	LC 1192	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.429	44.143	-3.894
1661	LC 1192	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.745	44.802	-3.527
1662	LC 1192	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.007	22.695	-3.014
1663	LC 1192	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.650	22.346	-3.096
1664	LC 1192	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	13.182	22.038	-3.176
1665	LC 1193	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
1666	LC 1193	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.028	0.441	0.187
1667	LC 1193	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.549	0.150	-0.071
1668	LC 1193	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	30.570	23.100	-4.862
1669	LC 1193	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	30.297	23.509	-4.523
1670	LC 1193	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.918	23.982	-4.169
1671	LC 1193	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.921	16.496	-3.151
1672	LC 1193	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.397	16.233	-3.238
1673	LC 1193	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.794	16.001	-3.324
1674	LC 1194	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
1675	LC 1194	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.245	0.266	0.111
1676	LC 1194	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.514	0.112	-0.030
1677	LC 1194	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.728	13.292	-5.095
1678	LC 1194	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.585	13.583	-4.811
1679	LC 1194	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.371	13.919	-4.516
1680	LC 1194	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.538	12.200	-3.093
1681	LC 1194	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.887	12.010	-3.168
1682	LC 1194	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.176	11.841	-3.242
1683	LC 1195	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
1684	LC 1195	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.195	0.485	0.094
1685	LC 1195	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.418	0.382	-0.041
1686	LC 1195	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.602	11.275	-5.191
1687	LC 1195	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.517	11.488	-4.915
1688	LC 1195	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.375	11.733	-4.628
1689	LC 1195	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.611	11.896	-3.096
1690	LC 1195	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.923	11.736	-3.171
1691	LC 1195	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.187	11.615	-3.245
1692	LC 1196	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
1693	LC 1196	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.242	1.696	0.132
1694	LC 1196	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.682	1.447	0.018
1695	LC 1196	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.293	43.687	-4.242
1696	LC 1196	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.811	44.228	-3.894
1697	LC 1196	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.153	44.873	-3.527
1698	LC 1196	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	11.682	22.766	-3.014
1699	LC 1196	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.313	22.428	-3.096
1700	LC 1196	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.835	22.131	-3.176
1701	LC 1197	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1702	LC 1197	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	3.850	0.448	0.187
1703	LC 1197	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.223	0.238	-0.071
1704	LC 1197	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.436	23.312	-4.862
1705	LC 1197	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.219	23.690	-4.523
1706	LC 1197	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	28.896	24.133	-4.169
1707	LC 1197	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.349	16.646	-3.151
1708	LC 1197	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.801	16.408	-3.238
1709	LC 1197	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.173	16.199	-3.324
1710	LC 1198	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
1711	LC 1198	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.199	0.268	0.111
1712	LC 1198	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.431	0.134	-0.030
1713	LC 1198	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.083	13.391	-5.095
1714	LC 1198	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.966	13.668	-4.811
1715	LC 1198	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.779	13.989	-4.516
1716	LC 1198	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.213	12.271	-3.093
1717	LC 1198	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.551	12.092	-3.168
1718	LC 1198	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.829	11.935	-3.242
1719	LC 1199	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
1720	LC 1199	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.099	0.109	0.109
1721	LC 1199	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.321	0.038	-0.037
1722	LC 1199	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.888	10.349	-5.202
1723	LC 1199	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.803	10.553	-4.924
1724	LC 1199	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.673	10.838	-4.638
1725	LC 1199	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.684	11.236	-3.100
1726	LC 1199	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.994	11.095	-3.175
1727	LC 1199	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	6.251	10.973	-3.249
1728	LC 1200	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
1729	LC 1200	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.249	1.667	0.133
1730	LC 1200	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.703	1.427	0.018
1731	LC 1200	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	42.543	43.685	-4.244
1732	LC 1200	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	42.060	44.222	-3.894
1733	LC 1200	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	41.401	44.863	-3.525
1734	LC 1200	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	11.799	22.744	-3.014
1735	LC 1200	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	12.432	22.404	-3.096
1736	LC 1200	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	12.955	22.105	-3.176
1737	LC 1201	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014
1738	LC 1201	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	3.823	0.195	0.197
1739	LC 1201	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.213	-0.003	-0.068
1740	LC 1201	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.722	23.028	-4.866
1741	LC 1201	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.501	23.406	-4.526
1742	LC 1201	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.168	23.855	-4.172
1743	LC 1201	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	8.424	16.357	-3.153
1744	LC 1201	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	8.873	16.117	-3.240
1745	LC 1201	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	9.263	15.941	-3.325
1746	LC 1202	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
1747	LC 1202	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
1748	LC 1202	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.440	0.089	-0.029
1749	LC 1202	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	21.299	13.313	-5.096
1750	LC 1202	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	21.177	13.594	-4.811
1751	LC 1202	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	20.984	13.919	-4.516
1752	LC 1202	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.294	12.180	-3.093
1753	LC 1202	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.631	11.999	-3.168
1754	LC 1202	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.909	11.841	-3.243
1755	LC 1203	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008
1756	LC 1203	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.088	0.074	0.109
1757	LC 1203	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.358	-0.033	-0.037
1758	LC 1203	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.323	10.095	-5.202
1759	LC 1203	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.194	10.318	-4.924
1760	LC 1203	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.020	10.621	-4.638
1761	LC 1203	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	5.981	11.150	-3.100
1762	LC 1203	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.317	10.987	-3.175
1763	LC 1203	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.600	10.844	-3.249
1764	LC 1204	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
1765	LC 1204	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.246	1.656	0.133
1766	LC 1204	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.715	1.405	0.018
1767	LC 1204	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	42.677	43.607	-4.244
1768	LC 1204	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	42.180	44.150	-3.894
1769	LC 1204	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	41.508	44.796	-3.525
1770	LC 1204	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	11.890	22.717	-3.014
1771	LC 1204	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	12.531	22.371	-3.096
1772	LC 1204	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	13.062	22.065	-3.176
1773	LC 1205	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
1774	LC 1205	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	3.809	0.153	0.197
1775	LC 1205	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.258	-0.089	-0.068
1776	LC 1205	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.956	22.862	-4.866
1777	LC 1205	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.706	23.252	-4.526
1778	LC 1205	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.344	23.713	-4.172
1779	LC 1205	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	8.593	16.300	-3.153
1780	LC 1205	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	9.059	16.047	-3.240
1781	LC 1205	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	9.466	15.856	-3.325
1782	LC 1206	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1783	LC 1206	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
1784	LC 1206	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.451	0.067	-0.029
1785	LC 1206	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.433	13.235	-5.096
1786	LC 1206	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.297	13.522	-4.811
1787	LC 1206	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.091	13.852	-4.516
1788	LC 1206	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.385	12.153	-3.093
1789	LC 1206	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.730	11.966	-3.168
1790	LC 1206	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.016	11.801	-3.243
1791	LC 1207	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
1792	LC 1207	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	2.916	-0.128	0.258
1793	LC 1207	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.267	-0.321	0.097
1794	LC 1207	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.042	10.927	-2.955
1795	LC 1207	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.889	11.019	-2.882
1796	LC 1207	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.701	11.128	-2.806
1797	LC 1207	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	20.741	11.358	-5.413
1798	LC 1207	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.396	10.940	-5.609
1799	LC 1207	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.941	10.567	-5.803
1800	LC 1208	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
1801	LC 1208	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.384	1.625	0.153
1802	LC 1208	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.868	1.357	0.036
1803	LC 1208	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	17.174	28.858	-2.787
1804	LC 1208	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	16.813	29.069	-2.694
1805	LC 1208	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	16.362	29.323	-2.594
1806	LC 1208	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	31.906	31.459	-4.937
1807	LC 1208	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	33.128	30.726	-5.147
1808	LC 1208	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	34.135	30.078	-5.353
1809	LC 1209	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
1810	LC 1209	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.549	-0.023	0.320
1811	LC 1209	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	5.087	-0.325	0.042
1812	LC 1209	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	11.136	18.361	-2.960
1813	LC 1209	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	10.897	18.501	-2.871
1814	LC 1209	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	10.602	18.669	-2.777
1815	LC 1209	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	26.058	18.931	-5.358
1816	LC 1209	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	26.952	18.373	-5.583
1817	LC 1209	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	27.691	17.878	-5.805
1818	LC 1210	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
1819	LC 1210	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.340	0.209	0.131
1820	LC 1210	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.613	0.051	-0.013
1821	LC 1210	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.428	12.299	-2.942
1822	LC 1210	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.270	12.392	-2.868
1823	LC 1210	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.075	12.502	-2.791
1824	LC 1210	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	19.686	12.807	-5.516
1825	LC 1210	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	20.331	12.397	-5.712
1826	LC 1210	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	20.862	12.034	-5.906
1827	LC 1211	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139
1828	LC 1211	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.500	-0.275	0.258
1829	LC 1211	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.682	-0.427	0.097
1830	LC 1211	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.946	11.137	-2.955
1831	LC 1211	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.827	11.203	-2.882
1832	LC 1211	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.675	11.286	-2.806
1833	LC 1211	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	17.341	11.261	-5.413
1834	LC 1211	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	17.889	10.901	-5.609
1835	LC 1211	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.326	10.586	-5.803
1836	LC 1212	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
1837	LC 1212	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.256	1.579	0.153
1838	LC 1212	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.688	1.325	0.036
1839	LC 1212	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.837	28.923	-2.787
1840	LC 1212	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.486	29.125	-2.694
1841	LC 1212	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.047	29.371	-2.594
1842	LC 1212	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	30.860	31.430	-4.937
1843	LC 1212	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	32.049	30.714	-5.147
1844	LC 1212	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	33.023	30.084	-5.353
1845	LC 1213	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
1846	LC 1213	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.046	-0.201	0.320
1847	LC 1213	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.379	-0.454	0.042
1848	LC 1213	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.561	18.498	-2.960
1849	LC 1213	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.345	18.622	-2.871
1850	LC 1213	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.073	18.773	-2.777
1851	LC 1213	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	24.118	18.867	-5.358
1852	LC 1213	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	24.943	18.348	-5.583
1853	LC 1213	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	25.611	17.891	-5.805
1854	LC 1214	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
1855	LC 1214	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.212	0.163	0.131
1856	LC 1214	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.433	0.018	-0.013
1857	LC 1214	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	7.090	12.364	-2.942
1858	LC 1214	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.943	12.448	-2.868
1859	LC 1214	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.759	12.551	-2.791
1860	LC 1214	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	18.640	12.777	-5.516
1861	LC 1214	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	19.252	12.386	-5.712
1862	LC 1214	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	19.750	12.040	-5.906
1863	LC 1215	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1864	LC 1215	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.522	-0.409	0.233
1865	LC 1215	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.748	-0.530	0.065
1866	LC 1215	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.384	10.477	-2.960
1867	LC 1215	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.255	10.552	-2.888
1868	LC 1215	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.094	10.642	-2.813
1869	LC 1215	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.955	10.474	-5.489
1870	LC 1215	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	19.524	10.121	-5.685
1871	LC 1215	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	19.991	9.810	-5.879
1872	LC 1216	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
1873	LC 1216	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.328	1.619	0.148
1874	LC 1216	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.790	1.365	0.031
1875	LC 1216	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	17.072	28.890	-2.787
1876	LC 1216	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.716	29.097	-2.694
1877	LC 1216	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.271	29.347	-2.594
1878	LC 1216	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	31.622	31.555	-4.945
1879	LC 1216	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	32.831	30.833	-5.154
1880	LC 1216	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	33.825	30.195	-5.360
1881	LC 1217	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
1882	LC 1217	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.215	-0.188	0.296
1883	LC 1217	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.635	-0.417	0.013
1884	LC 1217	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.830	18.227	-2.962
1885	LC 1217	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.605	18.358	-2.874
1886	LC 1217	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.324	18.516	-2.780
1887	LC 1217	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.191	18.642	-5.389
1888	LC 1217	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	26.042	18.115	-5.613
1889	LC 1217	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	26.736	17.659	-5.837
1890	LC 1218	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
1891	LC 1218	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.278	0.182	0.127
1892	LC 1218	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.524	0.041	-0.018
1893	LC 1218	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.306	12.298	-2.943
1894	LC 1218	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.154	12.386	-2.869
1895	LC 1218	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.965	12.492	-2.791
1896	LC 1218	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.334	12.756	-5.523
1897	LC 1218	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.963	12.359	-5.719
1898	LC 1218	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	20.477	12.008	-5.913
1899	LC 1219	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
1900	LC 1219	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.254	-0.563	0.233
1901	LC 1219	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.432	-0.708	0.065
1902	LC 1219	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.951	10.478	-2.960
1903	LC 1219	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.821	10.553	-2.888
1904	LC 1219	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.660	10.644	-2.813
1905	LC 1219	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	17.253	10.029	-5.489
1906	LC 1219	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	17.802	9.665	-5.685
1907	LC 1219	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.246	9.344	-5.879
1908	LC 1220	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060
1909	LC 1220	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.245	1.572	0.148
1910	LC 1220	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.692	1.310	0.031
1911	LC 1220	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.939	28.890	-2.787
1912	LC 1220	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.583	29.097	-2.694
1913	LC 1220	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.138	29.347	-2.594
1914	LC 1220	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	31.098	31.418	-4.945
1915	LC 1220	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	32.301	30.692	-5.154
1916	LC 1220	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	33.288	30.052	-5.360
1917	LC 1221	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
1918	LC 1221	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	3.891	-0.373	0.296
1919	LC 1221	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.253	-0.632	0.013
1920	LC 1221	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.629	18.228	-2.962
1921	LC 1221	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.404	18.359	-2.874
1922	LC 1221	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.124	18.517	-2.780
1923	LC 1221	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	24.243	18.350	-5.389
1924	LC 1221	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.081	17.817	-5.613
1925	LC 1221	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.760	17.354	-5.837
1926	LC 1222	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
1927	LC 1222	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.195	0.135	0.127
1928	LC 1222	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.427	-0.014	-0.018
1929	LC 1222	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.172	12.298	-2.943
1930	LC 1222	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.021	12.386	-2.869
1931	LC 1222	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.831	12.493	-2.791
1932	LC 1222	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	18.810	12.619	-5.523
1933	LC 1222	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.433	12.218	-5.719
1934	LC 1222	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.940	11.864	-5.913
1935	LC 1223	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
1936	LC 1223	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.343	0.478	0.094
1937	LC 1223	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.688	0.309	-0.041
1938	LC 1223	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.979	10.928	-2.955
1939	LC 1223	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.815	11.003	-2.882
1940	LC 1223	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.618	11.094	-2.806
1941	LC 1223	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	19.617	12.122	-5.597
1942	LC 1223	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.269	11.697	-5.791
1943	LC 1223	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.826	11.355	-5.985
1944	LC 1224	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1945	LC 1224	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.287	1.694	0.132
1946	LC 1224	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.765	1.425	0.018
1947	LC 1224	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	17.155	28.858	-2.787
1948	LC 1224	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.793	29.069	-2.694
1949	LC 1224	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.343	29.323	-2.594
1950	LC 1224	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	31.674	31.508	-4.958
1951	LC 1224	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	32.894	30.773	-5.168
1952	LC 1224	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	33.898	30.124	-5.374
1953	LC 1225	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
1954	LC 1225	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.028	0.441	0.187
1955	LC 1225	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.549	0.150	-0.071
1956	LC 1225	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	11.106	18.361	-2.960
1957	LC 1225	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.867	18.502	-2.871
1958	LC 1225	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.572	18.670	-2.777
1959	LC 1225	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.496	19.203	-5.433
1960	LC 1225	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	26.386	18.643	-5.658
1961	LC 1225	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	27.119	18.146	-5.880
1962	LC 1226	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
1963	LC 1226	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.245	0.266	0.111
1964	LC 1226	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.514	0.112	-0.030
1965	LC 1226	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.408	12.300	-2.942
1966	LC 1226	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.251	12.392	-2.868
1967	LC 1226	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.055	12.503	-2.791
1968	LC 1226	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.463	12.839	-5.534
1969	LC 1226	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.106	12.428	-5.730
1970	LC 1226	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.633	12.063	-5.924
1971	LC 1227	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
1972	LC 1227	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.195	0.485	0.094
1973	LC 1227	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.418	0.382	-0.041
1974	LC 1227	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.009	11.137	-2.955
1975	LC 1227	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.881	11.186	-2.882
1976	LC 1227	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.720	11.251	-2.806
1977	LC 1227	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	17.307	12.470	-5.597
1978	LC 1227	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	17.872	12.115	-5.791
1979	LC 1227	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.343	11.842	-5.985
1980	LC 1228	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
1981	LC 1228	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.242	1.696	0.132
1982	LC 1228	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.682	1.447	0.018
1983	LC 1228	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.856	28.922	-2.787
1984	LC 1228	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.506	29.125	-2.694
1985	LC 1228	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.066	29.371	-2.594
1986	LC 1228	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	30.963	31.615	-4.958
1987	LC 1228	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	32.157	30.902	-5.168
1988	LC 1228	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	33.134	30.274	-5.374
1989	LC 1229	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008
1990	LC 1229	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	3.850	0.448	0.187
1991	LC 1229	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.223	0.238	-0.071
1992	LC 1229	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.590	18.498	-2.960
1993	LC 1229	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.375	18.621	-2.871
1994	LC 1229	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.102	18.772	-2.777
1995	LC 1229	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	24.221	19.431	-5.433
1996	LC 1229	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.054	18.916	-5.658
1997	LC 1229	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.732	18.464	-5.880
1998	LC 1230	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
1999	LC 1230	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.199	0.268	0.111
2000	LC 1230	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.431	0.134	-0.030
2001	LC 1230	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.110	12.364	-2.942
2002	LC 1230	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.963	12.448	-2.868
2003	LC 1230	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.779	12.551	-2.791
2004	LC 1230	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	18.752	12.946	-5.534
2005	LC 1230	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.368	12.556	-5.730
2006	LC 1230	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.870	12.213	-5.924
2007	LC 1231	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
2008	LC 1231	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.099	0.109	0.109
2009	LC 1231	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.321	0.038	-0.037
2010	LC 1231	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	6.086	10.623	-2.959
2011	LC 1231	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.955	10.675	-2.887
2012	LC 1231	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.802	10.760	-2.812
2013	LC 1231	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	17.590	11.265	-5.611
2014	LC 1231	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.156	10.951	-5.805
2015	LC 1231	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.618	10.680	-5.998
2016	LC 1232	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
2017	LC 1232	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.249	1.667	0.133
2018	LC 1232	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.703	1.427	0.018
2019	LC 1232	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.962	28.904	-2.787
2020	LC 1232	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.609	29.109	-2.694
2021	LC 1232	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.167	29.357	-2.594
2022	LC 1232	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	31.239	31.606	-4.960
2023	LC 1232	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	32.438	30.888	-5.169
2024	LC 1232	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	33.421	30.256	-5.375
2025	LC 1233	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2026	LC 1233	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	3.823	0.195	0.197
2027	LC 1233	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.213	-0.003	-0.068
2028	LC 1233	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.690	18.324	-2.961
2029	LC 1233	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.470	18.451	-2.873
2030	LC 1233	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.195	18.605	-2.779
2031	LC 1233	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	24.463	18.925	-5.440
2032	LC 1233	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	25.294	18.408	-5.664
2033	LC 1233	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	26.011	18.021	-5.886
2034	LC 1234	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
2035	LC 1234	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
2036	LC 1234	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.440	0.089	-0.029
2037	LC 1234	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	7.196	12.312	-2.943
2038	LC 1234	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	7.047	12.398	-2.869
2039	LC 1234	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.861	12.502	-2.791
2040	LC 1234	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	18.958	12.794	-5.536
2041	LC 1234	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	19.576	12.402	-5.731
2042	LC 1234	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	20.079	12.056	-5.925
2043	LC 1235	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008
2044	LC 1235	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.088	0.074	0.109
2045	LC 1235	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.358	-0.033	-0.037
2046	LC 1235	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.367	10.534	-2.959
2047	LC 1235	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.218	10.599	-2.887
2048	LC 1235	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.046	10.697	-2.812
2049	LC 1235	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	18.077	11.034	-5.611
2050	LC 1235	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	18.694	10.679	-5.805
2051	LC 1235	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.208	10.365	-5.998
2052	LC 1236	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
2053	LC 1236	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.246	1.656	0.133
2054	LC 1236	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.715	1.405	0.018
2055	LC 1236	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	17.049	28.877	-2.787
2056	LC 1236	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	16.690	29.085	-2.694
2057	LC 1236	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	16.242	29.337	-2.594
2058	LC 1236	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	31.389	31.535	-4.960
2059	LC 1236	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	32.604	30.804	-5.169
2060	LC 1236	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	33.602	30.159	-5.375
2061	LC 1237	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
2062	LC 1237	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	3.809	0.153	0.197
2063	LC 1237	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.258	-0.089	-0.068
2064	LC 1237	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.848	18.266	-2.961
2065	LC 1237	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.617	18.401	-2.873
2066	LC 1237	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.329	18.564	-2.779
2067	LC 1237	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	24.731	18.774	-5.440
2068	LC 1237	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	25.596	18.230	-5.664
2069	LC 1237	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	26.346	17.815	-5.886
2070	LC 1238	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014
2071	LC 1238	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
2072	LC 1238	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.451	0.067	-0.029
2073	LC 1238	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.282	12.285	-2.943
2074	LC 1238	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.128	12.375	-2.869
2075	LC 1238	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.935	12.483	-2.791
2076	LC 1238	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	19.108	12.723	-5.536
2077	LC 1238	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	19.742	12.318	-5.731
2078	LC 1238	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	20.261	11.959	-5.925

BIJLAGE C

Belastingen uit lijn op juk 64b

Projectnaam: TenneT 150 kV Station Waalwijk
Onderdeel: Juk 64b; Belastingen uit lijn
Documentnummer: ---
Revisie: A
Bijlage: C-1

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1	LC 1001	K7:1NL.1#1a,Wind/10C,+90 degST	-18.718	0.436	-5.909
2	LC 1001	K7:2NL.1#1a,Wind/10C,+90 degST	-17.924	-0.008	-5.986
3	LC 1001	K7:3NL.1#1a,Wind/10C,+90 degST	-17.203	-0.365	-6.062
4	LC 1001	K11:1NL.1#1a,Wind/10C,+90 degST	-3.883	0.187	-0.211
5	LC 1001	K11:2NL.1#1a,Wind/10C,+90 degST	-3.459	0.092	-0.229
6	LC 1002	K7:1NL.1#1b,Wind/-20C,+90 degST	-43.312	-2.982	-5.711
7	LC 1002	K7:2NL.1#1b,Wind/-20C,+90 degST	-41.062	-4.186	-5.803
8	LC 1002	K7:3NL.1#1b,Wind/-20C,+90 degST	-39.006	-5.147	-5.892
9	LC 1002	K11:1NL.1#1b,Wind/-20C,+90 degST	-6.142	-0.360	-0.249
10	LC 1002	K11:2NL.1#1b,Wind/-20C,+90 degST	-5.332	-0.541	-0.257
11	LC 1003	K7:1NL.1#3,Wind / Ice / -5C,+90 degST	-30.507	-0.715	-6.311
12	LC 1003	K7:2NL.1#3,Wind / Ice / -5C,+90 degST	-29.006	-1.521	-6.433
13	LC 1003	K7:3NL.1#3,Wind / Ice / -5C,+90 degST	-27.636	-2.165	-6.555
14	LC 1003	K11:1NL.1#3,Wind / Ice / -5C,+90 degST	-7.833	0.495	-0.757
15	LC 1003	K11:2NL.1#3,Wind / Ice / -5C,+90 degST	-6.940	0.312	-0.903
16	LC 1004	K7:1NL.1#4,Construction/Maintenance +5C,+90 degST	-18.059	-0.426	-5.908
17	LC 1004	K7:2NL.1#4,Construction/Maintenance +5C,+90 degST	-17.161	-0.902	-5.985
18	LC 1004	K7:3NL.1#4,Construction/Maintenance +5C,+90 degST	-16.341	-1.282	-6.061
19	LC 1004	K11:1NL.1#4,Construction/Maintenance +5C,+90 degST	-3.070	-0.046	-0.190
20	LC 1004	K11:2NL.1#4,Construction/Maintenance +5C,+90 degST	-2.678	-0.129	-0.214
21	LC 1005	K7:1NL.1#1a,Wind/10C,-90 degST	-15.049	0.535	-5.909
22	LC 1005	K7:2NL.1#1a,Wind/10C,-90 degST	-14.161	0.128	-5.986
23	LC 1005	K7:3NL.1#1a,Wind/10C,-90 degST	-13.347	-0.192	-6.062
24	LC 1005	K11:1NL.1#1a,Wind/10C,-90 degST	-3.579	0.219	-0.211
25	LC 1005	K11:2NL.1#1a,Wind/10C,-90 degST	-3.029	0.148	-0.229
26	LC 1006	K7:1NL.1#1b,Wind/-20C,-90 degST	-42.579	-2.962	-5.711
27	LC 1006	K7:2NL.1#1b,Wind/-20C,-90 degST	-40.309	-4.159	-5.803
28	LC 1006	K7:3NL.1#1b,Wind/-20C,-90 degST	-38.235	-5.112	-5.892
29	LC 1006	K11:1NL.1#1b,Wind/-20C,-90 degST	-6.081	-0.354	-0.249
30	LC 1006	K11:2NL.1#1b,Wind/-20C,-90 degST	-5.246	-0.530	-0.257
31	LC 1007	K7:1NL.1#3,Wind / Ice / -5C,-90 degST	-29.133	-0.656	-6.311
32	LC 1007	K7:2NL.1#3,Wind / Ice / -5C,-90 degST	-27.576	-1.440	-6.433
33	LC 1007	K7:3NL.1#3,Wind / Ice / -5C,-90 degST	-26.151	-2.062	-6.555
34	LC 1007	K11:1NL.1#3,Wind / Ice / -5C,-90 degST	-7.373	0.543	-0.757
35	LC 1007	K11:2NL.1#3,Wind / Ice / -5C,-90 degST	-6.288	0.397	-0.903
36	LC 1008	K7:1NL.1#4,Construction/Maintenance +5C,-90 degST	-17.325	-0.407	-5.908
37	LC 1008	K7:2NL.1#4,Construction/Maintenance +5C,-90 degST	-16.408	-0.875	-5.985
38	LC 1008	K7:3NL.1#4,Construction/Maintenance +5C,-90 degST	-15.570	-1.247	-6.061
39	LC 1008	K11:1NL.1#4,Construction/Maintenance +5C,-90 degST	-3.009	-0.040	-0.190
40	LC 1008	K11:2NL.1#4,Construction/Maintenance +5C,-90 degST	-2.592	-0.118	-0.214
41	LC 1009	K7:1NL.1#1a,Wind/10C,+45 degST	-16.350	1.160	-5.915
42	LC 1009	K7:2NL.1#1a,Wind/10C,+45 degST	-15.602	0.756	-5.992
43	LC 1009	K7:3NL.1#1a,Wind/10C,+45 degST	-14.941	0.457	-6.068
44	LC 1009	K11:1NL.1#1a,Wind/10C,+45 degST	-3.093	0.642	-0.209
45	LC 1009	K11:2NL.1#1a,Wind/10C,+45 degST	-2.698	0.543	-0.226
46	LC 1010	K7:1NL.1#1b,Wind/-20C,+45 degST	-43.070	-3.068	-5.712
47	LC 1010	K7:2NL.1#1b,Wind/-20C,+45 degST	-40.815	-4.270	-5.803
48	LC 1010	K7:3NL.1#1b,Wind/-20C,+45 degST	-38.755	-5.229	-5.893
49	LC 1010	K11:1NL.1#1b,Wind/-20C,+45 degST	-6.110	-0.367	-0.249
50	LC 1010	K11:2NL.1#1b,Wind/-20C,+45 degST	-5.293	-0.546	-0.256
51	LC 1011	K7:1NL.1#3,Wind / Ice / -5C,+45 degST	-29.903	-0.723	-6.313
52	LC 1011	K7:2NL.1#3,Wind / Ice / -5C,+45 degST	-28.400	-1.514	-6.434
53	LC 1011	K7:3NL.1#3,Wind / Ice / -5C,+45 degST	-27.027	-2.146	-6.556
54	LC 1011	K11:1NL.1#3,Wind / Ice / -5C,+45 degST	-7.357	0.636	-0.755
55	LC 1011	K11:2NL.1#3,Wind / Ice / -5C,+45 degST	-6.435	0.447	-0.900
56	LC 1012	K7:1NL.1#4,Construction/Maintenance +5C,+45 degST	-17.794	-0.419	-5.908
57	LC 1012	K7:2NL.1#4,Construction/Maintenance +5C,+45 degST	-16.895	-0.890	-5.985
58	LC 1012	K7:3NL.1#4,Construction/Maintenance +5C,+45 degST	-16.073	-1.265	-6.062
59	LC 1012	K11:1NL.1#4,Construction/Maintenance +5C,+45 degST	-3.007	-0.031	-0.189
60	LC 1012	K11:2NL.1#4,Construction/Maintenance +5C,+45 degST	-2.611	-0.116	-0.213
61	LC 1013	K7:1NL.1#11a,Wind/10C,+45 degST	-14.625	1.498	-5.915
62	LC 1013	K7:2NL.1#11a,Wind/10C,+45 degST	-13.836	1.108	-5.992
63	LC 1013	K7:3NL.1#11a,Wind/10C,+45 degST	-13.136	0.825	-6.068
64	LC 1013	K11:1NL.1#11a,Wind/10C,+45 degST	-2.960	0.742	-0.209
65	LC 1013	K11:2NL.1#11a,Wind/10C,+45 degST	-2.518	0.658	-0.226
66	LC 1014	K7:1NL.1#11b,Wind/-20C,+45 degST	-42.725	-3.000	-5.712
67	LC 1014	K7:2NL.1#11b,Wind/-20C,+45 degST	-40.462	-4.200	-5.803
68	LC 1014	K7:3NL.1#11b,Wind/-20C,+45 degST	-38.394	-5.155	-5.893
69	LC 1014	K11:1NL.1#11b,Wind/-20C,+45 degST	-6.083	-0.347	-0.249
70	LC 1014	K11:2NL.1#11b,Wind/-20C,+45 degST	-5.257	-0.523	-0.256
71	LC 1015	K7:1NL.1#13,Wind / Ice / -5C,+45 degST	-29.263	-0.521	-6.313
72	LC 1015	K7:2NL.1#13,Wind / Ice / -5C,+45 degST	-27.735	-1.304	-6.434
73	LC 1015	K7:3NL.1#13,Wind / Ice / -5C,+45 degST	-26.340	-1.926	-6.556
74	LC 1015	K11:1NL.1#13,Wind / Ice / -5C,+45 degST	-7.155	0.787	-0.755
75	LC 1015	K11:2NL.1#13,Wind / Ice / -5C,+45 degST	-6.162	0.621	-0.900
76	LC 1016	K7:1NL.1#14,Construction/Maintenance +5C,+45 degST	-17.449	-0.351	-5.908
77	LC 1016	K7:2NL.1#14,Construction/Maintenance +5C,+45 degST	-16.541	-0.819	-5.985
78	LC 1016	K7:3NL.1#14,Construction/Maintenance +5C,+45 degST	-15.713	-1.191	-6.062
79	LC 1016	K11:1NL.1#14,Construction/Maintenance +5C,+45 degST	-2.981	-0.011	-0.189
80	LC 1016	K11:2NL.1#14,Construction/Maintenance +5C,+45 degST	-2.575	-0.093	-0.213
81	LC 1017	K7:1NL.1#1a,Wind/10C,-45 degST	-17.149	-0.918	-5.929

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
82	LC 1017	K7:2NL.1#1a,Wind/10C,-45 degST	-16.383	-1.391	-6.004
83	LC 1017	K7:3NL.1#1a,Wind/10C,-45 degST	-15.683	-1.781	-6.080
84	LC 1017	K11:1NL.1#1a,Wind/10C,-45 degST	-3.173	-0.606	-0.175
85	LC 1017	K11:2NL.1#1a,Wind/10C,-45 degST	-2.816	-0.716	-0.204
86	LC 1018	K7:1NL.1#1b,Wind/-20C,-45 degST	-43.204	-3.012	-5.712
87	LC 1018	K7:2NL.1#1b,Wind/-20C,-45 degST	-40.951	-4.214	-5.803
88	LC 1018	K7:3NL.1#1b,Wind/-20C,-45 degST	-38.893	-5.173	-5.893
89	LC 1018	K11:1NL.1#1b,Wind/-20C,-45 degST	-6.113	-0.372	-0.248
90	LC 1018	K11:2NL.1#1b,Wind/-20C,-45 degST	-5.300	-0.552	-0.256
91	LC 1019	K7:1NL.1#3,Wind / Ice / -5C,-45 degST	-30.112	-0.928	-6.315
92	LC 1019	K7:2NL.1#3,Wind / Ice / -5C,-45 degST	-28.605	-1.729	-6.437
93	LC 1019	K7:3NL.1#3,Wind / Ice / -5C,-45 degST	-27.230	-2.369	-6.558
94	LC 1019	K11:1NL.1#3,Wind / Ice / -5C,-45 degST	-7.426	0.172	-0.740
95	LC 1019	K11:2NL.1#3,Wind / Ice / -5C,-45 degST	-6.540	-0.014	-0.891
96	LC 1020	K7:1NL.1#4,Construction/Maintenance +5C,-45 degST	-17.950	-0.456	-5.909
97	LC 1020	K7:2NL.1#4,Construction/Maintenance +5C,-45 degST	-17.050	-0.930	-5.985
98	LC 1020	K7:3NL.1#4,Construction/Maintenance +5C,-45 degST	-16.228	-1.308	-6.062
99	LC 1020	K11:1NL.1#4,Construction/Maintenance +5C,-45 degST	-3.017	-0.090	-0.187
100	LC 1020	K11:2NL.1#4,Construction/Maintenance +5C,-45 degST	-2.625	-0.174	-0.212
101	LC 1021	K7:1NL.1#11a,Wind/10C,-45 degST	-14.092	-1.138	-5.929
102	LC 1021	K7:2NL.1#11a,Wind/10C,-45 degST	-13.260	-1.599	-6.004
103	LC 1021	K7:3NL.1#11a,Wind/10C,-45 degST	-12.496	-1.974	-6.080
104	LC 1021	K11:1NL.1#11a,Wind/10C,-45 degST	-3.006	-0.671	-0.175
105	LC 1021	K11:2NL.1#11a,Wind/10C,-45 degST	-2.566	-0.776	-0.204
106	LC 1022	K7:1NL.1#11b,Wind/-20C,-45 degST	-42.592	-3.056	-5.712
107	LC 1022	K7:2NL.1#11b,Wind/-20C,-45 degST	-40.326	-4.256	-5.803
108	LC 1022	K7:3NL.1#11b,Wind/-20C,-45 degST	-38.256	-5.211	-5.893
109	LC 1022	K11:1NL.1#11b,Wind/-20C,-45 degST	-6.079	-0.385	-0.248
110	LC 1022	K11:2NL.1#11b,Wind/-20C,-45 degST	-5.250	-0.563	-0.256
111	LC 1023	K7:1NL.1#13,Wind / Ice / -5C,-45 degST	-29.051	-1.060	-6.315
112	LC 1023	K7:2NL.1#13,Wind / Ice / -5C,-45 degST	-27.506	-1.854	-6.437
113	LC 1023	K7:3NL.1#13,Wind / Ice / -5C,-45 degST	-26.092	-2.484	-6.558
114	LC 1023	K11:1NL.1#13,Wind / Ice / -5C,-45 degST	-7.174	0.073	-0.740
115	LC 1023	K11:2NL.1#13,Wind / Ice / -5C,-45 degST	-6.161	-0.103	-0.891
116	LC 1024	K7:1NL.1#14,Construction/Maintenance +5C,-45 degST	-17.339	-0.500	-5.909
117	LC 1024	K7:2NL.1#14,Construction/Maintenance +5C,-45 degST	-16.425	-0.972	-5.985
118	LC 1024	K7:3NL.1#14,Construction/Maintenance +5C,-45 degST	-15.590	-1.346	-6.062
119	LC 1024	K11:1NL.1#14,Construction/Maintenance +5C,-45 degST	-2.984	-0.103	-0.187
120	LC 1024	K11:2NL.1#14,Construction/Maintenance +5C,-45 degST	-2.575	-0.186	-0.212
121	LC 1025	K7:1NL.1#1a,Wind/10C,+0 degST	-14.550	-0.592	-5.930
122	LC 1025	K7:2NL.1#1a,Wind/10C,+0 degST	-13.685	-0.856	-6.005
123	LC 1025	K7:3NL.1#1a,Wind/10C,+0 degST	-12.944	-1.096	-6.080
124	LC 1025	K11:1NL.1#1a,Wind/10C,+0 degST	-2.778	-0.384	-0.177
125	LC 1025	K11:2NL.1#1a,Wind/10C,+0 degST	-2.315	-0.360	-0.205
126	LC 1026	K7:1NL.1#1b,Wind/-20C+,0 degST	-42.788	-3.059	-5.712
127	LC 1026	K7:2NL.1#1b,Wind/-20C+,0 degST	-40.528	-4.257	-5.803
128	LC 1026	K7:3NL.1#1b,Wind/-20C+,0 degST	-38.464	-5.212	-5.893
129	LC 1026	K11:1NL.1#1b,Wind/-20C+,0 degST	-6.081	-0.396	-0.248
130	LC 1026	K11:2NL.1#1b,Wind/-20C+,0 degST	-5.259	-0.575	-0.256
131	LC 1027	K7:1NL.1#3,Wind / Ice / -5C,+0 degST	-29.267	-0.975	-6.316
132	LC 1027	K7:2NL.1#3,Wind / Ice / -5C,+0 degST	-27.749	-1.760	-6.437
133	LC 1027	K7:3NL.1#3,Wind / Ice / -5C,+0 degST	-26.363	-2.384	-6.558
134	LC 1027	K11:1NL.1#3,Wind / Ice / -5C,+0 degST	-7.108	0.238	-0.742
135	LC 1027	K11:2NL.1#3,Wind / Ice / -5C,+0 degST	-6.129	0.138	-0.892
136	LC 1028	K7:1NL.1#4,Construction/Maintenance +5C,+0 degST	-17.534	-0.503	-5.909
137	LC 1028	K7:2NL.1#4,Construction/Maintenance +5C,+0 degST	-16.627	-0.973	-5.985
138	LC 1028	K7:3NL.1#4,Construction/Maintenance +5C,+0 degST	-15.779	-1.314	-6.062
139	LC 1028	K11:1NL.1#4,Construction/Maintenance +5C,+0 degST	-2.975	-0.087	-0.187
140	LC 1028	K11:2NL.1#4,Construction/Maintenance +5C,+0 degST	-2.569	-0.156	-0.212
141	LC 1029	K7:1NL.1#1a,Wind/10C,-0 degST	-15.653	-0.343	-5.930
142	LC 1029	K7:2NL.1#1a,Wind/10C,-0 degST	-14.789	-0.630	-6.005
143	LC 1029	K7:3NL.1#1a,Wind/10C,-0 degST	-14.046	-0.892	-6.080
144	LC 1029	K11:1NL.1#1a,Wind/10C,-0 degST	-2.847	-0.314	-0.177
145	LC 1029	K11:2NL.1#1a,Wind/10C,-0 degST	-2.396	-0.300	-0.205
146	LC 1030	K7:1NL.1#1b,Wind/-20C,-0 degST	-43.008	-3.009	-5.712
147	LC 1030	K7:2NL.1#1b,Wind/-20C,-0 degST	-40.749	-4.212	-5.803
148	LC 1030	K7:3NL.1#1b,Wind/-20C,-0 degST	-38.684	-5.172	-5.893
149	LC 1030	K11:1NL.1#1b,Wind/-20C,-0 degST	-6.095	-0.382	-0.248
150	LC 1030	K11:2NL.1#1b,Wind/-20C,-0 degST	-5.276	-0.563	-0.256
151	LC 1031	K7:1NL.1#3,Wind / Ice / -5C,-0 degST	-29.660	-0.826	-6.316
152	LC 1031	K7:2NL.1#3,Wind / Ice / -5C,-0 degST	-28.143	-1.625	-6.437
153	LC 1031	K7:3NL.1#3,Wind / Ice / -5C,-0 degST	-26.756	-2.262	-6.558
154	LC 1031	K11:1NL.1#3,Wind / Ice / -5C,-0 degST	-7.212	0.345	-0.742
155	LC 1031	K11:2NL.1#3,Wind / Ice / -5C,-0 degST	-6.252	0.229	-0.892
156	LC 1032	K7:1NL.1#4,Construction/Maintenance +5C,-0 degST	-17.755	-0.453	-5.909
157	LC 1032	K7:2NL.1#4,Construction/Maintenance +5C,-0 degST	-16.848	-0.928	-5.985
158	LC 1032	K7:3NL.1#4,Construction/Maintenance +5C,-0 degST	-16.000	-1.273	-6.062
159	LC 1032	K11:1NL.1#4,Construction/Maintenance +5C,-0 degST	-2.989	-0.073	-0.187
160	LC 1032	K11:2NL.1#4,Construction/Maintenance +5C,-0 degST	-2.586	-0.144	-0.212
161	LC 1033	K7:1NL.1#1a,gunstig,Wind/10C,+90 degST	-16.488	0.136	-4.306
162	LC 1033	K7:2NL.1#1a,gunstig,Wind/10C,+90 degST	-15.798	-0.259	-4.356

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
163	LC 1033	K7:3NL.1#1a,gunstig,Wind/10C,+90 degST	-15.172	-0.576	-4.407
164	LC 1033	K11:1NL.1#1a,gunstig,Wind/10C,+90 degST	-3.726	0.162	-0.161
165	LC 1033	K11:2NL.1#1a,gunstig,Wind/10C,+90 degST	-3.322	0.069	-0.164
166	LC 1034	K7:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-42.505	-3.413	-4.097
167	LC 1034	K7:2NL.1#1b,gunstig,Wind/-20C,+90 degST	-40.283	-4.608	-4.163
168	LC 1034	K7:3NL.1#1b,gunstig,Wind/-20C,+90 degST	-38.253	-5.561	-4.227
169	LC 1034	K11:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-6.018	-0.424	-0.198
170	LC 1034	K11:2NL.1#1b,gunstig,Wind/-20C,+90 degST	-5.222	-0.605	-0.191
171	LC 1035	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-28.419	-1.326	-4.709
172	LC 1035	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-27.005	-2.095	-4.805
173	LC 1035	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-25.716	-2.709	-4.900
174	LC 1035	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-7.603	0.454	-0.705
175	LC 1035	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-6.738	0.275	-0.837
176	LC 1036	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-15.021	-1.158	-4.315
177	LC 1036	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-14.255	-1.575	-4.364
178	LC 1036	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-13.556	-1.908	-4.414
179	LC 1036	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-2.685	-0.150	-0.132
180	LC 1036	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-2.341	-0.230	-0.143
181	LC 1037	K7:1NL.1#1a,gunstig,Wind/10C,-90 degST	-12.819	0.235	-4.306
182	LC 1037	K7:2NL.1#1a,gunstig,Wind/10C,-90 degST	-12.036	-0.123	-4.356
183	LC 1037	K7:3NL.1#1a,gunstig,Wind/10C,-90 degST	-11.317	-0.404	-4.407
184	LC 1037	K11:1NL.1#1a,gunstig,Wind/10C,-90 degST	-3.421	0.193	-0.161
185	LC 1037	K11:2NL.1#1a,gunstig,Wind/10C,-90 degST	-2.891	0.125	-0.164
186	LC 1038	K7:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-41.771	-3.393	-4.097
187	LC 1038	K7:2NL.1#1b,gunstig,Wind/-20C,-90 degST	-39.530	-4.581	-4.163
188	LC 1038	K7:3NL.1#1b,gunstig,Wind/-20C,-90 degST	-37.482	-5.527	-4.227
189	LC 1038	K11:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-5.957	-0.417	-0.198
190	LC 1038	K11:2NL.1#1b,gunstig,Wind/-20C,-90 degST	-5.136	-0.594	-0.191
191	LC 1039	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-27.044	-1.267	-4.709
192	LC 1039	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-25.575	-2.013	-4.805
193	LC 1039	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-24.231	-2.606	-4.900
194	LC 1039	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-7.142	0.502	-0.705
195	LC 1039	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-6.087	0.359	-0.837
196	LC 1040	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-14.287	-1.138	-4.315
197	LC 1040	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-13.503	-1.548	-4.364
198	LC 1040	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-12.785	-1.873	-4.414
199	LC 1040	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-2.624	-0.144	-0.132
200	LC 1040	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-2.255	-0.219	-0.143
201	LC 1041	K7:1NL.1#1a,gunstig,Wind/10C,+45 degST	-13.447	1.343	-4.315
202	LC 1041	K7:2NL.1#1a,gunstig,Wind/10C,+45 degST	-12.862	1.036	-4.365
203	LC 1041	K7:3NL.1#1a,gunstig,Wind/10C,+45 degST	-12.317	0.770	-4.415
204	LC 1041	K11:1NL.1#1a,gunstig,Wind/10C,+45 degST	-2.780	0.775	-0.159
205	LC 1041	K11:2NL.1#1a,gunstig,Wind/10C,+45 degST	-2.427	0.675	-0.161
206	LC 1042	K7:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-42.310	-3.437	-4.097
207	LC 1042	K7:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-40.083	-4.629	-4.163
208	LC 1042	K7:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-38.048	-5.581	-4.227
209	LC 1042	K11:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-5.978	-0.441	-0.198
210	LC 1042	K11:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-5.177	-0.622	-0.191
211	LC 1043	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-27.768	-1.272	-4.711
212	LC 1043	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-26.357	-2.023	-4.806
213	LC 1043	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-25.068	-2.623	-4.901
214	LC 1043	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-7.088	0.617	-0.702
215	LC 1043	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-6.201	0.434	-0.834
216	LC 1044	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-14.732	-1.181	-4.315
217	LC 1044	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-13.966	-1.593	-4.365
218	LC 1044	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-13.266	-1.922	-4.414
219	LC 1044	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.607	-0.135	-0.131
220	LC 1044	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.256	-0.222	-0.142
221	LC 1045	K7:1NL.1#11a,gunstig,Wind/10C,+45 degST	-11.722	1.681	-4.315
222	LC 1045	K7:2NL.1#11a,gunstig,Wind/10C,+45 degST	-11.096	1.387	-4.365
223	LC 1045	K7:3NL.1#11a,gunstig,Wind/10C,+45 degST	-10.512	1.137	-4.415
224	LC 1045	K11:1NL.1#11a,gunstig,Wind/10C,+45 degST	-2.646	0.875	-0.159
225	LC 1045	K11:2NL.1#11a,gunstig,Wind/10C,+45 degST	-2.247	0.790	-0.161
226	LC 1046	K7:1NL.1#11b,gunstig,Wind/-20C,+45 degST	-41.965	-3.369	-4.097
227	LC 1046	K7:2NL.1#11b,gunstig,Wind/-20C,+45 degST	-39.730	-4.559	-4.163
228	LC 1046	K7:3NL.1#11b,gunstig,Wind/-20C,+45 degST	-37.687	-5.507	-4.227
229	LC 1046	K11:1NL.1#11b,gunstig,Wind/-20C,+45 degST	-5.951	-0.421	-0.198
230	LC 1046	K11:2NL.1#11b,gunstig,Wind/-20C,+45 degST	-5.141	-0.599	-0.191
231	LC 1047	K7:1NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-27.127	-1.070	-4.711
232	LC 1047	K7:2NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-25.692	-1.813	-4.806
233	LC 1047	K7:3NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-24.380	-2.403	-4.901
234	LC 1047	K11:1NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-6.887	0.769	-0.702
235	LC 1047	K11:2NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-5.929	0.609	-0.834
236	LC 1048	K7:1NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-14.387	-1.114	-4.315
237	LC 1048	K7:2NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-13.612	-1.523	-4.365
238	LC 1048	K7:3NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-12.905	-1.849	-4.414
239	LC 1048	K11:1NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-2.580	-0.115	-0.131
240	LC 1048	K11:2NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-2.220	-0.199	-0.142
241	LC 1049	K7:1NL.1#1a,gunstig,Wind/10C,-45 degST	-14.204	-2.084	-4.338
242	LC 1049	K7:2NL.1#1a,gunstig,Wind/10C,-45 degST	-13.599	-2.515	-4.386
243	LC 1049	K7:3NL.1#1a,gunstig,Wind/10C,-45 degST	-13.001	-2.870	-4.434

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
244	LC 1049	K11:1NL.1#1a,gunstig,Wind/10C,-45 degST	-2.847	-0.862	-0.115
245	LC 1049	K11:2NL.1#1a,gunstig,Wind/10C,-45 degST	-2.539	-0.957	-0.132
246	LC 1050	K7:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-42.444	-3.381	-4.097
247	LC 1050	K7:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-40.219	-4.573	-4.163
248	LC 1050	K7:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-38.186	-5.525	-4.227
249	LC 1050	K11:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-5.981	-0.446	-0.197
250	LC 1050	K11:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-5.183	-0.627	-0.190
251	LC 1051	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-27.976	-1.601	-4.714
252	LC 1051	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-26.558	-2.365	-4.809
253	LC 1051	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-25.263	-2.976	-4.904
254	LC 1051	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-7.168	0.094	-0.686
255	LC 1051	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-6.313	-0.090	-0.823
256	LC 1052	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-14.841	-1.280	-4.317
257	LC 1052	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-14.074	-1.696	-4.366
258	LC 1052	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-13.373	-2.028	-4.416
259	LC 1052	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-2.601	-0.237	-0.128
260	LC 1052	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-2.262	-0.313	-0.140
261	LC 1053	K7:1NL.1#11a,gunstig,Wind/10C,-45 degST	-11.147	-2.304	-4.338
262	LC 1053	K7:2NL.1#11a,gunstig,Wind/10C,-45 degST	-10.476	-2.723	-4.386
263	LC 1053	K7:3NL.1#11a,gunstig,Wind/10C,-45 degST	-9.815	-3.063	-4.434
264	LC 1053	K11:1NL.1#11a,gunstig,Wind/10C,-45 degST	-2.681	-0.927	-0.115
265	LC 1053	K11:2NL.1#11a,gunstig,Wind/10C,-45 degST	-2.289	-1.016	-0.132
266	LC 1054	K7:1NL.1#11b,gunstig,Wind/-20C,-45 degST	-41.832	-3.425	-4.097
267	LC 1054	K7:2NL.1#11b,gunstig,Wind/-20C,-45 degST	-39.594	-4.615	-4.163
268	LC 1054	K7:3NL.1#11b,gunstig,Wind/-20C,-45 degST	-37.549	-5.563	-4.227
269	LC 1054	K11:1NL.1#11b,gunstig,Wind/-20C,-45 degST	-5.948	-0.459	-0.197
270	LC 1054	K11:2NL.1#11b,gunstig,Wind/-20C,-45 degST	-5.133	-0.639	-0.190
271	LC 1055	K7:1NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-26.915	-1.733	-4.714
272	LC 1055	K7:2NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-25.458	-2.490	-4.809
273	LC 1055	K7:3NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-24.126	-3.091	-4.904
274	LC 1055	K11:1NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-6.917	-0.005	-0.686
275	LC 1055	K11:2NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-5.935	-0.179	-0.823
276	LC 1056	K7:1NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-14.229	-1.324	-4.317
277	LC 1056	K7:2NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-13.449	-1.738	-4.366
278	LC 1056	K7:3NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-12.736	-2.067	-4.416
279	LC 1056	K11:1NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-2.568	-0.250	-0.128
280	LC 1056	K11:2NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-2.212	-0.325	-0.140
281	LC 1057	K7:1NL.1#1a,gunstig,Wind/10C,+0 degST	-11.416	-1.509	-4.339
282	LC 1057	K7:2NL.1#1a,gunstig,Wind/10C,+0 degST	-10.662	-1.684	-4.387
283	LC 1057	K7:3NL.1#1a,gunstig,Wind/10C,+0 degST	-9.985	-1.778	-4.435
284	LC 1057	K11:1NL.1#1a,gunstig,Wind/10C,+0 degST	-2.392	-0.618	-0.116
285	LC 1057	K11:2NL.1#1a,gunstig,Wind/10C,+0 degST	-1.955	-0.580	-0.132
286	LC 1058	K7:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-42.028	-3.428	-4.097
287	LC 1058	K7:2NL.1#1b,gunstig,Wind/-20C+,0 degST	-39.796	-4.617	-4.163
288	LC 1058	K7:3NL.1#1b,gunstig,Wind/-20C+,0 degST	-37.757	-5.564	-4.227
289	LC 1058	K11:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-5.950	-0.449	-0.197
290	LC 1058	K11:2NL.1#1b,gunstig,Wind/-20C+,0 degST	-5.144	-0.627	-0.190
291	LC 1059	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-27.131	-1.648	-4.714
292	LC 1059	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-25.701	-2.396	-4.809
293	LC 1059	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-24.397	-2.991	-4.904
294	LC 1059	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-6.832	0.176	-0.688
295	LC 1059	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-5.887	0.079	-0.824
296	LC 1060	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-14.401	-1.296	-4.317
297	LC 1060	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-13.608	-1.674	-4.366
298	LC 1060	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-12.905	-2.000	-4.416
299	LC 1060	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-2.555	-0.218	-0.128
300	LC 1060	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-2.201	-0.284	-0.141
301	LC 1061	K7:1NL.1#1a,gunstig,Wind/10C,-0 degST	-12.519	-1.260	-4.339
302	LC 1061	K7:2NL.1#1a,gunstig,Wind/10C,-0 degST	-11.766	-1.459	-4.387
303	LC 1061	K7:3NL.1#1a,gunstig,Wind/10C,-0 degST	-11.087	-1.574	-4.435
304	LC 1061	K11:1NL.1#1a,gunstig,Wind/10C,-0 degST	-2.460	-0.548	-0.116
305	LC 1061	K11:2NL.1#1a,gunstig,Wind/10C,-0 degST	-2.036	-0.520	-0.132
306	LC 1062	K7:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-42.248	-3.378	-4.097
307	LC 1062	K7:2NL.1#1b,gunstig,Wind/-20C,-0 degST	-40.017	-4.572	-4.163
308	LC 1062	K7:3NL.1#1b,gunstig,Wind/-20C,-0 degST	-37.978	-5.523	-4.227
309	LC 1062	K11:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-5.964	-0.434	-0.197
310	LC 1062	K11:2NL.1#1b,gunstig,Wind/-20C,-0 degST	-5.160	-0.615	-0.190
311	LC 1063	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-27.524	-1.499	-4.714
312	LC 1063	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-26.096	-2.261	-4.809
313	LC 1063	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-24.789	-2.869	-4.904
314	LC 1063	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-6.935	0.283	-0.688
315	LC 1063	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-6.010	0.171	-0.824
316	LC 1064	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-14.622	-1.246	-4.317
317	LC 1064	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-13.829	-1.629	-4.366
318	LC 1064	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-13.126	-1.959	-4.416
319	LC 1064	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-2.569	-0.204	-0.128
320	LC 1064	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-2.217	-0.272	-0.141
321	LC 1065	K7:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-13.111	-0.025	-4.831
322	LC 1065	K7:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-12.447	-0.367	-4.884
323	LC 1065	K7:3NL.1#5a,Break Shield wire 1, Ahead,+10CST	-11.840	-0.639	-4.936
324	LC 1065	K11:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	0.000	0.000	-2.000

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
325	LC 1065	K11:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-2.016	-0.080	-0.146
326	LC 1066	K7:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-13.111	-0.025	-4.831
327	LC 1066	K7:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-12.447	-0.367	-4.884
328	LC 1066	K7:3NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-11.840	-0.639	-4.936
329	LC 1066	K11:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-2.325	-0.019	-0.128
330	LC 1066	K11:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	0.000	0.000	-2.000
331	LC 1067	K7:1NL.1#5a,Break Conductor 1, Ahead,+10CST	0.000	0.000	-2.000
332	LC 1067	K7:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-12.447	-0.367	-4.884
333	LC 1067	K7:3NL.1#5a,Break Conductor 1, Ahead,+10CST	-11.840	-0.639	-4.936
334	LC 1067	K11:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-2.325	-0.019	-0.128
335	LC 1067	K11:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-2.016	-0.080	-0.146
336	LC 1068	K7:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-13.111	-0.025	-4.831
337	LC 1068	K7:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	0.000	0.000	-2.000
338	LC 1068	K7:3NL.1#5a,Break Conductor 2 , Ahead,+10CST	-11.840	-0.639	-4.936
339	LC 1068	K11:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-2.325	-0.019	-0.128
340	LC 1068	K11:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	-2.016	-0.080	-0.146
341	LC 1069	K7:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-13.111	-0.025	-4.831
342	LC 1069	K7:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-12.447	-0.367	-4.884
343	LC 1069	K7:3NL.1#5a,Break Conductor 3 , Ahead,+10CST	0.000	0.000	-2.000
344	LC 1069	K11:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-2.325	-0.019	-0.128
345	LC 1069	K11:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-2.016	-0.080	-0.146
346	LC 1070	K7:1NL.1#6,Permanent,+10CST	-15.650	0.305	-6.535
347	LC 1070	K7:2NL.1#6,Permanent,+10CST	-14.866	-0.093	-6.605
348	LC 1070	K7:3NL.1#6,Permanent,+10CST	-14.151	-0.411	-6.675
349	LC 1070	K11:1NL.1#6,Permanent,+10CST	-2.690	0.047	-0.167
350	LC 1070	K11:2NL.1#6,Permanent,+10CST	-2.335	-0.019	-0.192
351	LC 1071	K7:1NL.1#6,gunstig,Permanent,+10CST	-12.328	-0.177	-4.345
352	LC 1071	K7:2NL.1#6,gunstig,Permanent,+10CST	-11.699	-0.502	-4.393
353	LC 1071	K7:3NL.1#6,gunstig,Permanent,+10CST	-11.124	-0.762	-4.440
354	LC 1071	K11:1NL.1#6,gunstig,Permanent,+10CST	-2.217	-0.051	-0.117
355	LC 1071	K11:2NL.1#6,gunstig,Permanent,+10CST	-1.921	-0.111	-0.132
356	LC 1072	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-16.248	0.250	-5.924
357	LC 1072	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-15.506	-0.150	-5.999
358	LC 1072	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-14.830	-0.470	-6.075
359	LC 1072	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-3.065	0.084	-0.192
360	LC 1072	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-2.705	0.007	-0.215
361	LC 1073	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-43.191	-3.042	-5.712
362	LC 1073	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-40.940	-4.246	-5.803
363	LC 1073	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-38.883	-5.206	-5.893
364	LC 1073	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-6.128	-0.370	-0.249
365	LC 1073	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-5.316	-0.551	-0.256
366	LC 1074	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-27.553	-1.558	-5.950
367	LC 1074	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-26.154	-2.312	-6.041
368	LC 1074	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-24.878	-2.914	-6.131
369	LC 1074	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-5.139	0.050	-0.339
370	LC 1074	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-4.513	-0.084	-0.385
371	LC 1075	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-17.962	-0.455	-5.908
372	LC 1075	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-17.062	-0.930	-5.985
373	LC 1075	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-16.241	-1.310	-6.062
374	LC 1075	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-3.041	-0.056	-0.189
375	LC 1075	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-2.649	-0.139	-0.213
376	LC 1076	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-14.340	0.302	-5.924
377	LC 1076	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-13.549	-0.079	-5.999
378	LC 1076	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-12.826	-0.380	-6.075
379	LC 1076	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.907	0.101	-0.192
380	LC 1076	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.481	0.036	-0.215
381	LC 1077	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-42.604	-3.026	-5.712
382	LC 1077	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-40.338	-4.224	-5.803
383	LC 1077	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-38.266	-5.178	-5.893
384	LC 1077	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-6.079	-0.365	-0.249
385	LC 1077	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-5.247	-0.542	-0.256
386	LC 1078	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-26.580	-1.525	-5.950
387	LC 1078	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-25.150	-2.266	-6.041
388	LC 1078	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-23.841	-2.855	-6.131
389	LC 1078	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-4.948	0.070	-0.339
390	LC 1078	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-4.242	-0.049	-0.385
391	LC 1079	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-17.375	-0.440	-5.908
392	LC 1079	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-16.460	-0.909	-5.985
393	LC 1079	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-15.624	-1.282	-6.062
394	LC 1079	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-2.992	-0.051	-0.189
395	LC 1079	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-2.580	-0.130	-0.213
396	LC 1080	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-15.305	0.422	-5.926
397	LC 1080	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-14.566	0.031	-6.001
398	LC 1080	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-13.903	-0.270	-6.077
399	LC 1080	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.738	0.232	-0.190
400	LC 1080	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.384	0.146	-0.213
401	LC 1081	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-43.036	-3.061	-5.712
402	LC 1081	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-40.780	-4.263	-5.803
403	LC 1081	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-38.718	-5.221	-5.893
404	LC 1081	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-6.107	-0.365	-0.249
405	LC 1081	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-5.283	-0.555	-0.256

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
406	LC 1082	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-27.153	-1.536	-5.951
407	LC 1082	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-25.754	-2.280	-6.041
408	LC 1082	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-24.476	-2.874	-6.131
409	LC 1082	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.914	0.111	-0.337
410	LC 1082	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.274	-0.032	-0.383
411	LC 1083	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-17.759	-0.412	-5.908
412	LC 1083	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-16.859	-0.882	-5.985
413	LC 1083	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-16.037	-1.258	-6.062
414	LC 1083	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.997	-0.040	-0.189
415	LC 1083	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.600	-0.125	-0.213
416	LC 1084	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-14.408	0.598	-5.926
417	LC 1084	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-13.648	0.214	-6.001
418	LC 1084	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-12.965	-0.079	-6.077
419	LC 1084	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.669	0.284	-0.190
420	LC 1084	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.290	0.206	-0.213
421	LC 1085	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-42.760	-3.007	-5.712
422	LC 1085	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-40.497	-4.207	-5.803
423	LC 1085	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-38.430	-5.163	-5.893
424	LC 1085	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-6.086	-0.349	-0.249
425	LC 1085	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-5.254	-0.537	-0.256
426	LC 1086	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-26.697	-1.421	-5.951
427	LC 1086	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-25.284	-2.161	-6.041
428	LC 1086	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-23.993	-2.749	-6.131
429	LC 1086	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.830	0.174	-0.337
430	LC 1086	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.160	0.040	-0.383
431	LC 1087	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-17.483	-0.358	-5.908
432	LC 1087	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-16.577	-0.826	-5.985
433	LC 1087	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-15.749	-1.199	-6.062
434	LC 1087	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.975	-0.024	-0.189
435	LC 1087	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.571	-0.107	-0.213
436	LC 1088	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-15.684	-0.130	-5.930
437	LC 1088	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-14.963	-0.559	-6.005
438	LC 1088	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-14.284	-0.876	-6.080
439	LC 1088	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.776	-0.218	-0.178
440	LC 1088	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.441	-0.304	-0.205
441	LC 1089	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-43.142	-3.017	-5.712
442	LC 1089	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-40.888	-4.218	-5.803
443	LC 1089	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-38.829	-5.177	-5.893
444	LC 1089	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-6.102	-0.384	-0.248
445	LC 1089	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-5.295	-0.553	-0.256
446	LC 1090	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-27.339	-1.659	-5.952
447	LC 1090	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-25.937	-2.409	-6.042
448	LC 1090	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-24.656	-3.008	-6.132
449	LC 1090	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.936	-0.139	-0.330
450	LC 1090	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.317	-0.265	-0.378
451	LC 1091	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-17.889	-0.461	-5.909
452	LC 1091	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-16.987	-0.934	-5.985
453	LC 1091	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-16.164	-1.312	-6.062
454	LC 1091	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-3.003	-0.086	-0.187
455	LC 1091	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.614	-0.163	-0.212
456	LC 1092	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-14.094	-0.245	-5.930
457	LC 1092	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-13.339	-0.667	-6.005
458	LC 1092	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-12.628	-0.977	-6.080
459	LC 1092	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.690	-0.251	-0.178
460	LC 1092	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.311	-0.335	-0.205
461	LC 1093	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-42.653	-3.052	-5.712
462	LC 1093	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-40.389	-4.251	-5.803
463	LC 1093	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-38.319	-5.207	-5.893
464	LC 1093	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-6.075	-0.394	-0.248
465	LC 1093	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-5.255	-0.562	-0.256
466	LC 1094	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-26.557	-1.733	-5.952
467	LC 1094	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-25.132	-2.480	-6.042
468	LC 1094	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-23.830	-3.074	-6.132
469	LC 1094	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.832	-0.180	-0.330
470	LC 1094	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.160	-0.302	-0.378
471	LC 1095	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-17.400	-0.496	-5.909
472	LC 1095	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-16.488	-0.967	-5.985
473	LC 1095	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-15.654	-1.343	-6.062
474	LC 1095	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.976	-0.096	-0.187
475	LC 1095	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.573	-0.173	-0.212
476	LC 1096	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-14.461	-0.066	-5.930
477	LC 1096	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-13.692	-0.411	-6.005
478	LC 1096	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-12.993	-0.676	-6.080
479	LC 1096	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-2.609	-0.122	-0.179
480	LC 1096	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-2.229	-0.146	-0.206
481	LC 1097	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-42.810	-3.054	-5.712
482	LC 1097	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-40.550	-4.253	-5.803
483	LC 1097	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-38.486	-5.208	-5.893
484	LC 1097	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-6.083	-0.394	-0.248
485	LC 1097	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-5.261	-0.573	-0.256
486	LC 1098	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-26.734	-1.707	-5.953

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
487	LC 1098	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-25.325	-2.449	-6.043
488	LC 1098	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-24.038	-3.039	-6.133
489	LC 1098	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-4.794	-0.106	-0.330
490	LC 1098	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-4.131	-0.196	-0.379
491	LC 1099	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-17.533	-0.467	-5.909
492	LC 1099	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-16.628	-0.936	-5.985
493	LC 1099	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-15.801	-1.310	-6.062
494	LC 1099	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-2.969	-0.075	-0.188
495	LC 1099	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-2.571	-0.155	-0.212
496	LC 1100	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-15.034	0.064	-5.930
497	LC 1100	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-14.267	-0.293	-6.005
498	LC 1100	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-13.567	-0.570	-6.080
499	LC 1100	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-2.645	-0.085	-0.179
500	LC 1100	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-2.271	-0.115	-0.206
501	LC 1101	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-42.986	-3.014	-5.712
502	LC 1101	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-40.727	-4.217	-5.803
503	LC 1101	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-38.662	-5.176	-5.893
504	LC 1101	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-6.094	-0.383	-0.248
505	LC 1101	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-5.274	-0.564	-0.256
506	LC 1102	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-27.020	-1.622	-5.953
507	LC 1102	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-25.611	-2.372	-6.043
508	LC 1102	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-24.324	-2.970	-6.133
509	LC 1102	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-4.837	-0.061	-0.330
510	LC 1102	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-4.182	-0.158	-0.379
511	LC 1103	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-17.709	-0.427	-5.909
512	LC 1103	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-16.804	-0.900	-5.985
513	LC 1103	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-15.978	-1.277	-6.062
514	LC 1103	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-2.980	-0.064	-0.188
515	LC 1103	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-2.584	-0.145	-0.212
516	LC 1104	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR	-3.065	0.084	-0.192
517	LC 1105	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR	-6.128	-0.370	-0.249
518	LC 1106	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR	-5.139	0.050	-0.339
519	LC 1107	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR	-3.041	-0.056	-0.189
520	LC 1108	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR	-2.907	0.101	-0.192
521	LC 1109	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR	-6.079	-0.365	-0.249
522	LC 1110	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR	-4.948	0.070	-0.339
523	LC 1111	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR	-2.992	-0.051	-0.189
524	LC 1112	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR	-2.738	0.232	-0.190
525	LC 1113	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR	-6.107	-0.365	-0.249
526	LC 1114	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR	-4.914	0.111	-0.337
527	LC 1115	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR	-2.997	-0.040	-0.189
528	LC 1116	K11:1NL.3#Torsion,Ahead,11a,Wind/10C,+45 degTOR	-2.669	0.284	-0.190
529	LC 1117	K11:1NL.3#Torsion,Ahead,11b,Wind/-20C,+45 degTOR	-6.086	-0.349	-0.249
530	LC 1118	K11:1NL.3#Torsion,Ahead,13,Wind / Ice / -5C,+45 degTOR	-4.830	0.174	-0.337
531	LC 1119	K11:1NL.3#Torsion,Ahead,14,Construction/Maintenance +5C,+45 degTOR	-2.975	-0.024	-0.189
532	LC 1120	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR	-2.776	-0.218	-0.178
533	LC 1121	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR	-6.102	-0.384	-0.248
534	LC 1122	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR	-4.936	-0.139	-0.330
535	LC 1123	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR	-3.003	-0.086	-0.187
536	LC 1124	K11:1NL.3#Torsion,Ahead,11a,Wind/10C,-45 degTOR	-2.690	-0.251	-0.178
537	LC 1125	K11:1NL.3#Torsion,Ahead,11b,Wind/-20C,-45 degTOR	-6.075	-0.394	-0.248
538	LC 1126	K11:1NL.3#Torsion,Ahead,13,Wind / Ice / -5C,-45 degTOR	-4.832	-0.180	-0.330
539	LC 1127	K11:1NL.3#Torsion,Ahead,14,Construction/Maintenance +5C,-45 degTOR	-2.976	-0.096	-0.187
540	LC 1128	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR	-2.609	-0.122	-0.179
541	LC 1129	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR	-6.083	-0.394	-0.248
542	LC 1130	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR	-4.794	-0.106	-0.330
543	LC 1131	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR	-2.969	-0.075	-0.188
544	LC 1132	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR	-2.645	-0.085	-0.179
545	LC 1133	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR	-6.094	-0.383	-0.248
546	LC 1134	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR	-4.837	-0.061	-0.330
547	LC 1135	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR	-2.980	-0.064	-0.188
548	LC 1136	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,+90 degTOR	-2.705	0.007	-0.215
549	LC 1137	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,+90 degTOR	-5.316	-0.551	-0.256
550	LC 1138	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,+90 degTOR	-4.513	-0.084	-0.385
551	LC 1139	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,+90 degTOR	-2.649	-0.139	-0.213
552	LC 1140	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,-90 degTOR	-2.481	0.036	-0.215
553	LC 1141	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,-90 degTOR	-5.247	-0.542	-0.256
554	LC 1142	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,-90 degTOR	-4.242	-0.049	-0.385
555	LC 1143	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,-90 degTOR	-2.580	-0.130	-0.213
556	LC 1144	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,+45 degTOR	-2.384	0.146	-0.213
557	LC 1145	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,+45 degTOR	-5.283	-0.555	-0.256
558	LC 1146	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,+45 degTOR	-4.274	-0.032	-0.383
559	LC 1147	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,+45 degTOR	-2.600	-0.125	-0.213
560	LC 1148	K11:2NL.3#Torsion,Ahead,211a,Wind/10C,+45 degTOR	-2.290	0.206	-0.213
561	LC 1149	K11:2NL.3#Torsion,Ahead,211b,Wind/-20C,+45 degTOR	-5.254	-0.537	-0.256
562	LC 1150	K11:2NL.3#Torsion,Ahead,213,Wind / Ice / -5C,+45 degTOR	-4.160	0.040	-0.383
563	LC 1151	K11:2NL.3#Torsion,Ahead,214,Construction/Maintenance +5C,+45 degTOR	-2.571	-0.107	-0.213
564	LC 1152	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,-45 degTOR	-2.441	-0.304	-0.205
565	LC 1153	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,-45 degTOR	-5.295	-0.553	-0.256
566	LC 1154	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,-45 degTOR	-4.317	-0.265	-0.378
567	LC 1155	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,-45 degTOR	-2.614	-0.163	-0.212

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
568	LC 1156	K11:2NL.3#Torsion,Ahead,211a,Wind/10C,-45 degTOR	-2.311	-0.335	-0.205
569	LC 1157	K11:2NL.3#Torsion,Ahead,211b,Wind/-20C,-45 degTOR	-5.255	-0.562	-0.256
570	LC 1158	K11:2NL.3#Torsion,Ahead,213,Wind / Ice / -5C,-45 degTOR	-4.160	-0.302	-0.378
571	LC 1159	K11:2NL.3#Torsion,Ahead,214,Construction/Maintenance +5C,-45 degTOR	-2.573	-0.173	-0.212
572	LC 1160	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,+0 degTOR	-2.229	-0.146	-0.206
573	LC 1161	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,+0 degTOR	-5.261	-0.573	-0.256
574	LC 1162	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,+0 degTOR	-4.131	-0.196	-0.379
575	LC 1163	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,+0 degTOR	-2.571	-0.155	-0.212
576	LC 1164	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,-0 degTOR	-2.271	-0.115	-0.206
577	LC 1165	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,-0 degTOR	-5.274	-0.564	-0.256
578	LC 1166	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,-0 degTOR	-4.182	-0.158	-0.379
579	LC 1167	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,-0 degTOR	-2.584	-0.145	-0.212

BIJLAGE D

In- en uitvoergegevens 3D raamwerkprogramma juk 64

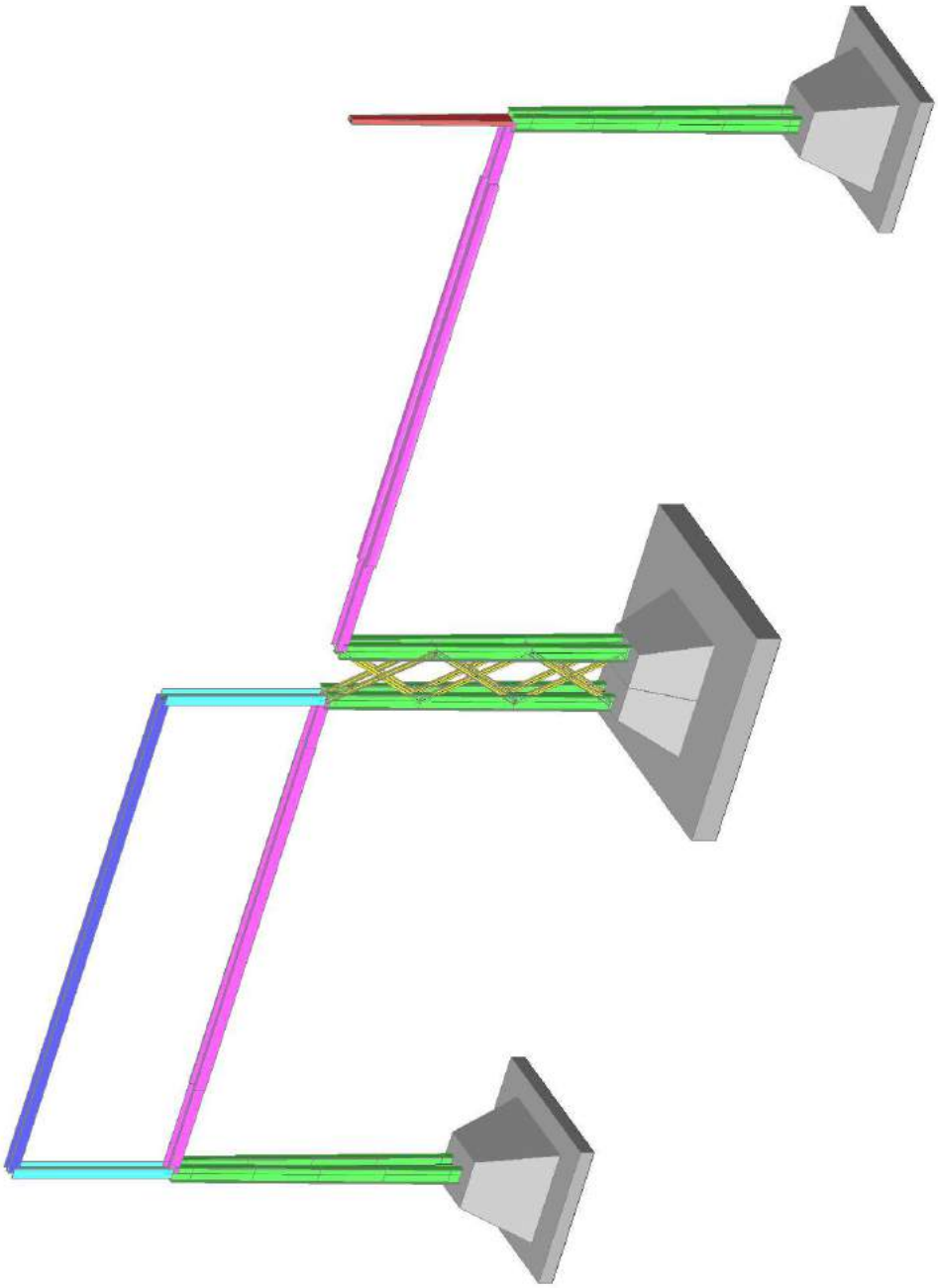
1. Inhoudsopgave

1. Inhoudsopgave **1**
2. Geometrie **3**
2.1. Perspectief constructie 3
2.2. Maatvoering 4
2.3. Materialen 5
2.4. Doorsneden 5
3. Belastingen **15**
3.1. Belastingsgevallen 15
3.2. BG1: e.g. constructie 22
3.3. BG2: grond op poer 22
3.4. BG3: wind op constructie; X-richting 23
3.5. BG4: wind op constructie; Y-richting 23
3.6. LC1001 / Totale waarde 24
3.7. LC1080 / Totale waarde 24
3.8. LC1159 / Totale waarde 25
3.9. LC1238 / Totale waarde 25
3.10. Combinaties 26
3.11. Resultaatklasses 33
4. Berekeningsverslag **34**
5. Reacties **56**
5.1. Oplegreacties kolom links; UGT, globale extremen 56
5.2. Oplegreacties kolom midden-links; UGT, globale extremen 56
5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen 56
5.4. Oplegreacties kolom rechts; UGT, globale extremen 56
6. Grondspanningen **57**
6.1. Grondspanningen onder betonpoeren; UGT 57
7. Staafkrachten **58**
7.1. Staafkrachten kolom INP45; UGT globale extremen 58
7.2. Staafkrachten kolom DIE36; UGT globale extremen 58
7.3. Staafkrachten ligger DIE34; UGT, globale extremen 58
7.4. Staafkrachten ligger DIE34+strippen; UGT, globale extremen 59
7.5. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen 59
7.6. Staafkrachten ligger DIN28; UGT globale extremen 59
7.7. Staafkrachten koppelplaat; UGT globale extremen 60
7.8. Staafkrachten diagonaal; UGT globale extremen 60
7.9. Staafkrachten bliksempiek; UGT globale extremen 60
7.10. Staafkrachten betonopstort links; UGT globale extremen 60
7.11. Staafkrachten betonopstort midden-links; UGT globale extremen 61
7.12. Staafkrachten betonopstort midden-rechts; UGT globale extremen 61
7.13. Staafkrachten betonopstort rechts; UGT globale extremen 61
8. Staafspanningen **62**
8.1. Von Mises spanningen kolom INP45; UGT, globale extremen 62
8.2. Von Mises spanningen kolom DIE36; UGT, globale extremen 62
8.3. Von Mises spanningen ligger DIE34; UGT, globale extremen 62
8.4. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen 62
8.5. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen 63
8.6. Von Mises spanningen ligger DIN28; UGT, globale extremen 63
8.7. Von Mises spanningen koppelplaat; UGT, globale extremen 63
8.8. Von Mises spanningen diagonaal; UGT, globale extremen 63
8.9. Von Mises spanningen bliksempiek; UGT, globale extremen 64
9. Normcontrole staal **65**
9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht 65
9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid 65
9.3. Staalcontrole kolom DIE36; UGT, grafisch overzicht 69
9.4. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid 69
9.5. Staalcontrole ligger DIE34; UGT, grafisch overzicht 73
9.6. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid 73
9.7. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht 77
9.8. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid 77
9.9. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht 81
9.10. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid 81
9.11. Staalcontrole ligger DIN28; UGT, grafisch overzicht 85
9.12. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid 85
9.13. Staalcontrole koppelplaat; UGT, grafisch overzicht 89
9.14. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 89
9.15. Staalcontrole diagonaal; UGT, grafisch overzicht 93

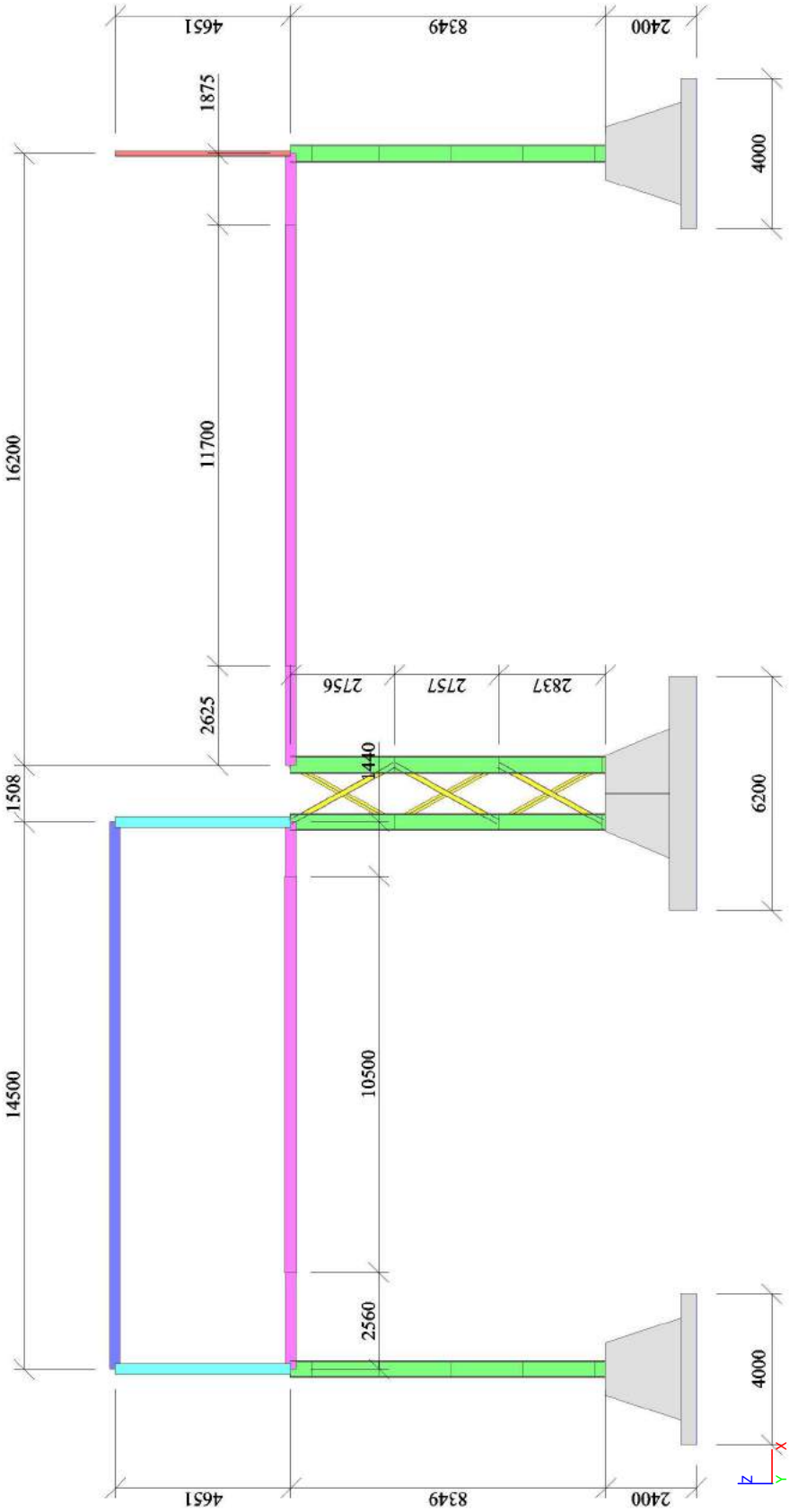
9.16. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid 93
9.17. Staalcontrole bliksempiek; UGT, grafisch overzicht 96
9.18. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 96

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 235	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	235.0 215.0	360.0 360.0	

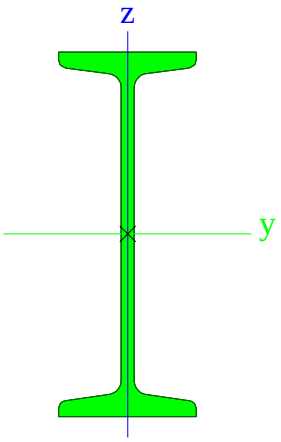
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C60/75	Beton	2500.0	2600.0	3.9100e+04	0.2	0.00	60.00	
Dummy beton	Beton	2500.0	2600.0	3.9100e+06	0.2	0.00	60.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom INP45		
Type	INP450	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	5.63e+05	5.63e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	8.11e+04	8.11e+04
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

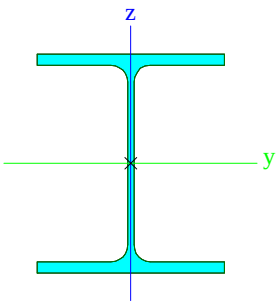
Afbeelding



Kolom DIE36		
Type	HEA360	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c

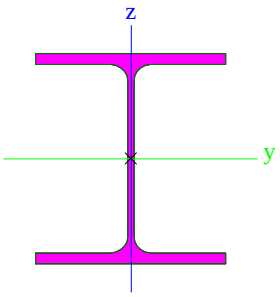
A [m²]	1.4300e-02	
A_y [m²], A_z [m²]	1.0125e-02	3.6844e-03
I_y [m⁴], I_z [m⁴]	3.3100e-04	7.8900e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8900e-03	5.2600e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0875e-03	8.0417e-04
I_w [m⁶], I_t [m⁴]	2.1766e-06	1.4900e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	175
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.91e+05	4.91e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.89e+05	1.89e+05
A_L [m²/m], A_D [m²/m]	1.8300e+00	1.8334e+00

Afbeelding



Ligger DIE34		
Type	HE340A	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3350e-02	
A_y [m²], A_z [m²]	9.5495e-03	3.3201e-03
I_y [m⁴], I_z [m⁴]	2.7690e-04	7.4360e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6780e-03	4.9570e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.8500e-03	7.5590e-04
I_w [m⁶], I_t [m⁴]	1.8240e-06	1.2720e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.35e+05	4.35e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.78e+05	1.78e+05
A_L [m²/m], A_D [m²/m]	1.7944e+00	1.7944e+00

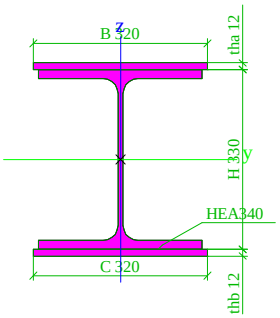
Afbeelding



Ligger DIE34+strippen		
Type	I + 2 PLud	
Uitgebreid	HEA340; 320; 320; 12; 12	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	c	c
A [m²]	2.1039e-02	
A_y [m²], A_z [m²]	1.6468e-02	3.6506e-03
I_y [m⁴], I_z [m⁴]	5.0182e-04	1.3990e-04

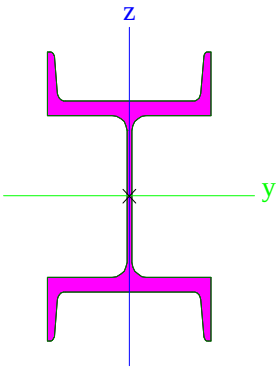
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.8351e-03	8.7437e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.1654e-03	1.3705e-03
I_w [m⁶], I_t [m⁴]	3.6743e-06	4.7425e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	160	177
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.44e+05	7.44e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.22e+05	3.22e+05
A_L [m²/m], A_D [m²/m]	1.9224e+00	1.9224e+00

Afbeelding



Ligger DIE34+UNP's		
Type	Grafische doorsnede	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.5114e-02	
A_y [m²], A_z [m²]	1.6554e-02	4.3472e-03
I_y [m⁴], I_z [m⁴]	7.2035e-04	2.3496e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.7183e-03	1.5664e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.1091e-03	2.0212e-03
I_w [m⁶], I_t [m⁴]	4.5518e-06	4.8902e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	0	0
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.66e+05	9.66e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	4.75e+05	4.75e+05
A_L [m²/m], A_D [m²/m]	2.4925e+00	2.4925e+00

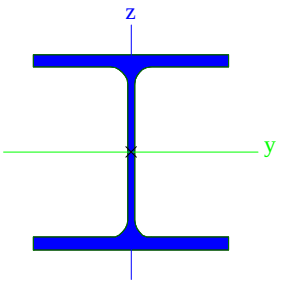
Afbeelding



Ligger DIN28		
Type	HEB280	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3140e-02	
A_y [m²], A_z [m²]	9.6422e-03	3.1403e-03
I_y [m⁴], I_z [m⁴]	1.9270e-04	6.5950e-05

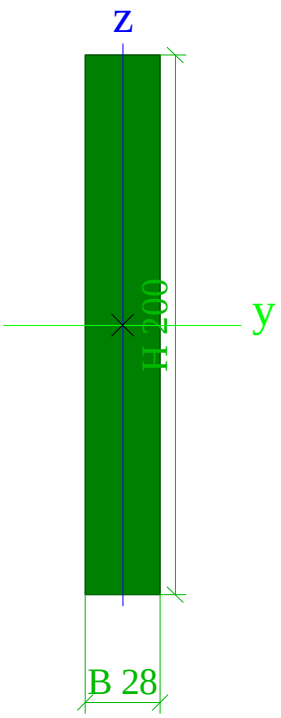
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3760e-03	4.7100e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.5340e-03	7.1760e-04
I_w [m⁶], I_t [m⁴]	1.1302e-06	1.4370e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	140	140
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3.61e+05	3.61e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.69e+05	1.69e+05
A_L [m²/m], A_D [m²/m]	1.6200e+00	1.6176e+00

Afbeelding



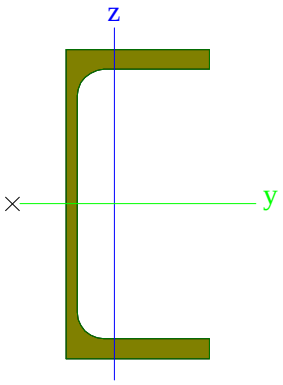
Plaat 2x14x200		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.58e+04	6.58e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.21e+03	9.21e+03
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

Afbeelding



Diagonaal UPE14		
Type	UPE140	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	c	c
A [m^2]	1.8400e-03	
A_y [m^2], A_z [m^2]	1.1000e-03	7.1956e-04
I_y [m^4], I_z [m^4]	5.9900e-06	7.8700e-07
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	8.5600e-05	1.8200e-05
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	9.8800e-05	3.2600e-05
I_w [m^6], I_t [m^4]	2.3372e-09	4.0500e-08
d_y [mm], d_z [mm]	-46	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	22	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.32e+04	2.32e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	7.66e+03	7.66e+03
A_L [m^2/m], A_D [m^2/m]	5.1970e-01	5.1965e-01

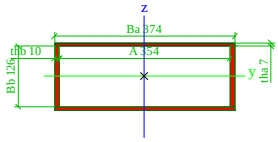
Afbeelding



Bliksempiek-1

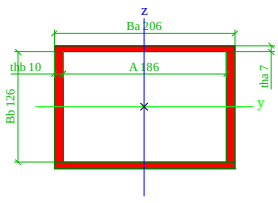
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	7.7560e-03	
A_y [m²], A_z [m²]	5.0496e-03	2.7596e-03
I_y [m⁴], I_z [m⁴]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.2757e-04	9.4821e-04
I_w [m⁶], I_t [m⁴]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.00e+05	1.00e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.23e+05	2.23e+05
A_L [m²/m], A_D [m²/m]	1.0280e+00	1.9880e+00

Afbeelding



Bliksempiek-2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	5.4040e-03	
A_y [m²], A_z [m²]	2.8012e-03	2.7167e-03
I_y [m⁴], I_z [m⁴]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.7117e-04	3.9549e-04
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.37e+04	6.37e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.29e+04	9.29e+04
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

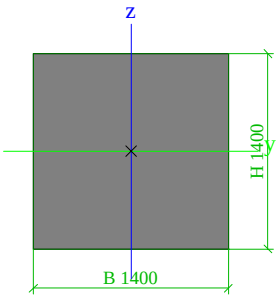
Afbeelding



Poer boven-IA		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	

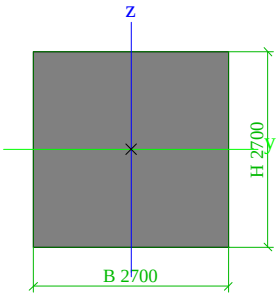
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Afbeelding



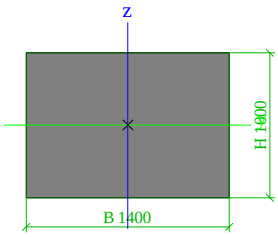
Poer onder-IA		
Type	Rechthoek	
Uitgebreid	2700; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	7.2900e+00	
A_y [m²], A_z [m²]	6.0750e+00	6.0750e+00
I_y [m⁴], I_z [m⁴]	4.4287e+00	4.4287e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.2805e+00	3.2805e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	4.9524e-02	7.4626e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	1350
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0800e+01	1.0800e+01

Afbeelding



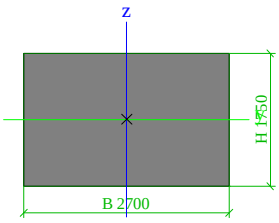
Poer boven-IB		
Type	Rechthoek	
Uitgebreid	1000; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.4000e+00	
A_y [m²], A_z [m²]	1.1667e+00	1.1667e+00
I_y [m⁴], I_z [m⁴]	1.1667e-01	2.2867e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.3333e-01	3.2667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	2.2616e-03	2.6127e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.8000e+00	4.8000e+00

Afbeelding



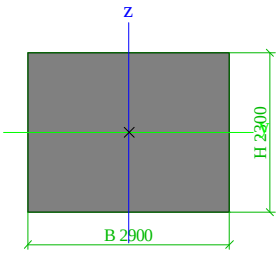
Poer onder-IB		
Type	Rechthoek	
Uitgebreid	1750; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	4.7250e+00	
A_y [m²], A_z [m²]	3.9375e+00	3.9375e+00
I_y [m⁴], I_z [m⁴]	1.2059e+00	2.8704e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3781e+00	2.1263e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2952e-01	2.8785e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	875
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	8.9000e+00	8.9000e+00

Afbeelding



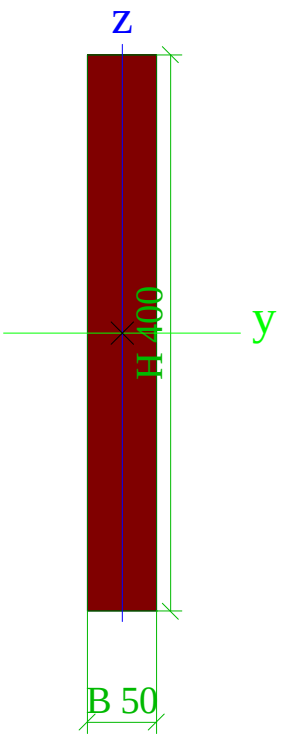
Poer onder-IV		
Type	Rechthoek	
Uitgebreid	2300; 2900	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	6.6700e+00	
A_y [m²], A_z [m²]	5.5583e+00	5.5583e+00
I_y [m⁴], I_z [m⁴]	2.9404e+00	4.6746e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.5568e+00	3.2238e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.3988e-01	6.0933e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1450	1150
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0400e+01	1.0400e+01

Afbeelding



Dummy 400x50		
Type	Rechthoek	
Uitgebreid	400; 50	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m^2]	2.0000e-02	
A_y [m^2], A_z [m^2]	1.6667e-02	1.6667e-02
I_y [m^4], I_z [m^4]	2.6667e-04	4.1667e-06
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	1.3333e-03	1.6667e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	2.0000e-03	2.5000e-04
I_w [m^6], I_t [m^4]	5.0391e-08	1.5278e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	25	200
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.70e+05	4.70e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	5.88e+04	5.88e+04
A_L [m^2/m], A_D [m^2/m]	9.0000e-01	9.0000e-01

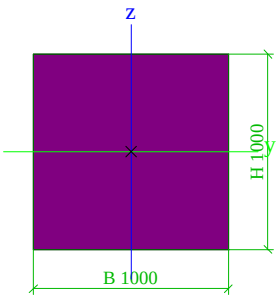
Afbeelding



Dummy beton		
Type	Rechthoek	
Uitgebreid	1000; 1000	
Onderdeelmateriaal	Dummy beton	
Bouwwijze	beton	

A [m²]	1.0000e+00	
A_y [m²], A_z [m²]	8.3333e-01	8.3333e-01
I_y [m⁴], I_z [m⁴]	8.3333e-02	8.3333e-02
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6667e-01	1.6667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2502e-04	1.4035e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	500	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.0000e+00	4.0000e+00

Afbeelding



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. staco	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie; X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie; Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1168	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1169	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1170	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1171	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1172	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1173	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1174	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1175	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1176	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1177	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1178	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1179	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1180	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1181	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1182	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1183	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1184	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1185	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1186	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1187	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1188	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1189	BC0	Variabel	EXCL MAST		Kort	Geen

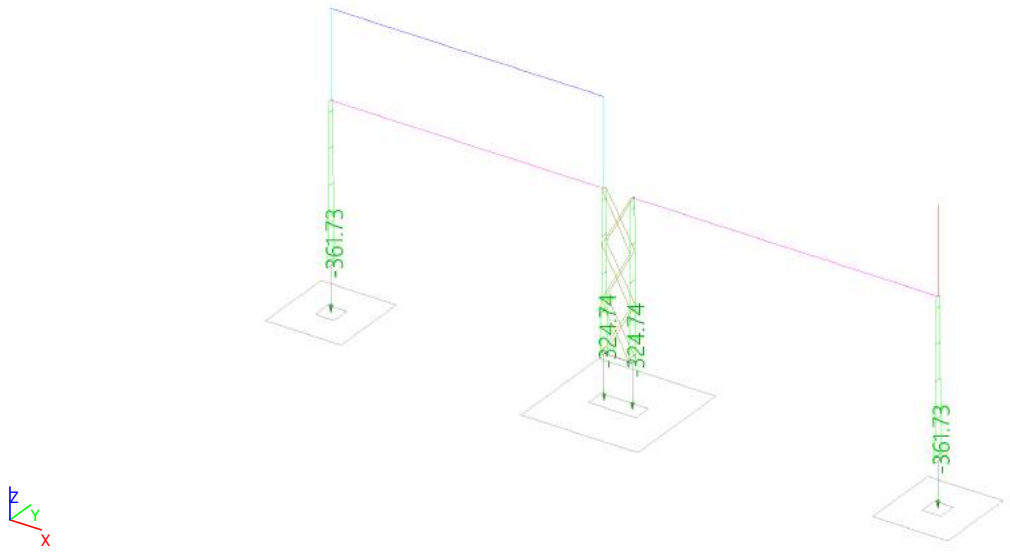
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1190	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1191	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1192	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1193	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1194	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1195	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1196	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1197	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1198	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1199	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1200	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1201	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1202	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1203	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1204	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1205	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1206	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1207	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1208	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1209	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1210	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1211	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1212	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1213	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1214	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1215	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1216	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1217	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1218	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1219	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1220	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1221	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1222	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1223	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1224	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1225	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1226	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1227	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1228	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1229	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1230	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1231	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1232	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1233	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1234	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1235	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1236	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1237	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1238	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

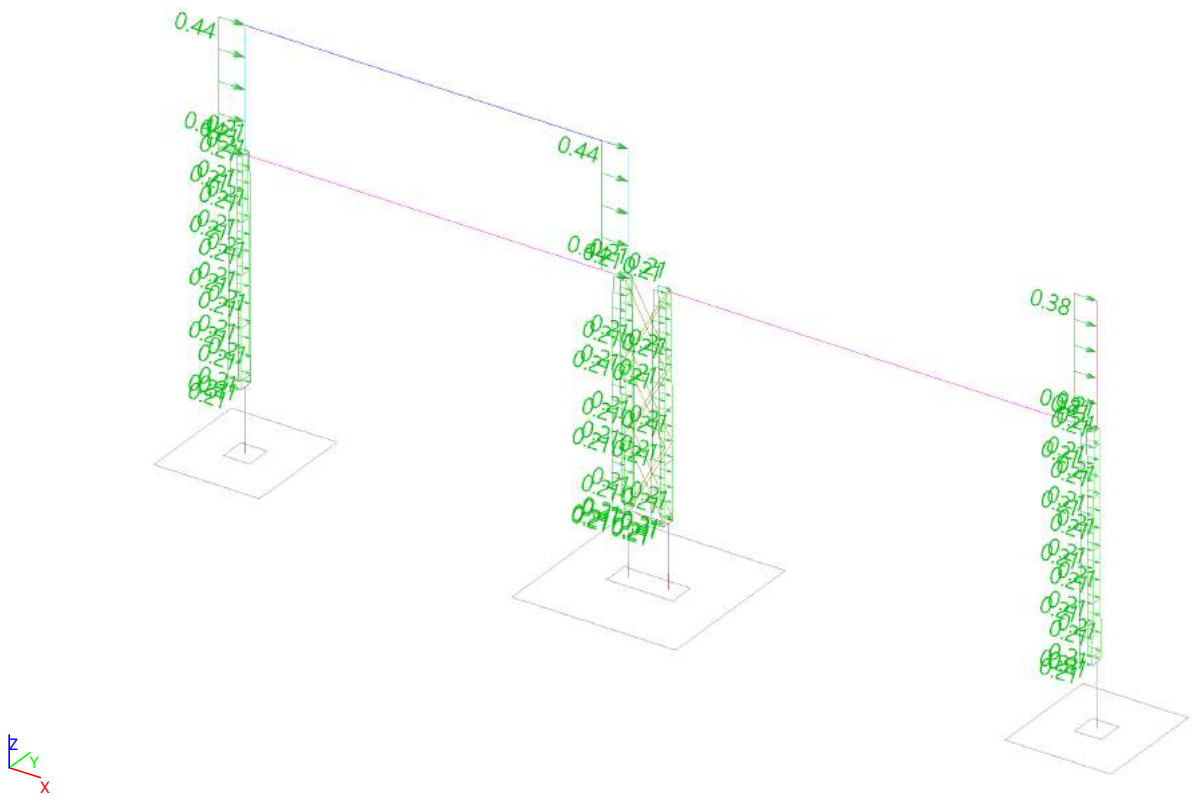
3.2. BG1: e.g. constructie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

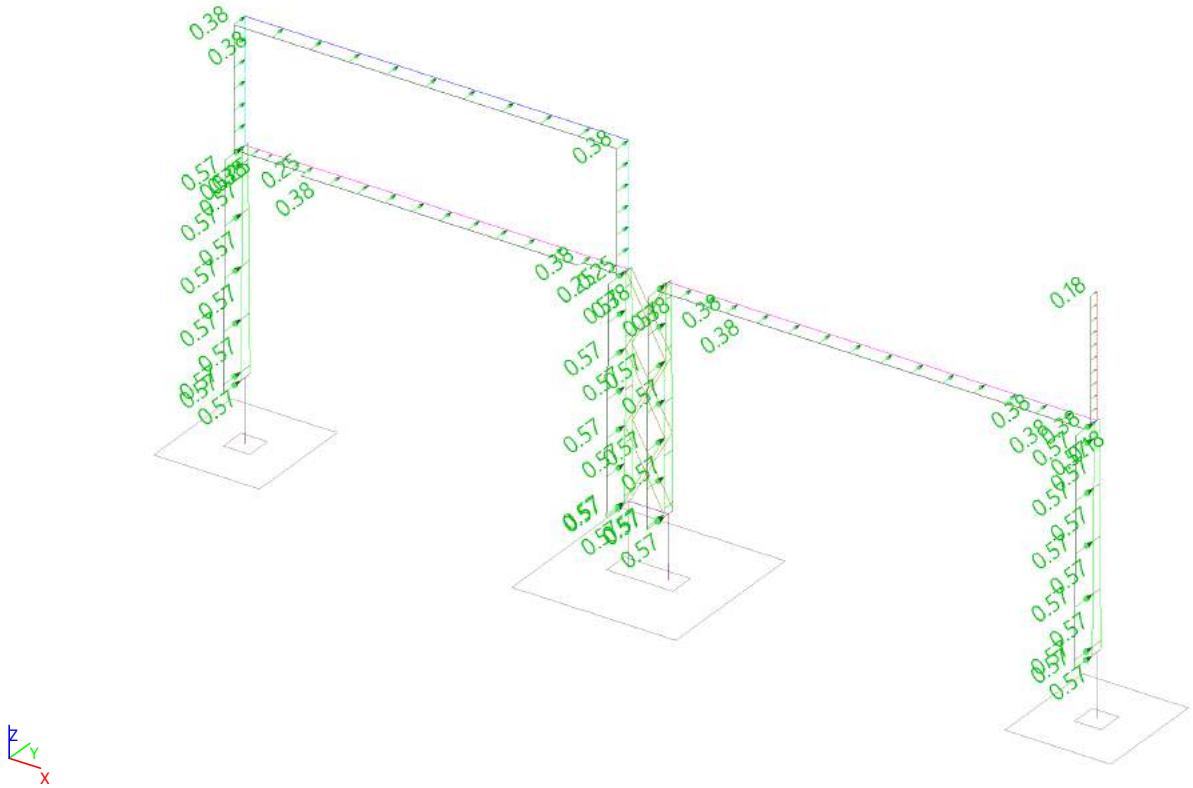
3.3. BG2: grond op poer



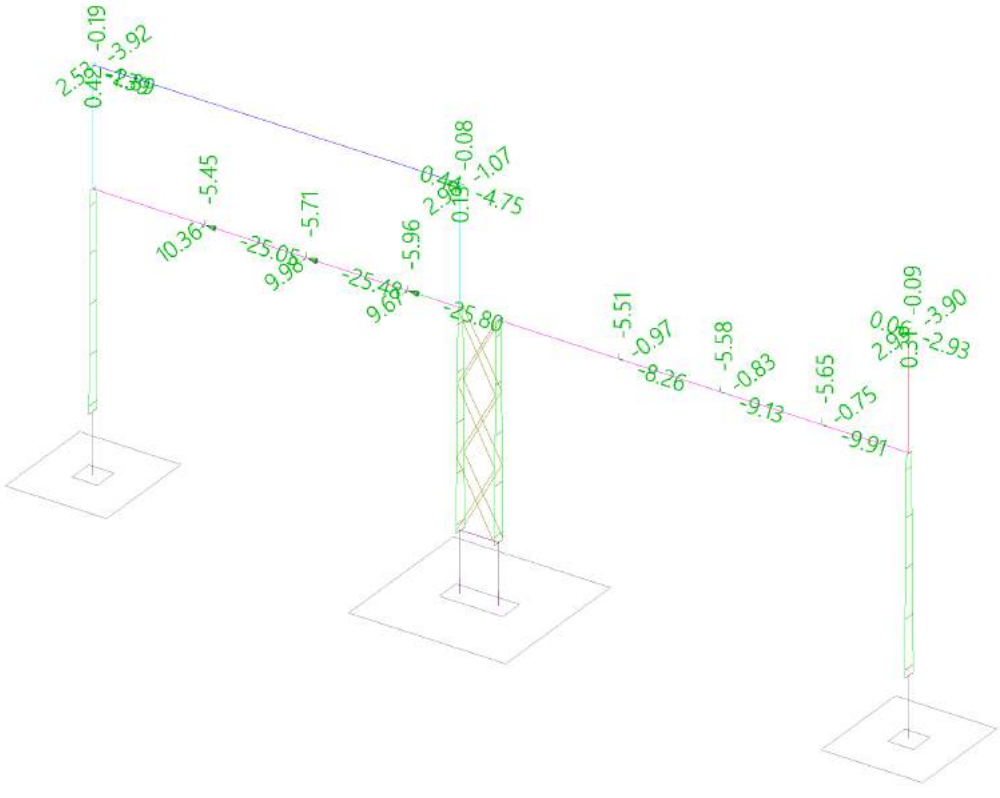
3.4. BG3: wind op constructie; X-richting



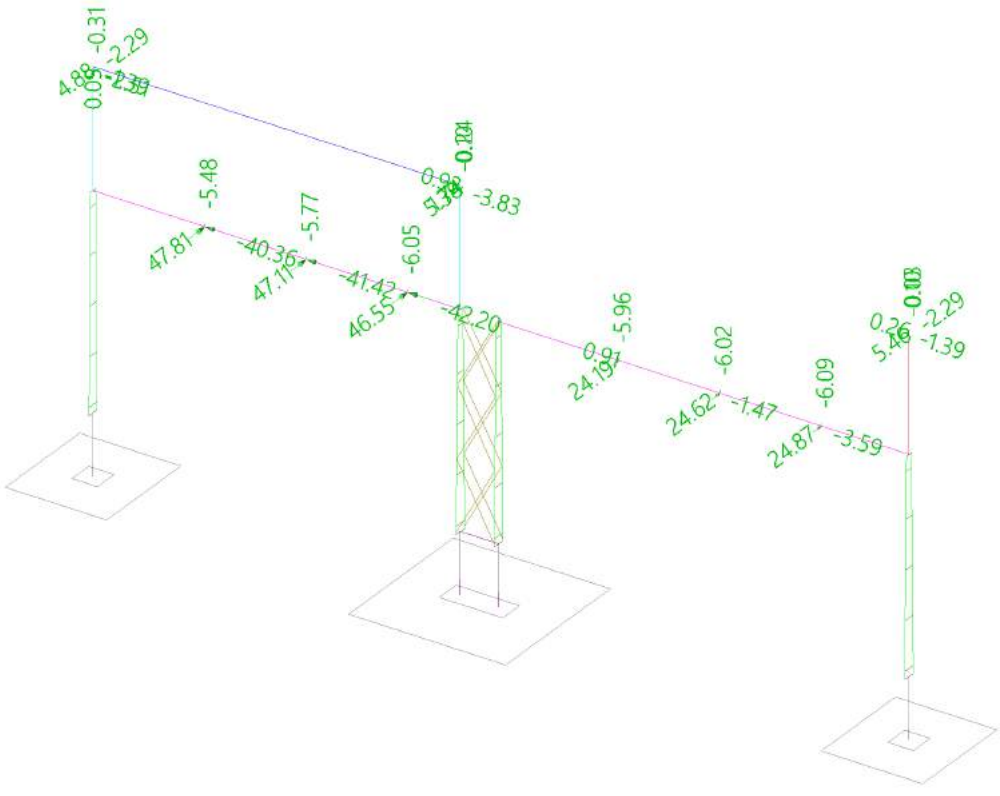
3.5. BG4: wind op constructie; Y-richting



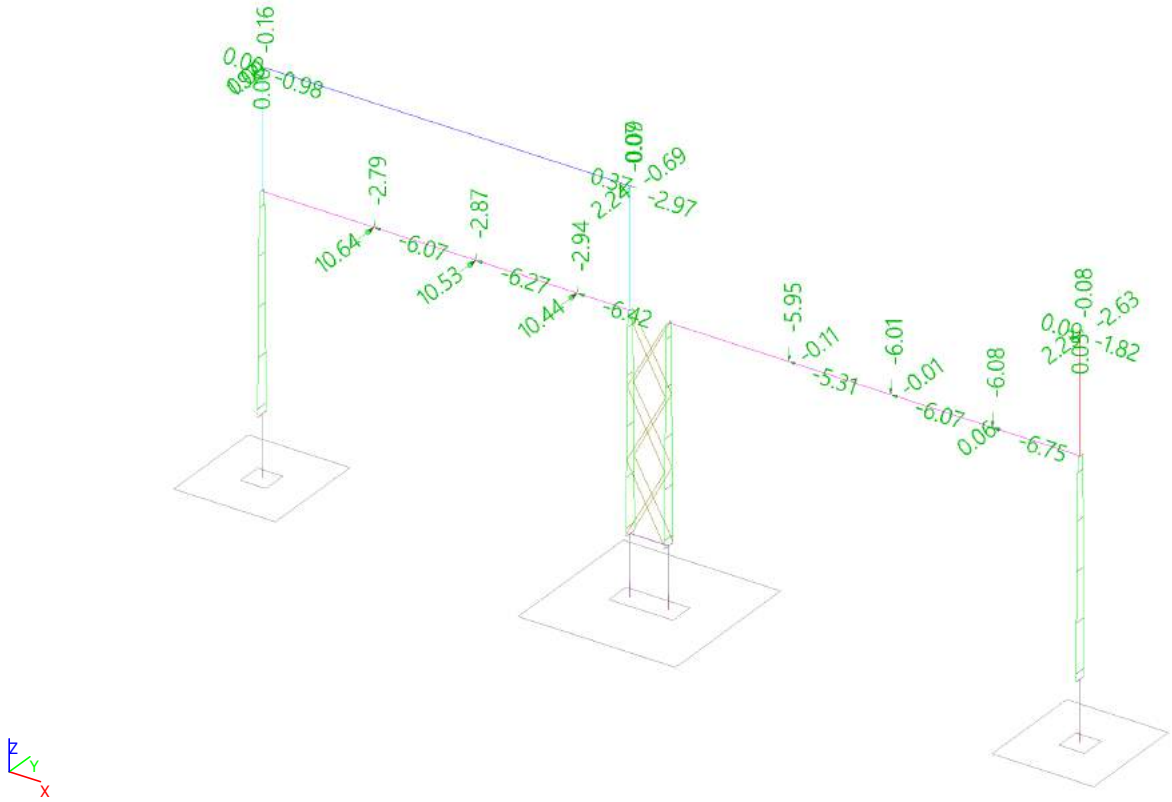
3.6. LC1001 / Totale waarde



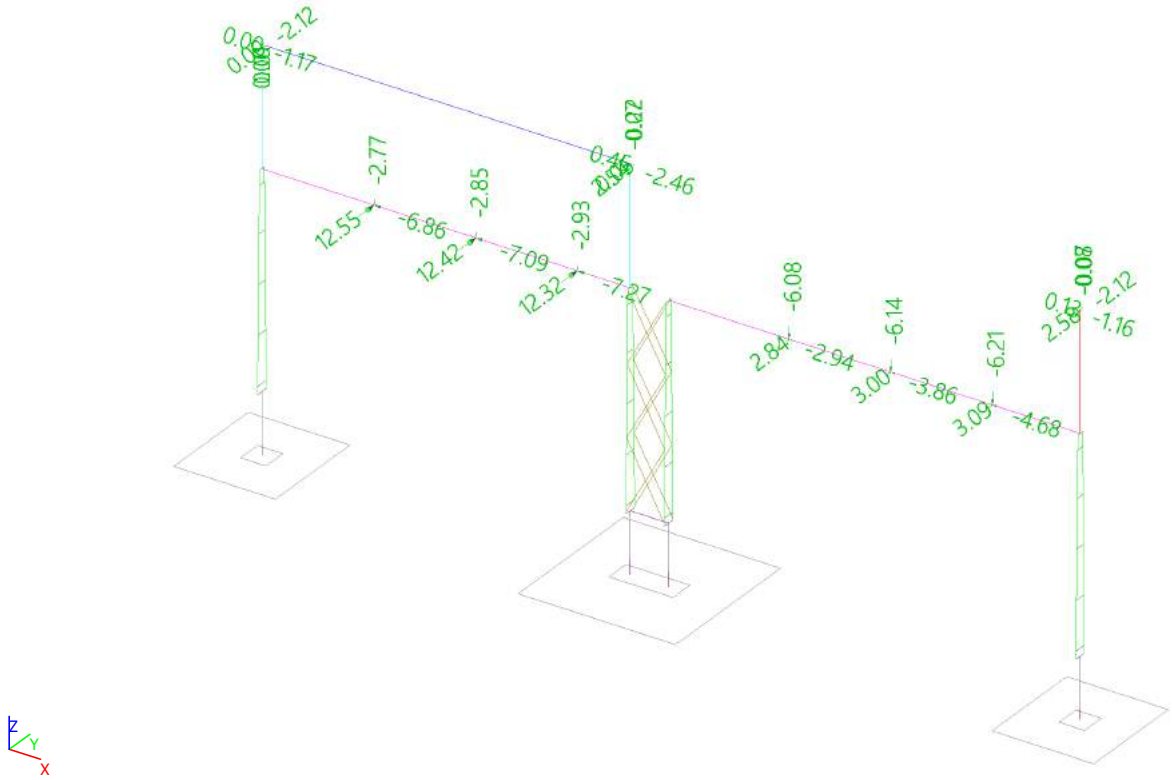
3.7. LC1080 / Totale waarde



3.8. LC1159 / Totale waarde



3.9. LC1238 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-1	Omhullend 1	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	1.40
			BG4 - wind op constructie; Y-richting	1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00
UGT-2	Omhullend 2	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	-1.40
			BG4 - wind op constructie; Y-richting	-1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00

3.11. Resultaatklasses

Naam	Omschrijving	Lijst
UGT	Sterkte en stabiliteit	UGT-1 - Omhullende - uiterst UGT-2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
Belastinggevallen	BG1
	BG3
	BG4
	BG2
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
	LC1168
	LC1169
	LC1170
	LC1171
	LC1172
	LC1173
	LC1174
	LC1175
	LC1176
	LC1177
	LC1178
	LC1179
	LC1180
	LC1181
	LC1182
	LC1183
	LC1184
	LC1185

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1186
	LC1187
	LC1188
	LC1189
	LC1190
	LC1191
	LC1192
	LC1193
	LC1194
	LC1195
	LC1196
	LC1197
	LC1198
	LC1199
	LC1200
	LC1201
	LC1202
	LC1203
	LC1204
	LC1205
	LC1206
	LC1207
	LC1208
	LC1209
	LC1210
	LC1211
	LC1212
	LC1213
	LC1214
	LC1215
	LC1216
	LC1217
	LC1218
	LC1219
	LC1220
	LC1221
	LC1222
	LC1223
	LC1224
	LC1225
	LC1226
	LC1227
	LC1228
	LC1229
	LC1230
	LC1231
	LC1232
	LC1233
	LC1234
	LC1235
	LC1236
	LC1237
	LC1238
Buigtheorie	Mindlin
Start berekening	17.06.2020 07:11
Einde berekening	17.06.2020 07:12

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	0.0	-1927.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	1927.3

	[kN]	X	Y	Z
BG BG3	last	19.9	0.0	0.0
	knoopreacties	0.0	-0.0	0.0
	lijnreactions	-1.1	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-18.8	0.0	0.0
BG BG4	last	0.0	40.1	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	-36.0	0.0
BG BG2	last	0.0	0.0	-1372.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	-0.0	1372.9
BG LC1001	last	-115.1	26.9	-33.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-2.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.8	-24.5	33.4
BG LC1002	last	-136.5	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.5	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	128.0	-203.1	36.1
BG LC1003	last	-145.5	89.5	-40.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	9.2	-8.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	136.3	-80.8	40.8
BG LC1004	last	-84.1	53.2	-37.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.3	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	78.9	-47.6	37.6
BG LC1005	last	-69.9	15.2	-33.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-1.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	65.5	-14.2	33.4
BG LC1006	last	-127.6	225.6	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-24.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.6	-201.1	36.1
BG LC1007	last	-121.0	81.7	-40.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.6	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	113.4	-74.0	40.8
BG LC1008	last	-75.2	50.9	-37.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-5.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	70.5	-45.6	37.6
BG LC1009	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1010	last	-133.4	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.0	-203.3	36.3
BG LC1011	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1012	last	-81.1	53.2	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.0	-47.6	37.9
BG LC1013	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1014	last	-133.4	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.0	-203.3	36.3
BG LC1015	last	-124.1	92.9	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.8	-9.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	116.3	-83.7	42.3
BG LC1016	last	-81.1	53.2	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.0	-47.6	37.9
BG LC1017	last	-98.6	20.1	-34.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-1.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.4	-18.4	34.7
BG LC1018	last	-134.6	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	126.2	-203.0	36.1
BG LC1019	last	-139.3	88.9	-41.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.8	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	-80.2	41.2
BG LC1020	last	-82.2	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	77.1	-47.3	37.7
BG LC1021	last	-98.6	20.1	-34.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-1.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.4	-18.4	34.7
BG LC1022	last	-134.6	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	126.2	-203.0	36.1
BG LC1023	last	-139.3	88.9	-41.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.8	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	-80.2	41.2
BG LC1024	last	-82.2	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	77.1	-47.3	37.7
BG LC1025	last	-74.3	32.0	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-3.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.7	-28.7	38.0
BG LC1026	last	-131.1	227.4	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-202.6	36.3
BG LC1027	last	-127.4	90.4	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-8.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.4	-81.5	42.3
BG LC1028	last	-78.8	52.3	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.9	-46.8	37.9
BG LC1029	last	-73.9	34.4	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.3	-30.9	38.0
BG LC1030	last	-131.0	227.9	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.8	-203.0	36.3
BG LC1031	last	-128.0	92.0	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.9	-82.9	42.3
BG LC1032	last	-78.7	52.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-47.2	37.9
BG LC1033	last	-99.6	27.9	-21.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-2.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	93.3	-25.3	21.9
BG LC1034	last	-118.6	250.1	-26.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.4	-27.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	111.2	-222.7	26.4
BG LC1035	last	-126.2	99.8	-30.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-9.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	118.3	-89.9	30.6
BG LC1036	last	-61.5	57.9	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.6	-51.6	27.8
BG LC1037	last	-54.3	16.2	-21.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-1.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.9	-15.0	21.9
BG LC1038	last	-109.7	247.8	-26.4

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-27.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	102.8	-220.7	26.4
BG LC1039	last	-101.8	92.0	-30.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-8.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	95.4	-83.1	30.6
BG LC1040	last	-52.6	55.6	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-6.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-49.6	27.8
BG LC1041	last	-69.1	50.9	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-45.4	28.0
BG LC1042	last	-115.0	251.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.8	-223.6	26.8
BG LC1043	last	-113.1	105.6	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-94.8	32.5
BG LC1044	last	-58.0	58.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.4	-52.1	28.2
BG LC1045	last	-69.1	50.9	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-45.4	28.0
BG LC1046	last	-115.0	251.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.8	-223.6	26.8
BG LC1047	last	-113.1	105.6	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-94.8	32.5
BG LC1048	last	-58.0	58.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.4	-52.1	28.2
BG LC1049	last	-79.1	15.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-1.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	74.1	-14.3	23.6
BG LC1050	last	-116.8	250.7	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.3	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	109.5	-223.2	26.5
BG LC1051	last	-119.3	99.0	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.5	-9.9	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	111.8	-89.1	31.1
BG LC1052	last	-59.2	57.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-51.0	27.9
BG LC1053	last	-79.1	15.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-1.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	74.1	-14.3	23.6
BG LC1054	last	-116.8	250.7	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.3	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	109.5	-223.2	26.5
BG LC1055	last	-119.3	99.0	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.5	-9.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	111.8	-89.1	31.1
BG LC1056	last	-59.2	57.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-51.0	27.9
BG LC1057	last	-51.7	35.2	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.5	-31.5	28.2
BG LC1058	last	-113.0	250.8	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-223.3	26.8
BG LC1059	last	-106.8	102.1	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.7	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	100.0	-91.8	32.5
BG LC1060	last	-55.6	57.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.1	-51.2	28.2
BG LC1061	last	-51.3	37.6	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.1	-33.6	28.2
BG LC1062	last	-112.9	251.3	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-27.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.8	-223.7	26.8
BG LC1063	last	-107.3	103.7	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.8	-10.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	100.6	-93.2	32.5
BG LC1064	last	-55.5	57.9	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.0	-51.6	28.2

	[kN]	X	Y	Z
BG LC1065	last	-60.7	33.4	-33.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.9	-29.9	33.7
BG LC1066	last	-61.7	35.1	-32.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.8	-31.3	32.9
BG LC1067	last	-61.7	35.1	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.8	-31.3	32.8
BG LC1068	last	-61.7	31.6	-32.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.9	-28.5	32.7
BG LC1069	last	-63.0	31.4	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.0	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	59.0	-28.1	32.8
BG LC1070	last	-62.7	31.4	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	58.8	-28.3	32.8
BG LC1071	last	-59.9	32.4	-28.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.1	-29.0	28.7
BG LC1072	last	-59.2	32.3	-28.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-28.9	28.7
BG LC1073	last	-58.6	32.2	-28.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.0	-28.9	28.6
BG LC1074	last	-51.9	33.5	-30.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.6	-30.0	30.9
BG LC1075	last	-51.9	33.4	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.7	-29.9	31.0
BG LC1076	last	-52.1	33.3	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.8	-29.8	31.1
BG LC1077	last	-80.4	30.8	-43.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.4	-27.7	43.1
BG LC1078	last	-57.5	34.0	-28.6
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.6	-3.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.9	-30.4	28.6
BG LC1079	last	-94.0	31.2	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.9	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	88.1	-28.1	36.2
BG LC1080	last	-136.0	228.0	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	127.5	-203.2	36.1
BG LC1081	last	-117.9	103.8	-37.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.4	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	110.5	-93.0	37.8
BG LC1082	last	-83.7	53.3	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	78.4	-47.7	37.7
BG LC1083	last	-67.3	24.2	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-2.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.1	-22.0	36.2
BG LC1084	last	-127.8	225.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-24.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.8	-201.3	36.1
BG LC1085	last	-100.7	98.7	-37.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-10.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.4	-88.5	37.8
BG LC1086	last	-75.5	51.2	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-5.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	70.7	-45.8	37.7
BG LC1087	last	-81.3	36.2	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.2	-32.5	38.0
BG LC1088	last	-133.2	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	124.9	-203.2	36.3
BG LC1089	last	-109.9	106.1	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-11.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	103.0	-94.9	38.8
BG LC1090	last	-80.8	53.0	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.7	-47.4	37.9
BG LC1091	last	-81.3	36.2	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-3.7	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	76.2	-32.5	38.0
BG LC1092	last	-133.2	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	124.9	-203.2	36.3
BG LC1093	last	-109.9	106.1	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-11.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	103.0	-94.9	38.8
BG LC1094	last	-80.8	53.0	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.7	-47.4	37.9
BG LC1095	last	-86.0	28.5	-36.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.4	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	80.6	-25.8	36.8
BG LC1096	last	-134.3	227.9	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.9	-203.1	36.2
BG LC1097	last	-113.6	103.4	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	106.4	-92.6	38.1
BG LC1098	last	-81.9	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.8	-47.3	37.7
BG LC1099	last	-86.0	28.5	-36.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.4	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	80.6	-25.8	36.8
BG LC1100	last	-134.3	227.9	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.9	-203.1	36.2
BG LC1101	last	-113.6	103.4	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	106.4	-92.6	38.1
BG LC1102	last	-81.9	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.8	-47.3	37.7
BG LC1103	last	-73.4	31.7	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	68.8	-28.5	38.1
BG LC1104	last	-131.1	227.4	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-202.6	36.3
BG LC1105	last	-105.8	104.3	-38.8

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-11.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	99.2	-93.3	38.8
BG LC1106	last	-78.8	52.3	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-46.8	37.9
BG LC1107	last	-73.2	33.2	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	68.6	-29.8	38.1
BG LC1108	last	-131.0	227.9	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.8	-203.0	36.3
BG LC1109	last	-106.0	105.4	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.7	-11.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	99.3	-94.3	38.8
BG LC1110	last	-78.7	52.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-47.2	37.9
BG LC1111	last	-71.7	33.9	-18.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	67.1	-30.2	18.5
BG LC1112	last	-130.5	156.6	-12.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.2	-139.7	12.5
BG LC1113	last	-100.4	79.8	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-71.2	19.3
BG LC1114	last	-68.9	46.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.5	-41.2	19.3
BG LC1115	last	-57.5	30.9	-18.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.8	-27.5	18.5
BG LC1116	last	-126.1	155.7	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	118.1	-138.9	18.0
BG LC1117	last	-91.0	77.4	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.8	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	85.2	-69.1	19.3
BG LC1118	last	-64.5	45.3	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.9	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	60.4	-40.4	19.3
BG LC1119	last	-64.9	37.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	60.7	-32.9	19.5
BG LC1120	last	-129.0	156.7	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	120.9	-139.7	18.1
BG LC1121	last	-96.0	81.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-8.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	-72.3	19.9
BG LC1122	last	-67.4	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-41.0	19.4
BG LC1123	last	-64.9	37.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	60.7	-32.9	19.5
BG LC1124	last	-129.0	156.7	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	120.9	-139.7	18.1
BG LC1125	last	-96.0	81.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-8.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	-72.3	19.9
BG LC1126	last	-67.4	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-41.0	19.4
BG LC1127	last	-66.0	31.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-27.9	18.8
BG LC1128	last	-129.4	156.5	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.2	-139.5	18.0
BG LC1129	last	-97.4	79.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	91.2	-70.6	19.5
BG LC1130	last	-67.8	45.9	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.4	-40.9	19.3
BG LC1131	last	-66.0	31.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-27.9	18.8

	[kN]	X	Y	Z
BG LC1132	last	-129.4	156.5	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.2	-139.5	18.0
BG LC1133	last	-97.4	79.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	91.2	-70.6	19.5
BG LC1134	last	-67.8	45.9	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.4	-40.9	19.3
BG LC1135	last	-59.8	33.3	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.9	-29.7	19.5
BG LC1136	last	-127.8	156.2	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.7	-139.3	18.1
BG LC1137	last	-93.5	79.9	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.5	-71.3	19.9
BG LC1138	last	-66.2	45.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-40.7	19.4
BG LC1139	last	-59.3	34.3	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-30.6	19.5
BG LC1140	last	-127.7	156.5	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.6	-139.6	18.1
BG LC1141	last	-93.4	80.7	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-8.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.4	-72.0	19.9
BG LC1142	last	-66.1	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-40.9	19.4
BG LC1143	last	-47.1	36.9	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	44.2	-32.9	26.7
BG LC1144	last	-61.9	177.5	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	58.1	-157.5	26.8
BG LC1145	last	-57.0	91.8	-27.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.5	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.4	-81.6	27.9
BG LC1146	last	-40.0	52.0	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.5	-46.3	27.5
BG LC1147	last	-30.3	33.2	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	1.9	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	28.5	-29.7	26.7
BG LC1148	last	-56.8	176.4	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-19.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.3	-156.6	26.8
BG LC1149	last	-46.2	89.0	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-9.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	43.4	-79.2	27.9
BG LC1150	last	-34.8	50.9	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.7	-45.3	27.5
BG LC1151	last	-40.1	39.0	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-34.7	27.7
BG LC1152	last	-60.3	177.6	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.6	-157.6	26.9
BG LC1153	last	-52.4	93.0	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.1	-82.7	28.4
BG LC1154	last	-38.4	51.8	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-46.0	27.6
BG LC1155	last	-40.1	39.0	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-34.7	27.7
BG LC1156	last	-60.3	177.6	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.6	-157.6	26.9
BG LC1157	last	-52.4	93.0	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.1	-82.7	28.4
BG LC1158	last	-38.4	51.8	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	36.0	-46.0	27.6
BG LC1159	last	-42.2	34.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	39.6	-30.9	27.0
BG LC1160	last	-60.8	177.4	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-157.5	26.9
BG LC1161	last	-54.2	91.2	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.8	-81.1	28.0
BG LC1162	last	-38.9	51.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.5	-46.0	27.5
BG LC1163	last	-42.2	34.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	39.6	-30.9	27.0
BG LC1164	last	-60.8	177.4	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-157.5	26.9
BG LC1165	last	-54.2	91.2	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.8	-81.1	28.0
BG LC1166	last	-38.9	51.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.5	-46.0	27.5
BG LC1167	last	-35.1	36.2	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.9	-32.3	27.7
BG LC1168	last	-58.9	177.2	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.3	-157.3	26.9
BG LC1169	last	-49.7	91.7	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.6	-81.6	28.4
BG LC1170	last	-37.1	51.4	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.8	-45.7	27.6
BG LC1171	last	-34.6	36.9	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.5	-32.9	27.7
BG LC1172	last	-58.8	177.4	-26.9

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.2	-157.5	26.9
BG LC1173	last	-49.6	92.3	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-10.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.5	-82.0	28.4
BG LC1174	last	-36.9	51.6	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.7	-45.9	27.6
BG LC1175	last	-73.8	28.5	-18.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-2.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.0	-26.0	18.3
BG LC1176	last	-132.2	148.9	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	123.8	-133.7	17.9
BG LC1177	last	-103.6	71.0	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	96.9	-64.4	19.2
BG LC1178	last	-70.4	41.4	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.5	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	65.8	-37.4	19.2
BG LC1179	last	-58.9	25.1	-18.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-2.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.1	-23.0	18.3
BG LC1180	last	-127.6	147.8	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-15.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.5	-132.7	17.9
BG LC1181	last	-93.3	68.2	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.4	-62.0	19.2
BG LC1182	last	-65.8	40.4	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.6	-36.5	19.2
BG LC1183	last	-66.2	32.6	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-29.5	19.5
BG LC1184	last	-130.5	149.0	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-133.8	18.1
BG LC1185	last	-98.4	73.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-7.0	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	92.1	-66.1	19.9
BG LC1186	last	-68.6	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.2	-37.3	19.4
BG LC1187	last	-66.2	32.6	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-29.5	19.5
BG LC1188	last	-130.5	149.0	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-133.8	18.1
BG LC1189	last	-98.4	73.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.1	-66.1	19.9
BG LC1190	last	-68.6	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.2	-37.3	19.4
BG LC1191	last	-68.0	26.4	-18.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.6	-24.1	18.7
BG LC1192	last	-131.0	148.8	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.7	-133.5	18.0
BG LC1193	last	-100.4	70.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-64.1	19.4
BG LC1194	last	-69.2	41.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-37.2	19.3
BG LC1195	last	-68.0	26.4	-18.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.6	-24.1	18.7
BG LC1196	last	-131.0	148.8	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.7	-133.5	18.0
BG LC1197	last	-100.4	70.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-64.1	19.4
BG LC1198	last	-69.2	41.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-37.2	19.3

	[kN]	X	Y	Z
BG LC1199	last	-61.0	29.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.1	-26.4	19.5
BG LC1200	last	-129.3	148.5	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.1	-133.3	18.1
BG LC1201	last	-95.7	72.0	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.6	-65.1	19.9
BG LC1202	last	-67.5	40.9	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.1	-37.0	19.4
BG LC1203	last	-60.7	30.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.7	-27.3	19.5
BG LC1204	last	-129.2	148.8	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.0	-133.6	18.1
BG LC1205	last	-95.8	72.8	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.6	-65.8	19.9
BG LC1206	last	-67.4	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-37.3	19.4
BG LC1207	last	-47.9	31.8	-26.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.0	-2.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	45.0	-29.0	26.3
BG LC1208	last	-60.8	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-152.0	26.5
BG LC1209	last	-57.9	83.6	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.3	-75.2	27.4
BG LC1210	last	-40.1	47.5	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.6	-42.8	27.3
BG LC1211	last	-30.6	27.8	-26.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	1.9	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	28.7	-25.4	26.3
BG LC1212	last	-55.5	169.1	-26.5
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.4	-18.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.0	-150.9	26.5
BG LC1213	last	-46.5	80.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	43.6	-72.4	27.4
BG LC1214	last	-34.8	46.3	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-4.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.6	-41.7	27.3
BG LC1215	last	-40.2	34.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-31.4	27.5
BG LC1216	last	-59.0	170.5	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.4	-152.1	26.6
BG LC1217	last	-52.6	85.4	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-76.7	28.1
BG LC1218	last	-38.3	47.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-42.6	27.4
BG LC1219	last	-40.2	34.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-31.4	27.5
BG LC1220	last	-59.0	170.5	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.4	-152.1	26.6
BG LC1221	last	-52.6	85.4	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-76.7	28.1
BG LC1222	last	-38.3	47.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-42.6	27.4
BG LC1223	last	-43.0	30.1	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.7	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	40.4	-27.3	26.7
BG LC1224	last	-59.7	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.0	-151.9	26.5
BG LC1225	last	-55.1	83.3	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-8.3	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	51.7	-75.0	27.6
BG LC1226	last	-39.0	47.2	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.6	-42.5	27.3
BG LC1227	last	-43.0	30.1	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.7	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	40.4	-27.3	26.7
BG LC1228	last	-59.7	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.0	-151.9	26.5
BG LC1229	last	-55.1	83.3	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	51.7	-75.0	27.6
BG LC1230	last	-39.0	47.2	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.6	-42.5	27.3
BG LC1231	last	-35.2	32.1	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.2	-3.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	33.0	-29.1	27.5
BG LC1232	last	-57.7	170.1	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.1	-151.7	26.6
BG LC1233	last	-49.8	84.2	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	-75.7	28.1
BG LC1234	last	-37.0	46.9	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.7	-42.2	27.4
BG LC1235	last	-34.8	32.9	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.7	-29.7	27.5
BG LC1236	last	-57.5	170.3	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.0	-151.9	26.6
BG LC1237	last	-49.9	84.8	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	-76.2	28.1
BG LC1238	last	-36.9	47.1	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.6	-42.4	27.4

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC1	K6	S246	**-1.40**	-0.02	**49.62**	1.04	**-1.81**	**0.05**
UGT-2/2	FC1	K6	S246	**7.35**	-60.60	61.10	518.61	19.71	-1.28
UGT-1/3	FC1	K6	S246	4.05	**-81.35**	57.90	**691.56**	14.08	-1.25
UGT-2/4	FC1	K6	S246	1.17	**16.26**	50.33	**-130.78**	0.91	-0.01
UGT-2/5	FC1	K6	S246	6.74	-25.98	**64.09**	202.16	**20.87**	-0.77
UGT-2/6	FC1	K6	S246	6.67	-64.88	58.66	557.72	17.23	**-1.32**

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC2	K8	S244	**24.30**	-0.13	**-41.80**	0.28	**-10.17**	-0.13
UGT-2/5	FC2	K8	S244	**120.41**	-49.86	**939.14**	321.00	**208.18**	10.49
UGT-1/7	FC2	K8	S244	98.77	**-122.90**	747.94	715.11	165.28	23.29
UGT-2/4	FC2	K8	S244	36.07	**17.54**	54.97	**-121.62**	11.55	**-2.60**
UGT-1/3	FC2	K8	S244	90.57	-121.15	653.25	**871.41**	144.19	20.62
UGT-1/8	FC2	K8	S244	98.77	-122.74	745.59	716.52	164.77	**23.31**

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	**-44.93**	0.16	**141.63**	0.33	**-30.99**	0.20
UGT-2/5	FC3	K438	S250	**48.88**	-4.86	**-821.83**	149.53	**184.70**	-0.80
UGT-1/9	FC3	K438	S250	22.77	**-43.27**	-552.54	505.37	124.32	-3.88
UGT-2/10	FC3	K438	S250	27.87	**24.87**	-638.09	119.67	142.86	6.28
UGT-2/4	FC3	K438	S250	-33.86	10.20	44.43	**-77.18**	-9.10	1.02
UGT-1/3	FC3	K438	S250	21.74	-43.23	-541.52	**505.57**	121.86	-3.84
UGT-1/11	FC3	K438	S250	-1.81	-42.07	-278.25	397.15	63.14	**-4.61**
UGT-2/12	FC3	K438	S250	27.22	24.84	-630.94	119.38	141.26	**6.29**

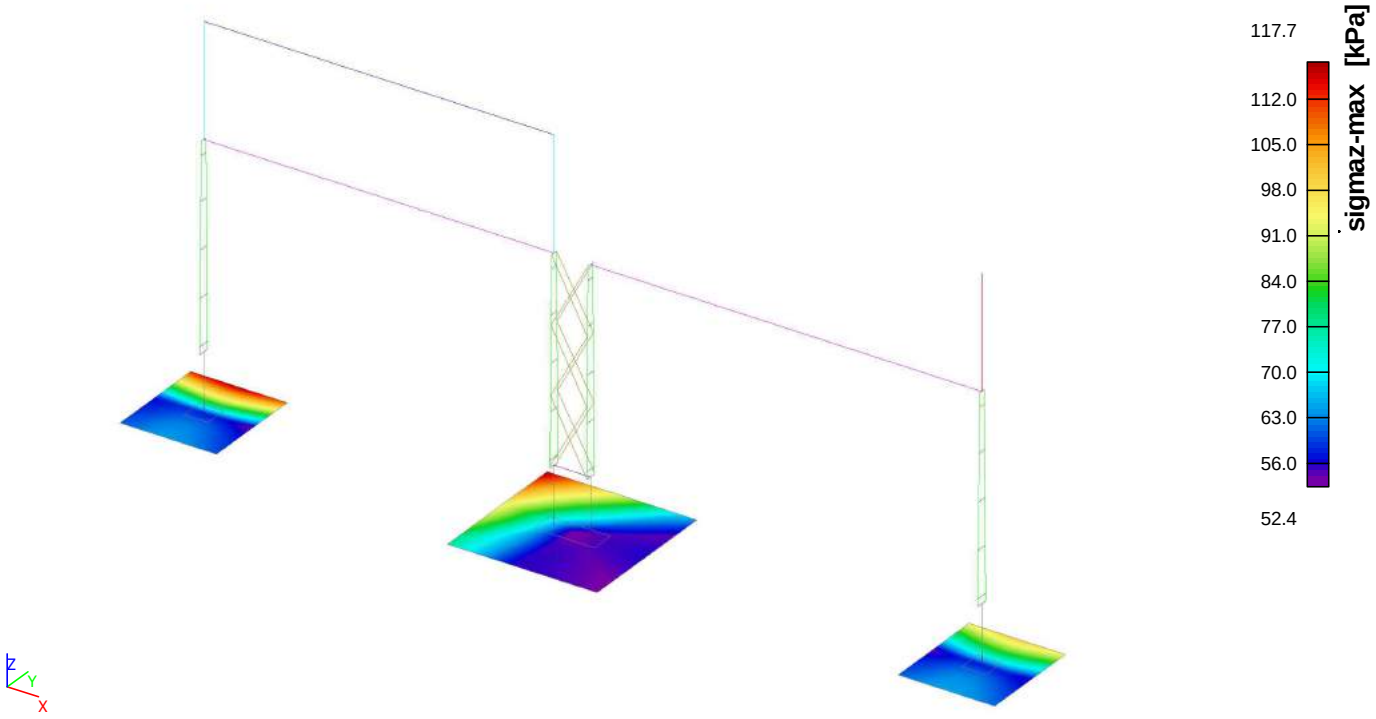
5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/13	FC4	K513	S322	**-8.17**	-15.03	52.51	124.66	0.57	0.18
UGT-2/14	FC4	K513	S322	**1.47**	-5.36	41.80	69.83	13.41	0.04
UGT-1/9	FC4	K513	S322	-3.42	**-61.67**	49.57	**507.96**	7.95	**0.53**
UGT-2/15	FC4	K513	S322	-4.67	**18.22**	50.98	-134.97	4.95	**-0.05**
UGT-2/16	FC4	K513	S322	-0.22	4.44	**41.45**	-57.62	10.93	0.08
UGT-1/17	FC4	K513	S322	-7.32	0.62	**53.88**	-5.69	3.28	0.01
UGT-2/18	FC4	K513	S322	-2.42	17.01	41.88	**-139.75**	7.76	0.04
UGT-1/1	FC4	K513	S322	-5.81	-0.01	43.02	0.09	**-3.82**	0.00
UGT-2/5	FC4	K513	S322	-2.69	-8.80	51.83	61.09	**14.38**	0.17

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren; UGT



7. Staafkrachten

7.1. Staafkrachten kolom INP45; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S276	Kolom INP45 - INP450	80	UGT-1/19	**-1707.72**	1.46	-22.51	1.73	-3.59	11.15
S266	Kolom INP45 - INP450	0	UGT-1/19	**1233.17**	3.98	-61.83	-1.09	-0.86	10.49
S266	Kolom INP45 - INP450	80	UGT-2/20	508.28	**-18.55**	-44.90	-1.17	-4.88	-5.67
S265	Kolom INP45 - INP450	80	UGT-1/19	1027.65	**73.74**	-36.60	0.35	-2.42	36.61
S266	Kolom INP45 - INP450	80	UGT-2/21	758.59	-15.97	**-78.10**	-1.63	-6.52	-3.85
S264	Kolom INP45 - INP450	2360	UGT-1/3	341.35	16.16	**23.76**	-0.95	58.08	-18.95
S266	Kolom INP45 - INP450	0	UGT-2/21	758.69	-15.98	-78.08	**-1.63**	-0.27	-2.58
S276	Kolom INP45 - INP450	0	UGT-2/5	-935.75	-15.93	-35.25	**3.69**	-1.24	-4.46
S261	Kolom INP45 - INP450	0	UGT-1/19	642.50	38.67	21.92	0.47	**-59.16**	-18.43
S262	Kolom INP45 - INP450	0	UGT-1/3	670.85	16.49	-22.12	0.06	**67.49**	-5.22
S282	Kolom INP45 - INP450	565	UGT-1/3	-506.69	51.15	9.27	0.90	-10.96	**-45.58**
S283	Kolom INP45 - INP450	1499	UGT-1/3	-938.23	48.70	-1.58	0.57	8.98	**48.27**

7.2. Staafkrachten kolom DIE36; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S329, S330
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S329	Kolom DIE36 - HEA360	0	UGT-2/5	**-17.26**	**-20.51**	-3.32	0.17	15.67	**50.28**
S330	Kolom DIE36 - HEA360	4651	UGT-2/5	**-6.38**	0.65	-2.65	-0.19	0.02	-0.02
S330	Kolom DIE36 - HEA360	0	UGT-1/22	-16.30	**11.31**	1.98	-0.07	-9.08	-27.43
S329	Kolom DIE36 - HEA360	4600	UGT-2/23	-10.17	-13.37	**-12.87**	0.19	0.63	-31.80
S330	Kolom DIE36 - HEA360	0	UGT-1/9	-13.63	6.05	**14.05**	-0.34	**-59.30**	-16.21
S330	Kolom DIE36 - HEA360	0	UGT-2/24	-13.64	6.12	1.37	**-0.41**	-11.83	-16.51
S329	Kolom DIE36 - HEA360	0	UGT-2/24	-15.55	-11.50	-2.93	**0.39**	8.09	27.47
S329	Kolom DIE36 - HEA360	0	UGT-2/25	-14.98	-11.19	-11.21	0.14	**46.35**	27.32
S329	Kolom DIE36 - HEA360	4651	UGT-2/5	-10.91	-15.05	-8.16	0.17	-0.02	**-38.30**

7.3. Staafkrachten ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S33, S40, S404, S406
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S40	Ligger DIE34 - HE340A	0	UGT-2/26	**-39.47**	24.54	-1.20	-0.02	-0.41	-53.35
S404	Ligger DIE34 - HE340A	0	UGT-2/2	**137.35**	-19.05	-83.41	0.01	94.87	-1.04
S406	Ligger DIE34 - HE340A	1875	UGT-1/17	-1.09	**-26.87**	0.54	-0.01	-0.01	-44.27
S40	Ligger DIE34 - HE340A	0	UGT-2/5	-36.17	**26.21**	10.01	-0.02	-4.42	-57.97
S404	Ligger DIE34 - HE340A	1440	UGT-1/3	119.13	-18.60	**-92.43**	0.01	**-28.71**	-29.76
S33	Ligger DIE34 - HE340A	0	UGT-1/3	7.42	18.21	**64.95**	0.01	-1.60	-47.18
S40	Ligger DIE34 - HE340A	0	UGT-2/27	-2.65	16.41	-4.32	**-0.06**	0.09	-34.38
S33	Ligger DIE34 - HE340A	0	UGT-2/28	7.77	15.89	33.04	**0.04**	-0.98	-38.95
S33	Ligger DIE34 - HE340A	2560	UGT-1/3	7.42	15.18	64.06	0.01	**163.53**	-4.44
S33	Ligger DIE34 - HE340A	0	UGT-2/5	18.67	22.67	29.30	0.02	-0.74	**-65.21**
S406	Ligger DIE34 - HE340A	0	UGT-2/5	-15.40	-22.35	-11.40	-0.02	21.20	**17.19**

7.4. Staafkrachten ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S403
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/1	**1.08**	8.40	0.02	0.00	-0.09	3.16
S403	Ligger DIE34+strippen - I + 2 PLud	9858	UGT-2/2	**137.35**	-17.85	-83.41	0.01	148.42	10.81
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/17	63.15	**-23.00**	-17.77	0.00	20.09	-11.35
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/5	18.67	**19.64**	29.30	0.02	74.28	-11.05
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/3	119.13	-16.90	**-91.92**	0.01	104.02	-4.20
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/3	7.42	15.18	**64.06**	0.01	163.53	-4.44
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/31	7.97	12.73	16.10	**-0.01**	41.98	-0.39
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/28	7.77	12.86	33.94	**0.04**	84.76	-2.15
S403	Ligger DIE34+strippen - I + 2 PLud	4258	UGT-2/4	6.31	0.86	-0.11	0.01	**-12.54**	21.98
S403	Ligger DIE34+strippen - I + 2 PLud	5858	UGT-1/3	43.71	0.30	10.21	0.01	**326.71**	36.68
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/22	49.37	-20.02	-16.44	0.00	18.64	**-12.13**
S403	Ligger DIE34+strippen - I + 2 PLud	5858	UGT-2/5	52.47	2.46	5.07	0.02	149.00	**46.98**

7.5. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S405
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/26	**-39.47**	21.44	-1.20	-0.02	-3.56	7.00
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/50	**7.34**	18.91	39.56	0.02	89.08	9.71
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/17	-1.09	**-24.65**	0.54	-0.01	-1.02	4.03
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/5	-36.17	**23.10**	10.01	-0.02	21.85	6.75
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/9	-3.95	-20.39	**-48.88**	0.02	92.06	6.29
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/9	-0.12	19.27	**43.22**	0.02	99.22	8.84
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/27	-2.65	13.30	-2.92	**-0.06**	-9.41	4.62
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/52	-9.06	21.04	37.39	**0.03**	87.21	11.13
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-2/15	-11.77	1.52	-0.79	-0.02	**-39.20**	72.34
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-1/9	-3.67	1.15	11.70	0.02	**240.76**	67.09
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/1	1.58	-13.94	-0.01	0.00	0.02	**-1.73**
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-2/5	-30.75	3.11	3.10	-0.02	55.48	**80.97**

7.6. Staafkrachten ligger DIN28; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S331
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S331	Ligger DIN28 - HEB280	0	UGT-2/29	**-9.76**	9.22	-3.86	0.01	0.10	-24.95
S331	Ligger DIN28 - HEB280	14500	UGT-1/30	**-7.46**	-8.43	-3.86	0.00	-0.03	-18.47
S331	Ligger DIN28 - HEB280	14500	UGT-1/1	-7.46	**-8.72**	0.00	0.00	0.00	-20.58
S331	Ligger DIN28 - HEB280	0	UGT-2/5	-9.61	**11.08**	0.00	0.02	0.17	**-38.30**
S331	Ligger DIN28 - HEB280	14500	UGT-1/31	-8.90	-7.96	**-3.86**	-0.01	0.04	-15.34
S331	Ligger DIN28 - HEB280	14500	UGT-2/32	-9.02	-7.82	**3.86**	0.04	0.28	-14.28
S331	Ligger DIN28 - HEB280	0	UGT-1/31	-8.90	8.91	3.86	**-0.01**	0.07	-22.22
S331	Ligger DIN28 - HEB280	0	UGT-2/32	-9.02	9.05	-3.85	**0.04**	0.22	-23.23
S331	Ligger DIN28 - HEB280	7250	UGT-2/4	-7.48	0.02	0.00	0.00	**-13.95**	12.08
S331	Ligger DIN28 - HEB280	7250	UGT-1/3	-8.22	0.95	0.00	0.01	**14.33**	11.70
S331	Ligger DIN28 - HEB280	9425	UGT-2/5	-9.61	0.11	0.00	0.02	0.18	**14.44**

7.7. Staafkrachten koppelplaat; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S392	Plaat 2x14x200 - Rechthoek	0	UGT-2/5	**-19.90**	0.69	-3.70	-0.08	0.25	0.09
S402	Plaat 2x14x200 - Rechthoek	0	UGT-2/21	**40.07**	-1.59	-80.70	-0.10	14.45	0.65
S396	Plaat 2x14x200 - Rechthoek	0	UGT-1/33	-2.05	**-6.07**	-365.68	-0.42	42.03	0.82
S390	Plaat 2x14x200 - Rechthoek	0	UGT-2/5	-0.12	**4.38**	-27.58	-0.08	3.88	-0.72
S396	Plaat 2x14x200 - Rechthoek	187	UGT-1/3	-2.00	-6.06	**-366.65**	-0.42	-26.29	-0.31
S364	Plaat 2x14x200 - Rechthoek	0	UGT-2/15	0.71	0.01	**53.43**	0.01	-4.97	0.00
S394	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	5.95	-0.46	-263.68	**-0.70**	22.96	-0.08
S384	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.67	1.51	-134.59	**0.76**	9.54	-0.07
S400	Plaat 2x14x200 - Rechthoek	277	UGT-1/3	1.18	-5.07	-271.87	0.04	**-32.58**	-0.19
S398	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.35	-5.24	-324.51	-0.07	**43.09**	1.04
S390	Plaat 2x14x200 - Rechthoek	0	UGT-2/21	-0.23	3.91	0.69	-0.20	0.00	**-1.09**
S400	Plaat 2x14x200 - Rechthoek	0	UGT-2/21	1.55	-5.39	-221.41	-0.10	34.84	**1.59**

7.8. Staafkrachten diagonaal; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S268	Diagonaal UPE14 - UPE140	0	UGT-2/21	**-180.49**	0.00	0.00	0.00	0.00	0.00
S271	Diagonaal UPE14 - UPE140	3142	UGT-1/8	**257.94**	0.00	0.00	0.00	0.00	0.00
S235	Diagonaal UPE14 - UPE140	0	UGT-1/34	-2.62	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.9. Staafkrachten bliksempiek; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S332
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S332	Bliksempiek-1 - Koker fl	0	UGT-1/35	**-3.77**	-3.18	0.10	0.00	-0.47	11.94
S332	Bliksempiek-1 - Koker fl	4651	UGT-1/36	**0.42**	3.61	-2.77	0.00	0.00	0.00
S332	Bliksempiek-1 - Koker fl	0	UGT-1/8	-2.81	**-6.63**	0.26	0.00	-1.21	**27.82**
S332	Bliksempiek-1 - Koker fl	4600	UGT-2/23	-0.14	**9.06**	-3.81	0.00	0.19	-0.46
S332	Bliksempiek-1 - Koker fl	0	UGT-2/5	-3.11	2.60	**-7.80**	0.00	**30.53**	-12.38
S332	Bliksempiek-1 - Koker fl	0	UGT-1/37	-2.81	-5.46	**2.77**	0.00	**-7.12**	25.09
S332	Bliksempiek-1 - Koker fl	0	UGT-1/9	-2.81	-5.13	-0.53	**0.00**	2.48	20.86
S332	Bliksempiek-1 - Koker fl	0	UGT-2/18	-2.70	6.09	-2.07	0.00	9.62	**-25.58**

7.10. Staafkrachten betonopstort links; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer boven-IA - Rechthoek	1600	UGT-2/5	**-286.86**	22.23	-6.12	-0.77	-31.29	241.50
S246	Poer boven-IA - Rechthoek	0	UGT-1/1	**-49.62**	0.02	**1.40**	**0.05**	1.81	1.04
S246	Poer boven-IA - Rechthoek	0	UGT-2/4	-50.33	**-16.26**	-1.17	-0.01	-0.91	-130.78
S246	Poer boven-IA - Rechthoek	0	UGT-1/3	-57.90	**81.35**	-4.05	-1.25	-14.08	691.56
S246	Poer boven-IA - Rechthoek	0	UGT-2/2	-61.10	60.60	**-7.35**	-1.28	-19.71	518.61
S246	Poer boven-IA - Rechthoek	0	UGT-2/6	-58.66	64.88	-6.67	**-1.32**	-17.23	557.72
S246	Poer boven-IA - Rechthoek	2000	UGT-2/2	-283.87	51.20	-6.71	-1.28	**-33.78**	630.46
S246	Poer boven-IA - Rechthoek	2000	UGT-1/1	-272.39	0.00	1.31	0.05	**4.52**	1.06
S246	Poer boven-IA - Rechthoek	2000	UGT-2/4	-273.10	-13.86	-1.10	-0.01	-3.18	**-160.91**
S246	Poer boven-IA - Rechthoek	2000	UGT-1/3	-280.67	68.79	-3.65	-1.25	-21.78	**841.75**

7.11. Staafkrachten betonopstort midden-links; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/5	**-1072.31**	48.08	-115.75	-4.32	-79.32	391.92
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**41.80**	0.13	**-24.30**	-0.13	**10.17**	0.28
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-54.97	**-17.54**	-36.07	-2.60	-11.55	-121.62
S244	Poer onder-IV - Rechthoek	0	UGT-1/7	-747.94	**122.90**	-98.77	23.29	-165.28	715.11
S244	Poer onder-IV - Rechthoek	0	UGT-2/5	-939.14	49.86	**-120.41**	10.49	-208.18	321.00
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	-786.42	115.96	-87.45	**-15.27**	-58.88	1043.32
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	-745.59	122.74	-98.77	**23.31**	-164.77	716.52
S244	Poer onder-IV - Rechthoek	360	UGT-2/5	-956.73	49.86	-120.41	10.49	**-251.53**	338.94
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-188.15	-16.76	-36.06	2.59	-41.75	**-152.53**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	-786.42	115.96	-87.45	-15.27	-90.36	**1085.07**

7.12. Staafkrachten betonopstort midden-rechts; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-274.81**	-0.17	44.44	0.15	34.73	0.10
S250	Poer onder-IV - Rechthoek	0	UGT-2/5	**821.83**	4.86	**-48.88**	-0.80	-184.70	149.53
S250	Poer onder-IV - Rechthoek	1440	UGT-2/10	504.92	**-26.83**	-24.22	-1.35	-8.01	82.90
S250	Poer onder-IV - Rechthoek	0	UGT-1/9	552.54	**43.27**	-22.77	-3.88	-124.32	505.37
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-141.63	-0.16	**44.93**	0.20	30.99	0.33
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	278.25	42.07	1.81	**-4.61**	-63.14	397.15
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	408.34	38.29	-18.56	**8.70**	-7.38	565.40
S250	Poer onder-IV - Rechthoek	360	UGT-2/5	804.24	4.86	-48.88	-0.80	**-202.29**	151.28
S250	Poer onder-IV - Rechthoek	1080	UGT-1/1	-199.11	-0.16	44.70	0.17	**53.73**	0.15
S250	Poer onder-IV - Rechthoek	1800	UGT-2/15	183.95	-17.47	2.58	-3.03	7.92	**-95.46**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	408.34	38.29	-18.56	8.70	-14.06	**579.18**

7.13. Staafkrachten betonopstort rechts; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer boven-IA - Rechthoek	1600	UGT-1/17	**-276.65**	-0.52	7.06	0.01	8.28	-6.63
S322	Poer boven-IA - Rechthoek	0	UGT-2/16	**-41.45**	-4.44	0.22	0.08	-10.93	-57.62
S322	Poer boven-IA - Rechthoek	0	UGT-2/15	-50.98	**-18.22**	4.67	**-0.05**	-4.95	-134.97
S322	Poer boven-IA - Rechthoek	0	UGT-1/9	-49.57	**61.67**	3.42	**0.53**	-7.95	507.96
S322	Poer boven-IA - Rechthoek	0	UGT-2/14	-41.80	5.36	**-1.47**	0.04	-13.41	69.83
S322	Poer boven-IA - Rechthoek	0	UGT-1/13	-52.51	15.03	**8.17**	0.18	-0.57	124.66
S322	Poer boven-IA - Rechthoek	2000	UGT-2/14	-264.57	4.20	-1.19	0.04	**-16.06**	79.39
S322	Poer boven-IA - Rechthoek	2000	UGT-1/38	-275.13	-2.07	7.55	0.01	**17.32**	-29.14
S322	Poer boven-IA - Rechthoek	2000	UGT-2/18	-264.65	-14.45	2.44	0.04	-2.91	**-171.22**
S322	Poer boven-IA - Rechthoek	2000	UGT-1/9	-272.34	52.38	3.40	0.53	-1.13	**622.06**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S275	2532	UGT-1/3	**-327.6**		0.9	**327.6**	0.0
S2	0	UGT-1/19		115.2	5.5	115.6	**0.0**
S248	0	UGT-1/3	-134.2		2.1	134.2	0.0
S4	2532	UGT-1/3		**273.4**	0.8	273.4	0.0
S262	0	UGT-1/9		104.6	**0.6**	104.6	0.0
S264	565	UGT-1/9		12.2	**18.9**	34.9	0.0
S284	1463	UGT-1/3	-13.7		14.6	**28.7**	0.0

8.2. Von Mises spanningen kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S329, S330
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S329	0	UGT-2/20	**-108.9**	2.2	**109.0**	**0.0**
S330	3067	UGT-1/43	**-18.2**	2.5	18.7	0.0
S330	3833	UGT-1/1	-27.8	**0.0**	27.8	0.0
S329	3067	UGT-1/8	-22.9	**3.9**	23.9	0.0
S330	3067	UGT-1/43	-18.2	2.5	**18.7**	0.0

8.3. Von Mises spanningen ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S33, S40, S404, S406
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S40	0	UGT-2/5	**-122.3**		0.3	122.3	0.0
S33	0	UGT-2/5		**133.4**	0.2	**133.4**	**0.0**
S404	1440	UGT-1/17		100.2	**0.0**	100.2	0.0
S406	937	UGT-1/53	-62.9		**0.3**	62.9	0.0
S40	1750	UGT-1/19	-54.0		0.2	**54.0**	0.0

8.4. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S403
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S403	0	UGT-1/8	63.6	0.0	63.6	**0.0**
S403	10500	UGT-1/3	**31.0**	29.1	59.2	0.0
S403	5858	UGT-1/44	**161.7**	0.0	161.7	0.0
S403	9858	UGT-2/14	71.3	**0.0**	71.3	0.0
S403	10500	UGT-1/3	31.0	**29.1**	59.2	0.0
S403	10500	UGT-1/3	31.0	29.1	**59.2**	0.0
S403	5858	UGT-1/44	161.7	0.0	**161.7**	0.0

8.5. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S405
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S405	6121	UGT-1/9	**-131.6**		0.0	131.6	0.0
S405	0	UGT-1/3		42.2	0.0	42.2	**0.0**
S405	2121	UGT-1/9	-98.5		0.0	98.5	0.0
S405	2121	UGT-1/3		**98.4**	0.0	98.4	0.0
S405	10910	UGT-1/19	-62.1		**0.0**	62.1	0.0
S405	2121	UGT-1/9	-98.5		**0.0**	98.5	0.0
S405	11700	UGT-1/19	-38.3		0.0	**38.3**	0.0
S405	6121	UGT-1/9	-131.6		0.0	**131.6**	0.0

8.6. Von Mises spanningen ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S331
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S331	0	UGT-2/5	**-82.2**	**0.2**	**82.2**	**0.0**
S331	3625	UGT-1/47	**-18.4**	0.2	18.4	0.0
S331	13775	UGT-1/1	-31.5	**0.0**	31.5	0.0
S331	3625	UGT-1/47	-18.4	0.2	**18.4**	0.0

8.7. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S398	0	UGT-1/3	**-270.6**		0.0	270.6	0.0
S351	0	UGT-1/3		1.4	55.8	96.6	**0.0**
S353	0	UGT-1/3	-162.3		0.0	162.3	0.0
S400	0	UGT-1/44		**279.0**	0.0	**279.0**	0.0
S400	277	UGT-1/3		181.8	**0.0**	181.8	0.0
S396	187	UGT-1/3	-12.3		**107.0**	185.8	0.0
S370	161	UGT-1/9		0.6	14.8	**25.6**	0.0

8.8. Von Mises spanningen diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S268	0	UGT-2/21	**-98.1**		0.0	98.1	0.0
S267	0	UGT-2/21		88.3	0.0	88.3	0.0
S235	0	UGT-2/21	-75.0		**0.0**	75.0	**0.0**
S271	3142	UGT-1/8		**140.2**	0.0	**140.2**	0.0
S279	0	UGT-2/5		19.7	0.0	**19.7**	0.0

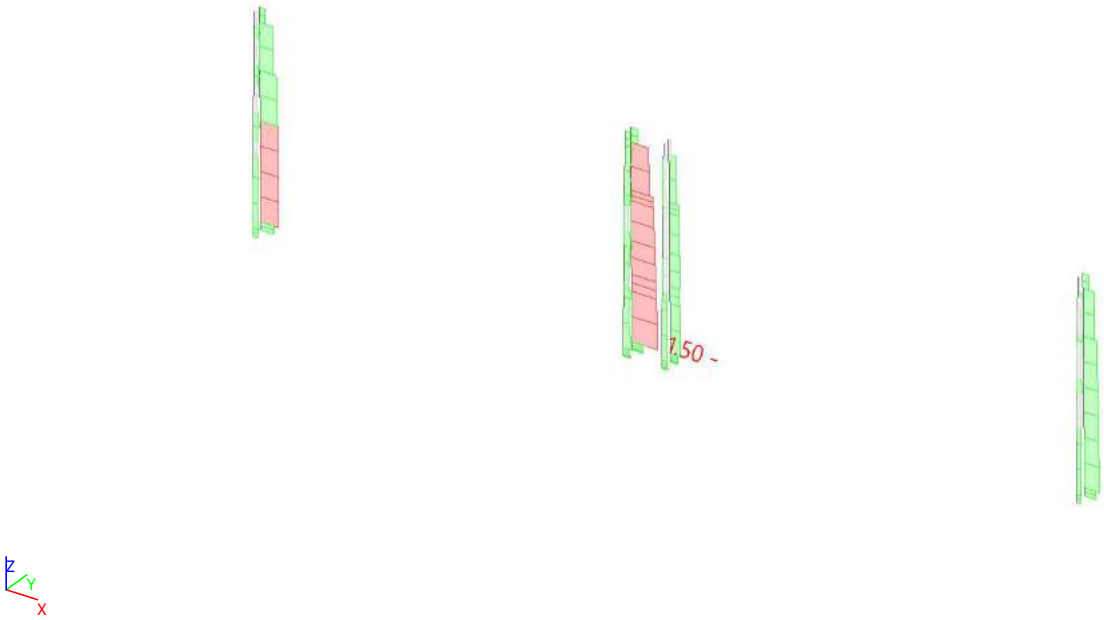
8.9. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S332
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S332	0	UGT-2/5	**-101.4**	0.0	**101.4**	**0.0**
S332	4651	UGT-1/47	**0.0**	4.4	7.6	0.0
S332	3721	UGT-2/5	-28.5	**0.0**	28.5	0.0
S332	4600	UGT-2/5	-2.2	**4.4**	7.9	0.0
S332	4600	UGT-2/5	-2.1	2.7	**5.2**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S275	2.532 / 2.757 m	INP450	S 235	UGT	1.50 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2.532 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-1571.76	kN
$V_{y,Ed}$	40.63	kN
$V_{z,Ed}$	-4.42	kN
T_{Ed}	-0.09	kNm
$M_{y,Ed}$	-1.09	kNm
$M_{z,Ed}$	44.81	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	5.109e+04	-8.442e+04	-1.65	23.80	0.38	2.50	38.87	43.19	102.45	1
3	SO	61	24	1.596e+05	2.951e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.50	1
4	I	369	16	1.053e+05	1.044e+05	0.99		1.00	22.78	28.00	34.00	38.11	1
5	SO	61	24	1.586e+05	2.941e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.51	1
7	SO	61	24	5.010e+04	-8.540e+04	-1.70	23.80	0.37	2.50	40.03	44.48	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m^2
$N_{c,Rd}$	3454.50	kN
Eenheidscontrole	0.45	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m^3
$M_{pl,y,Rd}$	564.00	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m^3
$M_{pl,z,Rd}$	81.08	kNm
Eenheidscontrole	0.55	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m^2
$V_{pl,y,Rd}$	1192.18	kN
Eenheidscontrole	0.03	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m^2
$V_{pl,z,Rd}$	1058.72	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.9	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	393.57	kNm
α	2.00	
$M_{N,z,Rd}$	81.00	kNm
β	2.27	

Eenheidscontrole (6.41) = 0.00 + 0.26 = 0.26 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2.532 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	5.109e+04	-8.442e+04	-1.65	23.80	0.38	2.50	38.87	43.19	102.45	1
3	SO	61	24	1.596e+05	2.951e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.50	1
4	I	369	16	1.053e+05	1.044e+05	0.99		1.00	22.78	28.00	34.00	38.11	1
5	SO	61	24	1.586e+05	2.941e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.51	1
7	SO	61	24	5.010e+04	-8.540e+04	-1.70	23.80	0.37	2.50	40.03	44.48	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings flexibel	
Systeemlengte L	2.757	1.895	m
Knikfactor k	0.97	1.42	
Kniklengte L_{cr}	2.672	2.698	m
Kritische Euler last N_{cr}	133088.03	4925.02	kN
Slankheid λ	15.13	78.65	
Relatieve slankheid λ_{rel}	0.16	0.84	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	1.00	0.70	
Knikweerstand $N_{b,Rd}$	3454.50	2421.75	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m²
Knikweerstand $N_{b,Rd}$	2421.75	kN
Eenheidscontrole	0.65	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m³
Elastisch kritisch moment M_{cr}	5191.07	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.33	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.93	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm

Mcr parameters		
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	1571.76	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	13.31	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	44.81	kNm
Karakteristieke drukweerstand N_{Rk}	3454.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	564.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	81.08	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	0.70	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.64	
Interactiefactor k_{yz}	0.92	
Interactiefactor k_{zy}	0.38	
Interactiefactor k_{zz}	1.53	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S275 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S275 positie 2.532 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	13.31	kNm
Veldmoment $M_{s,y}$	7.26	kNm
Factor $\alpha_{s,y}$	0.55	
Ratio van uiteinde momenten ψ_y	-0.13	
Equivalente moment factor C_{my}	0.64	
Zijdelings flexibel type z	Zijdelings flexibel	
Equivalente moment factor C_{mz}	0.90	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	-0.15	
Equivalente moment factor C_{mLT}	0.54	

Eenheidscontrole (6.61) = 0.45 + 0.02 + 0.51 = 0.98 -
Eenheidscontrole (6.62) = 0.65 + 0.01 + 0.84 = **1.50** -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

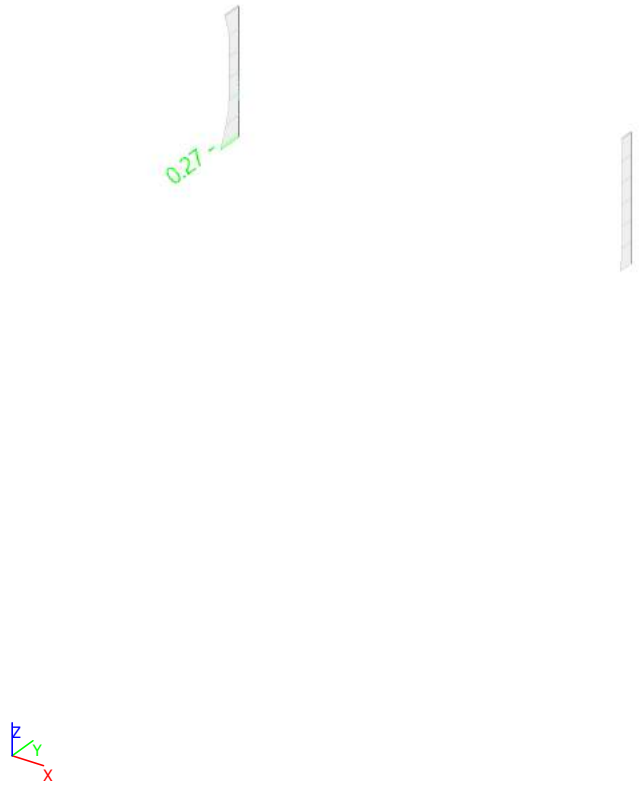
Plooiparameters		
Knik veldlengte a	2.757	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet NIET aan de stabiliteitscontrole!

9.3. Staalcontrole kolom DIE36; UGT, grafisch overzicht



9.4. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S329, S330

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S329	0.000 / 4.651 m	HEA360	S 235	UGT	0.27 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-17.26	kN
$V_{y,Ed}$	-20.51	kN
$V_{z,Ed}$	-3.32	kN
T_{Ed}	0.17	kNm
$M_{y,Ed}$	15.67	kNm
$M_{z,Ed}$	50.28	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	-2.706e+04	-1.023e+05								
3	SO	118	18	1.374e+04	8.896e+04	0.15	0.54	1.00	6.74	9.00	10.00	15.42	1
4	I	261	10	-4.969e+03	7.387e+03	-0.67		0.51	26.10	68.95	79.77	90.57	1
5	SO	118	18	2.948e+04	1.047e+05	0.28	0.52	1.00	6.74	9.00	10.00	15.09	1
7	SO	118	18	-1.132e+04	-8.654e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4300e-02	m^2
$N_{c,Rd}$	3360.50	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.0875e-03	m^3
$M_{pl,y,Rd}$	490.56	kNm
Eenheidscontrole	0.03	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	8.0417e-04	m^3
$M_{pl,z,Rd}$	188.98	kNm
Eenheidscontrole	0.27	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0870e-02	m^2
$V_{pl,y,Rd}$	1474.81	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.9200e-03	m^2
$V_{pl,z,Rd}$	667.53	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	2.0	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	490.56	kNm
α	2.00	
$M_{pl,z,Rd}$	188.98	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.27 = 0.27 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	-2.706e+04	-1.023e+05								
3	SO	118	18	1.374e+04	8.896e+04	0.15	0.54	1.00	6.74	9.00	10.00	15.42	1
4	I	261	10	-4.969e+03	7.387e+03	-0.67		0.51	26.10	68.95	79.77	90.57	1
5	SO	118	18	2.948e+04	1.047e+05	0.28	0.52	1.00	6.74	9.00	10.00	15.09	1
7	SO	118	18	-1.132e+04	-8.654e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	4.93	0.74	
Kniklengte L_{cr}	22.932	3.419	m
Kritische Euler last N_{cr}	1304.51	13993.02	kN
Slankheid λ	150.73	46.02	
Relatieve slankheid λ_{rel}	1.61	0.49	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Elastisch kritisch moment M_{cr}	2777.30	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.42	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Vorklengte L_g	4.651	m
Invloed van lastpositie	geen invloed	
Factor α	943.99	
Reductie factor k_{red}	1.00	
Coëfficiënt C	9.15	
Factor S	1949	mm
Kip moment factor C_1	1.76	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4300e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	8.0417e-04	m^3
Ontwerpdrukkracht N_{Ed}	17.26	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	15.67	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	50.28	kNm
Karakteristieke drukweerstand N_{Rk}	3360.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	490.56	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	188.98	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.54	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S329 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S329 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	50.28	kNm
Veldmoment $M_{s,z}$	4.74	kNm
Factor $\alpha_{s,z}$	0.09	
Ratio van uiteinde momenten ψ_z	-0.76	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	puntlast F	
Uiteinde moment $M_{h,LT}$	15.67	kNm
Veldmoment $M_{s,LT}$	0.40	kNm
Factor $\alpha_{s,LT}$	0.03	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.40	

Eenheidscontrole (6.61) = 0.01 + 0.03 + 0.06 = 0.10 -
Eenheidscontrole (6.62) = 0.01 + 0.02 + 0.11 = 0.13 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

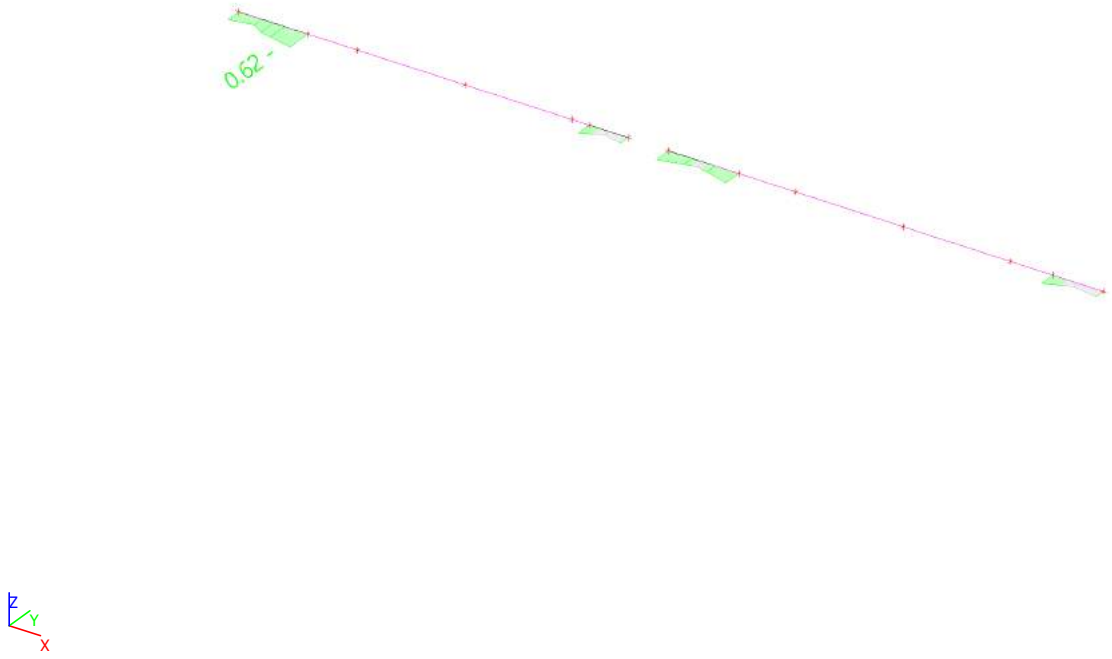
Plooiparameters		
Knik veldlengte a	4.651	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	315	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.50
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole ligger DIE34; UGT, grafisch overzicht



9.6. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S33, S40, S404, S406

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S33	2,560 / 2,560 m	HE340A	S 235	UGT	0,62 -

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1050

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,560 m

Interne krachten	Berekende	Eenheid
N_{Ed}	7,53	kN
$V_{y,Ed}$	15,20	kN
$V_{z,Ed}$	63,98	kN
T_{Ed}	0,01	kNm
$M_{y,Ed}$	163,33	kNm
$M_{z,Ed}$	-4,71	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	-9,098e+04	-8,349e+04								
3	SO	118	17	-9,500e+04	-1,025e+05								
4	I	243	10	-7,221e+04	7,108e+04	-1,02		0,49	25,58	73,01	84,17	125,97	1
5	SO	118	17	8,985e+04	8,236e+04	0,92	0,46	1,00	7,17	9,00	10,00	14,24	1
7	SO	118	17	9,388e+04	1,014e+05	0,93	0,44	1,00	7,17	9,00	10,00	13,86	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	1,3350e-02	m^2
$N_{pl,Rd}$	3137,25	kN
$N_{u,Rd}$	3460,32	kN
$N_{t,Rd}$	3137,25	kN
Eenheidscontrole	0,00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1,8500e-03	m^3
$M_{pl,y,Rd}$	434,75	kNm
Eenheidscontrole	0,38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7,5590e-04	m^3
$M_{pl,z,Rd}$	177,64	kNm
Eenheidscontrole	0,03	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,0247e-02	m^2
$V_{pl,y,Rd}$	1390,25	kN
Eenheidscontrole	0,01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,4978e-03	m^2
$V_{pl,z,Rd}$	610,24	kN
Eenheidscontrole	0,10	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	434,75	kNm
α	2,00	
$M_{pl,z,Rd}$	177,64	kNm
β	1,00	

Eenheidscontrole (6.41) = 0,14 + 0,03 = 0,17 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4)
wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,560 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	-9,098e+04	-8,349e+04								
3	SO	118	17	-9,500e+04	-1,025e+05								
4	I	243	10	-7,221e+04	7,108e+04	-1,02		0,49	25,58	73,01	84,17	125,97	1
5	SO	118	17	8,985e+04	8,236e+04	0,92	0,46	1,00	7,17	9,00	10,00	14,24	1
7	SO	118	17	9,388e+04	1,014e+05	0,93	0,44	1,00	7,17	9,00	10,00	13,86	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Elastisch kritisch moment M_{cr}	337,86	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1,13	
Limietslankheid $\lambda_{rel,LT,0}$	0,40	
Kipcurve	b	
Imperfectie α_{LT}	0,34	
Kipfactor β	0,75	
Reductie factor χ_{LT}	0,62	
Correctiefactor k_c	0,94	
Correctiefactor f	0,98	
Gewijzigde reductiefactor $\chi_{LT,mod}$	0,63	
Rekenwaarde knikweerstand $M_{b,Rd}$	275,21	kNm
Eenheidscontrole	0,59	-

Mcr parameters		
LTB lengte L	14,500	m
Vorklengte L_g	14,500	m
Invloed van lastpositie	geen invloed	
Factor α	575,00	
Reductie factor k_{red}	1,00	
Coëfficiënt C	3,87	
Factor S	1931	mm
Kip moment factor C_1	1,14	
Kip moment factor C_2	0,00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.
Opmerking: De correctiefactor k_c wordt bepaald op basis van C_1.

Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	7,53	kN
Ontwerp buigende momenten $M_{y,Ed}$	163,33	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-4,71	kNm
Trekweerstand $N_{t,Rd}$	3137,25	kN
Buigweerstand $M_{b,y,Rd}$	275,21	kNm
Buigweerstand $M_{c,z,Rd,com}$	177,64	kNm

Eenheidscontrole = 0,59 + 0,03 - 0,00 = 0,62 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

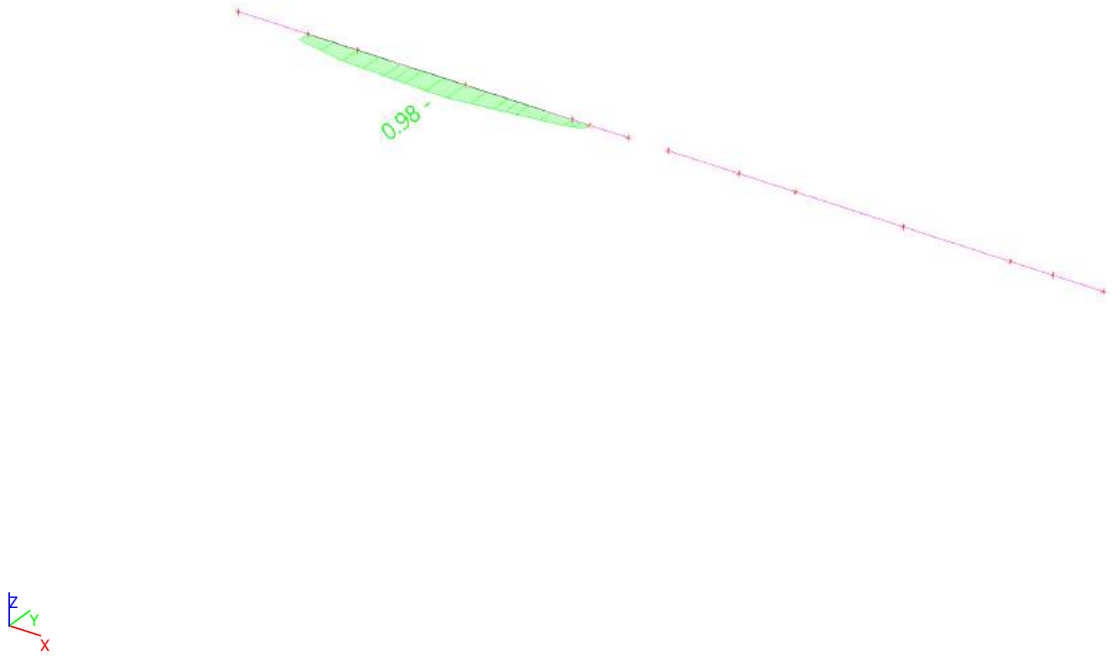
Plooiparameters		
Knik veldlengte a	2,560	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1,00	
Correctiefactor voor dwarskracht η	1,20	

Plooiverificatie	
Lijf slankheid h_w/t	31,26
Lijfslankheid limiet	60,00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht



9.8. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S403

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S403	**5,858 / 10,500 m**	**I + 2 PLud (HEA340; 320; 320; 12; 12)**	**S 235**	**UGT**	**0,98 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 5,858 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	43,71	kN
$V_{y,Ed}$	0,30	kN
$V_{z,Ed}$	10,21	kN
T_{Ed}	0,01	kNm
$M_{y,Ed}$	326,71	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	36,68	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-7,073e+04	-1,101e+05								
2	I	150	29	1,451e+05	1,058e+05	0,73		1,00	5,26	28,00	34,00	41,94	1
3	I	150	29	6,647e+04	1,058e+05	0,63		1,00	5,26	28,00	34,00	43,63	1
4	I	150	29	-1,494e+05	-1,101e+05								
5	I	8	10	-1,061e+05	-1,006e+05								
6	I	297	10	-1,006e+05	9,635e+04	-1,04		0,49	31,26	73,59	84,83	129,50	1
7	I	8	10	9,635e+04	1,018e+05	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,532e+05	1,506e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,357e+04	-7,620e+04								
10	UO	10	12	-1,549e+05	-1,575e+05								
13	UO	10	12	7,195e+04	6,932e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	2,1039e-02	m^2
$N_{pl,Rd}$	4944,14	kN
$N_{u,Rd}$	5453,28	kN
$N_{t,Rd}$	4944,14	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3,1654e-03	m^3
$M_{pl,y,Rd}$	743,86	kNm
Eenheidscontrole	0,44	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	1,3705e-03	m^3
$M_{pl,z,Rd}$	322,07	kNm
Eenheidscontrole	0,11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6468e-02	m^2
$V_{pl,y,Rd}$	2234,36	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	3,6506e-03	m^2
$V_{pl,z,Rd}$	495,31	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	4944,14	kN
$M_{pl,y,Rd}$	743,86	kNm
$M_{pl,z,Rd}$	322,07	kNm

Eenheidscontrole (6.2) = 0,01 + 0,44 + 0,11 = 0,56 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 5,858 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-7,073e+04	-1,101e+05								
2	I	150	29	1,451e+05	1,058e+05	0,73		1,00	5,26	28,00	34,00	41,94	1
3	I	150	29	6,647e+04	1,058e+05	0,63		1,00	5,26	28,00	34,00	43,63	1
4	I	150	29	-1,494e+05	-1,101e+05								
5	I	8	10	-1,061e+05	-1,006e+05								
6	I	297	10	-1,006e+05	9,635e+04	-1,04		0,49	31,26	73,59	84,83	129,50	1
7	I	8	10	9,635e+04	1,018e+05	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,532e+05	1,506e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,357e+04	-7,620e+04								
10	UO	10	12	-1,549e+05	-1,575e+05								
13	UO	10	12	7,195e+04	6,932e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3,1654e-03	m^3
Elastisch kritisch moment M_{cr}	856,97	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,93	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,50	
Rekenwaarde knikweerstand $M_{b,Rd}$	374,31	kNm
Eenheidscontrole	0,87	-

Mcr parameters		
LTB lengte L	14,500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

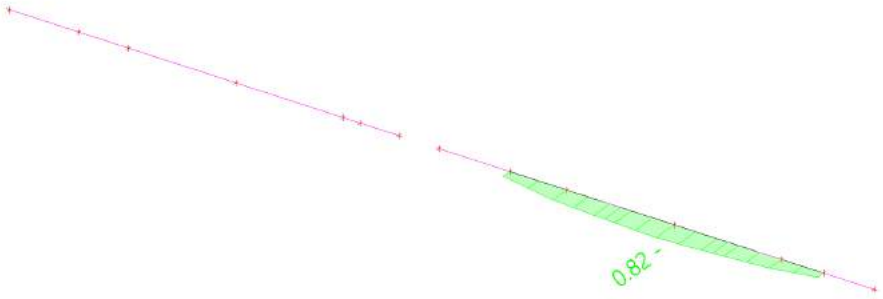
Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	43,71	kN
Ontwerp buigende momenten $M_{y,Ed}$	326,71	kNm
Ontwerp buigende momenten $M_{z,Ed}$	36,68	kNm
Trekweerstand $N_{t,Rd}$	4944,14	kN
Buigweerstand $M_{b,y,Rd}$	374,31	kNm
Buigweerstand $M_{c,z,Rd,com}$	322,07	kNm

Eenheidscontrole = 0,87 + 0,11 - 0,01 = 0,98 -

De staaf voldoet aan de stabiliteitscontrole.

9.9. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht





9.10. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S405

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S405	**6,121 / 11,700 m**	**Grafische doorsnede**	**S 235**	**UGT**	**0,82 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Algemeen	

Waarschuwing: Sterktereductie gerelateerd aan de dikte wordt niet ondersteund voor dit type doorsnede.

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 6,121 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-4,86	kN
$V_{y,Ed}$	-3,40	kN
$V_{z,Ed}$	-16,98	kN

Interne krachten	Berekende	Eenheid
T_{Ed}	0,02	kNm
$M_{y,Ed}$	240,76	kNm
$M_{z,Ed}$	67,09	kNm

Classificatie voor doorsnede-ontwerp
Waarschuwing: Classificatie wordt niet ondersteund voor dit type doorsnede.
De doorsnede wordt gecontroleerd als elastisch, klasse 3.

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2,5114e-02	m^2
$N_{c,Rd}$	5901,89	kN
Eenheidscontrole	0,00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,y,min}$	2,7183e-03	m^3
$M_{el,y,Rd}$	638,80	kNm
Eenheidscontrole	0,38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,z,min}$	1,5664e-03	m^3
$M_{el,z,Rd}$	368,11	kNm
Eenheidscontrole	0,18	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6554e-02	m^2
$V_{pl,y,Rd}$	2246,03	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,3472e-03	m^2
$V_{pl,z,Rd}$	589,81	kN
Eenheidscontrole	0,03	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	38	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.2 en formule (6.42)

Normaalspanningen		
Vezel	31	
$\sigma_{N,Ed}$	0,2	MPa
$\sigma_{My,Ed}$	88,6	MPa
$\sigma_{Mz,Ed}$	42,8	MPa
$\sigma_{tot,Ed}$	131,6	MPa
Eenheidscontrole	0,56	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	5688,94	1855,63	kN
Slankheid λ	95,65	167,48	
Relatieve slankheid λ_{rel}	1,02	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	16,200	m
Elastische kritische last $N_{cr,T}$	11328,76	kN
Elastische kritische last $N_{cr,TF}$	1855,63	kN
Relatieve slankheid $\lambda_{rel,T}$	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastisch kritisch moment M_{cr}	1007,79	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,80	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,58	
Rekenwaarde knikweerstand $M_{b,Rd}$	371,83	kNm
Eenheidscontrole	0,65	-

Mcr parameters		
LTB lengte L	16,200	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2,5114e-02	m^2
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastische doorsnedemodulus $W_{el,z}$	1,5664e-03	m^3
Ontwerpdrukkracht N_{Ed}	4,86	kN
Ontwerp buigende momenten $M_{y,Ed}$	240,76	kNm
Ontwerp buigende momenten $M_{z,Ed}$	67,09	kNm
Karakteristieke drukweerstand N_{Rk}	5901,89	kN
Karakteristieke momentweerstand $M_{y,Rk}$	638,80	kNm

Buig- en axiale drukcontrole paramaters		
Karakteristieke momentweerstand $M_{z,Rk}$	368,11	kNm
Reductie factor χ_y	1,00	
Reductie factor χ_z	1,00	
Reductie factor χ_{LT}	0,58	
Interactiefactor k_{yy}	0,95	
Interactiefactor k_{yz}	0,92	
Interactiefactor k_{zy}	1,00	
Interactiefactor k_{zz}	0,92	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-16,05	kNm
Veldmoment $M_{s,y}$	240,76	kNm
Factor $\alpha_{h,y}$	-0,07	
Ratio van uiteinde momenten ψ_y	0,03	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-45,81	kNm
Veldmoment $M_{s,z}$	67,09	kNm
Factor $\alpha_{h,z}$	-0,68	
Ratio van uiteinde momenten ψ_z	0,74	
Equivalente moment factor C_{mz}	0,92	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-16,05	kNm
Veldmoment $M_{s,LT}$	240,76	kNm
Factor $\alpha_{h,LT}$	-0,07	
Ratio van uiteinde momenten ψ_{LT}	0,03	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,00 + 0,61 + 0,17 = 0,78 -
Eenheidscontrole (6.62) = 0,00 + 0,65 + 0,17 = 0,82 -

De staaf voldoet aan de stabiliteitscontrole.

9.11. Staalcontrole ligger DIN28; UGT, grafisch overzicht





9.12. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S331

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S331	0.000 / 14.500 m	HEB280	S 235	UGT	0.23 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-9.61	kN
$V_{y,Ed}$	11.08	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.02	kNm
$M_{y,Ed}$	0.17	kNm
$M_{z,Ed}$	-38.30	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.760e+04	8.192e+04	0.21	0.53	1.00	6.15	9.00	10.00	15.26	1
3	SO	111	18	-1.637e+04	-8.069e+04								
4	I	196	11	6.462e+02	8.162e+02	0.79		1.00	18.67	28.00	34.00	40.96	1
5	SO	111	18	-1.614e+04	-8.046e+04								
7	SO	111	18	1.783e+04	8.215e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3140e-02	m^2
$N_{c,Rd}$	3087.90	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.5340e-03	m^3
$M_{pl,y,Rd}$	360.49	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.1760e-04	m^3
$M_{pl,z,Rd}$	168.64	kNm
Eenheidscontrole	0.23	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0442e-02	m^2
$V_{pl,y,Rd}$	1416.78	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.1130e-03	m^2
$V_{pl,z,Rd}$	558.04	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.2	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	360.49	kNm
α	2.00	
$M_{pl,z,Rd}$	168.64	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.23 = 0.23 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.760e+04	8.192e+04	0.21	0.53	1.00	6.15	9.00	10.00	15.26	1
3	SO	111	18	-1.637e+04	-8.069e+04								
4	I	196	11	6.462e+02	8.162e+02	0.79		1.00	18.67	28.00	34.00	40.96	1
5	SO	111	18	-1.614e+04	-8.046e+04								
7	SO	111	18	1.783e+04	8.215e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	14.500	14.500	m
Knikfactor k	1.00	1.00	
Kniklengte L_{cr}	14.500	14.500	m
Kritische Euler last N_{cr}	1899.61	650.13	kN
Slankheid λ	119.74	204.67	
Relatieve slankheid λ_{rel}	1.27	2.18	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Elastisch kritisch moment M_{cr}	301.73	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.09	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	14.500	m
Vorklengte L_g	14.500	m
Invloed van lastpositie	geen invloed	
Factor α	575.00	
Reductie factor k_{red}	1.00	
Coëfficiënt C	3.45	
Factor S	1430	mm
Kip moment factor C_1	1.05	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.1760e-04	m^3
Ontwerpdrukkracht N_{Ed}	9.61	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	0.19	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-38.30	kNm
Karakteristieke drukweerstand N_{Rk}	3087.90	kN
Karakteristieke momentweerstand $M_{y,Rk}$	360.49	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	168.64	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.96	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.58	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S331 positie 14.500 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S331 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lineair moment M	
Ratio van uiteinde momenten ψ_y	0.90	
Equivalente moment factor C_{my}	0.96	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-38.30	kNm
Veldmoment $M_{s,z}$	11.45	kNm
Factor $\alpha_{s,z}$	-0.30	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	0.90	
Equivalente moment factor C_{mLT}	0.96	

Eenheidscontrole (6.61) = 0.00 + 0.00 + 0.05 = 0.06 -
Eenheidscontrole (6.62) = 0.00 + 0.00 + 0.09 = 0.09 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

Plooiparameters		
Knik veldlengte a	14.500	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	244	mm
Lijfdikte t	11	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	23.24
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.13. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.14. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S398	0.000 / 0.232 m	Rechthoek (200; 28)	S 235	UGT	1.14 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-0.35	kN
$V_{y,Ed}$	-5.24	kN
$V_{z,Ed}$	-324.51	kN
T_{Ed}	-0.07	kNm
$M_{y,Ed}$	43.09	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	1.04	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-2.308e+05	2.309e+05	-1.00	0.85	0.50	7.14	18.00	19.99	19.36	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	5.6000e-03	m²
$N_{c,Rd}$	1316.00	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m³
$M_{pl,y,Rd}$	65.80	kNm
Eenheidscontrole	0.65	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m³
$M_{pl,z,Rd}$	9.21	kNm
Eenheidscontrole	0.11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,y,Rd}$	759.79	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,z,Rd}$	759.79	kN
Eenheidscontrole	0.43	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	1.4	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	65.80	kNm
α	1.00	
$M_{N,z,Rd}$	9.21	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.65 + 0.11 = 0.77 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-2.308e+05	2.309e+05	-1.00	0.85	0.50	7.14	18.00	19.99	19.36	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	0.402	0.402	m
Knikfactor k	2.73	0.84	
Kniklengte L_{cr}	1.099	0.338	m
Kritische Euler last N_{cr}	32039.51	6641.26	kN
Slankheid λ	19.03	41.80	
Relatieve slankheid λ_{rel}	0.20	0.45	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	0.402	m
Elastische kritische last $N_{cr,T}$	35677.12	kN
Relatieve slankheid $\lambda_{rel,T}$	0.19	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	1961.55	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.18	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.402	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.60	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	5.6000e-03	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.9200e-05	m^3
Ontwerpdrukkracht N_{Ed}	0.35	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	70.68	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	1.48	kNm
Karakteristieke drukweerstand N_{Rk}	1316.00	kN
Karakteristieke momentweerstand $M_{y,Rk}$	65.80	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	9.21	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.26	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.43	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S318 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S318 positie 0.000 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.2
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Resulterend belastingtype z	lineair moment M
Ratio van uiteinde momenten ψ_z	-0.42
Equivalente moment factor C_{mz}	0.43
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	-0.85
Equivalente moment factor C_{mLT}	0.40

Eenheidscontrole (6.61) = 0.00 + 0.97 + 0.04 = **1.01** -
Eenheidscontrole (6.62) = 0.00 + 1.07 + 0.07 = **1.14** -

De staaf voldoet NIET aan de stabiliteitscontrole!

9.15. Staalcontrole diagonaal; UGT, grafisch overzicht





9.16. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S235, S267..S271, S274, S277..S281

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S268	0.000 / 3.142 m	UPE140	S 235	UGT	0.82 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1176

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-180.49	kN
$V_{y,Ed}$	0.00	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.00	kNm
$M_{z,Ed}$	0.00	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	9.798e+04	9.798e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	9.798e+04	9.798e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	9.798e+04	9.798e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.8400e-03	m²
$N_{c,Rd}$	432.40	kN
Eenheidscontrole	0.42	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	9.798e+04	9.798e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	9.798e+04	9.798e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	9.798e+04	9.798e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	3.142	3.142	m
Knikfactor k	0.65	0.65	
Kniklengte L_{cr}	2.043	2.043	m
Kritische Euler last N_{cr}	2975.62	390.95	kN
Slankheid λ	35.80	98.77	
Relatieve slankheid λ_{rel}	0.38	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.91	0.51	
Knikweerstand $N_{b,Rd}$	392.28	220.76	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.8400e-03	m²
Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.82	-

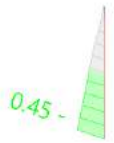
Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	3.142	m
Elastische kritische last $N_{cr,T}$	649.47	kN
Elastische kritische last $N_{cr,TF}$	390.95	kN
Relatieve slankheid $\lambda_{rel,T}$	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.51	
Oppervlakte van de doorsnede A	1.8400e-03	m²

Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.82	-

De staaf voldoet aan de stabiliteitscontrole.

9.17. Staalcontrole bliksempiek; UGT, grafisch overzicht





9.18. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S332

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S332	**0.000 / 4.651 m**	**Koker fl (374; 7; 126; 10; 354)**	**S 235**	**UGT**	**0.45 -**

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-3.11	kN
$V_{y,Ed}$	2.60	kN
$V_{z,Ed}$	-7.80	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	30.53	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-12.38	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	5.979e+04	6.021e+04	0.99	0.43	1.00	0.71	9.00	10.00	13.83	1
2	I	126	10	8.647e+04	-5.547e+04	-0.64		0.61	12.60	53.61	63.13	88.30	1
3	I	126	10	5.626e+04	-8.568e+04	-1.52		0.40	12.60	90.82	104.70	193.02	1
4	UO	5	7	-9.004e+04	-8.962e+04								
5	UO	5	7	9.041e+04	9.082e+04	1.00	0.43	1.00	0.71	9.00	10.00	13.78	1
6	I	4	10	8.647e+04	9.041e+04	0.96		1.00	0.35	28.00	34.00	38.58	1
7	UO	5	7	-5.942e+04	-5.900e+04								
8	I	4	10	-5.547e+04	-5.942e+04								
9	I	364	7	6.021e+04	9.041e+04	0.67		1.00	52.00	28.00	34.00	42.98	4
10	I	4	10	5.626e+04	6.021e+04	0.93		1.00	0.35	28.00	34.00	38.88	1
11	I	364	7	-8.962e+04	-5.942e+04								
12	I	4	10	-8.568e+04	-8.962e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My+
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
3	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
4	UO	5	-2.350e+05	-2.350e+05							
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2
7	UO	5	-2.350e+05	-2.350e+05							
8	I	4	-2.226e+05	-2.350e+05							
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	-2.350e+05	-2.350e+05							
12	I	4	-2.226e+05	-2.350e+05							

Effectieve doorsnede Mz-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.287e+05	-2.350e+05							
2	I	126	2.287e+05	2.287e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	-2.287e+05	-2.287e+05							
4	UO	5	-2.287e+05	-2.350e+05							
5	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
6	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
8	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
10	I	4	-2.287e+05	-2.287e+05							
11	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
12	I	4	-2.287e+05	-2.287e+05							

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	7.0288e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.5067e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.3936e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	7.0288e-03	m^2
$N_{c,Rd}$	1651.76	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.3936e-04	m^3
$M_{c,y,Rd}$	79.75	kNm
Eenheidscontrole	0.38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	187.45	kNm
Eenheidscontrole	0.07	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	685.11	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	374.41	kN
Eenheidscontrole	0.02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	7.0288e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.3936e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.4	MPa
$\sigma_{My,Ed}$	90.0	MPa
$\sigma_{Mz,Ed}$	15.5	MPa
$\sigma_{tot,Ed}$	105.9	MPa
Eenheidscontrole	0.45	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	2.20	0.92	
Kniklengte L_{cr}	10.239	4.262	m
Kritische Euler last N_{cr}	524.06	16491.48	kN
Slankheid λ	175.14	31.22	
Relatieve slankheid λ_{rel}	1.78	0.32	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.651	m
Elastische kritische last $N_{cr,T}$	264162.55	kN
Elastische kritische last $N_{cr,TF}$	524.06	kN
Relatieve slankheid $\lambda_{rel,T}$	1.78	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Elastisch kritisch moment M_{cr}	17006.54	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.07	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.89	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	7.0288e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	3.11	kN
Ontwerp buigende momenten $M_{y,Ed}$	30.53	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-12.38	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	1651.76	kN
Karakteristieke momentweerstand $M_{y,Rk}$	79.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	187.45	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.40	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.40	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	puntlast F	
Uiteinde moment $M_{h,z}$	-12.38	kNm
Veldmoment $M_{s,z}$	-0.42	kNm
Factor $\alpha_{s,z}$	0.03	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	30.53	kNm
Veldmoment $M_{s,LT}$	13.83	kNm
Factor $\alpha_{s,LT}$	0.45	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.56	

Eenheidscontrole (6.61) = 0.00 + 0.34 + 0.03 = 0.37 -
Eenheidscontrole (6.62) = 0.00 + 0.38 + 0.03 = 0.41 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE E

In- en uitvoergegevens 3D raamwerkprogramma juk 64, versterkt

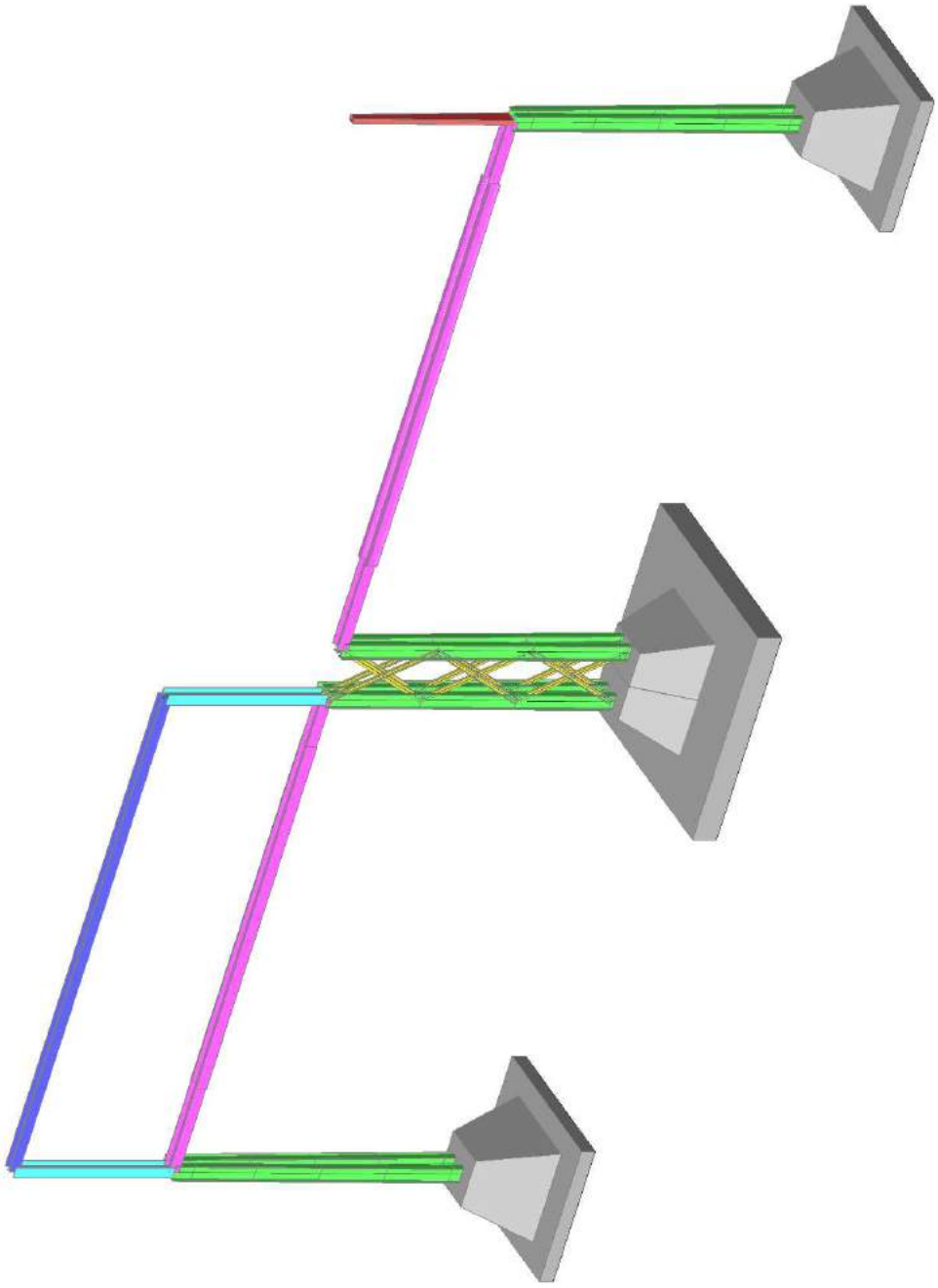
1. Inhoudsopgave

1. Inhoudsopgave **1**
2. Geometrie **3**
2.1. Perspectief constructie 3
2.2. Maatvoering 4
2.3. Materialen 5
2.4. Doorsneden 5
3. Belastingen **15**
3.1. Belastingsgevallen 15
3.2. BG1: e.g. constructie 22
3.3. BG2: grond op poer 22
3.4. BG3: wind op constructie; X-richting 23
3.5. BG4: wind op constructie; Y-richting 23
3.6. LC1001 / Totale waarde 24
3.7. LC1080 / Totale waarde 24
3.8. LC1159 / Totale waarde 25
3.9. LC1238 / Totale waarde 25
3.10. Combinaties 26
3.11. Resultaatklasses 33
4. Berekeningsverslag **34**
5. Reacties **56**
5.1. Oplegreacties kolom links; UGT, globale extremen 56
5.2. Oplegreacties kolom midden-links; UGT, globale extremen 56
5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen 56
5.4. Oplegreacties kolom rechts; UGT, globale extremen 56
6. Grondspanningen **57**
6.1. Grondspanningen onder betonpoeren; UGT 57
7. Staafkrachten **58**
7.1. Staafkrachten kolom INP45; UGT, globale extremen 58
7.2. Staafkrachten kolom INP45 versterkt; UGT, globale extremen 58
7.3. Staafkrachten kolom DIE36; UGT, globale extremen 58
7.4. Staafkrachten ligger DIE34; UGT, globale extremen 59
7.5. Staafkrachten ligger DIE34+strippen; UGT, globale extremen 59
7.6. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen 59
7.7. Staafkrachten ligger DIN28; UGT, globale extremen 60
7.8. Staafkrachten koppelplaat; UGT, globale extremen 60
7.9. Staafkrachten diagonaal; UGT, globale extremen 60
7.10. Staafkrachten bliksempiek; UGT, globale extremen 60
7.11. Staafkrachten betonopstort links; UGT, globale extremen 61
7.12. Staafkrachten betonopstort midden-links; UGT, globale extremen 61
7.13. Staafkrachten betonopstort midden-rechts; UGT, globale extremen 61
7.14. Staafkrachten betonopstort rechts; UGT, globale extremen 62
8. Staafspanningen **63**
8.1. Von Mises spanningen kolom INP45; UGT, globale extremen 63
8.2. Von Mises spanningen kolom INP45 versterkt; UGT, globale extremen 63
8.3. Von Mises spanningen kolom DIE36; UGT, globale extremen 63
8.4. Von Mises spanningen ligger DIE34; UGT, globale extremen 63
8.5. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen 64
8.6. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen 64
8.7. Von Mises spanningen ligger DIN28; UGT, globale extremen 64
8.8. Von Mises spanningen koppelplaat; UGT, globale extremen 64
8.9. Von Mises spanningen diagonaal; UGT, globale extremen 65
8.10. Von Mises spanningen bliksempiek; UGT, globale extremen 65
9. Normcontrole staal **66**
9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht 66
9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid 66
9.3. Staalcontrole kolom INP45 versterkt; UGT, grafisch overzicht 70
9.4. Staalcontrole kolom INP45 versterkt; UGT, maatgevende doorsnede, uitgebreid 70
9.5. Staalcontrole kolom DIE36; UGT, grafisch overzicht 75
9.6. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid 75
9.7. Staalcontrole ligger DIE34; UGT, grafisch overzicht 79
9.8. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid 79
9.9. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht 83
9.10. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid 83
9.11. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht 87
9.12. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid 87
9.13. Staalcontrole ligger DIN28; UGT, grafisch overzicht 91

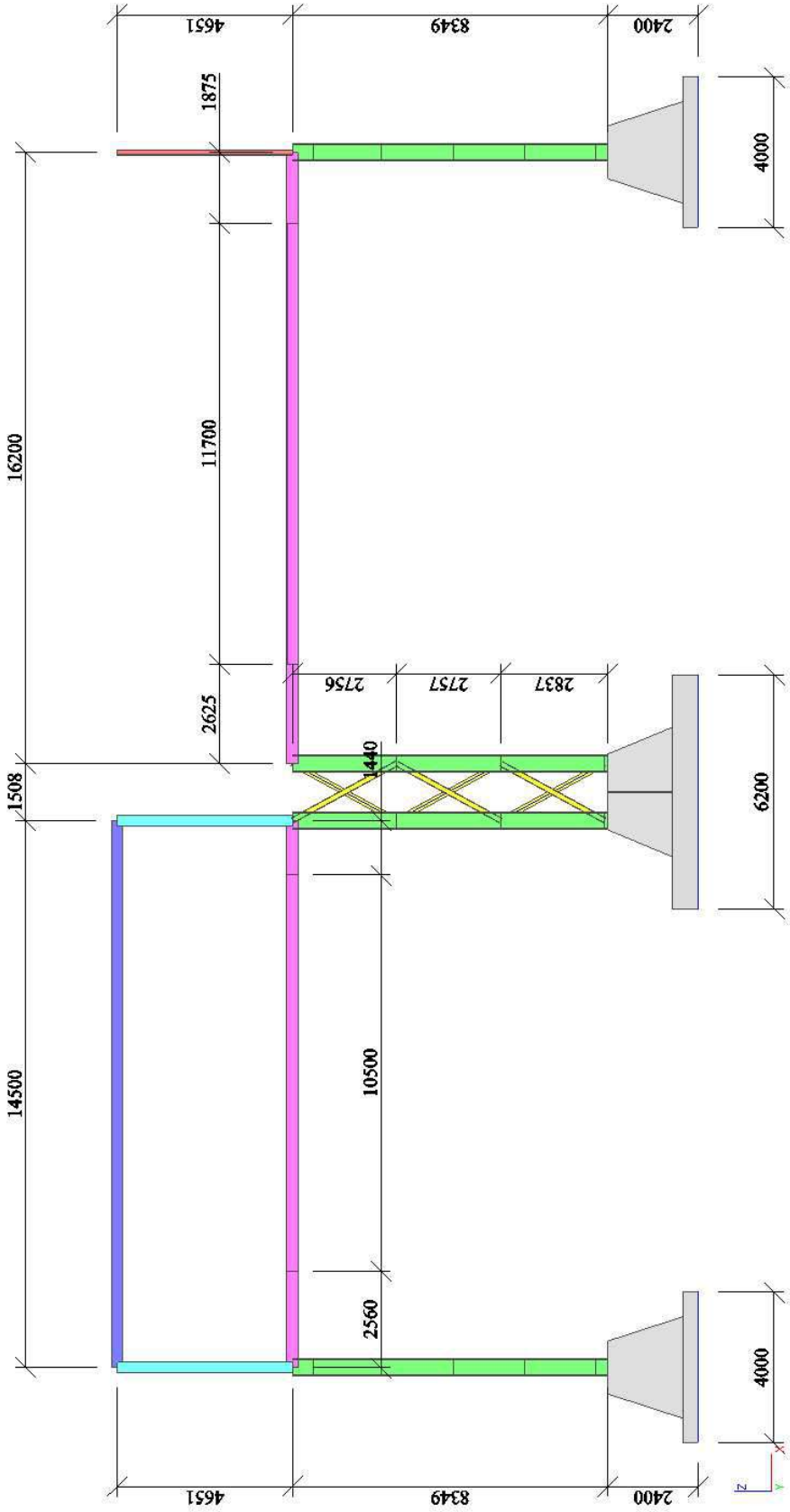
9.14. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid 91
9.15. Staalcontrole koppelplaat; UGT, grafisch overzicht 95
9.16. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 95
9.17. Staalcontrole diagonaal; UGT, grafisch overzicht 98
9.18. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid 98
9.19. Staalcontrole bliksempiek; UGT, grafisch overzicht 101
9.20. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 101

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 235	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	235.0 215.0	360.0 360.0	

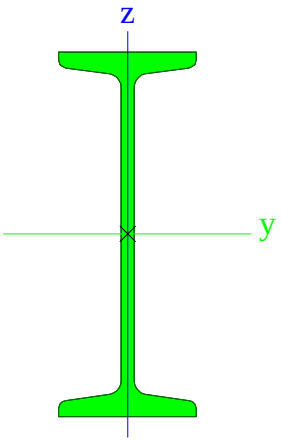
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C60/75	Beton	2500.0	2600.0	3.9100e+04	0.2	0.00	60.00	
Dummy beton	Beton	2500.0	2600.0	3.9100e+06	0.2	0.00	60.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom INP45		
Type	INP450	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	5.63e+05	5.63e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	8.11e+04	8.11e+04
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

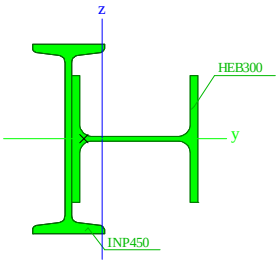
Afbeelding



Kolom-samengesteld		
Type	I + Ir	
Uitgebreid	INP450, HEB300	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	

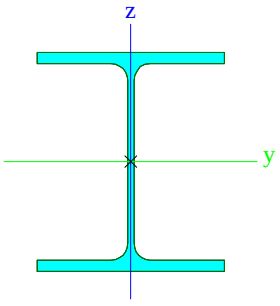
Knik y-y, Knik z-z	c	c
A [m²]	2.9616e-02	
A_y [m²], A_z [m²]	5.1391e-03	1.9650e-02
I_y [m⁴], I_z [m⁴]	5.4362e-04	4.5410e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.4161e-03	1.9877e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.2645e-03	2.5730e-03
I_w [m⁶], I_t [m⁴]	4.1252e-06	6.9763e-06
d_y [mm], d_z [mm]	-43	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	165	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.67e+05	7.67e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	6.05e+05	6.05e+05
A_L [m²/m], A_D [m²/m]	2.6069e+00	2.6069e+00

Afbeelding



Kolom DIE36		
Type	HEA360	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.4300e-02	
A_y [m²], A_z [m²]	1.0125e-02	3.6844e-03
I_y [m⁴], I_z [m⁴]	3.3100e-04	7.8900e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8900e-03	5.2600e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0875e-03	8.0417e-04
I_w [m⁶], I_t [m⁴]	2.1766e-06	1.4900e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	175
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.91e+05	4.91e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.89e+05	1.89e+05
A_L [m²/m], A_D [m²/m]	1.8300e+00	1.8334e+00

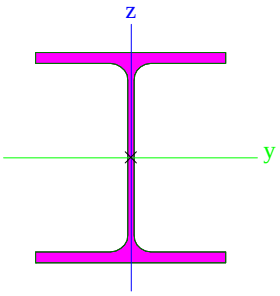
Afbeelding



Ligger DIE34		
Type	HE340A	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3350e-02	
A_y [m²], A_z [m²]	9.5495e-03	3.3201e-03
I_y [m⁴], I_z [m⁴]	2.7690e-04	7.4360e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6780e-03	4.9570e-04

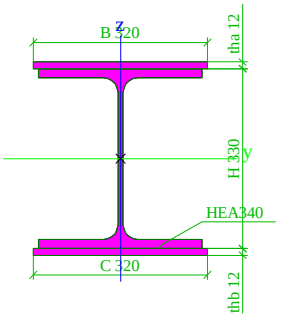
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.8500e-03	7.5590e-04
I_w [m⁶], I_t [m⁴]	1.8240e-06	1.2720e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.35e+05	4.35e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.78e+05	1.78e+05
A_L [m²/m], A_D [m²/m]	1.7944e+00	1.7944e+00

Afbeelding



Ligger DIE34+strippen		
Type	I + 2 PLud	
Uitgebreid	HEA340; 320; 320; 12; 12	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	c	c
A [m²]	2.1039e-02	
A_y [m²], A_z [m²]	1.6468e-02	3.6506e-03
I_y [m⁴], I_z [m⁴]	5.0182e-04	1.3990e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.8351e-03	8.7437e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.1654e-03	1.3705e-03
I_w [m⁶], I_t [m⁴]	3.6743e-06	4.7425e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	160	177
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.44e+05	7.44e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.22e+05	3.22e+05
A_L [m²/m], A_D [m²/m]	1.9224e+00	1.9224e+00

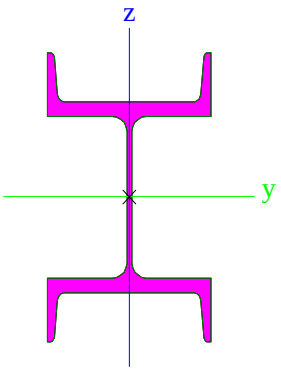
Afbeelding



Ligger DIE34+UNP's		
Type	Grafische doorsnede	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.5114e-02	
A_y [m²], A_z [m²]	1.6554e-02	4.3472e-03
I_y [m⁴], I_z [m⁴]	7.2035e-04	2.3496e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.7183e-03	1.5664e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.1091e-03	2.0212e-03
I_w [m⁶], I_t [m⁴]	4.5518e-06	4.8902e-06

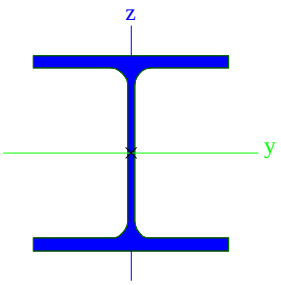
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	0	0
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.66e+05	9.66e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	4.75e+05	4.75e+05
A_L [m²/m], A_D [m²/m]	2.4925e+00	2.4925e+00

Afbeelding



Ligger DIN28		
Type	HEB280	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3140e-02	
A_y [m²], A_z [m²]	9.6422e-03	3.1403e-03
I_y [m⁴], I_z [m⁴]	1.9270e-04	6.5950e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3760e-03	4.7100e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.5340e-03	7.1760e-04
I_w [m⁶], I_t [m⁴]	1.1302e-06	1.4370e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	140	140
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3.61e+05	3.61e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.69e+05	1.69e+05
A_L [m²/m], A_D [m²/m]	1.6200e+00	1.6176e+00

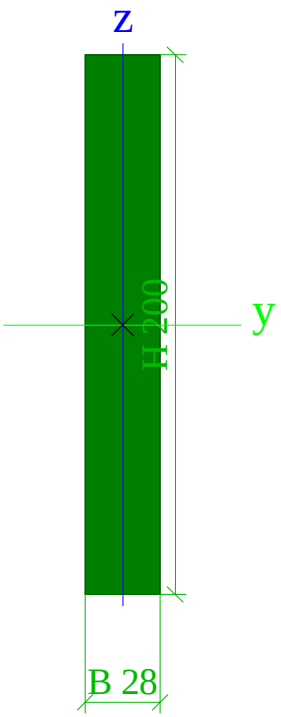
Afbeelding



Plaat 2x14x200		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06

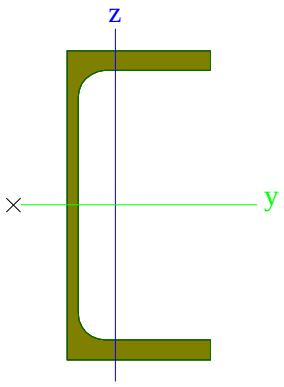
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.58e+04	6.58e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.21e+03	9.21e+03
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

Afbeelding



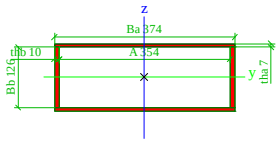
Diagonaal UPE14		
Type	UPE140	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	c	c
A [m²]	1.8400e-03	
A_y [m²], A_z [m²]	1.1000e-03	7.1956e-04
I_y [m⁴], I_z [m⁴]	5.9900e-06	7.8700e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	8.5600e-05	1.8200e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	9.8800e-05	3.2600e-05
I_w [m⁶], I_t [m⁴]	2.3372e-09	4.0500e-08
d_y [mm], d_z [mm]	-46	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	22	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.32e+04	2.32e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	7.66e+03	7.66e+03
A_L [m²/m], A_D [m²/m]	5.1970e-01	5.1965e-01

Afbeelding



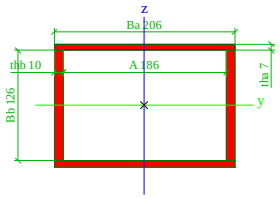
Bliksempiek-1		
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	7.7560e-03	
A_y [m²], A_z [m²]	5.0496e-03	2.7596e-03
I_y [m⁴], I_z [m⁴]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.2757e-04	9.4821e-04
I_w [m⁶], I_t [m⁴]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.00e+05	1.00e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.23e+05	2.23e+05
A_L [m²/m], A_D [m²/m]	1.0280e+00	1.9880e+00

Afbeelding



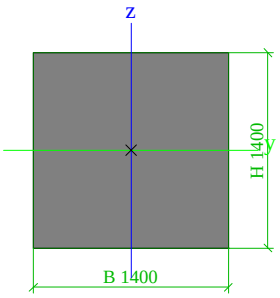
Bliksempiek-2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	5.4040e-03	
A_y [m²], A_z [m²]	2.8012e-03	2.7167e-03
I_y [m⁴], I_z [m⁴]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.7117e-04	3.9549e-04
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.37e+04	6.37e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.29e+04	9.29e+04
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

Afbeelding



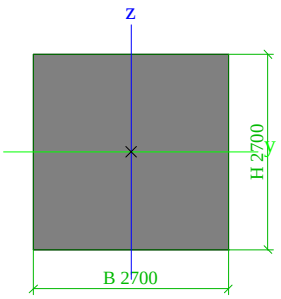
Poer boven-IA		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Afbeelding



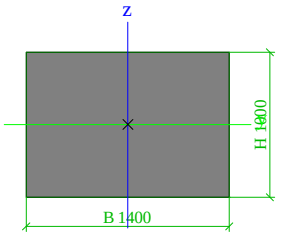
Poer onder-IA		
Type	Rechthoek	
Uitgebreid	2700; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	7.2900e+00	
A_y [m²], A_z [m²]	6.0750e+00	6.0750e+00
I_y [m⁴], I_z [m⁴]	4.4287e+00	4.4287e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.2805e+00	3.2805e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	4.9524e-02	7.4626e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	1350
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0800e+01	1.0800e+01

Afbeelding



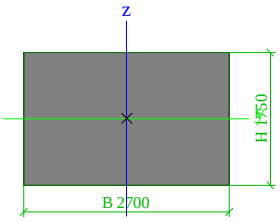
Poer boven-IB		
Type	Rechthoek	
Uitgebreid	1000; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.4000e+00	
A_y [m²], A_z [m²]	1.1667e+00	1.1667e+00
I_y [m⁴], I_z [m⁴]	1.1667e-01	2.2867e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.3333e-01	3.2667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	2.2616e-03	2.6127e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.8000e+00	4.8000e+00

Afbeelding



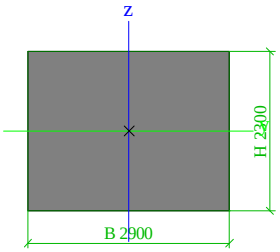
Poer onder-IB		
Type	Rechthoek	
Uitgebreid	1750; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	4.7250e+00	
A_y [m²], A_z [m²]	3.9375e+00	3.9375e+00
I_y [m⁴], I_z [m⁴]	1.2059e+00	2.8704e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3781e+00	2.1263e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2952e-01	2.8785e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	875
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	8.9000e+00	8.9000e+00

Afbeelding



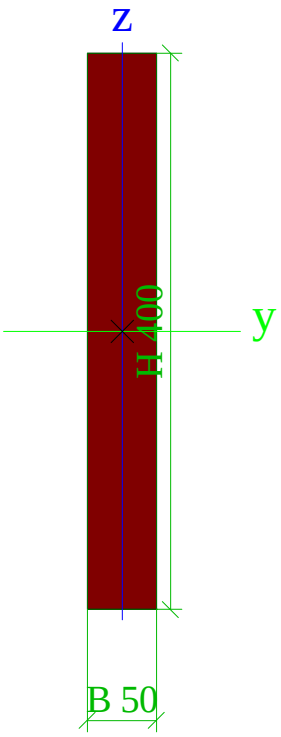
Poer onder-IV		
Type	Rechthoek	
Uitgebreid	2300; 2900	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	6.6700e+00	
A_y [m²], A_z [m²]	5.5583e+00	5.5583e+00
I_y [m⁴], I_z [m⁴]	2.9404e+00	4.6746e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.5568e+00	3.2238e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.3988e-01	6.0933e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1450	1150
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0400e+01	1.0400e+01

Afbeelding



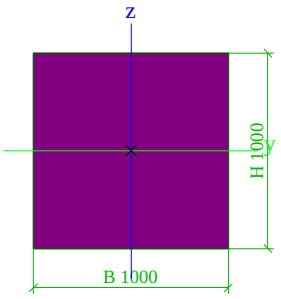
Dummy 400x50		
Type	Rechthoek	
Uitgebreid	400; 50	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.0000e-02	
A_y [m²], A_z [m²]	1.6667e-02	1.6667e-02
I_y [m⁴], I_z [m⁴]	2.6667e-04	4.1667e-06
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3333e-03	1.6667e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0000e-03	2.5000e-04
I_w [m⁶], I_t [m⁴]	5.0391e-08	1.5278e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	25	200
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.70e+05	4.70e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	5.88e+04	5.88e+04
A_L [m²/m], A_D [m²/m]	9.0000e-01	9.0000e-01

Afbeelding



Dummy beton		
Type	Rechthoek	
Uitgebreid	1000; 1000	
Onderdeelmateriaal	Dummy beton	
Bouwwijze	beton	
A [m²]	1.0000e+00	
A_y [m²], A_z [m²]	8.3333e-01	8.3333e-01
I_y [m⁴], I_z [m⁴]	8.3333e-02	8.3333e-02
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6667e-01	1.6667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2502e-04	1.4035e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	500	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.0000e+00	4.0000e+00

Afbeelding



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. staco	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie; X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie; Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1168	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1169	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1170	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1171	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1172	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1173	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1174	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1175	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1176	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1177	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1178	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1179	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1180	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1181	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1182	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1183	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1184	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1185	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1186	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1187	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1188	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1189	BC0	Variabel	EXCL MAST		Kort	Geen

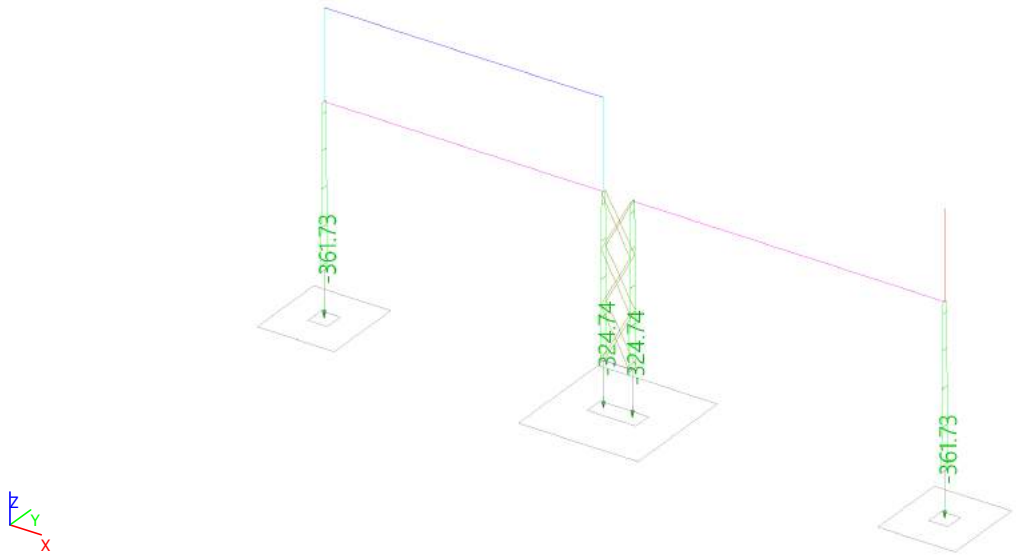
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1190	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1191	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1192	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1193	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1194	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1195	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1196	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1197	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1198	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1199	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1200	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1201	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1202	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1203	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1204	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1205	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1206	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1207	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1208	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1209	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1210	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1211	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1212	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1213	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1214	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1215	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1216	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1217	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1218	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1219	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1220	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1221	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1222	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1223	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1224	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1225	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1226	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1227	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1228	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1229	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1230	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1231	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1232	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1233	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1234	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1235	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1236	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1237	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1238	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

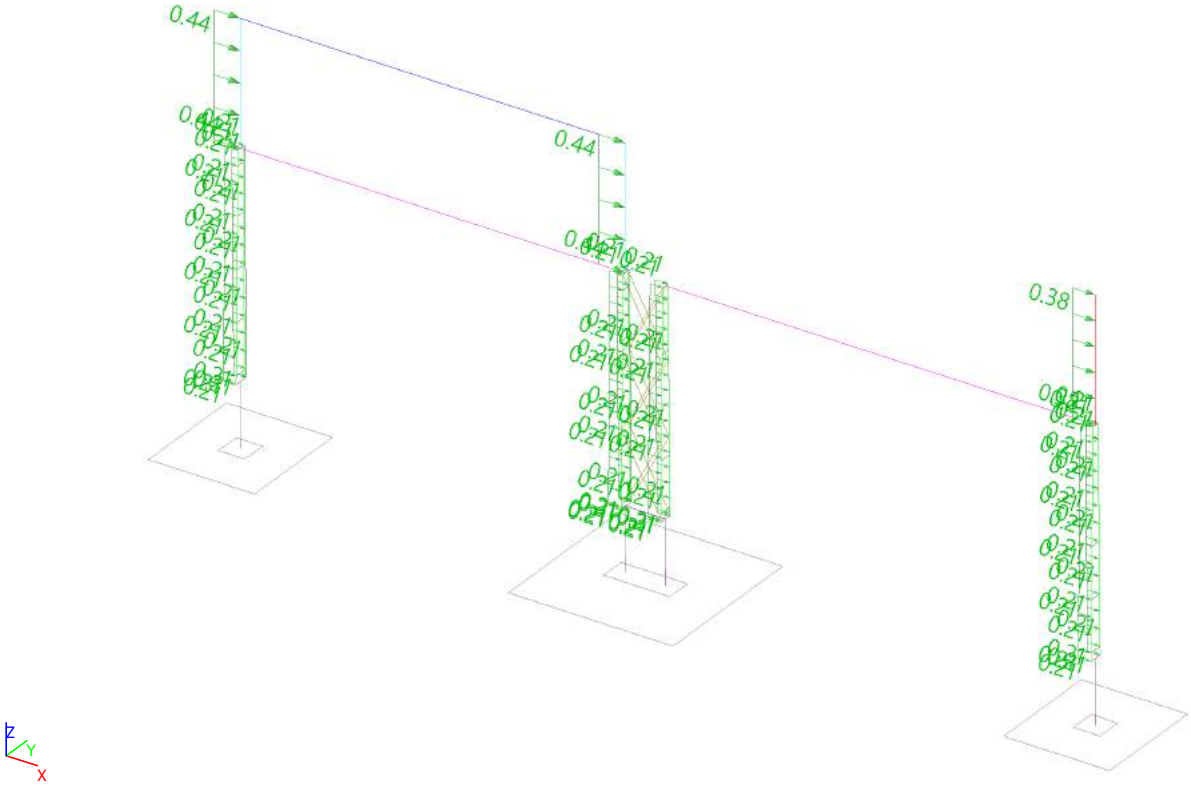
3.2. BG1: e.g. constructie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

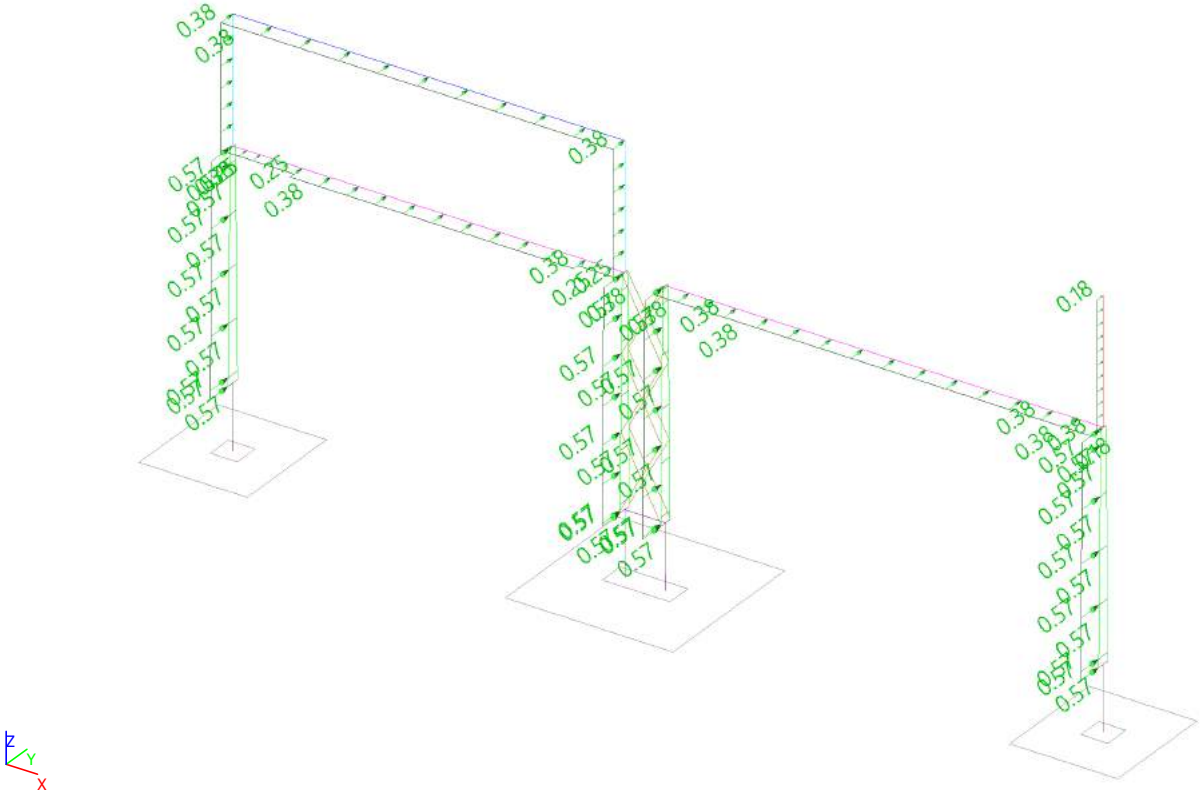
3.3. BG2: grond op poer



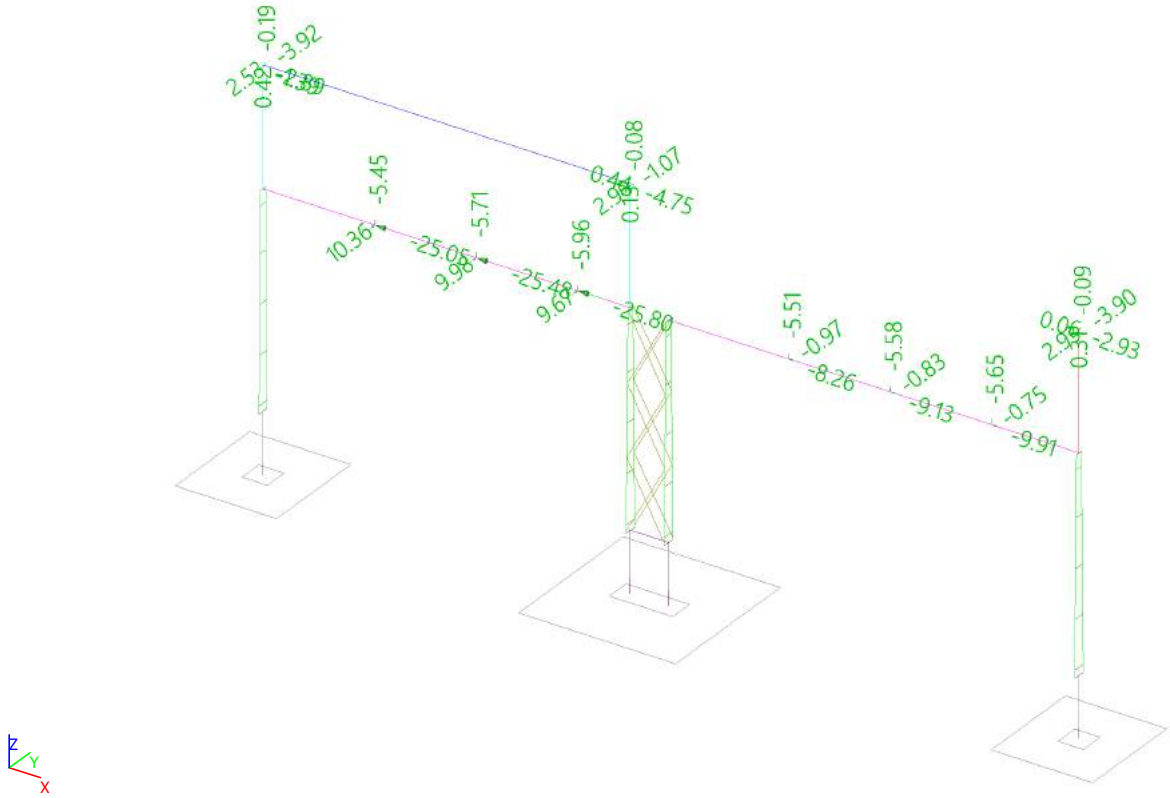
3.4. BG3: wind op constructie; X-richting



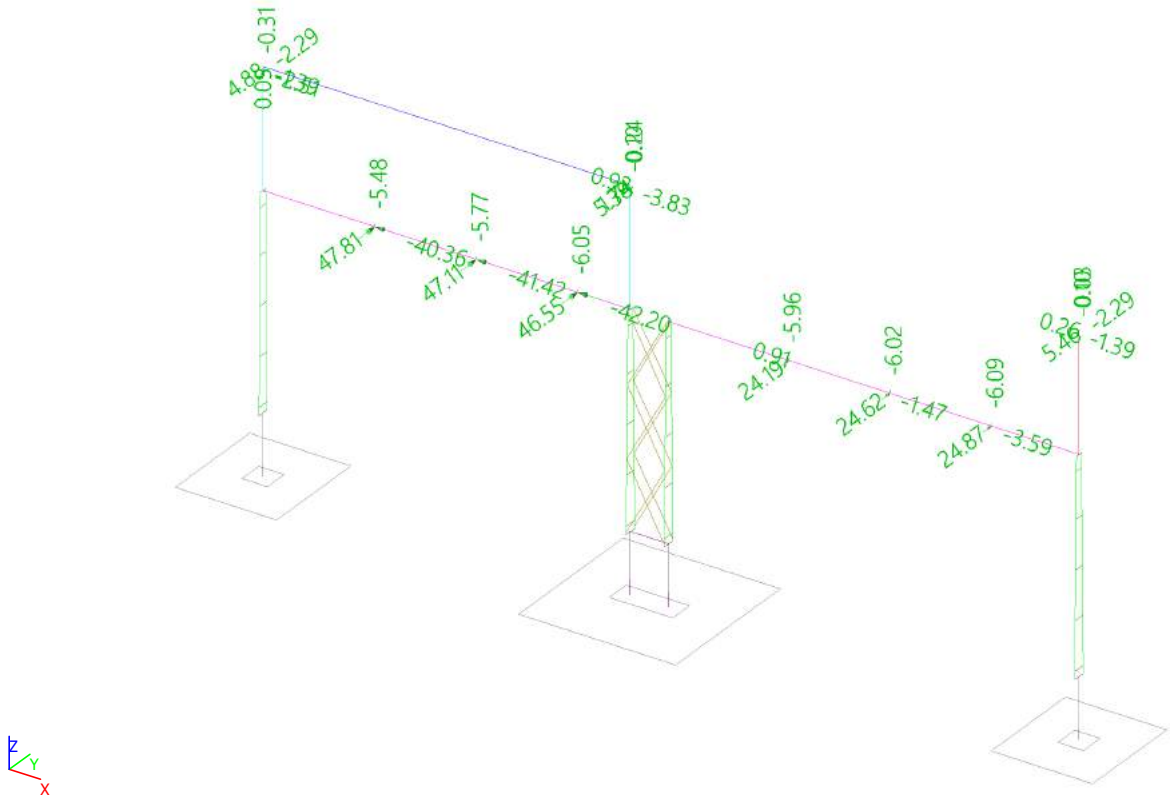
3.5. BG4: wind op constructie; Y-richting



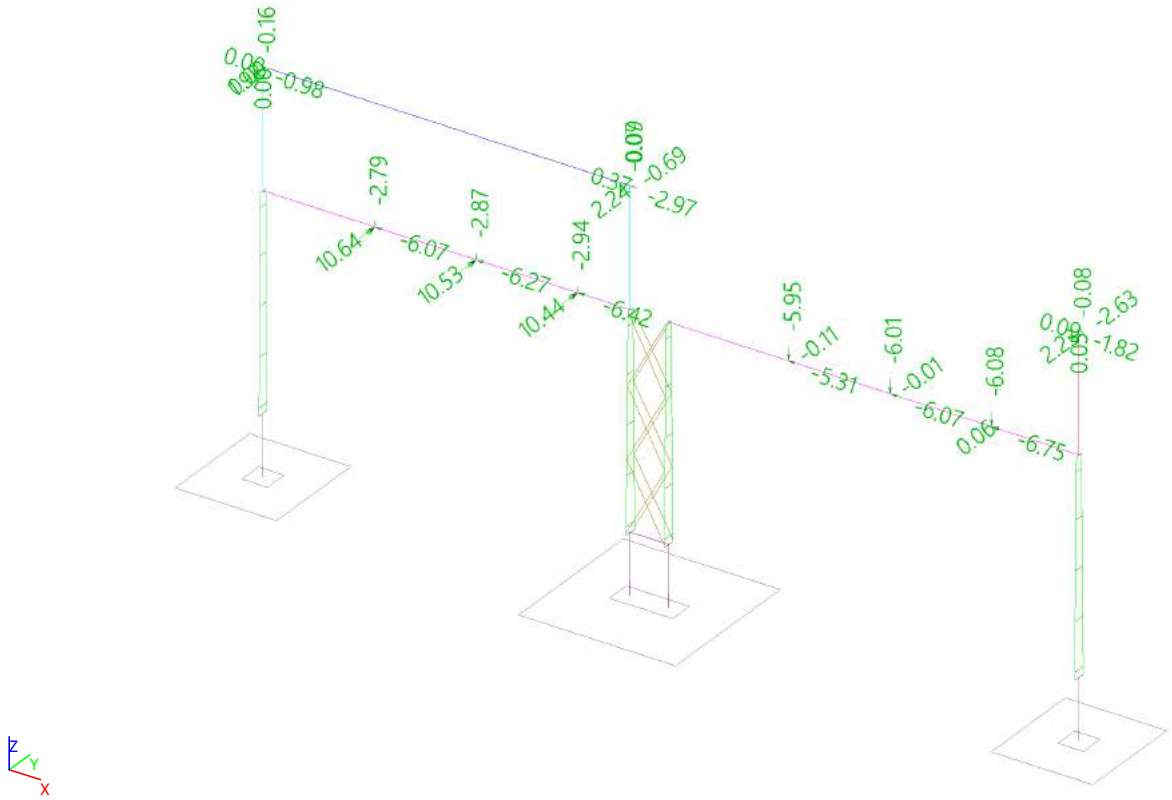
3.6. LC1001 / Totale waarde



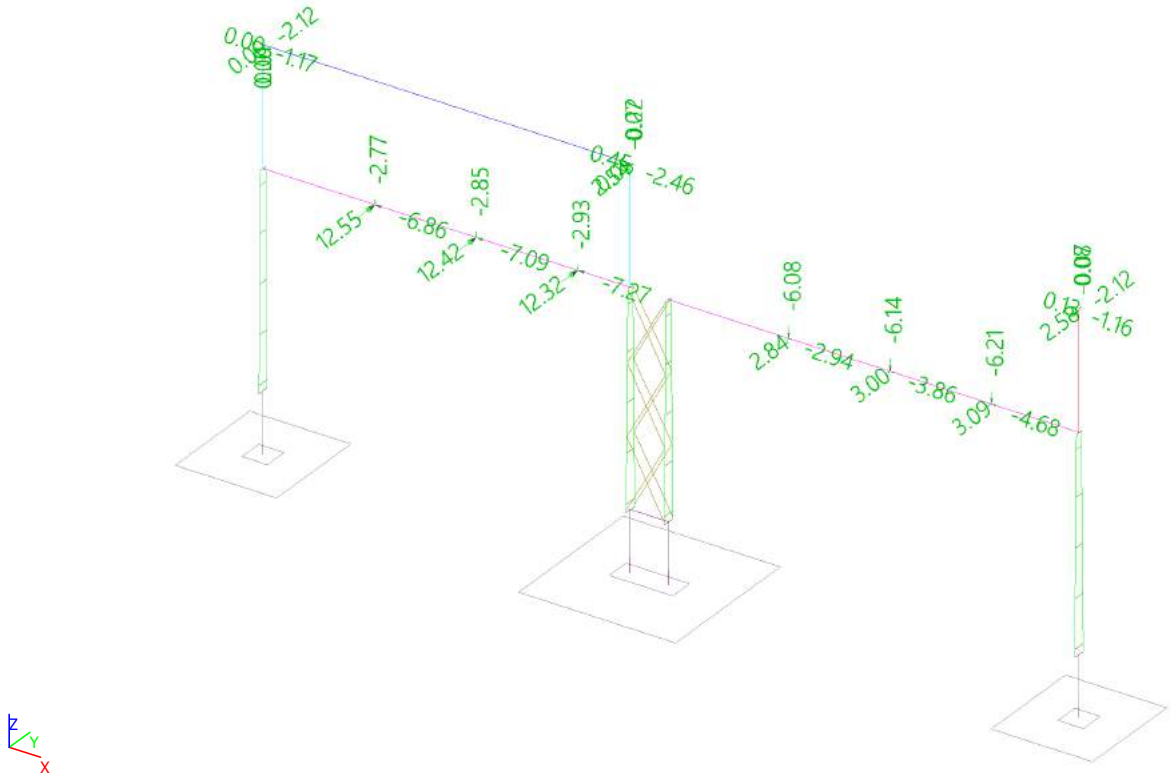
3.7. LC1080 / Totale waarde



3.8. LC1159 / Totale waarde



3.9. LC1238 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-1	Omhullend 1	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	1.40
			BG4 - wind op constructie; Y-richting	1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00
UGT-2	Omhullend 2	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	-1.40
			BG4 - wind op constructie; Y-richting	-1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00

3.11. Resultaatklasses

Naam	Omschrijving	Lijst
UGT	Sterkte en stabiliteit	UGT-1 - Omhullende - uiterst UGT-2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
Belastinggevallen	BG1
	BG3
	BG4
	BG2
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
	LC1168
	LC1169
	LC1170
	LC1171
	LC1172
	LC1173
	LC1174
	LC1175
	LC1176
	LC1177
	LC1178
	LC1179
	LC1180
	LC1181
	LC1182
	LC1183
	LC1184
	LC1185

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1186
	LC1187
	LC1188
	LC1189
	LC1190
	LC1191
	LC1192
	LC1193
	LC1194
	LC1195
	LC1196
	LC1197
	LC1198
	LC1199
	LC1200
	LC1201
	LC1202
	LC1203
	LC1204
	LC1205
	LC1206
	LC1207
	LC1208
	LC1209
	LC1210
	LC1211
	LC1212
	LC1213
	LC1214
	LC1215
	LC1216
	LC1217
	LC1218
	LC1219
	LC1220
	LC1221
	LC1222
	LC1223
	LC1224
	LC1225
	LC1226
	LC1227
	LC1228
	LC1229
	LC1230
	LC1231
	LC1232
	LC1233
	LC1234
	LC1235
	LC1236
	LC1237
	LC1238
Buigtheorie	Mindlin
Start berekening	17.06.2020 07:38
Einde berekening	17.06.2020 07:39

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	-0.0	-1946.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	0.1	1946.5

	[kN]	X	Y	Z
BG BG3	last	19.9	0.0	0.0
	knoopreacties	0.0	-0.0	0.0
	lijnreactions	-1.1	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-18.8	0.0	-0.0
BG BG4	last	0.0	40.1	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	-36.0	-0.0
BG BG2	last	0.0	0.0	-1372.9
	knoopreacties	0.0	-0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	-0.0	1372.9
BG LC1001	last	-115.1	26.9	-33.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-2.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.9	-24.5	33.4
BG LC1002	last	-136.5	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.5	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	128.0	-203.1	36.1
BG LC1003	last	-145.5	89.5	-40.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	9.2	-8.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	136.3	-80.8	40.8
BG LC1004	last	-84.1	53.2	-37.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.3	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	78.9	-47.6	37.6
BG LC1005	last	-69.9	15.2	-33.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-1.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	65.5	-14.2	33.4
BG LC1006	last	-127.6	225.6	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-24.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.6	-201.1	36.1
BG LC1007	last	-121.0	81.7	-40.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.6	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	113.4	-74.0	40.8
BG LC1008	last	-75.2	50.9	-37.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-5.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	70.5	-45.6	37.6
BG LC1009	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1010	last	-133.4	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.0	-203.3	36.3
BG LC1011	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1012	last	-81.1	53.2	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.0	-47.6	37.9
BG LC1013	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1014	last	-133.4	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.0	-203.3	36.3
BG LC1015	last	-124.1	92.9	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.8	-9.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	116.3	-83.7	42.3
BG LC1016	last	-81.1	53.2	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.0	-47.6	37.9
BG LC1017	last	-98.6	20.1	-34.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-1.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.4	-18.4	34.7
BG LC1018	last	-134.6	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	126.2	-203.0	36.1
BG LC1019	last	-139.3	88.9	-41.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.8	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	-80.2	41.2
BG LC1020	last	-82.2	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	77.1	-47.3	37.7
BG LC1021	last	-98.6	20.1	-34.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-1.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.4	-18.4	34.7
BG LC1022	last	-134.6	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	126.2	-203.0	36.1
BG LC1023	last	-139.3	88.9	-41.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.8	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	-80.2	41.2
BG LC1024	last	-82.2	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	77.1	-47.3	37.7
BG LC1025	last	-74.3	32.0	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-3.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.7	-28.7	38.0
BG LC1026	last	-131.1	227.4	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-202.6	36.3
BG LC1027	last	-127.4	90.4	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-8.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.4	-81.5	42.3
BG LC1028	last	-78.8	52.3	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.9	-46.8	37.9
BG LC1029	last	-73.9	34.4	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.3	-30.9	38.0
BG LC1030	last	-131.0	227.9	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-203.0	36.3
BG LC1031	last	-128.0	92.0	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.9	-82.9	42.3
BG LC1032	last	-78.7	52.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-47.2	37.9
BG LC1033	last	-99.6	27.9	-21.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-2.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	93.3	-25.3	21.9
BG LC1034	last	-118.6	250.1	-26.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.4	-27.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	111.2	-222.7	26.4
BG LC1035	last	-126.2	99.8	-30.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-9.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	118.3	-89.9	30.6
BG LC1036	last	-61.5	57.9	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.6	-51.6	27.8
BG LC1037	last	-54.3	16.2	-21.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-1.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.9	-15.0	21.9
BG LC1038	last	-109.7	247.8	-26.4

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.8	-27.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	102.9	-220.7	26.4
BG LC1039	last	-101.8	92.0	-30.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-8.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	95.4	-83.1	30.6
BG LC1040	last	-52.6	55.6	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-6.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-49.6	27.8
BG LC1041	last	-69.1	50.9	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-45.4	28.0
BG LC1042	last	-115.0	251.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.9	-223.6	26.8
BG LC1043	last	-113.1	105.6	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-94.8	32.5
BG LC1044	last	-58.0	58.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.4	-52.1	28.2
BG LC1045	last	-69.1	50.9	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-45.4	28.0
BG LC1046	last	-115.0	251.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.9	-223.6	26.8
BG LC1047	last	-113.1	105.6	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-94.8	32.5
BG LC1048	last	-58.0	58.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.4	-52.1	28.2
BG LC1049	last	-79.1	15.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-1.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	74.1	-14.3	23.6
BG LC1050	last	-116.8	250.7	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.3	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	109.5	-223.2	26.5
BG LC1051	last	-119.3	99.0	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.5	-9.9	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	111.8	-89.1	31.1
BG LC1052	last	-59.2	57.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-51.0	27.9
BG LC1053	last	-79.1	15.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-1.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	74.1	-14.3	23.6
BG LC1054	last	-116.8	250.7	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.3	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	109.5	-223.2	26.5
BG LC1055	last	-119.3	99.0	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.5	-9.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	111.8	-89.1	31.1
BG LC1056	last	-59.2	57.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-51.0	27.9
BG LC1057	last	-51.7	35.2	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.5	-31.5	28.2
BG LC1058	last	-113.0	250.8	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.0	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-223.3	26.8
BG LC1059	last	-106.8	102.1	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.7	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	100.1	-91.8	32.5
BG LC1060	last	-55.6	57.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.1	-51.2	28.2
BG LC1061	last	-51.3	37.6	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.1	-33.6	28.2
BG LC1062	last	-112.9	251.3	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.0	-27.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-223.7	26.8
BG LC1063	last	-107.3	103.7	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.8	-10.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	100.6	-93.2	32.5
BG LC1064	last	-55.5	57.9	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.0	-51.6	28.2

	[kN]	X	Y	Z
BG LC1065	last	-60.7	33.4	-33.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.9	-29.9	33.7
BG LC1066	last	-61.7	35.1	-32.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.8	-31.3	32.9
BG LC1067	last	-61.7	35.1	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.8	-31.3	32.8
BG LC1068	last	-61.7	31.6	-32.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.9	-28.5	32.7
BG LC1069	last	-63.0	31.4	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.0	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	59.0	-28.1	32.8
BG LC1070	last	-62.7	31.4	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	58.8	-28.3	32.8
BG LC1071	last	-59.9	32.4	-28.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.1	-29.0	28.7
BG LC1072	last	-59.2	32.3	-28.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-28.9	28.7
BG LC1073	last	-58.6	32.2	-28.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.0	-28.9	28.6
BG LC1074	last	-51.9	33.5	-30.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.6	-30.1	30.9
BG LC1075	last	-51.9	33.4	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.7	-29.9	31.0
BG LC1076	last	-52.1	33.3	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.8	-29.8	31.1
BG LC1077	last	-80.4	30.8	-43.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.4	-27.7	43.1
BG LC1078	last	-57.5	34.0	-28.6
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.6	-3.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.9	-30.4	28.6
BG LC1079	last	-94.0	31.2	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.9	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	88.1	-28.1	36.2
BG LC1080	last	-136.0	228.0	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.5	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	127.5	-203.2	36.1
BG LC1081	last	-117.9	103.8	-37.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.4	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	110.5	-93.0	37.8
BG LC1082	last	-83.7	53.3	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	78.4	-47.7	37.7
BG LC1083	last	-67.3	24.2	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-2.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.1	-22.0	36.2
BG LC1084	last	-127.8	225.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-24.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.9	-201.3	36.1
BG LC1085	last	-100.7	98.7	-37.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-10.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.4	-88.5	37.8
BG LC1086	last	-75.5	51.2	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-5.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	70.7	-45.8	37.7
BG LC1087	last	-81.3	36.2	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.2	-32.5	38.0
BG LC1088	last	-133.2	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	124.9	-203.3	36.3
BG LC1089	last	-109.9	106.1	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-11.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	103.0	-94.9	38.8
BG LC1090	last	-80.8	53.0	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.7	-47.4	37.9
BG LC1091	last	-81.3	36.2	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-3.7	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	76.2	-32.5	38.0
BG LC1092	last	-133.2	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	124.9	-203.3	36.3
BG LC1093	last	-109.9	106.1	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-11.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	103.0	-94.9	38.8
BG LC1094	last	-80.8	53.0	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.7	-47.4	37.9
BG LC1095	last	-86.0	28.5	-36.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.4	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	80.6	-25.8	36.8
BG LC1096	last	-134.3	227.9	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.9	-203.1	36.2
BG LC1097	last	-113.6	103.4	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	106.4	-92.6	38.1
BG LC1098	last	-81.9	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.8	-47.3	37.7
BG LC1099	last	-86.0	28.5	-36.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.4	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	80.6	-25.8	36.8
BG LC1100	last	-134.3	227.9	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.9	-203.1	36.2
BG LC1101	last	-113.6	103.4	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	106.4	-92.6	38.1
BG LC1102	last	-81.9	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.8	-47.3	37.7
BG LC1103	last	-73.4	31.7	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	68.8	-28.5	38.1
BG LC1104	last	-131.1	227.4	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-202.6	36.3
BG LC1105	last	-105.8	104.3	-38.8

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-11.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	99.2	-93.3	38.8
BG LC1106	last	-78.8	52.3	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.9	-46.8	37.9
BG LC1107	last	-73.2	33.2	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	68.6	-29.8	38.1
BG LC1108	last	-131.0	227.9	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-203.0	36.3
BG LC1109	last	-106.0	105.4	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-11.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	99.4	-94.3	38.8
BG LC1110	last	-78.7	52.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-47.2	37.9
BG LC1111	last	-71.7	33.9	-18.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	67.1	-30.2	18.5
BG LC1112	last	-130.5	156.6	-12.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-139.7	12.5
BG LC1113	last	-100.4	79.8	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-71.2	19.3
BG LC1114	last	-68.9	46.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.5	-41.2	19.3
BG LC1115	last	-57.5	30.9	-18.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.8	-27.5	18.5
BG LC1116	last	-126.1	155.7	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	118.2	-138.9	18.0
BG LC1117	last	-91.0	77.4	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.8	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	85.2	-69.1	19.3
BG LC1118	last	-64.5	45.3	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.1	-4.9	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	60.4	-40.4	19.3
BG LC1119	last	-64.9	37.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	60.7	-32.9	19.5
BG LC1120	last	-129.0	156.7	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	120.9	-139.7	18.1
BG LC1121	last	-96.0	81.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-8.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	-72.3	19.9
BG LC1122	last	-67.4	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-41.0	19.4
BG LC1123	last	-64.9	37.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	60.7	-32.9	19.5
BG LC1124	last	-129.0	156.7	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	120.9	-139.7	18.1
BG LC1125	last	-96.0	81.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-8.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	-72.3	19.9
BG LC1126	last	-67.4	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-41.0	19.4
BG LC1127	last	-66.0	31.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-27.9	18.8
BG LC1128	last	-129.4	156.5	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.2	-139.5	18.0
BG LC1129	last	-97.4	79.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	91.2	-70.6	19.5
BG LC1130	last	-67.8	45.9	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.4	-40.9	19.3
BG LC1131	last	-66.0	31.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-27.9	18.8

	[kN]	X	Y	Z
BG LC1132	last	-129.4	156.5	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.2	-139.5	18.0
BG LC1133	last	-97.4	79.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	91.2	-70.6	19.5
BG LC1134	last	-67.8	45.9	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.4	-40.9	19.3
BG LC1135	last	-59.8	33.3	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.9	-29.7	19.5
BG LC1136	last	-127.8	156.2	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.7	-139.3	18.1
BG LC1137	last	-93.5	79.9	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.5	-71.3	19.9
BG LC1138	last	-66.2	45.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-40.7	19.4
BG LC1139	last	-59.3	34.3	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-30.6	19.5
BG LC1140	last	-127.7	156.5	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.6	-139.6	18.1
BG LC1141	last	-93.4	80.7	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-8.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.4	-72.0	19.9
BG LC1142	last	-66.1	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-40.9	19.4
BG LC1143	last	-47.1	36.9	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	44.2	-32.9	26.7
BG LC1144	last	-61.9	177.5	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	58.1	-157.6	26.8
BG LC1145	last	-57.0	91.8	-27.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.5	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.4	-81.6	27.9
BG LC1146	last	-40.0	52.0	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.5	-46.3	27.5
BG LC1147	last	-30.3	33.2	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	1.9	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	28.5	-29.7	26.7
BG LC1148	last	-56.8	176.4	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-19.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.3	-156.6	26.8
BG LC1149	last	-46.2	89.0	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-9.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	43.4	-79.2	27.9
BG LC1150	last	-34.8	50.9	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.7	-45.3	27.5
BG LC1151	last	-40.1	39.0	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-34.7	27.7
BG LC1152	last	-60.3	177.6	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.6	-157.6	26.9
BG LC1153	last	-52.4	93.0	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.1	-82.7	28.4
BG LC1154	last	-38.4	51.8	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-46.0	27.6
BG LC1155	last	-40.1	39.0	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-34.7	27.7
BG LC1156	last	-60.3	177.6	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.6	-157.6	26.9
BG LC1157	last	-52.4	93.0	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.1	-82.7	28.4
BG LC1158	last	-38.4	51.8	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	36.0	-46.0	27.6
BG LC1159	last	-42.2	34.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	39.6	-30.9	27.0
BG LC1160	last	-60.8	177.4	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-157.5	26.9
BG LC1161	last	-54.2	91.2	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.8	-81.1	28.0
BG LC1162	last	-38.9	51.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.5	-46.0	27.5
BG LC1163	last	-42.2	34.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	39.6	-30.9	27.0
BG LC1164	last	-60.8	177.4	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-157.5	26.9
BG LC1165	last	-54.2	91.2	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.8	-81.1	28.0
BG LC1166	last	-38.9	51.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.5	-46.0	27.5
BG LC1167	last	-35.1	36.2	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.9	-32.3	27.7
BG LC1168	last	-58.9	177.2	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.3	-157.3	26.9
BG LC1169	last	-49.7	91.7	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.6	-81.6	28.4
BG LC1170	last	-37.1	51.4	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.8	-45.7	27.6
BG LC1171	last	-34.6	36.9	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.5	-32.9	27.7
BG LC1172	last	-58.8	177.4	-26.9

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.2	-157.5	26.9
BG LC1173	last	-49.6	92.3	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-10.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.5	-82.0	28.4
BG LC1174	last	-36.9	51.6	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.7	-45.9	27.6
BG LC1175	last	-73.8	28.5	-18.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-2.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.1	-26.0	18.3
BG LC1176	last	-132.2	148.9	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	123.8	-133.7	17.9
BG LC1177	last	-103.6	71.0	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	96.9	-64.4	19.2
BG LC1178	last	-70.4	41.4	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.5	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	65.8	-37.4	19.2
BG LC1179	last	-58.9	25.1	-18.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-2.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.1	-23.0	18.3
BG LC1180	last	-127.6	147.8	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-15.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.5	-132.7	17.9
BG LC1181	last	-93.3	68.2	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.4	-62.0	19.2
BG LC1182	last	-65.8	40.4	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.6	-36.5	19.2
BG LC1183	last	-66.2	32.6	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-29.5	19.5
BG LC1184	last	-130.5	149.0	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-133.8	18.1
BG LC1185	last	-98.4	73.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-7.0	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	92.1	-66.1	19.9
BG LC1186	last	-68.6	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.2	-37.3	19.4
BG LC1187	last	-66.2	32.6	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-29.5	19.5
BG LC1188	last	-130.5	149.0	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-133.8	18.1
BG LC1189	last	-98.4	73.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.1	-66.1	19.9
BG LC1190	last	-68.6	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.2	-37.3	19.4
BG LC1191	last	-68.0	26.4	-18.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.6	-24.1	18.7
BG LC1192	last	-131.0	148.8	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.7	-133.5	18.0
BG LC1193	last	-100.4	70.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-64.1	19.4
BG LC1194	last	-69.2	41.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-37.2	19.3
BG LC1195	last	-68.0	26.4	-18.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.6	-24.1	18.7
BG LC1196	last	-131.0	148.8	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.7	-133.5	18.0
BG LC1197	last	-100.4	70.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-64.1	19.4
BG LC1198	last	-69.2	41.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-37.2	19.3

	[kN]	X	Y	Z
BG LC1199	last	-61.0	29.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.1	-26.4	19.5
BG LC1200	last	-129.3	148.5	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.1	-133.3	18.1
BG LC1201	last	-95.7	72.0	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.6	-65.1	19.9
BG LC1202	last	-67.5	40.9	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.1	-37.0	19.4
BG LC1203	last	-60.7	30.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.7	-27.3	19.5
BG LC1204	last	-129.2	148.8	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.0	-133.6	18.1
BG LC1205	last	-95.8	72.8	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.6	-65.8	19.9
BG LC1206	last	-67.4	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-37.3	19.4
BG LC1207	last	-47.9	31.8	-26.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.0	-2.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	45.0	-29.0	26.3
BG LC1208	last	-60.8	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-152.0	26.5
BG LC1209	last	-57.9	83.6	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.3	-75.3	27.4
BG LC1210	last	-40.1	47.5	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.6	-42.8	27.3
BG LC1211	last	-30.6	27.8	-26.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	1.9	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	28.7	-25.4	26.3
BG LC1212	last	-55.5	169.1	-26.5
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.4	-18.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.0	-150.9	26.5
BG LC1213	last	-46.5	80.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	43.6	-72.4	27.4
BG LC1214	last	-34.8	46.3	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-4.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.6	-41.7	27.3
BG LC1215	last	-40.2	34.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-31.4	27.5
BG LC1216	last	-59.0	170.5	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.4	-152.1	26.6
BG LC1217	last	-52.6	85.4	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-76.7	28.1
BG LC1218	last	-38.3	47.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-42.6	27.4
BG LC1219	last	-40.2	34.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-31.4	27.5
BG LC1220	last	-59.0	170.5	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.4	-152.1	26.6
BG LC1221	last	-52.6	85.4	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-76.7	28.1
BG LC1222	last	-38.3	47.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-42.6	27.4
BG LC1223	last	-43.0	30.1	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.7	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	40.4	-27.3	26.7
BG LC1224	last	-59.7	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.0	-151.9	26.5
BG LC1225	last	-55.1	83.3	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-8.3	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	51.7	-75.0	27.6
BG LC1226	last	-39.0	47.2	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.6	-42.5	27.3
BG LC1227	last	-43.0	30.1	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.7	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	40.4	-27.3	26.7
BG LC1228	last	-59.7	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.0	-151.9	26.5
BG LC1229	last	-55.1	83.3	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	51.7	-75.0	27.6
BG LC1230	last	-39.0	47.2	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.6	-42.5	27.3
BG LC1231	last	-35.2	32.1	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.2	-3.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	33.0	-29.1	27.5
BG LC1232	last	-57.7	170.1	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.1	-151.7	26.6
BG LC1233	last	-49.8	84.2	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	-75.7	28.1
BG LC1234	last	-37.0	46.9	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.8	-42.2	27.4
BG LC1235	last	-34.8	32.9	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.7	-29.7	27.5
BG LC1236	last	-57.5	170.3	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.0	-151.9	26.6
BG LC1237	last	-49.9	84.8	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	-76.2	28.1
BG LC1238	last	-36.9	47.1	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.7	-42.4	27.4

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC1	K6	S246	**-1.38**	-0.02	**60.66**	4.12	**-1.74**	**0.05**
UGT-2/2	FC1	K6	S246	**7.12**	-60.73	71.97	522.74	18.52	-1.70
UGT-1/3	FC1	K6	S246	3.82	**-81.50**	68.77	**695.90**	12.89	-1.73
UGT-2/4	FC1	K6	S246	1.20	**16.29**	61.37	**-127.91**	1.01	0.01
UGT-2/5	FC1	K6	S246	6.57	-26.06	**74.98**	205.91	**20.01**	-0.97
UGT-2/6	FC1	K6	S246	6.39	-65.19	69.49	563.87	15.63	**-1.77**

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC2	K8	S244	**24.60**	-0.20	**-31.12**	2.43	**-7.85**	-0.16
UGT-2/5	FC2	K8	S244	**120.47**	-48.17	**953.99**	350.57	**210.83**	10.69
UGT-1/7	FC2	K8	S244	99.20	**-119.98**	763.38	764.19	167.80	23.52
UGT-2/4	FC2	K8	S244	36.29	**17.02**	65.46	**-125.81**	13.90	**-2.61**
UGT-1/3	FC2	K8	S244	91.06	-117.68	669.47	**929.88**	146.71	20.75
UGT-1/8	FC2	K8	S244	99.21	-119.83	761.04	765.65	167.29	**23.54**

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	**-45.28**	0.23	**141.98**	1.22	**-31.02**	0.26
UGT-2/5	FC3	K438	S250	**49.15**	-6.55	**-825.61**	123.16	**185.28**	-1.74
UGT-1/9	FC3	K438	S250	22.76	**-46.80**	-557.75	450.38	125.65	-5.53
UGT-2/10	FC3	K438	S250	27.83	**22.99**	-641.49	88.43	143.72	5.22
UGT-2/4	FC3	K438	S250	-34.14	10.71	44.97	**-69.89**	-9.29	1.25
UGT-1/3	FC3	K438	S250	21.73	-46.76	-546.70	**450.67**	123.19	-5.49
UGT-1/11	FC3	K438	S250	-1.89	-44.65	-281.83	357.83	64.05	**-5.78**
UGT-2/12	FC3	K438	S250	27.18	22.98	-634.31	88.27	142.12	**5.23**

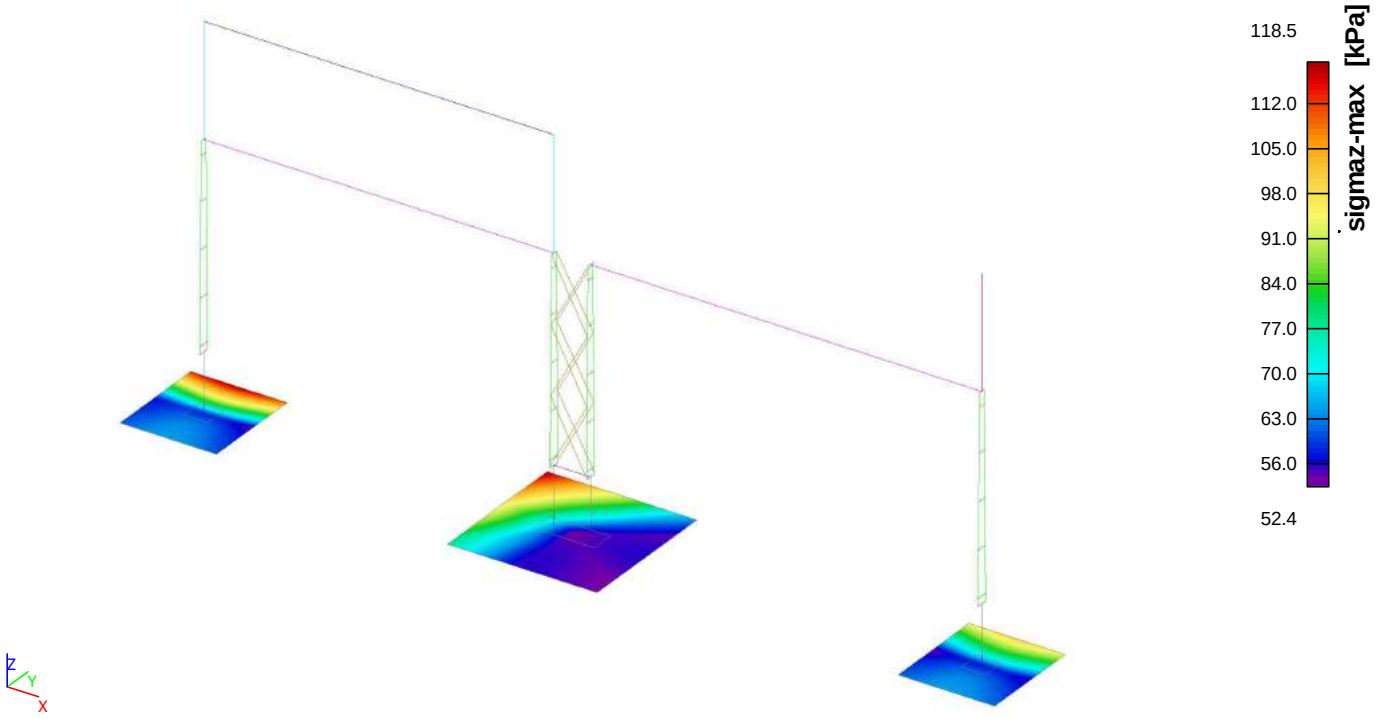
5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/13	FC4	K513	S322	**-8.25**	-14.97	52.56	124.11	0.22	0.17
UGT-2/14	FC4	K513	S322	**1.28**	-5.23	41.91	68.75	12.55	0.03
UGT-1/9	FC4	K513	S322	-3.66	**-61.47**	49.72	**506.23**	6.83	0.51
UGT-2/15	FC4	K513	S322	-4.70	**18.22**	50.99	-134.97	4.78	**-0.05**
UGT-2/16	FC4	K513	S322	-0.34	4.51	**41.52**	-58.20	10.32	0.07
UGT-1/17	FC4	K513	S322	-7.38	0.65	**53.91**	-5.94	3.00	0.01
UGT-2/18	FC4	K513	S322	-2.49	17.05	41.92	**-140.10**	7.39	0.04
UGT-1/1	FC4	K513	S322	-5.79	-0.02	43.02	0.14	**-3.72**	0.00
UGT-2/5	FC4	K513	S322	-2.86	-8.70	51.91	60.31	**13.55**	0.16
UGT-1/3	FC4	K513	S322	-3.70	-61.45	49.74	506.12	6.60	**0.51**

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren; UGT



7. Staafkrachten

7.1. Staafkrachten kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S2..S4, S252, S254, S256, S258, S260..S266, S272, S273, S284, S285, S292..S303
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S298	Kolom INP45 - INP450	305	UGT-1/9	**-965.95**	18.38	2.40	0.10	-2.68	17.45
S266	Kolom INP45 - INP450	0	UGT-1/19	**1129.37**	3.16	-51.32	-0.96	-1.03	9.76
S266	Kolom INP45 - INP450	80	UGT-2/20	475.11	**-18.88**	-41.68	-1.11	-4.57	-5.94
S265	Kolom INP45 - INP450	80	UGT-1/19	867.55	**139.00**	-29.26	0.22	-1.76	**41.18**
S266	Kolom INP45 - INP450	80	UGT-2/21	683.81	-16.59	**-70.45**	-1.53	-6.01	-4.43
S264	Kolom INP45 - INP450	2360	UGT-1/3	324.46	16.74	**23.37**	-0.95	60.48	-19.11
S266	Kolom INP45 - INP450	0	UGT-2/21	683.91	-16.60	-70.43	**-1.53**	-0.37	-3.11
S4	Kolom INP45 - INP450	0	UGT-2/21	255.50	17.44	4.86	**2.17**	0.09	7.12
S261	Kolom INP45 - INP450	0	UGT-1/19	598.41	19.79	21.69	0.54	**-58.12**	-9.22
S262	Kolom INP45 - INP450	0	UGT-1/3	609.35	17.07	-23.16	0.08	**69.74**	-6.14
S302	Kolom INP45 - INP450	0	UGT-1/9	-315.74	24.37	1.98	0.21	-19.17	**-21.41**

7.2. Staafkrachten kolom INP45 versterkt; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S248, S251, S253, S255, S257, S259, S275, S276, S282, S283
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S276	Kolom-samengesteld - I + Ir	80	UGT-1/19	**-1562.42**	-57.58	-29.28	2.39	-3.32	153.13
S248	Kolom-samengesteld - I + Ir	0	UGT-2/4	**139.91**	0.61	-0.58	0.04	-0.26	-27.94
S276	Kolom-samengesteld - I + Ir	80	UGT-2/2	-1418.06	**-60.58**	-37.54	3.61	-4.07	108.42
S282	Kolom-samengesteld - I + Ir	565	UGT-1/3	-550.80	**79.58**	13.01	2.40	-10.94	-81.23
S276	Kolom-samengesteld - I + Ir	80	UGT-2/5	-929.65	-50.10	**-38.49**	4.34	-4.00	27.74
S282	Kolom-samengesteld - I + Ir	2360	UGT-1/3	-806.59	69.96	**22.09**	-0.11	11.99	-16.34
S257	Kolom-samengesteld - I + Ir	0	UGT-1/3	-378.03	56.25	-2.22	**-1.00**	11.65	-52.42
S276	Kolom-samengesteld - I + Ir	0	UGT-2/5	-929.44	-50.10	-38.47	**4.34**	-0.92	31.75
S282	Kolom-samengesteld - I + Ir	2756	UGT-2/15	-63.11	3.46	-3.04	0.31	**-18.06**	-7.44
S282	Kolom-samengesteld - I + Ir	2756	UGT-1/11	-554.68	45.76	19.22	-0.37	**20.95**	13.64
S282	Kolom-samengesteld - I + Ir	565	UGT-1/22	-537.53	74.35	3.41	1.74	-13.48	**-81.83**
S275	Kolom-samengesteld - I + Ir	2532	UGT-1/3	-1436.64	68.57	-5.85	-0.07	0.13	**202.58**

7.3. Staafkrachten kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S329, S330
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S329	Kolom DIE36 - HEA360	0	UGT-2/5	**-17.23**	**-20.45**	-3.32	0.17	15.67	**50.24**
S330	Kolom DIE36 - HEA360	4651	UGT-2/5	**-6.41**	0.60	-2.65	-0.18	0.01	0.16
S330	Kolom DIE36 - HEA360	0	UGT-1/23	-16.31	**11.28**	1.98	-0.07	-9.09	-27.23
S329	Kolom DIE36 - HEA360	4600	UGT-2/24	-10.15	-13.33	**-12.87**	0.19	0.64	-31.65
S330	Kolom DIE36 - HEA360	0	UGT-1/9	-13.67	5.98	**14.05**	-0.35	**-59.30**	-15.67
S330	Kolom DIE36 - HEA360	0	UGT-2/25	-13.67	6.06	1.37	**-0.41**	-11.83	-16.06
S329	Kolom DIE36 - HEA360	0	UGT-2/25	-15.52	-11.44	-2.93	**0.40**	8.10	27.42
S329	Kolom DIE36 - HEA360	0	UGT-2/26	-14.97	-11.16	-11.21	0.15	**46.35**	27.27
S329	Kolom DIE36 - HEA360	4651	UGT-2/5	-10.88	-15.00	-8.16	0.17	-0.01	**-38.08**

7.4. Staafkrachten ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S33, S40, S404, S406
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S40	Ligger DIE34 - HE340A	0	UGT-2/27	**-39.58**	24.49	-1.16	-0.01	-1.08	-52.93
S404	Ligger DIE34 - HE340A	0	UGT-2/2	**137.51**	-19.18	-83.28	0.01	96.09	-1.88
S406	Ligger DIE34 - HE340A	1875	UGT-1/17	-1.15	**-26.90**	0.57	-0.01	-0.01	-44.48
S40	Ligger DIE34 - HE340A	0	UGT-2/5	-36.34	**26.13**	10.10	-0.02	-5.90	-57.23
S404	Ligger DIE34 - HE340A	1440	UGT-1/3	119.30	-18.73	**-92.27**	0.01	**-26.99**	-30.78
S33	Ligger DIE34 - HE340A	0	UGT-1/3	7.58	18.08	**65.10**	0.01	-2.08	-46.40
S40	Ligger DIE34 - HE340A	0	UGT-2/28	-2.80	16.32	-4.22	**-0.05**	-1.52	-33.52
S40	Ligger DIE34 - HE340A	0	UGT-1/29	-9.22	24.04	38.94	**0.04**	-15.28	-47.18
S33	Ligger DIE34 - HE340A	2560	UGT-1/3	7.58	15.06	64.21	0.01	**163.44**	-3.98
S33	Ligger DIE34 - HE340A	0	UGT-2/5	18.79	22.57	29.38	0.01	-0.95	**-64.58**
S406	Ligger DIE34 - HE340A	0	UGT-2/5	-15.56	-22.43	-11.30	-0.02	21.04	**16.76**

7.5. Staafkrachten ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S403
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/1	**1.05**	8.41	0.02	0.00	-0.10	3.12
S403	Ligger DIE34+strippen - I + 2 PLud	9858	UGT-2/2	**137.51**	-17.98	-83.28	0.01	149.56	10.04
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/17	63.16	**-23.04**	-17.73	0.00	20.53	-11.63
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/5	18.79	**19.54**	29.38	0.01	74.28	-10.68
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/3	119.30	-17.03	**-91.77**	0.01	105.52	-5.04
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/3	7.58	15.06	**64.21**	0.01	163.44	-3.98
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/31	7.99	12.69	16.16	**-0.01**	42.03	-0.28
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/32	7.67	12.72	34.05	**0.03**	84.78	-1.56
S403	Ligger DIE34+strippen - I + 2 PLud	4258	UGT-2/4	6.28	0.87	-0.13	0.00	**-12.69**	21.97
S403	Ligger DIE34+strippen - I + 2 PLud	5858	UGT-1/3	43.87	0.17	10.36	0.01	**327.50**	36.41
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/23	49.38	-20.05	-16.40	0.00	19.01	**-12.35**
S403	Ligger DIE34+strippen - I + 2 PLud	5858	UGT-2/5	52.59	2.36	5.15	0.01	149.47	**46.77**

7.6. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S405
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/27	**-39.58**	21.39	-1.16	-0.01	-4.12	7.29
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/50	**7.14**	18.79	39.74	0.03	86.68	10.59
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/17	-1.15	**-24.68**	0.57	-0.01	-1.07	3.88
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/5	-36.34	**23.02**	10.10	-0.02	20.61	7.28
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/9	-4.19	-20.53	**-48.68**	0.03	91.69	5.67
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/9	-0.36	19.12	**43.42**	0.03	96.44	9.89
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/28	-2.80	13.22	-2.82	**-0.05**	-10.76	5.25
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/29	-9.22	20.94	37.54	**0.04**	85.10	11.86
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-2/15	-11.80	1.51	-0.79	-0.02	**-39.20**	72.32
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-1/9	-3.91	1.01	11.91	0.03	**239.24**	67.26
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/1	1.59	-13.93	-0.02	0.00	0.03	**-1.68**
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-2/5	-30.91	3.03	3.19	-0.02	54.81	**81.00**

7.7. Staafkrachten ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S331
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S331	Ligger DIN28 - HEB280	0	UGT-2/33	**-9.72**	9.21	-3.86	0.00	0.10	-24.88
S331	Ligger DIN28 - HEB280	14500	UGT-1/34	**-7.44**	-8.44	-3.86	0.00	-0.03	-18.49
S331	Ligger DIN28 - HEB280	14500	UGT-1/1	-7.45	**-8.72**	0.00	0.00	0.00	-20.56
S331	Ligger DIN28 - HEB280	0	UGT-2/5	-9.55	**11.05**	0.00	0.01	0.17	**-38.08**
S331	Ligger DIN28 - HEB280	14500	UGT-1/8	-8.07	-7.26	**-3.86**	0.00	0.32	-10.29
S331	Ligger DIN28 - HEB280	14500	UGT-2/32	-8.98	-7.84	**3.86**	0.03	0.27	-14.39
S331	Ligger DIN28 - HEB280	0	UGT-1/31	-8.87	8.90	3.86	**-0.01**	0.06	-22.14
S331	Ligger DIN28 - HEB280	0	UGT-2/32	-8.98	9.04	-3.85	**0.03**	0.22	-23.09
S331	Ligger DIN28 - HEB280	7250	UGT-2/4	-7.48	0.02	0.00	0.00	**-13.95**	12.08
S331	Ligger DIN28 - HEB280	7250	UGT-1/3	-8.15	0.92	0.00	0.01	**14.33**	11.72
S331	Ligger DIN28 - HEB280	9425	UGT-2/5	-9.55	0.08	0.00	0.01	0.18	**14.40**

7.8. Staafkrachten koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S394	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	**-22.04**	-1.43	-162.97	**-0.76**	8.20	-0.10
S402	Plaat 2x14x200 - Rechthoek	0	UGT-1/19	**125.00**	-0.79	-74.06	0.07	10.20	0.35
S396	Plaat 2x14x200 - Rechthoek	0	UGT-1/35	6.51	**-9.08**	-250.50	-0.45	10.35	0.68
S390	Plaat 2x14x200 - Rechthoek	0	UGT-2/5	-0.04	**4.21**	-27.75	-0.06	3.90	-0.61
S396	Plaat 2x14x200 - Rechthoek	187	UGT-1/7	5.40	-4.45	**-255.80**	-0.31	-37.00	-0.31
S364	Plaat 2x14x200 - Rechthoek	0	UGT-2/15	0.71	0.01	**53.43**	0.01	-4.97	0.00
S384	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.52	1.17	-135.15	**0.66**	9.59	-0.06
S398	Plaat 2x14x200 - Rechthoek	232	UGT-1/3	1.59	-6.85	-254.65	-0.07	**-43.18**	-0.78
S366	Plaat 2x14x200 - Rechthoek	0	UGT-1/9	-0.79	-0.11	-198.28	-0.10	**23.00**	0.01
S396	Plaat 2x14x200 - Rechthoek	187	UGT-1/35	6.51	-9.08	-250.59	-0.45	-36.39	**-1.01**
S400	Plaat 2x14x200 - Rechthoek	0	UGT-2/21	-3.71	-5.48	-165.60	-0.09	13.37	**1.41**

7.9. Staafkrachten diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S268	Diagonaal UPE14 - UPE140	0	UGT-2/21	**-161.26**	0.00	0.00	0.00	0.00	0.00
S271	Diagonaal UPE14 - UPE140	3142	UGT-1/8	**236.17**	0.00	0.00	0.00	0.00	0.00
S235	Diagonaal UPE14 - UPE140	0	UGT-1/36	-2.51	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.10. Staafkrachten bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S332
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S332	Bliksempiek-2 - Koker fl	0	UGT-1/37	**-3.77**	-2.00	0.10	0.00	-0.47	9.21
S332	Bliksempiek-2 - Koker fl	4651	UGT-1/38	**0.42**	3.61	-2.77	0.00	0.00	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/8	-2.81	**-6.63**	0.26	0.00	-1.21	**27.82**
S332	Bliksempiek-2 - Koker fl	4600	UGT-2/24	-0.14	**9.06**	-3.81	0.00	0.19	-0.46
S332	Bliksempiek-2 - Koker fl	0	UGT-2/5	-3.11	2.60	**-7.80**	0.00	**30.53**	-12.38
S332	Bliksempiek-2 - Koker fl	0	UGT-1/39	-2.81	-5.46	**2.77**	0.00	**-7.12**	25.09
S332	Bliksempiek-2 - Koker fl	0	UGT-1/40	-2.84	-4.32	-1.15	**0.00**	5.35	17.09
S332	Bliksempiek-2 - Koker fl	0	UGT-2/18	-2.70	6.09	-2.07	0.00	9.62	**-25.58**

7.11. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer boven-IA - Rechthoek	1600	UGT-2/5	**-297.75**	22.26	-5.96	-0.97	-30.16	245.34
S246	Poer boven-IA - Rechthoek	0	UGT-1/1	**-60.66**	0.02	**1.38**	**0.05**	1.74	4.12
S246	Poer boven-IA - Rechthoek	0	UGT-2/4	-61.37	**-16.29**	-1.20	0.01	-1.01	-127.91
S246	Poer boven-IA - Rechthoek	0	UGT-1/3	-68.77	**81.50**	-3.82	-1.73	-12.89	695.90
S246	Poer boven-IA - Rechthoek	0	UGT-2/2	-71.97	60.73	**-7.12**	-1.70	-18.52	522.74
S246	Poer boven-IA - Rechthoek	0	UGT-2/6	-69.49	65.19	-6.39	**-1.77**	-15.63	563.87
S246	Poer boven-IA - Rechthoek	2000	UGT-2/5	-297.75	22.26	-5.96	-0.97	**-32.54**	254.24
S246	Poer boven-IA - Rechthoek	2000	UGT-1/1	-283.43	-0.04	1.29	0.05	**4.41**	4.11
S246	Poer boven-IA - Rechthoek	2000	UGT-2/4	-284.14	-13.92	-1.13	0.01	-3.33	**-158.12**
S246	Poer boven-IA - Rechthoek	2000	UGT-1/3	-291.54	68.88	-3.45	-1.73	-20.15	**846.33**

7.12. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/5	**-1087.17**	46.37	-115.78	-3.60	-77.59	419.06
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**31.12**	0.20	**-24.60**	-0.16	**7.85**	2.43
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-65.46	**-17.02**	-36.29	-2.61	-13.90	-125.81
S244	Poer onder-IV - Rechthoek	0	UGT-1/7	-763.38	**119.98**	-99.20	23.52	-167.80	764.19
S244	Poer onder-IV - Rechthoek	0	UGT-2/5	-953.99	48.17	**-120.47**	10.69	-210.83	350.57
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	-802.64	112.47	-87.89	**-14.10**	-57.21	1096.77
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	-761.04	119.83	-99.21	**23.54**	-167.29	765.65
S244	Poer onder-IV - Rechthoek	360	UGT-2/5	-971.58	48.17	-120.47	10.69	**-254.20**	367.91
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-198.64	-16.25	-36.26	2.43	-41.33	**-155.80**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	-802.64	112.47	-87.89	-14.10	-88.85	**1137.26**

7.13. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-275.15**	-0.24	44.81	0.19	35.16	0.88
S250	Poer onder-IV - Rechthoek	0	UGT-2/5	**825.61**	6.55	**-49.15**	-1.74	-185.28	123.16
S250	Poer onder-IV - Rechthoek	1440	UGT-2/10	508.31	**-24.96**	-24.15	-1.85	-7.77	54.35
S250	Poer onder-IV - Rechthoek	0	UGT-1/9	557.75	**46.80**	-22.76	-5.53	-125.65	450.38
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-141.98	-0.23	**45.28**	0.26	31.02	1.22
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	281.83	44.65	1.89	**-5.78**	-64.05	357.83
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	413.52	41.83	-18.51	**8.10**	-7.12	515.58
S250	Poer onder-IV - Rechthoek	360	UGT-2/5	808.02	6.55	-49.15	-1.74	**-202.98**	125.52
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-233.93	-0.24	44.90	0.21	**54.13**	0.88
S250	Poer onder-IV - Rechthoek	1800	UGT-2/15	184.80	-17.43	2.66	-3.14	8.28	**-96.94**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	413.52	41.83	-18.51	8.10	-13.78	**530.64**

7.14. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer boven-IA - Rechthoek	1600	UGT-1/17	**-276.68**	-0.54	7.11	0.01	8.66	-6.92
S322	Poer boven-IA - Rechthoek	0	UGT-2/16	**-41.52**	-4.51	0.34	0.07	-10.32	-58.20
S322	Poer boven-IA - Rechthoek	0	UGT-2/15	-50.99	**-18.22**	4.70	**-0.05**	-4.78	-134.97
S322	Poer boven-IA - Rechthoek	0	UGT-1/9	-49.72	**61.47**	3.66	0.51	-6.83	506.23
S322	Poer boven-IA - Rechthoek	0	UGT-2/14	-41.91	5.23	**-1.28**	0.03	-12.55	68.75
S322	Poer boven-IA - Rechthoek	0	UGT-1/13	-52.56	14.97	**8.25**	0.17	-0.22	124.11
S322	Poer boven-IA - Rechthoek	0	UGT-1/3	-49.74	61.45	3.70	**0.51**	-6.60	506.12
S322	Poer boven-IA - Rechthoek	2000	UGT-2/14	-264.68	4.09	-1.02	0.03	**-14.85**	78.07
S322	Poer boven-IA - Rechthoek	2000	UGT-1/41	-275.15	-2.09	7.57	0.00	**17.46**	-29.36
S322	Poer boven-IA - Rechthoek	2000	UGT-2/18	-264.69	-14.49	2.51	0.04	-2.39	**-171.65**
S322	Poer boven-IA - Rechthoek	2000	UGT-1/9	-272.49	52.20	3.61	0.51	0.44	**619.94**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S2..S4, S252, S254, S256, S258, S260..S266, S272, S273, S284, S285, S292..S303
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S299	1895	UGT-1/9	**-181.8**		1.4	181.8	0.0
S2	0	UGT-1/19		106.8	4.2	107.0	**0.0**
S264	0	UGT-1/9	-56.7		12.3	60.6	0.0
S265	80	UGT-1/3		**262.9**	2.0	**263.0**	0.0
S4	637	UGT-1/3		108.1	**0.3**	108.1	0.0
S4	2532	UGT-1/3		64.2	**29.3**	81.8	0.0
S260	283	UGT-1/3		18.2	8.9	**23.8**	0.0

8.2. Von Mises spanningen kolom INP45 versterkt; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S248, S251, S253, S255, S257, S259, S275, S276, S282, S283
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S275	2532	UGT-1/3	**-150.4**	5.4	**150.7**	0.0
S259	565	UGT-1/3	**-10.2**	14.8	**27.6**	0.0
S248	0	UGT-1/3	-105.0	1.6	105.0	**0.0**
S275	637	UGT-1/3	-88.0	**0.2**	88.0	0.0
S282	1462	UGT-1/3	-19.2	**28.4**	52.8	0.0

8.3. Von Mises spanningen kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S329, S330
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S329	0	UGT-2/20	**-108.9**	2.3	**108.9**	**0.0**
S330	3067	UGT-1/45	**-18.7**	2.5	19.1	0.0
S330	3833	UGT-1/1	-27.8	**0.0**	27.8	0.0
S329	3067	UGT-1/8	-22.6	**3.9**	23.6	0.0
S330	3067	UGT-1/45	-18.7	2.5	**19.1**	0.0

8.4. Von Mises spanningen ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S33, S40, S404, S406
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S40	0	UGT-2/5	**-121.7**		0.2	121.7	0.0
S33	0	UGT-2/5		**132.2**	0.1	**132.2**	**0.0**
S404	1440	UGT-1/17		100.6	**0.0**	100.6	0.0
S40	2625	UGT-1/3		77.6	**0.4**	77.6	0.0
S40	1750	UGT-1/19	-49.8		0.4	**49.9**	0.0

8.5. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S403
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S403	0	UGT-1/8	63.1	0.0	63.1	**0.0**
S403	10500	UGT-1/3	**31.4**	29.1	59.4	0.0
S403	5858	UGT-1/22	**161.7**	0.0	161.7	0.0
S403	9858	UGT-2/14	70.9	**0.0**	70.9	0.0
S403	10500	UGT-1/3	31.4	**29.1**	59.4	0.0
S403	10500	UGT-1/3	31.4	29.1	**59.4**	0.0
S403	5858	UGT-1/22	161.7	0.0	**161.7**	0.0

8.6. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S405
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S405	6121	UGT-1/9	**-131.2**		0.0	131.2	0.0
S405	0	UGT-1/3		41.9	0.0	41.9	**0.0**
S405	2121	UGT-1/9	-98.1		0.0	98.1	0.0
S405	2121	UGT-1/3		**98.0**	0.0	98.0	0.0
S405	10910	UGT-1/19	-61.6		**0.0**	61.6	0.0
S405	2121	UGT-1/9	-98.1		**0.0**	98.1	0.0
S405	11700	UGT-1/19	-37.7		0.0	**37.7**	0.0
S405	6121	UGT-1/9	-131.2		0.0	**131.2**	0.0

8.7. Von Mises spanningen ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S331
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S331	0	UGT-2/5	**-81.7**	**0.1**	**81.7**	**0.0**
S331	3625	UGT-1/48	**-18.1**	0.1	18.1	0.0
S331	13775	UGT-1/1	-31.4	**0.0**	31.4	0.0
S331	3625	UGT-1/48	-18.1	0.1	**18.1**	0.0

8.8. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S400	277	UGT-1/3	**-225.9**		0.0	225.9	0.0
S353	0	UGT-1/3		1.3	54.8	94.9	0.0
S351	0	UGT-1/3	-3.5		36.6	63.5	**0.0**
S398	232	UGT-1/3		**261.4**	0.0	261.4	0.0
S388	0	UGT-1/35		112.6	**0.0**	112.6	0.0
S396	93	UGT-1/3		7.4	**76.8**	133.2	0.0
S392	161	UGT-1/19	-7.9		13.9	**25.3**	0.0
S398	232	UGT-1/3		261.4	0.0	**261.4**	0.0

8.9. Von Mises spanningen diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S268	0	UGT-2/21	**-87.6**		0.0	87.6	0.0
S267	0	UGT-2/21		80.0	0.0	80.0	0.0
S235	0	UGT-2/21	-69.6		**0.0**	69.6	**0.0**
S271	3142	UGT-1/8		**128.4**	0.0	**128.4**	0.0
S279	0	UGT-2/5		25.5	0.0	**25.5**	0.0

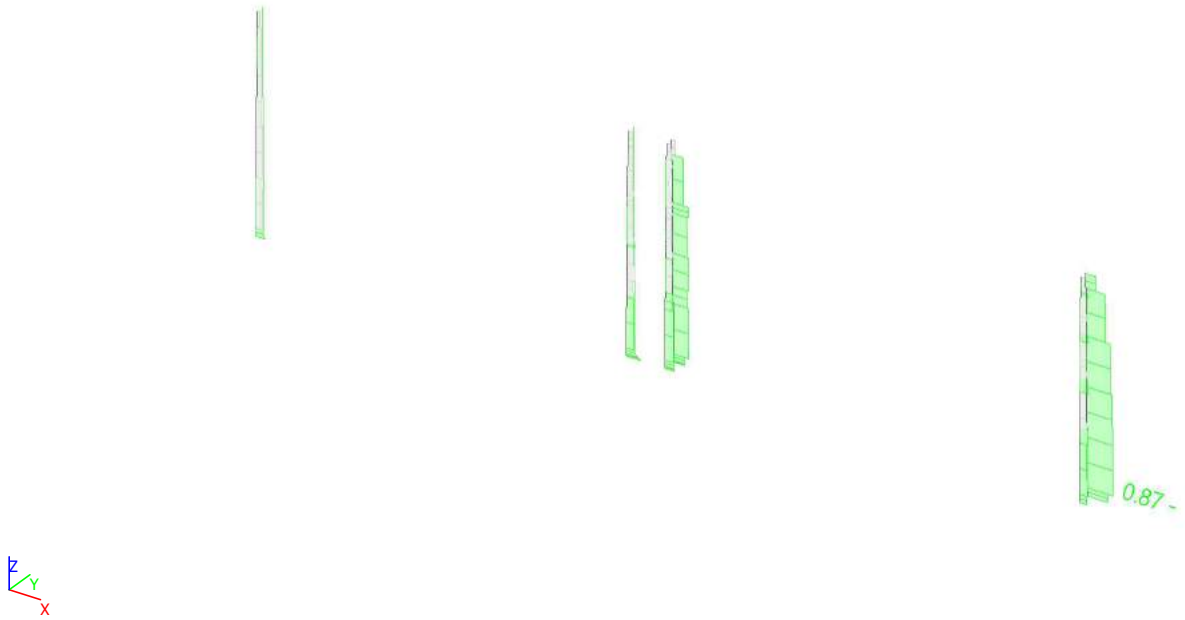
8.10. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S332
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S332	0	UGT-2/5	**-101.4**	0.0	**101.4**	**0.0**
S332	4651	UGT-1/52	**0.0**	4.4	7.6	0.0
S332	3721	UGT-2/5	-28.5	**0.0**	28.5	0.0
S332	4600	UGT-2/5	-2.2	**4.4**	7.9	0.0
S332	4600	UGT-2/5	-2.1	2.7	**5.2**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S2..S4, S252, S254, S256, S258, S260..S266, S272, S273, S284, S285, S292..S303

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S299	1.895 / 1.895 m	INP450	S 235	UGT	0.87 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.895 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-915.93	kN
$V_{y,Ed}$	19.56	kN
$V_{z,Ed}$	2.32	kN
T_{Ed}	0.14	kNm
$M_{y,Ed}$	-3.35	kNm
$M_{z,Ed}$	23.98	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	3.358e+04	-3.895e+04	-1.16	23.80	0.46	2.50	28.57	31.74	102.45	1
3	SO	61	24	9.165e+04	1.642e+05	0.56	0.47	1.00	2.50	9.00	10.00	14.47	1
4	I	369	16	6.241e+04	5.979e+04	0.96		1.00	22.78	28.00	34.00	38.56	1
5	SO	61	24	8.862e+04	1.611e+05	0.55	0.48	1.00	2.50	9.00	10.00	14.48	1
7	SO	61	24	3.055e+04	-4.198e+04	-1.37	23.80	0.42	2.50	32.92	36.58	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m²
$N_{c,Rd}$	3454.50	kN
Eenheidscontrole	0.27	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m³
$M_{pl,y,Rd}$	564.00	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m³
$M_{pl,z,Rd}$	81.08	kNm
Eenheidscontrole	0.30	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m²
$V_{pl,y,Rd}$	1192.18	kN
Eenheidscontrole	0.02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m²
$V_{pl,z,Rd}$	1058.72	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	1.4	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	530.66	kNm
α	2.00	
$M_{pl,z,Rd}$	81.08	kNm
β	1.33	

Eenheidscontrole (6.41) = 0.00 + 0.20 = 0.20 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 1.895 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	3.358e+04	-3.895e+04	-1.16	23.80	0.46	2.50	28.57	31.74	102.45	1
3	SO	61	24	9.165e+04	1.642e+05	0.56	0.47	1.00	2.50	9.00	10.00	14.47	1
4	I	369	16	6.241e+04	5.979e+04	0.96		1.00	22.78	28.00	34.00	38.56	1
5	SO	61	24	8.862e+04	1.611e+05	0.55	0.48	1.00	2.50	9.00	10.00	14.48	1
7	SO	61	24	3.055e+04	-4.198e+04	-1.37	23.80	0.42	2.50	32.92	36.58	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings flexibel	
Systeemlengte L	8.350	1.895	m
Knikfactor k	2.38	1.64	
Kniklengte L_{cr}	19.873	3.103	m
Kritische Euler last N_{cr}	2406.20	3723.57	kN
Slankheid λ	112.53	90.46	
Relatieve slankheid λ_{rel}	1.20	0.96	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	0.53	0.62	
Knikweerstand $N_{b,Rd}$	1834.82	2143.60	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Knikweerstand $N_{b,Rd}$	1834.82	kN
Eenheidscontrole	0.50	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Elastisch kritisch moment M_{cr}	3683.71	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.39	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.37	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	

Mcr parameters		
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	915.93	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	-20.14	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	23.98	kNm
Karakteristieke drukweerstand N_{Rk}	3454.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	564.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	81.08	kNm
Reductie factor χ_y	0.53	
Reductie factor χ_z	0.62	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.26	
Interactiefactor k_{yz}	0.85	
Interactiefactor k_{zy}	0.76	
Interactiefactor k_{zz}	1.41	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S303 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S299 positie 1.895 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.1
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Zijdelings flexibel type z	Zijdelings flexibel
Equivalente moment factor C_{mz}	0.90
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	0.43
Equivalente moment factor C_{mLT}	0.77

Eenheidscontrole (6.61) = 0.50 + 0.04 + 0.25 = 0.79 -
Eenheidscontrole (6.62) = 0.43 + 0.03 + 0.42 = 0.87 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

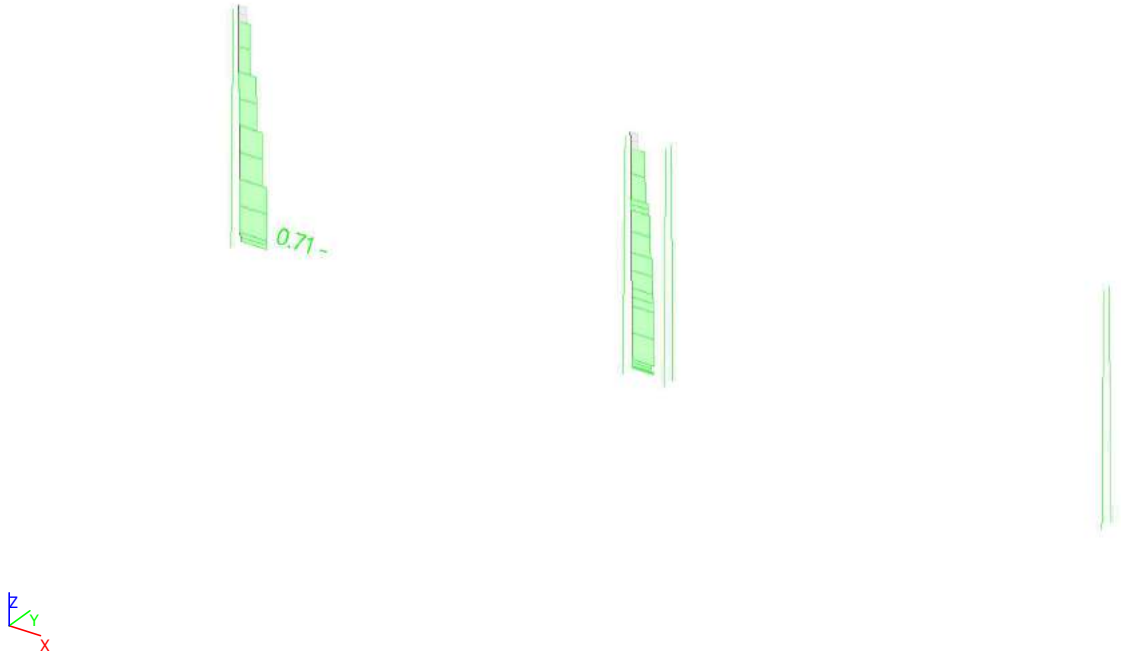
Plooiparameters		
Knik veldlengte a	1.895	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.3. Staalcontrole kolom INP45 versterkt; UGT, grafisch overzicht



9.4. Staalcontrole kolom INP45 versterkt; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S248, S251, S253, S255, S257, S259, S275, S276, S282, S283

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S251	**1.895 / 1.895 m**	**I + Ir (INP450, HEB300)**	**S 235**	**UGT**	**0.71 -**

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.895 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-905.47	kN
$V_{y,Ed}$	50.00	kN
$V_{z,Ed}$	-2.99	kN
T_{Ed}	-0.72	kNm
$M_{y,Ed}$	-7.24	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	157.08	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	85	24	3.596e+04	6.353e+03	0.18	0.54	1.00	3.50	9.00	10.00	15.36	1
2	UO	85	24	3.050e+04	8.951e+02	0.03	0.56	1.00	3.50	9.00	10.00	15.77	1
3	UO	85	24	-2.871e+04	8.951e+02	-32.08	23.80	0.03	3.50	1712.03	1902.25	102.45	1
4	UO	85	24	-2.325e+04	6.353e+03	-3.66	23.80	0.21	3.50	90.55	100.61	102.45	1
5	I	12	16	6.353e+03	6.197e+03	0.98		1.00	0.75	28.00	34.00	38.33	1
6	I	51	16	6.197e+03	5.547e+03	0.90		1.00	3.13	28.00	34.00	39.44	1
7	I	12	16	1.051e+03	8.951e+02	0.85		1.00	0.75	28.00	34.00	40.06	1
8	UO	150	19	1.057e+05	1.076e+05	0.98	0.44	1.00	7.89	9.00	10.00	13.88	1
9	I	150	35	6.933e+03	5.010e+03	0.72		1.00	4.26	28.00	34.00	42.05	1
10	I	150	35	8.856e+03	6.933e+03	0.78		1.00	4.26	28.00	34.00	41.10	1
11	UO	150	19	1.096e+05	1.076e+05	0.98	0.43	1.00	7.89	9.00	10.00	13.79	1
12	I	9	11	1.076e+05	1.043e+05	0.97		1.00	0.86	28.00	34.00	38.41	1
13	I	262	11	1.043e+05	1.306e+04	0.13		1.00	23.82	28.00	34.00	54.56	1
14	I	10	11	1.306e+04	9.754e+03	0.75		1.00	0.86	28.00	34.00	41.66	1
15	I	51	16	1.701e+03	1.051e+03	0.62		1.00	3.13	28.00	34.00	43.81	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2.9616e-02	m^2
$N_{c,Rd}$	6959.73	kN
Eenheidscontrole	0.13	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3.2645e-03	m^3
$M_{pl,y,Rd}$	767.16	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	2.5730e-03	m^3
$M_{pl,z,Rd}$	604.65	kNm
Eenheidscontrole	0.26	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.1391e-03	m^2
$V_{pl,y,Rd}$	697.25	kN
Eenheidscontrole	0.07	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.9650e-02	m^2
$V_{pl,z,Rd}$	2666.12	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	48	
τ_{Ed}	3.6	MPa
τ_{Rd}	135.7	MPa

Eenheidscontrole	0.03	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	6959.73	kN
$M_{pl,y,Rd}$	767.16	kNm
$M_{pl,z,Rd}$	604.65	kNm

Eenheidscontrole (6.2) = 0.13 + 0.01 + 0.26 = 0.40 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 1.895 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	85	24	3.596e+04	6.353e+03	0.18	0.54	1.00	3.50	9.00	10.00	15.36	1
2	UO	85	24	3.050e+04	8.951e+02	0.03	0.56	1.00	3.50	9.00	10.00	15.77	1
3	UO	85	24	-2.871e+04	8.951e+02	-32.08	23.80	0.03	3.50	1712.03	1902.25	102.45	1
4	UO	85	24	-2.325e+04	6.353e+03	-3.66	23.80	0.21	3.50	90.55	100.61	102.45	1
5	I	12	16	6.353e+03	6.197e+03	0.98		1.00	0.75	28.00	34.00	38.33	1
6	I	51	16	6.197e+03	5.547e+03	0.90		1.00	3.13	28.00	34.00	39.44	1
7	I	12	16	1.051e+03	8.951e+02	0.85		1.00	0.75	28.00	34.00	40.06	1
8	UO	150	19	1.057e+05	1.076e+05	0.98	0.44	1.00	7.89	9.00	10.00	13.88	1
9	I	150	35	6.933e+03	5.010e+03	0.72		1.00	4.26	28.00	34.00	42.05	1
10	I	150	35	8.856e+03	6.933e+03	0.78		1.00	4.26	28.00	34.00	41.10	1
11	UO	150	19	1.096e+05	1.076e+05	0.98	0.43	1.00	7.89	9.00	10.00	13.79	1
12	I	9	11	1.076e+05	1.043e+05	0.97		1.00	0.86	28.00	34.00	38.41	1
13	I	262	11	1.043e+05	1.306e+04	0.13		1.00	23.82	28.00	34.00	54.56	1
14	I	10	11	1.306e+04	9.754e+03	0.75		1.00	0.86	28.00	34.00	41.66	1
15	I	51	16	1.701e+03	1.051e+03	0.62		1.00	3.13	28.00	34.00	43.81	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings flexibel	
Systeemlengte L	8.350	1.895	m
Knikfactor k	2.38	3.48	
Kniklengte L_{cr}	19.873	6.590	m
Kritische Euler last N_{cr}	2852.92	21670.63	kN
Slankheid λ	146.68	53.22	
Relatieve slankheid λ_{rel}	1.56	0.57	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.30	0.80	
Knikweerstand $N_{b,Rd}$	2055.16	5602.14	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	2.9616e-02	m²
Knikweerstand $N_{b,Rd}$	2055.16	kN
Eenheidscontrole	0.44	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	1.895	m
Elastische kritische last $N_{cr,T}$	82933.03	kN
Elastische kritische last $N_{cr,TF}$	2847.74	kN
Relatieve slankheid $\lambda_{rel,T}$	1.56	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.29	
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Knikweerstand $N_{b,Rd}$	2052.22	kN
Eenheidscontrole	0.44	-

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3.2645e-03	m^3
Elastisch kritisch moment M_{cr}	43243.36	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.13	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.56	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	3.2645e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	2.5730e-03	m^3
Ontwerpdrukkracht N_{Ed}	905.47	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	12.63	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	157.08	kNm
Karakteristieke drukweerstand N_{Rk}	6959.73	kN
Karakteristieke momentweerstand $M_{y,Rk}$	767.16	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	604.65	kNm
Reductie factor χ_y	0.30	
Reductie factor χ_z	0.29	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	1.22	
Interactiefactor k_{yz}	0.59	
Interactiefactor k_{zy}	0.98	
Interactiefactor k_{zz}	0.98	

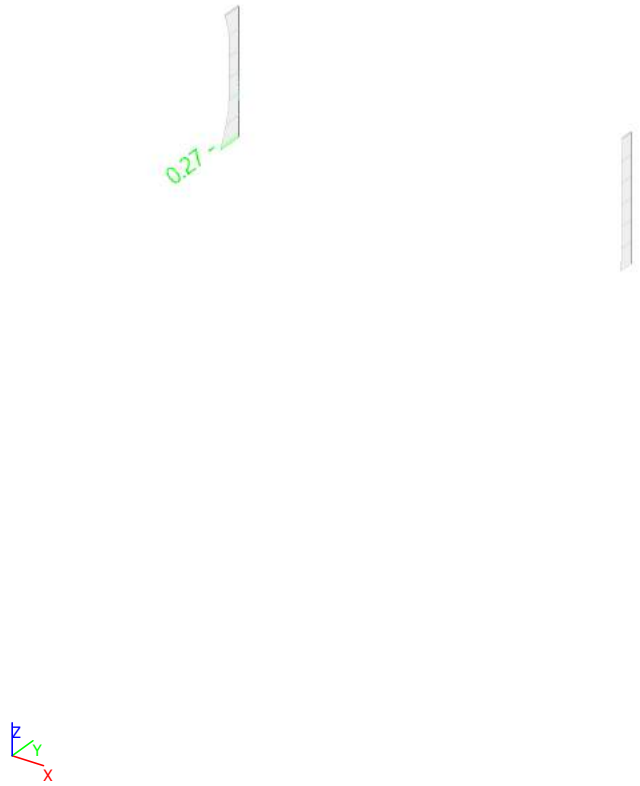
Maximum moment $M_{y,Ed}$ is afgeleid van balk S259 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S251 positie 1.895 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.2
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Zijdelings flexibel type z	Zijdelings flexibel
Equivalente moment factor C_{mz}	0.90
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	0.22
Equivalente moment factor C_{mLT}	0.69

Eenheidscontrole (6.61) = 0.44 + 0.02 + 0.15 = 0.61 -
Eenheidscontrole (6.62) = 0.44 + 0.02 + 0.25 = 0.71 -

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole kolom DIE36; UGT, grafisch overzicht



9.6. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S329, S330

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S329	0.000 / 4.651 m	HEA360	S 235	UGT	0.27 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-17.23	kN
$V_{y,Ed}$	-20.45	kN
$V_{z,Ed}$	-3.32	kN
T_{Ed}	0.17	kNm
$M_{y,Ed}$	15.67	kNm
$M_{z,Ed}$	50.24	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	-2.705e+04	-1.022e+05								
3	SO	118	18	1.372e+04	8.889e+04	0.15	0.54	1.00	6.74	9.00	10.00	15.42	1
4	I	261	10	-4.973e+03	7.387e+03	-0.67		0.51	26.10	68.96	79.77	90.61	1
5	SO	118	18	2.947e+04	1.046e+05	0.28	0.52	1.00	6.74	9.00	10.00	15.09	1
7	SO	118	18	-1.131e+04	-8.648e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4300e-02	m^2
$N_{c,Rd}$	3360.50	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.0875e-03	m^3
$M_{pl,y,Rd}$	490.56	kNm
Eenheidscontrole	0.03	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	8.0417e-04	m^3
$M_{pl,z,Rd}$	188.98	kNm
Eenheidscontrole	0.27	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0870e-02	m^2
$V_{pl,y,Rd}$	1474.81	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.9200e-03	m^2
$V_{pl,z,Rd}$	667.53	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	2.0	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	490.56	kNm
α	2.00	
$M_{pl,z,Rd}$	188.98	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.27 = 0.27 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	-2.705e+04	-1.022e+05								
3	SO	118	18	1.372e+04	8.889e+04	0.15	0.54	1.00	6.74	9.00	10.00	15.42	1
4	I	261	10	-4.973e+03	7.387e+03	-0.67		0.51	26.10	68.96	79.77	90.61	1
5	SO	118	18	2.947e+04	1.046e+05	0.28	0.52	1.00	6.74	9.00	10.00	15.09	1
7	SO	118	18	-1.131e+04	-8.648e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	4.59	0.74	
Kniklengte L_{cr}	21.348	3.420	m
Kritische Euler last N_{cr}	1505.29	13982.64	kN
Slankheid λ	140.32	46.04	
Relatieve slankheid λ_{rel}	1.49	0.49	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Elastisch kritisch moment M_{cr}	2776.85	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.42	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Vorklengte L_g	4.651	m
Invloed van lastpositie	geen invloed	
Factor α	943.99	
Reductie factor k_{red}	1.00	
Coëfficiënt C	9.15	
Factor S	1949	mm
Kip moment factor C_1	1.76	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4300e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	8.0417e-04	m^3
Ontwerpdrukkracht N_{Ed}	17.23	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	15.67	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	50.24	kNm
Karakteristieke drukweerstand N_{Rk}	3360.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	490.56	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	188.98	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.54	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S329 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S329 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	50.24	kNm
Veldmoment $M_{s,z}$	4.83	kNm
Factor $\alpha_{s,z}$	0.10	
Ratio van uiteinde momenten ψ_z	-0.76	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	puntlast F	
Uiteinde moment $M_{h,LT}$	15.67	kNm
Veldmoment $M_{s,LT}$	0.40	kNm
Factor $\alpha_{s,LT}$	0.03	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.40	

Eenheidscontrole (6.61) = 0.01 + 0.03 + 0.06 = 0.10 -
Eenheidscontrole (6.62) = 0.01 + 0.02 + 0.11 = 0.13 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

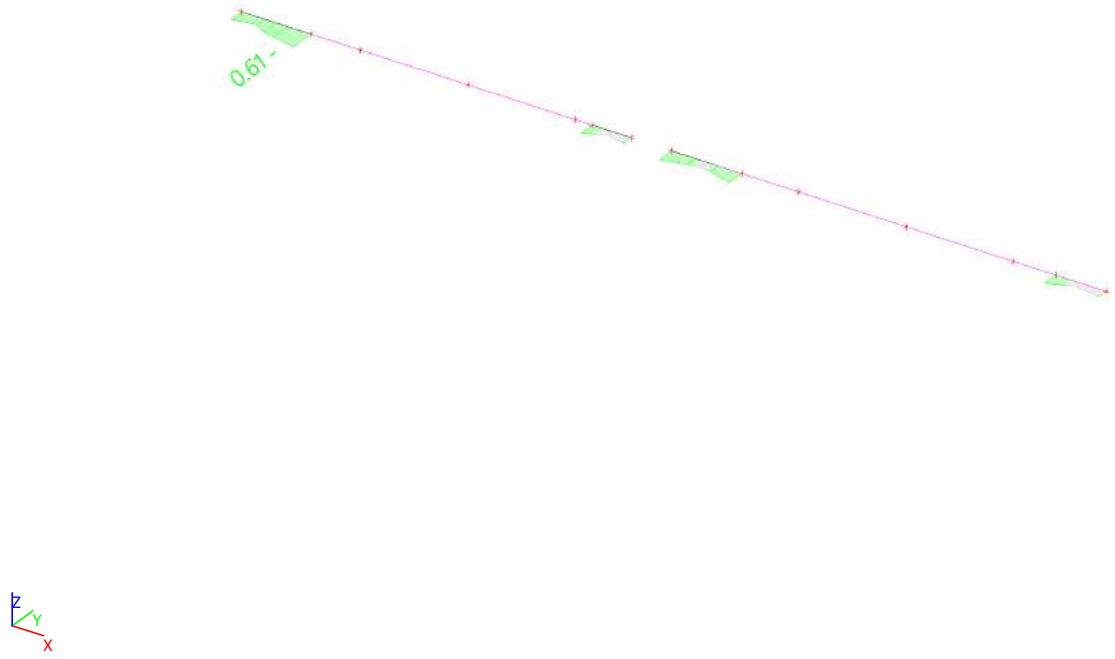
Plooiparameters		
Knik veldlengte a	4.651	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	315	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.50
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole ligger DIE34; UGT, grafisch overzicht



9.8. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S33, S40, S404, S406

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S33	**2,560 / 2,560 m**	**HE340A**	**S 235**	**UGT**	**0,61 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1050

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,560 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	7,69	kN
$V_{y,Ed}$	15,08	kN
$V_{z,Ed}$	64,13	kN
T_{Ed}	0,01	kNm
$M_{y,Ed}$	163,24	kNm
$M_{z,Ed}$	-4,24	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	-9,114e+04	-8,439e+04								
3	SO	118	17	-9,477e+04	-1,015e+05								
4	I	243	10	-7,218e+04	7,103e+04	-1,02		0,49	25,58	73,04	84,19	126,02	1
5	SO	118	17	8,999e+04	8,324e+04	0,93	0,46	1,00	7,17	9,00	10,00	14,19	1
7	SO	118	17	9,361e+04	1,004e+05	0,93	0,44	1,00	7,17	9,00	10,00	13,85	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	1,3350e-02	m^2
$N_{pl,Rd}$	3137,25	kN
$N_{u,Rd}$	3460,32	kN
$N_{t,Rd}$	3137,25	kN
Eenheidscontrole	0,00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1,8500e-03	m^3
$M_{pl,y,Rd}$	434,75	kNm
Eenheidscontrole	0,38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7,5590e-04	m^3
$M_{pl,z,Rd}$	177,64	kNm
Eenheidscontrole	0,02	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,0247e-02	m^2
$V_{pl,y,Rd}$	1390,25	kN
Eenheidscontrole	0,01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,4978e-03	m^2
$V_{pl,z,Rd}$	610,24	kN
Eenheidscontrole	0,11	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	434,75	kNm
α	2,00	
$M_{pl,z,Rd}$	177,64	kNm
β	1,00	

Eenheidscontrole (6.41) = 0,14 + 0,02 = 0,16 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4)
wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,560 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	-9,114e+04	-8,439e+04								
3	SO	118	17	-9,477e+04	-1,015e+05								
4	I	243	10	-7,218e+04	7,103e+04	-1,02		0,49	25,58	73,04	84,19	126,02	1
5	SO	118	17	8,999e+04	8,324e+04	0,93	0,46	1,00	7,17	9,00	10,00	14,19	1
7	SO	118	17	9,361e+04	1,004e+05	0,93	0,44	1,00	7,17	9,00	10,00	13,85	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Elastisch kritisch moment M_{cr}	337,62	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1,13	
Limietslankheid $\lambda_{rel,LT,0}$	0,40	
Kipcurve	b	
Imperfectie α_{LT}	0,34	
Kipfactor β	0,75	
Reductie factor χ_{LT}	0,62	
Correctiefactor k_c	0,94	
Correctiefactor f	0,98	
Gewijzigde reductiefactor $\chi_{LT,mod}$	0,63	
Rekenwaarde knikweerstand $M_{b,Rd}$	275,06	kNm
Eenheidscontrole	0,59	-

Mcr parameters		
LTB lengte L	14,500	m
Vorklengte L_g	14,500	m
Invloed van lastpositie	geen invloed	
Factor α	575,00	
Reductie factor k_{red}	1,00	
Coëfficiënt C	3,87	
Factor S	1931	mm
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.
Opmerking: De correctiefactor k_c wordt bepaald op basis van C_1.

Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	7,69	kN
Ontwerp buigende momenten $M_{y,Ed}$	163,24	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-4,24	kNm
Trekweerstand $N_{t,Rd}$	3137,25	kN
Buigweerstand $M_{b,y,Rd}$	275,06	kNm
Buigweerstand $M_{c,z,Rd,com}$	177,64	kNm

Eenheidscontrole = 0,59 + 0,02 - 0,00 = 0,61 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

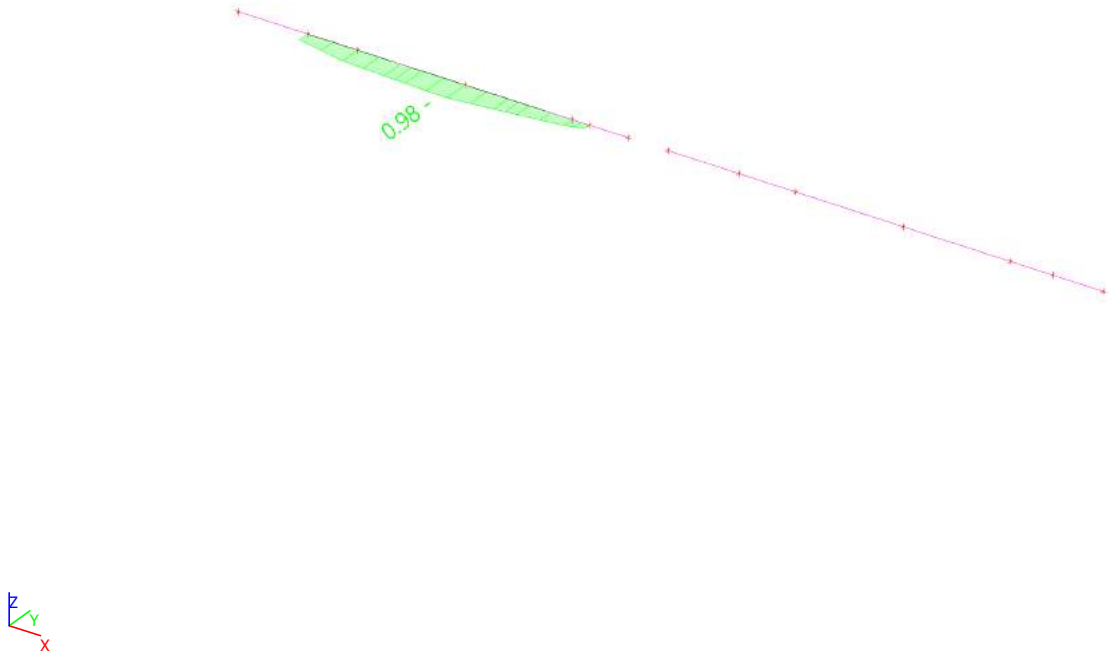
Plooiparameters		
Knik veldlengte a	2,560	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1,00	
Correctiefactor voor dwarskracht η	1,20	

Plooiverificatie	
Lijf slankheid h_w/t	31,26
Lijfslankheid limiet	60,00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.9. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht



9.10. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S403

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S403	**5,858 / 10,500 m**	**I + 2 PLud (HEA340; 320; 320; 12; 12)**	**S 235**	**UGT**	**0,98 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 5,858 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	43,87	kN
$V_{y,Ed}$	0,17	kN
$V_{z,Ed}$	10,36	kN
T_{Ed}	0,01	kNm
$M_{y,Ed}$	327,50	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	36,41	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-7,128e+04	-1,103e+05								
2	I	150	29	1,451e+05	1,061e+05	0,73		1,00	5,26	28,00	34,00	41,91	1
3	I	150	29	6,702e+04	1,061e+05	0,63		1,00	5,26	28,00	34,00	43,57	1
4	I	150	29	-1,494e+05	-1,103e+05								
5	I	8	10	-1,063e+05	-1,009e+05								
6	I	297	10	-1,009e+05	9,659e+04	-1,04		0,49	31,26	73,59	84,83	129,51	1
7	I	8	10	9,659e+04	1,021e+05	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,532e+05	1,506e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,416e+04	-7,677e+04								
10	UO	10	12	-1,549e+05	-1,575e+05								
13	UO	10	12	7,250e+04	6,990e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	2,1039e-02	m^2
$N_{pl,Rd}$	4944,14	kN
$N_{u,Rd}$	5453,28	kN
$N_{t,Rd}$	4944,14	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3,1654e-03	m^3
$M_{pl,y,Rd}$	743,86	kNm
Eenheidscontrole	0,44	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	1,3705e-03	m^3
$M_{pl,z,Rd}$	322,07	kNm
Eenheidscontrole	0,11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6468e-02	m^2
$V_{pl,y,Rd}$	2234,36	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	3,6506e-03	m^2
$V_{pl,z,Rd}$	495,31	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	4944,14	kN
$M_{pl,y,Rd}$	743,86	kNm
$M_{pl,z,Rd}$	322,07	kNm

Eenheidscontrole (6.2) = 0,01 + 0,44 + 0,11 = 0,56 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 5,858 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-7,128e+04	-1,103e+05								
2	I	150	29	1,451e+05	1,061e+05	0,73		1,00	5,26	28,00	34,00	41,91	1
3	I	150	29	6,702e+04	1,061e+05	0,63		1,00	5,26	28,00	34,00	43,57	1
4	I	150	29	-1,494e+05	-1,103e+05								
5	I	8	10	-1,063e+05	-1,009e+05								
6	I	297	10	-1,009e+05	9,659e+04	-1,04		0,49	31,26	73,59	84,83	129,51	1
7	I	8	10	9,659e+04	1,021e+05	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,532e+05	1,506e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,416e+04	-7,677e+04								
10	UO	10	12	-1,549e+05	-1,575e+05								
13	UO	10	12	7,250e+04	6,990e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3,1654e-03	m^3
Elastisch kritisch moment M_{cr}	856,97	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,93	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,50	
Rekenwaarde knikweerstand $M_{b,Rd}$	374,31	kNm
Eenheidscontrole	0,87	-

Mcr parameters		
LTB lengte L	14,500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

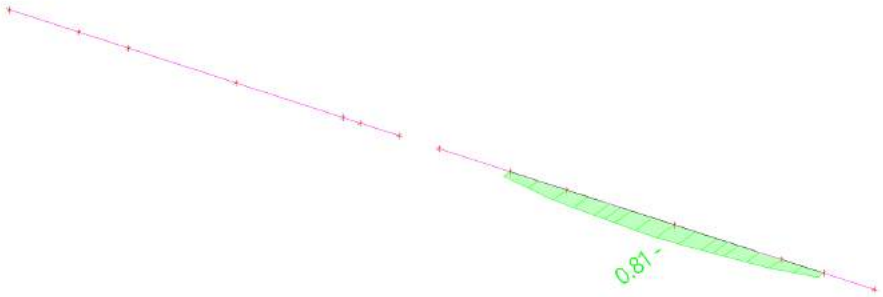
Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	43,87	kN
Ontwerp buigende momenten $M_{y,Ed}$	327,50	kNm
Ontwerp buigende momenten $M_{z,Ed}$	36,41	kNm
Trekweerstand $N_{t,Rd}$	4944,14	kN
Buigweerstand $M_{b,y,Rd}$	374,31	kNm
Buigweerstand $M_{c,z,Rd,com}$	322,07	kNm

Eenheidscontrole = 0,87 + 0,11 - 0,01 = 0,98 -

De staaf voldoet aan de stabiliteitscontrole.

9.11. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht





9.12. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S405

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S405	**6,121 / 11,700 m**	**Grafische doorsnede**	**S 235**	**UGT**	**0,81 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Algemeen	

Waarschuwing: Sterktereductie gerelateerd aan de dikte wordt niet ondersteund voor dit type doorsnede.

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 6,121 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-5,10	kN
$V_{y,Ed}$	-3,54	kN
$V_{z,Ed}$	-16,77	kN

Interne krachten	Berekende	Eenheid
T_{Ed}	0,03	kNm
$M_{y,Ed}$	239,24	kNm
$M_{z,Ed}$	67,26	kNm

Classificatie voor doorsnede-ontwerp
Waarschuwing: Classificatie wordt niet ondersteund voor dit type doorsnede.
De doorsnede wordt gecontroleerd als elastisch, klasse 3.

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2,5114e-02	m^2
$N_{c,Rd}$	5901,89	kN
Eenheidscontrole	0,00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,y,min}$	2,7183e-03	m^3
$M_{el,y,Rd}$	638,80	kNm
Eenheidscontrole	0,37	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,z,min}$	1,5664e-03	m^3
$M_{el,z,Rd}$	368,11	kNm
Eenheidscontrole	0,18	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6554e-02	m^2
$V_{pl,y,Rd}$	2246,03	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,3472e-03	m^2
$V_{pl,z,Rd}$	589,81	kN
Eenheidscontrole	0,03	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	38	
τ_{Ed}	0,2	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.2 en formule (6.42)

Normaalspanningen		
Vezel	31	
$\sigma_{N,Ed}$	0,2	MPa
$\sigma_{My,Ed}$	88,0	MPa
$\sigma_{Mz,Ed}$	42,9	MPa
$\sigma_{tot,Ed}$	131,2	MPa
Eenheidscontrole	0,56	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	5688,94	1855,63	kN
Slankheid λ	95,65	167,48	
Relatieve slankheid λ_{rel}	1,02	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	16,200	m
Elastische kritische last $N_{cr,T}$	11328,76	kN
Elastische kritische last $N_{cr,TF}$	1855,63	kN
Relatieve slankheid $\lambda_{rel,T}$	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastisch kritisch moment M_{cr}	1007,79	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,80	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,58	
Rekenwaarde knikweerstand $M_{b,Rd}$	371,83	kNm
Eenheidscontrole	0,64	-

Mcr parameters		
LTB lengte L	16,200	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2,5114e-02	m^2
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastische doorsnedemodulus $W_{el,z}$	1,5664e-03	m^3
Ontwerpdrukkracht N_{Ed}	5,10	kN
Ontwerp buigende momenten $M_{y,Ed}$	239,24	kNm
Ontwerp buigende momenten $M_{z,Ed}$	67,26	kNm
Karakteristieke drukweerstand N_{Rk}	5901,89	kN
Karakteristieke momentweerstand $M_{y,Rk}$	638,80	kNm

Buig- en axiale drukcontrole paramaters		
Karakteristieke momentweerstand $M_{z,Rk}$	368,11	kNm
Reductie factor χ_y	1,00	
Reductie factor χ_z	1,00	
Reductie factor χ_{LT}	0,58	
Interactiefactor k_{yy}	0,95	
Interactiefactor k_{yz}	0,92	
Interactiefactor k_{zy}	1,00	
Interactiefactor k_{zz}	0,92	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-19,38	kNm
Veldmoment $M_{s,y}$	239,24	kNm
Factor $\alpha_{h,y}$	-0,08	
Ratio van uiteinde momenten ψ_y	0,03	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-44,39	kNm
Veldmoment $M_{s,z}$	67,26	kNm
Factor $\alpha_{h,z}$	-0,66	
Ratio van uiteinde momenten ψ_z	0,79	
Equivalente moment factor C_{mz}	0,92	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-19,38	kNm
Veldmoment $M_{s,LT}$	239,24	kNm
Factor $\alpha_{h,LT}$	-0,08	
Ratio van uiteinde momenten ψ_{LT}	0,03	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,00 + 0,61 + 0,17 = 0,78 -
Eenheidscontrole (6.62) = 0,00 + 0,64 + 0,17 = 0,81 -

De staaf voldoet aan de stabiliteitscontrole.

9.13. Staalcontrole ligger DIN28; UGT, grafisch overzicht





9.14. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S331

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S331	**0.000 / 14.500 m**	**HEB280**	**S 235**	**UGT**	**0.23 -**

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-9.55	kN
$V_{y,Ed}$	11.05	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.01	kNm
$M_{y,Ed}$	0.17	kNm
$M_{z,Ed}$	-38.08	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.750e+04	8.145e+04	0.21	0.53	1.00	6.15	9.00	10.00	15.26	1
3	SO	111	18	-1.628e+04	-8.023e+04								
4	I	196	11	6.398e+02	8.145e+02	0.79		1.00	18.67	28.00	34.00	41.06	1
5	SO	111	18	-1.605e+04	-8.000e+04								
7	SO	111	18	1.773e+04	8.169e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3140e-02	m^2
$N_{c,Rd}$	3087.90	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.5340e-03	m^3
$M_{pl,y,Rd}$	360.49	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.1760e-04	m^3
$M_{pl,z,Rd}$	168.64	kNm
Eenheidscontrole	0.23	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0442e-02	m^2
$V_{pl,y,Rd}$	1416.78	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.1130e-03	m^2
$V_{pl,z,Rd}$	558.04	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.1	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	360.49	kNm
α	2.00	
$M_{pl,z,Rd}$	168.64	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.23 = 0.23 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.750e+04	8.145e+04	0.21	0.53	1.00	6.15	9.00	10.00	15.26	1
3	SO	111	18	-1.628e+04	-8.023e+04								
4	I	196	11	6.398e+02	8.145e+02	0.79		1.00	18.67	28.00	34.00	41.06	1
5	SO	111	18	-1.605e+04	-8.000e+04								
7	SO	111	18	1.773e+04	8.169e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	14.500	14.500	m
Knikfactor k	1.00	1.00	
Kniklengte L_{cr}	14.500	14.500	m
Kritische Euler last N_{cr}	1899.61	650.13	kN
Slankheid λ	119.74	204.67	
Relatieve slankheid λ_{rel}	1.27	2.18	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Elastisch kritisch moment M_{cr}	296.01	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.10	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	14.500	m
Vorklengte L_g	14.500	m
Invloed van lastpositie	geen invloed	
Factor α	575.00	
Reductie factor k_{red}	1.00	
Coëfficiënt C	3.39	
Factor S	1430	mm
Kip moment factor C_1	1.03	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.1760e-04	m^3
Ontwerpdrukkracht N_{Ed}	9.55	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	0.18	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-38.08	kNm
Karakteristieke drukweerstand N_{Rk}	3087.90	kN
Karakteristieke momentweerstand $M_{y,Rk}$	360.49	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	168.64	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.98	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.59	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S331 positie 14.500 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S331 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lineair moment M	
Ratio van uiteinde momenten ψ_y	0.94	
Equivalente moment factor C_{my}	0.97	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-38.08	kNm
Veldmoment $M_{s,z}$	11.46	kNm
Factor $\alpha_{s,z}$	-0.30	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	0.94	
Equivalente moment factor C_{mLT}	0.97	

Eenheidscontrole (6.61) = 0.00 + 0.00 + 0.05 = 0.06 -
Eenheidscontrole (6.62) = 0.00 + 0.00 + 0.09 = 0.09 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

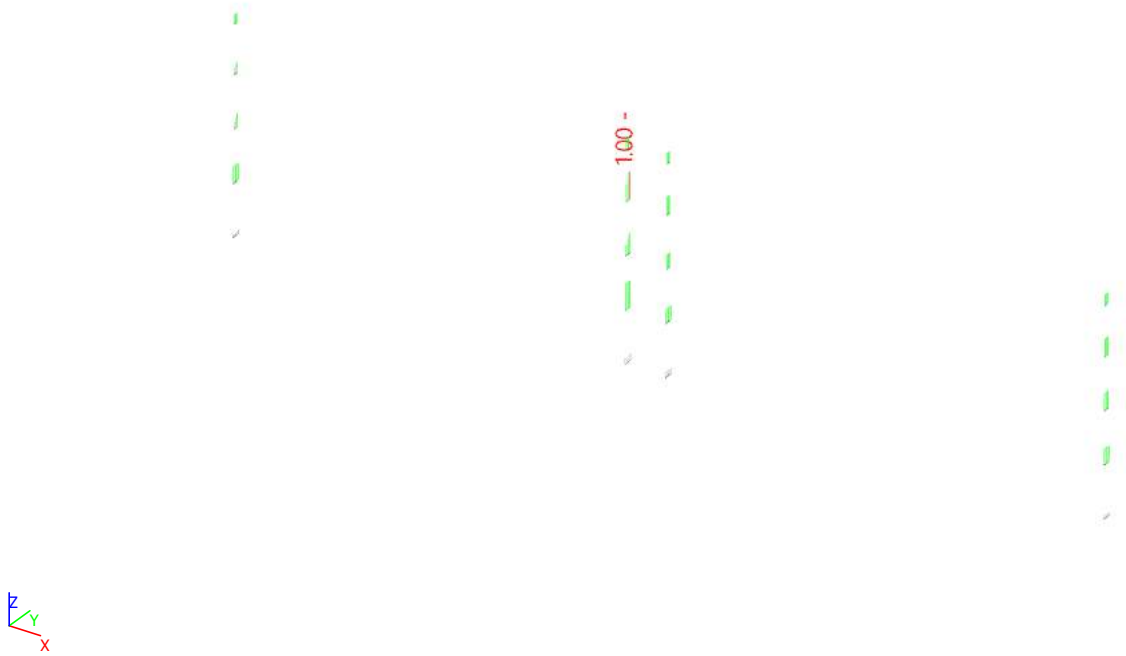
Plooiparameters		
Knik veldlengte a	14.500	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	244	mm
Lijfdikte t	11	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	23.24
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.15. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.16. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S396	0.187 / 0.187 m	Rechthoek (200; 28)	S 235	UGT	1.00 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.187 m

Interne krachten	Berekende	Eenheid
N_{Ed}	6.55	kN
$V_{y,Ed}$	-9.08	kN
$V_{z,Ed}$	-251.14	kN
T_{Ed}	-0.45	kNm
$M_{y,Ed}$	-36.48	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-1.01	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.942e+05	-1.966e+05	-1.01	23.80	0.50	7.14	25.69	28.54	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	5.6000e-03	m²
$N_{pl,Rd}$	1316.00	kN
$N_{u,Rd}$	1451.52	kN
$N_{t,Rd}$	1316.00	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m³
$M_{pl,y,Rd}$	65.80	kNm
Eenheidscontrole	0.55	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m³
$M_{pl,z,Rd}$	9.21	kNm
Eenheidscontrole	0.11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,y,Rd}$	759.79	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,z,Rd}$	759.79	kN
Eenheidscontrole	0.33	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	9.5	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.07	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1(5) en formule (6.1)

Elastische toetsing		
Vezel	3	
$\sigma_{N,Ed}$	-1.2	MPa
$\sigma_{My,Ed}$	-195.4	MPa
$\sigma_{Mz,Ed}$	-38.7	MPa
$\sigma_{tot,Ed}$	-235.2	MPa
$\tau_{Vy,Ed}$	0.0	MPa
$\tau_{Vz,Ed}$	0.0	MPa
$\tau_{t,Ed}$	0.0	MPa
$\tau_{tot,Ed}$	0.0	MPa

Elastische toetsing		
$\sigma_{von\ Mises,Ed}$	235.2	MPa
Eenheidscontrole	**1.00**	-

Opmerking: Voor deze doorsnede is in artikel 6.2.7(9) geen formule gegeven voor de plastische dwarskrachtweerstand gereduceerd met torsie. Daarom wordt het criterium elastisch vloeien volgens EN 1993-1-1 artikel 6.2.1(5) getoetst.

De staaf voldoet NIET aan de doorsnedecontrole!

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.187 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.942e+05	-1.966e+05	-1.01	23.80	0.50	7.14	25.69	28.54	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	2091.06	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.18	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

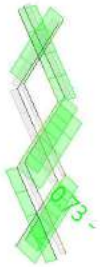
Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.357	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.42	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

De staaf voldoet aan de stabiliteitscontrole.

9.17. Staalcontrole diagonaal; UGT, grafisch overzicht





9.18. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S235, S267..S271, S274, S277..S281

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S268	0.000 / 3.142 m	UPE140	S 235	UGT	0.73 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1176

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-161.26	kN
$V_{y,Ed}$	0.00	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.00	kNm
$M_{z,Ed}$	0.00	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	8.754e+04	8.754e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	8.754e+04	8.754e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	8.754e+04	8.754e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.8400e-03	m²
$N_{c,Rd}$	432.40	kN
Eenheidscontrole	0.37	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	8.754e+04	8.754e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	8.754e+04	8.754e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	8.754e+04	8.754e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	3.142	3.142	m
Knikfactor k	0.65	0.65	
Kniklengte L_{cr}	2.043	2.043	m
Kritische Euler last N_{cr}	2975.62	390.95	kN
Slankheid λ	35.80	98.77	
Relatieve slankheid λ_{rel}	0.38	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.91	0.51	
Knikweerstand $N_{b,Rd}$	392.28	220.76	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.8400e-03	m²
Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.73	-

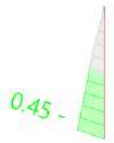
Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	3.142	m
Elastische kritische last $N_{cr,T}$	649.47	kN
Elastische kritische last $N_{cr,TF}$	390.95	kN
Relatieve slankheid $\lambda_{rel,T}$	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.51	
Oppervlakte van de doorsnede A	1.8400e-03	m²

Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.73	-

De staaf voldoet aan de stabiliteitscontrole.

9.19. Staalcontrole bliksempiek; UGT, grafisch overzicht





9.20. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S332

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S332	**0.000 / 4.651 m**	**Koker fl (374; 7; 126; 10; 354)**	**S 235**	**UGT**	**0.45 -**

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-3.11	kN
$V_{y,Ed}$	2.60	kN
$V_{z,Ed}$	-7.80	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	30.53	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-12.38	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	5.979e+04	6.021e+04	0.99	0.43	1.00	0.71	9.00	10.00	13.83	1
2	I	126	10	8.647e+04	-5.547e+04	-0.64		0.61	12.60	53.61	63.13	88.30	1
3	I	126	10	5.626e+04	-8.568e+04	-1.52		0.40	12.60	90.82	104.70	193.02	1
4	UO	5	7	-9.004e+04	-8.962e+04								
5	UO	5	7	9.041e+04	9.082e+04	1.00	0.43	1.00	0.71	9.00	10.00	13.78	1
6	I	4	10	8.647e+04	9.041e+04	0.96		1.00	0.35	28.00	34.00	38.58	1
7	UO	5	7	-5.942e+04	-5.900e+04								
8	I	4	10	-5.547e+04	-5.942e+04								
9	I	364	7	6.021e+04	9.041e+04	0.67		1.00	52.00	28.00	34.00	42.98	4
10	I	4	10	5.626e+04	6.021e+04	0.93		1.00	0.35	28.00	34.00	38.88	1
11	I	364	7	-8.962e+04	-5.942e+04								
12	I	4	10	-8.568e+04	-8.962e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My+
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
3	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
4	UO	5	-2.350e+05	-2.350e+05							
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2
7	UO	5	-2.350e+05	-2.350e+05							
8	I	4	-2.226e+05	-2.350e+05							
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	-2.350e+05	-2.350e+05							
12	I	4	-2.226e+05	-2.350e+05							

Effectieve doorsnede Mz-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.287e+05	-2.350e+05							
2	I	126	2.287e+05	2.287e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	-2.287e+05	-2.287e+05							
4	UO	5	-2.287e+05	-2.350e+05							
5	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
6	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
8	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
10	I	4	-2.287e+05	-2.287e+05							
11	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
12	I	4	-2.287e+05	-2.287e+05							

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	7.0288e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.5067e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.3936e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	7.0288e-03	m^2
$N_{c,Rd}$	1651.76	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.3936e-04	m^3
$M_{c,y,Rd}$	79.75	kNm
Eenheidscontrole	0.38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	187.45	kNm
Eenheidscontrole	0.07	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	685.11	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	374.41	kN
Eenheidscontrole	0.02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	7.0288e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.3936e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.4	MPa
$\sigma_{My,Ed}$	90.0	MPa
$\sigma_{Mz,Ed}$	15.5	MPa
$\sigma_{tot,Ed}$	105.9	MPa
Eenheidscontrole	0.45	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	2.20	0.92	
Kniklengte L_{cr}	10.228	4.262	m
Kritische Euler last N_{cr}	525.28	16492.64	kN
Slankheid λ	174.94	31.22	
Relatieve slankheid λ_{rel}	1.77	0.32	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.651	m
Elastische kritische last $N_{cr,T}$	264162.55	kN
Elastische kritische last $N_{cr,TF}$	525.28	kN
Relatieve slankheid $\lambda_{rel,T}$	1.77	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Elastisch kritisch moment M_{cr}	17006.54	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.07	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.89	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	7.0288e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	3.11	kN
Ontwerp buigende momenten $M_{y,Ed}$	30.53	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-12.38	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	1651.76	kN
Karakteristieke momentweerstand $M_{y,Rk}$	79.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	187.45	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.40	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.40	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	puntlast F	
Uiteinde moment $M_{h,z}$	-12.38	kNm
Veldmoment $M_{s,z}$	-0.42	kNm
Factor $\alpha_{s,z}$	0.03	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	30.53	kNm
Veldmoment $M_{s,LT}$	13.83	kNm
Factor $\alpha_{s,LT}$	0.45	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.56	

Eenheidscontrole (6.61) = 0.00 + 0.34 + 0.03 = 0.37 -
Eenheidscontrole (6.62) = 0.00 + 0.38 + 0.03 = 0.41 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE F

In- en uitvoergegevens 3D raamwerkprogramma juk 65

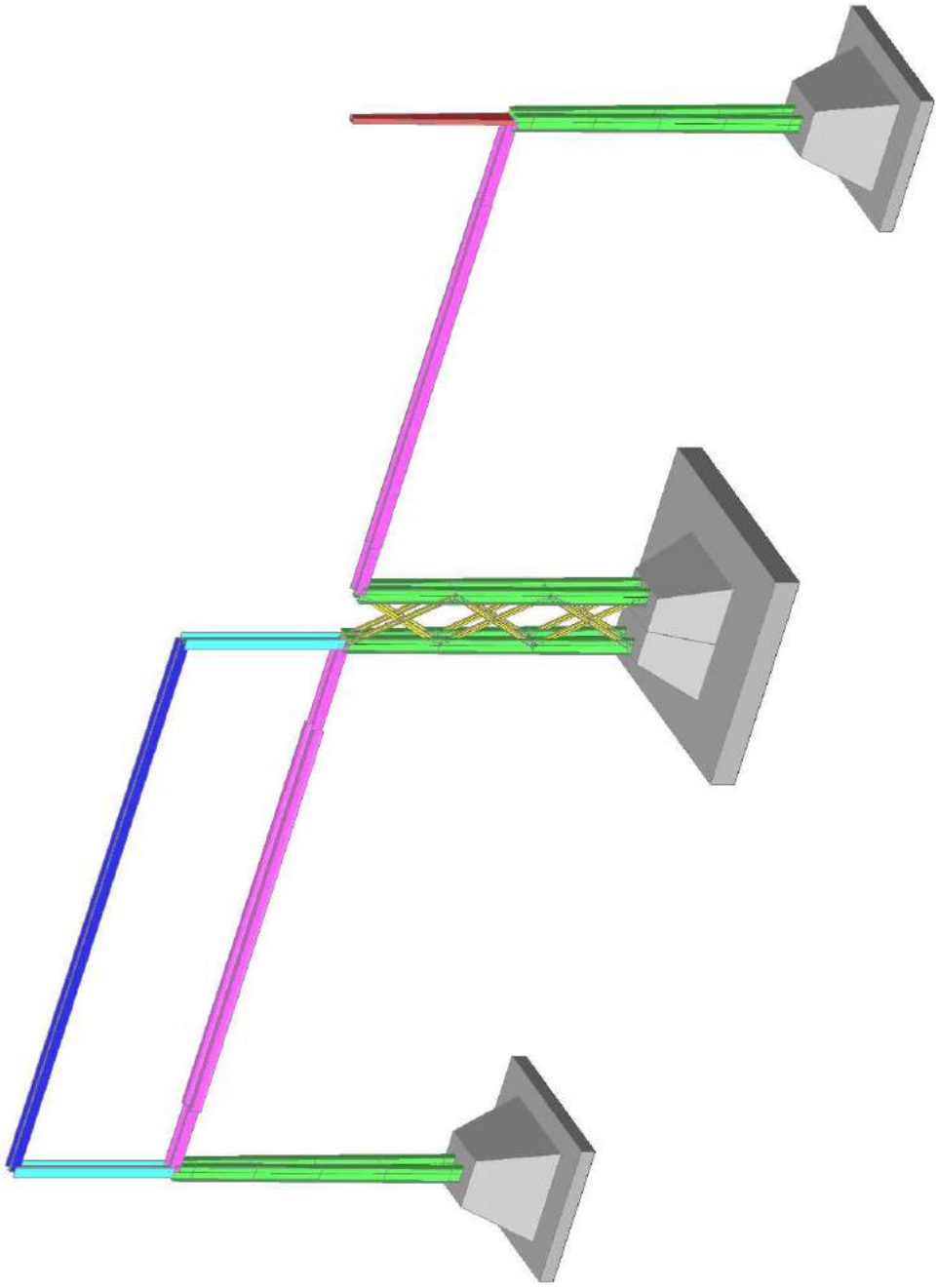
1. Inhoudsopgave

1. Inhoudsopgave **1**
2. Geometrie **3**
2.1. Perspectief constructie 3
2.2. Maatvoering 4
2.3. Materialen 5
2.4. Doorsneden 5
3. Belastingen **15**
3.1. Belastingsgevallen 15
3.2. BC1: e.g. constructie 22
3.3. BG2: grond op poer 22
3.4. BG3: wind op constructie; X-richting 23
3.5. BG4: wind op constructie; Y-richting 23
3.6. LC1001 / Totale waarde 24
3.7. LC1080 / Totale waarde 24
3.8. LC1159 / Totale waarde 25
3.9. LC1238 / Totale waarde 25
3.10. Combinaties 26
3.11. Resultaatklasses 33
4. Berekeningsverslag **34**
5. Reacties **56**
5.1. Oplegreacties kolom links; UGT, globale extremen 56
5.2. Oplegreacties kolom midden-links; UGT, globale extremen 56
5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen 56
5.4. Oplegreacties kolom rechts; UGT, globale extremen 56
6. Grondspanningen **57**
6.1. Grondspanningen onder betonpoeren 57
7. Staafkrachten **58**
7.1. Staafkrachten kolom INP45; UGT, globale extremen 58
7.2. Staafkrachten kolom DIE36; UGT, globale extremen 58
7.3. Staafkrachten ligger DIE34; UGT, globale extremen 58
7.4. Staafkrachten ligger DIE34+strippen; UGT, globale extremen 59
7.5. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen 59
7.6. Staafkrachten ligger DIN28; UGT, globale extremen 59
7.7. Staafkrachten koppelplaat; UGT, globale extremen 60
7.8. Staafkrachten diagonaal; UGT, globale extremen 60
7.9. Staafkrachten bliksempiek; UGT, globale extremen 60
7.10. Staafkrachten betonopstort links; UGT, globale extremen 60
7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen 61
7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen 61
7.13. Staafkrachten betonopstort rechts; UGT, globale extremen 61
8. Staafspanningen **62**
8.1. Von Mises spanningen kolom INP45; UGT, globale extremen 62
8.2. Von Mises spanningen kolom DIE36; UGT, globale extremen 62
8.3. Von Mises spanningen ligger DIE34; UGT, globale extremen 62
8.4. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen 62
8.5. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen 63
8.6. Von Mises spanningen ligger DIN28; UGT, globale extremen 63
8.7. Von Mises spanningen koppelplaat; UGT, globale extremen 63
8.8. Von Mises spanningen diagonaal; UGT, globale extremen 63
8.9. Von Mises spanningen bliksempiek; UGT, globale extremen 64
9. Normcontrole staal **65**
9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht 65
9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid 65
9.3. Staalcontrole kolom DIE36; UGT, grafisch overzicht 70
9.4. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid 70
9.5. Staalcontrole ligger DIE34; UGT, grafisch overzicht 74
9.6. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid 74
9.7. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht 79
9.8. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid 79
9.9. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht 83
9.10. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid 83
9.11. Staalcontrole ligger DIN28; UGT, grafisch overzicht 87
9.12. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid 87
9.13. Staalcontrole koppelplaat; UGT, grafisch overzicht 92
9.14. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 92
9.15. Staalcontrole diagonaal; UGT, grafisch overzicht 96

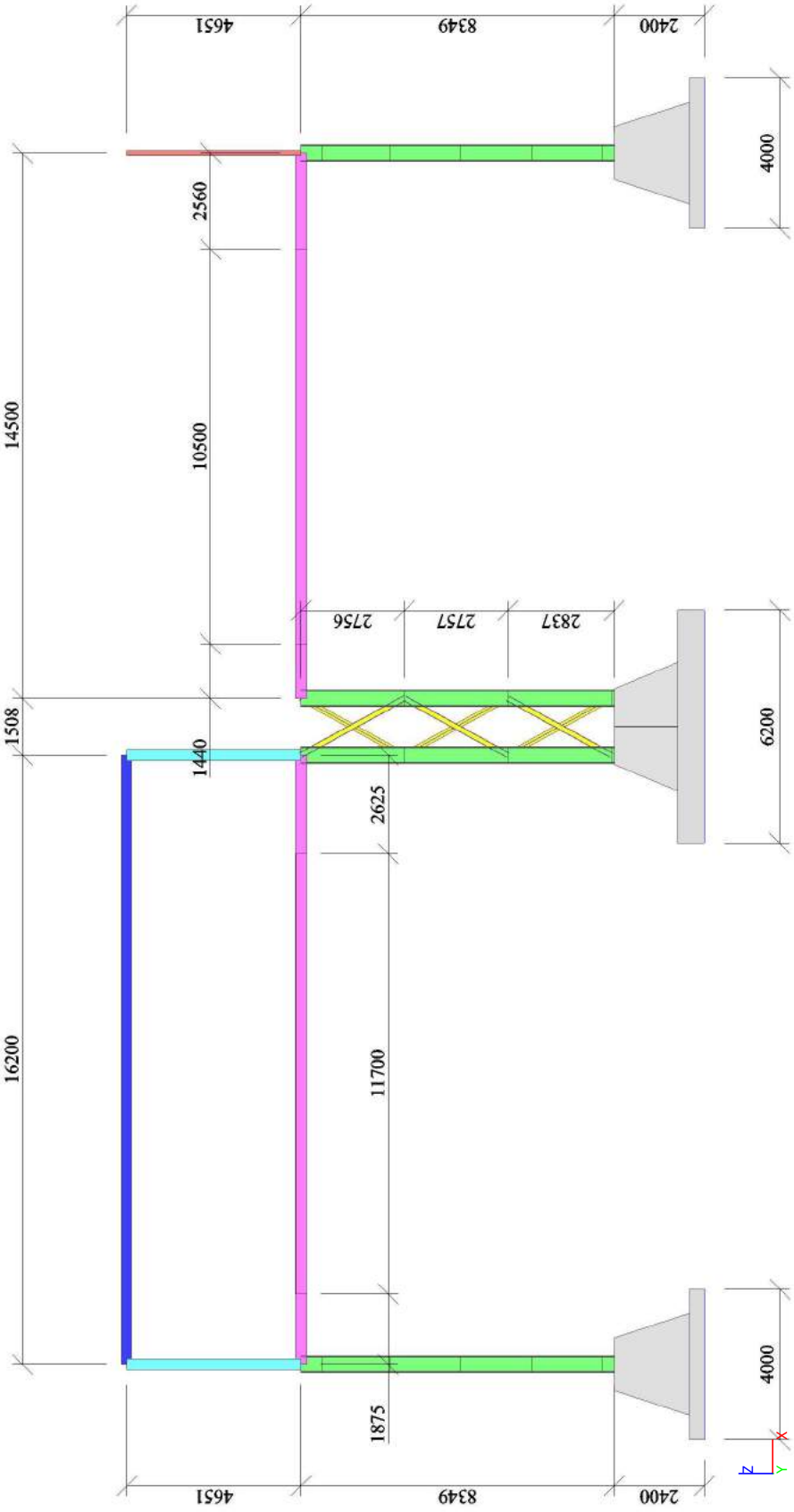
9.16. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid 96
9.17. Staalcontrole bliksempiek; UGT, grafisch overzicht 99
9.18. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 99

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 235	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	235.0 215.0	360.0 360.0	

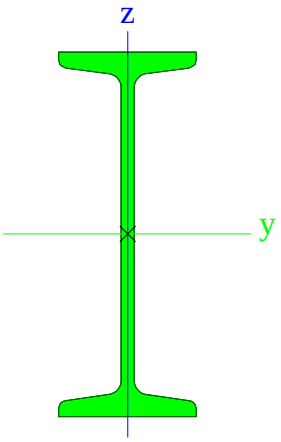
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C60/75	Beton	2500.0	2600.0	3.9100e+04	0.2	0.00	60.00	
Dummy beton	Beton	2500.0	2600.0	3.9100e+06	0.2	0.00	60.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom INP45		
Type	INP450	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	5.63e+05	5.63e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	8.11e+04	8.11e+04
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

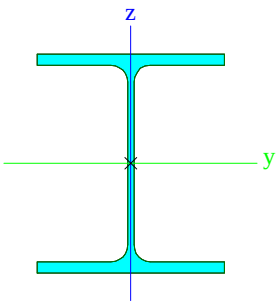
Afbeelding



Kolom DIE36		
Type	HEA360	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c

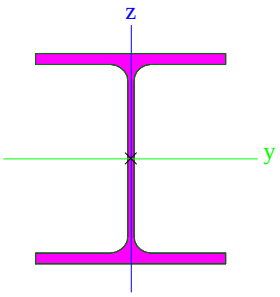
A [m²]	1.4300e-02	
A_y [m²], A_z [m²]	1.0125e-02	3.6844e-03
I_y [m⁴], I_z [m⁴]	3.3100e-04	7.8900e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8900e-03	5.2600e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0875e-03	8.0417e-04
I_w [m⁶], I_t [m⁴]	2.1766e-06	1.4900e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	175
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.91e+05	4.91e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.89e+05	1.89e+05
A_L [m²/m], A_D [m²/m]	1.8300e+00	1.8334e+00

Afbeelding



Ligger DIE34		
Type	HE340A	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3350e-02	
A_y [m²], A_z [m²]	9.5495e-03	3.3201e-03
I_y [m⁴], I_z [m⁴]	2.7690e-04	7.4360e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6780e-03	4.9570e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.8500e-03	7.5590e-04
I_w [m⁶], I_t [m⁴]	1.8240e-06	1.2720e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.35e+05	4.35e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.78e+05	1.78e+05
A_L [m²/m], A_D [m²/m]	1.7944e+00	1.7944e+00

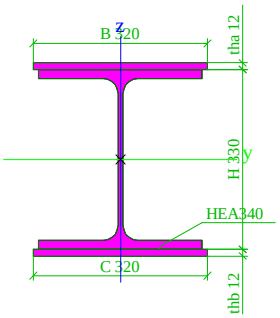
Afbeelding



Ligger DIE34+strippen		
Type	I + 2 PLud	
Uitgebreid	HEA340; 320; 320; 12; 12	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	c	c
A [m²]	2.1039e-02	
A_y [m²], A_z [m²]	1.6468e-02	3.6506e-03
I_y [m⁴], I_z [m⁴]	5.0182e-04	1.3990e-04

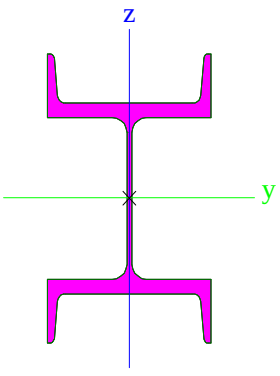
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.8351e-03	8.7437e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.1654e-03	1.3705e-03
I_w [m⁶], I_t [m⁴]	3.6743e-06	4.7425e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	160	177
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.44e+05	7.44e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.22e+05	3.22e+05
A_L [m²/m], A_D [m²/m]	1.9224e+00	1.9224e+00

Afbeelding



Ligger DIE34+UNP's		
Type	Grafische doorsnede	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.5114e-02	
A_y [m²], A_z [m²]	1.6554e-02	4.3472e-03
I_y [m⁴], I_z [m⁴]	7.2035e-04	2.3496e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.7183e-03	1.5664e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.1091e-03	2.0212e-03
I_w [m⁶], I_t [m⁴]	4.5518e-06	4.8902e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	0	0
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.66e+05	9.66e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	4.75e+05	4.75e+05
A_L [m²/m], A_D [m²/m]	2.4925e+00	2.4925e+00

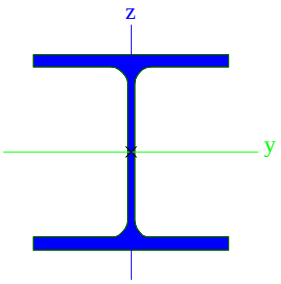
Afbeelding



Ligger DIN28		
Type	HEB280	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3140e-02	
A_y [m²], A_z [m²]	9.6422e-03	3.1403e-03
I_y [m⁴], I_z [m⁴]	1.9270e-04	6.5950e-05

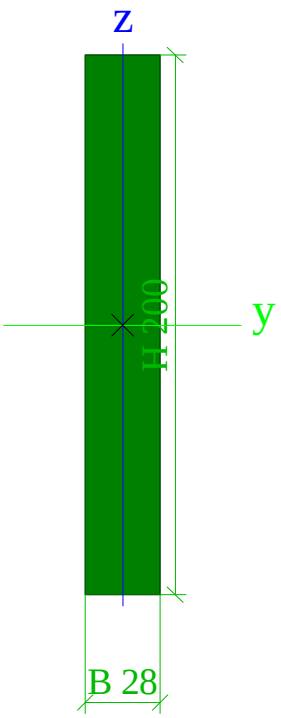
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3760e-03	4.7100e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.5340e-03	7.1760e-04
I_w [m⁶], I_t [m⁴]	1.1302e-06	1.4370e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	140	140
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3.61e+05	3.61e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.69e+05	1.69e+05
A_L [m²/m], A_D [m²/m]	1.6200e+00	1.6176e+00

Afbeelding



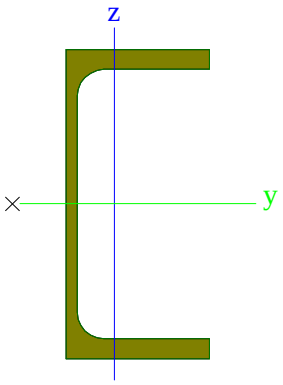
Plaat 2x14x200		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.58e+04	6.58e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.21e+03	9.21e+03
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

Afbeelding



Diagionaal UPE14		
Type	UPE140	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	c	c
A [m^2]	1.8400e-03	
A_y [m^2], A_z [m^2]	1.1000e-03	7.1956e-04
I_y [m^4], I_z [m^4]	5.9900e-06	7.8700e-07
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	8.5600e-05	1.8200e-05
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	9.8800e-05	3.2600e-05
I_w [m^6], I_t [m^4]	2.3372e-09	4.0500e-08
d_y [mm], d_z [mm]	-46	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	22	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.32e+04	2.32e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	7.66e+03	7.66e+03
A_L [m^2/m], A_D [m^2/m]	5.1970e-01	5.1965e-01

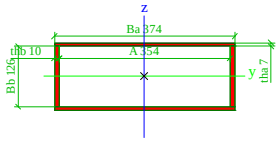
Afbeelding



Bliksempiek-1

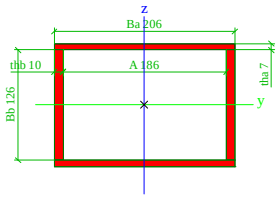
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	7.7560e-03	
A_y [m²], A_z [m²]	5.0496e-03	2.7596e-03
I_y [m⁴], I_z [m⁴]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.2757e-04	9.4821e-04
I_w [m⁶], I_t [m⁴]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.00e+05	1.00e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.23e+05	2.23e+05
A_L [m²/m], A_D [m²/m]	1.0280e+00	1.9880e+00

Afbeelding



Bliksempiek-2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	5.4040e-03	
A_y [m²], A_z [m²]	2.8012e-03	2.7167e-03
I_y [m⁴], I_z [m⁴]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.7117e-04	3.9549e-04
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.37e+04	6.37e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.29e+04	9.29e+04
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

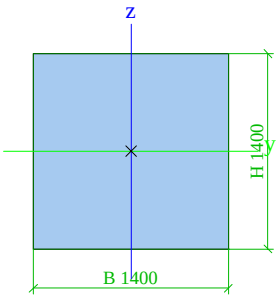
Afbeelding



Poer boven-IA		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	

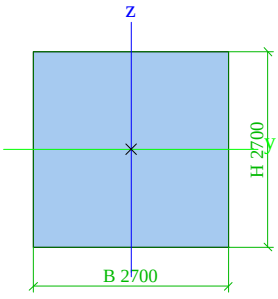
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Afbeelding



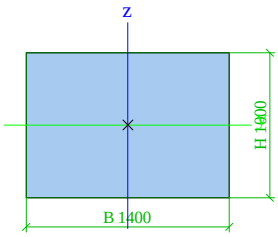
Poer onder-IA		
Type	Rechthoek	
Uitgebreid	2700; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	7.2900e+00	
A_y [m²], A_z [m²]	6.0750e+00	6.0750e+00
I_y [m⁴], I_z [m⁴]	4.4287e+00	4.4287e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.2805e+00	3.2805e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	4.9524e-02	7.4626e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	1350
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0800e+01	1.0800e+01

Afbeelding



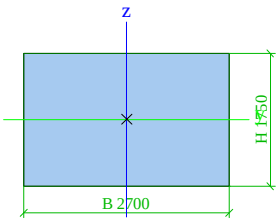
Poer boven-IB		
Type	Rechthoek	
Uitgebreid	1000; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.4000e+00	
A_y [m²], A_z [m²]	1.1667e+00	1.1667e+00
I_y [m⁴], I_z [m⁴]	1.1667e-01	2.2867e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.3333e-01	3.2667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	2.2616e-03	2.6127e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.8000e+00	4.8000e+00

Afbeelding



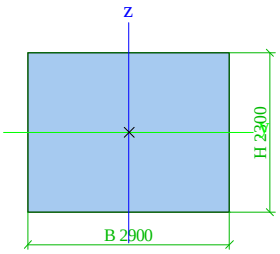
Poer onder-IB		
Type	Rechthoek	
Uitgebreid	1750; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	4.7250e+00	
A_y [m²], A_z [m²]	3.9375e+00	3.9375e+00
I_y [m⁴], I_z [m⁴]	1.2059e+00	2.8704e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3781e+00	2.1263e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2952e-01	2.8785e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	875
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	8.9000e+00	8.9000e+00

Afbeelding



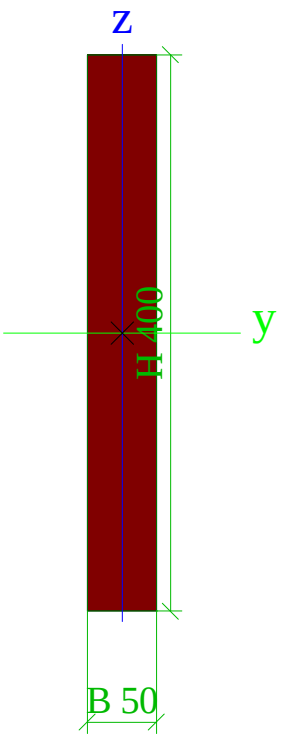
Poer onder-IV		
Type	Rechthoek	
Uitgebreid	2300; 2900	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	6.6700e+00	
A_y [m²], A_z [m²]	5.5583e+00	5.5583e+00
I_y [m⁴], I_z [m⁴]	2.9404e+00	4.6746e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.5568e+00	3.2238e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.3988e-01	6.0933e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1450	1150
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0400e+01	1.0400e+01

Afbeelding



Dummy 400x50		
Type	Rechthoek	
Uitgebreid	400; 50	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m^2]	2.0000e-02	
A_y [m^2], A_z [m^2]	1.6667e-02	1.6667e-02
I_y [m^4], I_z [m^4]	2.6667e-04	4.1667e-06
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	1.3333e-03	1.6667e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	2.0000e-03	2.5000e-04
I_w [m^6], I_t [m^4]	5.0391e-08	1.5278e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	25	200
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.70e+05	4.70e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	5.88e+04	5.88e+04
A_L [m^2/m], A_D [m^2/m]	9.0000e-01	9.0000e-01

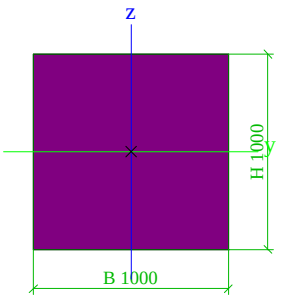
Afbeelding



Dummy beton		
Type	Rechthoek	
Uitgebreid	1000; 1000	
Onderdeelmateriaal	Dummy beton	
Bouwwijze	beton	

A [m²]	1.0000e+00	
A_y [m²], A_z [m²]	8.3333e-01	8.3333e-01
I_y [m⁴], I_z [m⁴]	8.3333e-02	8.3333e-02
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6667e-01	1.6667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2502e-04	1.4035e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	500	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.0000e+00	4.0000e+00

Afbeelding



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. staco	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie; X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie; Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1168	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1169	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1170	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1171	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1172	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1173	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1174	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1175	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1176	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1177	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1178	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1179	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1180	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1181	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1182	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1183	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1184	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1185	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1186	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1187	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1188	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1189	BC0	Variabel	EXCL MAST		Kort	Geen

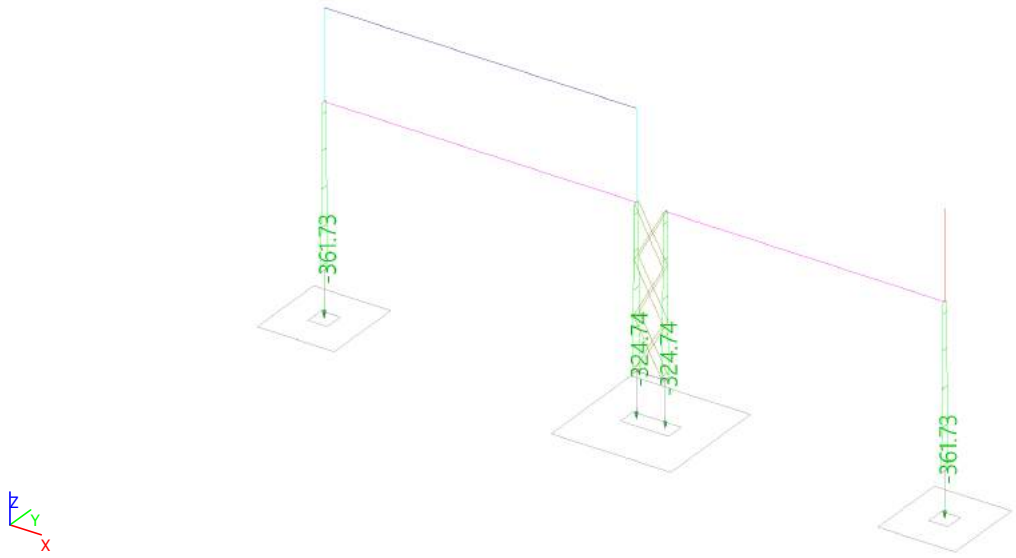
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1190	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1191	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1192	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1193	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1194	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1195	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1196	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1197	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1198	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1199	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1200	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1201	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1202	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1203	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1204	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1205	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1206	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1207	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1208	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1209	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1210	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1211	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1212	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1213	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1214	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1215	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1216	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1217	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1218	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1219	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1220	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1221	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1222	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1223	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1224	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1225	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1226	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1227	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1228	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1229	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1230	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1231	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1232	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1233	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1234	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1235	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1236	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1237	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1238	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

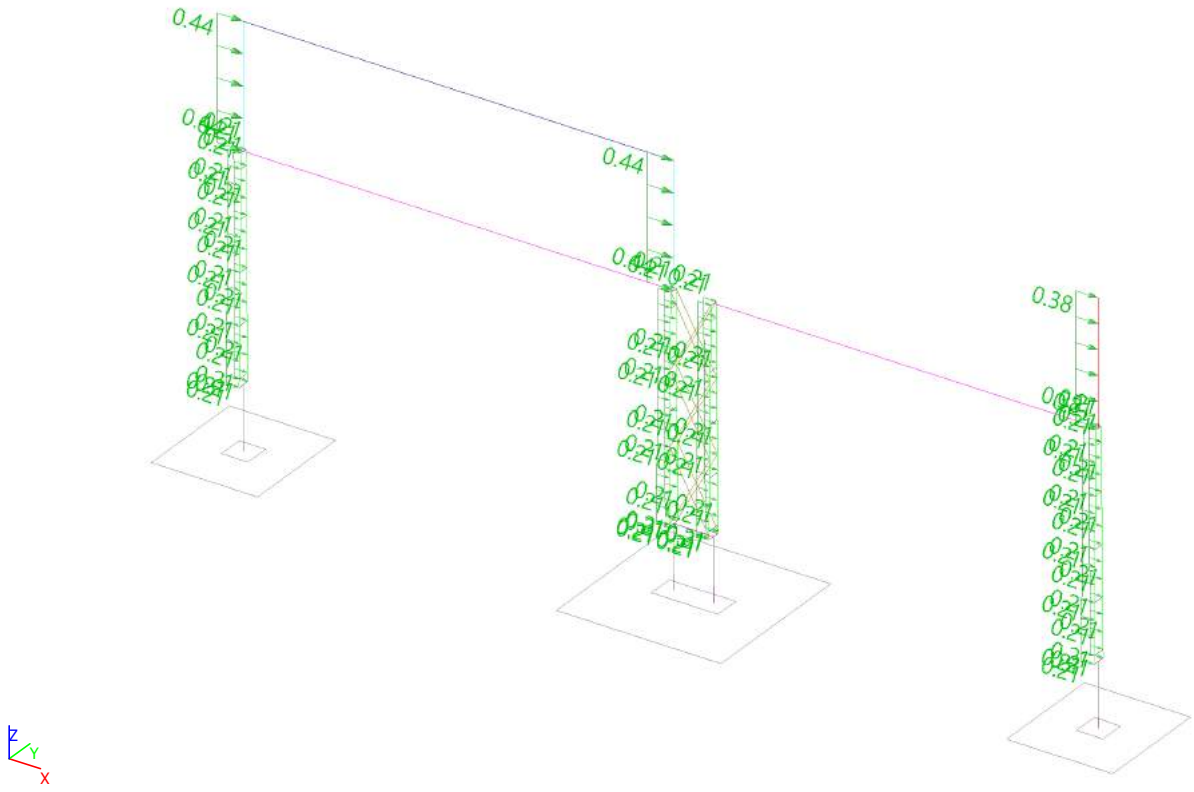
3.2. BC1: e.g. constructie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

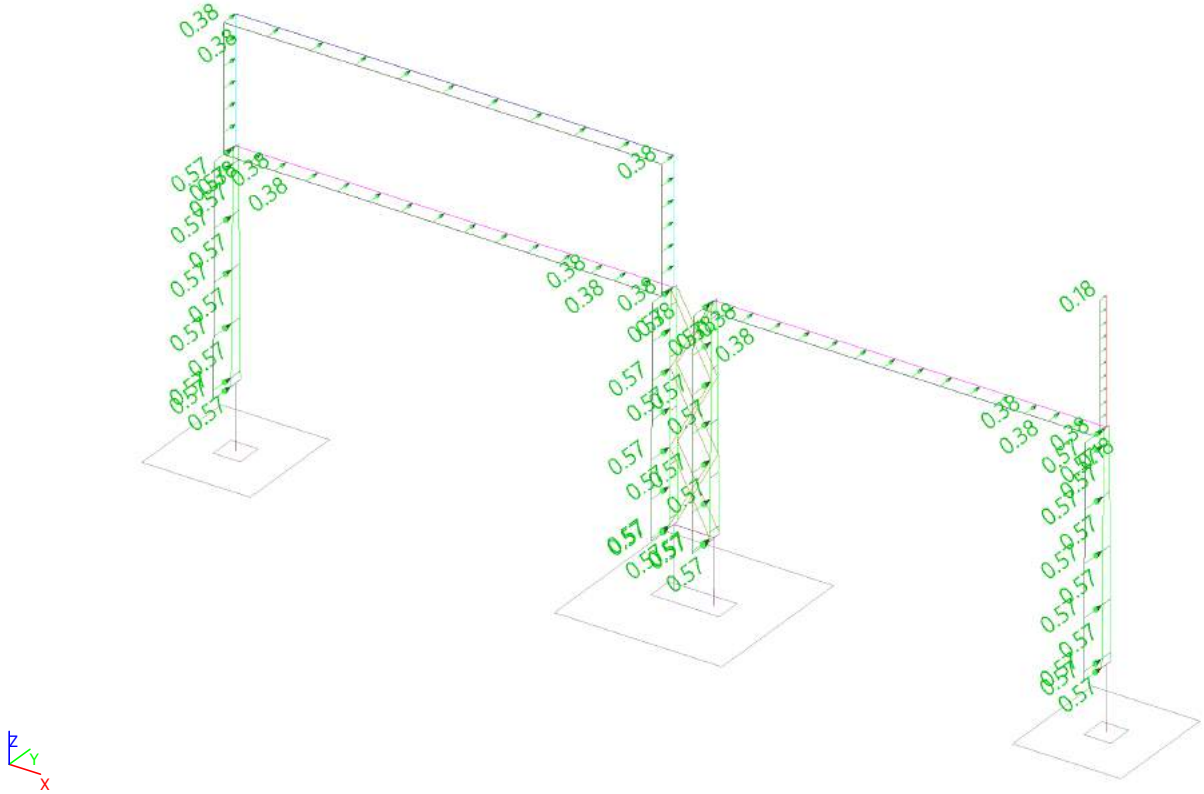
3.3. BG2: grond op poer



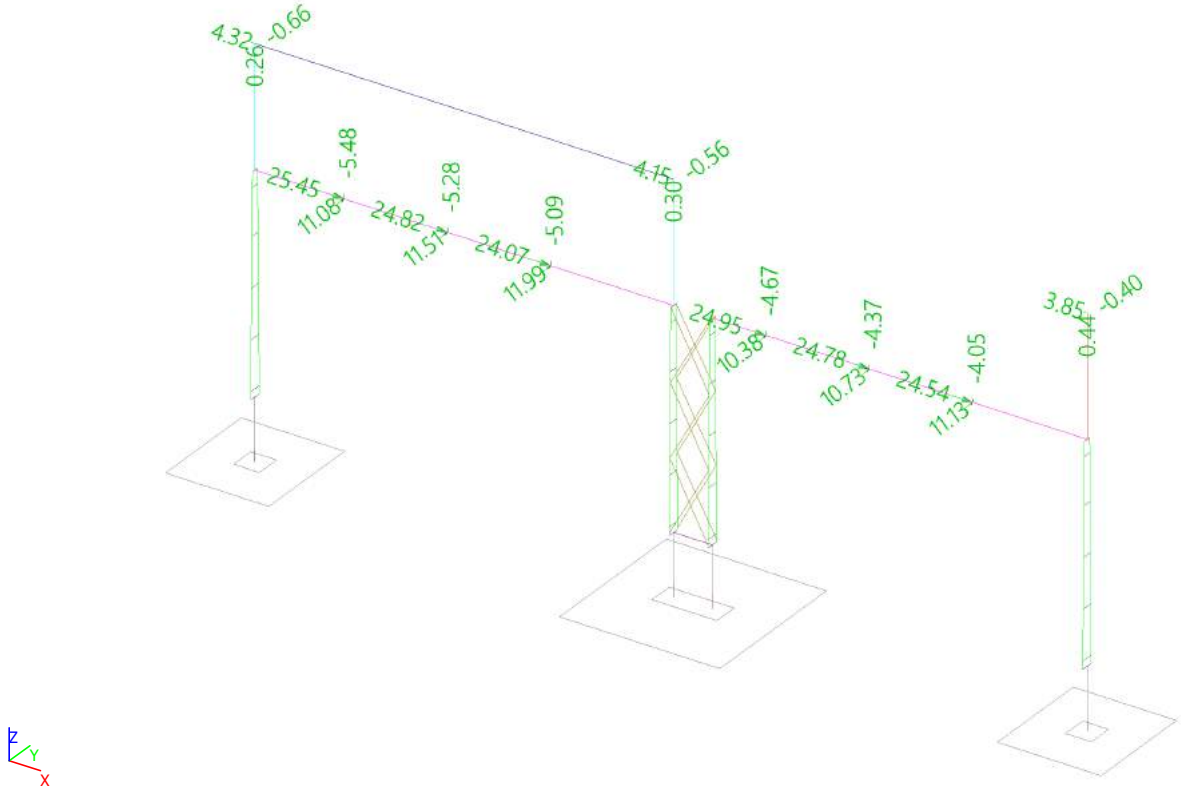
3.4. BG3: wind op constructie; X-richting



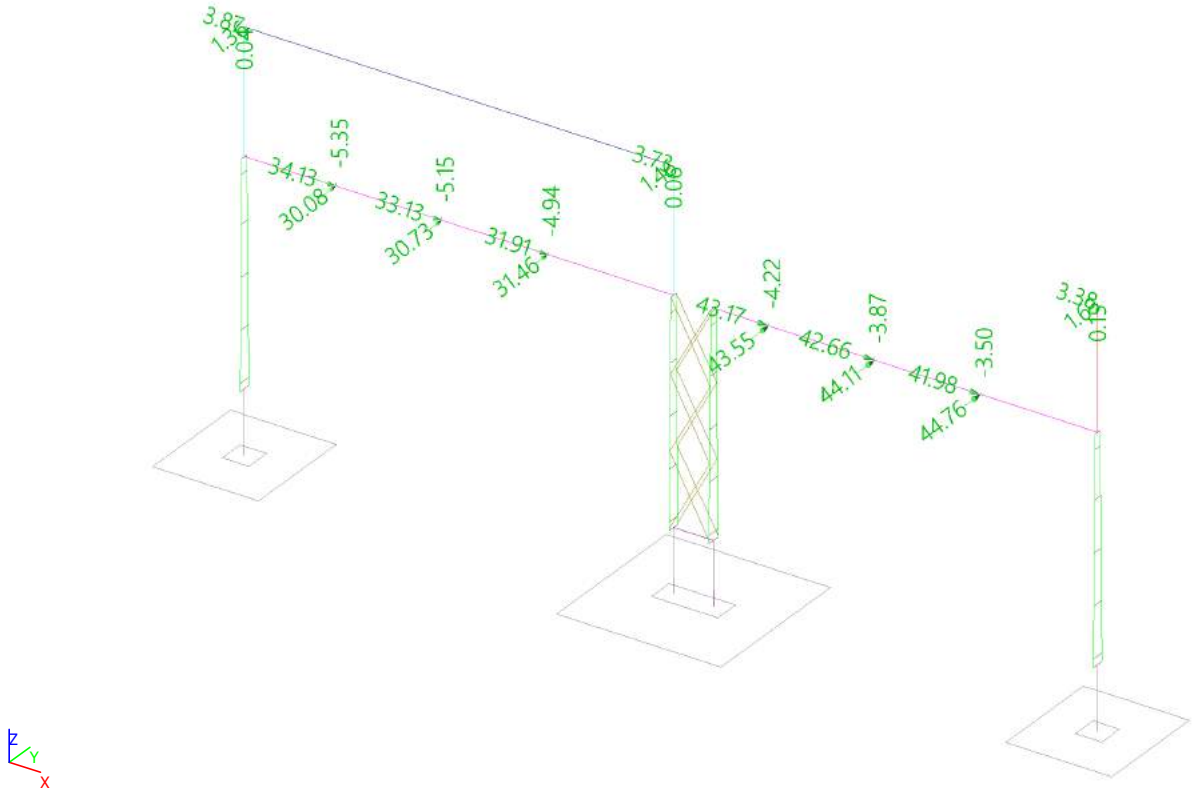
3.5. BG4: wind op constructie; Y-richting



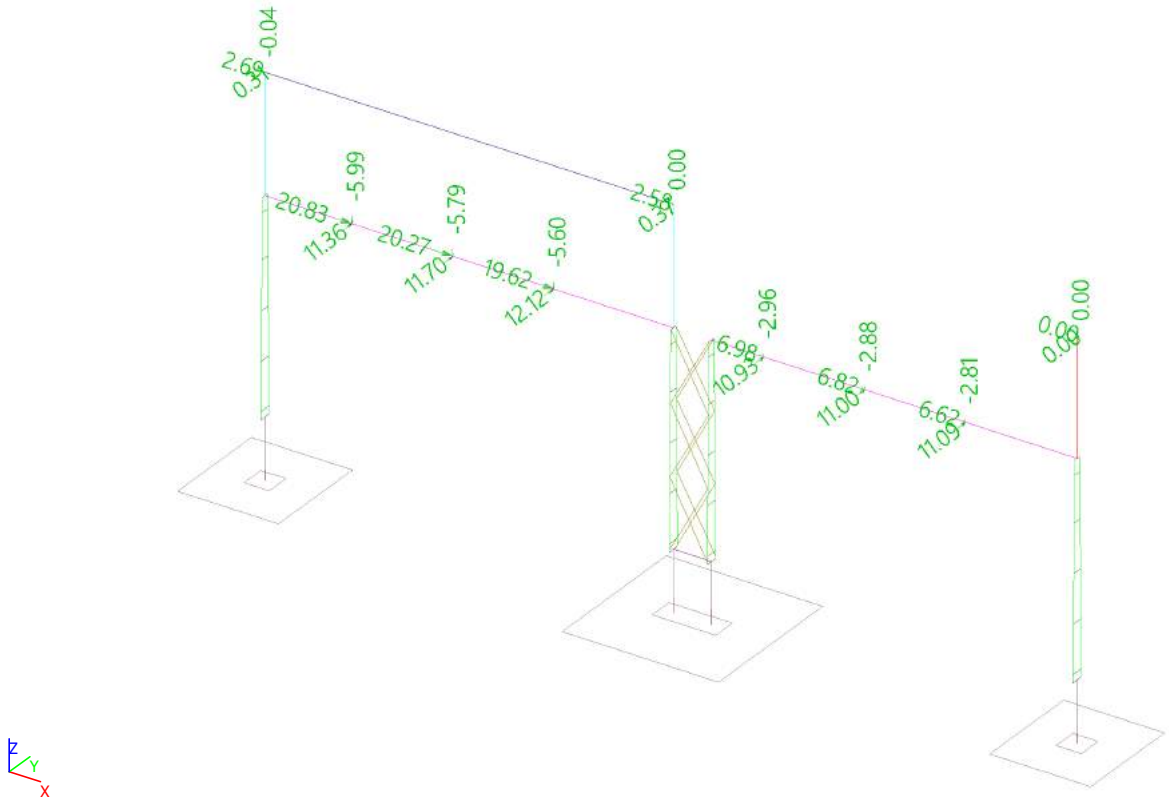
3.6. LC1001 / Totale waarde



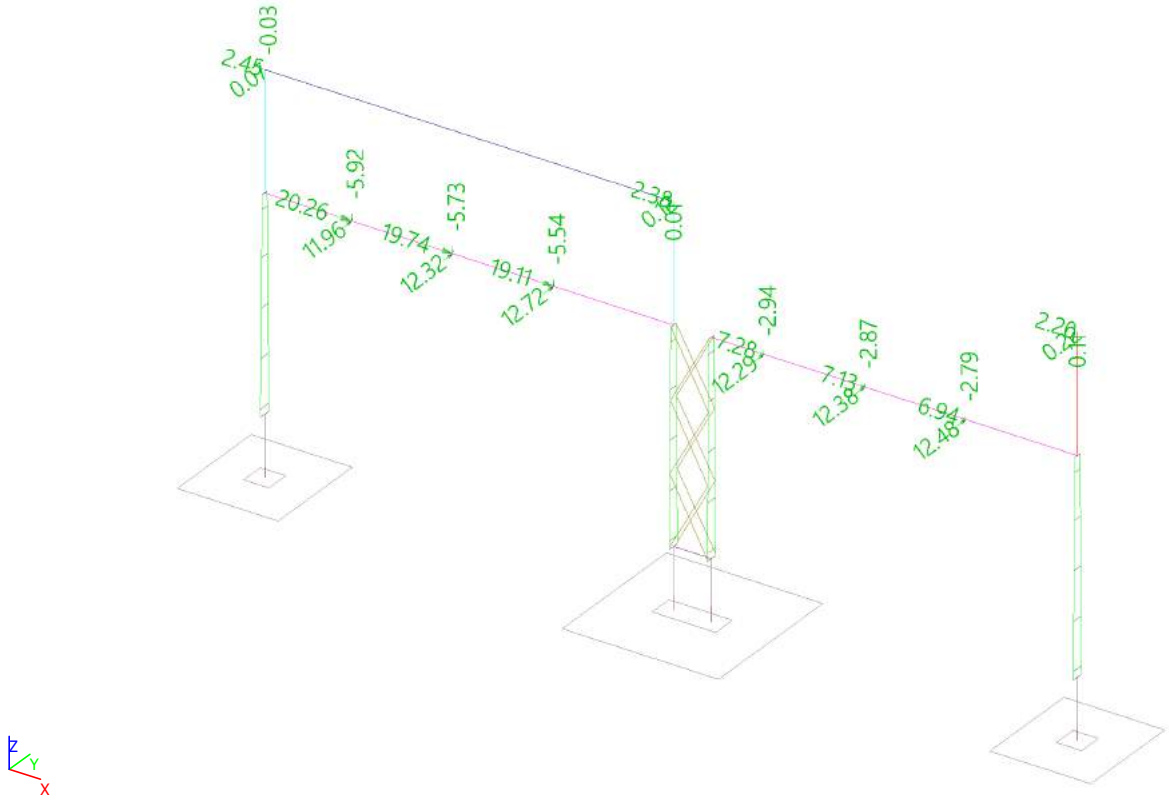
3.7. LC1080 / Totale waarde



3.8. LC1159 / Totale waarde



3.9. LC1238 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-1	Omhullend 1	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	1.40
			BG4 - wind op constructie; Y-richting	1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00
UGT-2	Omhullend 2	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	-1.40
			BG4 - wind op constructie; Y-richting	-1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00

3.11. Resultaatklasses

Naam	Omschrijving	Lijst
UGT	Sterkte en stabiliteit	UGT-1 - Omhullende - uiterst UGT-2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**7356**
Aantal 1D elementen	**197**
Aantal netknopen	**7805**
Aantal vergelijkingen	**46830**
Belastinggevallen	BG1
	BG3
	BG4
	BG2
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**7356**
Aantal 1D elementen	**197**
Aantal netknopen	**7805**
Aantal vergelijkingen	**46830**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**7356**
Aantal 1D elementen	**197**
Aantal netknopen	**7805**
Aantal vergelijkingen	**46830**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
	LC1168
	LC1169
	LC1170
	LC1171
	LC1172
	LC1173
	LC1174
	LC1175
	LC1176
	LC1177
	LC1178
	LC1179
	LC1180
	LC1181
	LC1182
	LC1183
	LC1184
	LC1185

Aantal 2D elementen	**7356**
Aantal 1D elementen	**197**
Aantal netknopen	**7805**
Aantal vergelijkingen	**46830**
	LC1186
	LC1187
	LC1188
	LC1189
	LC1190
	LC1191
	LC1192
	LC1193
	LC1194
	LC1195
	LC1196
	LC1197
	LC1198
	LC1199
	LC1200
	LC1201
	LC1202
	LC1203
	LC1204
	LC1205
	LC1206
	LC1207
	LC1208
	LC1209
	LC1210
	LC1211
	LC1212
	LC1213
	LC1214
	LC1215
	LC1216
	LC1217
	LC1218
	LC1219
	LC1220
	LC1221
	LC1222
	LC1223
	LC1224
	LC1225
	LC1226
	LC1227
	LC1228
	LC1229
	LC1230
	LC1231
	LC1232
	LC1233
	LC1234
	LC1235
	LC1236
	LC1237
	LC1238
Buigtheorie	Mindlin
Start berekening	17.06.2020 07:44
Einde berekening	17.06.2020 07:45

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	0.0	-1929.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	0.0	1929.0

	[kN]	X	Y	Z
BG BG3	last	19.9	0.0	0.0
	knoopreacties	0.0	-0.0	0.0
	lijnreactions	-1.1	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-18.8	0.0	0.0
BG BG4	last	0.0	41.2	0.0
	knoopreacties	-0.0	0.0	0.0
	lijnreactions	0.0	-4.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	-37.0	0.0
BG BG2	last	0.0	0.0	-1372.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	1372.9
BG LC1001	last	160.9	65.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-150.8	-58.2	27.9
BG LC1002	last	238.5	229.2	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-15.0	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-223.5	-204.3	26.7
BG LC1003	last	223.6	126.4	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.1	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-209.5	-113.0	30.5
BG LC1004	last	134.2	78.3	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.4	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-125.7	-69.8	31.3
BG LC1005	last	125.0	63.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.9	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-117.1	-56.5	27.9
BG LC1006	last	231.4	228.8	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-216.9	-203.9	26.7
BG LC1007	last	205.6	124.9	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.7	-111.7	30.5
BG LC1008	last	127.1	77.9	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.1	-69.5	31.3
BG LC1009	last	136.2	50.2	-29.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-5.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-127.7	-45.0	29.1
BG LC1010	last	236.4	229.6	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.5	-204.6	26.8
BG LC1011	last	215.1	124.1	-30.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-13.6	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-201.5	-111.0	30.9
BG LC1012	last	131.8	78.1	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.5	-69.6	31.4
BG LC1013	last	117.6	44.5	-29.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.2	-40.0	29.1
BG LC1014	last	232.7	228.5	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-218.1	-203.6	26.8
BG LC1015	last	205.8	120.3	-30.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.8	-107.7	30.9
BG LC1016	last	128.1	77.0	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.0	-68.6	31.4
BG LC1017	last	142.6	82.4	-31.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.0	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-133.6	-73.3	31.9
BG LC1018	last	236.6	229.8	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.7	-204.8	27.0
BG LC1019	last	216.1	130.6	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.6	-14.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-202.5	-116.6	31.7
BG LC1020	last	132.3	78.7	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.9	-70.1	31.5
BG LC1021	last	119.1	86.2	-31.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-9.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.6	-76.6	31.9
BG LC1022	last	231.9	230.5	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-25.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-217.4	-205.4	27.0
BG LC1023	last	205.5	132.8	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-14.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.5	-118.6	31.7
BG LC1024	last	127.7	79.4	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-119.6	-70.8	31.5
BG LC1025	last	118.1	67.9	-32.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-7.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.7	-60.5	32.0
BG LC1026	last	233.6	230.2	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.0	-205.1	27.0
BG LC1027	last	207.4	128.4	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.1	-13.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.3	-114.7	31.7
BG LC1028	last	129.1	78.6	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.9	-70.0	31.5
BG LC1029	last	122.9	65.0	-32.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.1	-57.9	32.0
BG LC1030	last	234.5	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.8	-204.6	27.0
BG LC1031	last	209.4	126.6	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.2	-13.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-196.2	-113.2	31.7
BG LC1032	last	130.0	78.0	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.8	-69.5	31.5
BG LC1033	last	136.4	55.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-5.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-127.8	-49.6	18.4
BG LC1034	last	209.9	238.6	-19.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.2	-26.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-196.7	-212.6	19.6
BG LC1035	last	193.4	120.2	-22.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.2	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-181.2	-107.5	22.3
BG LC1036	last	97.9	65.9	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.2	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-91.8	-58.8	23.6
BG LC1037	last	100.4	53.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-94.1	-47.9	18.4
BG LC1038	last	202.8	238.2	-19.6

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.7	-25.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-190.1	-212.3	19.6
BG LC1039	last	175.4	118.6	-22.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-12.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.3	-106.1	22.3
BG LC1040	last	90.9	65.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.1	-58.4	23.6
BG LC1041	last	103.5	29.7	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.5	-2.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-97.0	-26.7	20.0
BG LC1042	last	207.5	239.1	-19.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-26.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.5	-213.0	19.8
BG LC1043	last	183.6	116.8	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.6	-12.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-172.1	-104.5	22.7
BG LC1044	last	94.8	64.8	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.0	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-88.8	-57.8	23.7
BG LC1045	last	84.9	24.0	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-2.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.5	-21.7	20.0
BG LC1046	last	203.9	237.9	-19.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.8	-25.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-191.1	-212.0	19.8
BG LC1047	last	174.4	113.0	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-11.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.4	-101.2	22.7
BG LC1048	last	91.1	63.7	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.4	-56.8	23.7
BG LC1049	last	113.0	80.9	-24.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.1	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-105.9	-71.9	24.0
BG LC1050	last	207.5	240.0	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.5	-213.9	20.0
BG LC1051	last	184.9	126.4	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.6	-13.5	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-173.2	-112.8	23.8
BG LC1052	last	95.7	67.0	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.0	-7.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-89.6	-59.7	23.9
BG LC1053	last	89.6	84.7	-24.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-9.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.9	-75.2	24.0
BG LC1054	last	202.9	240.8	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.7	-26.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-190.2	-214.5	20.0
BG LC1055	last	174.2	128.6	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.3	-114.8	23.8
BG LC1056	last	91.0	67.7	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.3	-60.3	23.9
BG LC1057	last	83.2	57.3	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.0	-51.0	24.2
BG LC1058	last	204.4	240.2	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.8	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-191.6	-214.0	20.0
BG LC1059	last	175.3	122.7	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.2	-109.6	23.9
BG LC1060	last	92.0	66.1	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.2	-58.9	23.9
BG LC1061	last	88.0	54.5	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-6.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.4	-48.5	24.2
BG LC1062	last	205.4	239.6	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-26.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.5	-213.5	20.0
BG LC1063	last	177.3	120.9	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.2	-12.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-166.1	-108.0	23.9
BG LC1064	last	92.9	65.5	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.1	-58.4	23.9

	[kN]	X	Y	Z
BG LC1065	last	100.1	57.1	-29.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.8	-50.9	29.4
BG LC1066	last	100.2	57.0	-29.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.9	-50.8	29.5
BG LC1067	last	100.0	57.1	-29.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.8	-50.9	29.4
BG LC1068	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1069	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1070	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1071	last	91.8	57.0	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.0	-50.8	27.3
BG LC1072	last	91.6	57.2	-27.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.8	-51.0	27.2
BG LC1073	last	91.4	57.4	-27.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.7	-51.1	27.1
BG LC1074	last	90.9	57.1	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.9	27.5
BG LC1075	last	90.9	56.9	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.7	27.6
BG LC1076	last	90.9	56.8	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.6	27.8
BG LC1077	last	129.4	66.4	-37.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.2	-59.2	37.4
BG LC1078	last	93.8	54.1	-24.6
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-5.9	-5.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.9	-48.3	24.6
BG LC1079	last	138.4	63.7	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.7	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-129.7	-56.9	30.5
BG LC1080	last	238.0	229.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.9	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-223.0	-204.2	26.8
BG LC1081	last	187.8	124.5	-29.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.8	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-175.9	-111.1	29.6
BG LC1082	last	133.7	78.3	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.4	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-125.3	-69.8	31.3
BG LC1083	last	117.2	62.6	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-109.8	-55.9	30.5
BG LC1084	last	231.4	228.8	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-216.9	-203.9	26.8
BG LC1085	last	174.8	123.5	-29.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.8	-110.2	29.6
BG LC1086	last	127.2	78.0	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.2	-69.5	31.3
BG LC1087	last	126.9	58.4	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.9	-52.2	31.0
BG LC1088	last	236.2	229.7	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.3	-204.7	26.8
BG LC1089	last	181.7	122.7	-29.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.4	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-170.3	-109.6	29.8
BG LC1090	last	131.6	78.2	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.3	-69.7	31.4
BG LC1091	last	115.9	55.1	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-5.8	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-108.6	-49.2	31.0
BG LC1092	last	232.8	228.6	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-218.2	-203.8	26.8
BG LC1093	last	175.0	120.3	-29.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-12.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.0	-107.4	29.8
BG LC1094	last	128.2	77.1	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.1	-68.8	31.4
BG LC1095	last	129.8	70.0	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.7	-62.3	32.1
BG LC1096	last	236.3	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.4	-204.6	27.0
BG LC1097	last	182.7	127.4	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.5	-13.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-171.3	-113.6	30.4
BG LC1098	last	132.1	78.7	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.8	-70.1	31.5
BG LC1099	last	116.0	72.2	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-7.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-108.7	-64.3	32.1
BG LC1100	last	232.0	230.3	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-25.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-217.4	-205.2	27.0
BG LC1101	last	174.8	128.9	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-14.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.8	-115.0	30.4
BG LC1102	last	127.8	79.3	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.8	-70.7	31.5
BG LC1103	last	117.4	64.8	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.0	-57.8	32.1
BG LC1104	last	233.6	230.1	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.0	-205.1	27.0
BG LC1105	last	176.3	125.9	-30.4

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-13.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-165.2	-112.3	30.4
BG LC1106	last	129.1	78.5	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.0	-70.0	31.5
BG LC1107	last	120.2	63.2	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-112.7	-56.3	32.1
BG LC1108	last	234.5	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.8	-204.6	27.0
BG LC1109	last	177.9	124.7	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.2	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-166.7	-111.3	30.4
BG LC1110	last	130.0	78.0	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.8	-69.5	31.5
BG LC1111	last	92.3	65.7	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.4	-58.5	23.3
BG LC1112	last	172.8	202.6	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.0	-180.8	20.7
BG LC1113	last	130.2	118.3	-22.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-122.0	-105.6	22.6
BG LC1114	last	90.9	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.1	-68.7	23.7
BG LC1115	last	78.5	65.5	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.5	-58.4	23.3
BG LC1116	last	168.6	202.5	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.0	-180.8	20.7
BG LC1117	last	121.9	118.1	-22.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.2	-105.4	22.6
BG LC1118	last	86.7	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.4	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.2	-68.7	23.7
BG LC1119	last	84.6	61.3	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.2	-54.7	23.5
BG LC1120	last	171.6	202.9	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-160.8	-181.1	20.7
BG LC1121	last	126.2	116.9	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.2	-104.4	22.7
BG LC1122	last	89.5	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.8	-68.6	23.7
BG LC1123	last	77.7	59.5	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.8	-53.1	23.5
BG LC1124	last	169.5	202.4	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.9	-180.6	20.7
BG LC1125	last	122.1	115.5	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.4	-103.2	22.7
BG LC1126	last	87.3	76.4	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.8	-68.1	23.7
BG LC1127	last	87.4	69.0	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-7.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.9	-61.4	24.2
BG LC1128	last	171.9	202.8	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.1	-181.0	20.8
BG LC1129	last	127.3	120.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.3	-107.1	23.1
BG LC1130	last	90.0	77.3	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.3	-68.9	23.8
BG LC1131	last	77.8	70.6	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.8	-62.9	24.2

	[kN]	X	Y	Z
BG LC1132	last	168.9	203.4	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.3	-181.5	20.8
BG LC1133	last	121.9	121.1	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.2	-108.1	23.1
BG LC1134	last	87.0	77.8	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.5	-69.4	23.8
BG LC1135	last	78.7	65.2	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.7	-58.1	24.2
BG LC1136	last	170.0	203.2	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-159.3	-181.4	20.8
BG LC1137	last	122.9	119.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.1	-106.2	23.1
BG LC1138	last	87.9	77.2	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.3	-68.8	23.8
BG LC1139	last	80.8	64.1	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.7	-57.1	24.2
BG LC1140	last	170.7	202.9	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-159.9	-181.1	20.8
BG LC1141	last	124.1	118.2	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-116.2	-105.5	23.1
BG LC1142	last	88.5	76.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.9	-68.5	23.8
BG LC1143	last	91.1	65.4	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.4	-58.3	25.2
BG LC1144	last	157.1	182.3	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.3	-162.4	23.4
BG LC1145	last	123.3	110.2	-25.2
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-7.7	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.6	-98.3	25.2
BG LC1146	last	87.8	74.6	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.3	-66.5	25.7
BG LC1147	last	76.3	65.6	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-71.5	-58.5	25.2
BG LC1148	last	152.6	182.4	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-143.0	-162.5	23.4
BG LC1149	last	114.3	110.2	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.2	-98.3	25.2
BG LC1150	last	83.2	74.7	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.0	-66.6	25.7
BG LC1151	last	82.6	61.1	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-77.4	-54.5	25.5
BG LC1152	last	155.8	182.7	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.0	-162.8	23.4
BG LC1153	last	118.9	108.8	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-11.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.4	-97.0	25.3
BG LC1154	last	86.2	74.4	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.8	-66.4	25.8
BG LC1155	last	75.6	59.3	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.7	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-70.8	-53.0	25.5
BG LC1156	last	153.6	182.2	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-144.0	-162.3	23.4
BG LC1157	last	114.7	107.5	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-11.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.5	-95.9	25.3
BG LC1158	last	84.0	73.9	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.0	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-78.7	-65.9	25.8
BG LC1159	last	86.4	68.9	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-7.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.0	-61.4	26.1
BG LC1160	last	156.2	182.6	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.4	-162.7	23.5
BG LC1161	last	120.5	111.9	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-12.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-112.9	-99.8	25.6
BG LC1162	last	86.9	74.8	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.4	-66.7	25.8
BG LC1163	last	75.9	70.8	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-71.2	-63.1	26.1
BG LC1164	last	152.9	183.2	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-20.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-143.3	-163.2	23.5
BG LC1165	last	114.4	113.2	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-12.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.2	-101.0	25.6
BG LC1166	last	83.6	75.4	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.4	-67.2	25.8
BG LC1167	last	76.8	65.0	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.0	-58.0	26.1
BG LC1168	last	154.1	183.1	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.7	-20.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-144.5	-163.1	23.5
BG LC1169	last	115.4	110.8	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-12.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-108.2	-98.8	25.7
BG LC1170	last	84.5	74.7	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.2	-66.6	25.8
BG LC1171	last	79.2	63.9	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-74.3	-57.0	26.1
BG LC1172	last	154.9	182.7	-23.5

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-145.2	-162.8	23.5
BG LC1173	last	116.8	110.0	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-109.5	-98.1	25.7
BG LC1174	last	85.3	74.3	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.9	-66.3	25.8
BG LC1175	last	95.6	65.4	-23.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.1	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-89.5	-58.3	23.2
BG LC1176	last	176.7	203.9	-20.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-165.6	-181.9	20.6
BG LC1177	last	135.3	118.0	-22.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-126.7	-105.4	22.5
BG LC1178	last	93.5	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.6	-68.8	23.7
BG LC1179	last	81.2	65.1	-23.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-76.0	-58.1	23.2
BG LC1180	last	172.3	203.9	-20.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.4	-181.8	20.6
BG LC1181	last	126.3	117.6	-22.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.3	-105.1	22.5
BG LC1182	last	89.1	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.4	-68.7	23.7
BG LC1183	last	87.3	60.8	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.8	-54.3	23.4
BG LC1184	last	175.4	204.3	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.4	-182.2	20.7
BG LC1185	last	130.8	116.5	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-12.5	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-122.5	-104.0	22.7
BG LC1186	last	92.0	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.1	-68.7	23.7
BG LC1187	last	80.1	58.8	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.0	-52.5	23.4
BG LC1188	last	173.2	203.7	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.3	-181.7	20.7
BG LC1189	last	126.4	114.9	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.4	-102.7	22.7
BG LC1190	last	89.8	76.4	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.1	-68.1	23.7
BG LC1191	last	90.1	69.3	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.4	-61.7	24.2
BG LC1192	last	175.6	204.3	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.6	-182.1	20.8
BG LC1193	last	131.9	120.2	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-13.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.5	-107.2	23.1
BG LC1194	last	92.5	77.4	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.6	-69.0	23.8
BG LC1195	last	80.2	71.0	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.1	-63.2	24.2
BG LC1196	last	172.6	204.8	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.7	-182.6	20.8
BG LC1197	last	126.1	121.4	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.1	-108.3	23.1
BG LC1198	last	89.4	77.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.7	-69.5	23.8

	[kN]	X	Y	Z
BG LC1199	last	81.0	65.2	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.8	-58.1	24.2
BG LC1200	last	173.7	204.6	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.8	-182.5	20.8
BG LC1201	last	127.1	119.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.0	-106.1	23.1
BG LC1202	last	90.3	77.3	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.6	-68.9	23.8
BG LC1203	last	83.2	64.1	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-77.9	-57.1	24.2
BG LC1204	last	174.4	204.3	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.4	-182.2	20.8
BG LC1205	last	128.3	118.1	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.2	-105.4	23.1
BG LC1206	last	91.0	76.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-68.6	23.8
BG LC1207	last	94.0	65.2	-25.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-88.1	-58.2	25.0
BG LC1208	last	160.5	184.0	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.1	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-150.4	-163.7	23.3
BG LC1209	last	127.9	110.1	-24.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.8	-98.3	24.9
BG LC1210	last	90.1	74.8	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.5	-66.7	25.6
BG LC1211	last	78.8	65.3	-25.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.9	-58.3	25.0
BG LC1212	last	155.8	184.0	-23.3
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-9.8	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.1	-163.7	23.3
BG LC1213	last	118.4	110.0	-24.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-11.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.9	-98.1	24.9
BG LC1214	last	85.5	74.8	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.1	-66.7	25.6
BG LC1215	last	85.2	60.6	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.8	-54.2	25.3
BG LC1216	last	159.1	184.4	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-149.1	-164.1	23.3
BG LC1217	last	123.1	108.6	-25.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-11.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.3	-96.9	25.1
BG LC1218	last	88.5	74.6	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.9	-66.5	25.6
BG LC1219	last	77.8	58.8	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.9	-52.6	25.3
BG LC1220	last	156.9	183.8	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.0	-163.6	23.3
BG LC1221	last	118.5	107.1	-25.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-11.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.1	-95.6	25.1
BG LC1222	last	86.2	74.0	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.8	-66.0	25.6
BG LC1223	last	88.7	69.4	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-7.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.2	-61.8	26.0
BG LC1224	last	159.4	184.3	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-149.4	-164.0	23.4
BG LC1225	last	124.5	112.4	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.2	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-116.7	-100.1	25.5
BG LC1226	last	89.1	75.1	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.5	-66.9	25.7
BG LC1227	last	78.1	71.3	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.2	-63.5	26.0
BG LC1228	last	156.2	184.9	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.4	-164.5	23.4
BG LC1229	last	118.3	113.7	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-12.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.8	-101.3	25.5
BG LC1230	last	85.8	75.7	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.5	-67.4	25.7
BG LC1231	last	78.9	65.2	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.9	-58.1	26.0
BG LC1232	last	157.4	184.7	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.9	-20.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.5	-164.4	23.4
BG LC1233	last	119.3	111.0	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-12.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.8	-98.9	25.5
BG LC1234	last	86.7	74.9	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.3	-66.8	25.7
BG LC1235	last	81.3	64.0	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-76.2	-57.0	26.0
BG LC1236	last	158.1	184.4	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.9	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-148.2	-164.0	23.4
BG LC1237	last	120.7	110.1	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-113.1	-98.2	25.5
BG LC1238	last	87.5	74.5	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.0	-66.5	25.7

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC1	K6	S246	**-4.39**	-50.27	59.74	426.03	**-27.27**	-0.56
UGT-2/2	FC1	K6	S246	**4.17**	-16.86	63.47	138.81	-4.78	-0.19
UGT-1/3	FC1	K6	S246	-1.51	**-68.47**	58.84	**579.05**	-20.84	**-0.58**
UGT-2/4	FC1	K6	S246	1.51	**17.57**	55.45	**-144.66**	0.88	**0.02**
UGT-1/5	FC1	K6	S246	-1.02	-0.01	**54.85**	0.07	-1.63	0.00
UGT-2/6	FC1	K6	S246	3.20	-18.01	**64.96**	149.69	-10.31	-0.20
UGT-2/7	FC1	K6	S246	4.05	0.01	56.05	-0.08	**3.40**	0.00

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC2	K8	S244	**-90.65**	-39.42	**-1269.53**	460.81	**-284.02**	-0.07
UGT-2/7	FC2	K8	S244	**46.81**	-0.07	**155.91**	-0.19	**34.16**	0.13
UGT-1/8	FC2	K8	S244	-38.82	**-64.59**	-726.65	512.94	-162.24	**5.87**
UGT-2/4	FC2	K8	S244	35.19	**19.89**	58.28	**-119.28**	12.08	-2.69
UGT-1/3	FC2	K8	S244	-61.88	-59.01	-988.13	**600.50**	-220.93	2.46
UGT-2/9	FC2	K8	S244	-48.56	-5.27	-858.12	274.22	-192.54	**-4.73**

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	**-161.15**	-83.28	**1384.95**	570.36	**-307.56**	-9.37
UGT-2/7	FC3	K438	S250	**-22.64**	0.06	**-55.86**	0.30	**13.33**	-0.10
UGT-1/10	FC3	K438	S250	-133.24	**-98.58**	1107.37	694.14	-245.35	-10.97
UGT-2/4	FC3	K438	S250	-33.97	**8.58**	42.07	**-88.54**	-8.71	**0.24**
UGT-1/3	FC3	K438	S250	-132.51	-98.55	1099.50	**694.95**	-243.59	-10.96
UGT-1/11	FC3	K438	S250	-117.47	-94.31	931.45	628.26	-205.92	**-11.25**

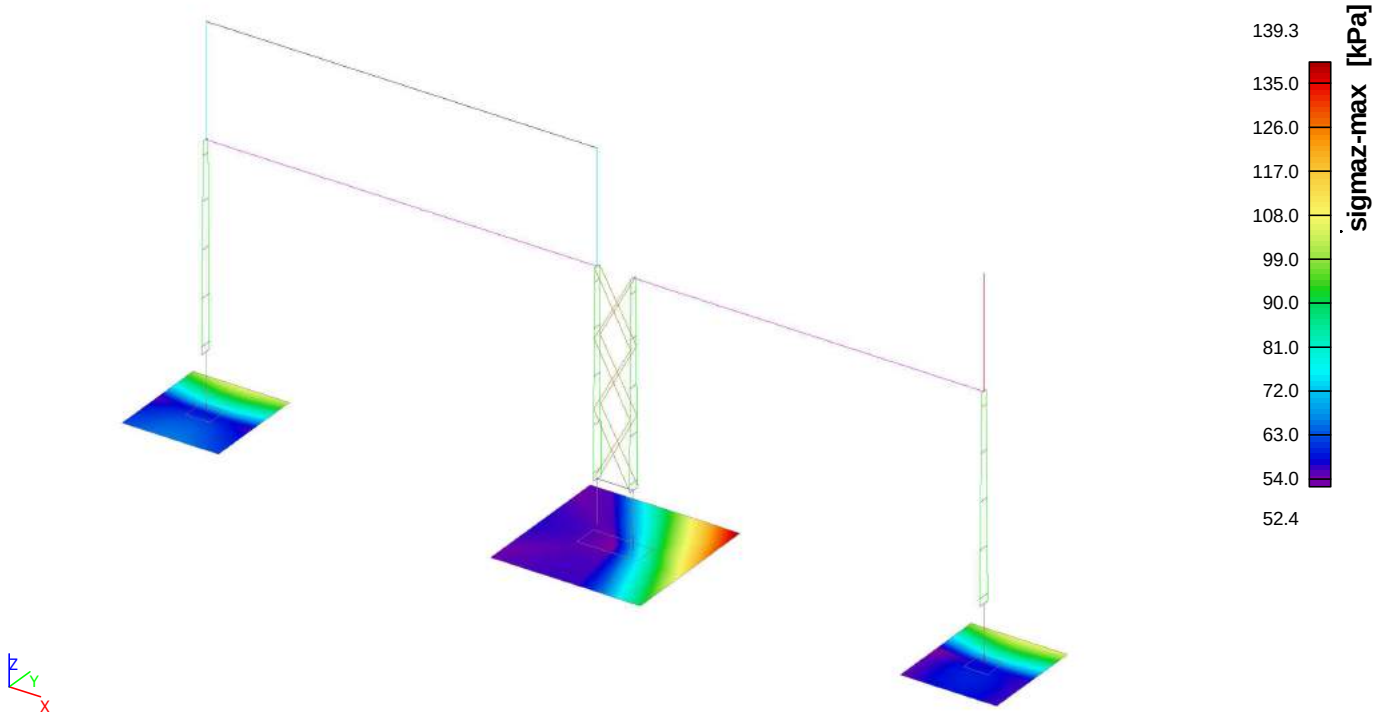
5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/12	FC4	K513	S322	**-10.14**	-56.35	46.06	478.41	-30.23	0.86
UGT-2/7	FC4	K513	S322	**-0.37**	0.00	**38.36**	-0.04	**1.25**	0.00
UGT-1/3	FC4	K513	S322	-6.99	**-72.46**	44.27	**590.29**	-24.05	**0.96**
UGT-2/4	FC4	K513	S322	-2.73	**11.69**	38.66	**-72.53**	-1.17	**-0.04**
UGT-1/13	FC4	K513	S322	-8.90	-13.42	**47.31**	112.07	-18.53	0.22
UGT-1/1	FC4	K513	S322	-10.12	-56.23	46.04	477.03	**-30.43**	0.86

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren



7. Staafkrachten

7.1. Staafkrachten kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S273	Kolom INP45 - INP450	80	UGT-1/14	**-1854.69**	-4.20	66.86	0.86	7.88	17.35
S265	Kolom INP45 - INP450	0	UGT-1/14	**1662.58**	-11.73	81.67	-1.25	2.11	13.89
S265	Kolom INP45 - INP450	80	UGT-2/15	805.35	**-25.82**	67.63	-0.96	7.32	-2.08
S266	Kolom INP45 - INP450	80	UGT-1/14	570.57	**60.98**	51.07	1.99	4.49	35.77
S284	Kolom INP45 - INP450	2360	UGT-1/16	-484.00	24.37	**-21.55**	0.21	-22.81	-16.64
S265	Kolom INP45 - INP450	80	UGT-1/1	1490.65	-19.79	**89.16**	-1.35	9.26	7.87
S4	Kolom INP45 - INP450	0	UGT-2/17	974.54	10.70	-5.42	**-2.00**	4.37	5.44
S2	Kolom INP45 - INP450	0	UGT-1/1	218.85	27.62	-4.96	**2.51**	27.41	12.69
S261	Kolom INP45 - INP450	0	UGT-2/18	608.10	14.90	17.30	0.56	**-47.77**	-7.85
S262	Kolom INP45 - INP450	0	UGT-1/19	427.13	32.90	-9.90	-0.32	**52.39**	-15.77
S284	Kolom INP45 - INP450	565	UGT-1/3	-406.73	39.59	-13.16	-1.02	10.69	**-35.91**
S285	Kolom INP45 - INP450	1499	UGT-1/3	-971.54	36.62	7.03	-0.54	-8.50	**36.96**

7.2. Staafkrachten kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S329, S330
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S330	Kolom DIE36 - HEA360	0	UGT-1/20	**-18.00**	14.90	0.00	-0.07	-0.01	-33.28
S329	Kolom DIE36 - HEA360	4651	UGT-1/21	**-7.18**	-3.40	-1.47	0.16	0.00	-4.61
S329	Kolom DIE36 - HEA360	0	UGT-2/22	-17.15	**-13.01**	0.00	0.07	0.00	31.38
S330	Kolom DIE36 - HEA360	0	UGT-1/21	-17.66	**22.25**	-1.32	-0.15	6.14	**-53.56**
S329	Kolom DIE36 - HEA360	0	UGT-2/23	-13.68	-4.80	**-8.75**	0.19	**34.95**	13.07
S330	Kolom DIE36 - HEA360	0	UGT-1/3	-16.34	13.81	**8.88**	-0.18	**-35.56**	-32.05
S330	Kolom DIE36 - HEA360	0	UGT-2/24	-16.50	14.87	-5.24	**-0.28**	18.62	-35.30
S329	Kolom DIE36 - HEA360	0	UGT-2/25	-14.19	-7.46	-5.34	**0.29**	19.07	19.78
S330	Kolom DIE36 - HEA360	4651	UGT-1/21	-11.77	19.39	-1.32	-0.15	0.00	**43.28**

7.3. Staafkrachten ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S33, S40, S404, S406
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S404	Ligger DIE34 - HE340A	0	UGT-1/54	**-97.06**	-21.33	-43.48	-0.02	102.27	-4.84
S40	Ligger DIE34 - HE340A	0	UGT-1/26	**129.70**	17.09	77.80	0.00	-19.13	-18.28
S404	Ligger DIE34 - HE340A	2625	UGT-1/21	-96.97	**-26.32**	-28.46	0.00	-5.89	**-74.61**
S33	Ligger DIE34 - HE340A	0	UGT-2/6	13.81	**26.00**	18.15	-0.01	-0.29	-46.58
S406	Ligger DIE34 - HE340A	2560	UGT-1/3	-4.34	-17.46	**-62.39**	0.00	-0.96	-46.64
S40	Ligger DIE34 - HE340A	0	UGT-1/3	109.60	15.47	**87.45**	0.00	-20.92	-16.09
S33	Ligger DIE34 - HE340A	0	UGT-1/8	7.49	22.79	53.19	**-0.03**	-0.76	-35.27
S33	Ligger DIE34 - HE340A	0	UGT-2/27	9.98	19.67	31.49	**0.03**	-0.61	-30.57
S40	Ligger DIE34 - HE340A	0	UGT-2/28	104.55	15.75	83.61	0.00	**-21.05**	-17.66
S406	Ligger DIE34 - HE340A	0	UGT-1/3	-4.34	-14.43	-61.03	0.00	**157.01**	-5.82
S33	Ligger DIE34 - HE340A	1875	UGT-1/21	-1.32	20.27	32.01	0.00	59.50	**14.66**

7.4. Staafkrachten ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S405
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S405	Ligger DIE34+strippen - I + 2 PLud	8642	UGT-2/55	**-11.91**	-9.64	-35.87	-0.02	157.90	22.11
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/26	**129.70**	15.39	77.80	0.00	92.90	5.10
S405	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/13	0.76	**-17.52**	-13.41	-0.01	34.12	-2.81
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/6	52.46	**20.12**	18.81	-0.01	22.84	-3.09
S405	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/3	-4.34	-14.43	**-61.03**	0.00	157.01	-5.82
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/3	109.60	13.76	**86.69**	0.00	104.46	4.96
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/8	42.64	14.33	54.56	**-0.02**	66.26	-0.08
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/27	123.83	15.73	74.79	**0.01**	87.87	3.82
S405	Ligger DIE34+strippen - I + 2 PLud	5642	UGT-2/4	-2.73	0.30	-0.09	0.00	**-13.92**	25.20
S405	Ligger DIE34+strippen - I + 2 PLud	4642	UGT-1/3	71.03	1.98	37.36	0.00	**313.69**	36.27
S405	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/21	6.36	-17.26	-28.94	-0.01	73.60	**-12.58**
S405	Ligger DIE34+strippen - I + 2 PLud	4642	UGT-2/6	31.76	5.36	8.37	-0.01	68.38	**45.84**

7.5. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S403
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S403	Ligger DIE34+UNP's - Grafische doorsnede	9579	UGT-1/54	**-97.06**	-16.61	-43.48	-0.02	194.49	35.38
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/56	**15.25**	17.81	35.65	0.02	66.25	1.94
S403	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/21	-96.97	**-23.22**	-28.46	0.00	68.81	**-9.58**
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/6	13.81	**23.78**	18.15	-0.01	33.74	0.09
S403	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/35	-86.92	-21.43	**-46.87**	-0.01	110.71	-4.92
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/35	9.35	20.09	**52.37**	-0.01	98.35	8.77
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/8	7.49	20.57	52.19	**-0.03**	98.03	5.37
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/27	9.98	17.45	32.49	**0.03**	59.37	4.23
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-2/4	7.90	1.36	-0.16	0.01	**-15.98**	37.82
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-1/35	-23.79	2.31	19.05	-0.01	**260.85**	64.75
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-1/13	-17.43	3.82	7.08	-0.01	90.76	**71.28**

7.6. Staafkrachten ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S331
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S331	Ligger DIN28 - HEB280	0	UGT-2/30	**-12.09**	9.25	0.00	0.00	0.07	-22.41
S331	Ligger DIN28 - HEB280	16200	UGT-1/31	**-8.16**	-10.44	0.00	0.00	0.12	-31.93
S331	Ligger DIN28 - HEB280	16200	UGT-1/21	-11.53	**-11.81**	0.00	0.00	0.15	**-43.28**
S331	Ligger DIN28 - HEB280	0	UGT-2/7	-9.44	**9.67**	0.00	0.00	0.00	-25.33
S331	Ligger DIN28 - HEB280	16200	UGT-1/32	-11.13	-10.54	**-4.31**	-0.01	0.17	-32.86
S331	Ligger DIN28 - HEB280	16200	UGT-2/27	-8.85	-10.13	**4.31**	0.02	0.23	-29.37
S331	Ligger DIN28 - HEB280	0	UGT-1/33	-11.13	8.31	4.31	**-0.01**	0.21	-14.84
S331	Ligger DIN28 - HEB280	0	UGT-2/34	-8.88	8.74	-4.31	**0.02**	0.20	-18.13
S331	Ligger DIN28 - HEB280	8100	UGT-2/4	-9.41	-0.01	0.00	0.00	**-17.41**	14.85
S331	Ligger DIN28 - HEB280	8100	UGT-1/35	-11.29	-1.23	0.00	-0.01	**17.64**	14.28
S331	Ligger DIN28 - HEB280	5670	UGT-1/21	-11.53	0.44	0.00	0.00	0.16	**16.60**

7.7. Staafkrachten koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S402	Plaat 2x14x200 - Rechthoek	0	UGT-1/1	**-34.12**	1.91	-35.85	0.21	5.23	-0.76
S392	Plaat 2x14x200 - Rechthoek	0	UGT-1/1	**34.78**	-1.53	-68.50	-0.11	11.68	-0.10
S390	Plaat 2x14x200 - Rechthoek	0	UGT-1/1	0.00	**-6.75**	-214.30	-0.09	29.72	1.36
S400	Plaat 2x14x200 - Rechthoek	0	UGT-1/21	0.02	**6.37**	-75.49	0.09	10.47	-0.98
S386	Plaat 2x14x200 - Rechthoek	187	UGT-1/3	-1.35	3.28	**-355.30**	0.41	-32.87	0.71
S396	Plaat 2x14x200 - Rechthoek	0	UGT-2/4	0.83	0.11	**48.30**	0.02	-4.55	-0.03
S394	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.22	-1.40	-163.30	**-0.71**	11.73	0.23
S384	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.38	1.18	-259.09	**0.71**	18.51	0.06
S388	Plaat 2x14x200 - Rechthoek	232	UGT-1/3	-0.25	-1.35	-313.70	0.04	**-36.63**	0.30
S388	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.25	-1.35	-313.59	0.04	**36.12**	0.61
S400	Plaat 2x14x200 - Rechthoek	0	UGT-2/17	0.90	5.84	-79.57	0.17	11.01	**-1.10**
S390	Plaat 2x14x200 - Rechthoek	0	UGT-2/17	0.85	-6.37	-187.57	-0.06	26.01	**1.38**

7.8. Staafkrachten diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S269	Diagionaal UPE14 - UPE140	0	UGT-1/1	**-183.70**	0.00	0.00	0.00	0.00	0.00
S270	Diagionaal UPE14 - UPE140	3142	UGT-1/36	**240.97**	0.00	0.00	0.00	0.00	0.00
S235	Diagionaal UPE14 - UPE140	0	UGT-1/37	-2.02	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.9. Staafkrachten bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S332
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S332	Bliksempiek-2 - Koker fl	0	UGT-1/38	**-4.71**	0.00	2.48	0.00	-5.76	0.00
S332	Bliksempiek-2 - Koker fl	4651	UGT-1/39	**0.49**	0.34	3.62	0.00	0.00	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/3	-2.65	**-3.41**	2.65	0.00	-12.33	**13.12**
S332	Bliksempiek-2 - Koker fl	0	UGT-2/40	-2.25	**2.77**	2.18	0.00	-10.14	**-10.14**
S332	Bliksempiek-2 - Koker fl	0	UGT-2/7	-2.71	0.00	**-2.47**	0.00	**5.75**	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/21	-2.28	1.01	**9.79**	0.00	**-39.80**	-4.71
S332	Bliksempiek-2 - Koker fl	0	UGT-1/41	-2.56	-2.75	3.26	**0.00**	-15.14	10.07

7.10. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer onder-IV - Rechthoek	1600	UGT-2/6	**-287.73**	15.27	-3.23	-0.20	5.17	176.88
S246	Poer onder-IV - Rechthoek	0	UGT-1/5	**-54.85**	0.01	1.02	0.00	1.63	0.07
S246	Poer onder-IV - Rechthoek	0	UGT-2/4	-55.45	**-17.57**	-1.51	**0.02**	-0.88	-144.66
S246	Poer onder-IV - Rechthoek	0	UGT-1/3	-58.84	**68.47**	1.51	**-0.58**	20.84	579.05
S246	Poer onder-IV - Rechthoek	0	UGT-2/2	-63.47	16.86	**-4.17**	-0.19	4.78	138.81
S246	Poer onder-IV - Rechthoek	0	UGT-1/1	-59.74	50.27	**4.39**	-0.56	27.27	426.03
S246	Poer onder-IV - Rechthoek	2000	UGT-2/7	-278.82	-0.01	-3.82	0.00	**-11.27**	-0.10
S246	Poer onder-IV - Rechthoek	2000	UGT-1/1	-282.51	42.53	3.76	-0.56	**35.42**	518.86
S246	Poer onder-IV - Rechthoek	2000	UGT-2/4	-278.22	-14.92	-1.44	0.02	-3.83	**-177.17**
S246	Poer onder-IV - Rechthoek	2000	UGT-1/3	-281.61	57.95	1.10	-0.58	23.45	**705.51**

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/7	**-289.08**	0.07	-46.24	0.11	-36.29	-0.09
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**1269.53**	39.42	**90.65**	-0.07	284.02	460.81
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-58.28	**-19.89**	-35.19	-2.69	-12.08	-119.28
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	726.65	**64.59**	38.82	**5.87**	162.24	512.94
S244	Poer onder-IV - Rechthoek	0	UGT-2/7	-155.91	0.07	**-46.81**	0.13	-34.16	-0.19
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	854.96	54.27	56.37	**-14.83**	29.12	683.15
S244	Poer onder-IV - Rechthoek	1080	UGT-2/7	-213.39	0.07	-46.54	0.12	**-56.78**	-0.11
S244	Poer onder-IV - Rechthoek	360	UGT-1/1	1251.94	39.42	90.65	-0.07	**316.65**	475.00
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-191.45	-19.08	-35.18	3.21	-39.70	**-154.39**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	854.96	54.27	56.37	-14.83	49.42	**702.68**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-1518.12**	79.44	154.14	15.28	102.46	688.40
S250	Poer onder-IV - Rechthoek	0	UGT-2/7	**55.86**	-0.06	**22.64**	-0.10	**-13.33**	0.30
S250	Poer onder-IV - Rechthoek	0	UGT-2/4	-42.07	**-8.58**	33.97	0.24	8.71	-88.54
S250	Poer onder-IV - Rechthoek	0	UGT-1/10	-1107.37	**98.58**	133.24	-10.97	245.35	694.14
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-1384.95	83.28	**161.15**	-9.37	307.56	570.36
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	-931.45	94.31	117.47	**-11.25**	205.92	628.26
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	-1232.68	93.71	127.04	**18.18**	83.64	834.49
S250	Poer onder-IV - Rechthoek	360	UGT-1/1	-1402.54	83.28	161.15	-9.37	**365.57**	600.34
S250	Poer onder-IV - Rechthoek	1800	UGT-2/4	-175.24	-7.80	34.04	-2.26	39.06	**-103.31**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	-1232.68	93.71	127.04	18.18	129.37	**868.23**

7.13. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer onder-IV - Rechthoek	1600	UGT-1/13	**-270.08**	11.38	8.21	0.22	32.37	132.32
S322	Poer onder-IV - Rechthoek	0	UGT-2/7	**-38.36**	0.00	**0.37**	0.00	**-1.25**	-0.04
S322	Poer onder-IV - Rechthoek	0	UGT-2/4	-38.66	**-11.69**	2.73	**-0.04**	1.17	-72.53
S322	Poer onder-IV - Rechthoek	0	UGT-1/3	-44.27	**72.46**	6.99	**0.96**	24.05	590.29
S322	Poer onder-IV - Rechthoek	0	UGT-1/12	-46.06	56.35	**10.14**	0.86	30.23	478.41
S322	Poer onder-IV - Rechthoek	2000	UGT-1/1	-268.81	47.57	9.20	0.86	**49.76**	580.86
S322	Poer onder-IV - Rechthoek	2000	UGT-2/4	-261.43	-10.26	2.60	-0.04	6.51	**-94.49**
S322	Poer onder-IV - Rechthoek	2000	UGT-1/3	-267.04	61.63	6.30	0.96	37.34	**724.42**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S272	2532	UGT-1/43	**-293.5**		1.3	**293.5**	0.0
S2	0	UGT-1/3		121.7	**21.4**	127.2	**0.0**
S248	0	UGT-1/3	-146.1		1.4	146.1	0.0
S2	2532	UGT-1/3		**232.3**	5.9	232.5	0.0
S284	2360	UGT-1/3	-195.5		**0.3**	195.5	0.0
S258	897	UGT-1/8		29.4	2.3	**29.7**	0.0

8.2. Von Mises spanningen kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S329, S330
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S330	0	UGT-2/15	**-111.5**	**2.4**	**111.6**	0.0
S329	2325	UGT-1/42	**-15.8**	2.4	16.3	0.0
S329	0	UGT-2/44	-65.5	1.3	65.6	**0.0**
S329	3720	UGT-2/7	-31.7	**0.0**	31.7	0.0
S329	2325	UGT-1/42	-15.8	2.4	**16.3**	0.0

8.3. Von Mises spanningen ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S33, S40, S404, S406
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S404	2625	UGT-1/21	**-161.3**		0.0	161.3	0.0
S33	0	UGT-2/29		95.7	0.1	95.7	**0.0**
S404	0	UGT-1/14	-83.1		0.1	83.1	0.0
S406	2560	UGT-1/21		**123.1**	0.2	123.1	0.0
S40	1440	UGT-1/48		81.4	**0.0**	81.4	0.0
S40	720	UGT-1/10		27.0	**28.2**	55.8	0.0
S40	720	UGT-1/10		27.0	28.2	**55.8**	0.0
S404	2625	UGT-1/21	-161.3		0.0	**161.3**	0.0

8.4. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S405
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S405	8642	UGT-1/3	**-115.6**		0.0	115.6	0.0
S405	0	UGT-1/10		30.7	**27.5**	**56.6**	**0.0**
S405	8642	UGT-1/3	-115.6		0.0	115.6	0.0
S405	4642	UGT-1/10		**155.5**	0.0	**155.5**	0.0
S405	1642	UGT-1/43		98.9	**0.0**	98.9	0.0

8.5. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S403
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S403	5579	UGT-1/35	**-139.5**		0.0	139.5	0.0
S403	0	UGT-1/14		42.3	0.0	**42.3**	**0.0**
S403	1579	UGT-1/35	-91.4		0.0	91.4	0.0
S403	1579	UGT-1/35		**90.8**	0.0	90.8	0.0
S403	11700	UGT-1/14	-47.5		**0.0**	47.5	0.0
S403	8579	UGT-1/8	-113.7		**0.0**	113.7	0.0
S403	5579	UGT-1/35	-139.5		0.0	**139.5**	0.0

8.6. Von Mises spanningen ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S331
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S331	16200	UGT-1/21	**-92.9**	0.0	92.9	0.0
S331	12150	UGT-2/4	**-21.4**	0.1	21.4	0.0
S331	0	UGT-2/7	-54.5	**0.0**	54.5	**0.0**
S331	2430	UGT-1/49	-23.6	**0.1**	23.6	0.0
S331	12150	UGT-2/4	-21.4	0.1	**21.4**	0.0
S331	16200	UGT-1/21	-92.9	0.0	**92.9**	0.0

8.7. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S390	0	UGT-1/10	**-235.3**		0.0	**235.3**	0.0
S360	0	UGT-1/35		47.4	0.0	47.4	0.0
S351	0	UGT-1/3	-0.2		51.1	88.4	**0.0**
S396	0	UGT-1/3		**131.5**	0.0	131.5	0.0
S398	232	UGT-1/32	-137.0		**0.0**	137.0	0.0
S386	93	UGT-1/3	-15.5		**103.9**	180.6	0.0
S360	161	UGT-1/35		0.2	16.0	**27.7**	0.0

8.8. Von Mises spanningen diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S269	0	UGT-1/1	**-99.8**		0.0	99.8	0.0
S235	0	UGT-1/1		97.8	**0.0**	97.8	**0.0**
S267	0	UGT-2/17	-89.0		0.0	89.0	0.0
S270	3142	UGT-1/36		**131.0**	0.0	**131.0**	0.0
S280	0	UGT-1/52		31.9	0.0	**31.9**	0.0

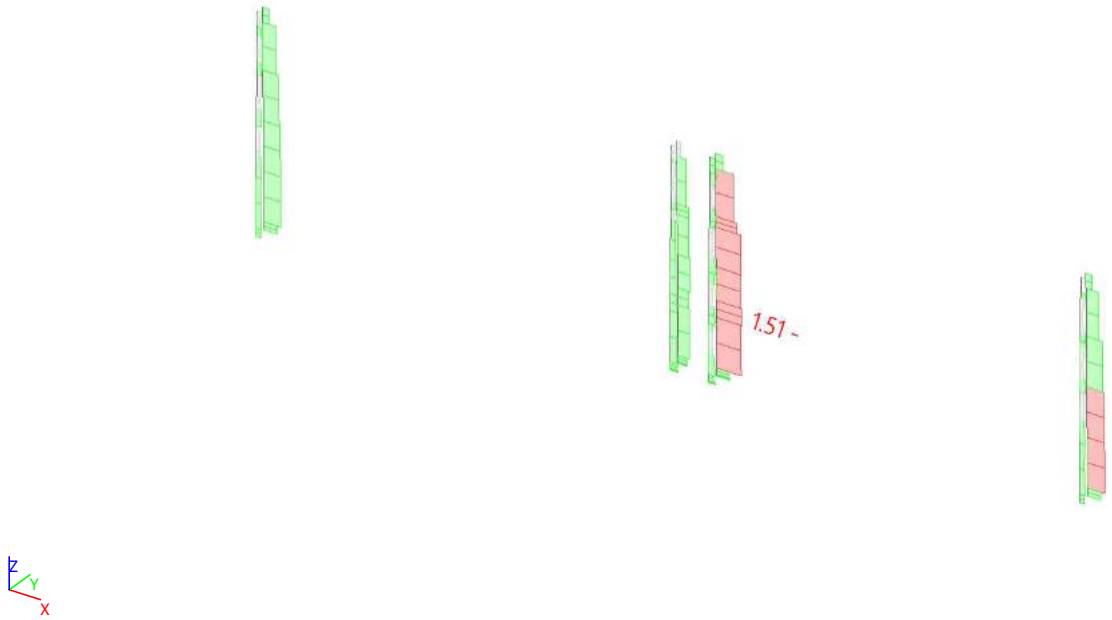
8.9. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S332
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S332	0	UGT-1/21	**-116.2**		0.0	**116.2**	**0.0**
S332	4186	UGT-1/21		**15.4**	0.0	15.4	0.0
S332	2791	UGT-1/21	-51.4		**0.0**	51.4	0.0
S332	4651	UGT-1/21		0.1	**3.1**	**5.3**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S272	0.637 / 2.757 m	INP450	S 235	UGT	1.51 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1050

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.637 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-1392.65	kN
$V_{y,Ed}$	33.02	kN
$V_{z,Ed}$	-4.04	kN
T_{Ed}	0.84	kNm
$M_{y,Ed}$	-0.12	kNm
$M_{z,Ed}$	35.83	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	4.959e+04	-5.875e+04	-1.18	23.80	0.46	2.50	29.06	32.29	102.45	1
3	SO	61	24	1.363e+05	2.447e+05	0.56	0.47	1.00	2.50	9.00	10.00	14.47	1
4	I	369	16	9.295e+04	9.285e+04	1.00		1.00	22.78	28.00	34.00	38.01	1
5	SO	61	24	1.362e+05	2.445e+05	0.56	0.47	1.00	2.50	9.00	10.00	14.47	1
7	SO	61	24	4.948e+04	-5.886e+04	-1.19	23.80	0.46	2.50	29.16	32.40	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m²
$N_{c,Rd}$	3454.50	kN
Eenheidscontrole	0.40	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m³
$M_{pl,y,Rd}$	564.00	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m³
$M_{pl,z,Rd}$	81.08	kNm
Eenheidscontrole	0.44	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m²
$V_{pl,y,Rd}$	1192.18	kN
Eenheidscontrole	0.03	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m²
$V_{pl,z,Rd}$	1058.72	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	8.3	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.06	-

Controle voor gecombineerde afschuiving en torsie voor V_y en $\tau_{t,Ed}$
Volgens EN 1993-1-1 artikel 6.2.6 & 6.2.7 en formule (6.25),(6.26)

$V_{pl,T,y,Rd}$	1162.73	kN
Eenheidscontrole	0.03	-

Controle voor gecombineerde afschuiving en torsie voor V_z en $\tau_{t,Ed}$
Volgens EN 1993-1-1 artikel 6.2.6 & 6.2.7 en formule (6.25),(6.26)

$V_{pl,T,z,Rd}$	1032.57	kN
Eenheidscontrole	0.00	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	431.01	kNm

α	2.00	
$M_{pl,z,Rd}$	81.08	kNm
β	2.02	

Eenheidscontrole (6.41) = 0.00 + 0.19 = 0.19 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2.532 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	6.497e+04	-4.592e+04	-0.71	13.77	0.59	2.50	20.07	22.30	77.94	1
3	SO	61	24	1.537e+05	2.646e+05	0.58	0.47	1.00	2.50	9.00	10.00	14.42	1
4	I	369	16	1.095e+05	1.109e+05	0.99		1.00	22.78	28.00	34.00	38.18	1
5	SO	61	24	1.554e+05	2.663e+05	0.58	0.47	1.00	2.50	9.00	10.00	14.42	1
7	SO	61	24	6.666e+04	-4.422e+04	-0.66	12.54	0.60	2.50	19.31	21.45	74.37	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings flexibel	
Systeemlengte L	2.757	1.895	m
Knikfactor k	1.00	1.79	
Kniklengte L_{cr}	2.748	3.399	m
Kritische Euler last N_{cr}	125847.92	3103.67	kN
Slankheid λ	15.56	99.08	
Relatieve slankheid λ_{rel}	0.17	1.06	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	1.00	0.56	
Knikweerstand $N_{b,Rd}$	3454.50	1943.36	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Knikweerstand $N_{b,Rd}$	1943.36	kN
Eenheidscontrole	0.72	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Elastisch kritisch moment M_{cr}	10691.93	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.23	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	3.98	
Kip moment factor C_2	0.89	
Kip moment factor C_3	0.41	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	1392.65	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	2.45	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	35.83	kNm
Karakteristieke drukweerstand N_{Rk}	3454.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	564.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	81.08	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	0.56	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.40	
Interactiefactor k_{yz}	1.08	
Interactiefactor k_{zy}	0.24	
Interactiefactor k_{zz}	1.80	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S272 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S272 positie 0.637 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	2.45	kNm
Veldmoment $M_{s,y}$	-0.18	kNm
Factor $\alpha_{s,y}$	-0.07	
Ratio van uiteinde momenten ψ_y	0.93	
Equivalente moment factor C_{my}	0.40	
Zijdelings flexibel type z	Zijdelings flexibel	
Equivalente moment factor C_{mz}	0.90	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-8.26	kNm
Veldmoment $M_{s,LT}$	2.45	kNm
Factor $\alpha_{s,LT}$	-0.30	
Ratio van uiteinde momenten ψ_{LT}	0.01	
Equivalente moment factor C_{mLT}	0.40	

Eenheidscontrole (6.61) = 0.40 + 0.00 + 0.48 = 0.88 -
Eenheidscontrole (6.62) = 0.72 + 0.00 + 0.80 = **1.51** -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

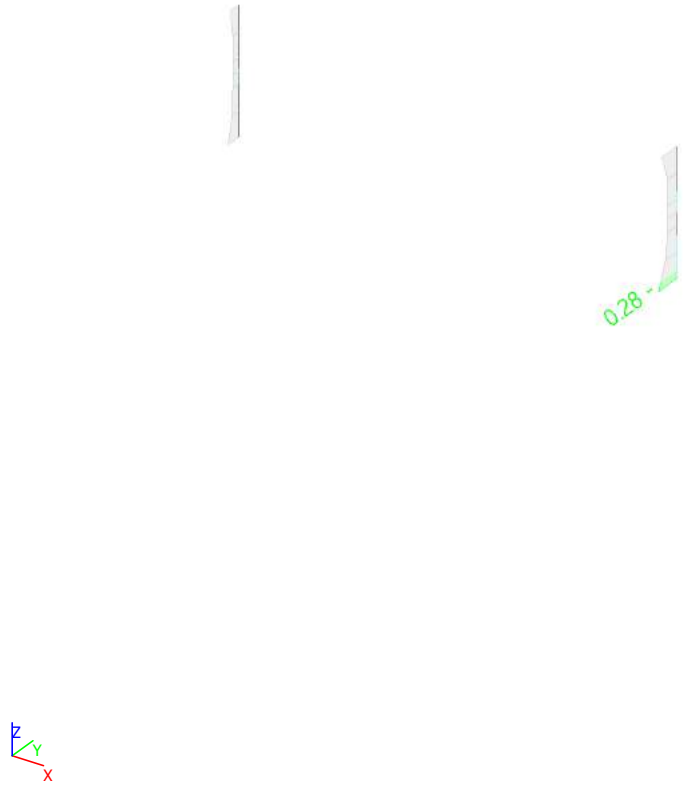
Plooiparameters		
Knik veldlengte a	2.757	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet NIET aan de stabiliteitscontrole!

9.3. Staalcontrole kolom DIE36; UGT, grafisch overzicht



9.4. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S329, S330

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S330	0.000 / 4.651 m	HEA360	S 235	UGT	0.28 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-17.66	kN
$V_{y,Ed}$	22.25	kN
$V_{z,Ed}$	-1.32	kN
T_{Ed}	-0.15	kNm
$M_{y,Ed}$	6.14	kNm
$M_{z,Ed}$	-53.56	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	1.988e+04	1.000e+05	0.20	0.53	1.00	6.74	9.00	10.00	15.30	1
3	SO	118	18	-2.358e+04	-1.037e+05								
4	I	261	10	-1.185e+03	3.658e+03	-0.32		0.51	26.10	68.88	79.69	70.29	1
5	SO	118	18	-1.741e+04	-9.755e+04								
7	SO	118	18	2.605e+04	1.062e+05	0.25	0.52	1.00	6.74	9.00	10.00	15.18	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4300e-02	m^2
$N_{c,Rd}$	3360.50	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.0875e-03	m^3
$M_{pl,y,Rd}$	490.56	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	8.0417e-04	m^3
$M_{pl,z,Rd}$	188.98	kNm
Eenheidscontrole	0.28	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0870e-02	m^2
$V_{pl,y,Rd}$	1474.81	kN
Eenheidscontrole	0.02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.9200e-03	m^2
$V_{pl,z,Rd}$	667.53	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	1.8	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	490.56	kNm
α	2.00	
$M_{pl,z,Rd}$	188.98	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.28 = 0.28 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	1.988e+04	1.000e+05	0.20	0.53	1.00	6.74	9.00	10.00	15.30	1
3	SO	118	18	-2.358e+04	-1.037e+05								
4	I	261	10	-1.185e+03	3.658e+03	-0.32		0.51	26.10	68.88	79.69	70.29	1
5	SO	118	18	-1.741e+04	-9.755e+04								
7	SO	118	18	2.605e+04	1.062e+05	0.25	0.52	1.00	6.74	9.00	10.00	15.18	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	4.91	0.75	
Kniklengte L_{cr}	22.846	3.509	m
Kritische Euler last N_{cr}	1314.34	13283.00	kN
Slankheid λ	150.17	47.24	
Relatieve slankheid λ_{rel}	1.60	0.50	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Elastisch kritisch moment M_{cr}	2759.66	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.42	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Vorklengte L_g	4.651	m
Invloed van lastpositie	geen invloed	
Factor α	943.75	
Reductie factor k_{red}	1.00	
Coëfficiënt C	9.09	
Factor S	1949	mm
Kip moment factor C_1	1.75	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4300e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	8.0417e-04	m^3
Ontwerpdrukkracht N_{Ed}	17.66	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	6.14	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-53.56	kNm
Karakteristieke drukweerstand N_{Rk}	3360.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	490.56	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	188.98	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.54	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S330 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S330 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-53.56	kNm
Veldmoment $M_{s,z}$	-3.47	kNm
Factor $\alpha_{s,z}$	0.06	
Ratio van uiteinde momenten ψ_z	-0.81	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.60	

Eenheidscontrole (6.61) = 0.01 + 0.01 + 0.07 = 0.08 -
Eenheidscontrole (6.62) = 0.01 + 0.01 + 0.11 = 0.13 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

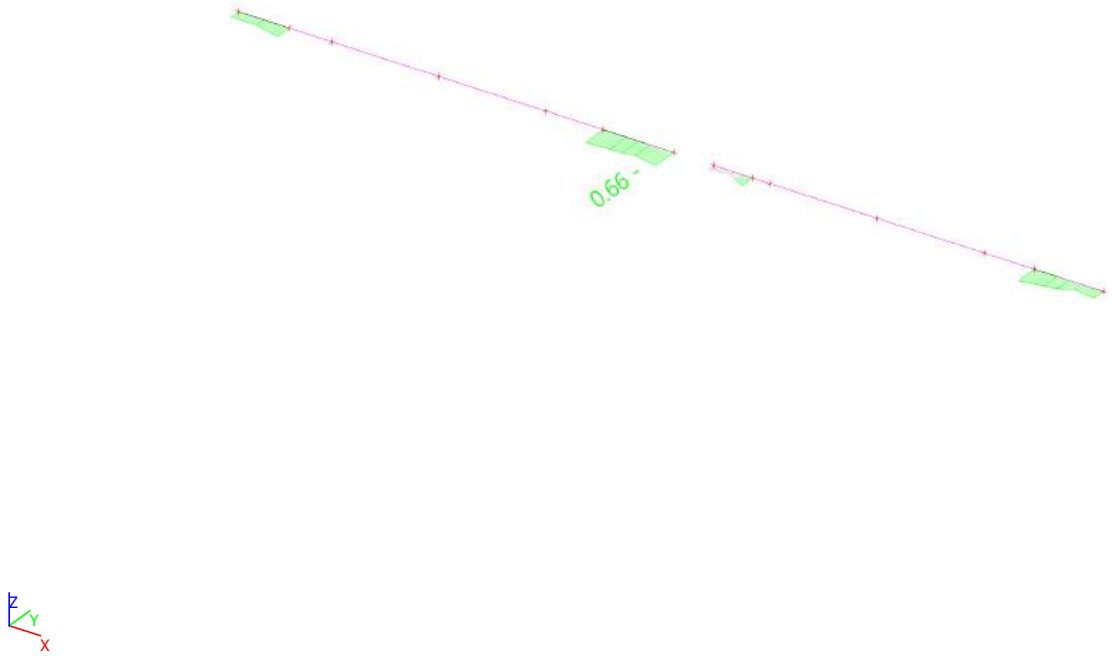
Plooiparameters		
Knik veldlengte a	4.651	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	315	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.50
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole ligger DIE34; UGT, grafisch overzicht



9.6. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S33, S40, S404, S406

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S404	2,625 / 2,625 m	HE340A	S 235	UGT	0,66 -

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG3 + 1,15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,625 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-96,97	kN
$V_{y,Ed}$	-26,32	kN
$V_{z,Ed}$	-28,46	kN
T_{Ed}	0,00	kNm
$M_{y,Ed}$	-5,89	kNm
$M_{z,Ed}$	-74,61	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	4,245e+04	1,611e+05	0,26	0,52	1,00	7,17	9,00	10,00	15,14	1
3	SO	118	17	-2,126e+04	-1,399e+05								
4	I	243	10	9,846e+03	4,680e+03	0,48		1,00	25,58	28,00	34,00	46,46	1
5	SO	118	17	-2,792e+04	-1,466e+05								
7	SO	118	17	3,579e+04	1,544e+05	0,23	0,53	1,00	7,17	9,00	10,00	15,22	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1,3350e-02	m^2
$N_{c,Rd}$	3137,25	kN
Eenheidscontrole	0,03	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1,8500e-03	m^3
$M_{pl,y,Rd}$	434,75	kNm
Eenheidscontrole	0,01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7,5590e-04	m^3
$M_{pl,z,Rd}$	177,64	kNm
Eenheidscontrole	0,42	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,0247e-02	m^2
$V_{pl,y,Rd}$	1390,25	kN
Eenheidscontrole	0,02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,4978e-03	m^2
$V_{pl,z,Rd}$	610,24	kN
Eenheidscontrole	0,05	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,0	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	434,75	kNm
α	2,00	
$M_{pl,z,Rd}$	177,64	kNm
β	1,00	

Eenheidscontrole (6.41) = 0,00 + 0,42 = 0,42 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,625 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	4,245e+04	1,611e+05	0,26	0,52	1,00	7,17	9,00	10,00	15,14	1
3	SO	118	17	-2,126e+04	-1,399e+05								
4	I	243	10	9,846e+03	4,680e+03	0,48		1,00	25,58	28,00	34,00	46,46	1
5	SO	118	17	-2,792e+04	-1,466e+05								
7	SO	118	17	3,579e+04	1,544e+05	0,23	0,53	1,00	7,17	9,00	10,00	15,22	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	2186,81	587,26	kN
Slankheid λ	112,48	217,06	
Relatieve slankheid λ_{rel}	1,20	2,31	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	
Knikcurve	b	c	
Imperfectie α	0,34	0,49	
Reductie factor χ	0,48	0,15	
Knikweerstand $N_{b,Rd}$	1503,83	478,04	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1,3350e-02	m^2
Knikweerstand $N_{b,Rd}$	478,04	kN
Eenheidscontrole	0,20	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Elastisch kritisch moment M_{cr}	296,83	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1,21	
Limietslankheid $\lambda_{rel,LT,0}$	0,40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	16,200	m
Vorklengte L_g	16,200	m
Invloed van lastpositie	geen invloed	
Factor α	575,00	
Reductie factor k_{red}	1,00	

Mcr parameters		
Coëfficiënt C	3,80	
Factor S	1931	mm
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1,3350e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7,5590e-04	m^3
Ontwerpdrukkracht N_{Ed}	96,97	kN
Ontwerp buigende momenten $M_{y,Ed}$	-5,89	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-74,61	kNm
Karakteristieke drukweerstand N_{Rk}	3137,25	kN
Karakteristieke momentweerstand $M_{y,Rk}$	434,75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	177,64	kNm
Reductie factor χ_y	0,48	
Reductie factor χ_z	0,15	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1,00	
Interactiefactor k_{yy}	1,00	
Interactiefactor k_{yz}	0,64	
Interactiefactor k_{zy}	0,60	
Interactiefactor k_{zz}	1,07	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-5,89	kNm
Veldmoment $M_{s,y}$	159,87	kNm
Factor $\alpha_{h,y}$	-0,04	
Ratio van uiteinde momenten ψ_y	0,09	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-74,61	kNm
Veldmoment $M_{s,z}$	68,71	kNm
Factor $\alpha_{s,z}$	-0,92	
Ratio van uiteinde momenten ψ_z	0,34	
Equivalente moment factor C_{mz}	0,84	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-5,89	kNm
Veldmoment $M_{s,LT}$	159,87	kNm
Factor $\alpha_{h,LT}$	-0,04	
Ratio van uiteinde momenten ψ_{LT}	0,09	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,06 + 0,01 + 0,27 = 0,35 -
Eenheidscontrole (6.62) = 0,20 + 0,01 + 0,45 = 0,66 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

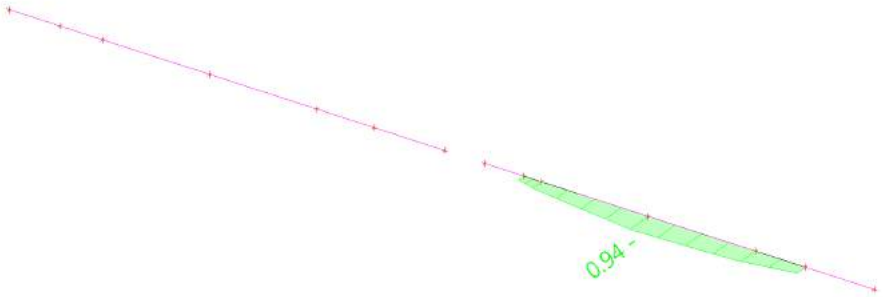
Plooiparameters		
Knik veldlengte a	2,625	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1,00	
Correctiefactor voor dwarskracht η	1,20	

Plooiverificatie	
Lijf slankheid h_w/t	31,26
Lijfslankheid limiet	60,00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht





9.8. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S405

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S405	**4,642 / 10,500 m**	**I + 2 PLud (HEA340; 320; 320; 12; 12)**	**S 235**	**UGT**	**0,94 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 4,642 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	32,99	kN
$V_{y,Ed}$	-0,89	kN
$V_{z,Ed}$	-9,99	kN
T_{Ed}	0,00	kNm
$M_{y,Ed}$	313,69	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	36,27	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-6,634e+04	-1,052e+05								
2	I	150	29	1,409e+05	1,020e+05	0,72		1,00	5,26	28,00	34,00	42,02	1
3	I	150	29	6,313e+04	1,020e+05	0,62		1,00	5,26	28,00	34,00	43,79	1
4	I	150	29	-1,441e+05	-1,052e+05								
5	I	8	10	-1,014e+05	-9,616e+04								
6	I	297	10	-9,616e+04	9,295e+04	-1,03		0,49	31,26	73,24	84,43	128,30	1
7	I	8	10	9,295e+04	9,820e+04	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,488e+05	1,462e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-6,900e+04	-7,159e+04								
10	UO	10	12	-1,494e+05	-1,520e+05								
13	UO	10	12	6,839e+04	6,579e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,99	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	2,1039e-02	m^2
$N_{pl,Rd}$	4944,14	kN
$N_{u,Rd}$	5453,28	kN
$N_{t,Rd}$	4944,14	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3,1654e-03	m^3
$M_{pl,y,Rd}$	743,86	kNm
Eenheidscontrole	0,42	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	1,3705e-03	m^3
$M_{pl,z,Rd}$	322,07	kNm
Eenheidscontrole	0,11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6468e-02	m^2
$V_{pl,y,Rd}$	2234,36	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	3,6506e-03	m^2
$V_{pl,z,Rd}$	495,31	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,0	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	4944,14	kN
$M_{pl,y,Rd}$	743,86	kNm
$M_{pl,z,Rd}$	322,07	kNm

Eenheidscontrole (6.2) = 0,01 + 0,42 + 0,11 = 0,54 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 4,642 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-6,634e+04	-1,052e+05								
2	I	150	29	1,409e+05	1,020e+05	0,72		1,00	5,26	28,00	34,00	42,02	1
3	I	150	29	6,313e+04	1,020e+05	0,62		1,00	5,26	28,00	34,00	43,79	1
4	I	150	29	-1,441e+05	-1,052e+05								
5	I	8	10	-1,014e+05	-9,616e+04								
6	I	297	10	-9,616e+04	9,295e+04	-1,03		0,49	31,26	73,24	84,43	128,30	1
7	I	8	10	9,295e+04	9,820e+04	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,488e+05	1,462e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-6,900e+04	-7,159e+04								
10	UO	10	12	-1,494e+05	-1,520e+05								
13	UO	10	12	6,839e+04	6,579e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,99	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3,1654e-03	m^3
Elastisch kritisch moment M_{cr}	856,97	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,93	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,50	
Rekenwaarde knikweerstand $M_{b,Rd}$	374,31	kNm
Eenheidscontrole	0,84	-

Mcr parameters		
LTB lengte L	14,500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

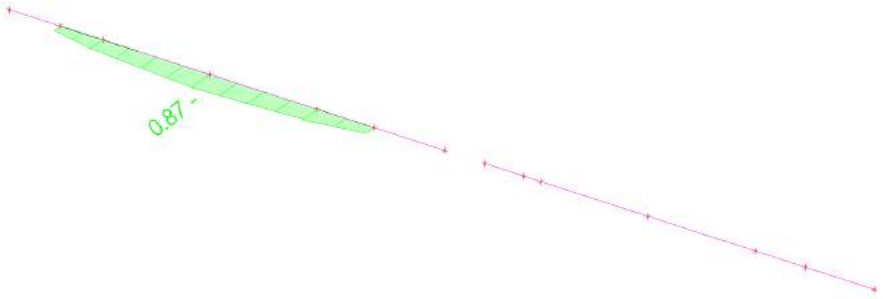
Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	32,99	kN
Ontwerp buigende momenten $M_{y,Ed}$	313,69	kNm
Ontwerp buigende momenten $M_{z,Ed}$	36,27	kNm
Trekweerstand $N_{t,Rd}$	4944,14	kN
Buigweerstand $M_{b,y,Rd}$	374,31	kNm
Buigweerstand $M_{c,z,Rd,com}$	322,07	kNm

Eenheidscontrole = 0,84 + 0,11 - 0,01 = 0,94 -

De staaf voldoet aan de stabiliteitscontrole.

9.9. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht





9.10. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S403

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S403	**5,579 / 11,700 m**	**Grafische doorsnede**	**S 235**	**UGT**	**0,87 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1022

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Algemeen	

Waarschuwing: Sterktereductie gerelateerd aan de dikte wordt niet ondersteund voor dit type doorsnede.

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 5,579 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-55,95	kN
$V_{y,Ed}$	-2,86	kN
$V_{z,Ed}$	-11,92	kN

Interne krachten	Berekende	Eenheid
T_{Ed}	-0,01	kNm
$M_{y,Ed}$	260,85	kNm
$M_{z,Ed}$	64,75	kNm

Classificatie voor doorsnede-ontwerp
Waarschuwing: Classificatie wordt niet ondersteund voor dit type doorsnede.
De doorsnede wordt gecontroleerd als elastisch, klasse 3.

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2,5114e-02	m^2
$N_{c,Rd}$	5901,89	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,y,min}$	2,7183e-03	m^3
$M_{el,y,Rd}$	638,80	kNm
Eenheidscontrole	0,41	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,z,min}$	1,5664e-03	m^3
$M_{el,z,Rd}$	368,11	kNm
Eenheidscontrole	0,18	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6554e-02	m^2
$V_{pl,y,Rd}$	2246,03	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,3472e-03	m^2
$V_{pl,z,Rd}$	589,81	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	38	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.2 en formule (6.42)

Normaalspanningen		
Vezel	31	
$\sigma_{N,Ed}$	2,2	MPa
$\sigma_{My,Ed}$	96,0	MPa
$\sigma_{Mz,Ed}$	41,3	MPa
$\sigma_{tot,Ed}$	139,5	MPa
Eenheidscontrole	0,59	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	5688,94	1855,63	kN
Slankheid λ	95,65	167,48	
Relatieve slankheid λ_{rel}	1,02	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	16,200	m
Elastische kritische last $N_{cr,T}$	11328,76	kN
Elastische kritische last $N_{cr,TF}$	1855,63	kN
Relatieve slankheid $\lambda_{rel,T}$	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastisch kritisch moment M_{cr}	1007,79	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,80	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,58	
Rekenwaarde knikweerstand $M_{b,Rd}$	371,83	kNm
Eenheidscontrole	0,70	-

Mcr parameters		
LTB lengte L	16,200	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2,5114e-02	m^2
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastische doorsnedemodulus $W_{el,z}$	1,5664e-03	m^3
Ontwerpdrukkracht N_{Ed}	55,95	kN
Ontwerp buigende momenten $M_{y,Ed}$	260,85	kNm
Ontwerp buigende momenten $M_{z,Ed}$	64,75	kNm
Karakteristieke drukweerstand N_{Rk}	5901,89	kN
Karakteristieke momentweerstand $M_{y,Rk}$	638,80	kNm

Buig- en axiale drukcontrole paramaters		
Karakteristieke momentweerstand $M_{z,Rk}$	368,11	kNm
Reductie factor χ_y	1,00	
Reductie factor χ_z	1,00	
Reductie factor χ_{LT}	0,58	
Interactiefactor k_{yy}	0,95	
Interactiefactor k_{yz}	0,90	
Interactiefactor k_{zy}	1,00	
Interactiefactor k_{zz}	0,90	

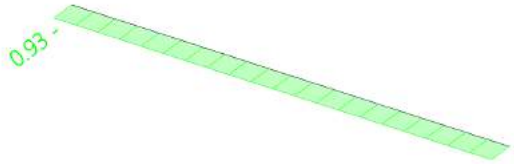
Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-14,15	kNm
Veldmoment $M_{s,y}$	260,85	kNm
Factor $\alpha_{h,y}$	-0,05	
Ratio van uiteinde momenten ψ_y	0,06	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-65,25	kNm
Veldmoment $M_{s,z}$	64,75	kNm
Factor $\alpha_{s,z}$	-0,99	
Ratio van uiteinde momenten ψ_z	0,47	
Equivalente moment factor C_{mz}	0,89	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-14,15	kNm
Veldmoment $M_{s,LT}$	260,85	kNm
Factor $\alpha_{h,LT}$	-0,05	
Ratio van uiteinde momenten ψ_{LT}	0,06	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,01 + 0,67 + 0,16 = 0,84 -
Eenheidscontrole (6.62) = 0,01 + 0,70 + 0,16 = 0,87 -

De staaf voldoet aan de stabiliteitscontrole.

9.11. Staalcontrole ligger DIN28; UGT, grafisch overzicht





9.12. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S331

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S331	0.000 / 16.200 m	HEB280	S 235	UGT	0.93 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG4 + 1.15*BG2 + LC1065

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-12.07	kN
$V_{y,Ed}$	9.00	kN
$V_{z,Ed}$	-4.31	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.11	kNm
$M_{z,Ed}$	-20.36	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	9.872e+03	4.406e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1
3	SO	111	18	-8.188e+03	-4.238e+04								
4	I	196	11	8.615e+02	9.762e+02	0.88		1.00	18.67	28.00	34.00	39.62	1
5	SO	111	18	-8.034e+03	-4.222e+04								
7	SO	111	18	1.003e+04	4.422e+04	0.23	0.53	1.00	6.15	9.00	10.00	15.23	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3140e-02	m^2
$N_{c,Rd}$	3087.90	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.5340e-03	m^3
$M_{pl,y,Rd}$	360.49	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.1760e-04	m^3
$M_{pl,z,Rd}$	168.64	kNm
Eenheidscontrole	0.12	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0442e-02	m^2
$V_{pl,y,Rd}$	1416.78	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.1130e-03	m^2
$V_{pl,z,Rd}$	558.04	kN
Eenheidscontrole	0.01	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.0	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	360.49	kNm
α	2.00	
$M_{pl,z,Rd}$	168.64	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.12 = 0.12 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 16.200 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.295e+04	5.880e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.25	1
3	SO	111	18	-1.127e+04	-5.712e+04								
4	I	196	11	8.583e+02	9.794e+02	0.88		1.00	18.67	28.00	34.00	39.70	1
5	SO	111	18	-1.111e+04	-5.696e+04								
7	SO	111	18	1.311e+04	5.896e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	16.200	16.200	m
Knikfactor k	10.00	0.62	
Kniklengte L_{cr}	162.000	10.082	m
Kritische Euler last N_{cr}	15.22	1344.66	kN
Slankheid λ	1337.74	142.32	
Relatieve slankheid λ_{rel}	14.24	1.52	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	b	c	
Imperfectie α	0.34	0.49	
Reductie factor χ	0.00	0.31	
Knikweerstand $N_{b,Rd}$	14.87	956.01	kN

Waarschuwing: Slankheid 1337.74 is groter dan de limietwaarde van 1000.00.

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Knikweerstand $N_{b,Rd}$	14.87	kN
Eenheidscontrole	0.81	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Elastisch kritisch moment M_{cr}	288.51	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.12	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	16.200	m
Vorklengte L_g	16.200	m
Invloed van lastpositie	geen invloed	

Mcr parameters		
Factor α	575.00	
Reductie factor k_{red}	1.00	
Coëfficiënt C	3.69	
Factor S	1430	mm
Kip moment factor C_1	1.13	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.1760e-04	m^3
Ontwerpdrukkracht N_{Ed}	12.07	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	-17.34	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-27.30	kNm
Karakteristieke drukweerstand N_{Rk}	3087.90	kN
Karakteristieke momentweerstand $M_{y,Rk}$	360.49	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	168.64	kNm
Reductie factor χ_y	0.00	
Reductie factor χ_z	0.31	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.48	
Interactiefactor k_{yz}	0.32	
Interactiefactor k_{zy}	0.89	
Interactiefactor k_{zz}	0.53	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S331 positie 8.100 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S331 positie 16.200 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-27.30	kNm
Veldmoment $M_{s,z}$	14.34	kNm
Factor $\alpha_{s,z}$	-0.53	
Ratio van uiteinde momenten ψ_z	0.75	
Equivalente moment factor C_{mz}	0.52	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	0.12	kNm
Veldmoment $M_{s,LT}$	-17.34	kNm
Factor $\alpha_{h,LT}$	-0.01	
Ratio van uiteinde momenten ψ_{LT}	0.95	
Equivalente moment factor C_{mLT}	0.95	

Eenheidscontrole (6.61) = 0.81 + 0.07 + 0.05 = 0.93 -
Eenheidscontrole (6.62) = 0.01 + 0.04 + 0.09 = 0.14 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

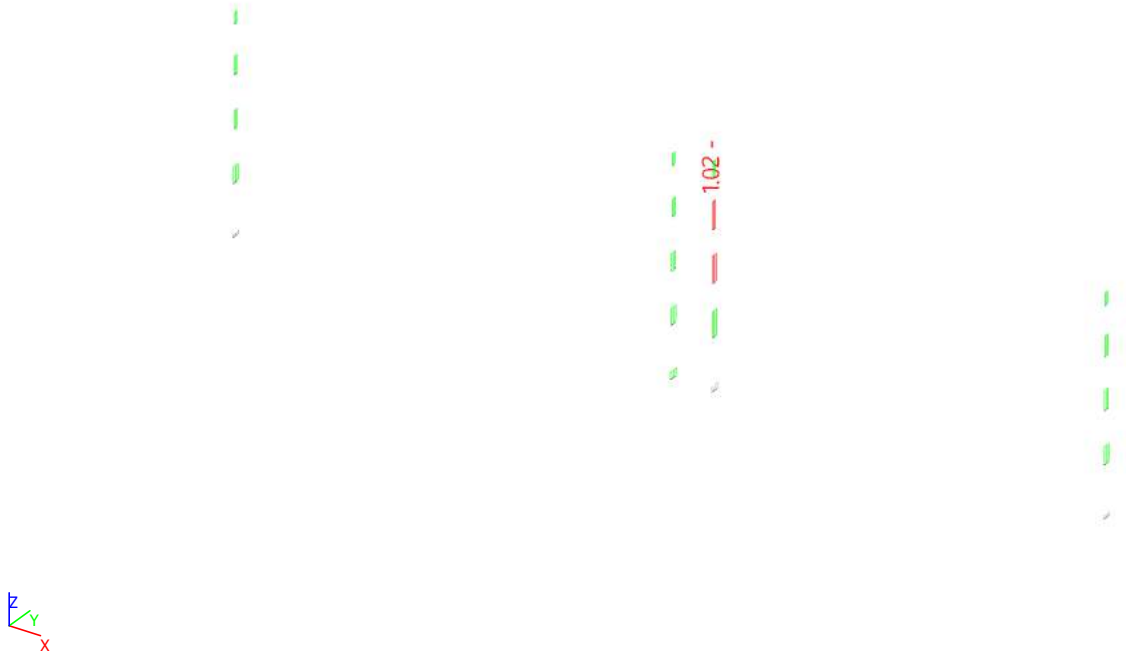
Plooiparameters		
Knik veldlengte a	16.200	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	244	mm
Lijfdikte t	11	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	23.24
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.13. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.14. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S386	0.187 / 0.187 m	Rechthoek (200; 28)	S 235	UGT	1.02 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.187 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-1.35	kN
$V_{y,Ed}$	3.28	kN
$V_{z,Ed}$	-355.30	kN
T_{Ed}	0.41	kNm
$M_{y,Ed}$	-32.87	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	0.71	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.763e+05	-1.758e+05	-1.00	23.69	0.50	7.14	25.40	28.23	102.22	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	5.6000e-03	m^2
$N_{c,Rd}$	1316.00	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m^3
$M_{pl,y,Rd}$	65.80	kNm
Eenheidscontrole	0.50	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m^3
$M_{pl,z,Rd}$	9.21	kNm
Eenheidscontrole	0.08	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m^2
$V_{pl,y,Rd}$	759.79	kN
Eenheidscontrole	0.00	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m^2
$V_{pl,z,Rd}$	759.79	kN
Eenheidscontrole	0.47	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	8.7	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.06	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1(5) en formule (6.1)

Elastische toetsing		
Vezel	1	
$\sigma_{N,Ed}$	0.2	MPa
$\sigma_{My,Ed}$	176.1	MPa
$\sigma_{Mz,Ed}$	27.0	MPa
$\sigma_{tot,Ed}$	203.3	MPa
$\tau_{Vy,Ed}$	0.0	MPa
$\tau_{Vz,Ed}$	0.0	MPa
$\tau_{t,Ed}$	0.0	MPa
$\tau_{tot,Ed}$	0.0	MPa
$\sigma_{von\ Mises,Ed}$	203.3	MPa
Eenheidscontrole	0.87	-

Opmerking: Voor deze doorsnede is in artikel 6.2.7(9) geen formule gegeven voor de plastische dwarskrachtweerstand gereduceerd met torsie. Daarom wordt het criterium elastisch vloeien volgens EN 1993-1-1 artikel 6.2.1(5) getoetst.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-1.787e+05	1.792e+05	-1.00	0.85	0.50	7.14	17.98	19.97	19.35	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	0.357	0.357	m
Knikfactor k	4.21	0.98	
Kniklengte L_{cr}	1.500	0.349	m
Kritische Euler last N_{cr}	17194.46	6222.75	kN
Slankheid λ	25.98	43.19	
Relatieve slankheid λ_{rel}	0.28	0.46	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	0.357	m
Elastische kritische last $N_{cr,T}$	36789.59	kN
Relatieve slankheid $\lambda_{rel,T}$	0.19	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	2245.46	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.17	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.357	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.60	
Kip moment factor C_2	0.00	
Kip moment factor C_3	0.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.

Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	5.6000e-03	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.9200e-05	m^3
Ontwerpdrukkracht N_{Ed}	1.35	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	63.59	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	0.98	kNm
Karakteristieke drukweerstand N_{Rk}	1316.00	kN
Karakteristieke momentweerstand $M_{y,Rk}$	65.80	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	9.21	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.32	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.53	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S313 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S385 positie 0.085 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.2
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Resulterend belastingtype z	lineair moment M
Ratio van uiteinde momenten ψ_z	-0.19
Equivalente moment factor C_{mz}	0.52
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	-0.99
Equivalente moment factor C_{mLT}	0.40

Eenheidscontrole (6.61) = 0.00 + 0.87 + 0.03 = 0.90 -
Eenheidscontrole (6.62) = 0.00 + 0.97 + 0.06 = **1.02** -

De staaf voldoet NIET aan de stabiliteitscontrole!

9.15. Staalcontrole diagonaal; UGT, grafisch overzicht





9.16. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S235, S267..S271, S274, S277..S281

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S269	0.000 / 3.142 m	UPE140	S 235	UGT	0.83 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1002

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-183.70	kN
$V_{y,Ed}$	0.00	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.00	kNm
$M_{z,Ed}$	0.00	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	9.972e+04	9.972e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	9.972e+04	9.972e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	9.972e+04	9.972e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.8400e-03	m²
$N_{c,Rd}$	432.40	kN
Eenheidscontrole	0.42	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	9.972e+04	9.972e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	9.972e+04	9.972e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	9.972e+04	9.972e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	3.142	3.142	m
Knikfactor k	0.65	0.65	
Kniklengte L_{cr}	2.043	2.043	m
Kritische Euler last N_{cr}	2975.62	390.95	kN
Slankheid λ	35.80	98.77	
Relatieve slankheid λ_{rel}	0.38	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.91	0.51	
Knikweerstand $N_{b,Rd}$	392.28	220.76	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.8400e-03	m²
Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.83	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	3.142	m
Elastische kritische last $N_{cr,T}$	649.47	kN
Elastische kritische last $N_{cr,TF}$	390.95	kN
Relatieve slankheid $\lambda_{rel,T}$	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.51	
Oppervlakte van de doorsnede A	1.8400e-03	m²

Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.83	-

De staaf voldoet aan de stabiliteitscontrole.

9.17. Staalcontrole bliksempiek; UGT, grafisch overzicht





9.18. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S332

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S332	**0.000 / 4.651 m**	**Koker fl (374; 7; 126; 10; 354)**	**S 235**	**UGT**	**0.53 -**

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-2.28	kN
$V_{y,Ed}$	1.01	kN
$V_{z,Ed}$	9.79	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	-39.80	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-4.71	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	-1.033e+05	-1.031e+05								
2	I	126	10	-8.649e+04	9.856e+04	-0.88		0.53	12.60	65.30	75.87	109.03	1
3	I	126	10	-9.798e+04	8.707e+04	-1.13		0.47	12.60	76.51	88.20	139.80	1
4	UO	5	7	9.205e+04	9.221e+04	1.00	0.43	1.00	0.71	9.00	10.00	13.80	1
5	UO	5	7	-9.163e+04	-9.147e+04								
6	I	4	10	-8.649e+04	-9.163e+04								
7	UO	5	7	1.037e+05	1.039e+05	1.00	0.43	1.00	0.71	9.00	10.00	13.77	1
8	I	4	10	9.856e+04	1.037e+05	0.95		1.00	0.35	28.00	34.00	38.67	1
9	I	364	7	-1.031e+05	-9.163e+04								
10	I	4	10	-9.798e+04	-1.031e+05								
11	I	364	7	9.221e+04	1.037e+05	0.89		1.00	52.00	28.00	34.00	39.52	4
12	I	4	10	8.707e+04	9.221e+04	0.94		1.00	0.35	28.00	34.00	38.75	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.350e+05	-2.350e+05							
2	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
3	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	-2.350e+05	-2.350e+05							
6	I	4	-2.226e+05	-2.350e+05							
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2
9	I	364	-2.350e+05	-2.350e+05							
10	I	4	-2.226e+05	-2.350e+05							

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2

Effectieve doorsnede Mz-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.287e+05	-2.350e+05							
2	I	126	2.287e+05	2.287e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	-2.287e+05	-2.287e+05							
4	UO	5	-2.287e+05	-2.350e+05							
5	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
6	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
8	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
10	I	4	-2.287e+05	-2.287e+05							
11	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
12	I	4	-2.287e+05	-2.287e+05							

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	7.0288e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.5067e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.3936e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	7.0288e-03	m^2
$N_{c,Rd}$	1651.76	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.3936e-04	m^3
$M_{c,y,Rd}$	79.75	kNm
Eenheidscontrole	0.50	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	187.45	kNm
Eenheidscontrole	0.03	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	685.11	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	374.41	kN
Eenheidscontrole	0.03	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	7.0288e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.3936e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.3	MPa
$\sigma_{My,Ed}$	117.3	MPa
$\sigma_{Mz,Ed}$	5.9	MPa
$\sigma_{tot,Ed}$	123.5	MPa
Eenheidscontrole	0.53	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	2.21	0.92	
Kniklengte L_{cr}	10.257	4.263	m
Kritische Euler last N_{cr}	522.28	16485.95	kN
Slankheid λ	175.44	31.23	
Relatieve slankheid λ_{rel}	1.78	0.32	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.651	m
Elastische kritische last $N_{cr,T}$	264162.55	kN
Elastische kritische last $N_{cr,TF}$	522.28	kN
Relatieve slankheid $\lambda_{rel,T}$	1.78	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Elastisch kritisch moment M_{cr}	16750.38	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.07	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.87	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	7.0288e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	2.28	kN
Ontwerp buigende momenten $M_{y,Ed}$	-39.80	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-4.71	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	1651.76	kN
Karakteristieke momentweerstand $M_{y,Rk}$	79.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	187.45	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.60	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.60	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lineair moment M	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.60	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-39.80	kNm
Veldmoment $M_{s,LT}$	-18.46	kNm
Factor $\alpha_{s,LT}$	0.46	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.57	

Eenheidscontrole (6.61) = 0.00 + 0.45 + 0.02 = 0.47 -
Eenheidscontrole (6.62) = 0.00 + 0.50 + 0.02 = 0.52 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE G

In- en uitvoergegevens 3D raamwerkprogramma juk 65, versterkt

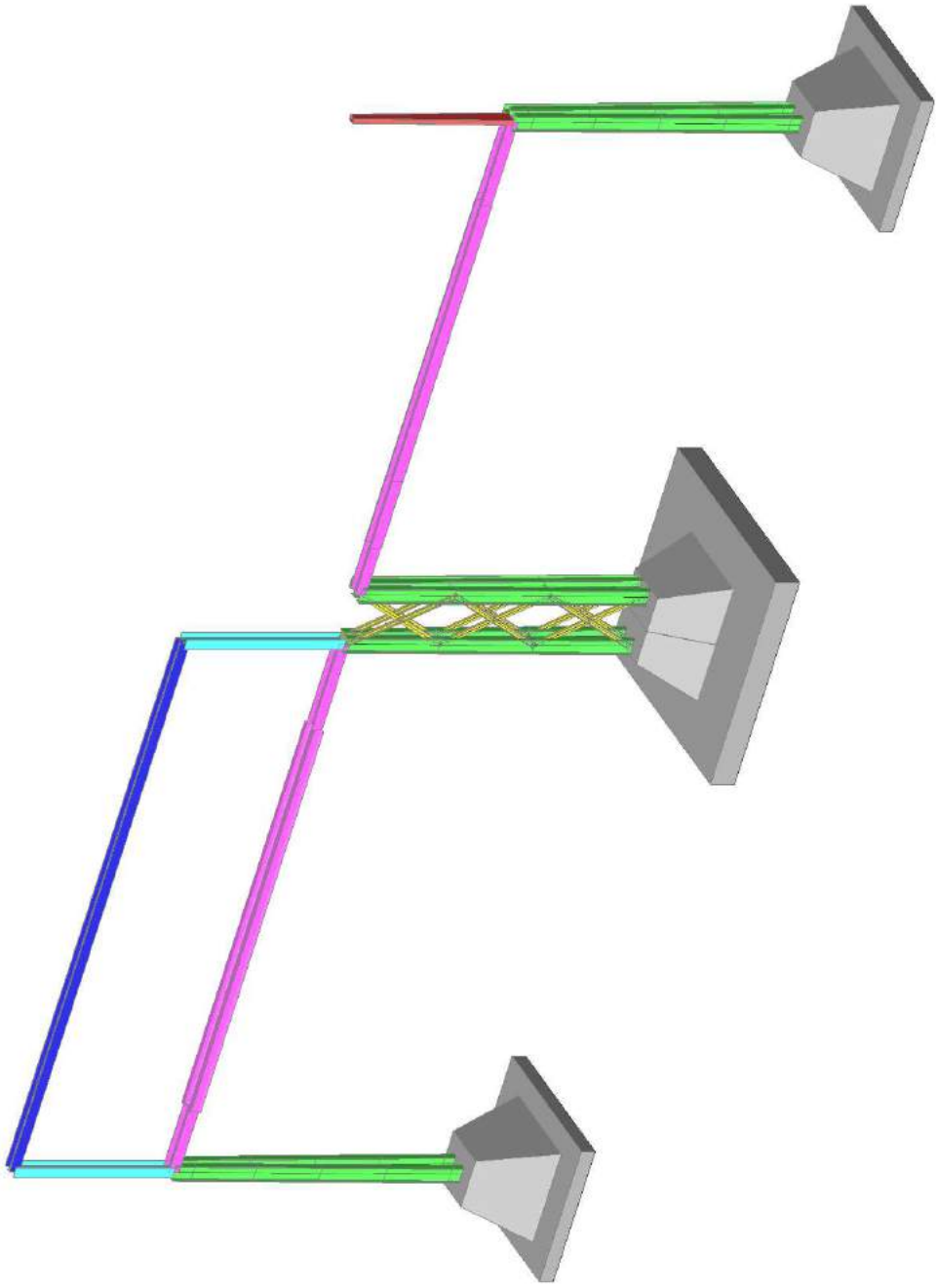
1. Inhoudsopgave

1. Inhoudsopgave **1**
2. Geometrie **3**
2.1. Perspectief constructie 3
2.2. Maatvoering 4
2.3. Materialen 5
2.4. Doorsneden 5
3. Belastingen **15**
3.1. Belastingsgevallen 15
3.2. BG1: e.g. constructie 22
3.3. BG2: grond op poer 22
3.4. BG3: wind op constructie; X-richting 23
3.5. BG4: wind op constructie; Y-richting 23
3.6. LC1001 / Totale waarde 24
3.7. LC1080 / Totale waarde 24
3.8. LC1159 / Totale waarde 25
3.9. LC1238 / Totale waarde 25
3.10. Combinaties 26
3.11. Resultaatklasses 33
4. Berekeningsverslag **34**
5. Reacties **56**
5.1. Oplegreacties kolom links; UGT, globale extremen 56
5.2. Oplegreacties kolom midden-links; UGT, globale extremen 56
5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen 56
5.4. Oplegreacties kolom rechts; UGT, globale extremen 56
6. Grondspanningen **57**
6.1. Grondspanningen onder betonpoeren; UGT 57
7. Staafkrachten **58**
7.1. Staafkrachten kolom INP45; UGT, globale extremen 58
7.2. Staafkrachten kolom INP45 versterkt; UGT, globale extremen 58
7.3. Staafkrachten kolom DIE36; UGT, globale extremen 58
7.4. Staafkrachten ligger DIE34; UGT, globale extremen 59
7.5. Staafkrachten ligger DIE34+strippen; UGT, globale extremen 59
7.6. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen 59
7.7. Staafkrachten ligger DIN28; UGT, globale extremen 60
7.8. Staafkrachten koppelplaat; UGT, globale extremen 60
7.9. Staafkrachten diagonaal; UGT, globale extremen 60
7.10. Staafkrachten bliksempiek; UGT, globale extremen 60
7.11. Staafkrachten betonopstort links; UGT, globale extremen 61
7.12. Staafkrachten betonopstort midden-links; UGT, globale extremen 61
7.13. Staafkrachten betonopstort midden-rechts; UGT, globale extremen 61
7.14. Staafkrachten betonopstort rechts; UGT, globale extremen 62
8. Staafspanningen **63**
8.1. Von Mises spanningen kolom INP45; UGT, globale extremen 63
8.2. Von Mises spanningen kolom INP45 versterkt; UGT, globale extremen 63
8.3. Von Mises spanningen kolom DIE36; UGT, globale extremen 63
8.4. Von Mises spanningen ligger DIE34; UGT, globale extremen 63
8.5. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen 64
8.6. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen 64
8.7. Von Mises spanningen ligger DIN28; UGT, globale extremen 64
8.8. Von Mises spanningen koppelplaat; UGT, globale extremen 64
8.9. Von Mises spanningen diagonaal; UGT, globale extremen 65
8.10. Von Mises spanningen bliksempiek; UGT, globale extremen 65
9. Normcontrole staal **66**
9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht 66
9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid 66
9.3. Staalcontrole kolom INP45 versterkt; UGT, grafisch overzicht 70
9.4. Staalcontrole kolom INP45 versterkt; UGT, maatgevende doorsnede, uitgebreid 70
9.5. Staalcontrole kolom DIE36; UGT, grafisch overzicht 75
9.6. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid 75
9.7. Staalcontrole ligger DIE34; UGT, grafisch overzicht 79
9.8. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid 79
9.9. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht 84
9.10. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid 84
9.11. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht 88
9.12. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid 88
9.13. Staalcontrole ligger DIN28; UGT, grafisch overzicht 92

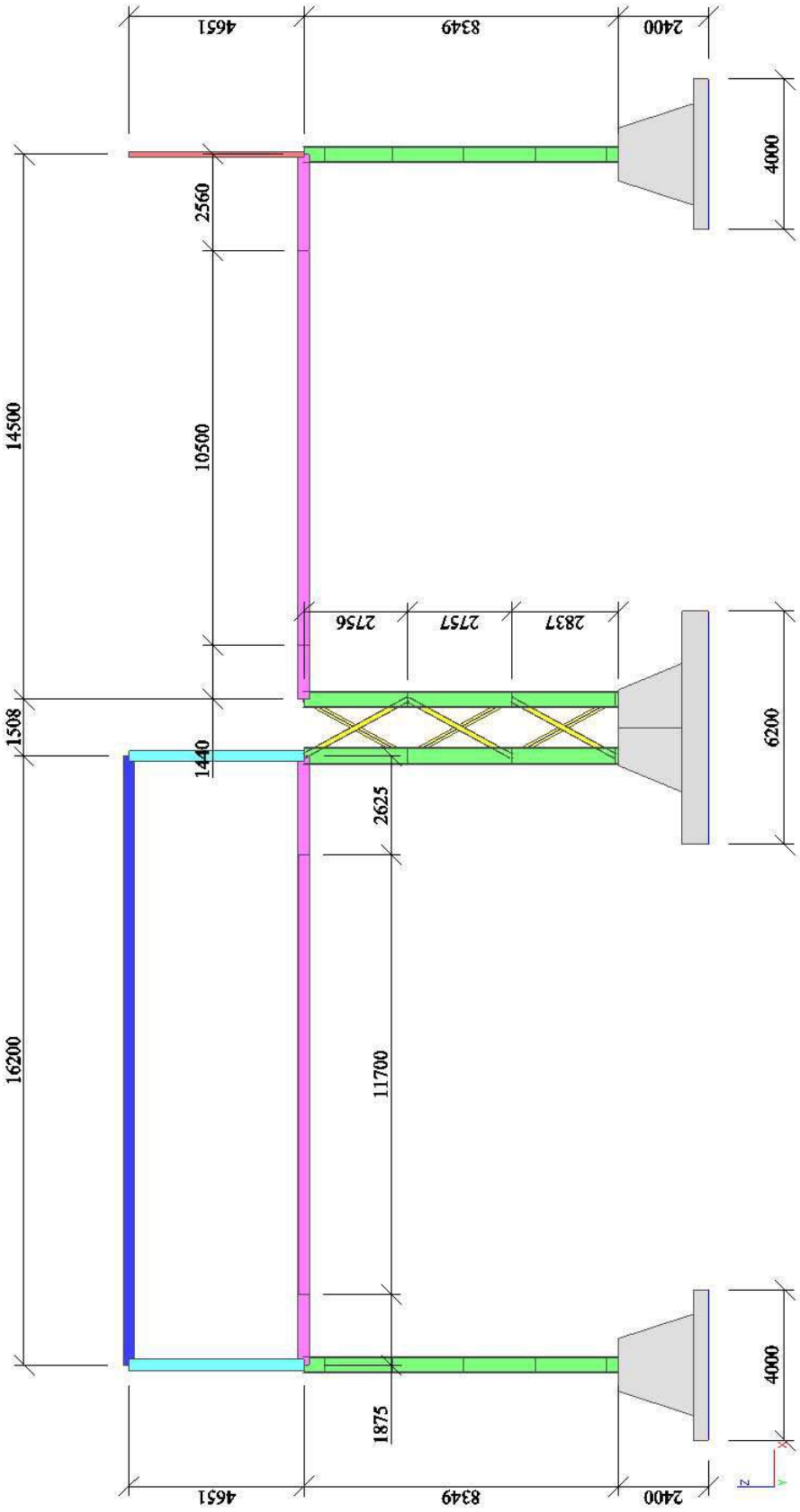
9.14. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid 92
9.15. Staalcontrole koppelplaat; UGT, grafisch overzicht 97
9.16. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 97
9.17. Staalcontrole diagonaal; UGT, grafisch overzicht 100
9.18. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid 100
9.19. Staalcontrole bliksempiek; UGT, grafisch overzicht 103
9.20. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 103

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 235	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	235.0 215.0	360.0 360.0	

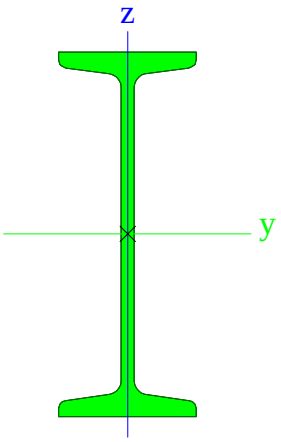
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C60/75	Beton	2500.0	2600.0	3.9100e+04	0.2	0.00	60.00	
Dummy beton	Beton	2500.0	2600.0	3.9100e+06	0.2	0.00	60.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom INP45		
Type	INP450	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	5.63e+05	5.63e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	8.11e+04	8.11e+04
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

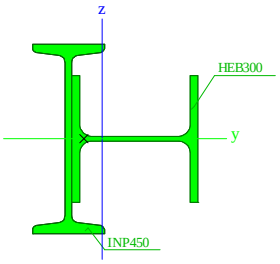
Afbeelding



Kolom-samengesteld		
Type	I + Ir	
Uitgebreid	INP450, HEB300	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	

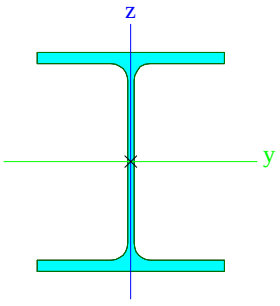
Knik y-y, Knik z-z	c	c
A [m²]	2.9616e-02	
A_y [m²], A_z [m²]	5.1391e-03	1.9650e-02
I_y [m⁴], I_z [m⁴]	5.4362e-04	4.5410e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.4161e-03	1.9877e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.2645e-03	2.5730e-03
I_w [m⁶], I_t [m⁴]	4.1252e-06	6.9763e-06
d_y [mm], d_z [mm]	-43	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	165	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.67e+05	7.67e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	6.05e+05	6.05e+05
A_L [m²/m], A_D [m²/m]	2.6069e+00	2.6069e+00

Afbeelding



Kolom DIE36		
Type	HEA360	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.4300e-02	
A_y [m²], A_z [m²]	1.0125e-02	3.6844e-03
I_y [m⁴], I_z [m⁴]	3.3100e-04	7.8900e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8900e-03	5.2600e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0875e-03	8.0417e-04
I_w [m⁶], I_t [m⁴]	2.1766e-06	1.4900e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	175
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.91e+05	4.91e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.89e+05	1.89e+05
A_L [m²/m], A_D [m²/m]	1.8300e+00	1.8334e+00

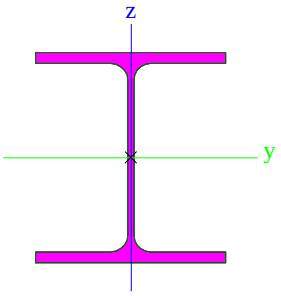
Afbeelding



Ligger DIE34		
Type	HE340A	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3350e-02	
A_y [m²], A_z [m²]	9.5495e-03	3.3201e-03
I_y [m⁴], I_z [m⁴]	2.7690e-04	7.4360e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6780e-03	4.9570e-04

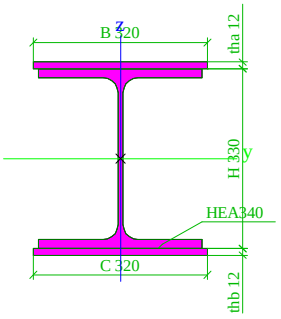
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.8500e-03	7.5590e-04
I_w [m⁶], I_t [m⁴]	1.8240e-06	1.2720e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.35e+05	4.35e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.78e+05	1.78e+05
A_L [m²/m], A_D [m²/m]	1.7944e+00	1.7944e+00

Afbeelding



Ligger DIE34+strippen		
Type	I + 2 PLud	
Uitgebreid	HEA340; 320; 320; 12; 12	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	c	c
A [m²]	2.1039e-02	
A_y [m²], A_z [m²]	1.6468e-02	3.6506e-03
I_y [m⁴], I_z [m⁴]	5.0182e-04	1.3990e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.8351e-03	8.7437e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.1654e-03	1.3705e-03
I_w [m⁶], I_t [m⁴]	3.6743e-06	4.7425e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	160	177
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.44e+05	7.44e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.22e+05	3.22e+05
A_L [m²/m], A_D [m²/m]	1.9224e+00	1.9224e+00

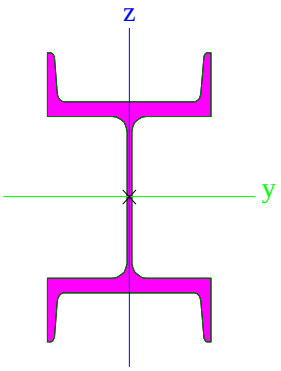
Afbeelding



Ligger DIE34+UNP's		
Type	Grafische doorsnede	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.5114e-02	
A_y [m²], A_z [m²]	1.6554e-02	4.3472e-03
I_y [m⁴], I_z [m⁴]	7.2035e-04	2.3496e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.7183e-03	1.5664e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.1091e-03	2.0212e-03
I_w [m⁶], I_t [m⁴]	4.5518e-06	4.8902e-06

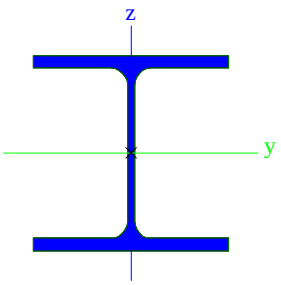
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	0	0
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.66e+05	9.66e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	4.75e+05	4.75e+05
A_L [m²/m], A_D [m²/m]	2.4925e+00	2.4925e+00

Afbeelding



Ligger DIN28		
Type	HEB280	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3140e-02	
A_y [m²], A_z [m²]	9.6422e-03	3.1403e-03
I_y [m⁴], I_z [m⁴]	1.9270e-04	6.5950e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3760e-03	4.7100e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.5340e-03	7.1760e-04
I_w [m⁶], I_t [m⁴]	1.1302e-06	1.4370e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	140	140
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3.61e+05	3.61e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.69e+05	1.69e+05
A_L [m²/m], A_D [m²/m]	1.6200e+00	1.6176e+00

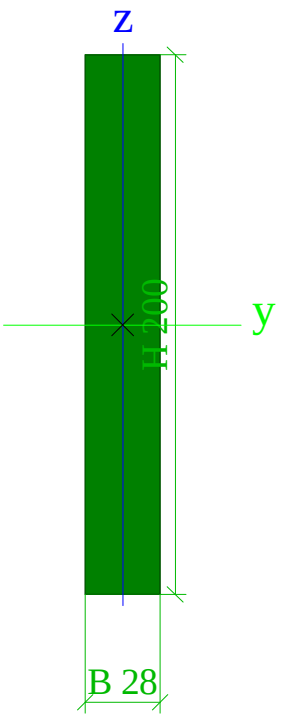
Afbeelding



Plaat 2x14x200		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06

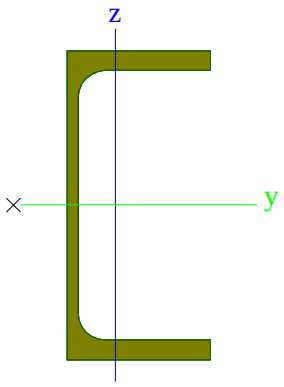
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.58e+04	6.58e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.21e+03	9.21e+03
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

Afbeelding



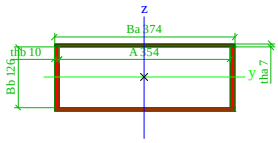
Diagionaal UPE14		
Type	UPE140	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	c	c
A [m²]	1.8400e-03	
A_y [m²], A_z [m²]	1.1000e-03	7.1956e-04
I_y [m⁴], I_z [m⁴]	5.9900e-06	7.8700e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	8.5600e-05	1.8200e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	9.8800e-05	3.2600e-05
I_w [m⁶], I_t [m⁴]	2.3372e-09	4.0500e-08
d_y [mm], d_z [mm]	-46	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	22	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.32e+04	2.32e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	7.66e+03	7.66e+03
A_L [m²/m], A_D [m²/m]	5.1970e-01	5.1965e-01

Afbeelding



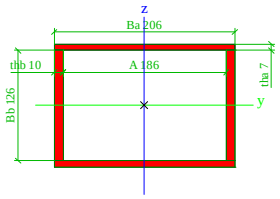
Bliksempiek-1		
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	7.7560e-03	
A_y [m²], A_z [m²]	5.0496e-03	2.7596e-03
I_y [m⁴], I_z [m⁴]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.2757e-04	9.4821e-04
I_w [m⁶], I_t [m⁴]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.00e+05	1.00e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.23e+05	2.23e+05
A_L [m²/m], A_D [m²/m]	1.0280e+00	1.9880e+00

Afbeelding



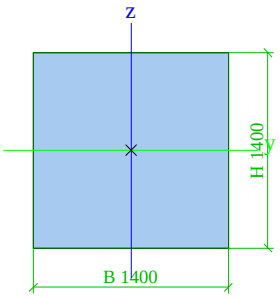
Bliksempiek-2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	5.4040e-03	
A_y [m²], A_z [m²]	2.8012e-03	2.7167e-03
I_y [m⁴], I_z [m⁴]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.7117e-04	3.9549e-04
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.37e+04	6.37e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.29e+04	9.29e+04
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

Afbeelding



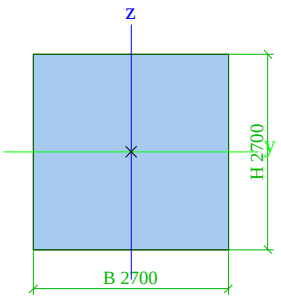
Poer boven-IA		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Afbeelding



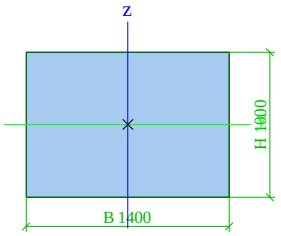
Poer onder-IA		
Type	Rechthoek	
Uitgebreid	2700; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	7.2900e+00	
A_y [m²], A_z [m²]	6.0750e+00	6.0750e+00
I_y [m⁴], I_z [m⁴]	4.4287e+00	4.4287e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.2805e+00	3.2805e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	4.9524e-02	7.4626e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	1350
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0800e+01	1.0800e+01

Afbeelding



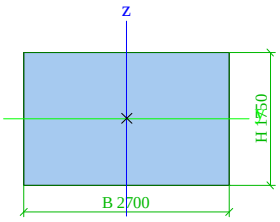
Poer boven-IB		
Type	Rechthoek	
Uitgebreid	1000; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.4000e+00	
A_y [m²], A_z [m²]	1.1667e+00	1.1667e+00
I_y [m⁴], I_z [m⁴]	1.1667e-01	2.2867e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.3333e-01	3.2667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	2.2616e-03	2.6127e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.8000e+00	4.8000e+00

Afbeelding



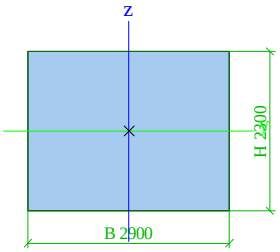
Poer onder-IB		
Type	Rechthoek	
Uitgebreid	1750; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	4.7250e+00	
A_y [m²], A_z [m²]	3.9375e+00	3.9375e+00
I_y [m⁴], I_z [m⁴]	1.2059e+00	2.8704e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3781e+00	2.1263e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2952e-01	2.8785e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	875
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	8.9000e+00	8.9000e+00

Afbeelding



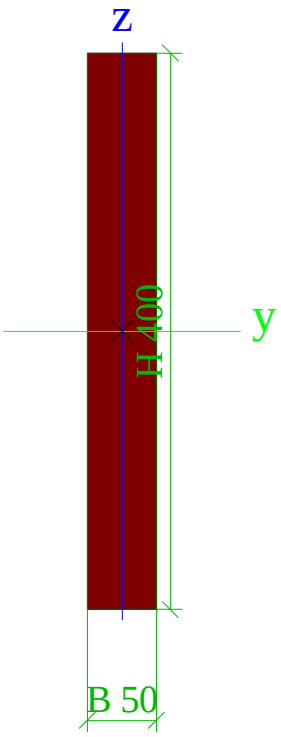
Poer onder-IV		
Type	Rechthoek	
Uitgebreid	2300; 2900	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	6.6700e+00	
A_y [m²], A_z [m²]	5.5583e+00	5.5583e+00
I_y [m⁴], I_z [m⁴]	2.9404e+00	4.6746e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.5568e+00	3.2238e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.3988e-01	6.0933e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1450	1150
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0400e+01	1.0400e+01

Afbeelding



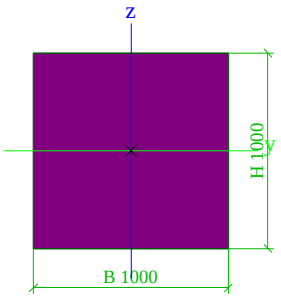
Dummy 400x50		
Type	Rechthoek	
Uitgebreid	400; 50	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.0000e-02	
A_y [m²], A_z [m²]	1.6667e-02	1.6667e-02
I_y [m⁴], I_z [m⁴]	2.6667e-04	4.1667e-06
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3333e-03	1.6667e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0000e-03	2.5000e-04
I_w [m⁶], I_t [m⁴]	5.0391e-08	1.5278e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	25	200
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.70e+05	4.70e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	5.88e+04	5.88e+04
A_L [m²/m], A_D [m²/m]	9.0000e-01	9.0000e-01

Afbeelding



Dummy beton		
Type	Rechthoek	
Uitgebreid	1000; 1000	
Onderdeelmateriaal	Dummy beton	
Bouwwijze	beton	
A [m²]	1.0000e+00	
A_y [m²], A_z [m²]	8.3333e-01	8.3333e-01
I_y [m⁴], I_z [m⁴]	8.3333e-02	8.3333e-02
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6667e-01	1.6667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2502e-04	1.4035e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	500	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.0000e+00	4.0000e+00

Afbeelding



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. staco	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie; X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie; Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1168	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1169	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1170	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1171	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1172	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1173	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1174	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1175	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1176	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1177	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1178	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1179	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1180	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1181	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1182	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1183	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1184	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1185	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1186	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1187	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1188	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1189	BC0	Variabel	EXCL MAST		Kort	Geen

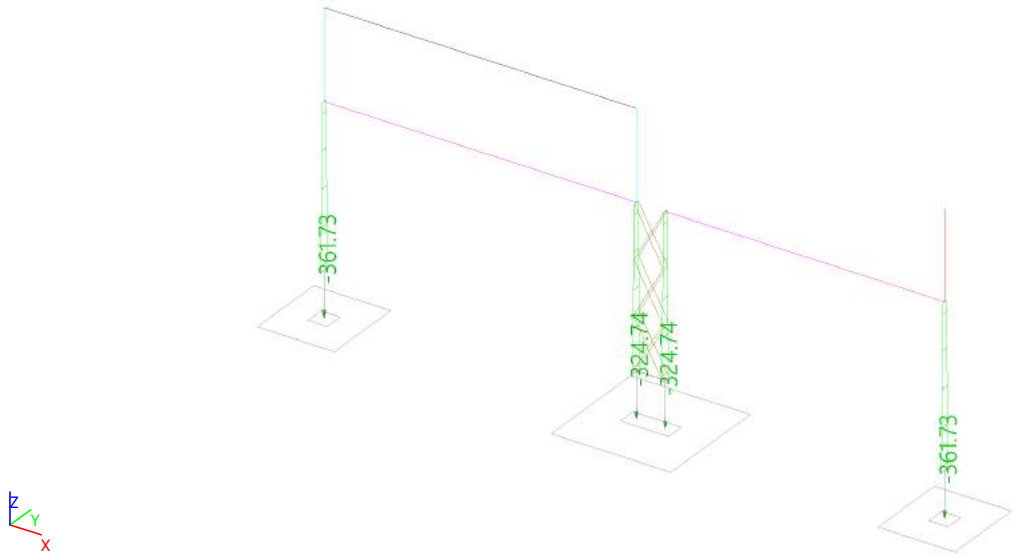
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1190	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1191	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1192	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1193	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1194	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1195	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1196	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1197	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1198	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1199	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1200	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1201	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1202	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1203	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1204	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1205	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1206	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1207	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1208	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1209	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1210	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1211	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1212	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1213	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1214	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1215	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1216	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1217	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1218	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1219	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1220	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1221	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1222	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1223	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1224	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1225	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1226	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1227	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1228	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1229	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1230	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1231	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1232	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1233	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1234	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1235	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1236	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1237	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1238	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

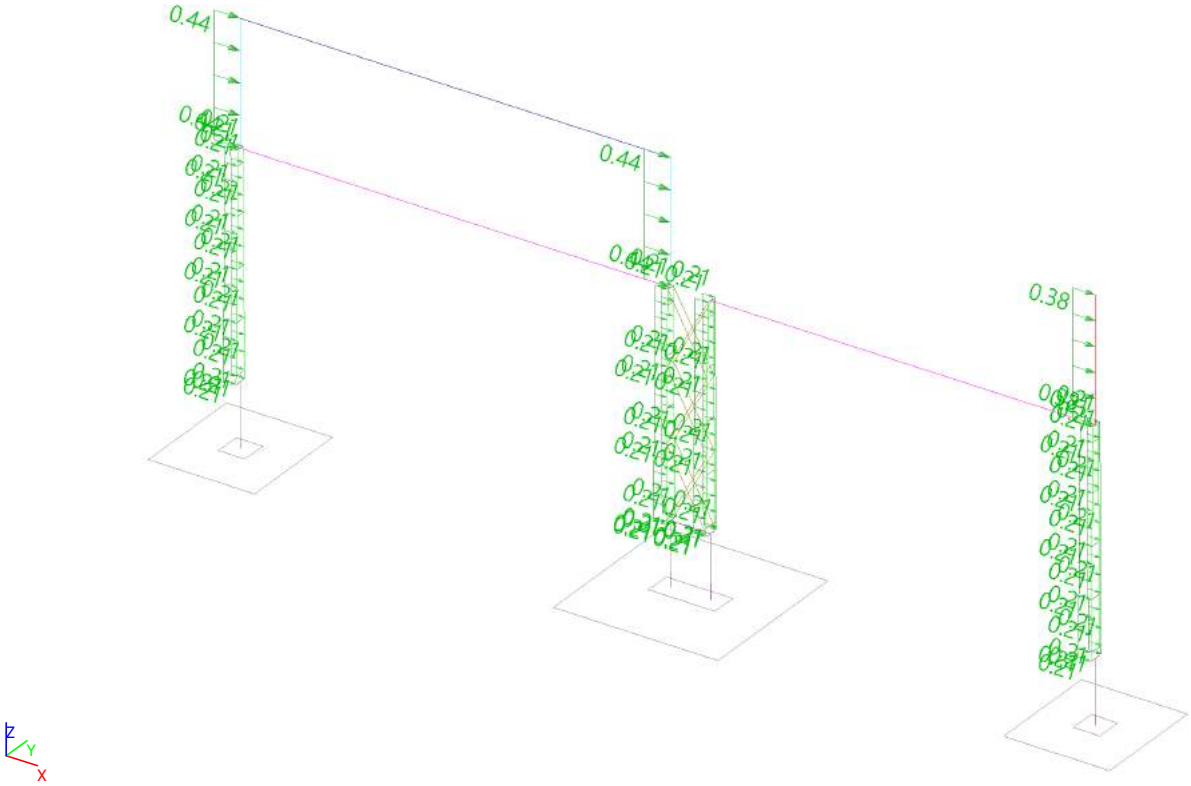
3.2. BG1: e.g. constructie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

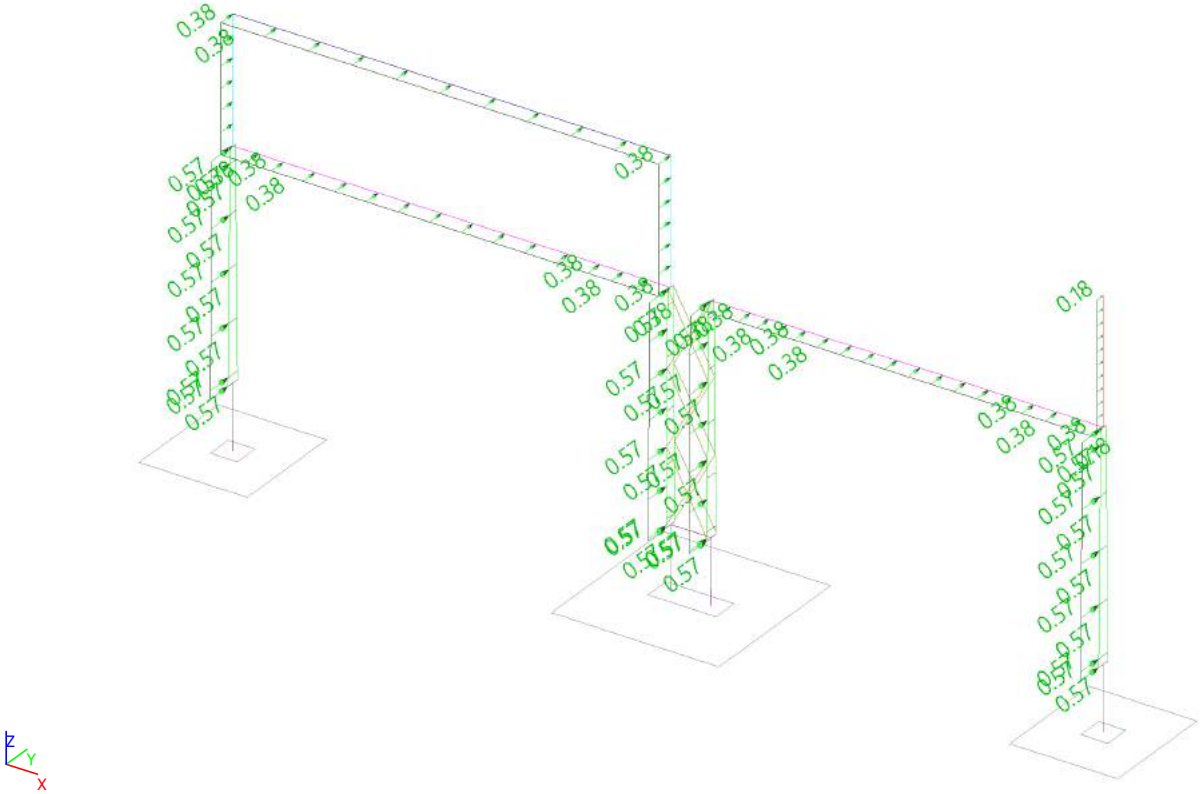
3.3. BG2: grond op poer



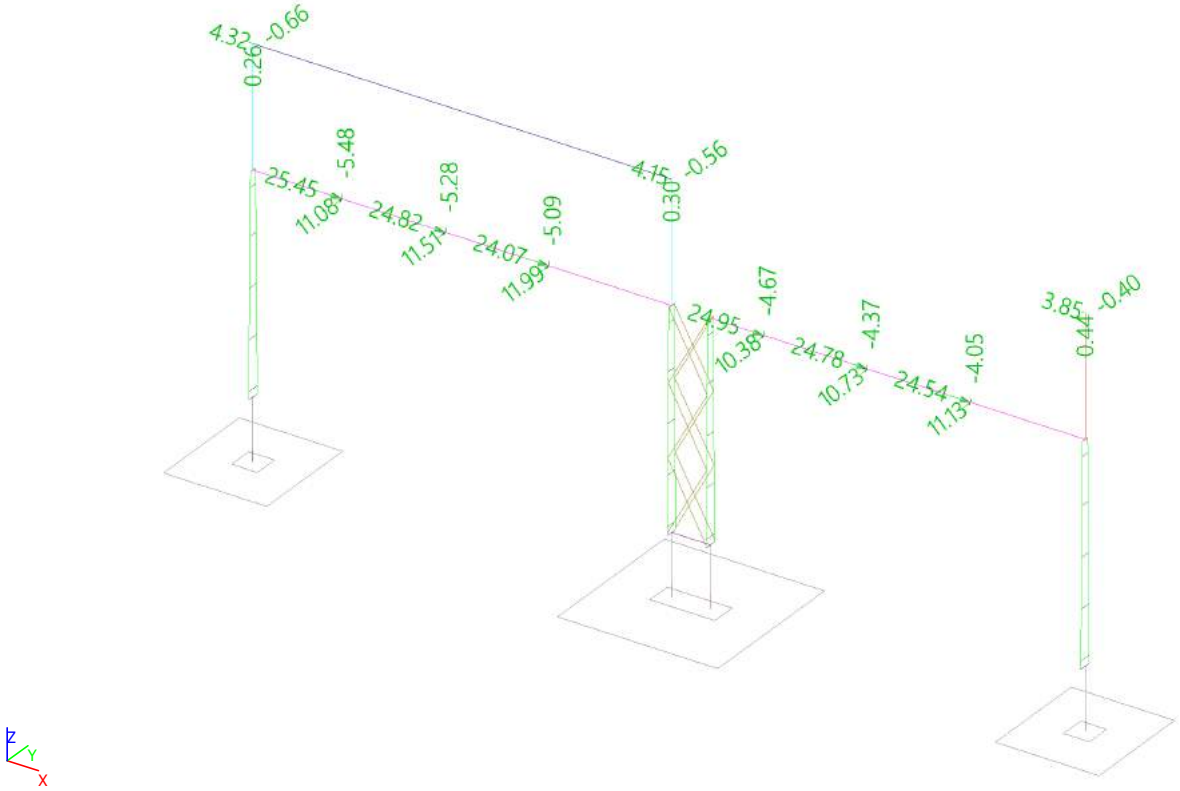
3.4. BG3: wind op constructie; X-richting



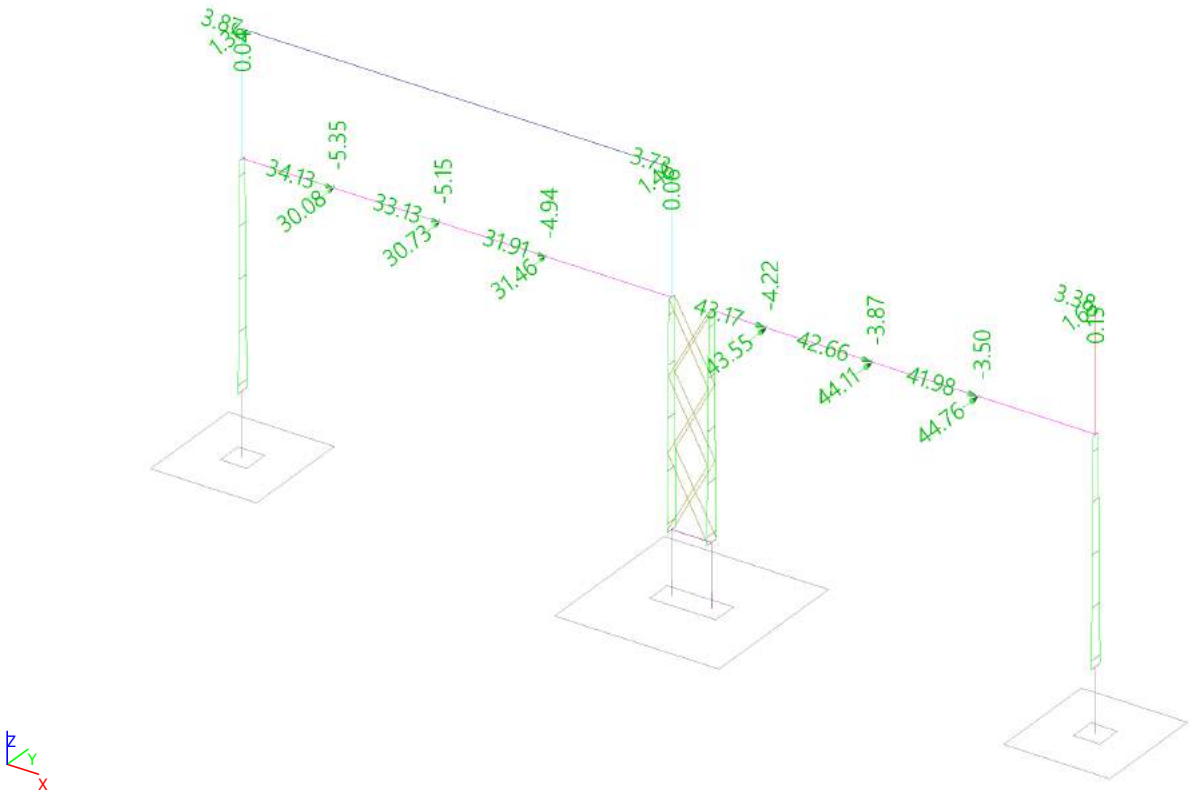
3.5. BG4: wind op constructie; Y-richting



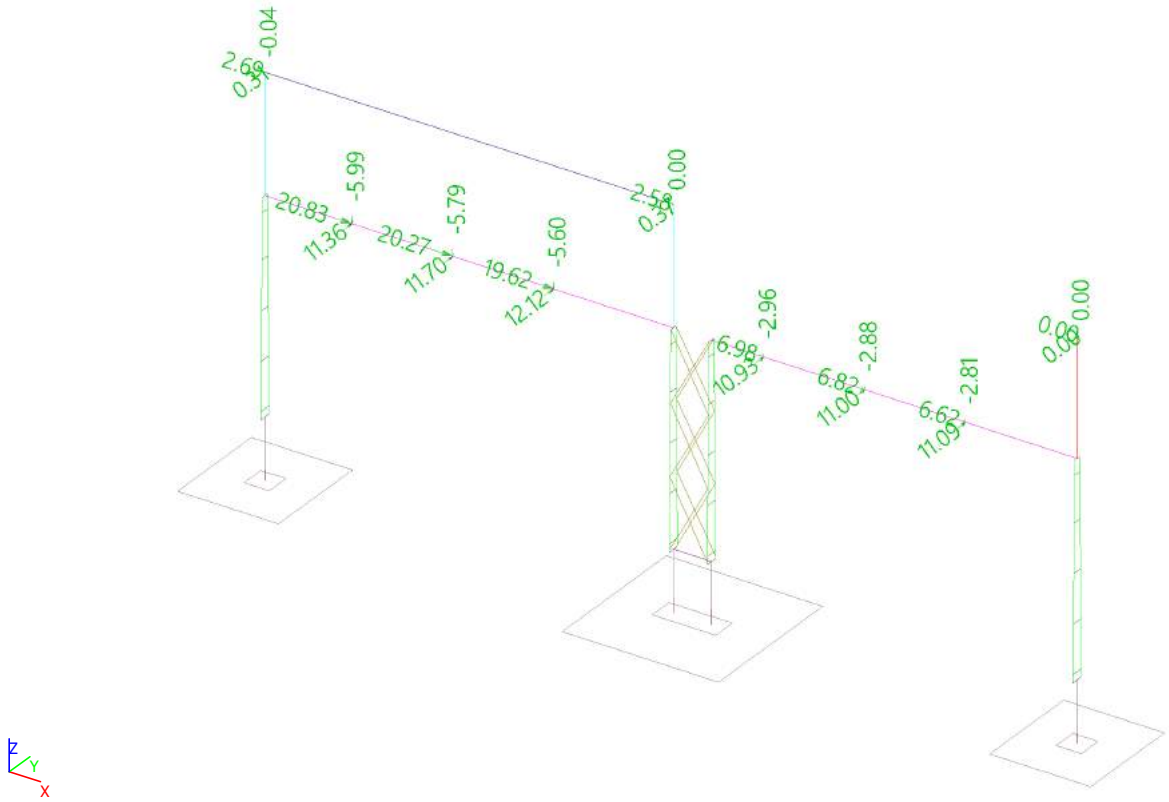
3.6. LC1001 / Totale waarde



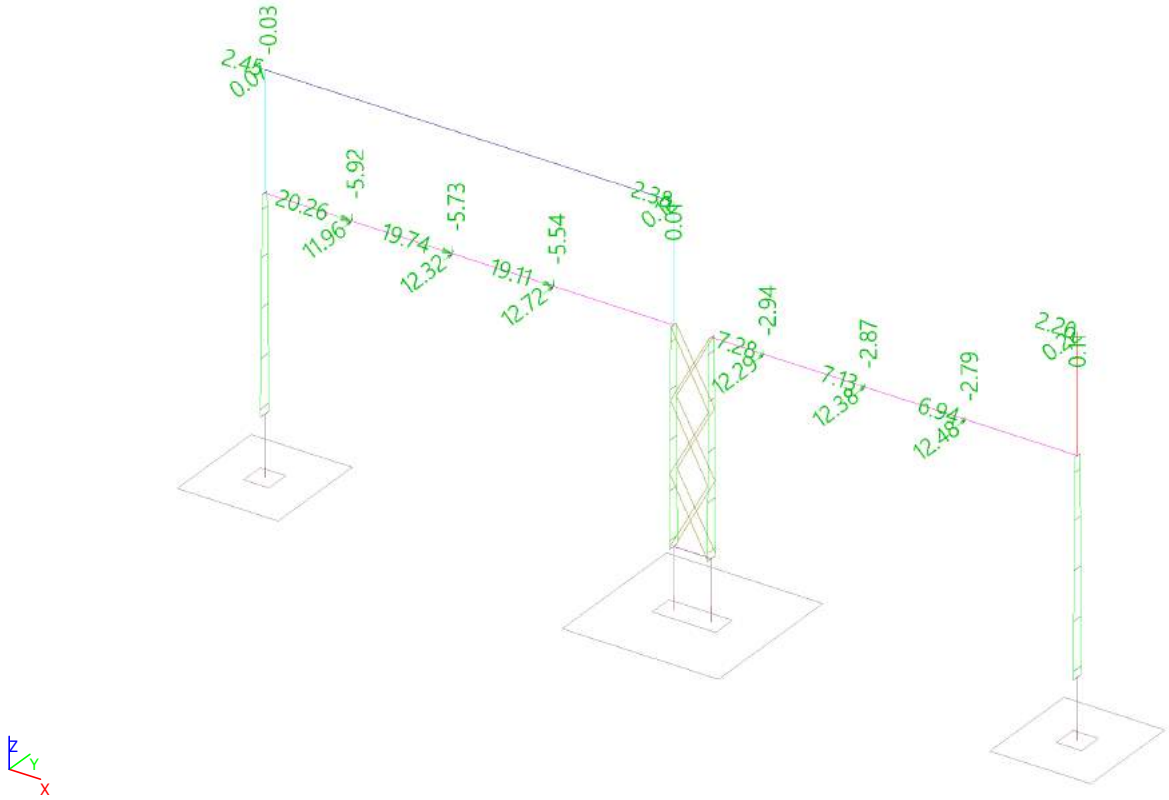
3.7. LC1080 / Totale waarde



3.8. LC1159 / Totale waarde



3.9. LC1238 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-1	Omhullend 1	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	1.40
			BG4 - wind op constructie; Y-richting	1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00
UGT-2	Omhullend 2	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	-1.40
			BG4 - wind op constructie; Y-richting	-1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00

3.11. Resultaatklasses

Naam	Omschrijving	Lijst
UGT	Sterkte en stabiliteit	UGT-1 - Omhullende - uiterst UGT-2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**7356**
Aantal 1D elementen	**198**
Aantal netknopen	**7806**
Aantal vergelijkingen	**46836**
Belastinggevallen	BG1
	BG3
	BG4
	BG2
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**7356**
Aantal 1D elementen	**198**
Aantal netknopen	**7806**
Aantal vergelijkingen	**46836**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**7356**
Aantal 1D elementen	**198**
Aantal netknopen	**7806**
Aantal vergelijkingen	**46836**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
	LC1168
	LC1169
	LC1170
	LC1171
	LC1172
	LC1173
	LC1174
	LC1175
	LC1176
	LC1177
	LC1178
	LC1179
	LC1180
	LC1181
	LC1182
	LC1183
	LC1184
	LC1185

Aantal 2D elementen	**7356**
Aantal 1D elementen	**198**
Aantal netknopen	**7806**
Aantal vergelijkingen	**46836**
	LC1186
	LC1187
	LC1188
	LC1189
	LC1190
	LC1191
	LC1192
	LC1193
	LC1194
	LC1195
	LC1196
	LC1197
	LC1198
	LC1199
	LC1200
	LC1201
	LC1202
	LC1203
	LC1204
	LC1205
	LC1206
	LC1207
	LC1208
	LC1209
	LC1210
	LC1211
	LC1212
	LC1213
	LC1214
	LC1215
	LC1216
	LC1217
	LC1218
	LC1219
	LC1220
	LC1221
	LC1222
	LC1223
	LC1224
	LC1225
	LC1226
	LC1227
	LC1228
	LC1229
	LC1230
	LC1231
	LC1232
	LC1233
	LC1234
	LC1235
	LC1236
	LC1237
	LC1238
Buigtheorie	Mindlin
Start berekening	17.06.2020 07:48
Einde berekening	17.06.2020 07:50

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	-0.0	-1948.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.1	1948.2

	[kN]	X	Y	Z
BG BG3	last	19.9	0.0	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-1.1	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-18.8	0.0	0.0
BG BG4	last	0.0	41.2	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-4.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	-37.0	-0.0
BG BG2	last	0.0	0.0	-1372.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	-0.0	1372.9
BG LC1001	last	160.9	65.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-150.8	-58.2	27.9
BG LC1002	last	238.5	229.2	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.9	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-223.5	-204.3	26.7
BG LC1003	last	223.6	126.4	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.1	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-209.5	-113.0	30.5
BG LC1004	last	134.2	78.3	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.4	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-125.7	-69.8	31.3
BG LC1005	last	125.0	63.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.9	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-117.2	-56.5	27.9
BG LC1006	last	231.4	228.8	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-216.9	-203.9	26.7
BG LC1007	last	205.6	124.9	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.7	-111.7	30.5
BG LC1008	last	127.1	77.9	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.1	-69.5	31.3
BG LC1009	last	136.2	50.2	-29.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-5.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-127.7	-45.0	29.1
BG LC1010	last	236.4	229.6	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.6	-204.6	26.8
BG LC1011	last	215.1	124.1	-30.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-13.5	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-201.5	-111.0	30.9
BG LC1012	last	131.8	78.1	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.5	-69.6	31.4
BG LC1013	last	117.6	44.5	-29.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.2	-40.0	29.1
BG LC1014	last	232.7	228.5	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-218.1	-203.7	26.8
BG LC1015	last	205.8	120.3	-30.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.9	-107.7	30.9
BG LC1016	last	128.1	77.0	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.0	-68.7	31.4
BG LC1017	last	142.6	82.4	-31.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.0	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-133.6	-73.3	31.9
BG LC1018	last	236.6	229.8	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.7	-204.8	27.0
BG LC1019	last	216.1	130.6	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.6	-14.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-202.5	-116.6	31.7
BG LC1020	last	132.3	78.7	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-124.0	-70.1	31.5
BG LC1021	last	119.1	86.2	-31.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-9.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.6	-76.6	31.9
BG LC1022	last	231.9	230.5	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-25.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-217.4	-205.4	27.0
BG LC1023	last	205.5	132.8	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-14.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.6	-118.6	31.7
BG LC1024	last	127.7	79.4	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-119.6	-70.8	31.5
BG LC1025	last	118.1	67.9	-32.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-7.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.7	-60.5	32.0
BG LC1026	last	233.6	230.2	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.0	-205.1	27.0
BG LC1027	last	207.4	128.4	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-13.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.3	-114.7	31.7
BG LC1028	last	129.1	78.6	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.9	-70.0	31.5
BG LC1029	last	122.9	65.0	-32.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.1	-57.9	32.0
BG LC1030	last	234.5	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.9	-204.6	27.0
BG LC1031	last	209.4	126.6	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.2	-13.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-196.2	-113.2	31.7
BG LC1032	last	130.0	78.0	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.8	-69.5	31.5
BG LC1033	last	136.4	55.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-5.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-127.8	-49.6	18.4
BG LC1034	last	209.9	238.6	-19.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.1	-26.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-196.8	-212.6	19.6
BG LC1035	last	193.4	120.2	-22.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.2	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-181.2	-107.5	22.3
BG LC1036	last	97.9	65.9	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.2	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-91.8	-58.8	23.6
BG LC1037	last	100.4	53.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-94.1	-47.9	18.4
BG LC1038	last	202.8	238.2	-19.6

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.7	-25.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-190.1	-212.3	19.6
BG LC1039	last	175.4	118.6	-22.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-12.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.4	-106.1	22.3
BG LC1040	last	90.9	65.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.1	-58.4	23.6
BG LC1041	last	103.5	29.7	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.5	-2.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-97.0	-26.7	20.0
BG LC1042	last	207.5	239.1	-19.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-26.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.5	-213.0	19.8
BG LC1043	last	183.6	116.8	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.6	-12.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-172.1	-104.5	22.7
BG LC1044	last	94.8	64.8	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.0	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-88.8	-57.8	23.7
BG LC1045	last	84.9	24.0	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-2.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.5	-21.7	20.0
BG LC1046	last	203.9	237.9	-19.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.8	-25.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-191.1	-212.1	19.8
BG LC1047	last	174.4	113.0	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-11.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.4	-101.2	22.7
BG LC1048	last	91.1	63.7	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.4	-56.8	23.7
BG LC1049	last	113.0	80.9	-24.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.1	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-105.9	-71.9	24.0
BG LC1050	last	207.5	240.0	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.5	-213.9	20.0
BG LC1051	last	184.9	126.4	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.6	-13.5	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-173.2	-112.8	23.8
BG LC1052	last	95.7	67.0	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.0	-7.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-89.6	-59.7	23.9
BG LC1053	last	89.6	84.7	-24.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-9.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.9	-75.2	24.0
BG LC1054	last	202.9	240.8	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.7	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-190.2	-214.5	20.0
BG LC1055	last	174.2	128.6	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.3	-114.8	23.8
BG LC1056	last	91.0	67.7	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.3	-60.4	23.9
BG LC1057	last	83.2	57.3	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.0	-51.0	24.2
BG LC1058	last	204.4	240.2	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.8	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-191.6	-214.0	20.0
BG LC1059	last	175.3	122.7	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.2	-109.6	23.9
BG LC1060	last	92.0	66.1	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.2	-58.9	23.9
BG LC1061	last	88.0	54.5	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-6.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.4	-48.5	24.2
BG LC1062	last	205.4	239.6	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-26.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.5	-213.5	20.0
BG LC1063	last	177.3	120.9	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.2	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-166.1	-108.0	23.9
BG LC1064	last	92.9	65.5	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.1	-58.4	23.9

	[kN]	X	Y	Z
BG LC1065	last	100.1	57.1	-29.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.8	-50.9	29.4
BG LC1066	last	100.2	57.0	-29.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.9	-50.9	29.5
BG LC1067	last	100.0	57.1	-29.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.8	-50.9	29.4
BG LC1068	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1069	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1070	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1071	last	91.8	57.0	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.0	-50.9	27.3
BG LC1072	last	91.6	57.2	-27.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.8	-51.0	27.2
BG LC1073	last	91.4	57.4	-27.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.7	-51.1	27.1
BG LC1074	last	90.9	57.1	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.9	27.5
BG LC1075	last	90.9	56.9	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.8	27.6
BG LC1076	last	90.9	56.8	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.6	27.8
BG LC1077	last	129.4	66.4	-37.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.3	-59.2	37.4
BG LC1078	last	93.8	54.1	-24.6
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-5.9	-5.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.9	-48.3	24.6
BG LC1079	last	138.4	63.7	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.7	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-129.7	-56.9	30.5
BG LC1080	last	238.0	229.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.9	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-223.1	-204.2	26.8
BG LC1081	last	187.8	124.5	-29.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.8	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-176.0	-111.1	29.6
BG LC1082	last	133.7	78.3	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.4	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-125.3	-69.8	31.3
BG LC1083	last	117.2	62.6	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-109.8	-55.9	30.5
BG LC1084	last	231.4	228.8	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-216.9	-203.9	26.8
BG LC1085	last	174.8	123.5	-29.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.8	-110.3	29.6
BG LC1086	last	127.2	78.0	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.2	-69.5	31.3
BG LC1087	last	126.9	58.4	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.9	-52.2	31.0
BG LC1088	last	236.2	229.7	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.4	-204.7	26.8
BG LC1089	last	181.7	122.7	-29.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.4	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-170.3	-109.6	29.8
BG LC1090	last	131.6	78.2	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.3	-69.7	31.4
BG LC1091	last	115.9	55.1	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-5.8	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-108.6	-49.2	31.0
BG LC1092	last	232.8	228.6	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-218.2	-203.8	26.8
BG LC1093	last	175.0	120.3	-29.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.0	-107.4	29.8
BG LC1094	last	128.2	77.1	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.1	-68.8	31.4
BG LC1095	last	129.8	70.0	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.7	-62.3	32.1
BG LC1096	last	236.3	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.5	-204.6	27.0
BG LC1097	last	182.7	127.4	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.5	-13.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-171.3	-113.6	30.4
BG LC1098	last	132.1	78.7	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.8	-70.1	31.5
BG LC1099	last	116.0	72.2	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-7.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-108.7	-64.3	32.1
BG LC1100	last	232.0	230.3	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-217.5	-205.2	27.0
BG LC1101	last	174.8	128.9	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-14.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.8	-115.0	30.4
BG LC1102	last	127.8	79.3	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.8	-70.7	31.5
BG LC1103	last	117.4	64.8	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.0	-57.8	32.1
BG LC1104	last	233.6	230.1	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.0	-205.1	27.0
BG LC1105	last	176.3	125.9	-30.4

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-13.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-165.2	-112.3	30.4
BG LC1106	last	129.1	78.5	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.0	-70.0	31.5
BG LC1107	last	120.2	63.2	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-112.7	-56.3	32.1
BG LC1108	last	234.5	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.8	-204.6	27.0
BG LC1109	last	177.9	124.7	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.2	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-166.7	-111.3	30.4
BG LC1110	last	130.0	78.0	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.8	-69.6	31.5
BG LC1111	last	92.3	65.7	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.4	-58.5	23.3
BG LC1112	last	172.8	202.6	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.0	-180.8	20.7
BG LC1113	last	130.2	118.3	-22.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-122.0	-105.6	22.6
BG LC1114	last	90.9	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.1	-68.7	23.7
BG LC1115	last	78.5	65.5	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.5	-58.4	23.3
BG LC1116	last	168.6	202.5	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.0	-180.8	20.7
BG LC1117	last	121.9	118.1	-22.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.3	-105.4	22.6
BG LC1118	last	86.7	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.3	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.2	-68.7	23.7
BG LC1119	last	84.6	61.3	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.2	-54.7	23.5
BG LC1120	last	171.6	202.9	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-160.9	-181.1	20.7
BG LC1121	last	126.2	116.9	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.2	-104.4	22.7
BG LC1122	last	89.5	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.8	-68.6	23.7
BG LC1123	last	77.7	59.5	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.8	-53.1	23.5
BG LC1124	last	169.5	202.4	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.9	-180.6	20.7
BG LC1125	last	122.1	115.5	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.4	-103.2	22.7
BG LC1126	last	87.3	76.4	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.8	-68.1	23.7
BG LC1127	last	87.4	69.0	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-7.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.9	-61.4	24.2
BG LC1128	last	171.9	202.8	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.1	-181.1	20.8
BG LC1129	last	127.3	120.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.3	-107.1	23.1
BG LC1130	last	90.0	77.3	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.3	-68.9	23.8
BG LC1131	last	77.8	70.6	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.8	-62.9	24.2

	[kN]	X	Y	Z
BG LC1132	last	168.9	203.4	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.3	-181.5	20.8
BG LC1133	last	121.9	121.1	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.2	-108.1	23.1
BG LC1134	last	87.0	77.8	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.5	-69.4	23.8
BG LC1135	last	78.7	65.2	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.7	-58.1	24.2
BG LC1136	last	170.0	203.2	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-159.3	-181.4	20.8
BG LC1137	last	122.9	119.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.1	-106.2	23.1
BG LC1138	last	87.9	77.2	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.3	-68.8	23.8
BG LC1139	last	80.8	64.1	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.7	-57.1	24.2
BG LC1140	last	170.7	202.9	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-160.0	-181.1	20.8
BG LC1141	last	124.1	118.2	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-116.2	-105.5	23.1
BG LC1142	last	88.5	76.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.9	-68.5	23.8
BG LC1143	last	91.1	65.4	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.4	-58.3	25.2
BG LC1144	last	157.1	182.3	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.3	-162.5	23.4
BG LC1145	last	123.3	110.2	-25.2
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-7.7	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.6	-98.3	25.2
BG LC1146	last	87.8	74.6	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.3	-66.5	25.7
BG LC1147	last	76.3	65.6	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-71.6	-58.5	25.2
BG LC1148	last	152.6	182.4	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.5	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-143.0	-162.5	23.4
BG LC1149	last	114.3	110.2	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.2	-98.3	25.2
BG LC1150	last	83.2	74.7	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.0	-66.6	25.7
BG LC1151	last	82.6	61.1	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-77.5	-54.5	25.5
BG LC1152	last	155.8	182.7	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.0	-162.8	23.4
BG LC1153	last	118.9	108.8	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-11.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.4	-97.0	25.3
BG LC1154	last	86.2	74.4	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.8	-66.4	25.8
BG LC1155	last	75.6	59.3	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.7	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-70.8	-53.0	25.5
BG LC1156	last	153.6	182.2	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-144.0	-162.4	23.4
BG LC1157	last	114.7	107.5	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-11.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.5	-95.9	25.3
BG LC1158	last	84.0	73.9	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.0	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-78.7	-65.9	25.8
BG LC1159	last	86.4	68.9	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-7.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.0	-61.4	26.1
BG LC1160	last	156.2	182.6	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.4	-162.7	23.5
BG LC1161	last	120.5	111.9	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-12.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-112.9	-99.8	25.6
BG LC1162	last	86.9	74.8	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.4	-66.7	25.8
BG LC1163	last	75.9	70.8	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.7	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-71.2	-63.1	26.1
BG LC1164	last	152.9	183.2	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-20.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-143.4	-163.2	23.5
BG LC1165	last	114.4	113.2	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-12.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.3	-101.0	25.6
BG LC1166	last	83.6	75.4	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.4	-67.2	25.8
BG LC1167	last	76.8	65.0	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.0	-58.0	26.1
BG LC1168	last	154.1	183.1	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-20.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-144.5	-163.1	23.5
BG LC1169	last	115.4	110.8	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-12.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-108.2	-98.8	25.7
BG LC1170	last	84.5	74.7	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.2	-66.6	25.8
BG LC1171	last	79.2	63.9	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-74.3	-57.0	26.1
BG LC1172	last	154.9	182.7	-23.5

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-145.2	-162.8	23.5
BG LC1173	last	116.8	110.0	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-109.5	-98.1	25.7
BG LC1174	last	85.3	74.3	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.0	-66.3	25.8
BG LC1175	last	95.6	65.4	-23.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.1	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-89.5	-58.3	23.2
BG LC1176	last	176.7	203.9	-20.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-165.6	-181.9	20.6
BG LC1177	last	135.3	118.0	-22.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-126.7	-105.4	22.5
BG LC1178	last	93.5	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.6	-68.8	23.7
BG LC1179	last	81.2	65.1	-23.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-76.0	-58.1	23.2
BG LC1180	last	172.3	203.9	-20.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-22.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.4	-181.8	20.6
BG LC1181	last	126.3	117.6	-22.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.3	-105.1	22.5
BG LC1182	last	89.1	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.4	-68.7	23.7
BG LC1183	last	87.3	60.8	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.8	-54.3	23.4
BG LC1184	last	175.4	204.3	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.4	-182.2	20.7
BG LC1185	last	130.8	116.5	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-12.4	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-122.6	-104.0	22.7
BG LC1186	last	92.0	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.2	-68.7	23.7
BG LC1187	last	80.1	58.8	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.0	-52.5	23.4
BG LC1188	last	173.2	203.7	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.3	-181.7	20.7
BG LC1189	last	126.4	114.9	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.4	-102.7	22.7
BG LC1190	last	89.8	76.4	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.1	-68.1	23.7
BG LC1191	last	90.1	69.3	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.4	-61.7	24.2
BG LC1192	last	175.6	204.3	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.6	-182.2	20.8
BG LC1193	last	131.9	120.2	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-13.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.5	-107.2	23.1
BG LC1194	last	92.5	77.4	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.6	-69.0	23.8
BG LC1195	last	80.2	71.0	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.1	-63.2	24.2
BG LC1196	last	172.6	204.8	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.7	-182.6	20.8
BG LC1197	last	126.1	121.4	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.1	-108.3	23.1
BG LC1198	last	89.4	77.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.8	-69.5	23.8

	[kN]	X	Y	Z
BG LC1199	last	81.0	65.2	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.8	-58.1	24.2
BG LC1200	last	173.7	204.6	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.8	-182.5	20.8
BG LC1201	last	127.1	119.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.1	-106.2	23.1
BG LC1202	last	90.3	77.3	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.6	-68.9	23.8
BG LC1203	last	83.2	64.1	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-77.9	-57.1	24.2
BG LC1204	last	174.4	204.3	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.4	-182.2	20.8
BG LC1205	last	128.3	118.1	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.2	-105.4	23.1
BG LC1206	last	91.0	76.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-68.6	23.8
BG LC1207	last	94.0	65.2	-25.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-88.1	-58.2	25.0
BG LC1208	last	160.5	184.0	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-150.5	-163.7	23.3
BG LC1209	last	127.9	110.1	-24.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.8	-98.3	24.9
BG LC1210	last	90.1	74.8	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.5	-66.7	25.6
BG LC1211	last	78.8	65.3	-25.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.9	-58.3	25.0
BG LC1212	last	155.8	184.0	-23.3
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-9.8	-20.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.1	-163.7	23.3
BG LC1213	last	118.4	110.0	-24.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-11.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.0	-98.1	24.9
BG LC1214	last	85.5	74.8	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.1	-66.7	25.6
BG LC1215	last	85.2	60.6	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.8	-54.2	25.3
BG LC1216	last	159.1	184.4	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-149.2	-164.1	23.3
BG LC1217	last	123.1	108.6	-25.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-11.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.4	-96.9	25.1
BG LC1218	last	88.5	74.6	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.9	-66.5	25.6
BG LC1219	last	77.8	58.8	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.9	-52.6	25.3
BG LC1220	last	156.9	183.8	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.0	-163.6	23.3
BG LC1221	last	118.5	107.1	-25.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-11.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.1	-95.6	25.1
BG LC1222	last	86.2	74.0	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.8	-66.0	25.6
BG LC1223	last	88.7	69.4	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-7.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.2	-61.8	26.0
BG LC1224	last	159.4	184.3	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-149.5	-164.0	23.4
BG LC1225	last	124.5	112.4	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.2	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-116.7	-100.2	25.5
BG LC1226	last	89.1	75.1	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.5	-66.9	25.7
BG LC1227	last	78.1	71.3	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.2	-63.5	26.0
BG LC1228	last	156.2	184.9	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.4	-164.5	23.4
BG LC1229	last	118.3	113.7	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-12.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.9	-101.3	25.5
BG LC1230	last	85.8	75.7	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.5	-67.4	25.7
BG LC1231	last	78.9	65.2	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.9	-58.1	26.0
BG LC1232	last	157.4	184.7	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.5	-164.4	23.4
BG LC1233	last	119.3	111.0	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-12.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.8	-99.0	25.5
BG LC1234	last	86.7	74.9	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.3	-66.8	25.7
BG LC1235	last	81.3	64.0	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-76.2	-57.0	26.0
BG LC1236	last	158.1	184.4	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.9	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-148.2	-164.1	23.4
BG LC1237	last	120.7	110.1	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-113.1	-98.2	25.5
BG LC1238	last	87.5	74.5	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.0	-66.5	25.7

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/16	FC1	K6	S246	**-4.01**	-49.84	59.93	422.36	**-25.36**	-0.52
UGT-2/23	FC1	K6	S246	**4.26**	-16.75	63.51	137.81	-4.32	-0.18
UGT-1/5	FC1	K6	S246	-1.09	**-67.98**	59.05	**574.86**	-18.76	-0.54
UGT-2/7	FC1	K6	S246	1.47	**17.52**	55.43	**-144.24**	0.65	**0.02**
UGT-1/24	FC1	K6	S246	-1.02	-0.01	**54.85**	0.05	-1.64	0.00
UGT-2/4	FC1	K6	S246	3.32	-17.88	**65.02**	148.60	-9.74	-0.19
UGT-2/25	FC1	K6	S246	4.03	0.01	56.04	-0.05	**3.33**	0.00
UGT-1/13	FC1	K6	S246	-1.33	-67.78	60.74	570.55	-21.96	**-0.54**

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/16	FC2	K8	S244	**-92.77**	-46.35	**-1277.27**	361.39	**-285.38**	4.85
UGT-2/25	FC2	K8	S244	**47.06**	0.15	**156.09**	0.67	**34.19**	0.11
UGT-1/26	FC2	K8	S244	-42.49	**-70.15**	-755.49	432.34	-168.43	**9.51**
UGT-2/7	FC2	K8	S244	35.67	**20.74**	59.10	**-108.34**	12.21	**-3.15**
UGT-1/5	FC2	K8	S244	-64.26	-66.80	-996.57	**487.84**	-222.41	8.01

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/16	FC3	K438	S250	**-159.75**	-76.55	**1403.77**	675.53	**-310.79**	-11.33
UGT-2/25	FC3	K438	S250	**-22.87**	-0.15	**-45.03**	3.30	**11.09**	-0.18
UGT-1/18	FC3	K438	S250	-131.65	**-91.02**	1126.90	812.71	-248.62	-13.19
UGT-2/7	FC3	K438	S250	-34.36	**7.75**	52.26	**-95.76**	-10.87	**0.34**
UGT-1/5	FC3	K438	S250	-130.92	-90.98	1119.03	**813.53**	-246.86	-13.18
UGT-1/27	FC3	K438	S250	-115.92	-87.47	950.19	735.84	-209.04	**-13.47**

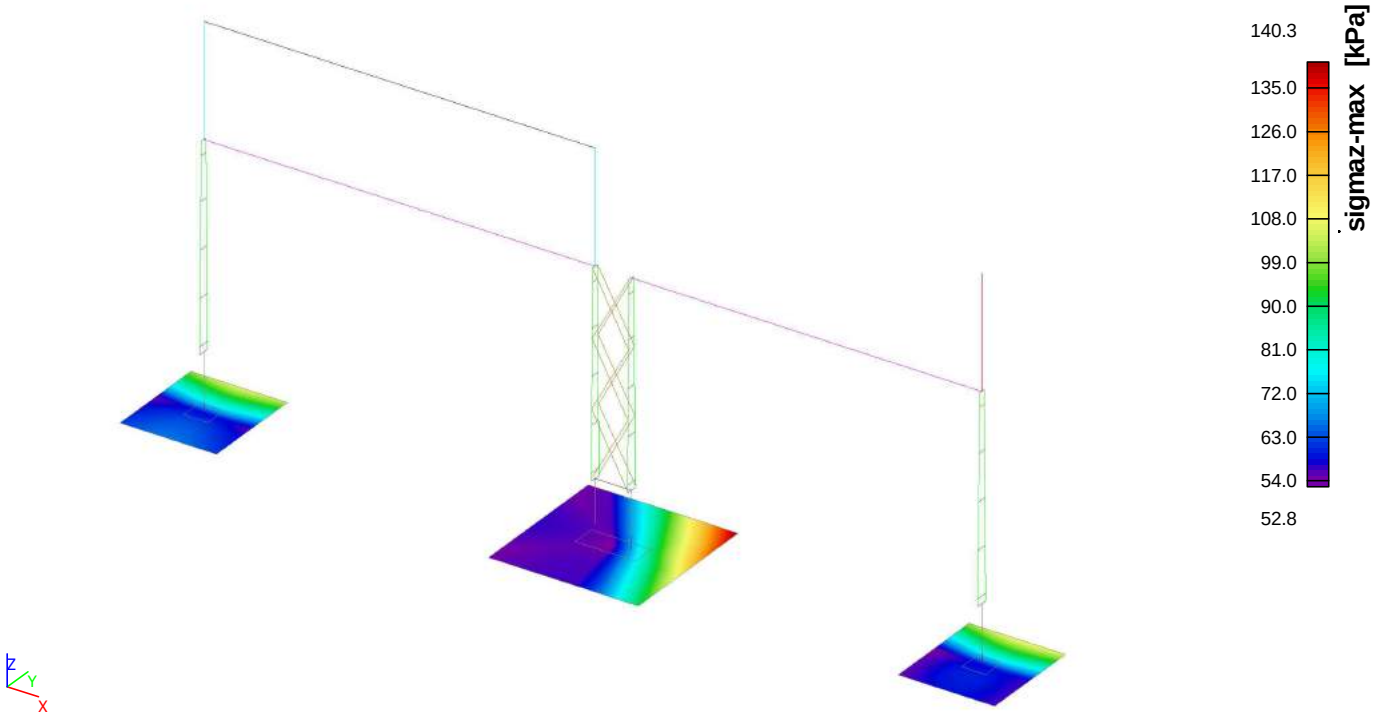
5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/28	FC4	K513	S322	**-9.79**	-56.58	56.83	484.25	-28.65	1.68
UGT-2/25	FC4	K513	S322	**-0.38**	0.00	**49.40**	4.00	**1.26**	**0.02**
UGT-1/5	FC4	K513	S322	-6.61	**-72.72**	55.02	**596.47**	-22.33	1.75
UGT-2/7	FC4	K513	S322	-2.78	**11.71**	49.71	**-68.77**	-1.28	0.02
UGT-1/9	FC4	K513	S322	-8.76	-13.48	**58.25**	116.53	-17.86	0.63
UGT-1/16	FC4	K513	S322	-9.78	-56.46	56.81	482.88	**-28.85**	1.68
UGT-1/29	FC4	K513	S322	-9.04	-60.97	55.35	523.29	-25.05	**1.75**

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren; UGT



7. Staafkrachten

7.1. Staafkrachten kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S2..S4, S248, S251..S266, S275, S276, S282, S283, S292..S297
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S248	Kolom INP45 - INP450	305	UGT-1/5	**-1099.84**	19.85	-0.05	-0.13	8.61	19.40
S265	Kolom INP45 - INP450	0	UGT-1/22	**1455.07**	-10.18	58.52	-0.66	2.35	11.52
S265	Kolom INP45 - INP450	80	UGT-2/30	715.20	**-25.17**	57.60	-0.70	6.58	-3.06
S266	Kolom INP45 - INP450	80	UGT-1/22	362.77	**138.96**	38.68	1.71	3.85	**42.22**
S263	Kolom INP45 - INP450	2756	UGT-2/31	245.23	14.21	**-19.17**	-0.39	-45.95	-1.69
S265	Kolom INP45 - INP450	80	UGT-1/16	1302.31	-18.39	**67.98**	-0.81	7.77	5.82
S275	Kolom INP45 - INP450	0	UGT-1/22	-169.76	20.85	1.20	**-2.07**	9.88	10.05
S2	Kolom INP45 - INP450	0	UGT-1/16	93.91	13.46	-3.85	**2.04**	22.29	5.96
S261	Kolom INP45 - INP450	0	UGT-2/32	515.70	14.22	18.26	0.42	**-47.00**	-7.74
S262	Kolom INP45 - INP450	0	UGT-1/33	330.06	14.22	-13.42	-0.23	**53.76**	-6.65
S257	Kolom INP45 - INP450	0	UGT-1/13	-381.93	26.80	0.51	-0.22	7.39	**-23.32**

7.2. Staafkrachten kolom INP45 versterkt; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S272, S273, S284, S285, S298..S303
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S273	Kolom-samengesteld - I + Ir	80	UGT-1/22	**-1664.61**	-72.24	71.92	-3.81	7.68	92.61
S273	Kolom-samengesteld - I + Ir	0	UGT-2/7	**106.29**	-0.22	-8.40	0.22	0.18	-18.88
S273	Kolom-samengesteld - I + Ir	80	UGT-1/16	-1576.58	**-73.69**	68.40	-3.86	7.85	71.28
S284	Kolom-samengesteld - I + Ir	565	UGT-1/5	-391.01	**68.51**	-18.83	-2.31	11.21	-73.06
S284	Kolom-samengesteld - I + Ir	2360	UGT-1/34	-355.50	41.56	**-29.95**	1.74	-28.98	4.02
S273	Kolom-samengesteld - I + Ir	0	UGT-1/22	-1664.40	-72.23	**71.92**	-3.81	1.92	98.39
S273	Kolom-samengesteld - I + Ir	0	UGT-1/16	-1576.37	-73.69	68.37	**-3.86**	2.38	77.17
S272	Kolom-samengesteld - I + Ir	0	UGT-1/3	-917.44	26.76	-3.68	**2.05**	-1.11	13.01
S284	Kolom-samengesteld - I + Ir	2756	UGT-1/35	-356.39	41.50	-29.93	1.74	**-40.86**	20.50
S284	Kolom-samengesteld - I + Ir	0	UGT-1/36	-258.00	46.87	-11.67	-2.86	**20.74**	-66.02
S284	Kolom-samengesteld - I + Ir	565	UGT-1/18	-391.53	68.49	-18.74	-2.30	11.18	**-73.08**
S272	Kolom-samengesteld - I + Ir	2532	UGT-1/5	-1453.60	59.54	8.06	0.41	-0.28	**160.62**

7.3. Staafkrachten kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S329, S330
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S330	Kolom DIE36 - HEA360	0	UGT-1/37	**-17.99**	14.92	0.00	-0.06	-0.01	-33.45
S329	Kolom DIE36 - HEA360	4651	UGT-1/3	**-7.20**	-3.44	-1.47	0.16	0.01	-4.83
S329	Kolom DIE36 - HEA360	0	UGT-2/38	-17.16	**-13.02**	0.00	0.08	0.00	31.36
S330	Kolom DIE36 - HEA360	0	UGT-1/3	-17.64	**22.29**	-1.32	-0.14	6.13	**-53.95**
S329	Kolom DIE36 - HEA360	0	UGT-2/39	-13.70	-4.83	**-8.75**	0.19	**34.96**	13.04
S330	Kolom DIE36 - HEA360	0	UGT-1/5	-16.29	13.88	**8.88**	-0.16	**-35.59**	-32.73
S330	Kolom DIE36 - HEA360	0	UGT-2/40	-16.46	14.93	-5.24	**-0.26**	18.60	-35.84
S329	Kolom DIE36 - HEA360	0	UGT-2/41	-14.22	-7.50	-5.34	**0.29**	19.08	19.74
S330	Kolom DIE36 - HEA360	4651	UGT-1/3	-11.75	19.43	-1.32	-0.14	-0.01	**43.08**

7.4. Staafkrachten ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S33, S40, S404, S406
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S404	Ligger DIE34 - HE340A	0	UGT-1/1	**-97.28**	-21.22	-43.80	-0.03	97.95	-4.23
S40	Ligger DIE34 - HE340A	0	UGT-1/2	**130.01**	17.32	77.59	0.00	-16.59	-20.43
S404	Ligger DIE34 - HE340A	2625	UGT-1/3	-97.17	**-26.22**	-28.72	-0.02	-10.10	**-73.78**
S33	Ligger DIE34 - HE340A	0	UGT-2/4	13.71	**26.04**	18.02	-0.01	-0.28	-46.94
S406	Ligger DIE34 - HE340A	2560	UGT-1/5	-3.96	-17.19	**-62.65**	0.00	-1.75	-45.24
S40	Ligger DIE34 - HE340A	0	UGT-1/5	109.97	15.74	**87.19**	0.00	-17.84	-18.63
S33	Ligger DIE34 - HE340A	0	UGT-1/6	7.35	22.87	52.79	**-0.04**	-0.73	-35.89
S33	Ligger DIE34 - HE340A	0	UGT-2/7	7.94	15.97	-4.07	**0.01**	-0.02	-32.13
S404	Ligger DIE34 - HE340A	2625	UGT-1/5	-71.33	-22.27	-48.39	-0.03	**-22.28**	-57.20
S406	Ligger DIE34 - HE340A	0	UGT-1/5	-3.96	-14.16	-61.29	0.00	**156.90**	-5.11
S33	Ligger DIE34 - HE340A	1875	UGT-1/3	-1.53	20.36	31.75	-0.02	59.03	**14.07**

7.5. Staafkrachten ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S405, S407
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S405	Ligger DIE34+strippen - I + 2 PLud	6582	UGT-2/8	**-11.68**	-9.47	-36.03	-0.01	157.93	22.21
S407	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/2	**130.01**	15.61	77.59	0.00	95.13	3.28
S405	Ligger DIE34+strippen - I + 2 PLud	8440	UGT-1/9	0.89	**-17.43**	-13.47	0.00	34.05	-2.62
S407	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/4	52.57	**20.20**	18.73	0.00	23.44	-3.75
S405	Ligger DIE34+strippen - I + 2 PLud	8440	UGT-1/5	-3.96	-14.16	**-61.29**	0.00	156.90	-5.11
S407	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/5	109.97	14.04	**86.42**	0.00	107.16	2.81
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/10	26.07	7.89	24.37	**-0.01**	137.82	20.40
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/11	81.07	7.81	32.10	**0.01**	182.77	25.17
S405	Ligger DIE34+strippen - I + 2 PLud	3582	UGT-2/7	-2.78	0.27	-0.07	0.00	**-14.17**	25.20
S405	Ligger DIE34+strippen - I + 2 PLud	2582	UGT-1/5	71.40	2.25	37.09	0.00	**315.14**	35.38
S405	Ligger DIE34+strippen - I + 2 PLud	8440	UGT-1/3	6.59	-17.09	-29.06	0.00	73.60	**-12.10**
S405	Ligger DIE34+strippen - I + 2 PLud	2582	UGT-2/4	31.87	5.44	8.29	0.00	68.61	**45.54**

7.6. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S403
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S403	Ligger DIE34+UNP's - Grafische doorsnede	9579	UGT-1/1	**-97.28**	-16.50	-43.80	-0.03	190.84	35.77
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/12	**14.98**	17.94	35.26	0.00	65.55	1.15
S403	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/3	-97.17	**-23.12**	-28.72	-0.02	65.29	**-9.02**
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/4	13.71	**23.83**	18.02	-0.01	33.50	-0.19
S403	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/13	-87.26	-21.26	**-47.35**	-0.04	104.22	-3.97
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/13	9.01	20.26	**51.89**	-0.04	97.48	7.78
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/6	7.35	20.65	51.79	**-0.04**	97.32	4.91
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/7	7.94	13.75	-3.08	**0.01**	-6.72	-4.27
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-2/7	7.94	1.34	-0.11	0.01	**-15.61**	37.83
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-1/13	-24.13	2.48	18.57	-0.04	**257.30**	64.69
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-1/9	-17.54	3.87	6.94	-0.01	89.76	**71.26**

7.7. Staafkrachten ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S331
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S331	Ligger DIN28 - HEB280	0	UGT-2/42	**-12.11**	9.26	0.00	0.00	0.08	-22.50
S331	Ligger DIN28 - HEB280	16200	UGT-1/43	**-8.19**	-10.42	0.00	-0.01	0.11	-31.76
S331	Ligger DIN28 - HEB280	16200	UGT-1/3	-11.57	**-11.79**	0.00	-0.01	0.14	**-43.08**
S331	Ligger DIN28 - HEB280	0	UGT-2/25	-9.44	**9.67**	0.00	0.00	0.00	-25.32
S331	Ligger DIN28 - HEB280	16200	UGT-1/26	-11.18	-10.51	**-4.31**	-0.02	0.15	-32.61
S331	Ligger DIN28 - HEB280	16200	UGT-2/7	-9.41	-9.44	**4.31**	0.01	0.05	-23.40
S331	Ligger DIN28 - HEB280	0	UGT-1/6	-11.19	8.34	4.31	**-0.02**	0.21	-15.06
S331	Ligger DIN28 - HEB280	0	UGT-2/44	-8.93	8.77	-4.31	**0.01**	0.21	-18.42
S331	Ligger DIN28 - HEB280	8100	UGT-2/7	-9.41	-0.01	0.00	0.01	**-17.41**	14.86
S331	Ligger DIN28 - HEB280	8100	UGT-1/10	-11.17	-1.07	0.00	-0.02	**17.64**	14.32
S331	Ligger DIN28 - HEB280	5670	UGT-1/3	-11.57	0.47	0.00	-0.01	0.15	**16.52**

7.8. Staafkrachten koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S402	Plaat 2x14x200 - Rechthoek	0	UGT-1/16	**-32.76**	1.56	-39.65	0.09	5.84	-0.65
S392	Plaat 2x14x200 - Rechthoek	0	UGT-1/22	**127.40**	-0.93	-70.20	-0.17	9.34	-0.16
S390	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	0.08	**-5.88**	-70.21	-0.07	5.83	0.89
S386	Plaat 2x14x200 - Rechthoek	0	UGT-1/34	1.57	**8.44**	-107.90	0.40	5.06	0.30
S353	Plaat 2x14x200 - Rechthoek	187	UGT-1/5	-0.78	0.12	**-251.97**	0.11	-23.49	0.01
S396	Plaat 2x14x200 - Rechthoek	0	UGT-2/7	0.93	0.06	**48.48**	0.01	-4.61	-0.04
S394	Plaat 2x14x200 - Rechthoek	0	UGT-1/5	-0.53	-1.12	-164.52	**-0.60**	11.79	0.20
S384	Plaat 2x14x200 - Rechthoek	0	UGT-1/5	-19.70	2.00	-127.44	**0.86**	6.50	0.16
S388	Plaat 2x14x200 - Rechthoek	232	UGT-1/5	1.84	1.47	-199.89	0.10	**-34.10**	0.91
S355	Plaat 2x14x200 - Rechthoek	0	UGT-1/13	-0.79	0.12	-217.20	0.10	**25.20**	-0.01
S400	Plaat 2x14x200 - Rechthoek	0	UGT-2/30	0.60	6.02	-34.62	0.05	4.81	**-0.93**
S386	Plaat 2x14x200 - Rechthoek	187	UGT-1/5	4.20	8.08	-188.01	0.53	-26.79	**1.95**

7.9. Staafkrachten diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S281	Diagionaal UPE14 - UPE140	0	UGT-1/22	**-220.68**	0.00	0.00	0.00	0.00	0.00
S270	Diagionaal UPE14 - UPE140	3142	UGT-2/45	**212.41**	0.00	0.00	0.00	0.00	0.00
S235	Diagionaal UPE14 - UPE140	0	UGT-1/46	-1.80	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.10. Staafkrachten bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S332
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S332	Bliksempiek-2 - Koker fl	0	UGT-1/47	**-4.71**	0.00	2.48	0.00	-5.76	0.00
S332	Bliksempiek-2 - Koker fl	4651	UGT-1/48	**0.49**	0.34	3.62	0.00	0.00	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/5	-2.65	**-3.41**	2.65	0.00	-12.33	**13.12**
S332	Bliksempiek-2 - Koker fl	0	UGT-2/49	-2.25	**2.77**	2.18	0.00	-10.14	**-10.14**
S332	Bliksempiek-2 - Koker fl	0	UGT-2/25	-2.71	0.00	**-2.47**	0.00	**5.75**	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/3	-2.28	1.01	**9.79**	0.00	**-39.80**	-4.71
S332	Bliksempiek-2 - Koker fl	0	UGT-2/50	-2.58	-1.69	0.81	**0.00**	-9.54	7.88

7.11. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer onder-IV - Rechthoek	1600	UGT-2/4	**-287.79**	15.17	-3.33	-0.19	4.42	175.59
S246	Poer onder-IV - Rechthoek	0	UGT-1/24	**-54.85**	0.01	1.02	0.00	1.64	0.05
S246	Poer onder-IV - Rechthoek	0	UGT-2/7	-55.43	**-17.52**	-1.47	**0.02**	-0.65	-144.24
S246	Poer onder-IV - Rechthoek	0	UGT-1/5	-59.05	**67.98**	1.09	-0.54	18.76	574.86
S246	Poer onder-IV - Rechthoek	0	UGT-2/23	-63.51	16.75	**-4.26**	-0.18	4.32	137.81
S246	Poer onder-IV - Rechthoek	0	UGT-1/16	-59.93	49.84	**4.01**	-0.52	25.36	422.36
S246	Poer onder-IV - Rechthoek	0	UGT-1/13	-60.74	67.78	1.33	**-0.54**	21.96	570.55
S246	Poer onder-IV - Rechthoek	2000	UGT-2/25	-278.81	-0.01	-3.81	0.00	**-11.17**	-0.06
S246	Poer onder-IV - Rechthoek	2000	UGT-1/16	-282.71	42.16	3.43	-0.52	**32.80**	514.39
S246	Poer onder-IV - Rechthoek	2000	UGT-2/7	-278.20	-14.88	-1.39	0.02	-3.51	**-176.65**
S246	Poer onder-IV - Rechthoek	2000	UGT-1/5	-281.82	57.53	0.74	-0.54	20.59	**700.40**

7.12. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/25	**-289.27**	-0.16	-46.51	0.16	-36.64	0.45
S244	Poer onder-IV - Rechthoek	0	UGT-1/16	**1277.27**	46.35	**92.77**	4.85	285.38	361.39
S244	Poer onder-IV - Rechthoek	0	UGT-2/7	-59.10	**-20.74**	-35.67	-3.15	-12.21	-108.34
S244	Poer onder-IV - Rechthoek	0	UGT-1/26	755.49	**70.15**	42.49	**9.51**	168.43	432.34
S244	Poer onder-IV - Rechthoek	0	UGT-2/25	-156.09	-0.15	**-47.06**	0.11	-34.19	0.67
S244	Poer onder-IV - Rechthoek	1440	UGT-1/5	863.40	62.07	58.69	**-11.62**	31.47	581.72
S244	Poer onder-IV - Rechthoek	1080	UGT-2/25	-213.58	-0.16	-46.80	0.13	**-57.06**	0.51
S244	Poer onder-IV - Rechthoek	360	UGT-1/16	1259.68	46.35	92.77	4.85	**318.78**	378.07
S244	Poer onder-IV - Rechthoek	1800	UGT-2/7	-192.27	-19.94	-35.67	3.00	-40.46	**-145.00**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/5	863.40	62.07	58.69	-11.62	52.60	**604.07**

7.13. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/16	**-1536.94**	72.67	152.70	11.30	98.02	783.86
S250	Poer onder-IV - Rechthoek	0	UGT-2/25	**45.03**	0.15	**22.87**	-0.18	**-11.09**	3.30
S250	Poer onder-IV - Rechthoek	0	UGT-2/7	-52.26	**-7.75**	34.36	0.34	10.87	-95.76
S250	Poer onder-IV - Rechthoek	0	UGT-1/18	-1126.90	**91.02**	131.65	-13.19	248.62	812.71
S250	Poer onder-IV - Rechthoek	0	UGT-1/16	-1403.77	76.55	**159.75**	-11.33	310.79	675.53
S250	Poer onder-IV - Rechthoek	0	UGT-1/27	-950.19	87.47	115.92	**-13.47**	209.04	735.84
S250	Poer onder-IV - Rechthoek	1440	UGT-1/5	-1252.20	86.10	125.40	**13.69**	78.74	942.15
S250	Poer onder-IV - Rechthoek	360	UGT-1/16	-1421.36	76.55	159.75	-11.33	**368.30**	703.09
S250	Poer onder-IV - Rechthoek	1800	UGT-2/7	-185.44	-6.98	34.41	-1.92	38.85	**-109.05**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/5	-1252.20	86.10	125.40	13.69	123.89	**973.15**

7.14. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer onder-IV - Rechthoek	1600	UGT-1/9	**-281.02**	11.37	8.10	0.63	31.49	136.84
S322	Poer onder-IV - Rechthoek	0	UGT-2/25	**-49.40**	0.00	**0.38**	**0.02**	**-1.26**	4.00
S322	Poer onder-IV - Rechthoek	0	UGT-2/7	-49.71	**-11.71**	2.78	0.02	1.28	-68.77
S322	Poer onder-IV - Rechthoek	0	UGT-1/5	-55.02	**72.72**	6.61	1.75	22.33	596.47
S322	Poer onder-IV - Rechthoek	0	UGT-1/28	-56.83	56.58	**9.79**	1.68	28.65	484.25
S322	Poer onder-IV - Rechthoek	0	UGT-1/29	-55.35	60.97	9.04	**1.75**	25.05	523.29
S322	Poer onder-IV - Rechthoek	2000	UGT-1/16	-279.58	47.70	8.89	1.68	**47.52**	587.07
S322	Poer onder-IV - Rechthoek	2000	UGT-2/7	-272.48	-10.33	2.64	0.02	6.70	**-90.82**
S322	Poer onder-IV - Rechthoek	2000	UGT-1/5	-277.79	61.80	5.97	1.75	34.92	**731.04**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S2..S4, S248, S251..S266, S275, S276, S282, S283, S292..S297
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S251	1895	UGT-1/13	**-205.0**		1.5	205.0	0.0
S2	0	UGT-1/5		71.0	16.1	76.3	**0.0**
S248	0	UGT-1/5	-144.6		1.2	144.6	0.0
S266	80	UGT-1/21		**242.0**	14.9	243.4	0.0
S4	637	UGT-1/51		157.8	**0.6**	157.8	0.0
S2	2532	UGT-1/5		40.9	**30.9**	67.4	0.0
S297	283	UGT-1/5		17.4	8.5	**22.7**	0.0
S266	80	UGT-1/21		242.0	14.9	**243.4**	0.0

8.2. Von Mises spanningen kolom INP45 versterkt; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S272, S273, S284, S285, S298..S303
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S272	2532	UGT-1/5	**-129.9**	5.7	**130.3**	0.0
S303	565	UGT-1/5	**-7.9**	13.1	24.0	0.0
S272	0	UGT-1/5	-83.2	3.3	83.3	**0.0**
S272	2757	UGT-1/5	-112.6	**0.3**	112.6	0.0
S284	1462	UGT-1/5	-14.0	**24.8**	45.2	0.0
S303	565	UGT-1/5	-7.9	13.1	**24.0**	0.0

8.3. Von Mises spanningen kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S329, S330
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S330	0	UGT-2/30	**-112.1**	2.3	**112.2**	0.0
S329	2325	UGT-1/51	**-15.4**	2.5	16.0	0.0
S329	0	UGT-2/53	-65.5	1.3	65.5	**0.0**
S329	3720	UGT-2/25	-31.7	**0.0**	31.7	0.0
S329	1860	UGT-1/13	-24.0	**2.5**	24.3	0.0
S329	2325	UGT-1/51	-15.4	2.5	**16.0**	0.0

8.4. Von Mises spanningen ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S33, S40, S404, S406
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S404	2625	UGT-1/3	**-162.1**		0.2	162.1	0.0
S33	0	UGT-2/14		96.3	0.1	96.3	**0.0**
S404	0	UGT-1/16	-77.8		0.3	77.8	0.0
S406	2560	UGT-1/3		**121.5**	0.0	121.5	0.0
S406	0	UGT-1/20	-104.7		**0.0**	104.7	0.0
S40	720	UGT-1/18		28.4	**28.1**	56.3	0.0
S40	720	UGT-1/18		28.4	28.1	**56.3**	0.0
S404	2625	UGT-1/3	-162.1		0.2	**162.1**	0.0

8.5. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S405, S407
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S405	6582	UGT-1/5	**-115.9**		0.0	115.9	0.0
S405	0	UGT-1/21		107.0	0.0	107.0	**0.0**
S405	6582	UGT-1/5	-115.9		0.0	115.9	0.0
S405	2582	UGT-1/18		**155.0**	0.0	155.0	0.0
S405	861	UGT-1/18		124.7	**0.0**	124.7	0.0
S407	0	UGT-1/18		31.3	**27.4**	**56.8**	0.0
S405	2582	UGT-1/18		155.0	0.0	**155.0**	0.0

8.6. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S403
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S403	5579	UGT-1/13	**-138.2**		0.0	138.2	0.0
S403	0	UGT-1/22		41.3	0.0	**41.3**	**0.0**
S403	1579	UGT-1/13	-90.3		0.0	90.3	0.0
S403	1579	UGT-1/13		**89.7**	0.0	89.7	0.0
S403	11700	UGT-1/22	-44.5		**0.0**	44.5	0.0
S403	7579	UGT-1/10	-122.5		**0.0**	122.5	0.0
S403	5579	UGT-1/13	-138.2		0.0	**138.2**	0.0

8.7. Von Mises spanningen ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S331
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S331	16200	UGT-1/3	**-92.4**	0.1	92.4	0.0
S331	12150	UGT-1/54	**-21.4**	0.1	21.4	0.0
S331	0	UGT-2/25	-54.5	**0.0**	54.5	**0.0**
S331	2430	UGT-1/55	-23.2	**0.2**	23.2	0.0
S331	12150	UGT-1/54	-21.4	0.1	**21.4**	0.0
S331	16200	UGT-1/3	-92.4	0.1	**92.4**	0.0

8.8. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S390	277	UGT-1/21	**-176.9**		0.0	176.9	0.0
S360	0	UGT-1/13		47.0	0.0	47.0	0.0
S351	0	UGT-1/5	-0.2		50.4	87.4	**0.0**
S386	187	UGT-1/5		**218.7**	0.0	**218.7**	0.0
S398	0	UGT-1/10	-134.8		**0.0**	134.8	0.0
S353	93	UGT-1/5	-0.1		**69.9**	121.0	0.0
S360	161	UGT-1/13		0.2	15.7	**27.3**	0.0

8.9. Von Mises spanningen diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S281	0	UGT-1/22	**-119.9**		0.0	**119.9**	0.0
S235	0	UGT-1/16		75.8	**0.0**	75.8	**0.0**
S267	0	UGT-2/52	-74.8		0.0	74.8	0.0
S270	3142	UGT-2/45		**115.4**	0.0	115.4	0.0
S271	3142	UGT-2/30	-38.5		0.0	**38.5**	0.0

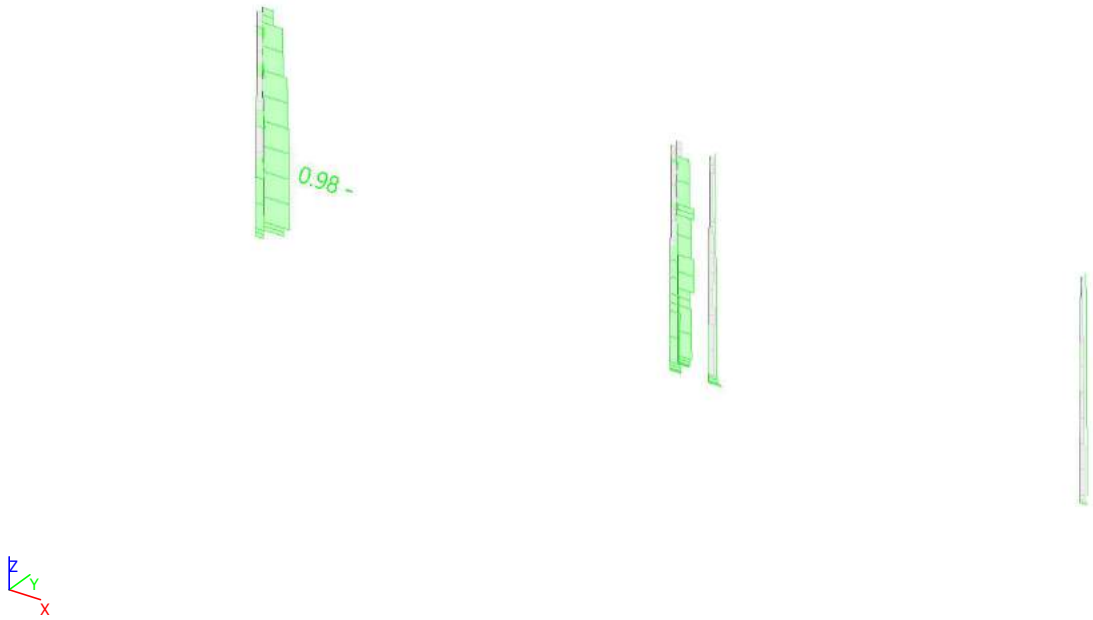
8.10. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S332
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S332	0	UGT-1/3	**-116.2**		0.0	**116.2**	**0.0**
S332	4186	UGT-1/3		**15.4**	0.0	15.4	0.0
S332	2791	UGT-1/3	-51.4		**0.0**	51.4	0.0
S332	4651	UGT-1/55		0.1	**3.1**	5.3	0.0
S332	4651	UGT-1/55		0.1	3.1	**5.3**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S2..S4, S248, S251..S266, S275, S276, S282, S283, S292..S297

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S253	1.895 / 1.895 m	INP450	S 235	UGT	0.98 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.895 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-866.15	kN
$V_{y,Ed}$	22.66	kN
$V_{z,Ed}$	0.15	kN
T_{Ed}	-0.18	kNm
$M_{y,Ed}$	8.42	kNm
$M_{z,Ed}$	25.67	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	2.290e+04	-5.472e+04	-2.39	23.80	0.30	2.50	56.16	62.40	102.45	1
3	SO	61	24	8.505e+04	1.627e+05	0.52	0.48	1.00	2.50	9.00	10.00	14.54	1
4	I	369	16	5.448e+04	6.108e+04	0.89		1.00	22.78	28.00	34.00	39.48	1
5	SO	61	24	9.266e+04	1.703e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.50	1
7	SO	61	24	3.051e+04	-4.711e+04	-1.54	23.80	0.39	2.50	36.52	40.58	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m²
$N_{c,Rd}$	3454.50	kN
Eenheidscontrole	0.25	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m³
$M_{pl,y,Rd}$	564.00	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m³
$M_{pl,z,Rd}$	81.08	kNm
Eenheidscontrole	0.32	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m²
$V_{pl,y,Rd}$	1192.18	kN
Eenheidscontrole	0.02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m²
$V_{pl,z,Rd}$	1058.72	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	1.7	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	541.07	kNm
α	2.00	
$M_{pl,z,Rd}$	81.08	kNm
β	1.25	

Eenheidscontrole (6.41) = 0.00 + 0.24 = 0.24 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 1.895 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	2.290e+04	-5.472e+04	-2.39	23.80	0.30	2.50	56.16	62.40	102.45	1
3	SO	61	24	8.505e+04	1.627e+05	0.52	0.48	1.00	2.50	9.00	10.00	14.54	1
4	I	369	16	5.448e+04	6.108e+04	0.89		1.00	22.78	28.00	34.00	39.48	1
5	SO	61	24	9.266e+04	1.703e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.50	1
7	SO	61	24	3.051e+04	-4.711e+04	-1.54	23.80	0.39	2.50	36.52	40.58	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings flexibel	
Systeemlengte L	8.350	1.895	m
Knikfactor k	2.38	1.94	
Kniklengte L_{cr}	19.873	3.684	m
Kritische Euler last N_{cr}	2406.20	2642.54	kN
Slankheid λ	112.53	107.38	
Relatieve slankheid λ_{rel}	1.20	1.14	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	0.53	0.51	
Knikweerstand $N_{b,Rd}$	1834.82	1761.09	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Knikweerstand $N_{b,Rd}$	1761.09	kN
Eenheidscontrole	0.49	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Elastisch kritisch moment M_{cr}	2732.77	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.45	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.02	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	

Mcr parameters		
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	866.15	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	8.63	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	25.67	kNm
Karakteristieke drukweerstand N_{Rk}	3454.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	564.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	81.08	kNm
Reductie factor χ_y	0.53	
Reductie factor χ_z	0.51	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.24	
Interactiefactor k_{yz}	0.91	
Interactiefactor k_{zy}	0.74	
Interactiefactor k_{zz}	1.52	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S248 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S253 positie 1.895 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.1
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Zijdelings flexibel type z	Zijdelings flexibel
Equivalente moment factor C_{mz}	0.90
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	0.97
Equivalente moment factor C_{mLT}	0.99

Eenheidscontrole (6.61) = 0.47 + 0.02 + 0.29 = 0.78 -
Eenheidscontrole (6.62) = 0.49 + 0.01 + 0.48 = 0.98 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

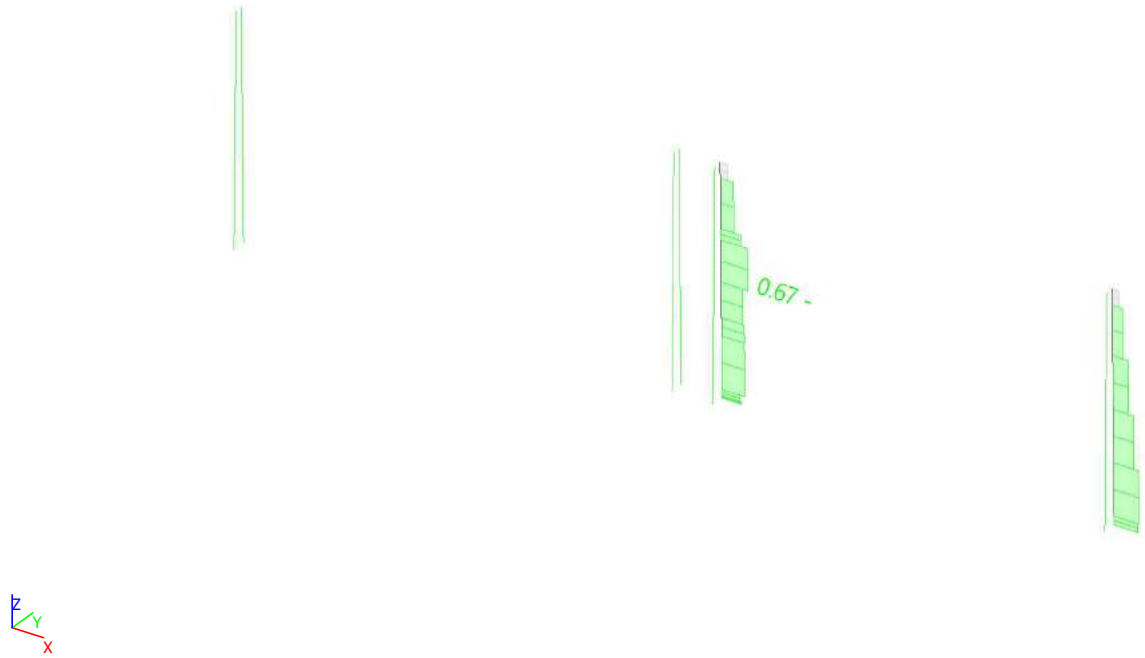
Plooiparameters		
Knik veldlengte a	1.895	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.3. Staalcontrole kolom INP45 versterkt; UGT, grafisch overzicht



9.4. Staalcontrole kolom INP45 versterkt; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S272, S273, S284, S285, S298..S303

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S285	**1.499 / 2.757 m**	**I + Ir (INP450, HEB300)**	**S 235**	**UGT**	**0.67 -**

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1050

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.499 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-886.99	kN
$V_{y,Ed}$	61.81	kN
$V_{z,Ed}$	5.91	kN
T_{Ed}	-2.37	kNm
$M_{y,Ed}$	-23.75	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	78.99	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	85	24	4.022e+04	2.533e+04	0.63	0.47	1.00	3.50	9.00	10.00	14.33	1
2	UO	85	24	2.231e+04	7.426e+03	0.33	0.51	1.00	3.50	9.00	10.00	14.97	1
3	UO	85	24	-7.462e+03	7.426e+03	-1.00	23.80	0.50	3.50	25.55	28.39	102.45	1
4	UO	85	24	1.045e+04	2.533e+04	0.41	0.77	1.00	3.50	9.00	10.00	18.41	1
5	I	12	16	2.533e+04	2.482e+04	0.98		1.00	0.75	28.00	34.00	38.27	1
6	I	51	16	2.482e+04	2.269e+04	0.91		1.00	3.13	28.00	34.00	39.17	1
7	I	12	16	7.937e+03	7.426e+03	0.94		1.00	0.75	28.00	34.00	38.87	1
8	UO	150	19	6.237e+04	6.868e+04	0.91	0.46	1.00	7.89	9.00	10.00	14.29	1
9	I	150	35	1.804e+04	1.173e+04	0.65		1.00	4.26	28.00	34.00	43.25	1
10	I	150	35	2.435e+04	1.804e+04	0.74		1.00	4.26	28.00	34.00	41.75	1
11	UO	150	19	7.499e+04	6.868e+04	0.92	0.44	1.00	7.89	9.00	10.00	13.87	1
12	I	9	11	6.868e+04	6.702e+04	0.98		1.00	0.86	28.00	34.00	38.32	1
13	I	262	11	6.702e+04	2.113e+04	0.32		1.00	23.82	28.00	34.00	49.84	1
14	I	10	11	2.113e+04	1.946e+04	0.92		1.00	0.86	28.00	34.00	39.07	1
15	I	51	16	1.007e+04	7.937e+03	0.79		1.00	3.13	28.00	34.00	41.01	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2.9616e-02	m^2
$N_{c,Rd}$	6959.73	kN
Eenheidscontrole	0.13	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3.2645e-03	m^3
$M_{pl,y,Rd}$	767.16	kNm
Eenheidscontrole	0.03	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	2.5730e-03	m^3
$M_{pl,z,Rd}$	604.65	kNm
Eenheidscontrole	0.13	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.1391e-03	m^2
$V_{pl,y,Rd}$	697.25	kN
Eenheidscontrole	0.09	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.9650e-02	m^2
$V_{pl,z,Rd}$	2666.12	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	48	
τ_{Ed}	11.9	MPa
τ_{Rd}	135.7	MPa

Eenheidscontrole	0.09	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1(5) en formule (6.1)

Elastische toetsing		
Vezel	33	
$\sigma_{N,Ed}$	29.9	MPa
$\sigma_{My,Ed}$	6.6	MPa
$\sigma_{Mz,Ed}$	39.7	MPa
$\sigma_{tot,Ed}$	76.2	MPa
$\tau_{Vy,Ed}$	0.0	MPa
$\tau_{Vz,Ed}$	0.0	MPa
$\tau_{t,Ed}$	6.4	MPa
$\tau_{tot,Ed}$	6.4	MPa
$\sigma_{von\ Mises,Ed}$	77.1	MPa
Eenheidscontrole	0.33	-

Opmerking: Voor deze doorsnede is in artikel 6.2.7(9) geen formule gegeven voor de plastische dwarskrachtweerstand gereduceerd met torsie. Daarom wordt het criterium elastisch vloeien volgens EN 1993-1-1 artikel 6.2.1(5) getoetst.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2.757 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	85	24	4.497e+04	2.903e+04	0.65	0.46	1.00	3.50	9.00	10.00	14.30	1
2	UO	85	24	3.142e+04	1.548e+04	0.49	0.48	1.00	3.50	9.00	10.00	14.60	1
3	UO	85	24	-4.608e+02	1.548e+04	-0.03	1.86	0.97	3.50	9.40	10.45	28.67	1
4	UO	85	24	1.309e+04	2.903e+04	0.45	0.73	1.00	3.50	9.00	10.00	17.95	1
5	I	12	16	2.903e+04	2.864e+04	0.99		1.00	0.75	28.00	34.00	38.18	1
6	I	51	16	2.864e+04	2.703e+04	0.94		1.00	3.13	28.00	34.00	38.76	1
7	I	12	16	1.587e+04	1.548e+04	0.98		1.00	0.75	28.00	34.00	38.32	1
8	UO	150	19	7.348e+04	7.826e+04	0.94	0.45	1.00	7.89	9.00	10.00	14.12	1
9	I	150	35	2.404e+04	1.926e+04	0.80		1.00	4.26	28.00	34.00	40.81	1
10	I	150	35	2.881e+04	2.404e+04	0.83		1.00	4.26	28.00	34.00	40.32	1
11	UO	150	19	8.303e+04	7.826e+04	0.94	0.43	1.00	7.89	9.00	10.00	13.84	1
12	I	9	11	7.826e+04	7.648e+04	0.98		1.00	0.86	28.00	34.00	38.30	1
13	I	262	11	7.648e+04	2.734e+04	0.36		1.00	23.82	28.00	34.00	48.90	1
14	I	10	11	2.734e+04	2.556e+04	0.93		1.00	0.86	28.00	34.00	38.88	1
15	I	51	16	1.748e+04	1.587e+04	0.91		1.00	3.13	28.00	34.00	39.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings flexibel	
Systeemlengte L	2.757	1.895	m
Knikfactor k	0.95	9.66	
Kniklengte L_{cr}	2.631	18.311	m
Kritische Euler last N_{cr}	162720.18	2807.04	kN
Slankheid λ	19.42	147.88	
Relatieve slankheid λ_{rel}	0.21	1.57	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	1.00	0.29	
Knikweerstand $N_{b,Rd}$	6935.55	2029.01	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Knikweerstand $N_{b,Rd}$	2029.01	kN
Eenheidscontrole	0.44	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	1.895	m
Elastische kritische last $N_{cr,T}$	82933.03	kN
Elastische kritische last $N_{cr,TF}$	2807.04	kN
Relatieve slankheid $\lambda_{rel,T}$	1.57	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.29	
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Knikweerstand $N_{b,Rd}$	2029.01	kN
Eenheidscontrole	0.44	-

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3.2645e-03	m^3
Elastisch kritisch moment M_{cr}	28877.31	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.16	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.04	
Kip moment factor C_2	0.13	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	3.2645e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	2.5730e-03	m^3
Ontwerpdrukkracht N_{Ed}	886.99	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	-32.60	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	78.99	kNm
Karakteristieke drukweerstand N_{Rk}	6959.73	kN
Karakteristieke momentweerstand $M_{y,Rk}$	767.16	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	604.65	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	0.29	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.78	
Interactiefactor k_{yz}	0.87	
Interactiefactor k_{zy}	0.94	
Interactiefactor k_{zz}	1.45	

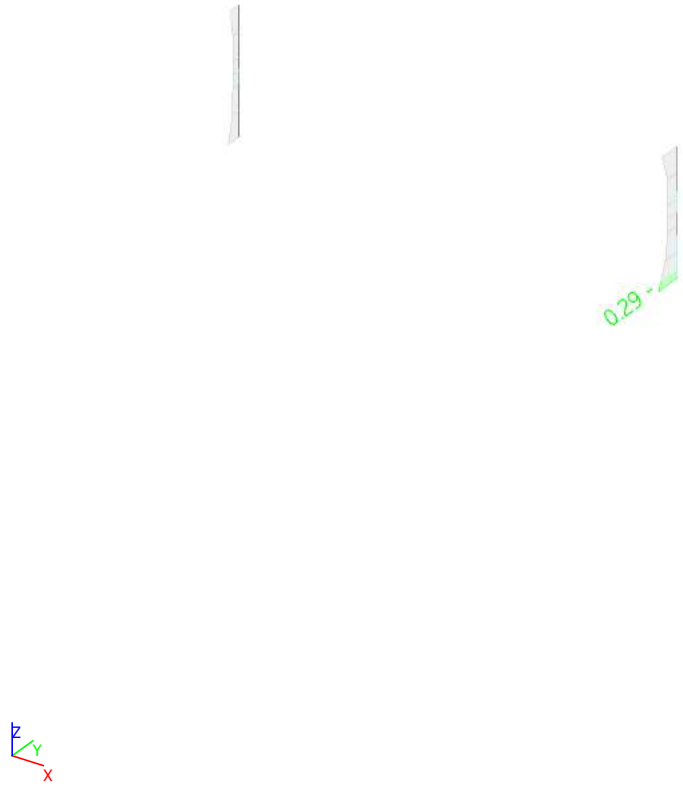
Maximum moment $M_{y,Ed}$ is afgeleid van balk S285 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S285 positie 1.499 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	puntlast F	
Uiteinde moment $M_{h,y}$	-32.60	kNm
Veldmoment $M_{s,y}$	-23.70	kNm
Factor $\alpha_{s,y}$	0.73	
Ratio van uiteinde momenten ψ_y	0.55	
Equivalente moment factor C_{my}	0.78	
Zijdelings flexibel type z	Zijdelings flexibel	
Equivalente moment factor C_{mz}	0.90	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-23.75	kNm
Veldmoment $M_{s,LT}$	-32.60	kNm
Factor $\alpha_{h,LT}$	0.73	
Ratio van uiteinde momenten ψ_{LT}	0.93	
Equivalente moment factor C_{mLT}	0.99	

Eenheidscontrole (6.61) = 0.13 + 0.03 + 0.11 = 0.27 -
Eenheidscontrole (6.62) = 0.44 + 0.04 + 0.19 = 0.67 -

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole kolom DIE36; UGT, grafisch overzicht



9.6. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S329, S330

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S330	0.000 / 4.651 m	HEA360	S 235	UGT	0.29 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-17.64	kN
$V_{y,Ed}$	22.29	kN
$V_{z,Ed}$	-1.32	kN
T_{Ed}	-0.14	kNm
$M_{y,Ed}$	6.13	kNm
$M_{z,Ed}$	-53.95	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	2.005e+04	1.008e+05	0.20	0.53	1.00	6.74	9.00	10.00	15.30	1
3	SO	118	18	-2.373e+04	-1.045e+05								
4	I	261	10	-1.182e+03	3.652e+03	-0.32		0.51	26.10	68.89	79.70	70.28	1
5	SO	118	18	-1.758e+04	-9.829e+04								
7	SO	118	18	2.620e+04	1.069e+05	0.25	0.52	1.00	6.74	9.00	10.00	15.18	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4300e-02	m^2
$N_{c,Rd}$	3360.50	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.0875e-03	m^3
$M_{pl,y,Rd}$	490.56	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	8.0417e-04	m^3
$M_{pl,z,Rd}$	188.98	kNm
Eenheidscontrole	0.29	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0870e-02	m^2
$V_{pl,y,Rd}$	1474.81	kN
Eenheidscontrole	0.02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.9200e-03	m^2
$V_{pl,z,Rd}$	667.53	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	1.6	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	490.56	kNm
α	2.00	
$M_{pl,z,Rd}$	188.98	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.29 = 0.29 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	2.005e+04	1.008e+05	0.20	0.53	1.00	6.74	9.00	10.00	15.30	1
3	SO	118	18	-2.373e+04	-1.045e+05								
4	I	261	10	-1.182e+03	3.652e+03	-0.32		0.51	26.10	68.89	79.70	70.28	1
5	SO	118	18	-1.758e+04	-9.829e+04								
7	SO	118	18	2.620e+04	1.069e+05	0.25	0.52	1.00	6.74	9.00	10.00	15.18	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	4.63	0.75	
Kniklengte L_{cr}	21.537	3.496	m
Kritische Euler last N_{cr}	1479.08	13376.43	kN
Slankheid λ	141.56	47.07	
Relatieve slankheid λ_{rel}	1.51	0.50	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Elastisch kritisch moment M_{cr}	2761.50	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.42	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Vorklengte L_g	4.651	m
Invloed van lastpositie	geen invloed	
Factor α	943.75	
Reductie factor k_{red}	1.00	
Coëfficiënt C	9.10	
Factor S	1949	mm
Kip moment factor C_1	1.75	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4300e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	8.0417e-04	m^3
Ontwerpdrukkracht N_{Ed}	17.64	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	6.13	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-53.95	kNm
Karakteristieke drukweerstand N_{Rk}	3360.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	490.56	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	188.98	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.54	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S330 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S330 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-53.95	kNm
Veldmoment $M_{s,z}$	-3.77	kNm
Factor $\alpha_{s,z}$	0.07	
Ratio van uiteinde momenten ψ_z	-0.80	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.60	

Eenheidscontrole (6.61) = 0.01 + 0.01 + 0.07 = 0.09 -
Eenheidscontrole (6.62) = 0.01 + 0.01 + 0.11 = 0.13 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

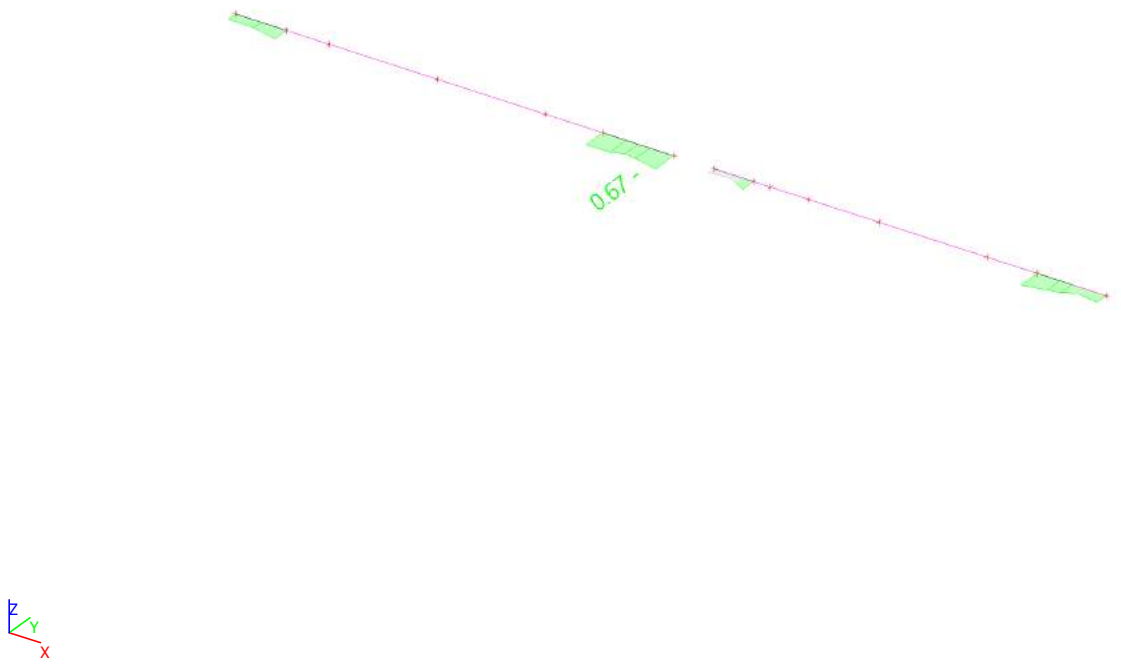
Plooiparameters		
Knik veldlengte a	4.651	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	315	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.50
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole ligger DIE34; UGT, grafisch overzicht



9.8. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S33, S40, S404, S406

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S404	2,625 / 2,625 m	HE340A	S 235	UGT	0,67 -

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG3 + 1,15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,625 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-97,17	kN
$V_{y,Ed}$	-26,22	kN
$V_{z,Ed}$	-28,72	kN
T_{Ed}	-0,02	kNm
$M_{y,Ed}$	-10,10	kNm
$M_{z,Ed}$	-73,78	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	4,450e+04	1,618e+05	0,27	0,52	1,00	7,17	9,00	10,00	15,11	1
3	SO	118	17	-1,851e+04	-1,358e+05								
4	I	243	10	1,171e+04	2,850e+03	0,24		1,00	25,58	28,00	34,00	51,53	1
5	SO	118	17	-2,994e+04	-1,473e+05								
7	SO	118	17	3,307e+04	1,504e+05	0,22	0,53	1,00	7,17	9,00	10,00	15,25	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1,3350e-02	m^2
$N_{c,Rd}$	3137,25	kN
Eenheidscontrole	0,03	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1,8500e-03	m^3
$M_{pl,y,Rd}$	434,75	kNm
Eenheidscontrole	0,02	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7,5590e-04	m^3
$M_{pl,z,Rd}$	177,64	kNm
Eenheidscontrole	0,42	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,0247e-02	m^2
$V_{pl,y,Rd}$	1390,25	kN
Eenheidscontrole	0,02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,4978e-03	m^2
$V_{pl,z,Rd}$	610,24	kN
Eenheidscontrole	0,05	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,2	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	434,75	kNm
α	2,00	
$M_{pl,z,Rd}$	177,64	kNm
β	1,00	

Eenheidscontrole (6.41) = 0,00 + 0,42 = 0,42 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,625 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	4,450e+04	1,618e+05	0,27	0,52	1,00	7,17	9,00	10,00	15,11	1
3	SO	118	17	-1,851e+04	-1,358e+05								
4	I	243	10	1,171e+04	2,850e+03	0,24		1,00	25,58	28,00	34,00	51,53	1
5	SO	118	17	-2,994e+04	-1,473e+05								
7	SO	118	17	3,307e+04	1,504e+05	0,22	0,53	1,00	7,17	9,00	10,00	15,25	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	2186,81	587,26	kN
Slankheid λ	112,48	217,06	
Relatieve slankheid λ_{rel}	1,20	2,31	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	
Knikcurve	b	c	
Imperfectie α	0,34	0,49	
Reductie factor χ	0,48	0,15	
Knikweerstand $N_{b,Rd}$	1503,83	478,04	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1,3350e-02	m^2
Knikweerstand $N_{b,Rd}$	478,04	kN
Eenheidscontrole	0,20	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Elastisch kritisch moment M_{cr}	297,43	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1,21	
Limietslankheid $\lambda_{rel,LT,0}$	0,40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	16,200	m
Vorklengte L_g	16,200	m
Invloed van lastpositie	geen invloed	
Factor α	575,00	
Reductie factor k_{red}	1,00	

Mcr parameters		
Coëfficiënt C	3,80	
Factor S	1931	mm
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1,3350e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7,5590e-04	m^3
Ontwerpdrukkracht N_{Ed}	97,17	kN
Ontwerp buigende momenten $M_{y,Ed}$	-10,10	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-73,78	kNm
Karakteristieke drukweerstand N_{Rk}	3137,25	kN
Karakteristieke momentweerstand $M_{y,Rk}$	434,75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	177,64	kNm
Reductie factor χ_y	0,48	
Reductie factor χ_z	0,15	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1,00	
Interactiefactor k_{yy}	1,00	
Interactiefactor k_{yz}	0,65	
Interactiefactor k_{zy}	0,60	
Interactiefactor k_{zz}	1,08	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-10,10	kNm
Veldmoment $M_{s,y}$	157,94	kNm
Factor $\alpha_{h,y}$	-0,06	
Ratio van uiteinde momenten ψ_y	0,05	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-73,78	kNm
Veldmoment $M_{s,z}$	68,67	kNm
Factor $\alpha_{s,z}$	-0,93	
Ratio van uiteinde momenten ψ_z	0,36	
Equivalente moment factor C_{mz}	0,84	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-10,10	kNm
Veldmoment $M_{s,LT}$	157,94	kNm
Factor $\alpha_{h,LT}$	-0,06	
Ratio van uiteinde momenten ψ_{LT}	0,05	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,06 + 0,02 + 0,27 = 0,36 -
Eenheidscontrole (6.62) = 0,20 + 0,01 + 0,45 = 0,67 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

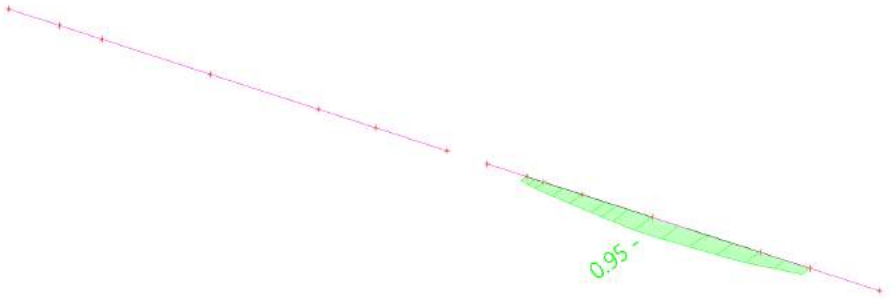
Plooiparameters		
Knik veldlengte a	2,625	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1,00	
Correctiefactor voor dwarskracht η	1,20	

Plooiverificatie	
Lijf slankheid h_w/t	31,26
Lijfslankheid limiet	60,00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.9. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht





9.10. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S405, S407

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S405	**2,582 / 8,440 m**	**I + 2 PLud (HEA340; 320; 320; 12; 12)**	**S 235**	**UGT**	**0,95 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,582 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	33,37	kN
$V_{y,Ed}$	-0,62	kN
$V_{z,Ed}$	-10,26	kN
T_{Ed}	0,00	kNm
$M_{y,Ed}$	315,14	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	35,38	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-6,779e+04	-1,057e+05								
2	I	150	29	1,404e+05	1,025e+05	0,73		1,00	5,26	28,00	34,00	41,93	1
3	I	150	29	6,455e+04	1,025e+05	0,63		1,00	5,26	28,00	34,00	43,60	1
4	I	150	29	-1,437e+05	-1,057e+05								
5	I	8	10	-1,019e+05	-9,662e+04								
6	I	297	10	-9,662e+04	9,337e+04	-1,03		0,49	31,26	73,25	84,44	128,33	1
7	I	8	10	9,337e+04	9,865e+04	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,482e+05	1,457e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,054e+04	-7,307e+04								
10	UO	10	12	-1,490e+05	-1,515e+05								
13	UO	10	12	6,982e+04	6,729e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	2,1039e-02	m^2
$N_{pl,Rd}$	4944,14	kN
$N_{u,Rd}$	5453,28	kN
$N_{t,Rd}$	4944,14	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3,1654e-03	m^3
$M_{pl,y,Rd}$	743,86	kNm
Eenheidscontrole	0,42	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	1,3705e-03	m^3
$M_{pl,z,Rd}$	322,07	kNm
Eenheidscontrole	0,11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6468e-02	m^2
$V_{pl,y,Rd}$	2234,36	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	3,6506e-03	m^2
$V_{pl,z,Rd}$	495,31	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,0	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	4944,14	kN
$M_{pl,y,Rd}$	743,86	kNm
$M_{pl,z,Rd}$	322,07	kNm

Eenheidscontrole (6.2) = 0,01 + 0,42 + 0,11 = 0,54 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,582 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-6,779e+04	-1,057e+05								
2	I	150	29	1,404e+05	1,025e+05	0,73		1,00	5,26	28,00	34,00	41,93	1
3	I	150	29	6,455e+04	1,025e+05	0,63		1,00	5,26	28,00	34,00	43,60	1
4	I	150	29	-1,437e+05	-1,057e+05								
5	I	8	10	-1,019e+05	-9,662e+04								
6	I	297	10	-9,662e+04	9,337e+04	-1,03		0,49	31,26	73,25	84,44	128,33	1
7	I	8	10	9,337e+04	9,865e+04	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,482e+05	1,457e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,054e+04	-7,307e+04								
10	UO	10	12	-1,490e+05	-1,515e+05								
13	UO	10	12	6,982e+04	6,729e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3,1654e-03	m^3
Elastisch kritisch moment M_{cr}	856,97	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,93	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,50	
Rekenwaarde knikweerstand $M_{b,Rd}$	374,31	kNm
Eenheidscontrole	0,84	-

Mcr parameters		
LTB lengte L	14,500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

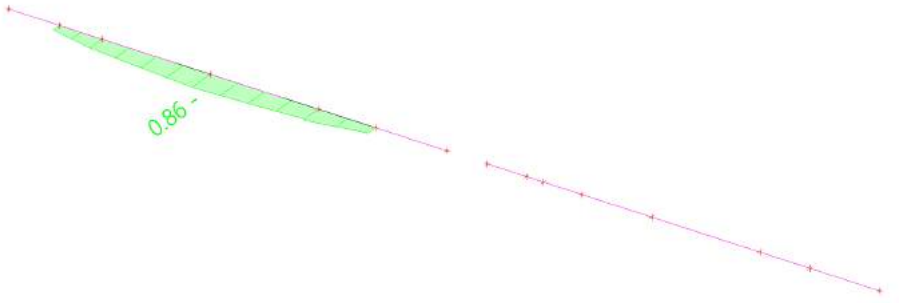
Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	33,37	kN
Ontwerp buigende momenten $M_{y,Ed}$	315,14	kNm
Ontwerp buigende momenten $M_{z,Ed}$	35,38	kNm
Trekweerstand $N_{t,Rd}$	4944,14	kN
Buigweerstand $M_{b,y,Rd}$	374,31	kNm
Buigweerstand $M_{c,z,Rd,com}$	322,07	kNm

Eenheidscontrole = 0,84 + 0,11 - 0,01 = 0,95 -

De staaf voldoet aan de stabiliteitscontrole.

9.11. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht





9.12. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S403

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S403	**5,579 / 11,700 m**	**Grafische doorsnede**	**S 235**	**UGT**	**0,86 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1022

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Algemeen	

Waarschuwing: Sterktereductie gerelateerd aan de dikte wordt niet ondersteund voor dit type doorsnede.

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 5,579 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-56,29	kN
$V_{y,Ed}$	-2,69	kN
$V_{z,Ed}$	-12,40	kN

Interne krachten	Berekende	Eenheid
T_{Ed}	-0,04	kNm
$M_{y,Ed}$	257,30	kNm
$M_{z,Ed}$	64,69	kNm

Classificatie voor doorsnede-ontwerp
Waarschuwing: Classificatie wordt niet ondersteund voor dit type doorsnede.
De doorsnede wordt gecontroleerd als elastisch, klasse 3.

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2,5114e-02	m^2
$N_{c,Rd}$	5901,89	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,y,min}$	2,7183e-03	m^3
$M_{el,y,Rd}$	638,80	kNm
Eenheidscontrole	0,40	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,z,min}$	1,5664e-03	m^3
$M_{el,z,Rd}$	368,11	kNm
Eenheidscontrole	0,18	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6554e-02	m^2
$V_{pl,y,Rd}$	2246,03	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,3472e-03	m^2
$V_{pl,z,Rd}$	589,81	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	38	
τ_{Ed}	0,2	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.2 en formule (6.42)

Normaalspanningen		
Vezel	31	
$\sigma_{N,Ed}$	2,2	MPa
$\sigma_{My,Ed}$	94,7	MPa
$\sigma_{Mz,Ed}$	41,3	MPa
$\sigma_{tot,Ed}$	138,2	MPa
Eenheidscontrole	0,59	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	5688,94	1855,63	kN
Slankheid λ	95,65	167,48	
Relatieve slankheid λ_{rel}	1,02	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	16,200	m
Elastische kritische last $N_{cr,T}$	11328,76	kN
Elastische kritische last $N_{cr,TF}$	1855,63	kN
Relatieve slankheid $\lambda_{rel,T}$	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastisch kritisch moment M_{cr}	1007,79	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,80	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,58	
Rekenwaarde knikweerstand $M_{b,Rd}$	371,83	kNm
Eenheidscontrole	0,69	-

Mcr parameters		
LTB lengte L	16,200	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2,5114e-02	m^2
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastische doorsnedemodulus $W_{el,z}$	1,5664e-03	m^3
Ontwerpdrukkracht N_{Ed}	56,29	kN
Ontwerp buigende momenten $M_{y,Ed}$	257,30	kNm
Ontwerp buigende momenten $M_{z,Ed}$	64,69	kNm
Karakteristieke drukweerstand N_{Rk}	5901,89	kN
Karakteristieke momentweerstand $M_{y,Rk}$	638,80	kNm

Buig- en axiale drukcontrole paramaters		
Karakteristieke momentweerstand $M_{z,Rk}$	368,11	kNm
Reductie factor χ_y	1,00	
Reductie factor χ_z	1,00	
Reductie factor χ_{LT}	0,58	
Interactiefactor k_{yy}	0,95	
Interactiefactor k_{yz}	0,91	
Interactiefactor k_{zy}	1,00	
Interactiefactor k_{zz}	0,91	

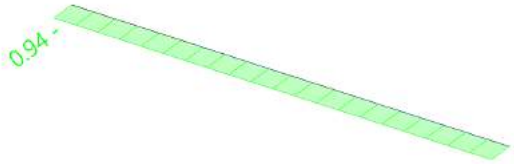
Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-21,89	kNm
Veldmoment $M_{s,y}$	257,30	kNm
Factor $\alpha_{h,y}$	-0,09	
Ratio van uiteinde momenten ψ_y	0,03	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-63,86	kNm
Veldmoment $M_{s,z}$	64,69	kNm
Factor $\alpha_{h,z}$	-0,99	
Ratio van uiteinde momenten ψ_z	0,51	
Equivalente moment factor C_{mz}	0,90	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-21,89	kNm
Veldmoment $M_{s,LT}$	257,30	kNm
Factor $\alpha_{h,LT}$	-0,09	
Ratio van uiteinde momenten ψ_{LT}	0,03	
Equivalente moment factor C_{mLT}	0,90	

Eenheidscontrole (6.61) = 0,01 + 0,66 + 0,16 = 0,83 -
Eenheidscontrole (6.62) = 0,01 + 0,69 + 0,16 = 0,86 -

De staaf voldoet aan de stabiliteitscontrole.

9.13. Staalcontrole ligger DIN28; UGT, grafisch overzicht





9.14. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S331

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S331	0.000 / 16.200 m	HEB280	S 235	UGT	0.94 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1065

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-12.08	kN
$V_{y,Ed}$	9.01	kN
$V_{z,Ed}$	4.31	kN
T_{Ed}	-0.01	kNm
$M_{y,Ed}$	0.04	kNm
$M_{z,Ed}$	-20.47	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	9.970e+03	4.434e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1
3	SO	111	18	-8.185e+03	-4.256e+04								
4	I	196	11	8.994e+02	9.393e+02	0.96		1.00	18.67	28.00	34.00	38.57	1
5	SO	111	18	-8.132e+03	-4.250e+04								
7	SO	111	18	1.002e+04	4.440e+04	0.23	0.53	1.00	6.15	9.00	10.00	15.23	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3140e-02	m^2
$N_{c,Rd}$	3087.90	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.5340e-03	m^3
$M_{pl,y,Rd}$	360.49	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.1760e-04	m^3
$M_{pl,z,Rd}$	168.64	kNm
Eenheidscontrole	0.12	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0442e-02	m^2
$V_{pl,y,Rd}$	1416.78	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.1130e-03	m^2
$V_{pl,z,Rd}$	558.04	kN
Eenheidscontrole	0.01	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.1	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	360.49	kNm
α	2.00	
$M_{pl,z,Rd}$	168.64	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.12 = 0.12 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 16.200 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.297e+04	5.865e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1
3	SO	111	18	-1.115e+04	-5.682e+04								
4	I	196	11	9.140e+02	9.246e+02	0.99		1.00	18.67	28.00	34.00	38.15	1
5	SO	111	18	-1.114e+04	-5.681e+04								
7	SO	111	18	1.299e+04	5.866e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	16.200	16.200	m
Knikfactor k	10.00	0.62	
Kniklengte L_{cr}	162.000	10.081	m
Kritische Euler last N_{cr}	15.22	1344.93	kN
Slankheid λ	1337.74	142.30	
Relatieve slankheid λ_{rel}	14.24	1.52	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	b	c	
Imperfectie α	0.34	0.49	
Reductie factor χ	0.00	0.31	
Knikweerstand $N_{b,Rd}$	14.87	956.16	kN

Waarschuwing: Slankheid 1337.74 is groter dan de limietwaarde van 1000.00.

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Knikweerstand $N_{b,Rd}$	14.87	kN
Eenheidscontrole	0.81	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Elastisch kritisch moment M_{cr}	288.20	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.12	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	16.200	m
Vorklengte L_g	16.200	m
Invloed van lastpositie	geen invloed	

Mcr parameters		
Factor α	575.00	
Reductie factor k_{red}	1.00	
Coëfficiënt C	3.68	
Factor S	1430	mm
Kip moment factor C_1	1.13	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.1760e-04	m^3
Ontwerpdrukkracht N_{Ed}	12.08	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	17.48	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-27.20	kNm
Karakteristieke drukweerstand N_{Rk}	3087.90	kN
Karakteristieke momentweerstand $M_{y,Rk}$	360.49	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	168.64	kNm
Reductie factor χ_y	0.00	
Reductie factor χ_z	0.31	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.48	
Interactiefactor k_{yz}	0.32	
Interactiefactor k_{zy}	0.89	
Interactiefactor k_{zz}	0.53	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S331 positie 8.100 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S331 positie 16.200 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-27.20	kNm
Veldmoment $M_{s,z}$	14.34	kNm
Factor $\alpha_{s,z}$	-0.53	
Ratio van uiteinde momenten ψ_z	0.75	
Equivalente moment factor C_{mz}	0.52	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	0.04	kNm
Veldmoment $M_{s,LT}$	17.48	kNm
Factor $\alpha_{h,LT}$	0.00	
Ratio van uiteinde momenten ψ_{LT}	0.27	
Equivalente moment factor C_{mLT}	0.95	

Eenheidscontrole (6.61) = 0.81 + 0.07 + 0.05 = 0.94 -
Eenheidscontrole (6.62) = 0.01 + 0.04 + 0.09 = 0.14 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

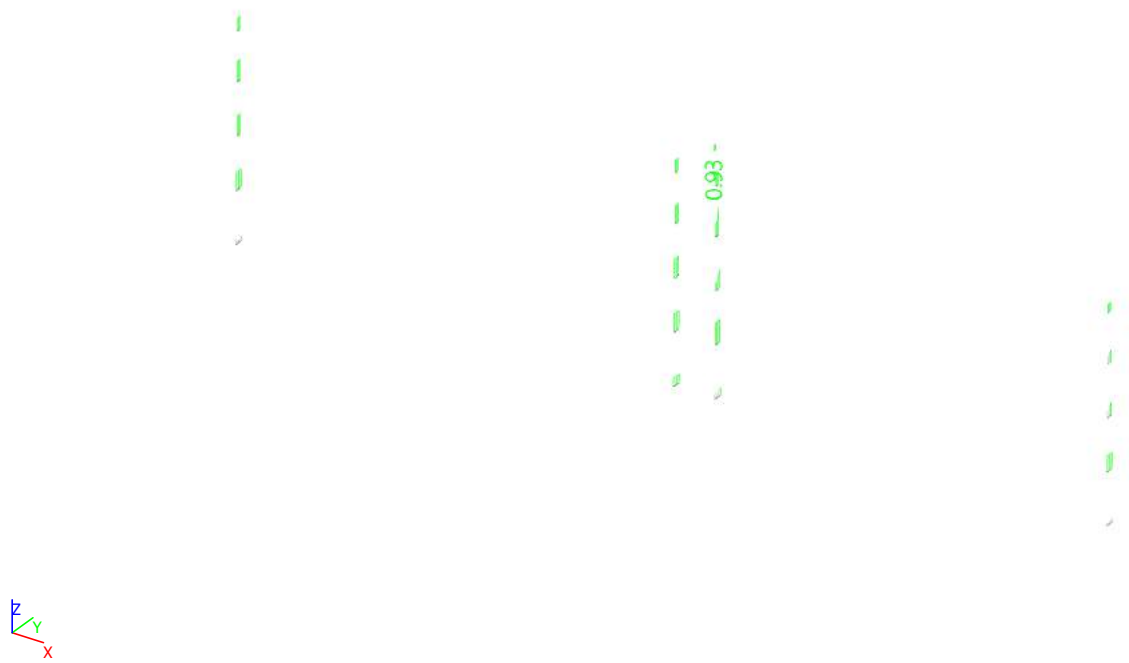
Plooiparameters		
Knik veldlengte a	16.200	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	244	mm
Lijfdikte t	11	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	23.24
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.15. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.16. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S386	0.187 / 0.187 m	Rechthoek (200; 28)	S 235	UGT	0.93 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.187 m

Interne krachten	Berekende	Eenheid
N_{Ed}	4.20	kN
$V_{y,Ed}$	8.08	kN
$V_{z,Ed}$	-188.01	kN
T_{Ed}	0.53	kNm
$M_{y,Ed}$	-26.79	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	1.95	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.428e+05	-1.443e+05	-1.01	23.80	0.50	7.14	25.66	28.51	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	5.6000e-03	m²
$N_{pl,Rd}$	1316.00	kN
$N_{u,Rd}$	1451.52	kN
$N_{t,Rd}$	1316.00	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m³
$M_{pl,y,Rd}$	65.80	kNm
Eenheidscontrole	0.41	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m³
$M_{pl,z,Rd}$	9.21	kNm
Eenheidscontrole	0.21	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,y,Rd}$	759.79	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,z,Rd}$	759.79	kN
Eenheidscontrole	0.25	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	11.2	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.08	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1(5) en formule (6.1)

Elastische toetsing		
Vezel	5	
$\sigma_{N,Ed}$	-0.7	MPa
$\sigma_{My,Ed}$	-143.5	MPa
$\sigma_{Mz,Ed}$	-74.4	MPa
$\sigma_{tot,Ed}$	-218.7	MPa
$\tau_{Vy,Ed}$	0.0	MPa
$\tau_{Vz,Ed}$	0.0	MPa
$\tau_{t,Ed}$	0.0	MPa
$\tau_{tot,Ed}$	0.0	MPa

Elastische toetsing		
$\sigma_{von\ Mises,Ed}$	218.7	MPa
Eenheidscontrole	0.93	-

Opmerking: Voor deze doorsnede is in artikel 6.2.7(9) geen formule gegeven voor de plastische dwarskrachtweerstand gereduceerd met torsie. Daarom wordt het criterium elastisch vloeien volgens EN 1993-1-1 artikel 6.2.1(5) getoetst.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.187 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.428e+05	-1.443e+05	-1.01	23.80	0.50	7.14	25.66	28.51	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	2112.72	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.18	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

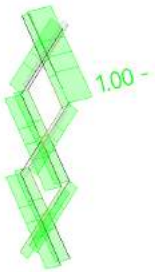
Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.357	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.45	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

De staaf voldoet aan de stabiliteitscontrole.

9.17. Staalcontrole diagonaal; UGT, grafisch overzicht





9.18. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S235, S267..S271, S274, S277..S281

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S281	0.000 / 3.142 m	UPE140	S 235	UGT	1.00 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1002

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-220.68	kN
$V_{y,Ed}$	0.00	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.00	kNm
$M_{z,Ed}$	0.00	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	1.198e+05	1.198e+05	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	1.198e+05	1.198e+05	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	1.198e+05	1.198e+05	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.8400e-03	m²
$N_{c,Rd}$	432.40	kN
Eenheidscontrole	0.51	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	1.198e+05	1.198e+05	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	1.198e+05	1.198e+05	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	1.198e+05	1.198e+05	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	3.142	3.142	m
Knikfactor k	0.65	0.65	
Kniklengte L_{cr}	2.042	2.042	m
Kritische Euler last N_{cr}	2977.28	391.17	kN
Slankheid λ	35.79	98.74	
Relatieve slankheid λ_{rel}	0.38	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.91	0.51	
Knikweerstand $N_{b,Rd}$	392.31	220.83	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.8400e-03	m²
Knikweerstand $N_{b,Rd}$	220.83	kN
Eenheidscontrole	1.00	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	3.142	m
Elastische kritische last $N_{cr,T}$	649.52	kN
Elastische kritische last $N_{cr,TF}$	391.17	kN
Relatieve slankheid $\lambda_{rel,T}$	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.51	
Oppervlakte van de doorsnede A	1.8400e-03	m²

Knikweerstand $N_{b,Rd}$	220.83	kN
Eenheidscontrole	1.00	-

De staaf voldoet aan de stabiliteitscontrole.

9.19. Staalcontrole bliksempiek; UGT, grafisch overzicht





9.20. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S332

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S332	**0.000 / 4.651 m**	**Koker fl (374; 7; 126; 10; 354)**	**S 235**	**UGT**	**0.53 -**

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-2.28	kN
$V_{y,Ed}$	1.01	kN
$V_{z,Ed}$	9.79	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	-39.80	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-4.71	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	-1.033e+05	-1.031e+05								
2	I	126	10	-8.649e+04	9.856e+04	-0.88		0.53	12.60	65.30	75.87	109.03	1
3	I	126	10	-9.798e+04	8.707e+04	-1.13		0.47	12.60	76.51	88.20	139.80	1
4	UO	5	7	9.205e+04	9.221e+04	1.00	0.43	1.00	0.71	9.00	10.00	13.80	1
5	UO	5	7	-9.163e+04	-9.147e+04								
6	I	4	10	-8.649e+04	-9.163e+04								
7	UO	5	7	1.037e+05	1.039e+05	1.00	0.43	1.00	0.71	9.00	10.00	13.77	1
8	I	4	10	9.856e+04	1.037e+05	0.95		1.00	0.35	28.00	34.00	38.67	1
9	I	364	7	-1.031e+05	-9.163e+04								
10	I	4	10	-9.798e+04	-1.031e+05								
11	I	364	7	9.221e+04	1.037e+05	0.89		1.00	52.00	28.00	34.00	39.52	4
12	I	4	10	8.707e+04	9.221e+04	0.94		1.00	0.35	28.00	34.00	38.75	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.350e+05	-2.350e+05							
2	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
3	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	-2.350e+05	-2.350e+05							
6	I	4	-2.226e+05	-2.350e+05							
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2
9	I	364	-2.350e+05	-2.350e+05							
10	I	4	-2.226e+05	-2.350e+05							

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2

Effectieve doorsnede Mz-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.287e+05	-2.350e+05							
2	I	126	2.287e+05	2.287e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	-2.287e+05	-2.287e+05							
4	UO	5	-2.287e+05	-2.350e+05							
5	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
6	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
8	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
10	I	4	-2.287e+05	-2.287e+05							
11	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
12	I	4	-2.287e+05	-2.287e+05							

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	7.0288e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.5067e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.3936e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	7.0288e-03	m^2
$N_{c,Rd}$	1651.76	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.3936e-04	m^3
$M_{c,y,Rd}$	79.75	kNm
Eenheidscontrole	0.50	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	187.45	kNm
Eenheidscontrole	0.03	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	685.11	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	374.41	kN
Eenheidscontrole	0.03	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	7.0288e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.3936e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.3	MPa
$\sigma_{My,Ed}$	117.3	MPa
$\sigma_{Mz,Ed}$	5.9	MPa
$\sigma_{tot,Ed}$	123.5	MPa
Eenheidscontrole	0.53	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	2.20	0.89	
Kniklengte L_{cr}	10.243	4.138	m
Kritische Euler last N_{cr}	523.72	17494.75	kN
Slankheid λ	175.20	30.31	
Relatieve slankheid λ_{rel}	1.78	0.31	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.651	m
Elastische kritische last $N_{cr,T}$	264162.55	kN
Elastische kritische last $N_{cr,TF}$	523.72	kN
Relatieve slankheid $\lambda_{rel,T}$	1.78	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Elastisch kritisch moment M_{cr}	16750.38	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.07	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.87	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	7.0288e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	2.28	kN
Ontwerp buigende momenten $M_{y,Ed}$	-39.80	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-4.71	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	1651.76	kN
Karakteristieke momentweerstand $M_{y,Rk}$	79.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	187.45	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.60	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.60	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lineair moment M	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.60	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-39.80	kNm
Veldmoment $M_{s,LT}$	-18.46	kNm
Factor $\alpha_{s,LT}$	0.46	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.57	

Eenheidscontrole (6.61) = 0.00 + 0.45 + 0.02 = 0.47 -
Eenheidscontrole (6.62) = 0.00 + 0.50 + 0.02 = 0.52 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE H

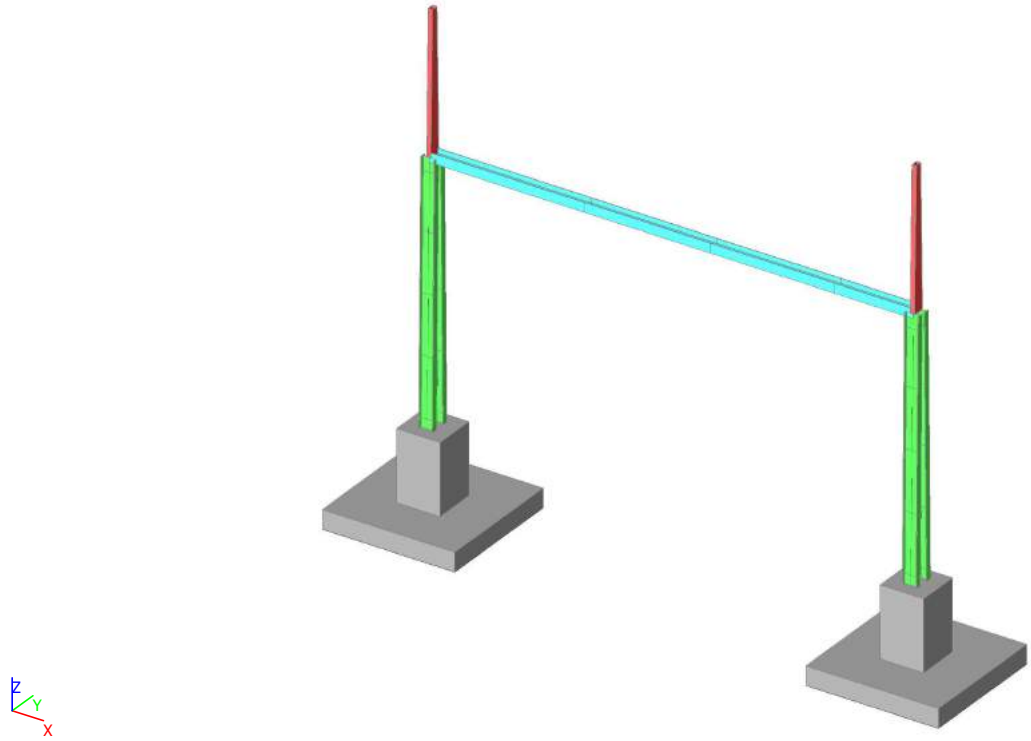
In- en uitvoergegevens 3D raamwerkprogramma juk 64b

1. Inhoudsopgave

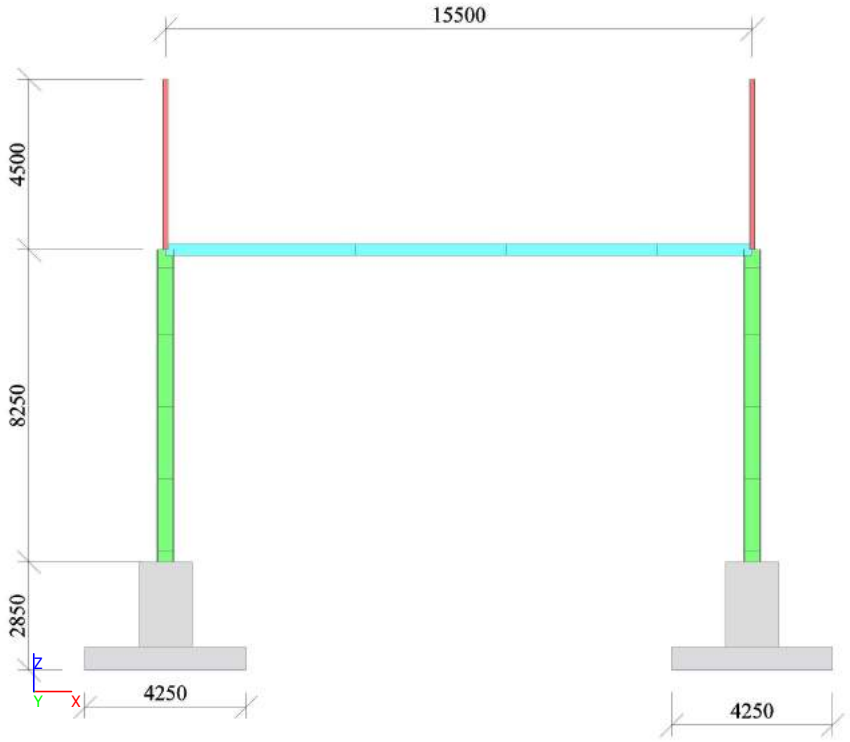
1. Inhoudsopgave **1**
2. Geometrie **2**
2.1. Perspectief constructie 2
2.2. Maatvoering 2
2.3. Materialen 3
2.4. Doorsneden 3
3. Belastingen **9**
3.1. Belastingsgevallen 9
3.2. BG1: e.g. constrcutie 14
3.3. BG2: grond op poer 14
3.4. BG3: wind op constructie; X-richting 15
3.5. BG4: wind op constructie; Y-richting 15
3.6. LC1001 / Totale waarde 16
3.7. LC1056 / Totale waarde 16
3.8. LC1111 / Totale waarde 17
3.9. LC1167 / Totale waarde 17
3.10. Combinaties 18
3.11. Resultaatklasses 23
4. Berekeningsverslag **24**
5. Reacties **40**
5.1. Oplegreacties kolom links; UGT, globale extremen 40
5.2. Oplegreacties kolom rechts; UGT, globale extremen 40
6. Grondspanningen **41**
6.1. Grondspanningen onder betonpoeren; UGT 41
7. Staafkrachten **42**
7.1. Staafkrachten kolom INP450; UGT, globale extremen 42
7.2. Staafkrachten ligger HEA340; UGT, globale extremen 42
7.3. Staafkrachten koppelplaat; UGT, globale extremen 42
7.4. Staafkrachten bliksempiek; UGT, globale extremen 43
7.5. Staafkrachten betonopstort; UGT, globale extremen 43
8. Staafspanningen **44**
8.1. Von Mises spanningen kolom INP450; UGT, globale extremen 44
8.2. Von Mises spanningen ligger HEA340; UGT, globale extremen 44
8.3. Von Mises spanningen koppelplaat; UGT, globale extremen 44
8.4. Von Mises spanningen bliksempiek; UGT, globale extremen 44
9. Normcontrole staal **45**
9.1. Staalcontrole kolom INP450; UGT, grafisch overzicht 45
9.2. Staalcontrole kolom INP450; UGT, maatgevende doorsnede, uitgebreid 45
9.3. Staalcontrole ligger HEA340; UGT, grafisch overzicht 49
9.4. Staalcontrole ligger HEA340; UGT, maatgevende doorsnede, uitgebreid 49
9.5. Staalcontrole koppelplaat; UGT, grafisch overzicht 54
9.6. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 54
9.7. Staalcontrole bliksempiek; UGT, grafisch overzicht 57
9.8. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 57

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 355	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	355.0 335.0	490.0 470.0	
Dummy-S	0.0	2.1000e+07 8.0769e+06	0.3 0.00	0 40	40 80	355.0 335.0	490.0 470.0	

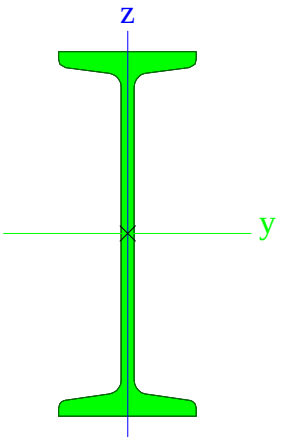
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C35/45	Beton	2500.0	2600.0	3.4100e+04	0.2	0.00	35.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom		
Type	INP450	
Onderdeelmateriaal	S 355	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	8.50e+05	8.50e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.22e+05	1.22e+05
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

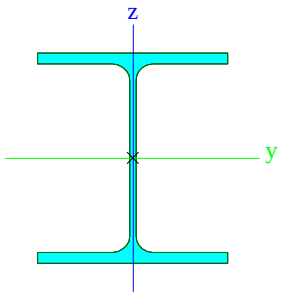
Picture



Ligger		
Type	HEA340	
Onderdeelmateriaal	S 355	
Bouwwijze	gewalst	

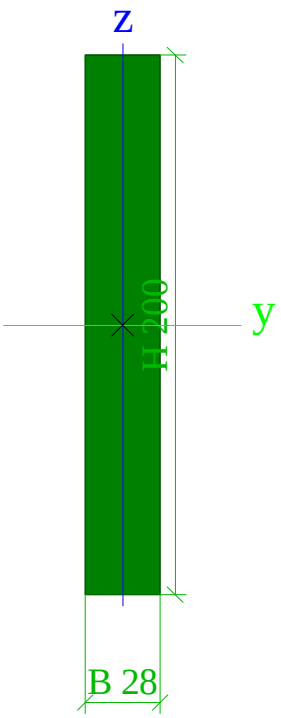
Knik y-y, Knik z-z	b	c
A [m^2]	1.3400e-02	
A_y [m^2], A_z [m^2]	9.5495e-03	3.3201e-03
I_y [m^4], I_z [m^4]	2.7700e-04	7.4400e-05
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	1.6800e-03	4.9600e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	1.8500e-03	7.5417e-04
I_w [m^6], I_t [m^4]	1.8244e-06	1.2700e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.57e+05	6.57e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.68e+05	2.68e+05
A_L [m^2/m], A_D [m^2/m]	1.8000e+00	1.7944e+00

Picture



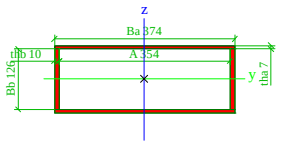
Plaat		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 355	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m^2]	5.6000e-03	
A_y [m^2], A_z [m^2]	4.6667e-03	4.6667e-03
I_y [m^4], I_z [m^4]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	2.8000e-04	3.9200e-05
I_w [m^6], I_t [m^4]	1.0882e-09	1.3284e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.94e+04	9.94e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.39e+04	1.39e+04
A_L [m^2/m], A_D [m^2/m]	4.5600e-01	4.5600e-01

Picture



Bliksempiek 1		
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 355	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m^2]	7.7560e-03	
A_y [m^2], A_z [m^2]	5.0496e-03	2.7596e-03
I_y [m^4], I_z [m^4]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	4.2757e-04	9.4821e-04
I_w [m^6], I_t [m^4]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.52e+05	1.52e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.37e+05	3.37e+05
A_L [m^2/m], A_D [m^2/m]	1.0280e+00	1.9880e+00

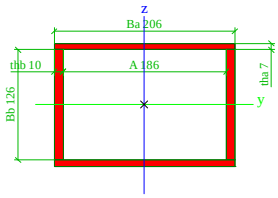
Picture



Bliksempiek 2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 355	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m^2]	5.4040e-03	
A_y [m^2], A_z [m^2]	2.8012e-03	2.7167e-03
I_y [m^4], I_z [m^4]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	2.7117e-04	3.9549e-04

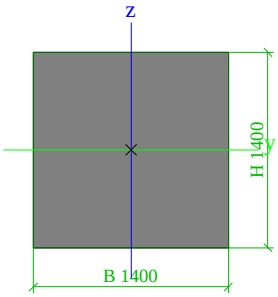
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.63e+04	9.63e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.40e+05	1.40e+05
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

Picture



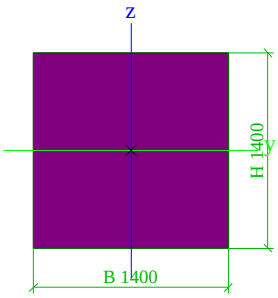
Poer		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C35/45	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Picture



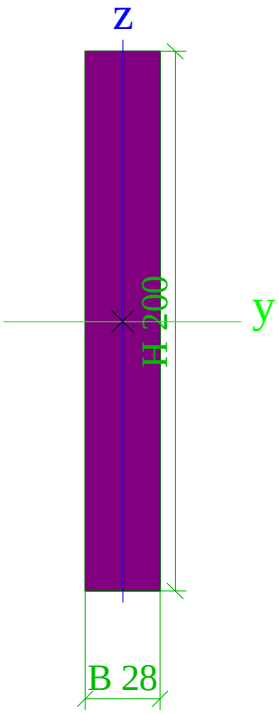
Dummy-B		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C35/45	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Picture



Dummy-S1		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 355	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.94e+04	9.94e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.39e+04	1.39e+04
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

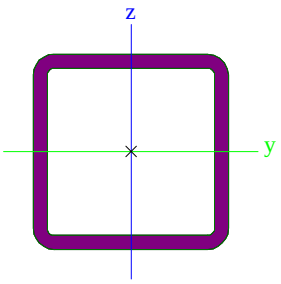
Picture



Dummy-S2		
Type	SHS450/450/32.0	
Onderdeelmateriaal	Dummy-S	

Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	a
A [m^2]	5.0900e-02	
A_y [m^2], A_z [m^2]	2.5857e-02	2.5857e-02
I_y [m^4], I_z [m^4]	1.4410e-03	1.4410e-03
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	6.4040e-03	6.4040e-03
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	8.0210e-03	8.0210e-03
I_w [m^6], I_t [m^4]	4.9208e-05	2.4200e-03
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	225	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.85e+06	2.85e+06
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.85e+06	2.85e+06
A_L [m^2/m], A_D [m^2/m]	1.6900e+00	3.2336e+00

Picture



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. constructie	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

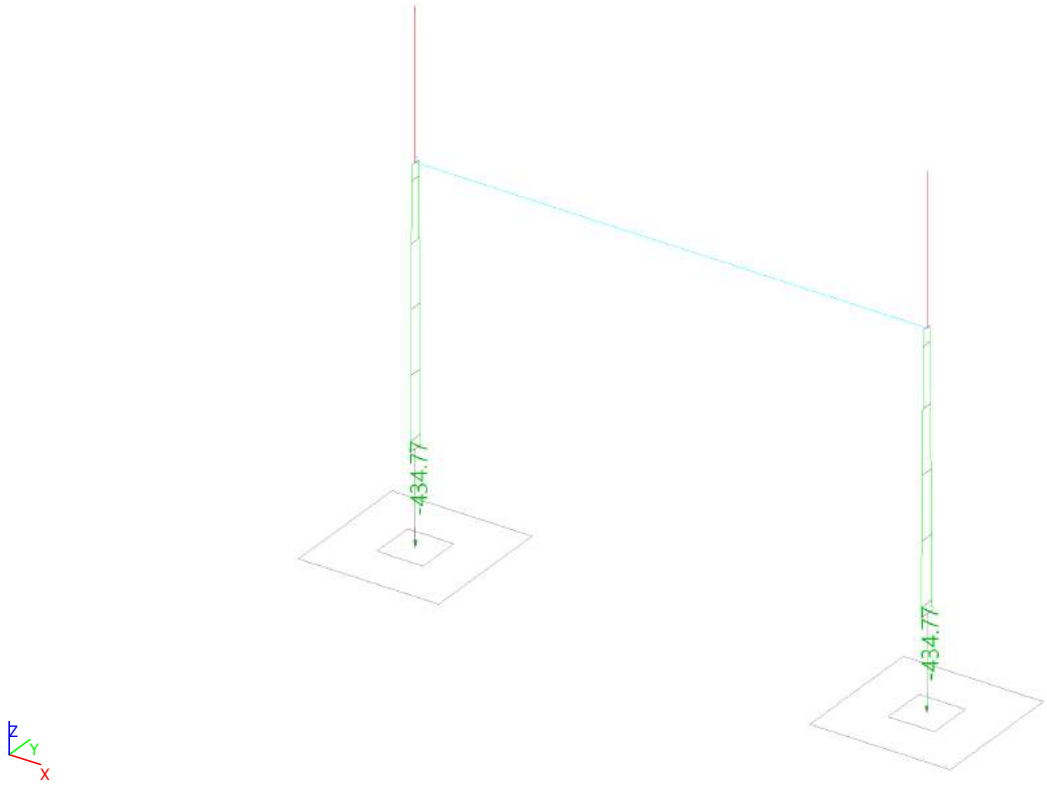
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

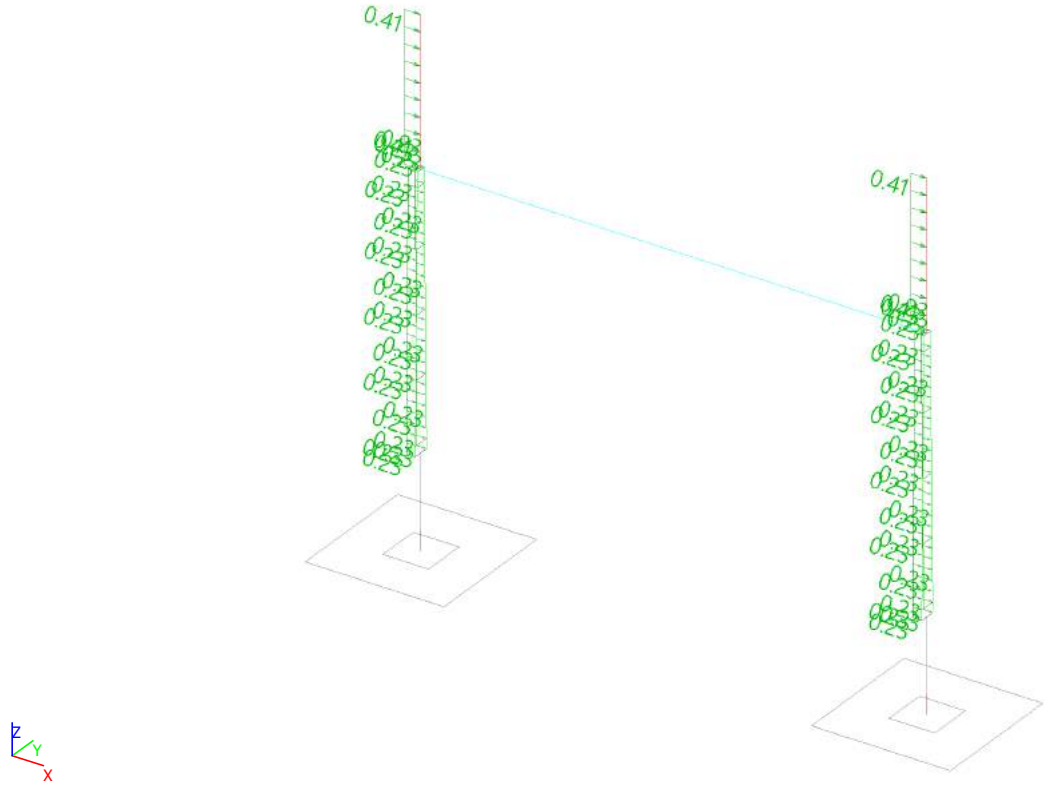
3.2. BG1: e.g. constrcutie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

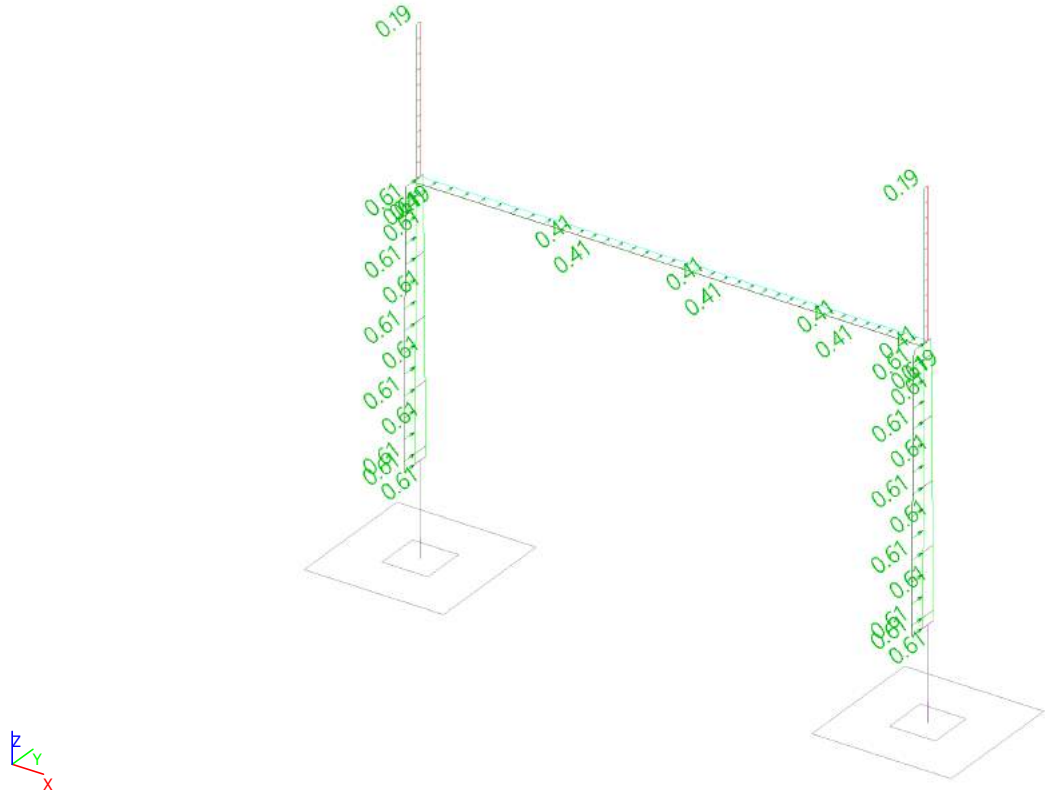
3.3. BG2: grond op poer



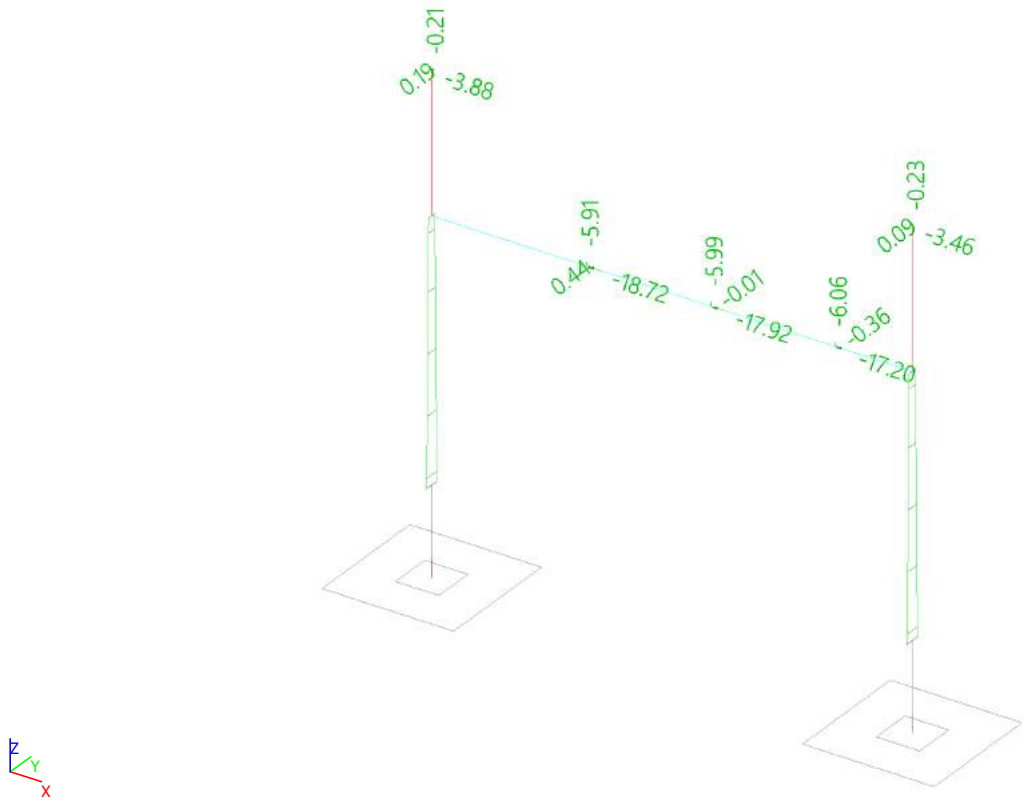
3.4. BG3: wind op constructie; X-richting



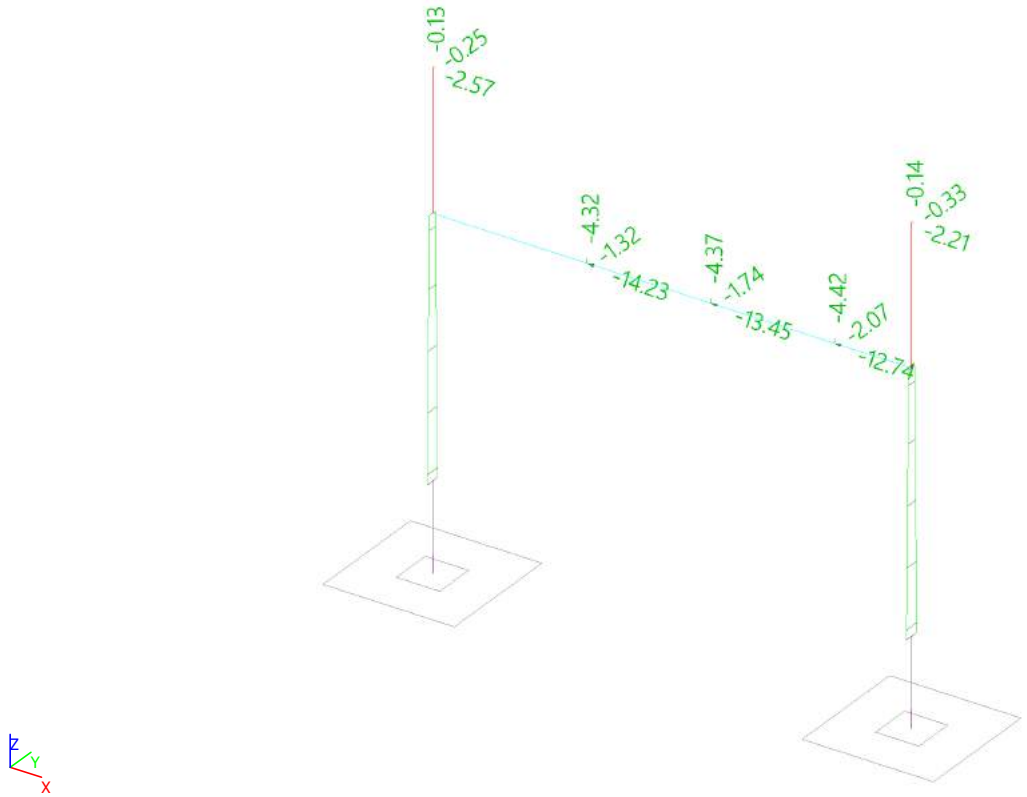
3.5. BG4: wind op constructie; Y-richting



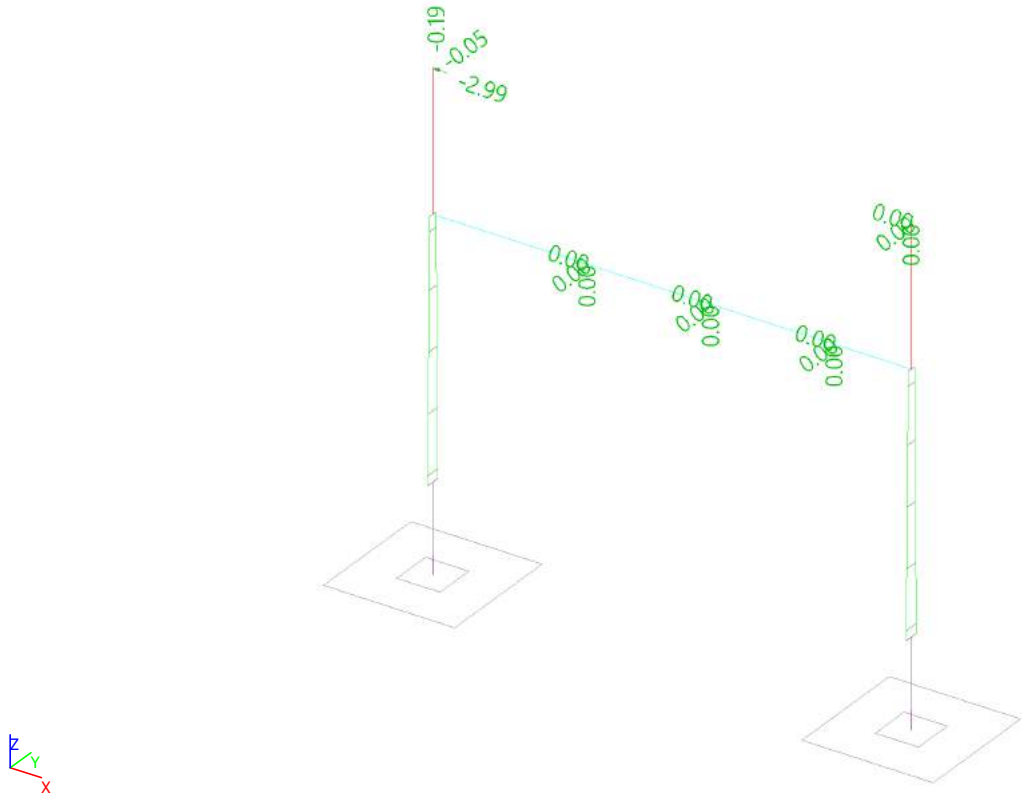
3.6. LC1001 / Totale waarde



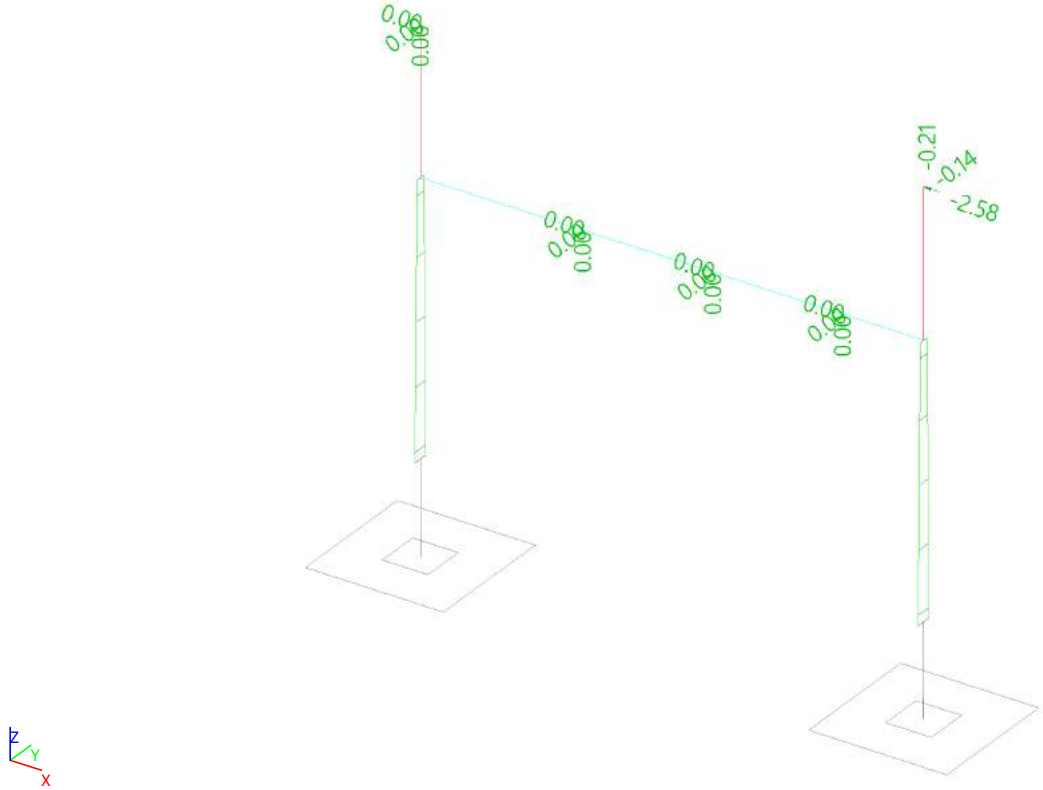
3.7. LC1056 / Totale waarde



3.8. LC1111 / Totale waarde



3.9. LC1167 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
Combi1	UGT-1-Omhullend 1	Omhullende - uiterst	BG1 - e.g. constructie	1.20
			BG2 - grond op poer	1.20
			BG3 - wind op constructie X-richting	1.50
			BG4 - wind op constructie Y-richting	1.50
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
Combi2	UGT-2-Omhullend 2	Omhullende - uiterst	BG1 - e.g. constructie	1.20
			BG2 - grond op poer	1.20
			BG3 - wind op constructie X-richting	-1.50
			BG4 - wind op constructie Y-richting	-1.50
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00

3.11. Resultaatklassen

Naam	Lijst
Alle UGT	Combi1 - Omhullende - uiterst Combi2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**888**
Aantal 1D elementen	**84**
Aantal netknopen	**1041**
Aantal vergelijkingen	**6246**
Belastinggevallen	BG1
	BG2
	BG3
	BG4
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**888**
Aantal 1D elementen	**84**
Aantal netknopen	**1041**
Aantal vergelijkingen	**6246**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**888**
Aantal 1D elementen	**84**
Aantal netknopen	**1041**
Aantal vergelijkingen	**6246**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
Buigtheorie	Mindlin
Start berekening	24.12.2019 10:15
Einde berekening	24.12.2019 10:15

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	0.0	-865.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	20.5
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	844.7
BG BG2	last	0.0	0.0	-869.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	21.8
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	847.8
BG BG3	last	11.3	0.0	0.0
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-11.3	0.0	0.0
BG BG4	last	0.0	18.1	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	-13.6	0.0
BG LC1001	last	-61.2	0.3	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	61.2	-0.2	17.9
BG LC1002	last	-134.9	-13.2	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.9	9.1	17.5
BG LC1003	last	-101.9	-3.6	-21.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	101.9	2.6	20.4
BG LC1004	last	-57.3	-2.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	57.3	1.9	17.9
BG LC1005	last	-49.2	0.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	49.2	-0.5	17.9
BG LC1006	last	-132.4	-13.1	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	132.4	9.0	17.5
BG LC1007	last	-96.5	-3.2	-21.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	96.5	2.4	20.4
BG LC1008	last	-54.9	-2.7	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	54.9	1.8	17.9
BG LC1009	last	-52.7	3.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-1.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	52.7	-2.3	17.9
BG LC1010	last	-134.0	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.0	9.3	17.5
BG LC1011	last	-99.1	-3.3	-21.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	99.1	2.4	20.4
BG LC1012	last	-56.4	-2.7	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	56.4	1.9	17.9
BG LC1013	last	-47.1	4.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-1.6	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	47.1	-3.2	17.9
BG LC1014	last	-132.9	-13.2	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	132.9	9.1	17.5
BG LC1015	last	-96.7	-2.3	-21.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.5	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	96.7	1.8	20.4
BG LC1016	last	-55.3	-2.5	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	55.3	1.7	17.9
BG LC1017	last	-55.2	-5.4	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	55.2	3.6	17.9
BG LC1018	last	-134.5	-13.3	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.5	9.1	17.5
BG LC1019	last	-99.9	-4.9	-20.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.5	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	99.9	3.4	20.4
BG LC1020	last	-56.9	-3.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.9	2.0	17.9
BG LC1021	last	-45.4	-6.2	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	45.4	4.1	17.9
BG LC1022	last	-132.5	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	132.5	9.2	17.5
BG LC1023	last	-96.0	-5.4	-20.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.7	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	96.0	3.8	20.4
BG LC1024	last	-54.9	-3.1	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	54.9	2.1	17.9
BG LC1025	last	-46.3	-3.3	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	46.3	2.2	17.9
BG LC1026	last	-133.1	-13.5	-17.9

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.1	9.3	17.5
BG LC1027	last	-96.6	-4.7	-20.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.4	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	96.6	3.3	20.4
BG LC1028	last	-55.5	-3.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	2.1	17.9
BG LC1029	last	-49.7	-2.5	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	49.7	1.6	17.9
BG LC1030	last	-133.8	-13.3	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.8	9.1	17.5
BG LC1031	last	-98.0	-4.1	-20.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	98.0	2.9	20.4
BG LC1032	last	-56.2	-2.9	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.2	2.0	17.9
BG LC1033	last	-54.5	-0.5	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	54.5	0.4	13.1
BG LC1034	last	-132.3	-14.6	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	132.3	10.0	12.6
BG LC1035	last	-95.5	-5.4	-16.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.6	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	95.5	3.8	15.6
BG LC1036	last	-47.9	-5.0	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	47.9	3.4	13.0
BG LC1037	last	-42.5	0.0	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	42.5	0.0	13.1
BG LC1038	last	-129.9	-14.5	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	129.9	10.0	12.6
BG LC1039	last	-90.1	-5.0	-16.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.4	0.4

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	90.1	3.6	15.6
BG LC1040	last	-45.5	-4.9	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.5	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	45.5	3.4	13.0
BG LC1041	last	-43.8	4.6	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-1.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	43.8	-3.0	13.1
BG LC1042	last	-131.6	-14.7	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	131.6	10.1	12.6
BG LC1043	last	-92.5	-4.9	-16.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.4	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	92.5	3.5	15.6
BG LC1044	last	-46.8	-5.1	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	3.5	13.0
BG LC1045	last	-38.2	5.9	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-2.0	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	38.2	-3.9	13.1
BG LC1046	last	-130.5	-14.5	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.5	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	9.9	12.6
BG LC1047	last	-90.0	-3.9	-16.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.0	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	90.0	2.9	15.6
BG LC1048	last	-45.7	-4.8	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.5	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	45.7	3.3	13.0
BG LC1049	last	-46.2	-9.3	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	3.1	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	46.2	6.2	13.1
BG LC1050	last	-132.0	-14.6	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	132.0	10.0	12.5
BG LC1051	last	-93.3	-6.9	-15.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.1	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	93.3	4.8	15.5
BG LC1052	last	-47.2	-5.6	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	47.2	3.8	13.0

	[kN]	X	Y	Z
BG LC1053	last	-36.4	-10.0	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	3.3	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	36.4	6.7	13.1
BG LC1054	last	-130.1	-14.7	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	130.1	10.1	12.5
BG LC1055	last	-89.4	-7.5	-15.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.3	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	89.4	5.2	15.5
BG LC1056	last	-45.2	-5.7	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	45.2	3.9	13.0
BG LC1057	last	-36.4	-6.2	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	36.4	4.1	13.1
BG LC1058	last	-130.7	-14.7	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	130.7	10.1	12.5
BG LC1059	last	-89.9	-6.8	-15.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	4.7	15.5
BG LC1060	last	-45.7	-5.5	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.7	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	45.7	3.7	13.0
BG LC1061	last	-39.9	-5.4	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	39.9	3.6	13.1
BG LC1062	last	-131.4	-14.5	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	131.4	10.0	12.5
BG LC1063	last	-91.4	-6.2	-15.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	91.4	4.3	15.5
BG LC1064	last	-46.4	-5.3	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.7	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	46.4	3.6	13.0
BG LC1065	last	-39.4	-1.1	-16.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.3	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	39.4	0.8	16.4
BG LC1066	last	-39.7	-1.0	-16.8
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	0.0	0.3	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	39.7	0.7	16.4
BG LC1067	last	-28.6	-1.1	-12.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.3	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	28.6	0.8	11.8
BG LC1068	last	-29.3	-0.8	-12.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	29.3	0.5	11.7
BG LC1069	last	-29.9	-0.5	-12.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	29.9	0.3	11.7
BG LC1070	last	-49.7	-0.2	-20.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	49.7	0.1	19.7
BG LC1071	last	-39.3	-1.6	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.5	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	39.3	1.1	13.1
BG LC1072	last	-52.4	-0.3	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	52.4	0.2	17.9
BG LC1073	last	-134.5	-13.4	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.5	9.2	17.5
BG LC1074	last	-88.2	-6.8	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	88.2	4.7	18.4
BG LC1075	last	-57.0	-2.9	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	2.0	17.9
BG LC1076	last	-46.1	-0.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	46.1	0.0	17.9
BG LC1077	last	-132.5	-13.3	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	132.5	9.2	17.5
BG LC1078	last	-84.8	-6.6	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	84.8	4.6	18.4
BG LC1079	last	-55.0	-2.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	55.0	1.9	17.9
BG LC1080	last	-48.9	0.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	48.9	-0.3	17.9
BG LC1081	last	-133.9	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.9	9.2	17.5
BG LC1082	last	-86.6	-6.6	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	86.6	4.6	18.4
BG LC1083	last	-56.3	-2.7	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.3	1.9	17.9
BG LC1084	last	-48.9	0.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	48.9	-0.3	17.9
BG LC1085	last	-133.9	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.9	9.2	17.5
BG LC1086	last	-86.6	-6.6	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	86.6	4.6	18.4
BG LC1087	last	-56.3	-2.7	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.3	1.9	17.9
BG LC1088	last	-50.1	-2.1	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.7	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	50.1	1.4	17.9
BG LC1089	last	-134.3	-13.3	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.3	9.2	17.5
BG LC1090	last	-87.2	-7.5	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	87.2	5.1	18.4
BG LC1091	last	-56.7	-3.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.7	2.0	17.9
BG LC1092	last	-50.1	-2.1	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.7	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	50.1	1.4	17.9
BG LC1093	last	-134.3	-13.3	-17.9

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.3	9.2	17.5
BG LC1094	last	-87.2	-7.5	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	87.2	5.1	18.4
BG LC1095	last	-56.7	-3.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.7	2.0	17.9
BG LC1096	last	-46.0	-1.4	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.5	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	46.0	1.0	17.9
BG LC1097	last	-133.2	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.2	9.2	17.5
BG LC1098	last	-85.0	-7.5	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	85.0	5.2	18.4
BG LC1099	last	-55.5	-2.9	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	2.0	17.9
BG LC1100	last	-47.8	-1.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	47.8	0.7	17.9
BG LC1101	last	-133.7	-13.4	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.7	9.2	17.5
BG LC1102	last	-86.0	-7.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	86.0	5.0	18.4
BG LC1103	last	-56.1	-2.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.1	1.9	17.9
BG LC1104	last	-3.1	0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.1	-0.1	0.2
BG LC1105	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1106	last	-5.1	0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	5.1	-0.0	0.3
BG LC1107	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1108	last	-2.9	0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.9	-0.1	0.2
BG LC1109	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1110	last	-4.9	0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.9	-0.0	0.3
BG LC1111	last	-3.0	-0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1112	last	-2.7	0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.7	-0.1	0.2
BG LC1113	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1114	last	-4.9	0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.9	-0.1	0.3
BG LC1115	last	-3.0	-0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1116	last	-2.7	0.3	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.7	-0.2	0.2
BG LC1117	last	-6.1	-0.3	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1118	last	-4.8	0.2	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.8	-0.1	0.3
BG LC1119	last	-3.0	-0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2

	[kN]	X	Y	Z
BG LC1120	last	-2.8	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.8	0.1	0.2
BG LC1121	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1122	last	-4.9	-0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.9	0.1	0.3
BG LC1123	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1124	last	-2.7	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.7	0.1	0.2
BG LC1125	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1126	last	-4.8	-0.2	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.8	0.1	0.3
BG LC1127	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.1	0.2
BG LC1128	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1129	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1130	last	-4.8	-0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.8	0.1	0.3
BG LC1131	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1132	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.0	0.2
BG LC1133	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1134	last	-4.8	-0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.8	0.0	0.3
BG LC1135	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1136	last	-2.7	0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.7	-0.0	0.2
BG LC1137	last	-5.3	-0.5	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1138	last	-4.5	-0.1	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.5	0.0	0.4
BG LC1139	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1140	last	-2.5	0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.5	-0.0	0.2
BG LC1141	last	-5.2	-0.5	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.2	0.3	0.2
BG LC1142	last	-4.2	-0.0	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.2	0.0	0.4
BG LC1143	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1144	last	-2.4	0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.4	-0.1	0.2
BG LC1145	last	-5.3	-0.6	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1146	last	-4.3	-0.0	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	4.3	0.0	0.4
BG LC1147	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1148	last	-2.3	0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.3	-0.1	0.2
BG LC1149	last	-5.3	-0.5	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1150	last	-4.2	0.0	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.2	-0.0	0.4
BG LC1151	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1152	last	-2.4	-0.3	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.4	0.2	0.2
BG LC1153	last	-5.3	-0.5	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1154	last	-4.3	-0.3	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.3	0.1	0.4
BG LC1155	last	-2.6	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1156	last	-2.3	-0.3	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.3	0.2	0.2
BG LC1157	last	-5.3	-0.6	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1158	last	-4.2	-0.3	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.2	0.2	0.4
BG LC1159	last	-2.6	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1160	last	-2.2	-0.1	-0.2

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.2	0.1	0.2
BG LC1161	last	-5.3	-0.6	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1162	last	-4.1	-0.2	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.1	0.1	0.4
BG LC1163	last	-2.6	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1164	last	-2.3	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.3	0.1	0.2
BG LC1165	last	-5.3	-0.6	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1166	last	-4.2	-0.2	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.2	0.1	0.4
BG LC1167	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : Alle UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC1	K1	S7	**-4.68**	0.00	**34.98**	0.00	**-39.26**	0.00
Combi2/11	FC1	K1	S7	**83.46**	4.97	**53.23**	-42.60	**571.63**	0.23
Combi1/19	FC1	K1	S7	25.83	**-16.38**	43.99	**110.79**	161.20	**-0.23**
Combi2/20	FC1	K1	S7	71.44	**19.21**	50.06	**-132.31**	504.54	0.40
Combi2/14	FC1	K1	S7	72.22	19.21	50.16	-132.22	510.26	**0.40**

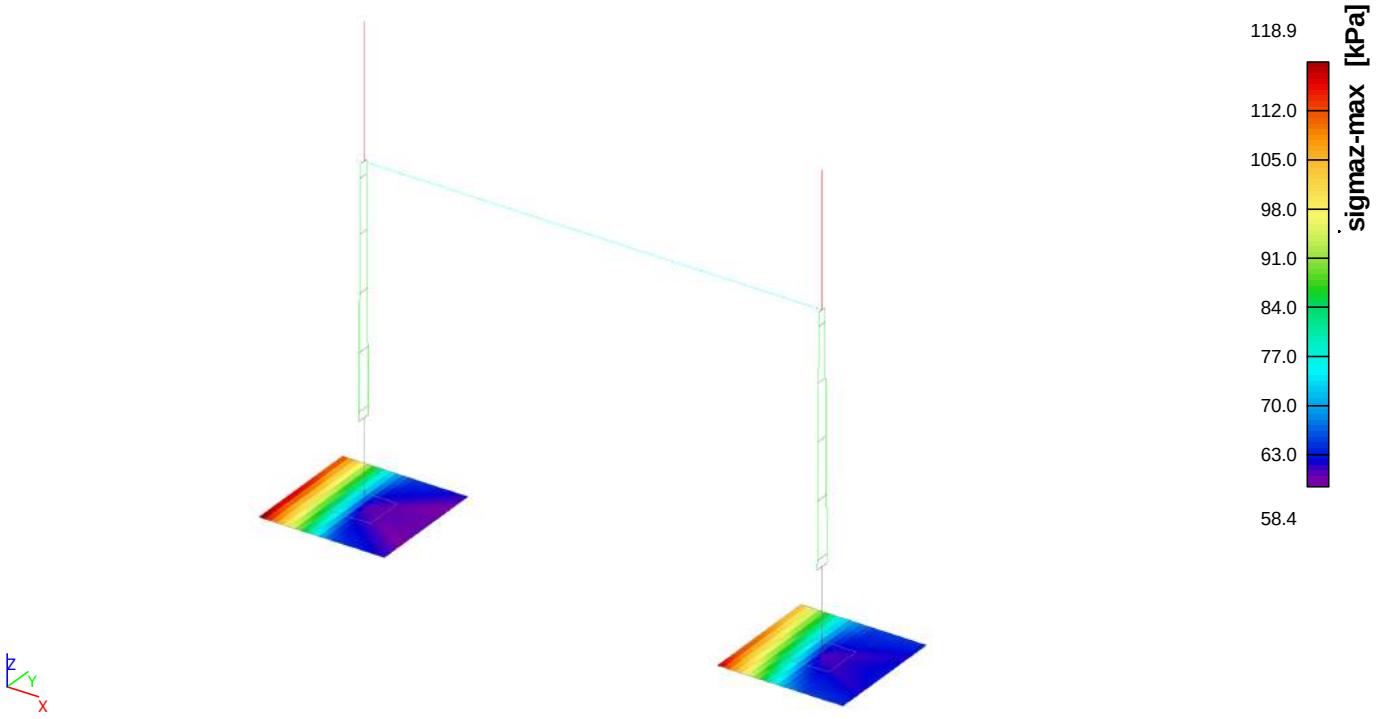
5.2. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : Alle UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC2	K3	S8	**-12.24**	0.00	36.60	0.00	**-53.33**	0.00
Combi2/11	FC2	K3	S8	**68.32**	8.25	36.27	-70.48	**543.67**	-0.21
Combi1/19	FC2	K3	S8	12.40	**-16.69**	41.01	**112.98**	136.26	**0.23**
Combi2/14	FC2	K3	S8	59.38	**22.70**	34.30	**-161.78**	486.58	**-0.38**
Combi2/12	FC2	K3	S8	68.18	9.04	**33.44**	-77.33	535.50	-0.23
Combi1/13	FC2	K3	S8	8.08	0.32	**45.11**	-2.72	129.60	0.00

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren; UGT



7. Staafkrachten

7.1. Staafkrachten kolom INP450; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S17..S40
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S29	Kolom - INP450	0.305	Combi2/20	**-321.08**	7.54	28.48	-0.01	237.75	4.94
S35	Kolom - INP450	0.000	Combi2/14	**287.16**	-7.86	-30.52	-0.02	-236.71	-2.55
S35	Kolom - INP450	0.305	Combi2/14	286.74	**-7.87**	-30.52	-0.02	-246.02	-4.95
S30	Kolom - INP450	1.895	Combi2/14	-295.32	**8.28**	28.91	-0.02	231.79	**8.93**
S23	Kolom - INP450	0.305	Combi2/11	54.20	-1.51	**-41.22**	0.00	**-284.18**	-1.11
S17	Kolom - INP450	0.305	Combi2/11	-107.43	1.53	**42.24**	0.01	**287.48**	1.10
S38	Kolom - INP450	0.000	Combi2/14	143.80	-7.20	-30.33	**-0.06**	-64.02	6.16
S20	Kolom - INP450	0.000	Combi2/14	-138.23	4.99	36.79	**0.06**	37.31	-4.76
S36	Kolom - INP450	1.895	Combi2/14	262.10	-7.46	-30.47	-0.03	-236.71	**-8.70**

7.2. Staafkrachten ligger HEA340; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S4..S6, S11
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S11	Ligger - HEA340	0.000	Combi1/21	**-68.86**	25.98	0.16	0.00	0.08	-121.04
S6	Ligger - HEA340	0.000	Combi1/22	**54.52**	-8.33	7.71	0.00	-19.06	38.88
S6	Ligger - HEA340	2.500	Combi1/13	14.20	**-18.72**	0.30	0.00	0.00	-35.19
S11	Ligger - HEA340	0.000	Combi2/11	-68.86	**26.78**	-4.61	0.00	0.23	**-127.29**
S11	Ligger - HEA340	0.000	Combi2/14	-66.24	23.77	**-9.94**	0.00	0.40	-112.44
S6	Ligger - HEA340	2.500	Combi2/14	54.20	-7.91	**13.24**	0.00	0.38	26.58
S4	Ligger - HEA340	0.000	Combi1/23	-23.93	13.48	-1.73	**0.00**	-25.60	-9.07
S4	Ligger - HEA340	0.000	Combi1/24	1.34	4.18	1.69	**0.00**	16.00	5.87
S4	Ligger - HEA340	4.000	Combi2/14	-23.93	8.53	-0.97	0.00	**-50.38**	34.94
S4	Ligger - HEA340	3.200	Combi1/19	-11.46	3.17	-0.05	0.00	**28.41**	25.40
S5	Ligger - HEA340	3.200	Combi2/11	15.52	0.16	2.56	0.00	-21.11	**47.62**

7.3. Staafkrachten koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S41..S50
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S44	Plaat - Rechthoek	0.000	Combi1/21	**-0.92**	-0.02	-21.21	0.00	2.95	0.00
S49	Plaat - Rechthoek	0.000	Combi2/2	**0.85**	0.10	59.45	0.02	-8.22	-0.02
S46	Plaat - Rechthoek	0.000	Combi2/14	0.61	**-0.15**	42.88	0.01	-3.02	0.01
S41	Plaat - Rechthoek	0.000	Combi2/14	0.61	**0.16**	33.53	-0.01	-2.35	-0.01
S47	Plaat - Rechthoek	0.187	Combi1/19	-0.89	0.06	**-45.73**	-0.02	-4.26	0.01
S47	Plaat - Rechthoek	0.000	Combi2/14	0.83	-0.10	**70.93**	0.03	-6.60	0.01
S43	Plaat - Rechthoek	0.000	Combi2/14	0.83	-0.04	54.80	**-0.03**	-6.35	0.00
S48	Plaat - Rechthoek	0.000	Combi2/14	0.83	0.04	66.78	**0.03**	-7.73	-0.01
S49	Plaat - Rechthoek	0.000	Combi2/14	0.85	0.10	59.59	0.02	**-8.24**	-0.02
S49	Plaat - Rechthoek	0.277	Combi2/14	0.85	0.10	59.44	0.02	**8.26**	0.01
S44	Plaat - Rechthoek	0.277	Combi2/14	0.85	-0.11	49.91	-0.02	6.94	**-0.02**
S44	Plaat - Rechthoek	0.000	Combi2/14	0.85	-0.11	50.05	-0.02	-6.92	**0.01**

7.4. Staafkrachten bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S51, S52
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S51	Bliksempiek 1 - Koker fl	0.000	Combi1/25	**-4.74**	-1.28	0.00	0.00	0.00	2.89
S51	Bliksempiek 1 - Koker fl	4.500	Combi1/26	**0.00**	0.00	0.00	0.00	0.00	0.00
S51	Bliksempiek 1 - Koker fl	0.000	Combi1/19	-2.90	**-2.16**	-2.65	0.00	11.91	**6.82**
S52	Bliksempiek 1 - Koker fl	0.000	Combi2/5	-2.87	**2.30**	-2.29	0.00	10.30	**-7.46**
S51	Bliksempiek 1 - Koker fl	0.000	Combi2/15	-3.49	-0.49	**-10.60**	0.00	**41.48**	2.23
S51	Bliksempiek 1 - Koker fl	0.000	Combi1/27	-4.74	0.00	**2.77**	0.00	**-6.23**	0.00
S51	Bliksempiek 1 - Koker fl	0.000	Combi1/28	-2.95	-1.92	-3.09	**0.00**	13.92	5.77

7.5. Staafkrachten betonopstort; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S7, S8
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S7	Poer - Rechthoek	0.000	Combi2/11	**-139.33**	3.51	**-83.46**	0.23	**759.41**	-51.98
S8	Poer - Rechthoek	2.250	Combi2/12	**-33.44**	9.04	-68.18	-0.23	535.50	-77.33
S8	Poer - Rechthoek	1.688	Combi1/19	-73.45	**-16.69**	-12.40	0.23	143.23	122.37
S8	Poer - Rechthoek	1.688	Combi2/14	-66.74	**22.70**	-59.38	-0.38	519.98	-174.55
S8	Poer - Rechthoek	0.000	Combi1/18	-123.01	0.00	**12.24**	0.00	**-80.87**	0.00
S8	Poer - Rechthoek	0.000	Combi2/14	-120.76	16.90	-59.38	**-0.38**	620.18	**-205.68**
S7	Poer - Rechthoek	0.000	Combi2/14	-136.32	14.42	-72.22	**0.40**	672.75	-169.52
S8	Poer - Rechthoek	0.000	Combi1/19	-127.34	-12.58	-12.40	0.23	164.15	**145.46**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP450; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S17..S40
Klasse : Alle UGT
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S30	1.895	Combi2/2	**-178.2**		0.2	178.2	0.0
S23	0.000	Combi2/1		146.4	0.1	146.4	0.0
S17	0.000	Combi2/1	-152.9		0.2	152.9	**0.0**
S36	1.895	Combi2/2		**177.2**	0.3	177.2	0.0
S29	0.000	Combi2/1	-150.0		**0.1**	150.0	0.0
S21	1.026	Combi2/2	-9.7		**5.8**	14.0	0.0
S27	0.897	Combi2/2		7.0	5.6	**12.0**	0.0
S30	1.895	Combi2/2	-178.2		0.2	**178.2**	0.0

8.2. Von Mises spanningen ligger HEA340; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S4..S6, S11
Klasse : Alle UGT
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S11	0.000	Combi2/11	**-261.9**		0.0	**261.9**	0.0
S5	0.000	Combi2/3		109.6	0.0	109.6	0.0
S4	0.000	Combi2/2	-45.1		**0.0**	45.1	**0.0**
S5	1.600	Combi2/6		**113.3**	0.0	113.3	0.0
S6	2.500	Combi1/13		72.0	**0.0**	72.0	0.0
S4	0.267	Combi2/5	-42.6		0.0	**42.6**	0.0

8.3. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S41..S50
Klasse : Alle UGT
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S41	0.000	Combi2/14	0.6	9.2	15.9	**0.0**
S46	0.072	Combi2/14	**0.1**	11.7	20.2	0.0
S49	0.277	Combi2/14	**44.9**	0.0	**44.9**	0.0
S50	0.000	Combi2/14	22.4	**0.0**	22.4	0.0
S47	0.093	Combi2/14	0.2	**19.6**	33.9	0.0
S45	0.161	Combi2/14	0.1	5.8	**10.1**	0.0

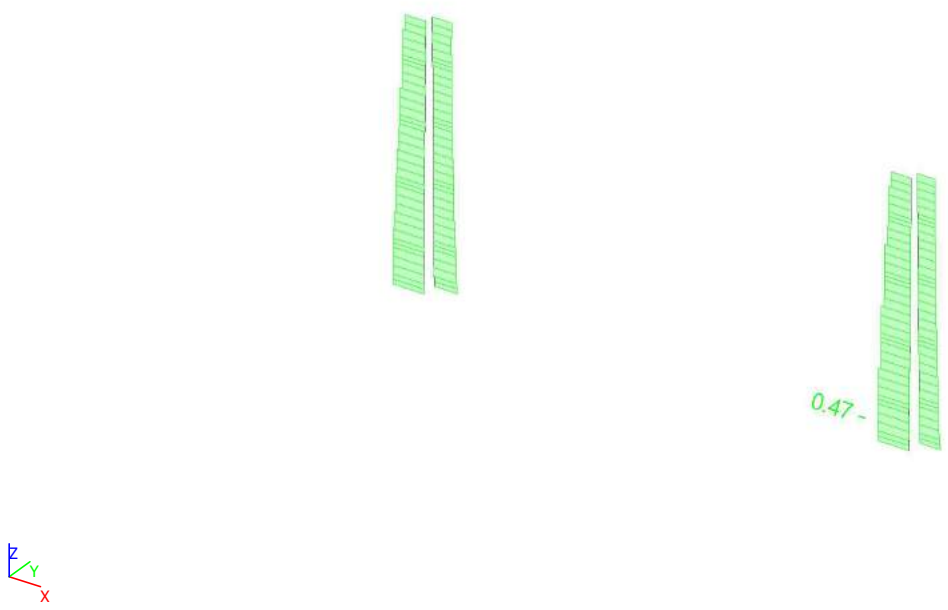
8.4. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S51, S52
Klasse : Alle UGT
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S51	0.000	Combi2/15	**-117.5**	0.0	**117.5**	**0.0**
S51	4.500	Combi1/16	**-0.1**	3.3	5.7	0.0
S52	3.600	Combi2/15	-24.5	**0.0**	24.5	0.0
S51	4.500	Combi1/16	-0.1	**3.3**	5.7	0.0
S52	4.500	Combi1/17	-0.2	2.9	**5.0**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP450; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP450; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: Alle UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S17..S40

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S30	1.895 / 1.895 m	INP450	S 355	Alle UGT	0.47 -

Combinatiesleutel
Alle UGT / 1.20*BG1 + 1.20*BG2 - 1.50*BG4 + LC1034

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	355.0	MPa
Uiterste sterkte f_u	490.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.895 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-294.36	kN
$V_{y,Ed}$	8.26	kN
$V_{z,Ed}$	29.08	kN
T_{Ed}	-0.02	kNm
$M_{y,Ed}$	233.07	kNm
$M_{z,Ed}$	8.91	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	-9.652e+04	-1.235e+05								
3	SO	61	24	-7.494e+04	-4.798e+04								
4	I	369	16	-7.170e+04	1.110e+05	-0.65		0.57	22.78	48.10	56.28	72.10	1
5	SO	61	24	1.358e+05	1.627e+05	0.83	0.44	1.00	2.50	7.32	8.14	11.38	1
7	SO	61	24	1.142e+05	8.725e+04	0.76	0.52	1.00	2.50	7.32	8.14	12.36	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m^2
$N_{c,Rd}$	5218.50	kN
Eenheidscontrole	0.06	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m^3
$M_{pl,y,Rd}$	852.00	kNm
Eenheidscontrole	0.27	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m^3
$M_{pl,z,Rd}$	122.48	kNm
Eenheidscontrole	0.07	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m^2
$V_{pl,y,Rd}$	1800.95	kN
Eenheidscontrole	0.00	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m^2
$V_{pl,z,Rd}$	1599.34	kN
Eenheidscontrole	0.02	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.2	MPa
τ_{Rd}	205.0	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	852.00	kNm
α	2.00	
$M_{pl,z,Rd}$	122.48	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.07 + 0.07 = 0.15 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 1.895 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	-9.652e+04	-1.235e+05								
3	SO	61	24	-7.494e+04	-4.798e+04								
4	I	369	16	-7.170e+04	1.110e+05	-0.65		0.57	22.78	48.10	56.28	72.10	1
5	SO	61	24	1.358e+05	1.627e+05	0.83	0.44	1.00	2.50	7.32	8.14	11.38	1
7	SO	61	24	1.142e+05	8.725e+04	0.76	0.52	1.00	2.50	7.32	8.14	12.36	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings flexibel	
Systeemlengte L	8.251	1.895	m
Knikfactor k	2.38	1.61	
Kniklengte L_{cr}	19.636	3.044	m
Kritische Euler last N_{cr}	2464.53	3870.64	kN
Slankheid λ	111.19	88.72	
Relatieve slankheid λ_{rel}	1.46	1.16	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	0.39	0.50	
Knikweerstand $N_{b,Rd}$	2045.69	2607.48	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Knikweerstand $N_{b,Rd}$	2045.69	kN
Eenheidscontrole	0.14	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Elastisch kritisch moment M_{cr}	3045.15	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.53	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.13	

Mcr parameters		
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	294.36	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	241.92	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	8.91	kNm
Karakteristieke drukweerstand N_{Rk}	5218.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	852.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	122.48	kNm
Reductie factor χ_y	0.39	
Reductie factor χ_z	0.50	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.00	
Interactiefactor k_{yz}	0.63	
Interactiefactor k_{zy}	0.60	
Interactiefactor k_{zz}	1.04	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S29 positie 0.305 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S30 positie 1.895 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.1
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Zijdelings flexibel type z	Zijdelings flexibel
Equivalente moment factor C_{mz}	0.90
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	0.76
Equivalente moment factor C_{mLT}	0.91

Eenheidscontrole (6.61) = 0.14 + 0.28 + 0.05 = 0.47 -
Eenheidscontrole (6.62) = 0.11 + 0.17 + 0.08 = 0.36 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

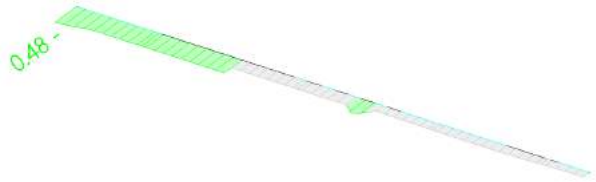
Plooiparameters		
Knik veldlengte a	1.895	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	0.81	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	48.82

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.3. Staalcontrole ligger HEA340; UGT, grafisch overzicht





9.4. Staalcontrole ligger HEA340; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: Alle UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S4..S6, S11

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S11	0.000 / 5.000 m	HEA340	S 355	Alle UGT	0.48 -

Combinatiesleutel
Alle UGT / 1.20*BG1 + 1.20*BG2 - 1.50*BG3 + LC1002

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	355.0	MPa
Uiterste sterkte f_u	490.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-68.86	kN
$V_{y,Ed}$	26.78	kN
$V_{z,Ed}$	-4.61	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.23	kNm
$M_{z,Ed}$	-127.29	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	5.938e+04	2.618e+05	0.23	0.53	1.00	7.17	7.32	8.14	12.39	1
3	SO	118	17	-4.932e+04	-2.517e+05								
4	I	243	10	5.056e+03	5.259e+03	0.96		1.00	25.58	22.78	27.66	31.34	2
5	SO	118	17	-4.906e+04	-2.515e+05								
7	SO	118	17	5.964e+04	2.621e+05	0.23	0.53	1.00	7.17	7.32	8.14	12.39	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 2

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3400e-02	m^2
$N_{c,Rd}$	4757.00	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.8500e-03	m^3
$M_{pl,y,Rd}$	656.75	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.5417e-04	m^3
$M_{pl,z,Rd}$	267.73	kNm
Eenheidscontrole	0.48	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0247e-02	m^2
$V_{pl,y,Rd}$	2100.17	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.5477e-03	m^2
$V_{pl,z,Rd}$	932.10	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.0	MPa
τ_{Rd}	205.0	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	656.75	kNm
α	2.00	
$M_{pl,z,Rd}$	267.73	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.48 = 0.48 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	5.938e+04	2.618e+05	0.23	0.53	1.00	7.17	7.32	8.14	12.39	1
3	SO	118	17	-4.932e+04	-2.517e+05								
4	I	243	10	5.056e+03	5.259e+03	0.96		1.00	25.58	22.78	27.66	31.34	2
5	SO	118	17	-4.906e+04	-2.515e+05								
7	SO	118	17	5.964e+04	2.621e+05	0.23	0.53	1.00	7.17	7.32	8.14	12.39	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 2

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	15.500	15.500	m
Knikfactor k	1.00	1.00	
Kniklengte L_{cr}	15.500	15.500	m
Kritische Euler last N_{cr}	2389.66	641.84	kN
Slankheid λ	107.81	208.02	
Relatieve slankheid λ_{rel}	1.41	2.72	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	b	c	
Imperfectie α	0.34	0.49	
Reductie factor χ	0.38	0.11	
Knikweerstand $N_{b,Rd}$	1793.98	540.21	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.3400e-02	m^2
Knikweerstand $N_{b,Rd}$	540.21	kN
Eenheidscontrole	0.13	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.8500e-03	m^3
Elastisch kritisch moment M_{cr}	311.60	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.45	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	15.500	m
Vorklengte L_g	15.500	m
Invloed van lastpositie	geen invloed	
Factor α	575.00	
Reductie factor k_{red}	1.00	

Mcr parameters		
Coëfficiënt C	3.82	
Factor S	1933	mm
Kip moment factor C_1	1.13	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3400e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.8500e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.5417e-04	m^3
Ontwerpdrukkracht N_{Ed}	68.86	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	-29.31	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-127.29	kNm
Karakteristieke drukweerstand N_{Rk}	4757.00	kN
Karakteristieke momentweerstand $M_{y,Rk}$	656.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	267.73	kNm
Reductie factor χ_y	0.38	
Reductie factor χ_z	0.11	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.98	
Interactiefactor k_{yz}	0.28	
Interactiefactor k_{zy}	0.59	
Interactiefactor k_{zz}	0.47	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S4 positie 4.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S11 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	0.23	kNm
Veldmoment $M_{s,y}$	-29.31	kNm
Factor $\alpha_{h,y}$	-0.01	
Ratio van uiteinde momenten ψ_y	0.90	
Equivalente moment factor C_{my}	0.95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-127.29	kNm
Veldmoment $M_{s,z}$	40.76	kNm
Factor $\alpha_{s,z}$	-0.32	
Ratio van uiteinde momenten ψ_z	-0.21	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	0.23	kNm
Veldmoment $M_{s,LT}$	-29.31	kNm
Factor $\alpha_{h,LT}$	-0.01	
Ratio van uiteinde momenten ψ_{LT}	0.90	
Equivalente moment factor C_{mLT}	0.95	

Eenheidscontrole (6.61) = 0.04 + 0.04 + 0.13 = 0.22 -
Eenheidscontrole (6.62) = 0.13 + 0.03 + 0.22 = 0.38 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

Plooiparameters		
Knik veldlengte a	5.000	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	0.81	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.26
Lijfslankheid limiet	48.82

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.6. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: Alle UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S41..S50

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S49	**0.277 / 0.277 m**	**Rechthoek (200; 28)**	**S 355**	**Alle UGT**	**0.08 -**

Combinatiesleutel
Alle UGT / 1.20*BG1 + 1.20*BG2 - 1.50*BG4 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	355.0	MPa
Uiterste sterkte f_u	490.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.277 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	0.85	kN
$V_{y,Ed}$	0.10	kN
$V_{z,Ed}$	59.44	kN
T_{Ed}	0.02	kNm
$M_{y,Ed}$	8.26	kNm
$M_{z,Ed}$	0.01	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-4.441e+04	4.410e+04	-1.01	0.85	0.50	7.14	14.70	16.33	15.77	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	5.6000e-03	m^2
$N_{pl,Rd}$	1988.00	kN
$N_{u,Rd}$	1975.68	kN
$N_{t,Rd}$	1975.68	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m^3
$M_{pl,y,Rd}$	99.40	kNm
Eenheidscontrole	0.08	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m^3
$M_{pl,z,Rd}$	13.92	kNm
Eenheidscontrole	0.00	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m^2
$V_{pl,y,Rd}$	1147.77	kN
Eenheidscontrole	0.00	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m^2
$V_{pl,z,Rd}$	1147.77	kN
Eenheidscontrole	0.05	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	0.5	MPa
τ_{Rd}	205.0	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	99.40	kNm
α	1.00	
$M_{N,z,Rd}$	13.92	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.08 + 0.00 = 0.08 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.277 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-4.441e+04	4.410e+04	-1.01	0.85	0.50	7.14	14.70	16.33	15.77	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	1742.87	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.24	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

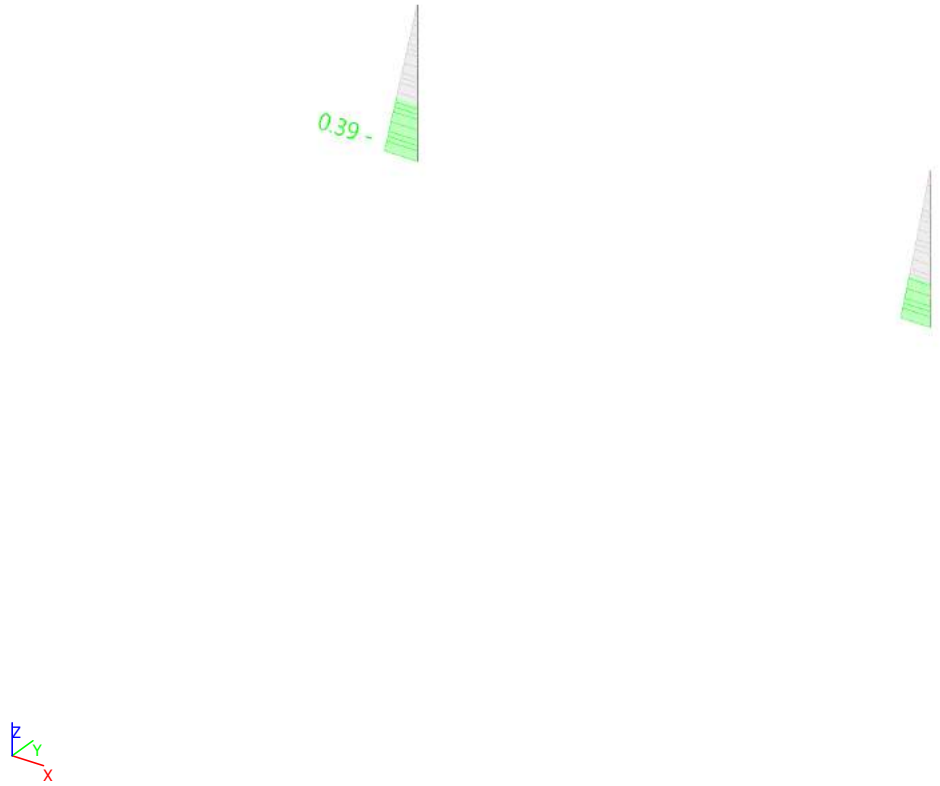
Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.447	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.60	
Kip moment factor C_2	0.00	
Kip moment factor C_3	0.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole bliksempiek; UGT, grafisch overzicht



9.8. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: Alle UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S51, S52

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S51	**0.000 / 4.500 m**	**Koker fl (374; 7; 126; 10; 354)**	**S 355**	**Alle UGT**	**0.39 -**

Combinatiesleutel
Alle UGT / 1.20*BG1 + 1.20*BG2 - 1.50*BG3 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	355.0	MPa
Uiterste sterkte f_u	490.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-3.49	kN
$V_{y,Ed}$	-0.49	kN
$V_{z,Ed}$	-10.60	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	41.48	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	2.23	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	1.050e+05	1.049e+05	1.00	0.43	1.00	0.71	7.32	8.14	11.20	1
2	I	126	10	9.415e+04	-9.870e+04	-1.05		0.49	12.60	60.00	69.16	105.79	1
3	I	126	10	9.959e+04	-9.327e+04	-0.94		0.52	12.60	55.71	64.49	94.25	1
4	UO	5	7	-9.855e+04	-9.863e+04								
5	UO	5	7	9.951e+04	9.944e+04	1.00	0.43	1.00	0.71	7.32	8.14	11.22	1
6	I	4	10	9.415e+04	9.951e+04	0.95		1.00	0.35	22.78	27.66	31.51	1
7	UO	5	7	-1.041e+05	-1.041e+05								
8	I	4	10	-9.870e+04	-1.041e+05								
9	I	364	7	1.049e+05	9.951e+04	0.95		1.00	52.00	22.78	27.66	31.48	4
10	I	4	10	9.959e+04	1.049e+05	0.95		1.00	0.35	22.78	27.66	31.47	1
11	I	364	7	-9.863e+04	-1.041e+05								
12	I	4	10	-9.327e+04	-9.863e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
2	I	126	3.550e+05	3.550e+05	1.00	4.00	0.27	1.00	126	63	63
3	I	126	3.550e+05	3.550e+05	1.00	4.00	0.27	1.00	126	63	63
4	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
5	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
6	I	4	3.550e+05	3.550e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
8	I	4	3.550e+05	3.550e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	3.550e+05	3.550e+05	1.00	4.00	1.13	0.71	260	130	130
10	I	4	3.550e+05	3.550e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	3.550e+05	3.550e+05	1.00	4.00	1.13	0.71	260	130	130
12	I	4	3.550e+05	3.550e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My+
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
2	I	126	3.363e+05	-3.363e+05	-1.00	23.90	0.11	1.00	63	25	38
3	I	126	3.363e+05	-3.363e+05	-1.00	23.90	0.11	1.00	63	25	38
4	UO	5	-3.550e+05	-3.550e+05							
5	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
6	I	4	3.550e+05	3.363e+05	0.95	4.11	0.01	1.00	4	2	2
7	UO	5	-3.550e+05	-3.550e+05							
8	I	4	-3.363e+05	-3.550e+05							
9	I	364	3.550e+05	3.550e+05	1.00	4.00	1.13	0.71	260	130	130
10	I	4	3.550e+05	3.363e+05	0.95	4.11	0.01	1.00	4	2	2

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	-3.550e+05	-3.550e+05							
12	I	4	-3.363e+05	-3.550e+05							

Effectieve doorsnede Mz+
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	3.550e+05	3.455e+05	0.97	0.43	0.05	1.00	5		
2	I	126	-3.455e+05	-3.455e+05							
3	I	126	3.455e+05	3.455e+05	1.00	4.00	0.27	1.00	126	63	63
4	UO	5	3.550e+05	3.455e+05	0.97	0.43	0.05	1.00	5		
5	UO	5	-3.455e+05	-3.550e+05							
6	I	4	-3.455e+05	-3.455e+05							
7	UO	5	-3.455e+05	-3.550e+05							
8	I	4	-3.455e+05	-3.455e+05							
9	I	364	3.455e+05	-3.455e+05	-1.00	23.90	0.46	1.00	182	73	109
10	I	4	3.455e+05	3.455e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	3.455e+05	-3.455e+05	-1.00	23.90	0.46	1.00	182	73	109
12	I	4	3.455e+05	3.455e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	6.4434e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.3557e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.0699e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	6.4434e-03	m^2
$N_{c,Rd}$	2287.42	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.0699e-04	m^3
$M_{c,y,Rd}$	108.98	kNm
Eenheidscontrole	0.38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	283.17	kNm
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	1034.95	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	565.60	kN
Eenheidscontrole	0.02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	6.4434e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.0699e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.5	MPa
$\sigma_{My,Ed}$	135.1	MPa
$\sigma_{Mz,Ed}$	2.8	MPa
$\sigma_{tot,Ed}$	138.4	MPa
Eenheidscontrole	0.39	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.500	4.500	m
Knikfactor k	2.55	0.92	
Kniklengte L_{cr}	11.454	4.121	m
Kritische Euler last N_{cr}	418.85	17637.01	kN
Slankheid λ	195.91	30.19	
Relatieve slankheid λ_{rel}	2.34	0.36	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.500	m
Elastische kritische last $N_{cr,T}$	264204.07	kN
Elastische kritische last $N_{cr,TF}$	418.85	kN
Relatieve slankheid $\lambda_{rel,T}$	2.34	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.0699e-04	m^3
Elastisch kritisch moment M_{cr}	17348.33	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.08	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.87	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	6.4434e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.0699e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	3.49	kN
Ontwerp buigende momenten $M_{y,Ed}$	41.48	kNm
Ontwerp buigende momenten $M_{z,Ed}$	2.23	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	2287.42	kN
Karakteristieke momentweerstand $M_{y,Rk}$	108.98	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	283.17	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.60	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.60	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lineair moment M	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.60	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	41.48	kNm
Veldmoment $M_{s,LT}$	19.18	kNm
Factor $\alpha_{s,LT}$	0.46	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.57	

Eenheidscontrole (6.61) = 0.00 + 0.34 + 0.00 = 0.35 -
Eenheidscontrole (6.62) = 0.00 + 0.38 + 0.00 = 0.39 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE I

Kantelveiligheid juk 64, versterkt

Kantelveiligheid juk 65, versterkt

Kantelveiligheid juk 64b

Bijlage I-1

Technosoft Construct release 6.07a 19 dec 2019

Project : TenneT 150kV Station Waalwijk
Onderdeel : Kantelveiligheid fundering juk 64 en 65 links en rechts
Datum : 19/12/2019
Eenheden : kN/m/rad

Toegepaste normen volgens Eurocode met Nederlandse NB

Belastingen	NEN-EN 1990:2002	C2:2010	NB:2011(nl)
	NEN-EN 1991-1-1:2002	C1:2009	NB:2011(nl)
Geotechniek	EN 1997-1:2004	AC:2009	
	NEN-EN 1997-1:2005	C1+A1:2013	NB:2016
	NEN 9997-1:2016	C2:2017	

Funderingsplaat. (A)

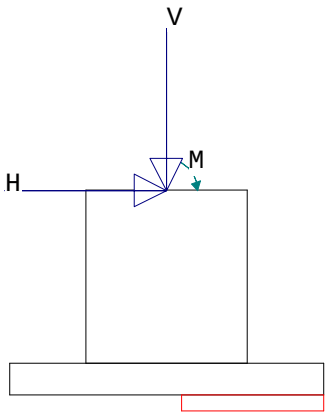
Plaatafmeting B*L*D	[mm]	: 4000 * 4400 * 400	
Kolomafmeting B*H	[mm]	: 2050 * 2050	
Aanlegdiepte	[m]	: 1.90	
Bovenkant kolom tov. maaiveld	[m]	: 0.70	
Excentriciteit kolom	[mm]	: 0.00	
Soortelijk gewicht grond	[kN/m3]	: 18.00	
Soortelijk gewicht beton	[kN/m3]	: 24.00	
Moment	[kNm]	: 695.34	
Verticale kracht	[kN]	: 73.76	
Horizontale kracht	[kN]	: 81.47	
Belastingfactor		: 1.00	

Tussenresultaten

E.g. grond	[kN] : 361.73		Red. e.g. grond	[kN/m] :	118.80
E.g. kolom	[kN] : 221.89				
E.g. plaat	[kN] : 168.96		Red. e.g. plaat	[kN/m] :	42.24
Totale vert. kracht	[kN] : 826.34		Exc. drukfg.- zw.plt.	[m] :	1.10

Resultaten

Gronddruk	[kN/m2] : 104.08				
Kantelmoment	[kNm] : 907.16		Stab.moment	[kNm] :	1652.69
Kantelveiligheid	: **1.82**		Bef rechts	[m] :	1.80
Moment links	[kNm] : 80.52		Moment rechts	[kNm] :	-148.46



Technosoft Construct release 6.07a 19 dec 2019

Project : TenneT 150kV Station Waalwijk
Onderdeel : Kantelveiligheid fundering juk 64 en 65 midden (1)
Datum : 19/12/2019
Eenheden : kN/m/rad

Toegepaste normen volgens Eurocode met Nederlandse NB

Belastingen	NEN-EN 1990:2002	C2:2010	NB:2011(nl)
	NEN-EN 1991-1-1:2002	C1:2009	NB:2011(nl)
Geotechniek	EN 1997-1:2004	AC:2009	
	NEN-EN 1997-1:2005	C1+A1:2013	NB:2016
	NEN 9997-1:2016	C2:2017	

Funderingsplaat. (A)

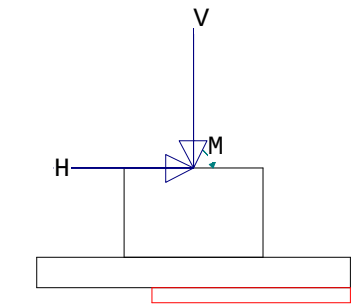
Plaatafmeting B*L*D	[mm]	: 6200 * 6200 * 600	
Kolomafmeting B*H	[mm]	: 2750 * 2050	
Aanlegdiepte	[m]	: 1.70	
Bovenkant kolom tov. maaiveld	[m]	: 0.65	
Excentriciteit kolom	[mm]	: 0.00	
Soortelijk gewicht grond	[kN/m3]	: 18.00	
Soortelijk gewicht beton	[kN/m3]	: 24.00	
Moment	[kNm]	: 1386.98	
Verticale kracht	[kN]	: 119.96	
Horizontale kracht	[kN]	: 165.26	
Belastingfactor		: 1.00	

Tussenresultaten

E.g. grond	[kN] : 649.49		Red. e.g. grond	[kN/m] :	122.76
E.g. kolom	[kN] : 236.77				
E.g. plaat	[kN] : 553.54		Red. e.g. plaat	[kN/m] :	89.28
Totale vert. kracht	[kN] : 1559.76		Exc. drukfg.- zw.plt.	[m] :	1.14

Resultaten

Gronddruk	[kN/m2] : 64.12				
Kantelmoment	[kNm] : 1775.34		Stab.moment	[kNm] :	4835.26
Kantelveiligheid	: **2.72**		Bef rechts	[m] :	3.92
Moment links	[kNm] : 324.69		Moment rechts	[kNm] :	-284.04



Technosoft Construct release 6.07a **19 dec 2019**

Project : TenneT 150kV Station Waalwijk
Onderdeel : Kantelveiligheid fundering juk 64 en 65 midden (2)
Datum : 19/12/2019
Eenheden : kN/m/rad

Toegepaste normen volgens Eurocode met Nederlandse NB

Belastingen	NEN-EN 1990:2002	C2:2010	NB:2011(nl)
	NEN-EN 1991-1-1:2002	C1:2009	NB:2011(nl)
Geotechniek	EN 1997-1:2004	AC:2009	
	NEN-EN 1997-1:2005	C1+A1:2013	NB:2016
	NEN 9997-1:2016	C2:2017	

Funderingsplaat. (A)

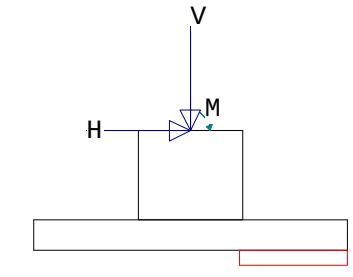
Plaatafmeting B*L*D	[mm]	: 6200	* 6200	* 600
Kolomafmeting B*H	[mm]	: 2050	* 2750	
Aanlegdiepte	[m]	: 1.70		
Bovenkant kolom tov. maaiveld	[m]	: 0.65		
Excentriciteit kolom	[mm]	: 0.00		
Soortelijk gewicht grond	[kN/m3]	: 18.00		
Soortelijk gewicht beton	[kN/m3]	: 24.00		
Moment	[kNm]	: 2596.90		
Verticale kracht	[kN]	: 130.82		
Horizontale kracht	[kN]	: 251.67		
Belastingfactor		: 1.00		

Tussenresultaten

E.g. grond	[kN] : 649.49		Red. e.g. grond	[kN/m] :	122.76
E.g. kolom	[kN] : 236.77				
E.g. plaat	[kN] : 553.54		Red. e.g. plaat	[kN/m] :	89.28
Totale vert. kracht	[kN] : 1570.62		Exc. drukfg.- zw.plt.	[m] :	2.03

Resultaten

Gronddruk	[kN/m2] : 118.37				
Kantelmoment	[kNm] : 3188.32		Stab.moment	[kNm] :	4868.92
Kantelveiligheid	: **1.53**		Bef rechts	[m] :	2.14
Moment links	[kNm] : 467.55		Moment rechts	[kNm] :	-1150.74



Technosoft Construct release 6.07a **19 dec 2019**

Project : TenneT 150kV Station Waalwijk
Onderdeel : Kantelveiligheid fundering juk 64b
Datum : 19/12/2019
Eenheden : kN/m/rad

Toegepaste normen volgens Eurocode met Nederlandse NB

Belastingen	NEN-EN 1990:2002	C2:2010	NB:2011(nl)
	NEN-EN 1991-1-1:2002	C1:2009	NB:2011(nl)
Geotechniek	EN 1997-1:2004	AC:2009	
	NEN-EN 1997-1:2005	C1+A1:2013	NB:2016
	NEN 9997-1:2016	C2:2017	

Funderingsplaat. (A)

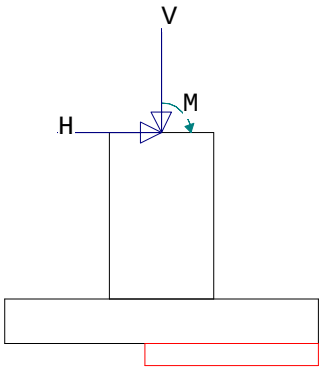
Plaatafmeting B*L*D	[mm]	: 4250 * 4250 * 600	
Kolomafmeting B*H	[mm]	: 1400 * 1400	
Aanlegdiepte	[m]	: 2.10	
Bovenkant kolom tov. maaiveld	[m]	: 0.75	
Excentriciteit kolom	[mm]	: 0.00	
Soortelijk gewicht grond	[kN/m3]	: 18.00	
Soortelijk gewicht beton	[kN/m3]	: 24.00	
Moment	[kNm]	: 571.63	
Verticale kracht	[kN]	: 53.23	
Horizontale kracht	[kN]	: 83.46	
Belastingfactor		: 1.00	

Tussenresultaten

E.g. grond	[kN] : 434.77		Red. e.g. grond	[kN/m] :	114.75
E.g. kolom	[kN] : 105.84				
E.g. plaat	[kN] : 260.10		Red. e.g. plaat	[kN/m] :	61.20
Totale vert. kracht	[kN] : 853.94		Exc. drukfg.- zw.plt.	[m] :	0.95

Resultaten

Gronddruk	[kN/m2] : 85.35				
Kantelmoment	[kNm] : 809.49		Stab.moment	[kNm] :	1814.62
Kantelveiligheid	: **2.24**		Bef rechts	[m] :	2.35
Moment links	[kNm] : 184.97		Moment rechts	[kNm] :	-196.37



BIJLAGE J

Boutkrachtentabel

Projectnaam:	TenneT 150 kV Station Waalwijk
Onderdeel:	Boutkracht tabellen
Documentnummer:	---
Revisie:	A
Bijlage:	J

Boutgegevens

sterkteklasse	4.6	8.8	10.9	
treksterkte f_{ub}	400	800	1000	MPa

gerolde draad	β	1.00

k_2	0.90		α_d	0.50
$\alpha_{v;1}$	0.60		k_1	2.50
$\alpha_{v;2}$	0.50		$f_{u;S235}$	360
γ_{M2}	1.25		$f_{u;S355}$	490

boutdiameter	12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
spanningsdoorsnede	84	157	245	353	459	561	694	817	976	1121	1306	1473	1758	2030	2362	2676	mm^2

Trekweerstand GEROLDE DRAAD:

$F_{t;Rd} = k_2 * f_{ub} * A_s / \gamma_{M2}$

boutdiameter	12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
4.6	24.19	45.22	70.56	101.66	132.19	161.57	199.87	235.30	281.09	322.85	376.13	424.22	506.30	584.64	680.26	770.69	kN
8.8	48.38	90.43	141.12	203.33	264.38	323.14	399.74	470.59	562.18	645.70	752.26	848.45	1012.61	1169.28	1360.51	1541.38	kN
10.9	60.48	113.04	176.40	254.16	330.48	403.92	499.68	588.24	702.72	807.12	940.32	1060.56	1265.76	1461.60	1700.64	1926.72	kN

Afschuifweerstand GEROLDE DRAAD:

$F_{v;Rd} = \alpha_v * f_{ub} * A_s / \gamma_{M2}$

boutdiameter	12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
4.6	16.13	30.14	47.04	67.78	88.13	107.71	133.25	156.86	187.39	215.23	250.75	282.82	337.54	389.76	453.50	513.79	kN
8.8	32.26	60.29	94.08	135.55	176.26	215.42	266.50	313.73	374.78	430.46	501.50	565.63	675.07	779.52	907.01	1027.58	kN
10.9	33.60	62.80	98.00	141.20	183.60	224.40	277.60	326.80	390.40	448.40	522.40	589.20	703.20	812.00	944.80	1070.40	kN

Stuik niet maatgevend vanaf plaatdikte:

$F_{b;Rd} = k_1 * \alpha_b * f_u * d * t / \gamma_{M2}$ randafstand $\geq 1.5 * d_0$ steek $\geq 3.0 * d_0$

boutdiameter		12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
	d_0	13	18	22	26	30	33	36	39	42	45	58	51	55	59	63	67	mm
S235	4.6	3.7	5.2	6.5	7.8	9.1	10.0	11.2	12.1	13.3	14.2	15.5	16.4	18.0	19.3	21.0	22.3	mm
	8.8	7.5	10.5	13.1	15.7	18.1	19.9	22.4	24.2	26.7	28.5	31.0	32.7	36.1	38.7	42.0	44.6	mm
	10.9	7.8	10.9	13.6	16.3	18.9	20.8	23.4	25.2	27.8	29.7	32.2	34.1	37.6	40.3	43.7	46.5	mm
S355	4.6	2.7	3.8	4.8	5.8	6.7	7.3	8.2	8.9	9.8	10.5	11.4	12.0	13.2	14.2	15.4	16.4	mm
	8.8	5.5	7.7	9.6	11.5	13.3	14.7	16.5	17.8	19.6	20.9	22.7	24.0	26.5	28.4	30.9	32.8	mm
	10.9	5.7	8.0	10.0	12.0	13.9	15.3	17.2	18.5	20.4	21.8	23.7	25.1	27.6	29.6	32.1	34.1	mm

COLOFON

TENNET STATION WAALWIJK
VERIFICATIEBEREKENING CONSTRUCTIE JUKKEN 64 EN 65
ONTWERPBEREKENING CONSTRUCTIE JUK 64B

AUTEUR
Harry Beertsen

ONZE REFERENTIE

DATUM
24 juni 2020

Arcadis Nederland B.V.

Postbus 220
3800 AE Amersfoort
Nederland
+31 (0)88 4261261

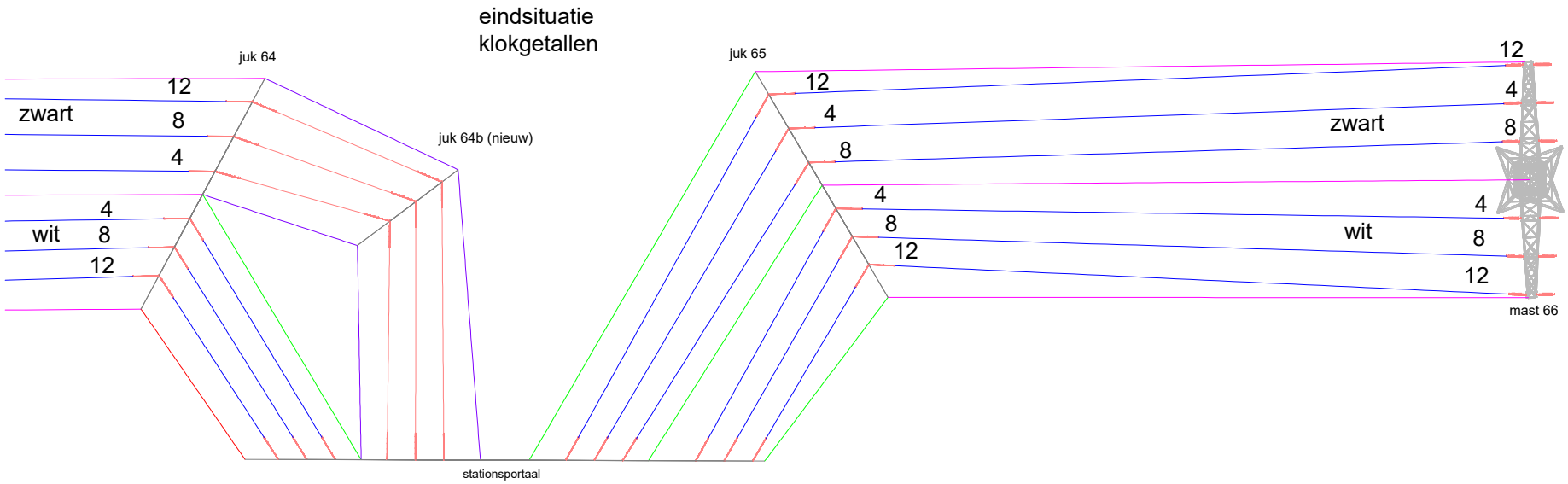
www.arcadis.com

Bijlage L03 - Afspanjuk 64b ontwerp

Station Waalwijk 150 kV

Datum: 3-7-2020

Inhoudsopgave	Tekeningnummer	Revisie	Datum
Principetek.stalen constructie afspanportaal lijnveld	MDR_00561-01-10316	A	3-7-2020
Samenstellingstekening afspanportaal lijnveld	MDR-00561-01-10419	A	3-7-2020
Locatie juk 64b en eindsituatie klokgetallen			
D-006142-1			
Rapport constructieberekening jukken 64_64b_65	MDR-00561-01-50505	A	24-6-2020


eindsituatie
klokgetallen
juk 64
juk 64b (nieuw)
juk 65
zwart
wit
12
8
4
4
8
12
12
4
8
4
8
12
zwart
wit
12
4
8
4
8
12
mast 66
stationsportaal

KOLOMMEN SCHAAL 1:20.

A75 A74. A73. A72.

OVERZICHT SCHAAL 1:400

AFSPANJUK VOLGENS PIJL A. SCHAAL 1:200

AFSPANJUK VOLGENS PIJL B SCHAAL 1:200

HORIZONTALE REGELS SCHAAL 1:20.

A76 A77 A78 A79 A80.

STIJL GEMERKT A72. BESTAAT UIT: POS. 103L-105R-111 7/11.120. MET VOETPLAAT AANGELAST VOLGENS DETAIL I
" " A73. " POS. 104L-106R-111 7/11.120. " " " " II
" " A74. " POS. 107R-109R-111 7/11.120. " " " " I
" " A75. " POS. 108L-110L-111 7/11.120. " " " " II

LETWEL!

DE LENGTEMATEN VAN DE STIJLEN ZIJN NIET OP SCHAAL GETEKEND!

NA BEWERKING VERZINKEN.

DE GATEN VOOR DE LASSEN IN DE REGELS 1W BOREN.

DE VRIES ROBBÉ & Co. N.V.
GORINCHEM (HOLLAND)

OPMERKINGEN VOOR WERKPLAATS EN MONTAGE

+ IN DE WERKPLAATS TE KLINKEN KLINKNAGELS
✓ OP MONTAGE TE KLINKEN K. (KNAGELS
■ SCHROEFBOUTEN

TENZIJ ANDERS VERMELD KOMEN IN ½" GATEN
L 40 m 45 M "
L 50 tot en met 60 ⅝ "
L groter dan 60 ¾ "
KRABMATEN EN AFSTANDEN VOLGENS TABEL No. 16-11-3

BIJBEHORENDE DETAILBLADEN EN LIJSTEN

DETAILBL. Nr.	DETAIL No.

SPECIFICATIES TE BEWERKINGS-LIJSTEN	A8.9
VERZENDINGS-LIJSTEN	A6.106.
UITREKST. MAGAZIJN-GOEDEREN	W.P.
	M.
UITREKST. VOOR ELECTRODEN	W.P.
	M.
HOOFDMERK	1078.

TEKENING No. 55307-198 B.

11-5-57	16-8-57		D.D.
			GET.
			GECONTR.
			GEZ.

TEKENKAMER G. BERG Ingekomen 26 SEP. 1957

BETREFF: Ing. en Arch. Bureau Ir. J. G. Hesselt en Mr. Koning Nijmegen 150 K.V. Station P.N.E.M. Weelwijk.

INH. TEK: Afspanjukken Reg. 16200

BIJ DEZE TEKENING BEHOREN

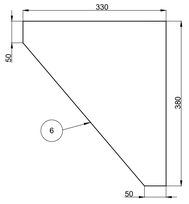
TEK.	INHOUD TEK.

Ingek. op 27 SEP. 1957 Bij Lg No. 3405

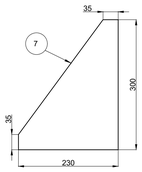
N.V. P.N.E.M. TEKENINGENARCHIEF GEERTRUIDENBERG DG142

INGENIEURS EN ARCHITECTENBUREAU voorheen J. VAN HASSELT EN ZONEN

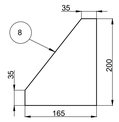
ROL N9



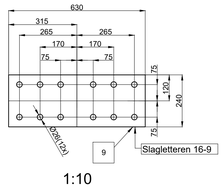
1:5



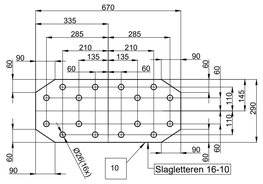
1:5



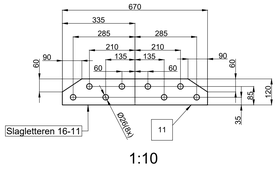
1:5



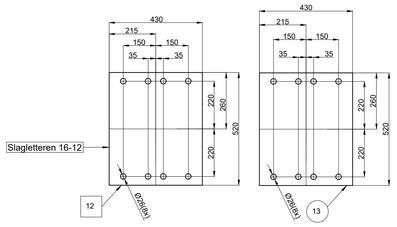
1:10



1:10

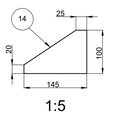


1:10

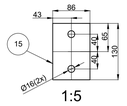


1:10

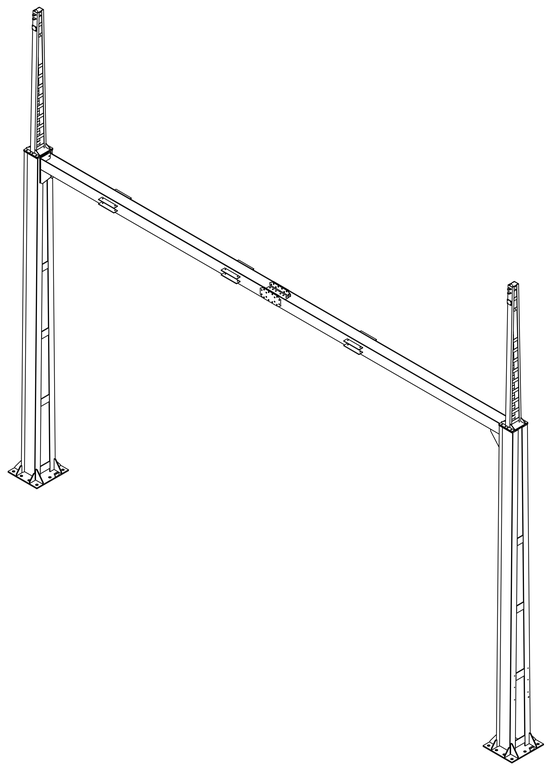
1:10

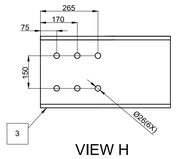


1:5

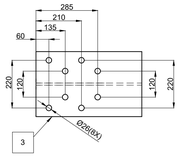


1:5

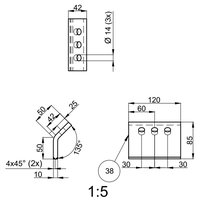




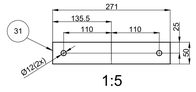
VIEW H
1:10



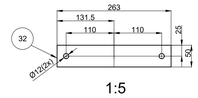
DETAIL J
1:10



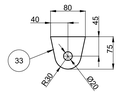
1:5



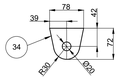
1:5



1:5



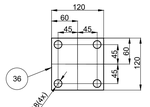
1:5



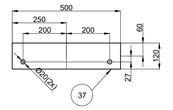
1:5



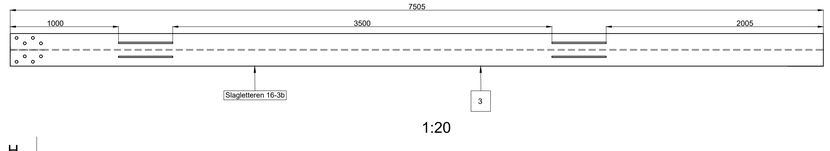
1:5



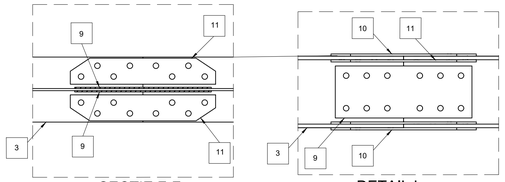
1:5



1:10

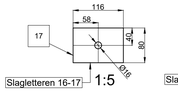


1:20

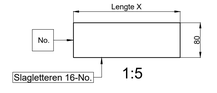


SECTIE F-F
1:10

DETAIL L
1:10

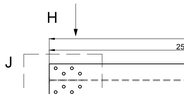


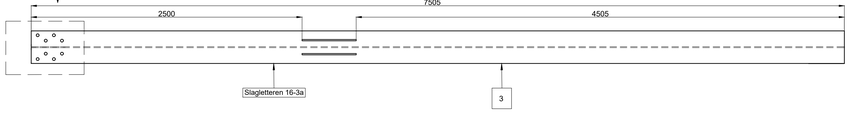
1:5



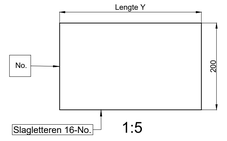
1:5

No.	Lengte (x)
16	101
18	145
19	158
20	161
21	175
22	189
23	204
24	218
25	232
26	246



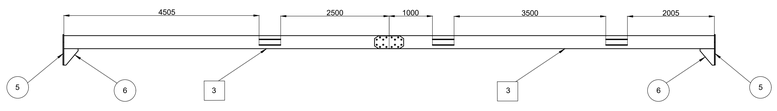


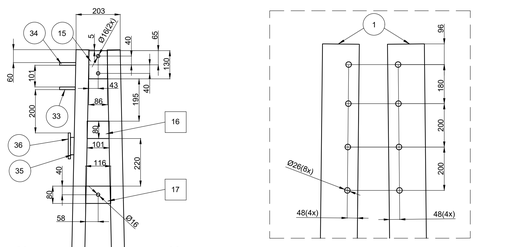
1:20



1:5

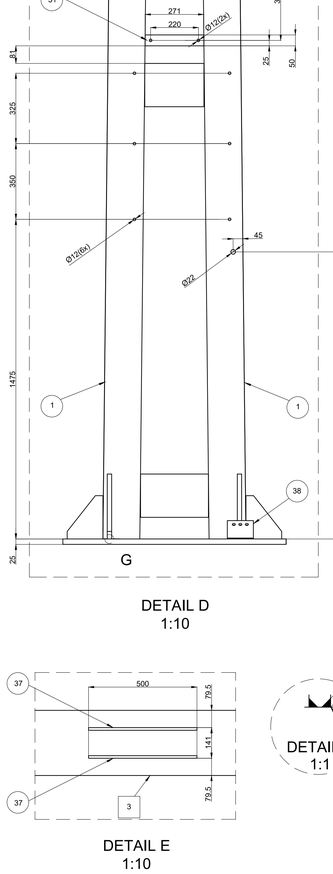
No.	Lengte (Y)
27	327
28	280
29	238
30	195



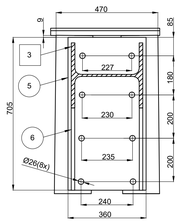


1:10

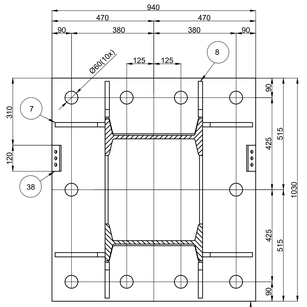
DETAIL A
1:10



DETAIL D
1:10

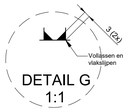


SECTIE B-B
1:10

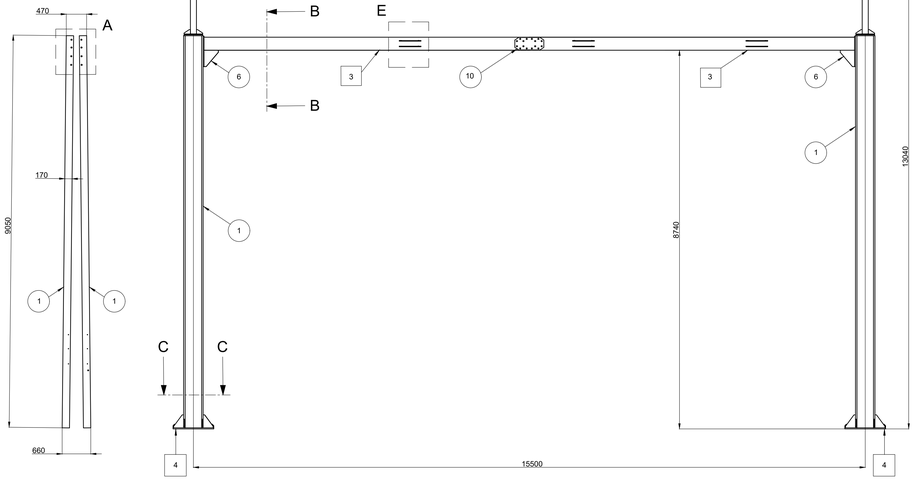


SECTIE C-C
1:10

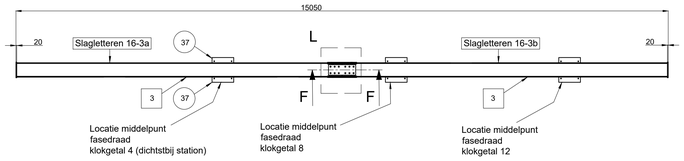
DETAIL E
1:10



DETAIL G
1:1



15050



Algemene gegevens (Tenzij anders vermeld)	
Staalkwaliteit	Scherpe kanten breken.
	Gaten soevereinen.
	Lassen a = 4 mm.
	Bij profielstaal voldoende openingen t.b.v. zinkuitloop.
	Merknummers □ / Positienummers ○
Staalkwaliteit	Profielstaal S355J0, dikte ≤ 16mm volgens NEN-EN 10025
	Profielstaal S355J2, dikte > 16mm volgens NEN-EN 10025
	Gesloten profiel S355J0H, dikte ≤ 16mm volgens NEN-EN 10210
	Gesloten profiel S355J2H, dikte > 16mm volgens NEN-EN 10210
	Voetplaat S355J2+N volgens NEN-EN 10025
Toleranties	Alle toleranties voor hoekmaten moeten voldoen aan toleranticklasse A Tabel 2, NEN-EN-ISO 13920
	Alle toleranties voor lengtematen moeten voldoen aan toleranticklasse A Tabel 1, NEN-EN-ISO 13920
	Alle toleranties voor rechtheid, vlakheid, en evenwijdigheid moeten voldoen aan toleranticklasse E Tabel 3, NEN-EN-ISO 13920.
Bevestigingsartikelen	Onder elke moer en boutkop een sluitring
	Bouten en moeren ISO passend
Uitvoeringsklasse	Profielstaal: Thermisch verzinken volgens NEN-EN-ISO 1461
	Aanvullend verfsysteem volgens SPE.00.903 in RAL 7033
Algemene gegevens	Waarschuwingsbord: zie tekening 29210-00-37-0003
	Circuitcombibord: zie tekening 29210-00-37-0008
	Vlaggenstokhouder: zie tekening 23720-90-030
Totaalgewicht	
Uitvoeringsklasse	EXC3

38	4	Pl. 100x10	120			
37	12	Pl. 120x12	500			
36	4	Pl. 120x10	120			
35	2	Pl. 80x10	17			
34	2	Pl. 78x12	72			
33	2	Pl. 80x12	75			
32	1	Pl. 50x14	263			
31	1	Pl. 50x14	271			
30	4	Pl. 80x6	195			
29	4	Pl. 80x6	238			
28	4	Pl. 80x6	280			
27	4	Pl. 200x14	327			
26	4	Pl. 80x6	246			
25	4	Pl. 80x6	232			
24	4	Pl. 80x6	218			
23	4	Pl. 80x6	204			
22	4	Pl. 80x6	189			
21	4	Pl. 80x6	175			
20	4	Pl. 80x6	161			
19	4	Pl. 80x6	158			
18	4	Pl. 80x6	145			
17	4	Pl. 80x6	116			
16	4	Pl. 80x6	101			
15	4	Pl. 130x6	86			
14	8	Pl. 145x6	100			
13	2	Pl. 520x22	430			
12	2	Pl. 520x18	430			
11	4	Pl. 670x10	120			
10	2	Pl. 670x10	290			
9	2	Pl. 630x6	240			
8	8	Pl. 200x20	165			
7	8	Pl. 300x20	230			
6	4	Pl. 380x16	330			
5	2	Pl. 705x20	360			
4	2	Pl. 1030x25	940			
3	2	HEA340	7505			
2	4	U140	3925			
1	4	INP450	9050			
Pos. No.	Aantal	Omschrijving	Lengte in mm	Gewicht in kg		Opmerkingen

Station Waalwijk 150kV

Voor uitvoering

Rev.	Datum revisie	Beschrijving revisie	Getekend	Datum As-Built	Schaal	Formaat
A	03-07-2020	Voor uitvoering	Arcadis/SB		1:50	A0

Relatie

Thema: Primair

Categorie: Algemeen

Documentcode: Constructietekening

Object ID: ONDERSTEUNING

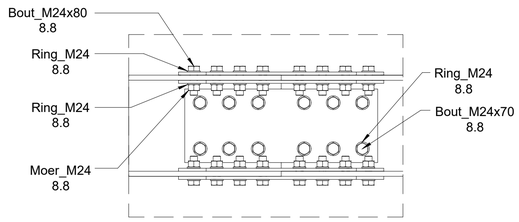
Omschrijving: Staaltekening afspanportaal lijnveld

Documentnummer: 00561-01-10316

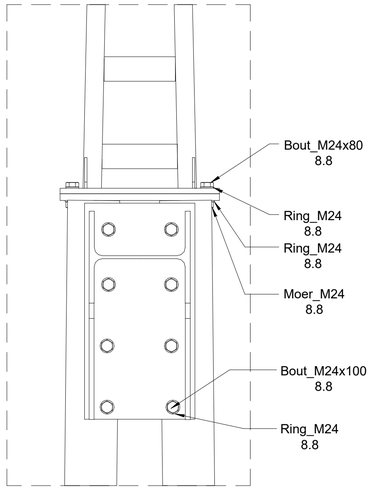
ARCADIS

Tennet
tpicing power further

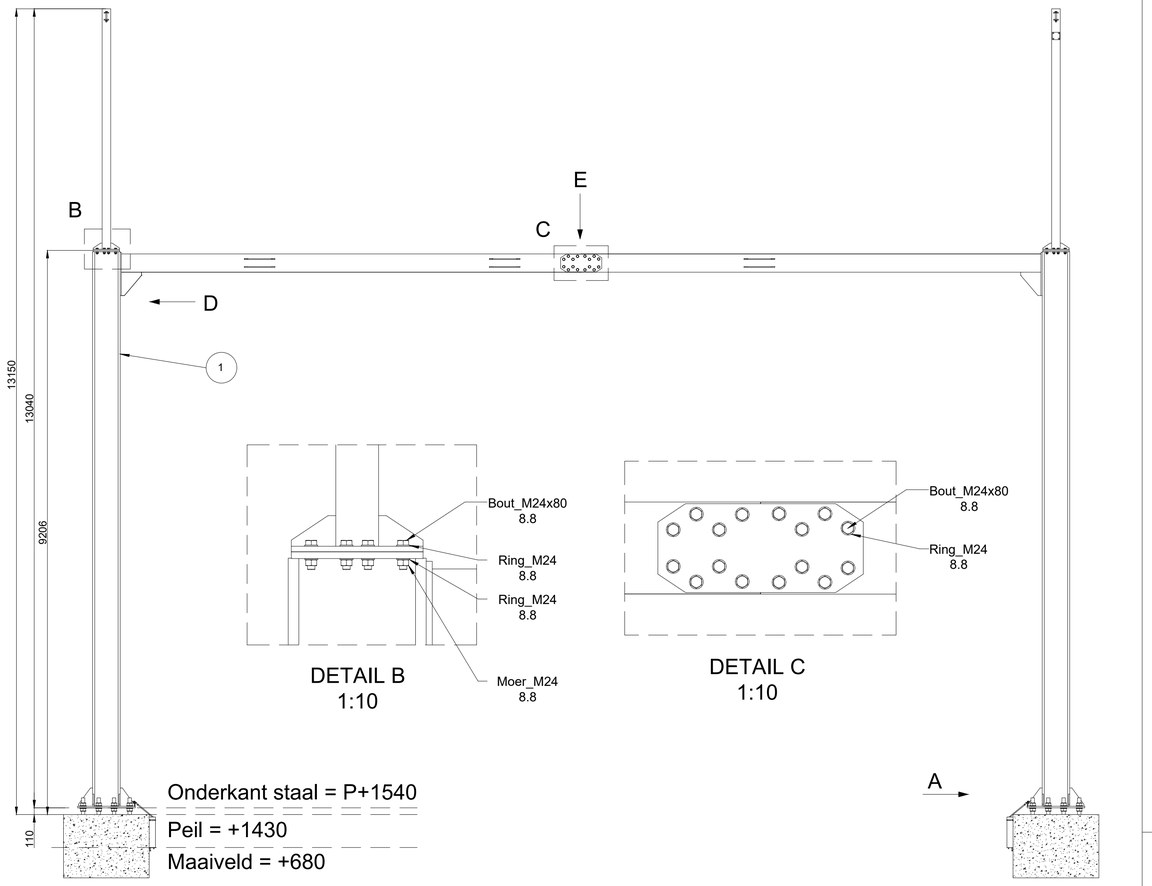
Out tekeningnummer:



AANZICHT E
1:10



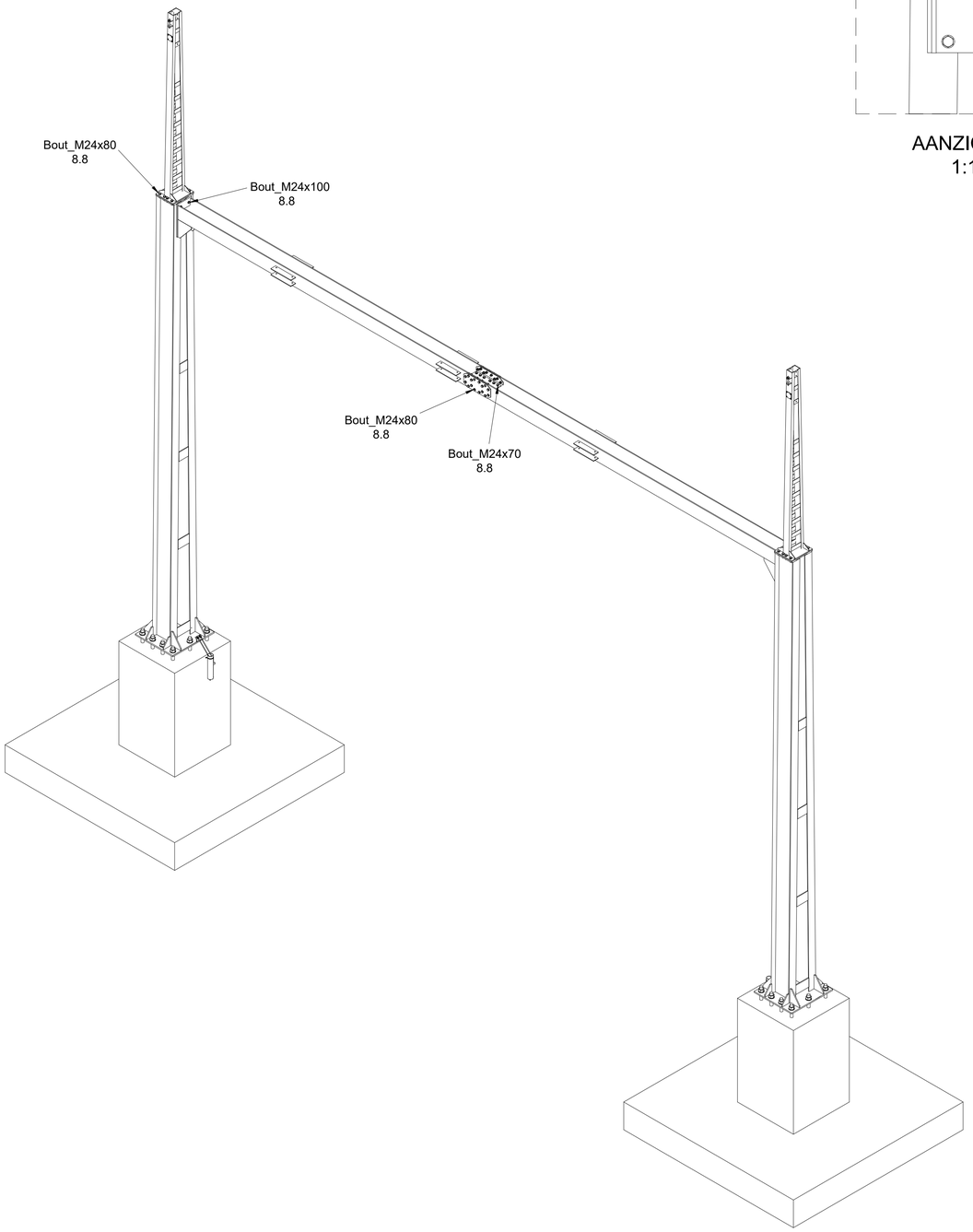
AANZICHT D
1:10

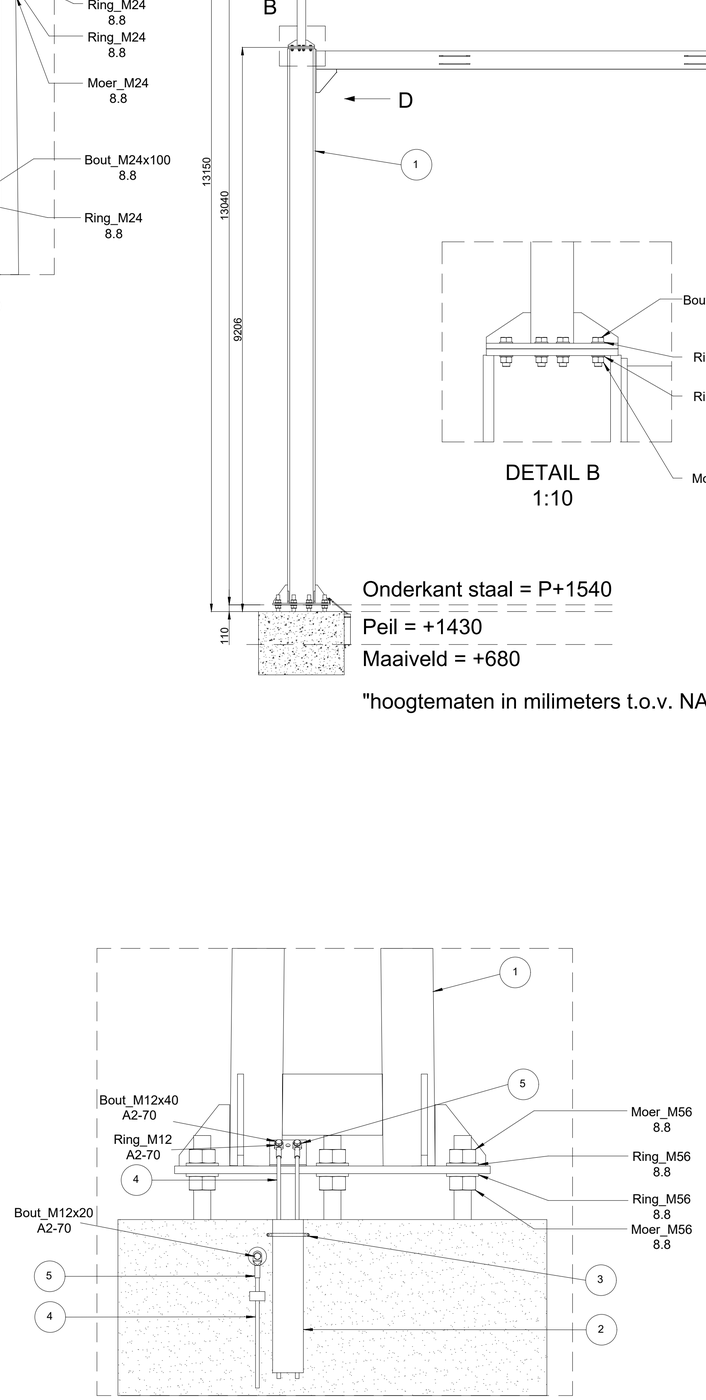


"hoogtematen in milimeters t.o.v. NAP"

DETAIL B
1:10

DETAIL C
1:10





DETAIL A
1:10

2		Bout M12x20	4017	A2-70	RVS
4		Bout M12x40	4017	A2-70	RVS
48		Bout M24x80	4017	8.8	THVZ
16		Bout M24x100	4017	8.8	THVZ
12		Bout M24x70	4017	8.8	THVZ
4		Moer M12	4032	A2-70	RVS
76		Moer M24	4032	8.8	THVZ
40		Moer M56	4032	8.8	THVZ
8		Ring M12	7089	A2-70	RVS
152		Ring M24	7091	8.8	THVZ
40		Ring M56	7091	8.8	THVZ
Aantal		Omschrijving	ISO	Kwaliteit	Opmerkingen
5	6	Perskabelschoen	Cu vertind	M12 120mm²	YCA120M12TN
4	6	Aardkabel	Cu vertind	120mm²	
3	2	Pijpbeugel			
2	2	Buis	Buis	Ø100, L=500mm	
1	1	Staalconstructie			Tek. 00561-01-10316
Pos. No.	Aantal	Omschrijving	Materiaal	Fabrikaat / Type	Opmerkingen

Naam: Station Waalwijk 150kV
Tekeningstatus: Voor uitvoering

Rev.	Datum revisie	Omschrijving revisie	Getekend	Datum As-Built	Schaal	Formaat
A	03-07-2020	Voor uitvoering	Arcadis/SB		1:50	A1

Relatie: ARCADIS
Oud Tekeningnummer:

Thema: Primair
Categorie: Algemeen
Documentcode: Opstellingstekening
Object ID: MAST portaal
Omschrijving: Samenstellingstekening afspanportaal lijnveld
Documentnummer: 00561-01-10419

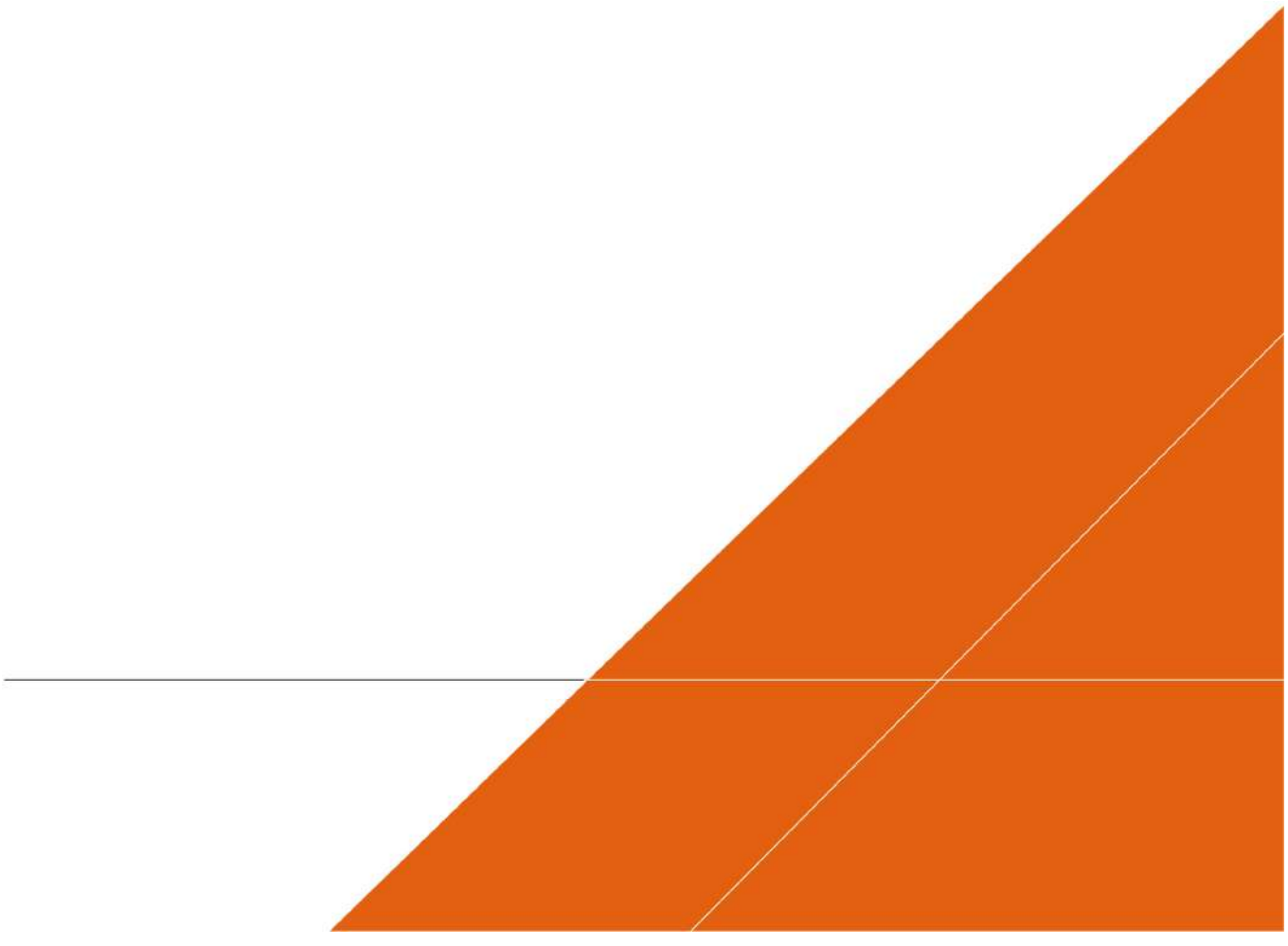
TenneT Taking power further

ARCADIS Design & Consultancy for natural and built assets

TENNET STATION WAALWIJK

Verificatieberekening constructie jukken 64 en 65
Ontwerpberekening constructie juk 64b

24 JUNI 2020



Contactpersonen

HARRY BEERTSEN
Senior Specialist

T +31 (0)6 2706 0298
M +31 (0)6 2706 0298
E harry.beertsen@arcadis.com

Arcadis Nederland B.V.
Postbus 220
3800 AE Amersfoort
Nederland

Versie	Datum	Wijzigingen	Constructeur
0	31-12-2019	In concept gereed	H. Beertsen
1	24-06-2020	Definitief	H. Beertsen

INHOUDSOPGAVE

1 INLEIDING 7

1.1 Aanleiding 7

1.1.1 Huidige situatie 7

1.1.2 Eindsituatie 7

1.2 Vraagstelling 8

1.3 Te leveren producten 8

1.4 Doel van dit rapport 8

2 VOORSCHRIFTEN EN RICHTLIJNEN 9

2.1 Eurocode en Nationale Bijlagen 9

2.2 Overige voorschriften en richtlijnen 9

3 UITGANGSPUNTEN 10

3.1 Gehanteerde informatie 10

3.2 Gevolgklasse, belastingfactoren en ontwerplevensduur 10

3.3 Materiaaleigenschappen 11

3.4 Ankers en voetplaten 11

3.5 Vervormingen 11

3.6 Gehanteerde software 12

4 BELASTINGEN EN BELASTINGCOMBINATIES 13

4.1 Algemeen 13

4.2 Permanente belastingen 13

4.3 Veranderlijke belastingen 13

4.4 Belastingcombinaties 13

5 STAALCONSTRUCTIE JUK 64 15

5.1 Beschrijving constructie 15

5.2 Belastingen 16

5.2.1 BG2: grondgewicht op poer 16

5.2.2 BG3: wind op constructie, X-richting 17

5.2.3 BG4: wind op constructie, Y-richting 17
5.2.4 LC1001 t/m 1238: Belasting uit mastberekeningen 17
5.3 Resultaten 3D-raamwerkberekeningen 17

6 STAALCONSTRUCTIE JUK 64 VERSTERKT 19
6.1 Beschrijving versterkingen 19
6.2 Resultaten 3D-raamwerkberekeningen 19

7 STAALCONSTRUCTIE JUK 65 21
7.1 Beschrijving constructie 21
7.2 Belastingen 22
7.2.1 BG2: grondgewicht op poer 22
7.2.2 BG3: wind op constructie, X-richting 22
7.2.3 BG4: wind op constructie, Y-richting 22
7.2.4 LC1001 t/m 1238: Belasting uit mastberekeningen 23
7.3 Resultaten 3D-raamwerkberekeningen 23

8 STAALCONSTRUCTIE JUK 65 VERSTERKT 24
8.1 Beschrijving versterkingen 24
8.2 Resultaten 3D-raamwerkberekeningen 24

9 STAALCONSTRUCTIE JUK 64B 26
9.1 Beschrijving constructie 26
9.2 Belastingen 26
9.2.1 BG2: grondgewicht op poer 27
9.2.2 BG3: wind op constructie, X-richting 27
9.2.3 BG4: wind op constructie, Y-richting 27
9.2.4 LC1001 t/m 1167: Belasting uit mastberekeningen 27
9.3 Resultaten 3D-raamwerkberekeningen 27

10 FUNDERING VERSTERKTE JUKKEN 64 EN 65 28
10.1 Beschrijving constructie 28
10.2 Maximaal optredende grondspanningen/draagvermogen 28
10.3 Kantelveiligheid/stabiliteit 29
10.3.1 Poer links en rechts van versterkt juk 64 en 65 29
10.3.2 Middelste poer van versterkt juk 64 en 65 30

11 FUNDERING JUK 64B 32
11.1 Beschrijving constructie 32
11.2 Maximaal optredende grondspanningen/draagvermogen 32

11.3 Kantelveiligheid/stabiliteit 33

12 WAPENING IN POEREN 34

12.1 Poer links en rechts van versterkt juk 64 en 65 34
12.1.1 Beschrijving poer 34
12.1.2 Wapening in opstort 1400/2700 x 1400/2700 x 2000 35
12.1.3 Wapening in plaat 4200 x 4000 x 400 36
12.2 Middelste poer van versterkt juk 64 en 65 37
12.2.1 Beschrijving poer 37
12.2.2 Wapening in opstort 1400/2700 x 2900/4200 x 1800 (M_z) 38
12.2.3 Wapening in plaat 6200 x 6200 x 600 (M_z) 39
12.2.4 Wapening in opstort 1400/2700 x 2900/4200 x 1800 (M_y) 40
12.2.5 Wapening in plaat 6200 x 6200 x 600 (M_y) 41
12.3 Poeren van juk 64b 41
12.3.1 Wapening in opstort 1400 x 1400 x 2250 41
12.3.2 Wapening in plaat 4250 x 4250 x 600 42

13 DETAILBEREKENING STAALCONSTRUCTIE 43

13.1 Overzicht met detailnummering 43
13.2 Toets detail 1B 44
13.2.1 Bouten 45
13.2.2 Kopplaat 46
13.2.3 Lassen 46
13.3 Toets detail 2B 47
13.3.1 Bouten 48
13.3.2 Kopplaat 48
13.3.3 Lassen 49
13.3.4 Lijf kolom 49
13.4 Toets detail 3B 50
13.4.1 Bouten verbinding diagonaal aan schetsplaat 50
13.4.2 Bouten schetsplaat aan kolom INP45 51
13.4.3 Lijf schetsplaat 51
13.4.4 Flens schetsplaat 52
13.4.5 Flens schetsplaat 53
13.5 Toets detail 4B 54
13.5.1 Bouten 54
13.5.2 Kopplaat 55
13.5.3 Lassen 55
13.6 Toets detail 5B 56

13.6.1 Bouten 57
13.6.2 Kopplaat 57
13.6.3 Lassen 58
13.7 Toets detail 6B 59
13.8 Toets detail 7B 60
13.8.1 Bouten 61
13.9 Toets detail 8B 62
13.9.1 Ankers 62
13.9.2 Voetplaat 63
13.9.3 Lassen 63
13.9.4 Uitbreken ankergroep 64
13.10 Toets detail 1N 65
13.10.1 Bouten 65
13.10.2 Kopplaat 66
13.10.3 Lassen 66
13.11 Toets detail 5N 67
13.11.1 Bouten 68
13.11.2 Kopplaat 68
13.11.3 Lassen 68
13.12 Toets detail 8N 69
13.12.1 Ankers 69
13.12.2 Voetplaat 70
13.12.3 Lassen 70
13.12.4 Uitbreken ankergroep 71

COLOFON **82**

1 INLEIDING

1.1 Aanleiding

Het station Waalwijk is met twee circuits aangesloten op het 150 kV net en de belasting bedraagt meer dan 100 MW. Hierdoor voldoet Waalwijk niet aan het 100 MW/6h criterium zoals is gesteld in de Elektriciteitswet. In het Kwaliteits- en Capaciteits Document jaar 2016 is dit als nieuw risico aangemerkt. Waalwijk 150 zal daarom worden uitgebreid met een tweede hoofdrail (U-I), koppelveld, omloop, twee lijnvelden en een transformator veld. Het bestaande daknet zal hiervoor moeten worden uitgebreid.

1.1.1 Huidige situatie

Het huidige 150 kV station Waalwijk is aangesloten op het 150 kV net middels de lijnvelden Geertruidenberg wit en 's-Hertogenbosch Noord wit. Het station is uitgevoerd met een enkele rail (daknet) welke middels sectiescheiders verdeeld kan worden in de secties A t/m E. Op de secties A, C en E zijn de drie transformatoren van Enexis en op sectie A en E zijn de twee lijnvelden aangesloten. De secties B en D kunnen alleen als koppelsectie worden gebruikt.



Figuur 1: Huidige situatie TenneT station Waalwijk met op de voorgrond de jukken 65 (L) en 64 (R)

1.1.2 Eindsituatie

In de eindsituatie bestaat het station uit een dubbele rail in UI configuratie, een extra koppelveld en twee extra lijnvelden (Geertruidenberg zwart en 's-Hertogenbosch West zwart). Tevens is een nieuw Centraal Diensten Unit (CDU) geplaatst en ingericht en zijn de bestaande 150 kV velden secundair gerenoveerd. Voor wat betreft de elektrotechnische installatie wordt het bestaande CDG door TenneT verlaten.

Binnen het project 002.880.20 wordt op station Waalwijk een transformatorveld voor transformator TR2 gerealiseerd. Voor het redundant aan kunnen sluiten van transformator TR2 dient dit project voor of gelijktijdig met het project 002.880.20 te worden gerealiseerd. Uitvoering van het project 002.880.20 is dan ook onlosmakelijk verbonden met dit project.

1.2 Vraagstelling

De onderzoeksvraag is tweeledig:

1. Voldoen de bestaande jukken 64 en 65, alsmede funderingen en alle verbindingen, aan de geldende normen en TenneT standaarden?
2. Wat zijn de profielafmetingen van het nieuw te bouwen juk 64b, de afmetingen van kop- en voetplaten, de afmetingen van de ankers, bouten en lassen en de afmetingen van de funderingen?

1.3 Te leveren producten

Het opstellen van een berekeningsrapport waarin de bestaande jukken getoetst worden aan de hand van de belastingen in de toekomstige eindsituatie. Hierbij dient als uitgangspunt minimaal voldaan te worden aan de NEN 8700, verbouwniveau, met een restlevensduur (referentieperiode) van 30 jaar.

Het nieuw te bouwen juk wordt getoetst op nieuwbouwniveau met een levensduur van 50 jaar.

1.4 Doel van dit rapport

In dit rapport worden de resultaten beschreven die volgen uit de (verificatie-)berekeningen van bovengenoemde staalconstructies.

2 VOORSCHRIFTEN EN RICHTLIJNEN

2.1 Eurocode en Nationale Bijlagen

De in tabel 1 weergegeven Eurocodes met Nationale Bijlagen zijn gehanteerd.

Tabel 1: Overzicht Eurocodes met Nationale Bijlagen

Normen	Onderwerp
[1] NEN-EN 1990+A1+A1/C2;2011 + NB	Grondslagen van het constructief ontwerp.
[2] NEN-EN 1991-1-1+C1;2011 + NB	Belastingen op constructies – Deel 1-1: Algemene belastingen.
[3] NEN-EN 1991-1-4+A1+C2; 2011 + NB	Belastingen op constructies – Deel 1-4: Windbelasting.
[4] NEN-EN 1992-1-1+C2; 2011 + NBI	Ontwerp en berekening van betonconstructies – Deel 1-1: Algemene regels.
[5] NEN-EN 1993-1-1+C2+A1;2016 + NB	Ontwerp en berekening van staalconstructies – Deel 1-1: Algemene regels.
[6] NEN-EN 1993-1-8+C2;2011 + NB	Ontwerp en berekening van staalconstructies – Deel 1-8: Verbindingen.
[7] NEN-EN 1997-1+C1; 2012 + NBI	Geotechnisch ontwerp – Deel 1: Algemene regels.
[8] NEN-EN 50341-3+C1 t/m C4; 2010	Bovengrondse elektrische lijnen boven 45 KV wisselspanning Deel 3: Verzameling van nationale normatieve aspecten
[9] NEN-EN IEC 60865-1;2012	Short-circuits currents – Calculation of effects

2.2 Overige voorschriften en richtlijnen

Naast de Eurocode zijn de in tabel 2 weergegeven normen en richtlijnen gehanteerd.

Tabel 2: Overzicht overige normen en richtlijnen

Normen	Onderwerp
[10] NEN 8700; 2011	Beoordelen constructieve veiligheid van een bestaand bouwwerk bij verbouwen en afkeuren - Grondslagen.
[11] NEN 8701; 2011	Beoordelen constructieve veiligheid van een bestaand bouwwerk bij verbouwen en afkeuren - Belastingen.
[12] SPE.01.100 versie 12- 2017	Specificatie Staalwerk primaire ondersteuningen, portalen en bliksempieken
[13] SPE.04.004 versie 11- 2018	Specificatie Constructieberekeningen
[14] SPE.04.006, versie 12-2017	Eisen Bouwbesluit 2012

3 UITGANGSPUNTEN

3.1 Gehanteerde informatie

De in tabel 3 genoemde documenten zijn geraadpleegd bij het opstellen van deze rapportage:

Tabel 3: Overzicht gehanteerde documenten

Titel	
[15] p-007877-1	Tekening: Plaatsing afspanjukken
[16] p-007893-1	Tekening: Hoofdconstructie
[17] p-036043-1	Tekening: Overzicht hoofdstaalconstructie (inclusief statische trekkracht in geleiders)
[18] d-006142-1	Tekening: Afspanjukken lang 16200
[19] d-15484-1	Tekening: Verzwaring afspanjukken
[20] p-134655-1	Tekening: Afspanjukken, wijziging afspanconstructie geleiders
[21] p-134655-2	Tekening: Afspanjukken, wijziging afspanconstructie geleiders
[22] v01-v-----con-00001	Tekening: afspanjuk 65, wijziging en uitbreiding 1962
[23] d-006143-1	Tekening: Langsjukken (5 portalen)
[24] d-006528-1	Tekening: Afspanjukken lang 14500
[25] p-047293-1	Tekening: Bij te plaatsen dwarsjukken
[26] p-047294-1	Tekening: Onderdelen voor afspanning
[27] p-065887-1	Tekening: Uitbreiding hoofdstaalconstructie
[28] p-134659-1	Tekening: Afspanbalkjes voor geleiders
[29] d-043886-1	Funderingsadvies uitbreiding 150 kV station Waalwijk
[30] d-006150-1	Tekening: Details poeren
[31] d-006515-1	Tekening: Kleine fundaties
[32] p-026872-1	Tekening: Afspanjuk, verzwaring fundatie
[33] BOU.04.004.03.009A	Tekening: Overzicht ankers met stelhoogten
[34] 43122-108	Tekening verzwaring afspanjukken

3.2 Gevolgklasse, belastingfactoren en ontwerplevensduur

Zowel de nieuw te bouwen constructiedelen als de bestaande constructie vallen in gevolgklasse CC2, zie tabel NB.21-B1 van [1]. De bestaande constructie zal in de nieuwe situatie worden getoetst op verbouwniveau. De nieuw te bouwen onderdelen worden getoetst op nieuwbouwniveau. De te hanteren belastingfactoren zijn in onderstaande tabel opgenomen.

Tabel 4: Partiële belastingfactoren

Belasting	verbouwniveau γ	nieuwbouw γ
Permanent, ongunstig	1.15	1.20
Permanent, gunstig	0.90	0.90
Windbelasting	1.40	1.50
Overige veranderlijke belastingen	1.30	1.50

De nieuw te bouwen constructiedelen dienen een ontwerplevensduur van 50 jaar te hebben.

3.3 Materiaaleigenschappen

Voor de onderdelen worden de volgende staalsoorten en –kwaliteiten toegepast:

Tabel 5: Staalsoorten

Onderdeel	(Wand-)dikte	Staalsoort	f_y MPa	f_u MPa
Bestaande profielen	t ≤ 40 mm	S235	235	360
Bestaande kop- en voetplaten	t ≤ 40 mm	S235	235	360
Bestaande bouten	---	kwal. 8.8	640	800
Bestaande ankers	---	n.v.t.	n.v.t.	n.v.t.
Nieuwe profielen	t ≤ 40 mm	S355	355	490
Nieuwe kop- en voetplaten	t ≤ 40 mm	S355	355	490
Nieuwe bouten	---	kwal. 8.8	640	800
Nieuwe ankers	---	kwal. 8.8	640	800

3.4 Ankers en voetplaten

De diameters van de toe te passen ankers volgen uit de berekening, maar dienen minimaal M24 te zijn. De ankers dienen thermisch te worden verzinkt, isometrisch passend. De ankers moeten zijn voorzien van een gerolde draad.

De voetplaten worden niet ondersabeld. De stelhoogte dient conform tekening BOU.04.004.03.009A te worden toegepast. De ankers en voetplaten dienen hierop te worden gedimensioneerd.

3.5 Vervormingen

Voor ondersteunende constructies in veldopstellingen gelden de volgende waarden ten aanzien van de maximale verplaatsing:

Constructie	Maximale horizontale verplaatsing
Schakelende apparatuur (vermogensschakelaar, aarder en scheider)	1/300 van de hoogte
Ondersteunende apparatuur (steunisolator, stroom/spanningstransformator en railsteunen)	1/150 van de hoogte
Bliksempieken	1/50 van de hoogte

Constructie	Maximale verticale doorbuiging
Portalen	1/500 van de overspanning

3.6 Gehanteerde software

De volgende software is toegepast bij het opstellen van deze rapportage:

Tabel 6: Gehanteerde software

Programma	Omschrijving
SCIA Engineer 17.1.2029 / 19.0.60	3D raamwerk- en platenprogramma
Technosoft Construct 6.07a	Bepaling grondspanningen en kantelveiligheid funderingen op staal
Excel 2016 / Office 365	Spreadsheets; vrijgegeven door ARCADIS
Word 2016 / Office 365	Tekstverwerkingsprogramma

4 BELASTINGEN EN BELASTINGCOMBINATIES

4.1 Algemeen

In dit hoofdstuk worden alle belastingen beschreven die werken op de constructie van de lijnjukken. De grootte van de diverse belastingen zijn terug te vinden in de hoofdstukken 5 tot en met 9.

4.2 Permanente belastingen

De volgende permanente belastingen worden in rekening gebracht:

- Eigen gewicht van de beton- en staalconstructie.
- Eigen gewicht van de grond op de poeren.
- Eigen gewicht van de geleiders en isolatoren.
- Eigen gewicht van de diverse componenten.
- Statische trekkrachten op bliksempieken.

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

4.3 Veranderlijke belastingen

De volgende veranderlijke belastingen worden in rekening gebracht:

- Windbelasting op de constructie.
- Windbelasting op de geleiders, isolatoren, componenten en bliksemdraden.
- Windbelasting op de be-ijsde geleiders, isolatoren, componenten en bliksemdraden.
- IJsbelasting.
- Kortsluitkrachten.

4.4 Belastingcombinaties

De volgende belastingcombinaties worden in rekening gebracht voor de toetsing van de sterkte/stabiliteit:

Toets bestaande constructie in nieuwe situatie, UGT:

maximale ijslast:	1.15 ∗ permanent	+	1.30 ∗ ijs	+	1.40 ∗ 0.30 ∗wind X (be-ijsd)
	1.15 ∗ permanent	+	1.30 ∗ ijs	+	1.40 ∗ 0.30 ∗wind Y (be-ijsd)
maximale wind:	1.15 ∗ permanent	+	1.40 ∗ wind X		
	1.15 ∗ permanent	+	1.40 ∗ wind Y		
kortsluiting:	1.15 ∗ permanent	+	0.30 ∗wind X	+	1.30 ∗ kortsluiting
	1.15 ∗ permanent	+	0.30 ∗wind Y	+	1.30 ∗ kortsluiting

Toets nieuwe constructie, UGT:

maximale ijslast:	1.20 ∗ permanent	+	1.50 ∗ ijs	+	1.50 ∗ 0.30 ∗wind X (be-ijsd)
	1.20 ∗ permanent	+	1.50 ∗ ijs	+	1.50 ∗ 0.30 ∗wind Y (be-ijsd)
maximale wind:	1.20 ∗ permanent	+	1.50 ∗ wind X		
	1.20 ∗ permanent	+	1.50 ∗ wind Y		
kortsluiting:	1.20 ∗ permanent	+	0.30 ∗wind X	+	1.50 ∗ kortsluiting
	1.20 ∗ permanent	+	0.30 ∗wind Y	+	1.50 ∗ kortsluiting

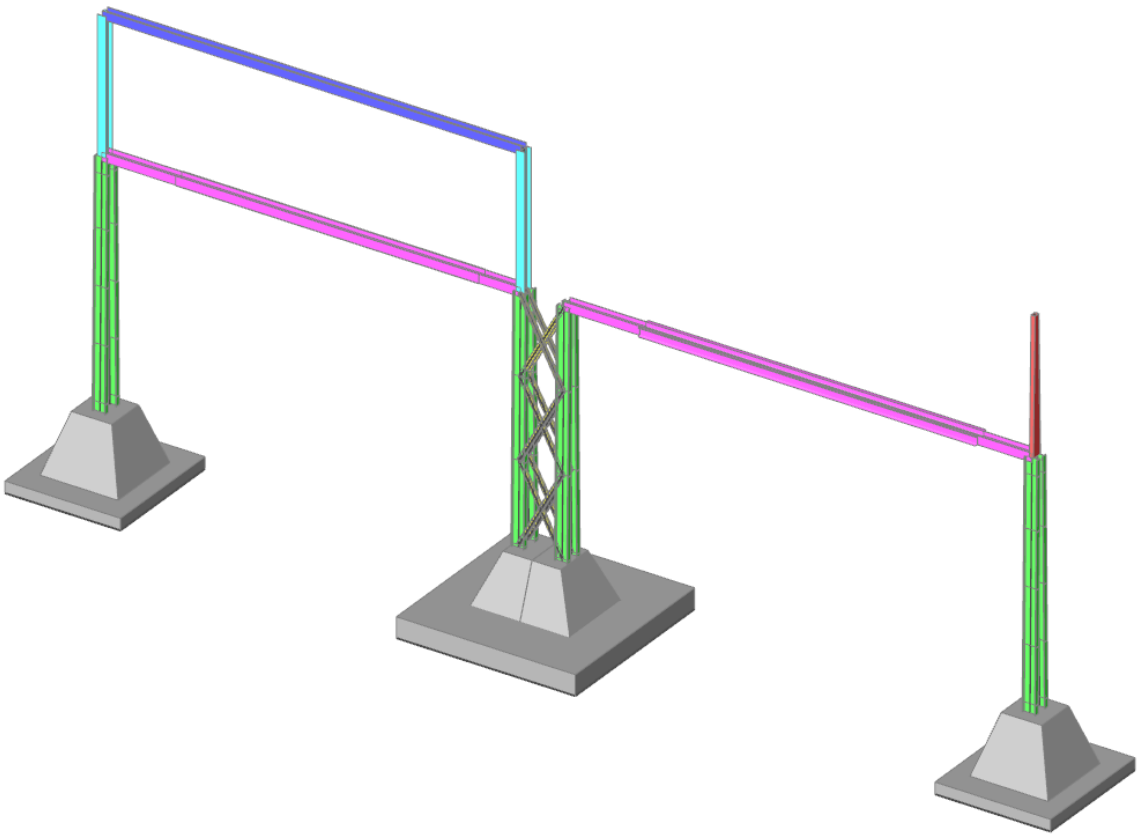
De volgende belastingcombinaties worden in rekening gebracht voor de toetsing van de stijfheid:

Bestaand en nieuw, BGT:

maximale ijslast:	1.00 ∗ permanent	+	1.00 ∗ ijs	+	0.30 ∗wind X (be-ijsd)
	1.00 ∗ permanent	+	1.00 ∗ ijs	+	0.30 ∗wind Y (be-ijsd)
maximale wind:	1.00 ∗ permanent	+	1.00 ∗ wind X		
	1.00 ∗ permanent	+	1.00 ∗ wind Y		

5 STAALCONSTRUCTIE JUK 64

5.1 Beschrijving constructie



Figuur 2; Rekenmodel huidig lijnjuk 64 in SCIA-Engineer

In bovenstaande afbeelding is het rekenmodel uit SCIA gegeven. De volgende stalen onderdelen zijn gehanteerd:

Tabel 7: In berekening toegepaste profielen

Profiel volgens tekening	Profiel ingevoerd	Staalkwaliteit	Kleur in figuur
Kolom INP45	INP450	S235	Groen
Kolom DIE36	HEA360	S235	Cyaan
Ligger DIE34	HEA340	S235	Lila
Ligger DIE34 + strippen	HEA340+ 2x strip 320x12	S235	Lila
Ligger DIE34 + UNP's	HEA340+ 2x UNP300	S235	Lila
Ligger DIN28	HEB280	S235	Donkerblauw
Koppelplaat 2x14x200 (tussen kolommen)	28x200	S235	Donkergroen
Diagonaal UNP14	UNP140	S235	Geel
Bliksempiek	Koker 140x354	S235	Rood

Origineel zijn de flexibele geleiders afgespannen aan een “kaal” DIE34 profiel. In een later stadium is dit profiel voorzien van versterkingen in de vorm van dubbele strippen of dubbele UNP-profielen gebout tegen de flensen.



Figuur 3: Versterkingen met strippen (links) en UNP-profielen (rechts)

5.2 Belastingen

De volgende belastingen zijn in de berekening gehanteerd:

- BG1: Het eigengewicht van het stalen portaal en de funderingen.
- BG2: Grondgewicht op de poer.
- BG3: Windbelasting op het afspanjuk, X-richting.
- BG4: Windbelasting op het afspanjuk, Y-richting.
- LC1001 t/m LC1238: Krachten uit de lijn.
  (LC1001 t/m LC1238 zijn de **rekenwaarden** van de belastingcombinaties uit de mastberekeningen)

5.2.1 BG2: grondgewicht op poer

Poer links en rechts:

lengte plaat	: 4.40 m
breedte plaat	: 4.00 m
lengte opstort	: 2.05 m (gemiddeld)
breedte opstort	: 2.05 m (gemiddeld)
gronddekking	: 1.50 m
soortelijke massa grond	: 18.00 kNm^3

$$Q_{grond} = (4.40 * 4.00 - 2.05 * 2.05) * 1.50 * 18.00 = 361.73\ kN$$

Poer midden:
lengte plaat : 6.20 m
breedte plaat : 6.20 m
lengte opstort : 2.05 m (gemiddeld)
breedte opstort : 2.75 m (gemiddeld)
gronddekking : 1.10 m
soortelijke massa grond : 18.00 kNm^3

$Q_{grond} = (6.20 * 6.20 - 2.05 * 2.75) * 1.10 * 18.00 = 649.49\ kN$

5.2.2 BG3: wind op constructie, X-richting

stuwdruk : 0.63 kPa; profielfactor : 2.00

kolom INP45 : $q_{wind} = 2.00 * 0.63 * 0.17 = 0.21\ kN/m$
kolom DIE36 : $q_{wind} = 2.00 * 0.63 * 0.35 = 0.44\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$

5.2.3 BG4: wind op constructie, Y-richting

stuwdruk : 0.63 kPa; profielfactor : 2.00

kolom INP45 : $q_{wind} = 2.00 * 0.63 * 0.45 = 0.57\ kN/m$
kolom DIE36 : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$
ligger DIE34 : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$
ligger DIN28 : $q_{wind} = 2.00 * 0.63 * 0.28 = 0.35\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.63 * 0.14 = 0.18\ kN/m$

5.2.4 LC1001 t/m 1238: Belasting uit mastberekeningen

De krachten die op het lijnportaal (afspanjuk) werken, zijn overgenomen uit de hoofdberekening van de masten. Een lijst van alle belastingcombinaties met krachten is weergegeven in Bijlage A. Dit zijn rekenwaarden (inclusief belastingfactor) van de krachten uit de geleiders en de bliksemdraden. In de bijlage is een overzicht gegeven van de knoopnummers waarop de krachten aangrijpen volgens de berekening van de mast. Deze knoopnummers corresponderen met knoopnummering in SCIA. De opgegeven krachten werken in het X, Y, Z-coördinaatsysteem van de constructie.

5.3 Resultaten 3D-raamwerkberekeningen

In tabel 8 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld.
Voor de in- en uitvoergegevens, zie Bijlage D.

Tabel 8: Maximaal optredende UC-waarde (verbouwniveau)

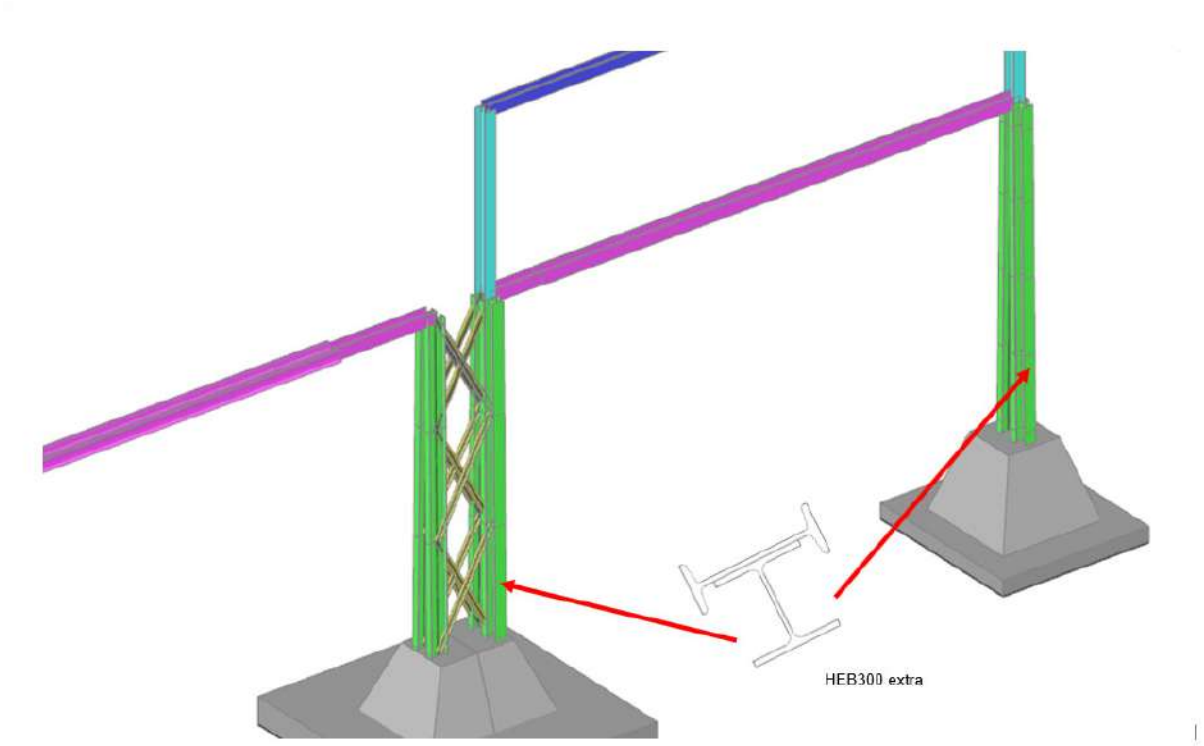
Profiel	Staalkwaliteit	UC_{max}
Kolom INP45	S235	1.50
Kolom DIE36	S235	0.27
Ligger DIE34	S235	0.62
Ligger DIE34 + strippen	S235	0.98
Ligger DIE34 + UNP's	S235	0.82
Ligger DIN28	S235	0.23

Profiel	Staalkwaliteit	UC_{max}
Koppelplaat 2x14x200 (tussen kolommen)	S235	1.14
Diagonaal UNP14	S235	0.82
Bliksempiek	S235	0.45

Conclusie: bepaalde onderdelen van de constructie dienen te worden versterkt, zie hoofdstuk 6.

6 STAALCONSTRUCTIE JUK 64 VERSTERKT

6.1 Beschrijving versterkingen



Figuur 4; Versterkingen aan lijnjuk 64 in SCIA-Engineer (achteraanzicht juk)

Twee van de vier samengestelde kolommen dienen te worden versterkt en dan alleen die INP-profielen die onder druk staan (aan de zijde van de naast gelegen mast). Hiertoe moeten in het werk extra HEB300 profielen tegen het lijf van de INP-kolommen worden gemonteerd.

Door het toepassen van bovenstaand beschreven versterkingen worden de optredende spanningen in de overbelaste koppelplaten gereduceerd en is een versterking hiervan niet noodzakelijk.

6.2 Resultaten 3D-raamwerkberekeningen

In tabel 9 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld.
Voor de in- en uitvoergegevens, zie Bijlage E.

Tabel 9: Maximaal optredende UC-waarde (verbouwniveau)

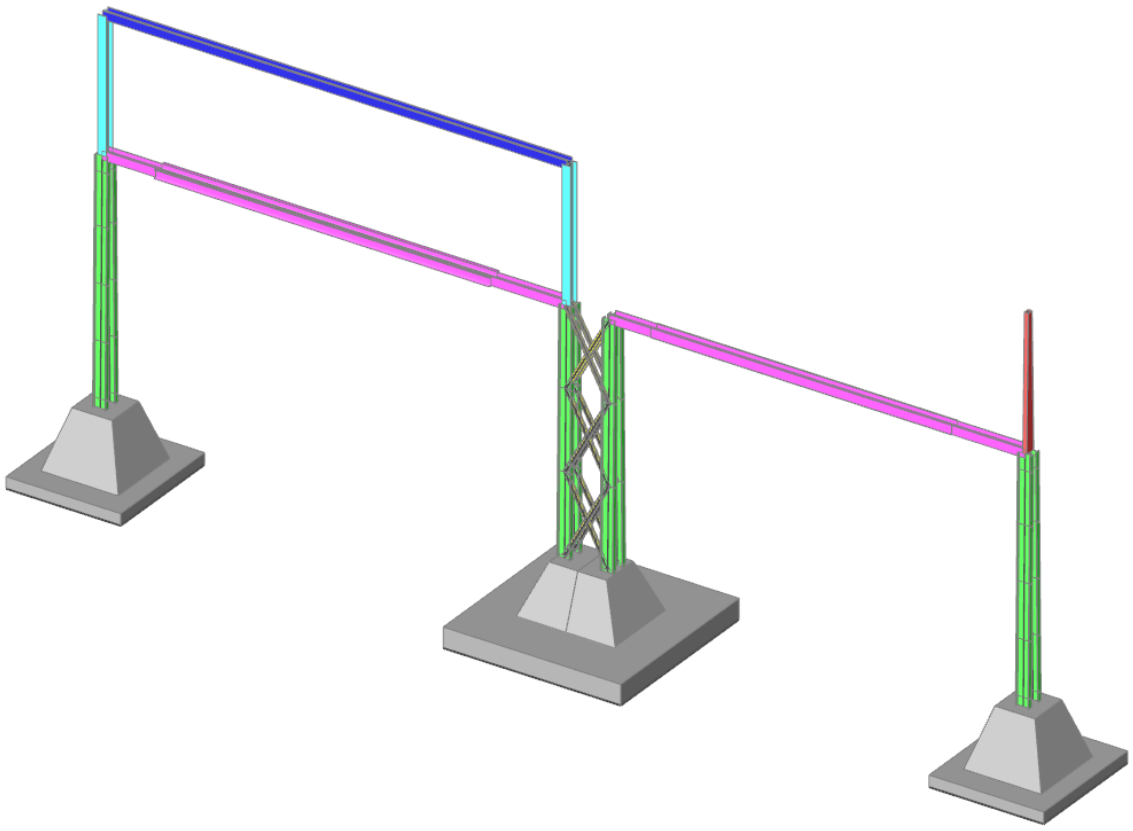
Profiel	Staalkwaliteit	UC_{max}
Kolom INP45	S235	0.87
Kolom INP45 + HEB300	S235 / S355	0.71
Kolom DIE36	S235	0.27
Ligger DIE34	S235	0.61
Ligger DIE34 + strippen	S235	0.98
Ligger DIE34 + UNP's	S235	0.81

Profiel	Staalkwaliteit	UC_{max}
Ligger DIN28	S235	0.23
Koppelplaat 2x14x200 (tussen kolommen)	S235	1.00
Diagonaal UNP14	S235	0.73
Bliksempiek	S235	0.45

Alle profielen voldoen aan de eisen van sterkte en stabiliteit.

7 STAALCONSTRUCTIE JUK 65

7.1 Beschrijving constructie



Figuur 5; Rekenmodel huidig lijnjuk 65 in SCIA-Engineer

In bovenstaande afbeelding is het rekenmodel uit SCIA gegeven. De volgende stalen onderdelen zijn gehanteerd:

Tabel 10: In berekening toegepaste profielen

Profiel volgens tekening	Profiel ingevoerd	Staalkwaliteit	Kleur in figuur
Kolom INP45	INP450	S235	Groen
Kolom DIE36	HEA360	S235	Cyaan
Ligger DIE34	HEA340	S235	Lila
Ligger DIE34 + strippen	HEA340+ 2x strip 320x12	S235	Lila
Ligger DIE34 + UNP's	HEA340+ 2x UNP300	S235	Lila
Ligger DIN28	HEB280	S235	Donkerblauw
Koppelplaat 2x14x200 (tussen kolommen)	28x200	S235	Donkergroen
Diagonaal UNP14	UNP140	S235	Geel
Bliksempiek	Koker 140x354	S235	Rood

Origineel zijn de flexibele geleiders afgespannen aan een “kaal” DIE34 profiel. In een later stadium is dit profiel voorzien van versterkingen in de vorm van dubbele strippen of dubbele UNP-profielen gebout tegen de flensen. Zie ook juk 64, figuur 3.

7.2 Belastingen

De volgende belastingen zijn in de berekening gehanteerd:

- BG1: Het eigengewicht van het stalen portaal en de funderingen.
- BG2: Grondgewicht op de poer.
- BG3: Windbelasting op het afspanjuk, X-richting.
- BG4: Windbelasting op het afspanjuk, Y-richting.
- LC1001 t/m LC1238: Krachten uit de lijn.
  (LC1001 t/m LC1238 zijn de **rekenwaarden** van de belastingcombinaties uit de mastberekeningen)

7.2.1 BG2: grondgewicht op poer

Poer links en rechts:

lengte plaat	: 4.40 m
breedte plaat	: 4.00 m
lengte opstort	: 2.05 m (gemiddeld)
breedte opstort	: 2.05 m (gemiddeld)
gronddekking	: 1.50 m
soortelijke massa grond	: 18.00 kNm^3

$$Q_{grond} = (4.40 * 4.00 - 2.05 * 2.05) * 1.50 * 18.00 = 361.73\ kN$$

Poer midden:

lengte plaat	: 6.20 m
breedte plaat	: 6.20 m
lengte opstort	: 2.05 m (gemiddeld)
breedte opstort	: 2.75 m (gemiddeld)
gronddekking	: 1.10 m
soortelijke massa grond	: 18.00 kNm^3

$$Q_{grond} = (6.20 * 6.20 - 2.05 * 2.75) * 1.10 * 18.00 = 649.49\ kN$$

7.2.2 BG3: wind op constructie, X-richting

stuwdruk : 0.63 kPa; profielfactor : 2.00

kolom INP45 : $q_{wind} = 2.00 * 0.63 * 0.17 = 0.21\ kN/m$
kolom DIE36 : $q_{wind} = 2.00 * 0.63 * 0.35 = 0.44\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$

7.2.3 BG4: wind op constructie, Y-richting

stuwdruk : 0.63 kPa; profielfactor : 2.00

kolom INP45 : $q_{wind} = 2.00 * 0.63 * 0.45 = 0.57\ kN/m$
kolom DIE36 : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$
ligger DIE34 : $q_{wind} = 2.00 * 0.63 * 0.30 = 0.38\ kN/m$
ligger DIN28 : $q_{wind} = 2.00 * 0.63 * 0.28 = 0.35\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.63 * 0.14 = 0.18\ kN/m$

7.2.4 LC1001 t/m 1238: Belasting uit mastberekeningen

De krachten die op het lijnportaal (afspanjuk) werken, zijn overgenomen uit de hoofdberekening van de masten. Een lijst van alle belastingcombinaties met krachten is weergegeven in Bijlage B. Dit zijn rekenwaarden (inclusief belastingfactor) van de krachten uit de geleiders en de bliksemdraden. In de bijlage is een overzicht gegeven van de knoopnummers waarop de krachten aangrijpen volgens de berekening van de mast. Deze knoopnummers corresponderen met knoopnummering in SCIA. De opgegeven krachten werken in het X, Y, Z-coördinaatsysteem van de constructie.

7.3 Resultaten 3D-raamwerkberekeningen

In tabel 11 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld.
Voor de in- en uitvoergegevens, zie Bijlage F.

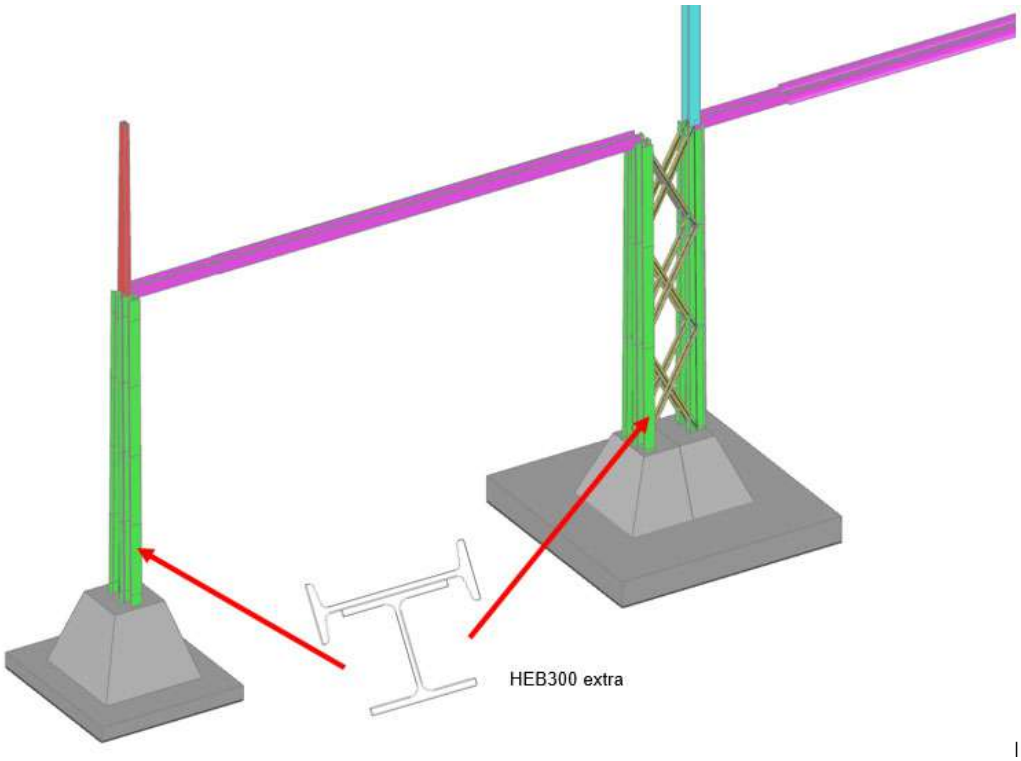
Tabel 11: Maximaal optredende UC-waarde (verbouwniveau)

Profiel	Staalkwaliteit	UC_{max}
Kolom INP45	S235	1.51
Kolom DIE36	S235	0.28
Ligger DIE34	S235	0.66
Ligger DIE34 + strippen	S235	0.94
Ligger DIE34 + UNP's	S235	0.87
Ligger DIN28	S235	0.93
Koppelplaat 2x14x200 (tussen kolommen)	S235	1.02
Diagonaal UNP14	S235	0.83
Bliksempiek	S235	0.53

Conclusie: bepaalde onderdelen van de constructie dienen te worden versterkt, zie hoofdstuk 8.

8 STAALCONSTRUCTIE JUK 65 VERSTERKT

8.1 Beschrijving versterkingen



Figuur 6; Versterkingen aan lijnjuk 65 in SCIA-Engineer(achteraanzicht juk)

Twee van de vier samengestelde kolommen dienen te worden versterkt en dan alleen die INP-profielen die onder druk staan (aan de zijde van de naast gelegen mast). Hiertoe moeten in het werk extra HEB300 profielen tegen het lijf van de INP-kolommen worden gemonteerd.

Door het toepassen van bovenstaand beschreven versterkingen worden de optredende spanningen in de overbelaste koppelplaten en diagonalen gereduceerd en is een versterking hiervan niet noodzakelijk.

8.2 Resultaten 3D-raamwerkberekeningen

In tabel 12 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld.
Voor de in- en uitvoergegevens, zie Bijlage G.

Tabel 12: Maximaal optredende UC-waarde (verbouwniveau)

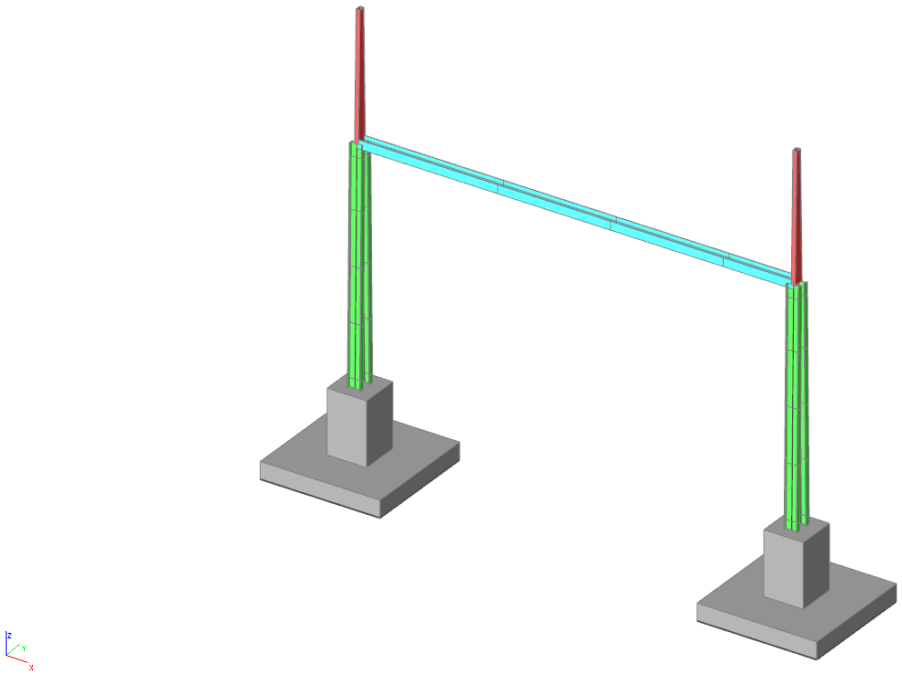
Profiel	Staalkwaliteit	UC_{max}
Kolom INP45	S235	0.98
Kolom INP45 + HEB300	S235 / S355	0.67
Kolom DIE36	S235	0.29
Ligger DIE34	S235	0.67
Ligger DIE34 + strippen	S235	0.95
Ligger DIE34 + UNP's	S235	0.86

Profiel	Staalkwaliteit	UC_{max}
Ligger DIN28	S235	0.94
Koppelplaat 2x14x200 (tussen kolommen)	S235	0.93
Diagonaal UNP14	S235	1.00
Bliksempiek	S235	0.53

Alle profielen voldoen aan de eisen van sterkte en stabiliteit.

9 STAALCONSTRUCTIE JUK 64B

9.1 Beschrijving constructie



Figuur 7; Rekenmodel nieuw lijnjuk 64b in SCIA-Engineer

In bovenstaande afbeelding is het rekenmodel uit SCIA gegeven. De volgende stalen onderdelen zijn gehanteerd:

Tabel 13: In berekening toegepaste profielen

Profiel volgens tekening	Profiel ingevoerd	Staalkwaliteit	Kleur in figuur
Kolom INP450	INP450	S355	Groen
Ligger HEA340	HEA340	S355	Cyaan
Koppelplaat 2x14x200 (tussen kolommen)	28x200	S355	Donkergroen
Bliksempiek	Koker 140x354	S355	Rood

9.2 Belastingen

De volgende belastingen zijn in de berekening gehanteerd:

- BG1: Het eigengewicht van het stalen portaal en de funderingen.
- BG2: Grondgewicht op de poer.
- BG3: Windbelasting op het afspanjuk, X-richting.
- BG4: Windbelasting op het afspanjuk, Y-richting.
- LC1001 t/m LC1167: Krachten uit de lijn.
  (LC1001 t/m LC1167 zijn de **rekenwaarden** van de belastingcombinaties uit de mastberekeningen)

9.2.1 BG2: grondgewicht op poer

Poer links en rechts:
lengte plaat : 4.25 m
breedte plaat : 4.25 m
lengte opstort : 1.40 m
breedte opstort : 1.40 m
gronddekking : 1.50 m
soortelijke massa grond : 18.00 kNm^3

$Q_{grond} = (4.25 * 4.25 - 1.40 * 1.40) * 1.50 * 18.00 = 434.77\ kN$

9.2.2 BG3: wind op constructie, X-richting

stuwdruk : 0.68 kPa; profielfactor : 2.00

kolom INP450 : $q_{wind} = 2.00 * 0.68 * 0.17 = 0.23\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.68 * 0.30 = 0.41\ kN/m$

9.2.3 BG4: wind op constructie, Y-richting

stuwdruk : 0.68 kPa; profielfactor : 2.00

kolom INP450 : $q_{wind} = 2.00 * 0.68 * 0.45 = 0.61\ kN/m$
ligger HEA340 : $q_{wind} = 2.00 * 0.68 * 0.30 = 0.41\ kN/m$
bliksempiek : $q_{wind} = 2.00 * 0.68 * 0.14 = 0.19\ kN/m$

9.2.4 LC1001 t/m 1167: Belasting uit mastberekeningen

De krachten die op het lijnportaal (afspanjuk) werken, zijn overgenomen uit de hoofdberekening van de masten. Een lijst van alle belastingcombinaties met krachten is weergegeven in Bijlage C. Dit zijn rekenwaarden (inclusief belastingfactor) van de krachten uit de geleiders. In de bijlage is een overzicht gegeven van de knoopnummers waarop de krachten aangrijpen volgens de berekening van de mast. Deze knoopnummers corresponderen met knoopnummering in SCIA. De opgegeven krachten werken in het X, Y, Z-coördinaatsysteem van de constructie.

9.3 Resultaten 3D-raamwerkberekeningen

In tabel 14 staat voor ieder stalen onderdeel de maximaal optredende UC vermeld. De staalkwaliteit is niet bekend (staat niet op de beschikbare tekeningen). Aangenomen is dat een staalkwaliteit S235 is toegepast.

Voor de in- en uitvoergegevens, zie Bijlage H.

Tabel 14: Maximaal optredende UC-waarde (nieuwbouwniveau)

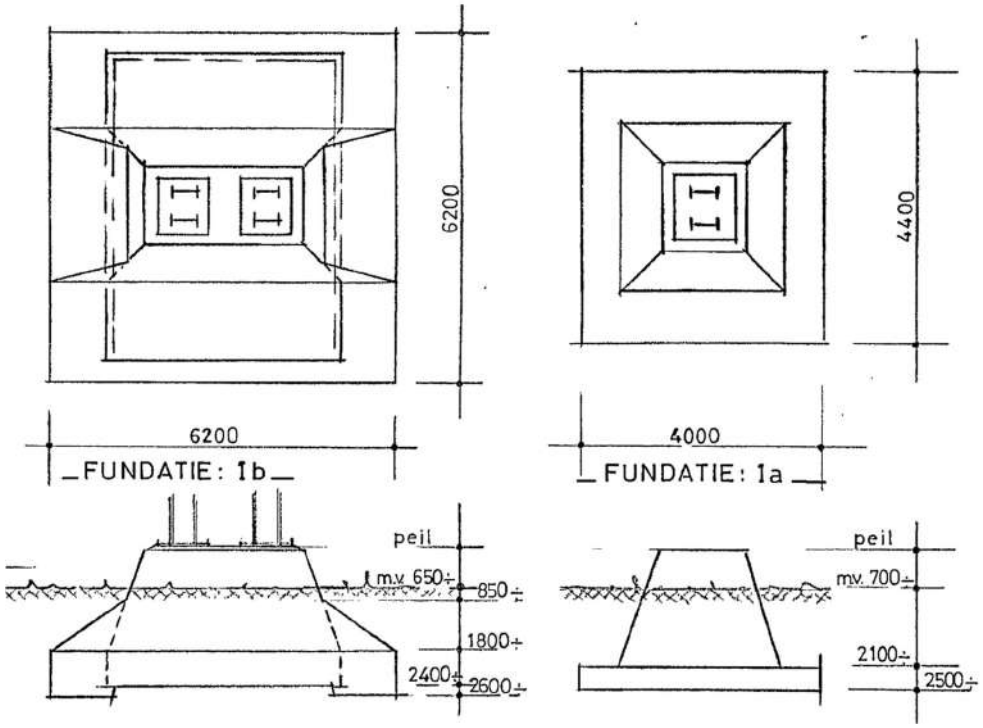
Profiel	Staalkwaliteit	UC_{max}
Kolom INP450	S355	0.47
Ligger HEA340	S355	0.48
Koppelplaat 2x14x200 (tussen kolommen)	S355	0.08
Bliksempiek	S355	0.39

Alle profielen voldoen aan de eisen van sterkte en stabiliteit.

10 FUNDERING VERSTERKTE JUKKEN 64 EN 65

10.1 Beschrijving constructie

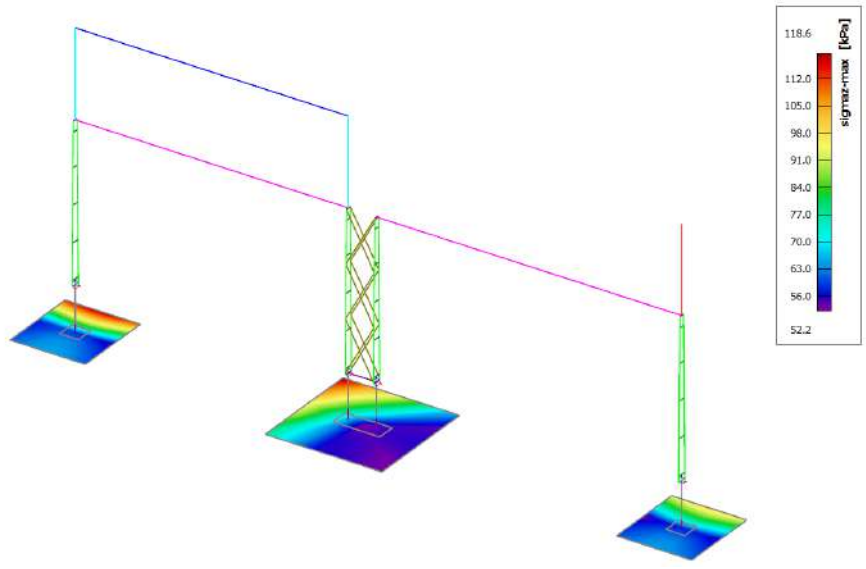
De kolommen van de jukken 64 en 65 zijn met ankers 2,25 inch verankerd in de betonnen poer. De poeren zijn in onderstaande afbeelding weergegeven:



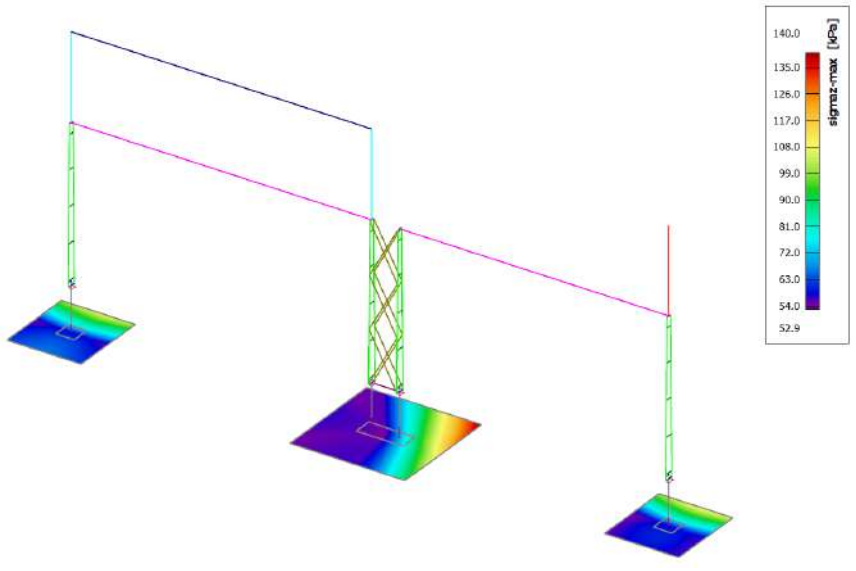
Figuur 8; Poeren 1b (uitgebreid) en 1a

Ten behoeve van de uitbreiding van het portaal in 1961 is de middelste poer (poer 1b) verzwaard. In bovenstaande afbeelding zijn de maten gegeven na deze verzwaring.

10.2 Maximaal optredende grondspanningen/draagvermogen



Figuur 9; Grondspanningen onder fundering juk 64 versterkt



Figuur 10; Grondspanningen onder fundering juk 65 versterkt

De maximale grondspanning bedraagt 140 MPa. Dat is minder dan de toelaatbare waarde van 175 MPa zoals berekend in document “Fundaties primaire componenten, uitbreiding Waalwijk 150”.

10.3 Kantelveiligheid/stabiliteit

10.3.1 Poer links en rechts van versterkt juk 64 en 65

Krachten uit versterkt juk 64.

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC1	K6	S246	**-1.63**	-0.02	**64.94**	4.12	**-2.10**	**0.05**
UGT-2/2	FC1	K6	S246	**7.09**	-60.53	77.25	521.09	17.74	-1.36
UGT-1/3	FC1	K6	S246	3.69	**-81.47**	73.76	**695.34**	12.13	-1.35
UGT-2/4	FC1	K6	S246	1.05	**16.51**	65.79	**-129.43**	0.67	0.00
UGT-2/5	FC1	K6	S246	6.75	-26.05	**80.54**	205.81	**19.34**	-0.81
UGT-2/6	FC1	K6	S246	6.44	-64.75	74.68	559.76	15.34	**-1.41**

5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/13	FC4	K513	S322	**-8.99**	-14.85	46.34	123.08	-0.05	0.40
UGT-2/14	FC4	K513	S322	**1.59**	-5.34	35.73	69.67	12.70	0.02
UGT-1/9	FC4	K513	S322	-4.17	**-61.04**	43.52	**502.70**	6.49	**1.24**
UGT-2/15	FC4	K513	S322	-5.36	**18.11**	44.79	-134.08	4.61	**-0.17**
UGT-2/16	FC4	K513	S322	-0.17	4.46	**35.39**	-57.76	10.45	0.07
UGT-1/17	FC4	K513	S322	-8.22	0.62	**47.68**	-5.67	2.73	0.00
UGT-2/18	FC4	K513	S322	-2.16	16.96	35.71	**-139.36**	7.60	-0.02
UGT-1/1	FC4	K513	S322	-5.08	-0.02	36.60	0.13	**-3.34**	0.00
UGT-2/5	FC4	K513	S322	-4.15	-8.64	45.97	59.75	**13.05**	0.33

Krachten uit versterkt juk 65.

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC1	K6	S246	**-4.78**	-49.81	59.97	422.15	**-26.07**	-0.62
UGT-2/19	FC1	K6	S246	**3.61**	0.01	56.71	-0.05	**2.69**	0.00
UGT-1/1	FC1	K6	S246	-1.78	**-67.95**	59.25	**574.42**	-19.45	-0.64
UGT-2/9	FC1	K6	S246	1.04	**17.52**	56.04	**-144.01**	0.05	**0.02**
UGT-1/20	FC1	K6	S246	-1.45	-0.01	**55.40**	0.04	-2.20	0.00
UGT-2/21	FC1	K6	S246	2.47	-17.87	**65.35**	148.53	-10.74	-0.22
UGT-1/8	FC1	K6	S246	-2.10	-67.75	60.86	570.12	-22.71	**-0.65**

5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC4	K513	S322	**-9.85**	-56.41	61.02	482.47	**-28.31**	1.42
UGT-2/19	FC4	K513	S322	**0.30**	0.00	**53.06**	3.99	**1.87**	**-0.01**
UGT-1/1	FC4	K513	S322	-6.49	**-72.67**	59.09	**595.59**	-21.74	1.44
UGT-2/9	FC4	K513	S322	-2.24	**11.71**	53.45	**-68.31**	-0.73	0.02
UGT-1/24	FC4	K513	S322	-8.20	-13.46	**62.19**	116.40	-17.08	0.55
UGT-1/25	FC4	K513	S322	-9.07	-60.92	59.50	522.87	-24.52	**1.47**

Het maximaal moment om de X-as van juk 64 is maatgevend.
Het moment om de Y-as is verwaarloosbaar klein.

Voor in- en uitvoergegevens stabiliteitsberekening, zie Bijlage I-1.

De kantelveiligheid bedraagt: 1.82 > 1.50 ⇒ akkoord

10.3.2 Middelste poer van versterkt juk 64 en 65

Krachten uit versterkt juk 64.

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC2	K8	S244	**24.27**	-0.18	**-26.93**	2.59	**-6.95**	-0.17
UGT-2/5	FC2	K8	S244	**120.69**	-47.40	**950.45**	357.66	**210.14**	10.62
UGT-1/7	FC2	K8	S244	98.72	**-119.14**	761.30	770.25	167.37	23.27
UGT-2/4	FC2	K8	S244	35.94	**17.04**	68.80	**-128.02**	14.61	**-2.65**
UGT-1/3	FC2	K8	S244	90.98	-115.56	669.05	**957.58**	146.75	20.82
UGT-1/8	FC2	K8	S244	98.56	-119.00	757.43	771.62	166.52	**23.29**

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	**-45.40**	0.21	**135.89**	1.07	**-29.71**	0.25
UGT-2/5	FC3	K438	S250	**50.04**	-7.41	**-825.71**	116.74	**185.34**	-2.02
UGT-1/9	FC3	K438	S250	23.47	**-49.74**	-560.10	429.12	126.21	-6.70
UGT-2/10	FC3	K438	S250	28.11	**22.63**	-642.21	83.68	143.89	5.29
UGT-2/4	FC3	K438	S250	-34.26	10.88	39.54	**-68.80**	-8.13	1.33
UGT-1/3	FC3	K438	S250	22.43	-49.70	-549.09	**429.40**	123.76	-6.66
UGT-1/11	FC3	K438	S250	-1.20	-47.05	-286.09	341.07	65.02	**-6.79**
UGT-2/12	FC3	K438	S250	27.45	22.62	-635.08	83.53	142.30	**5.30**

Krachten uit versterkt juk 65.

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC2	K8	S244	**-92.18**	-46.43	**-1263.07**	361.21	**-282.27**	4.90
UGT-2/19	FC2	K8	S244	**47.02**	0.14	**157.62**	0.64	**34.50**	0.11
UGT-1/22	FC2	K8	S244	-42.04	**-70.22**	-744.53	431.67	-166.04	**9.57**
UGT-2/9	FC2	K8	S244	35.71	**20.72**	62.04	**-108.01**	12.84	**-3.15**
UGT-1/1	FC2	K8	S244	-63.83	-66.87	-985.60	**487.28**	-220.02	8.06

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC3	K438	S250	**-159.49**	-76.54	**1393.89**	676.32	**-308.62**	-11.36
UGT-2/19	FC3	K438	S250	**-23.09**	-0.15	**-42.33**	3.33	**10.50**	-0.17
UGT-1/14	FC3	K438	S250	-131.51	**-91.02**	1120.16	813.31	-247.14	-13.23
UGT-2/9	FC3	K438	S250	-34.51	**7.77**	53.54	**-95.50**	-11.14	**0.35**
UGT-1/1	FC3	K438	S250	-130.78	-90.99	1112.34	**814.14**	-245.39	-13.22
UGT-1/23	FC3	K438	S250	-115.85	-87.49	945.61	736.20	-208.03	**-13.50**

Omdat er twee kolommen op de fundering staan dienen boven vermelde krachten en momenten te worden samengesteld.
Voor de momenten om de X-as is juk 64 maatgevend, juk 65 voor momenten om de Y-as.

Maximaal moment om de X-as van juk 64.
$M_{x,max} = 957.58 + 429.40 = 1386.98\ kNm$
$V_y = 115.56 + 49.70 = 165.26\ kN$
$N_c = 669.05 - 549.09 = 119.96\ kN$

Voor in- en uitvoergegevens stabiliteitsberekening, zie Bijlage I-2.

De kantelveiligheid bedraagt: 2.72 > 1.50 ⇒ akkoord

Maximaal moment om de Y-as van juk 65.
$M_{y,max} = 282.27 + 308.62 = 590.89\ kNm$
$V_x = 92.18 + 159.49 = 251.67\ kN$
$N_c = 1393.89 - 1263.07 = 130.82\ kN$

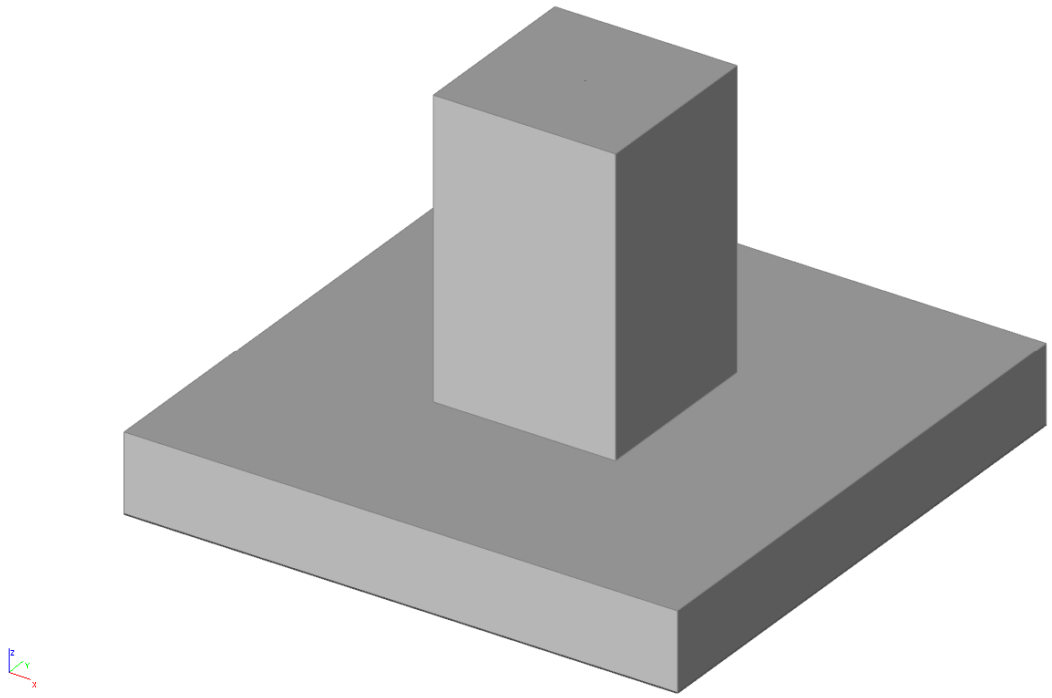
De twee kolommen staan op een afstand van 1.51 m.
Dit levert een extra M_y moment van:
$\Delta M_y = (1393.89 - 0.5 * 130.82) * 1.51 = 2006.00\ kNm$
$M_{y,tot} = 590.89 + 2006.00 = 2596.89\ kNm$

Voor in- en uitvoergegevens stabiliteitsberekening, zie Bijlage I-3.

De kantelveiligheid bedraagt: 1.53 > 1.50 ⇒ akkoord

11 FUNDERING JUK 64B

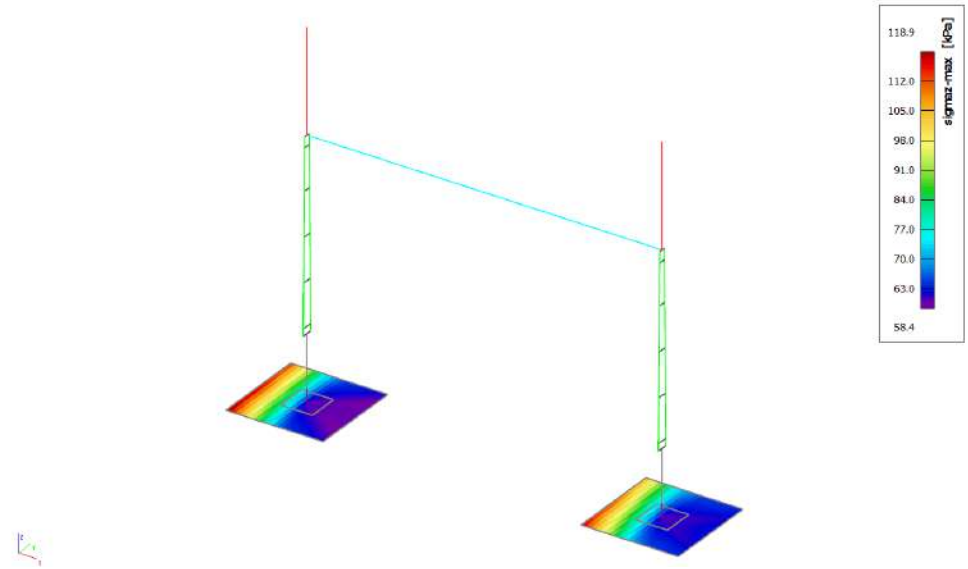
11.1 Beschrijving constructie



Figuur 11; Betonpoer voor nieuw juk 64b

De plaat is 4250 mm lang, 4250 mm breed en 600 mm dik.
De opstort heeft een doorsnede van 1400x1400 mm^2. en is 2250 mm hoog.

11.2 Maximaal optredende grondspanningen/draagvermogen



Figuur 12; Grondspanningen onder fundering juk 65 versterkt

De maximale grondspanning bedraagt 119 MPa. Dat is minder dan de toelaatbare waarde van 175 MPa zoals berekend in document “Fundaties primaire componenten, uitbreiding Waalwijk 150”.

11.3 Kantelveiligheid/stabiliteit

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : Alle UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC1	K1	S7	**-4.68**	0.00	**34.98**	0.00	**-39.26**	0.00
Combi2/11	FC1	K1	S7	**83.46**	4.97	**53.23**	-42.60	**571.63**	0.23
Combi1/19	FC1	K1	S7	25.83	**-16.38**	43.99	**110.79**	161.20	**-0.23**
Combi2/20	FC1	K1	S7	71.44	**19.21**	50.06	**-132.31**	504.54	0.40
Combi2/14	FC1	K1	S7	72.22	19.21	50.16	-132.22	510.26	**0.40**

5.2. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : Alle UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC2	K3	S8	**-12.24**	0.00	36.60	0.00	**-53.33**	0.00
Combi2/11	FC2	K3	S8	**68.32**	8.25	36.27	-70.48	**543.67**	-0.21
Combi1/19	FC2	K3	S8	12.40	**-16.69**	41.01	**112.98**	136.26	**0.23**
Combi2/14	FC2	K3	S8	59.38	**22.70**	34.30	**-161.78**	486.58	**-0.38**
Combi2/12	FC2	K3	S8	68.18	9.04	**33.44**	-77.33	535.50	-0.23
Combi1/13	FC2	K3	S8	8.08	0.32	**45.11**	-2.72	129.60	0.00

Het maximaal moment om de Y-as is maatgevend.

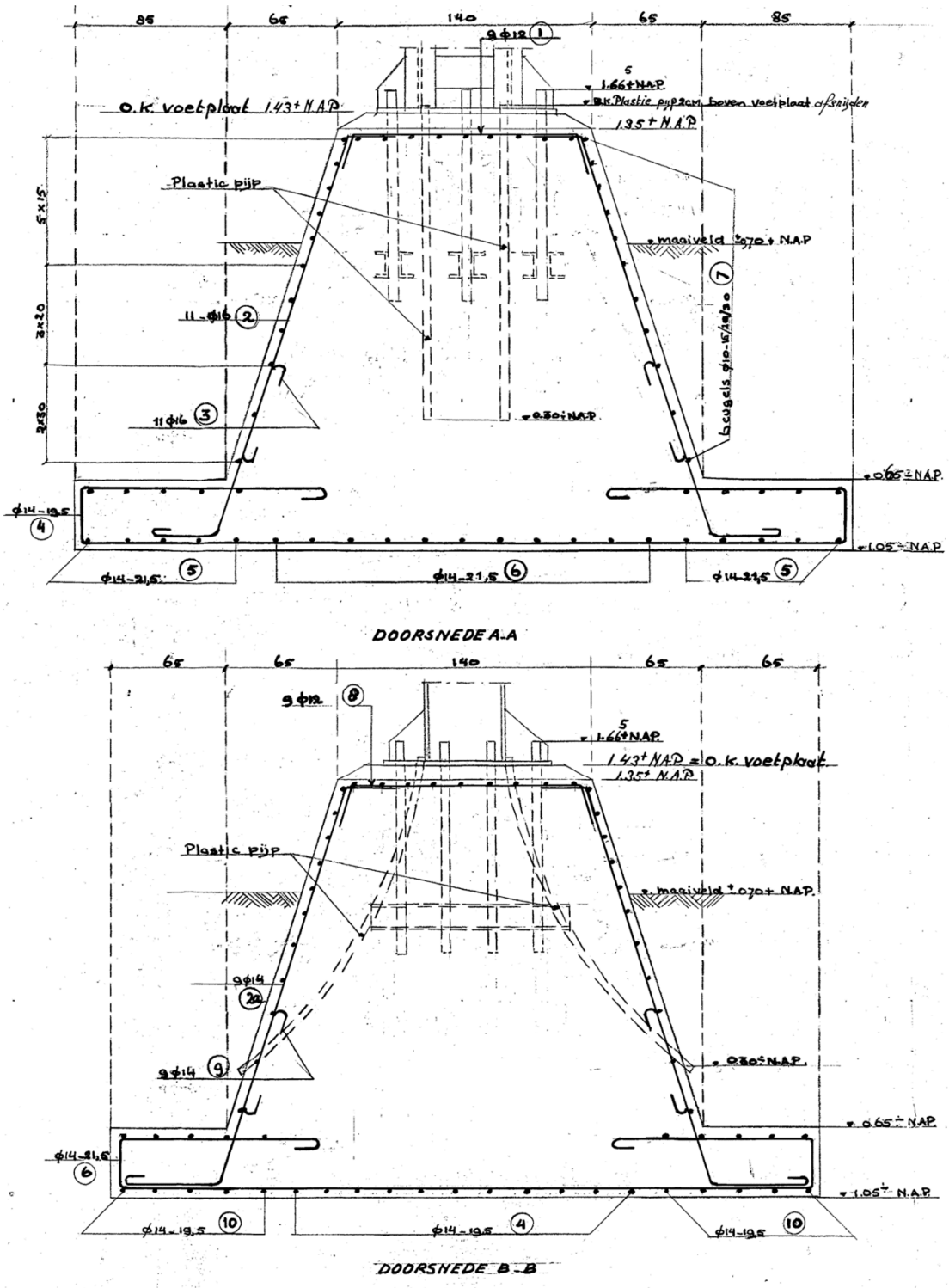
Voor in- en uitvoergegevens stabiliteitsberekening, zie Bijlage I-4.

De kantelveiligheid bedraagt: 2.24 > 1.50 ⇒ akkoord

12 WAPENING IN POEREN

12.1 Poer links en rechts van versterkt juk 64 en 65

12.1.1 Beschrijving poer



Figuur 13; Randpoer Type 1A

12.1.2 Wapening in opstort 1400/2700 x 1400/2700 x 2000

Vanwege de relatief geringe normaalkracht in de opstort, wordt deze berekend als zijnde een balk.

Belastingen op de opstort, juk 64:

7.10. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer boven-IA - Rechthoek	1600	UGT-2/5	**-303.31**	22.24	-6.15	-0.81	-29.78	245.22
S246	Poer boven-IA - Rechthoek	0	UGT-1/1	**-64.94**	0.02	**1.63**	**0.05**	2.10	4.12
S246	Poer boven-IA - Rechthoek	0	UGT-2/4	-65.79	**-16.51**	-1.05	0.00	-0.67	-129.43
S246	Poer boven-IA - Rechthoek	0	UGT-1/3	-73.76	**81.47**	-3.69	-1.35	-12.13	695.34
S246	Poer boven-IA - Rechthoek	0	UGT-2/2	-77.25	60.53	**-7.09**	-1.36	-17.74	521.09
S246	Poer boven-IA - Rechthoek	0	UGT-2/6	-74.68	64.75	-6.44	**-1.41**	-15.34	559.76
S246	Poer boven-IA - Rechthoek	2000	UGT-2/5	-303.31	22.24	-6.15	-0.81	**-32.24**	254.11
S246	Poer boven-IA - Rechthoek	2000	UGT-1/1	-287.71	-0.04	1.53	0.05	**5.26**	4.10
S246	Poer boven-IA - Rechthoek	2000	UGT-2/4	-288.56	-14.12	-1.00	0.00	-2.72	**-160.07**
S246	Poer boven-IA - Rechthoek	2000	UGT-1/3	-296.53	68.86	-3.34	-1.35	-19.17	**845.72**

7.13. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer boven-IA - Rechthoek	1600	UGT-1/17	**-270.45**	-0.52	7.91	0.00	10.25	-6.60
S322	Poer boven-IA - Rechthoek	0	UGT-2/16	**-35.39**	-4.46	0.17	0.07	-10.45	-57.76
S322	Poer boven-IA - Rechthoek	0	UGT-2/15	-44.79	**-18.11**	5.36	**-0.17**	-4.61	-134.08
S322	Poer boven-IA - Rechthoek	0	UGT-1/9	-43.52	**61.04**	4.17	**1.24**	-6.49	502.70
S322	Poer boven-IA - Rechthoek	0	UGT-2/14	-35.73	5.34	**-1.59**	0.02	-12.70	69.67
S322	Poer boven-IA - Rechthoek	0	UGT-1/13	-46.34	14.85	**8.99**	0.40	0.05	123.08
S322	Poer boven-IA - Rechthoek	2000	UGT-2/14	-258.50	4.18	-1.32	0.02	**-15.61**	79.19
S322	Poer boven-IA - Rechthoek	2000	UGT-1/41	-268.84	-2.05	8.08	-0.02	**18.64**	-28.89
S322	Poer boven-IA - Rechthoek	2000	UGT-2/18	-258.48	-14.41	2.19	-0.02	-3.25	**-170.75**
S322	Poer boven-IA - Rechthoek	2000	UGT-1/9	-266.29	51.85	4.09	1.24	1.77	**615.63**

Belastingen op de opstort, juk 65:

7.10. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer onder-IV - Rechthoek	1600	UGT-2/21	**-288.12**	15.16	-2.54	-0.22	6.74	175.51
S246	Poer onder-IV - Rechthoek	0	UGT-1/20	**-55.40**	0.01	1.45	0.00	2.20	0.04
S246	Poer onder-IV - Rechthoek	0	UGT-2/9	-56.04	**-17.52**	-1.04	**0.02**	-0.05	-144.01
S246	Poer onder-IV - Rechthoek	0	UGT-1/1	-59.25	**67.95**	1.78	-0.64	19.45	574.42
S246	Poer onder-IV - Rechthoek	0	UGT-2/19	-56.71	-0.01	**-3.61**	0.00	-2.69	-0.05
S246	Poer onder-IV - Rechthoek	0	UGT-1/5	-59.97	49.81	**4.78**	-0.62	26.07	422.15
S246	Poer onder-IV - Rechthoek	0	UGT-1/8	-60.86	67.75	2.10	**-0.65**	22.71	570.12
S246	Poer onder-IV - Rechthoek	2000	UGT-2/19	-279.48	-0.01	-3.41	0.00	**-9.71**	-0.06
S246	Poer onder-IV - Rechthoek	2000	UGT-1/5	-282.74	42.14	4.16	-0.62	**35.02**	514.14
S246	Poer onder-IV - Rechthoek	2000	UGT-2/9	-278.81	-14.88	-1.00	0.02	-2.09	**-176.42**
S246	Poer onder-IV - Rechthoek	2000	UGT-1/1	-282.02	57.51	1.39	-0.64	22.62	**699.93**

7.13. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer onder-IV - Rechthoek	1600	UGT-1/24	**-284.96**	11.36	7.58	0.55	29.83	136.69
S322	Poer onder-IV - Rechthoek	0	UGT-2/19	**-53.06**	0.00	**-0.30**	**-0.01**	-1.87	3.99
S322	Poer onder-IV - Rechthoek	0	UGT-2/9	-53.45	**-11.71**	2.24	0.02	0.73	-68.31
S322	Poer onder-IV - Rechthoek	0	UGT-1/1	-59.09	**72.67**	6.49	1.44	21.74	595.59
S322	Poer onder-IV - Rechthoek	0	UGT-1/5	-61.02	56.41	**9.85**	1.42	28.31	482.47
S322	Poer onder-IV - Rechthoek	0	UGT-1/25	-59.50	60.92	9.07	**1.47**	24.52	522.87
S322	Poer onder-IV - Rechthoek	2000	UGT-2/19	-275.83	-0.05	-0.26	-0.01	**-2.43**	3.94
S322	Poer onder-IV - Rechthoek	2000	UGT-1/5	-283.79	47.67	8.97	1.42	**47.14**	586.58
S322	Poer onder-IV - Rechthoek	2000	UGT-2/9	-276.22	-10.33	2.13	0.02	5.10	**-90.37**
S322	Poer onder-IV - Rechthoek	2000	UGT-1/1	-281.86	61.76	5.86	1.44	34.11	**730.07**

Staaf S246, Combi 1/3 t.p.v. bovenzijde opstort maatgevend.

Berekening wapening in de opstort:

Opstort								
invoer			sterkte			scheurwijdte		
hoogte	1400	mm	f_a	240	MPa	f_a	200	MPa
breedte	1400	mm	h_{netto}	1284	mm	w_k	0.2	mm
dekking	30	mm	A_{wap}	201	mm^2	A_{wap}	201	mm^2
beugel	10	mm	M_{ULS}	695.34	kNm	M_{SLS}	556.27	kNm
beton	C60/75		A_{ben}	2256	mm^2	A_{ben}	2165	mm^2
wapening	16	mm	n_{staaf}	11.2	stuks	n_{staaf}	10.8	stuks

Toegepast: 11 staven rond 16 mm (per zijde) $\Rightarrow$ akkoord

Beugels: rond 10 mm om de 150 mm (praktisch)

12.1.3 Wapening in plaat 4200 x 4000 x 400

Berekening wapening in de plaat: (voor σ_{grond} zie Bijlage I-1).

Plaat								
invoer			sterkte			scheurwijdte		
hoogte	400	mm	f_a	240	MPa	f_a	220	MPa
breedte	4000	mm	h_{netto}	345	mm	w_k	0.2	mm
dekking	30	mm	A_{wap}	154	mm^2	A_{wap}	154	mm^2
beugel	0	mm	b_{eff}	3390	mm	b_{eff}	3390	mm
wapening	14	mm	M_{ULS}	150.28	kNm	M_{SLS}	120.22	kNm
σ_{grond}	104	MPa	A_{ben}	1816	mm^2	A_{ben}	1585	mm^2
$\ell_{overstek}$	850	mm	n_{staaf}	11.8	stuks	n_{staaf}	10.3	stuks

$$staven\ h.o.h. \leq \frac{3390}{11.8} = 287\ mm$$

Toegepast: rond 14 om de 195 mm (in beide richtingen) $\Rightarrow$ akkoord

Toetsing van de plaat op dwarskracht:

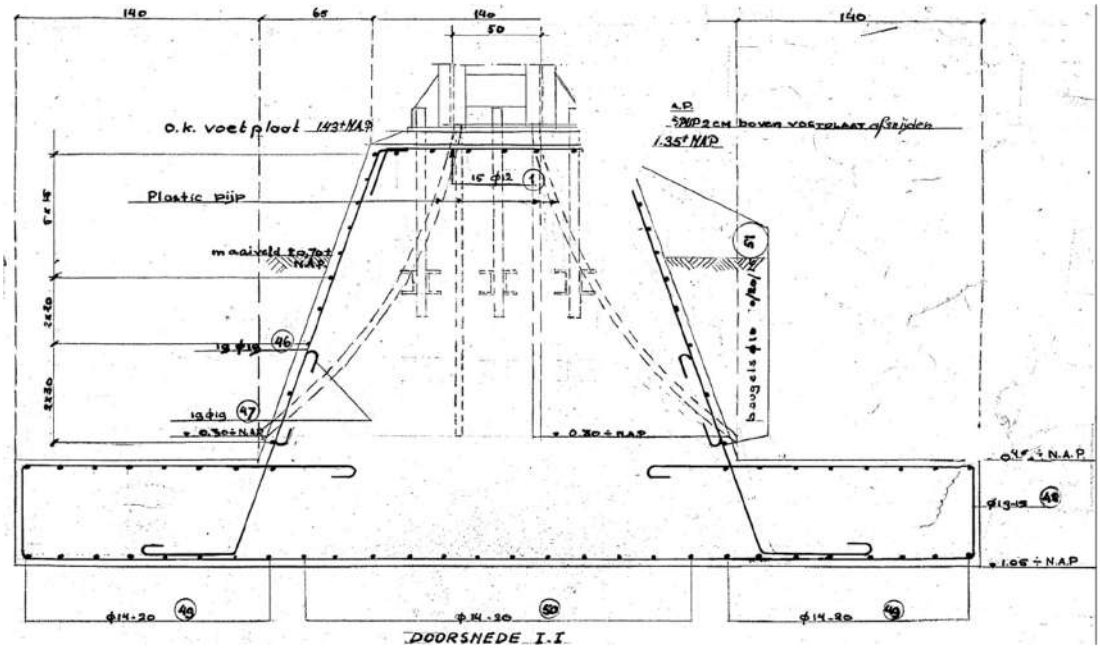
Dwarskracht plaat					
invoer			sterkte		
h_{netto}	345	mm	V_{Ed}	353.60	kN
breedte	4000	mm	A_V	1.38	m^2
σ_{grond}	104	MPa	ν_d	0.26	MPa
$\ell_{overstek}$	850	mm	$\nu_{Rd,c}$	0.60	MPa

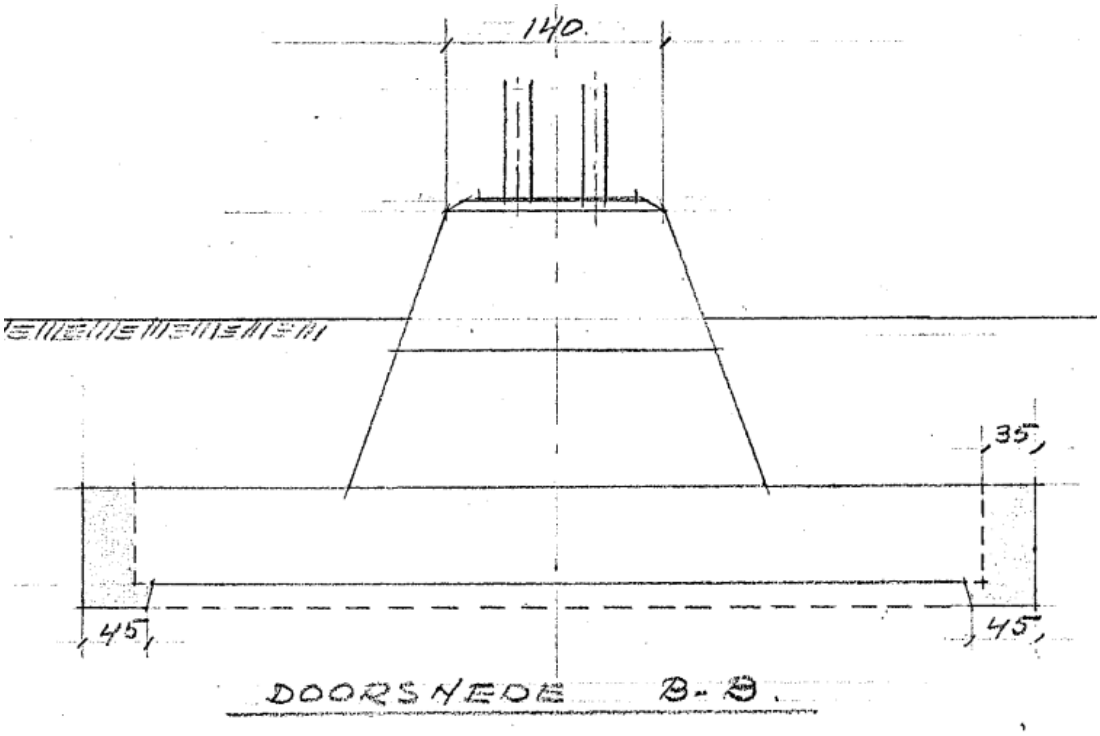
De maximale UC bedraagt:

$$UC = \frac{0.26}{0.60} = 0.42 \ < \ 1.00 \ \Rightarrow \ akkoord$$

12.2 Middelste poer van versterkt juk 64 en 65

12.2.1 Beschrijving poer





Figuur 14; Middenpoer Type 1B, Doorsnede I-I is origineel formaat, doorsnede B-B is de verzwaarde poer.

12.2.2 Wapening in opstort 1400/2700 x 2900/4200 x 1800 (M_z)

Vanwege de relatief geringe normaalkracht in de opstort, wordt deze berekend als zijnde een balk.

Belastingen op de opstort, juk 64:

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/5	**-1083.62**	45.59	-115.99	-3.44	-78.27	425.02
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**26.93**	0.18	**-24.27**	-0.17	**6.95**	2.59
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-68.80	**-17.04**	-35.94	-2.65	-14.61	-128.02
S244	Poer onder-IV - Rechthoek	0	UGT-1/7	-761.30	**119.14**	-98.72	23.27	-167.37	770.25
S244	Poer onder-IV - Rechthoek	0	UGT-2/5	-950.45	47.40	**-120.69**	10.62	-210.14	357.66
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	-802.22	110.32	-87.80	**-13.39**	-57.26	1121.41
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	-757.43	119.00	-98.56	**23.29**	-166.52	771.62
S244	Poer onder-IV - Rechthoek	360	UGT-2/5	-968.04	47.40	-120.69	10.62	**-253.59**	374.72
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-201.97	-16.26	-35.89	2.39	-40.39	**-158.02**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	-802.22	110.32	-87.80	-13.39	-88.87	**1161.13**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-269.06**	-0.22	44.95	0.19	35.87	0.76
S250	Poer onder-IV - Rechthoek	0	UGT-2/5	**825.71**	7.41	**-50.04**	-2.02	-185.34	116.74
S250	Poer onder-IV - Rechthoek	1440	UGT-2/10	509.04	**-24.58**	-24.43	-1.67	-8.13	50.14
S250	Poer onder-IV - Rechthoek	0	UGT-1/9	560.10	**49.74**	-23.47	-6.70	-126.21	429.12
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-135.89	-0.21	**45.40**	0.25	29.71	1.07
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	286.09	47.05	1.20	**-6.79**	-65.02	341.07
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	415.92	44.74	-19.21	**7.82**	-7.98	498.53
S250	Poer onder-IV - Rechthoek	360	UGT-2/5	808.12	7.41	-50.04	-2.02	**-203.36**	119.41
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-227.84	-0.22	45.04	0.21	**54.38**	0.76
S250	Poer onder-IV - Rechthoek	1800	UGT-2/15	187.92	-17.69	2.06	-3.04	7.41	**-95.98**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	415.92	44.74	-19.21	7.82	-14.89	**514.64**

Belastingen op de opstort, juk 65:

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/19	**-290.79**	-0.15	-46.47	0.15	-36.43	0.43
S244	Poer onder-IV - Rechthoek	0	UGT-1/5	**1263.07**	46.43	**92.18**	4.90	282.27	361.21
S244	Poer onder-IV - Rechthoek	0	UGT-2/9	-62.04	**-20.72**	-35.71	-3.15	-12.84	-108.01
S244	Poer onder-IV - Rechthoek	0	UGT-1/22	744.53	**70.22**	42.04	**9.57**	166.04	431.67
S244	Poer onder-IV - Rechthoek	0	UGT-2/19	-157.62	-0.14	**-47.02**	0.11	-34.50	0.64
S244	Poer onder-IV - Rechthoek	1440	UGT-1/1	852.43	62.14	58.30	**-11.59**	31.77	581.26
S244	Poer onder-IV - Rechthoek	1080	UGT-2/19	-215.10	-0.15	-46.76	0.13	**-57.10**	0.48
S244	Poer onder-IV - Rechthoek	360	UGT-1/5	1245.48	46.43	92.18	4.90	**315.46**	377.92
S244	Poer onder-IV - Rechthoek	1800	UGT-2/9	-195.21	-19.93	-35.71	3.00	-40.27	**-144.64**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/1	852.43	62.14	58.30	-11.59	52.76	**603.63**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/5	**-1527.06**	72.66	152.49	11.26	98.46	784.63
S250	Poer onder-IV - Rechthoek	0	UGT-2/19	**42.33**	0.15	**23.09**	-0.17	**-10.50**	3.33
S250	Poer onder-IV - Rechthoek	0	UGT-2/9	-53.54	**-7.77**	34.51	0.35	11.14	-95.50
S250	Poer onder-IV - Rechthoek	0	UGT-1/14	-1120.16	**91.02**	131.51	-13.23	247.14	813.31
S250	Poer onder-IV - Rechthoek	0	UGT-1/5	-1393.89	76.54	**159.49**	-11.36	308.62	676.32
S250	Poer onder-IV - Rechthoek	0	UGT-1/23	-945.61	87.49	115.85	**-13.50**	208.03	736.20
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-1245.52	86.10	125.30	**13.65**	79.10	942.76
S250	Poer onder-IV - Rechthoek	360	UGT-1/5	-1411.48	76.54	159.49	-11.36	**366.03**	703.88
S250	Poer onder-IV - Rechthoek	1800	UGT-2/9	-186.71	-7.00	34.56	-1.91	39.02	**-108.82**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/1	-1245.52	86.10	125.30	13.65	124.21	**973.76**

Staaf S244, Combi 1/8 t.p.v. bovenzijde opstort maatgevend.

Omdat er twee kolommen aangrijpen op de opstorting, wordt conservatief de belasting uit de zwaarst belaste kolom verdubbeld.

Berekening wapening in de opstort:

Opstort								
invoer			sterkte			scheurwijdte		
hoogte	1400	mm	f_a	240	MPa	f_a	173	MPa
breedte	2900	mm	h_{netto}	1283	mm	w_k	0.2	mm
dekking	30	mm	A_{wap}	284	mm^2	A_{wap}	284	mm^2
beugel	10	mm	M_{ULS}	1543.24	kNm	M_{SLS}	1234.59	kNm
beton	C60/75		A_{ben}	5012	mm^2	A_{ben}	5562	mm^2
wapening	19	mm	n_{staaf}	17.7	stuks	n_{staaf}	19.6	stuks

Toegepast: 19 staven rond 19 mm (per zijde) $\Rightarrow$ akkoord

Beugels: rond 10 mm om de 150 mm (praktisch)

12.2.3 Wapening in plaat 6200 x 6200 x 600 (M_z)

Berekening wapening in de plaat: ($\sigma_{grond} = \sqrt{64^2 + 118^2} = 134\ MPa$, zie Bijlage I-2 en I-3).

Plaat								
invoer			sterkte			scheurwijdte		
hoogte	600	mm	f_a	240	MPa	f_a	173	MPa
breedte	6200	mm	h_{netto}	532	mm	w_k	0.2	mm
dekking	30	mm	A_{wap}	284	mm^2	A_{wap}	284	mm^2
beugel	0	mm	b_{eff}	4365	mm	b_{eff}	4365	mm
wapening	19	mm	M_{ULS}	873.38	kNm	M_{SLS}	698.70	kNm
σ_{grond}	134	MPa	A_{ben}	6834	mm^2	A_{ben}	7585	mm^2
$\ell_{overstek}$	1450	mm	n_{staaf}	24.1	stuks	n_{staaf}	26.8	stuks

$$staven\ h.o.h. \leq \frac{4368}{26.8} = 162\ mm$$

Toegepast: rond 19 om de 150 mm $\Rightarrow$ akkoord

Toetsing van de plaat op dwarskracht:

Dwarskracht plaat					
invoer			sterkte		
h_{netto}	532	mm	V_{Ed}	1204.66	kN
breedte	6200	mm	A_V	3.30	m^2
σ_{grond}	134	MPa	ν_d	0.36	MPa
$\ell_{overstek}$	1450	mm	$\nu_{Rd,c}$	0.53	MPa

De maximale UC bedraagt:

$$UC = \frac{0.36}{0.53} = 0.68 \ < \ 1.00 \ \Rightarrow \ akkoord$$

12.2.4 Wapening in opstort 1400/2700 x 2900/4200 x 1800 (M_y)

Vanwege de relatief geringe normaalkracht in de opstort, wordt deze berekend als zijnde een balk.

Belastingen op de opstort, juk 64:

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/5	**-1083.62**	45.59	-115.99	-3.44	-78.27	425.02
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**26.93**	0.18	**-24.27**	-0.17	**6.95**	2.59
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-68.80	**-17.04**	-35.94	-2.65	-14.61	-128.02
S244	Poer onder-IV - Rechthoek	0	UGT-1/7	-761.30	**119.14**	-98.72	23.27	-167.37	770.25
S244	Poer onder-IV - Rechthoek	0	UGT-2/5	-950.45	47.40	**-120.69**	10.62	-210.14	357.66
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	-802.22	110.32	-87.80	**-13.39**	-57.26	1121.41
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	-757.43	119.00	-98.56	**23.29**	-166.52	771.62
S244	Poer onder-IV - Rechthoek	360	UGT-2/5	-968.04	47.40	-120.69	10.62	**-253.59**	374.72
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-201.97	-16.26	-35.89	2.39	-40.39	**-158.02**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	-802.22	110.32	-87.80	-13.39	-88.87	**1161.13**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-269.06**	-0.22	44.95	0.19	35.87	0.76
S250	Poer onder-IV - Rechthoek	0	UGT-2/5	**825.71**	7.41	**-50.04**	-2.02	-185.34	116.74
S250	Poer onder-IV - Rechthoek	1440	UGT-2/10	509.04	**-24.58**	-24.43	-1.67	-8.13	50.14
S250	Poer onder-IV - Rechthoek	0	UGT-1/9	560.10	**49.74**	-23.47	-6.70	-126.21	429.12
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-135.89	-0.21	**45.40**	0.25	29.71	1.07
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	286.09	47.05	1.20	**-6.79**	-65.02	341.07
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	415.92	44.74	-19.21	**7.82**	-7.98	498.53
S250	Poer onder-IV - Rechthoek	360	UGT-2/5	808.12	7.41	-50.04	-2.02	**-203.36**	119.41
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-227.84	-0.22	45.04	0.21	**54.38**	0.76
S250	Poer onder-IV - Rechthoek	1800	UGT-2/15	187.92	-17.69	2.06	-3.04	7.41	**-95.98**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	415.92	44.74	-19.21	7.82	-14.89	**514.64**

Belastingen op de opstort, juk 65:

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/19	**-290.79**	-0.15	-46.47	0.15	-36.43	0.43
S244	Poer onder-IV - Rechthoek	0	UGT-1/5	**1263.07**	46.43	**92.18**	4.90	282.27	361.21
S244	Poer onder-IV - Rechthoek	0	UGT-2/9	-62.04	**-20.72**	-35.71	-3.15	-12.84	-108.01
S244	Poer onder-IV - Rechthoek	0	UGT-1/22	744.53	**70.22**	42.04	**9.57**	166.04	431.67
S244	Poer onder-IV - Rechthoek	0	UGT-2/19	-157.62	-0.14	**-47.02**	0.11	-34.50	0.64
S244	Poer onder-IV - Rechthoek	1440	UGT-1/1	852.43	62.14	58.30	**-11.59**	31.77	581.26
S244	Poer onder-IV - Rechthoek	1080	UGT-2/19	-215.10	-0.15	-46.76	0.13	**-57.10**	0.48
S244	Poer onder-IV - Rechthoek	360	UGT-1/5	1245.48	46.43	92.18	4.90	**315.46**	377.92
S244	Poer onder-IV - Rechthoek	1800	UGT-2/9	-195.21	-19.93	-35.71	3.00	-40.27	**-144.64**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/1	852.43	62.14	58.30	-11.59	52.76	**603.63**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/5	**-1527.06**	72.66	152.49	11.26	98.46	784.63
S250	Poer onder-IV - Rechthoek	0	UGT-2/19	**42.33**	0.15	**23.09**	-0.17	**-10.50**	3.33
S250	Poer onder-IV - Rechthoek	0	UGT-2/9	-53.54	**-7.77**	34.51	0.35	11.14	-95.50
S250	Poer onder-IV - Rechthoek	0	UGT-1/14	-1120.16	**91.02**	131.51	-13.23	247.14	813.31
S250	Poer onder-IV - Rechthoek	0	UGT-1/5	-1393.89	76.54	**159.49**	-11.36	308.62	676.32
S250	Poer onder-IV - Rechthoek	0	UGT-1/23	-945.61	87.49	115.85	**-13.50**	208.03	736.20
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-1245.52	86.10	125.30	**13.65**	79.10	942.76
S250	Poer onder-IV - Rechthoek	360	UGT-1/5	-1411.48	76.54	159.49	-11.36	**366.03**	703.88
S250	Poer onder-IV - Rechthoek	1800	UGT-2/9	-186.71	-7.00	34.56	-1.91	39.02	**-108.82**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/1	-1245.52	86.10	125.30	13.65	124.21	**973.76**

Omdat er twee kolommen op de fundering staan dienen boven vermelde krachten en momenten te worden samengesteld.

Maximaal moment om de Y-as van juk 65.
$M_{y,max} = 282.27 + 308.62 = 590.89\ kNm$
$V_z = 92.18 + 159.49 = 251.67\ kN$
$N_c = 1393.89 - 1263.07 = 130.82\ kN$

De twee kolommen staan op een afstand van 1.51 m.
Dit levert een extra M_y moment van:
$\Delta M_y = (1393.89 - 0.5 * 130.82) * 1.51 = 2006.00\ kNm$
$M_{y,tot} = 590.89 + 2006.00 = 2596.89\ kNm$

Staaf S244+250, Combi 1/5 t.p.v. bovenzijde opstort maatgevend.

Berekening wapening in de opstort:

Opstort								
invoer			sterkte			scheurwijdte		
hoogte	2900	mm	f_a	240	MPa	f_a	173	MPa
breedte	1400	mm	h_{netto}	2594	mm	w_k	0.2	mm
dekking	150	mm	A_{wap}	284	mm^2	A_{wap}	284	mm^2
beugel	10	mm	M_{ULS}	2596.89	kNm	M_{SLS}	2077.51	kNm
beton	C60/75		A_{ben}	4171	mm^2	A_{ben}	4629	mm^2
wapening	19	mm	n_{staaf}	14.7	stuks	n_{staaf}	16.3	stuks

Toegepast: 15 staven rond 19 mm (per zijde) $\Rightarrow$ $\approx$ akkoord

Beugels: rond 10 mm om de 150 mm (praktisch)

12.2.5 Wapening in plaat 6200 x 6200 x 600 (M_y)

Door de uitgevoerde versterking van de poer is de plaatdikte zodanig toegenomen dat een toets op sterkte en scheurwijdte hier achterwege kan blijven.

12.3 Poeren van juk 64b

12.3.1 Wapening in opstort 1400 x 1400 x 2250

Vanwege de relatief geringe normaalkracht in de opstort, wordt deze berekend als zijnde een balk.

Belastingen op de opstort:

7.5. Staafkrachten betonopstort; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S7, S8
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S7	Poer - Rechthoek	0.000	Combi2/11	**-139.33**	3.51	**-83.46**	0.23	**759.41**	-51.98
S8	Poer - Rechthoek	2.250	Combi2/12	**-33.44**	9.04	-68.18	-0.23	535.50	-77.33
S8	Poer - Rechthoek	1.688	Combi1/19	-73.45	**-16.69**	-12.40	0.23	143.23	122.37
S8	Poer - Rechthoek	1.688	Combi2/14	-66.74	**22.70**	-59.38	-0.38	519.98	-174.55
S8	Poer - Rechthoek	0.000	Combi1/18	-123.01	0.00	**12.24**	0.00	**-80.87**	0.00
S8	Poer - Rechthoek	0.000	Combi2/14	-120.76	16.90	-59.38	**-0.38**	620.18	**-205.68**
S7	Poer - Rechthoek	0.000	Combi2/14	-136.32	14.42	-72.22	**0.40**	672.75	-169.52
S8	Poer - Rechthoek	0.000	Combi1/19	-127.34	-12.58	-12.40	0.23	164.15	**145.46**

Staaf S7, Combi 2/11 maatgevend.

Berekening wapening in de opstort:

Opstort								
invoer			sterkte			scheurwijdte		
hoogte	1400	mm	f_a	435	MPa	f_a	200	MPa
breedte	1400	mm	h_{netto}	1197	mm	w_k	0.2	mm
dekking	50	mm	A_{wap}	201	mm^2	A_{wap}	201	mm^2
beugel	12	mm	M_{ULS}	759.41	kNm	M_{SLS}	584.16	kNm
beton	C35/45		A_{ben}	1458	mm^2	A_{ben}	2440	mm^2
wapening	16	mm	n_{staaf}	7.3	stuks	n_{staaf}	12.1	stuks

Toegepast: 13 staven rond 16 mm (per zijde) $\Rightarrow$ akkoord

Beugels: rond 12 mm om de 200 mm (praktisch)

12.3.2 Wapening in plaat 4250 x 4250 x 600

Berekening wapening in de plaat: (voor σ_{grond} zie Bijlage I-4).

Plaat								
invoer			sterkte			scheurwijdte		
hoogte	600	mm	f_a	435	MPa	f_a	200	MPa
breedte	4250	mm	h_{netto}	488	mm	w_k	0.2	mm
dekking	50	mm	A_{wap}	201	mm^2	A_{wap}	201	mm^2
beugel	0	mm	b_{eff}	2376	mm	b_{eff}	2376	mm
wapening	16	mm	M_{ULS}	366.78	kNm	M_{SLS}	282.14	kNm
σ_{grond}	85	MPa	A_{ben}	1729	mm^2	A_{ben}	2892	mm^2
$\ell_{overstek}$	1425	mm	n_{staaf}	8.6	stuks	n_{staaf}	14.4	stuks

$$staven\ h.o.h. \leq \frac{2376}{14.4} = 165\ mm$$

Toegepast: rond 16 om de 150 mm (in beide richtingen)

Toetsing van de plaat op dwarskracht:

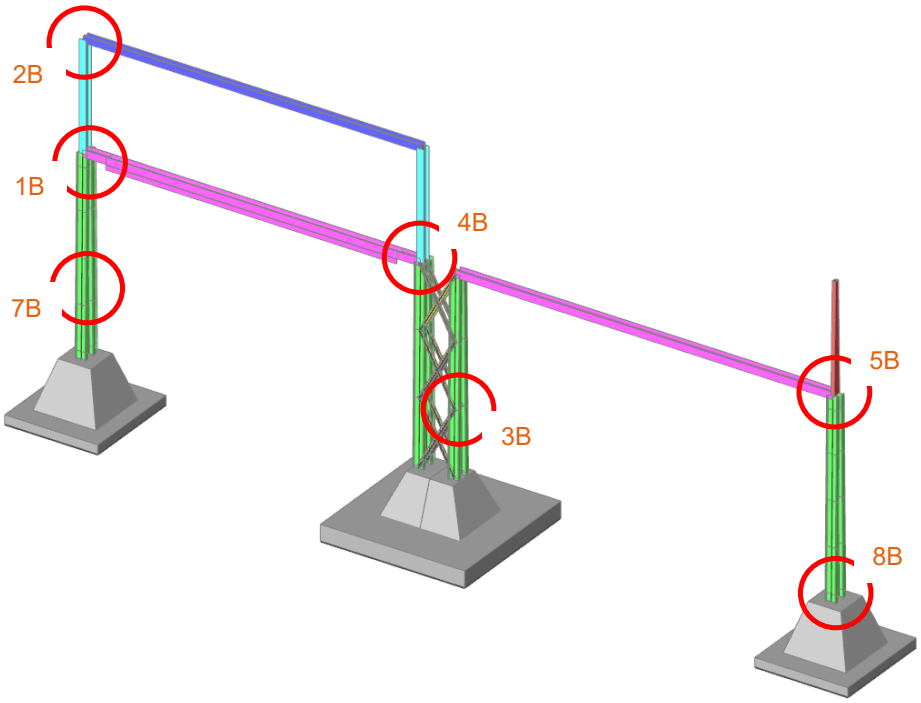
Dwarskracht plaat					
invoer			sterkte		
h_{netto}	488	mm	V_{Ed}	514.78	kN
breedte	4250	mm	A_V	2.07	m^2
σ_{grond}	85	MPa	v_d	0.25	MPa
$\ell_{overstek}$	1425	mm	$v_{Rd,c}$	0.41	MPa

De maximale UC bedraagt:

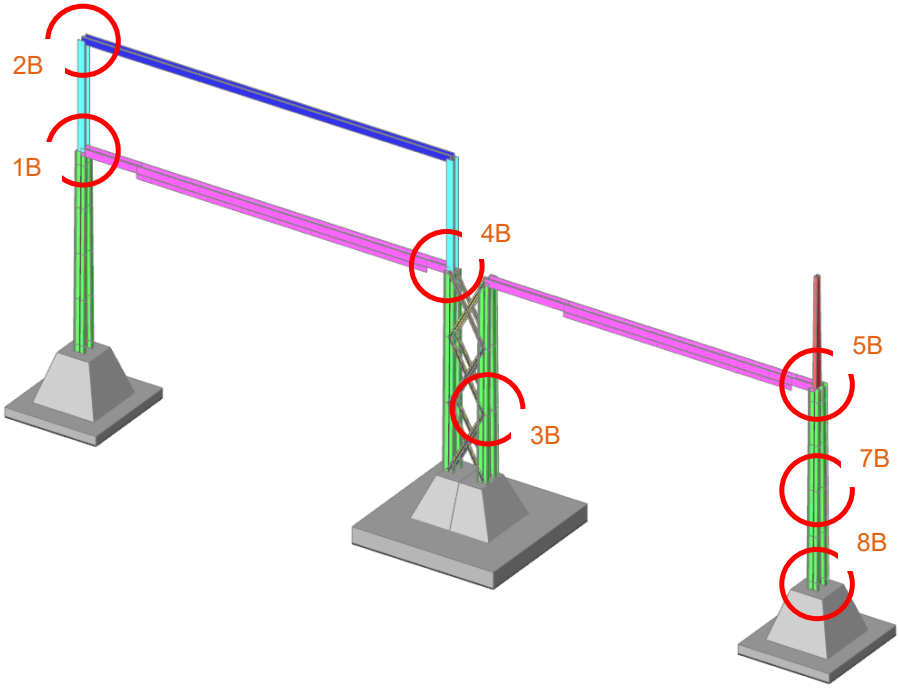
$$UC = \frac{0.25}{0.41} = 0.61 \ < \ 1.00 \ \Rightarrow \ akkoord$$

13 DETAILBEREKENING STAALCONSTRUCTIE

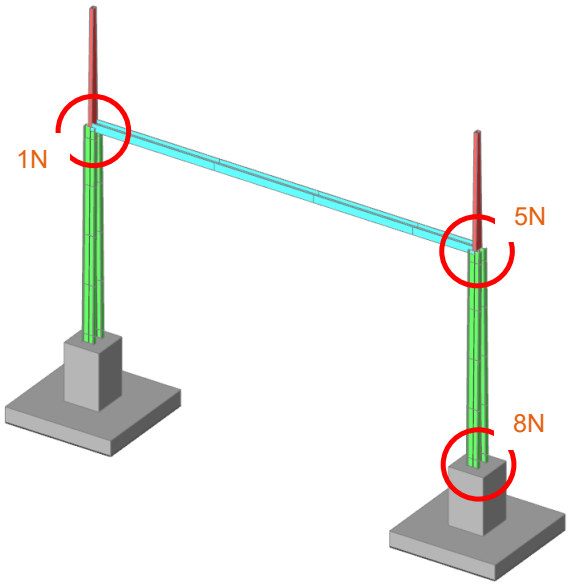
13.1 Overzicht met detailnummering



Figuur 15: Overzicht detailnummers juk 64

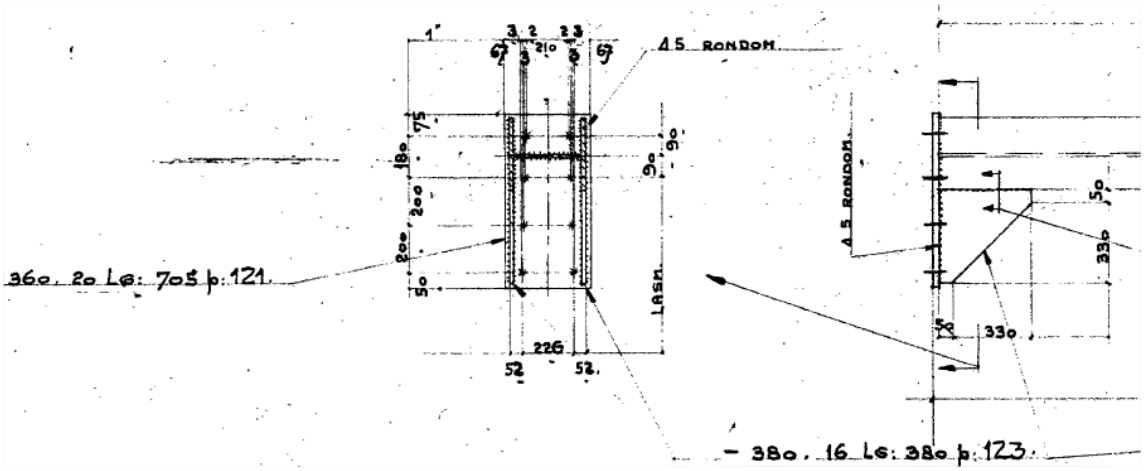


Figuur 16: Overzicht detailnummers juk 65



Figuur 17: Overzicht detailnummers juk 64

13.2 Toets detail 1B



Figuur 18; Detail kolom-ligger verbinding

1B: Verbindingskrachten ligger DIE34 - kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-2/2	FC6	K7	S404	-136.78	83.49	-23.61	0.04	-13.42	-26.36
UGT-2/5	FC5	K5	S33	17.81	29.37	-28.32	-0.03	64.65	0.74
UGT-2/15	FC8	K11	S40	6.78	-8.61	-18.15	-0.01	-42.79	0.17
UGT-1/3	FC6	K7	S404	-118.84	92.67	-21.79	0.39	-17.86	-30.69
UGT-2/16	FC8	K11	S40	10.53	-0.03	-8.54	-0.02	-12.76	-0.07
UGT-2/30	FC5	K5	S33	7.46	32.66	-20.54	-0.47	36.09	0.98
UGT-1/51	FC6	K7	S404	-57.82	56.44	-20.02	0.44	-22.31	-20.84
UGT-1/17	FC8	K11	S40	1.99	-0.53	-20.67	0.00	-51.24	0.00
UGT-1/9	FC7	K9	S40	-0.86	45.24	-16.23	-0.02	45.32	26.97

1B: Verbindingskrachten ligger DIE34 - kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/19	FC6	K7	S404	-13.40	0.01	-17.82	0.00	-26.55	-0.10
UGT-1/32	FC7	K9	S40	130.13	77.63	-18.30	-0.03	16.67	16.91
UGT-2/9	FC6	K7	S404	-8.24	-4.54	-18.25	-0.48	-30.70	3.80
UGT-1/1	FC7	K9	S40	110.09	87.24	-16.76	0.10	15.47	18.27
UGT-1/11	FC6	K7	S404	96.01	28.73	-29.87	-0.02	-83.13	-10.41
UGT-1/20	FC7	K9	S40	2.73	0.00	-13.55	0.00	19.80	-0.05
UGT-2/33	FC6	K7	S404	88.76	39.51	-27.39	-0.52	-66.45	-13.95
UGT-1/13	FC6	K7	S404	26.57	36.52	-23.95	0.49	-52.93	-18.16
UGT-2/46	FC5	K5	S33	13.23	17.26	-25.34	0.01	40.38	0.32
UGT-1/1	FC6	K7	S404	70.49	48.41	-25.62	0.46	-62.24	-22.79
UGT-2/34	FC7	K9	S40	109.97	79.57	-16.69	-0.16	14.90	18.81

13.2.1 Bouten

$I_{boutgroep,My} = 2 * (40^2 + 240^2 + 440^2 + 620^2) = 1274400\ mm^4$

$I_{boutgroep,Mz} = 4 * (46^2 + 264^2) = 287248\ mm^4$

$$F_{t,Ed,64} = \frac{118.84}{8} + \frac{17.86 * 10^3 * 620}{1274400} + \frac{30.69 * 10^3 * 264}{287248} = 51.75\ kN$$

$$F_{t,Ed,65} = \frac{96.01}{8} + \frac{83.13 * 10^3 * 620}{1274400} + \frac{10.41 * 10^3 * 264}{287248} = 62.01\ kN$$

$$F_{v,Ed,64} = \frac{\sqrt{92.67^2 + 21.79^2}}{8} = 11.90\ kN$$

$$F_{v,Ed,65} = \frac{\sqrt{28.73^2 + 29.87^2}}{8} = 5.18\ kN$$

$F_{t,Rd} = 203.33\ kN$

$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$$UC_1 = \frac{51.75}{203.33} = 0.26 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{62.01}{203.33} = 0.31 < 1.00 \Rightarrow akkoord$$

$$UC_3 = \frac{11.90}{135.55} = 0.09 < 1.00 \Rightarrow akkoord$$

$$UC_4 = \frac{5.18}{135.55} = 0.04 < 1.00 \Rightarrow akkoord$$

$$UC_5 = 0.09 + \frac{0.26}{1.40} = 0.28 < 1.00 \Rightarrow akkoord$$

$$UC_6 = 0.04 + \frac{0.31}{1.40} = 0.26 < 1.00 \Rightarrow akkoord$$

De flensdikte van een INP45 en de dikte van de kopplaat zijn groter dan 15.7 mm, waardoor stuik niet maatgevend is (zie Bijlage J)

13.2.2 Kopplaat

$m = 0.5 * 180 - 0.5 * 10 - 0.8 * 5 * \sqrt{2} = 79.3\ mm$

$e = \min(75\ ;\ 1.25 * 79.3) =\ 75.0\ mm$

$m_2 = 0.5 * (330 - 2 * 17 - 218) - 0.8 * 5 * \sqrt{2} = 41.8\ mm$

$\lambda_1 = \dfrac{79.3}{79.3 + 75.0} = 0.51$

$\lambda_2 = \dfrac{41.8}{79.3 + 75.0} = 0.27 \quad \Rightarrow \quad \alpha \cong 2 * \pi$

$\ell_{eff,1} = 2 * \pi * 79.3 = 498\ mm$

$\ell_{eff,2} = 2 * \pi * 79.3 = 498\ mm$

$\ell_{eff,3} =\ \pi * 79.3 + 218 = 467\ mm$

$\ell_{eff,4} = 0.5 * 218 + 2 * \pi * 79.3 - (2 * 79.3 + 0.625 * 75) = 481\ mm$

$M_{plt,Rd} = 0.25 * 360 * 20^2 * 235 * 10^{-6} =\ 8.46\ kNm$

$F_{T,1,Rd} = \dfrac{4 * 8.46 * 10^3}{79.3} = 426.73\ kN$

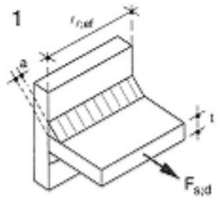
$F_{T,2,Rd} = \dfrac{2 * 8.46 * 10^3 + 75.0 * 2 * 203.33}{79.3 + 75.0} = 307.32\ kN$

$F_{T,3,Rd} = 2 * 203.33 = 406.66\ kN$

$UC_7 = \dfrac{2 * 62.01}{307.32} = 0.40 \ < \ 1.00 \quad \Rightarrow \quad akkoord$

13.2.3 Lassen

Basisgeval 1 (kracht haaks op las):



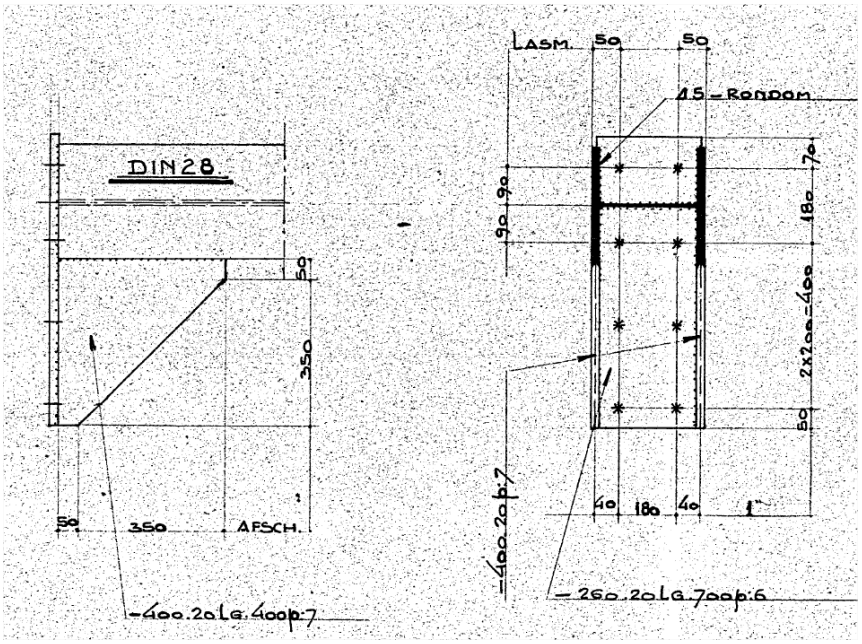
$F_{las,Ed} \cong 2 * 62.01 = 124.02\ kN$
$\ell_{las} = 150\ mm\ , a_{las} = 5\ mm$

$\sigma_1 = \tau_{h,1} = \dfrac{124.02 * \sqrt{2} * 10^3}{4 * 5 * 150} = 58\ MPa$

$UC_8 = \dfrac{\sqrt{58^2 + 3 * (0^2 + 58^2)}}{\left[\dfrac{360}{0.8 * 1.25}\right]} = 0.32 \ < \ 1.00 \quad \Rightarrow \quad akkoord$

$UC_9 = \dfrac{58}{\left[\dfrac{0.8 * 360}{1.25}\right]} = 0.25 \ < \ 1.00 \quad \Rightarrow \quad akkoord$

13.3 Toets detail 2B



Figuur 19; Detail kolom-ligger verbinding

2B: Verbindingskrachten ligger DIN28 - kolom DIE36 juk 64

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/32	FC9	K5:1	S331	-9.30	-3.86	-9.31	0.00	25.04	-0.14
UGT-2/32	FC10	K4:1	S331	9.30	-3.86	-7.56	0.00	-12.38	0.14
UGT-2/30	FC10	K4:1	S331	8.61	-3.86	-7.90	0.03	-14.82	0.23
UGT-1/51	FC9	K5:1	S331	-8.58	3.86	-8.96	-0.03	22.45	-0.11
UGT-2/5	FC9	K5:1	S331	-8.75	0.00	-10.85	-0.01	36.48	-0.13
UGT-2/5	FC10	K4:1	S331	8.75	0.00	-6.02	0.01	-1.43	0.15
UGT-2/30	FC9	K5:1	S331	-8.61	-3.85	-8.97	-0.03	22.57	-0.17
UGT-1/1	FC10	K4:1	S331	7.40	0.00	-8.71	0.00	-20.54	0.00
UGT-2/26	FC9	K5:1	S331	-7.60	-3.86	-9.26	-0.02	24.71	-0.30
UGT-2/26	FC10	K4:1	S331	7.60	-3.86	-7.62	0.02	-12.82	0.33

2B: Verbindingskrachten ligger DIN28 - kolom DIE36 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-1/26	FC9	K5:2	S331	-12.02	0.00	-8.82	0.01	18.97	-0.09
UGT-1/26	FC10	K4:1	S331	12.02	0.00	-10.04	-0.01	-28.87	0.07
UGT-2/53	FC9	K5:2	S331	-11.32	-4.31	-8.42	0.01	15.88	-0.33
UGT-1/22	FC10	K4:1	S331	11.32	4.32	-10.42	-0.02	-32.07	0.16
UGT-1/11	FC10	K4:1	S331	11.91	0.00	-11.66	-0.01	-42.29	0.15
UGT-1/11	FC9	K5:2	S331	-11.91	0.00	-7.19	0.01	6.02	-0.19
UGT-1/36	FC10	K4:1	S331	11.32	4.32	-10.43	-0.02	-32.11	0.16
UGT-1/36	FC9	K5:2	S331	-11.32	4.30	-8.42	0.02	15.89	-0.26
UGT-2/19	FC9	K5:2	S331	-9.24	0.00	-9.68	0.00	25.37	0.00
UGT-2/30	FC9	K5:2	S331	-11.31	-4.31	-8.43	0.01	15.93	-0.33
UGT-2/29	FC10	K4:1	S331	11.55	-4.31	-10.53	-0.01	-32.98	0.27

13.3.1 Bouten

$I_{boutgroep,My} = 2 * (50^2 + 250^2 + 450^2 + 630^2) = 1328800\ mm^4$

$F_{t,Ed} = \frac{11.91}{8} + \frac{42.29 * 10^3 * 620}{1328800} = 21.22\ kN$

$F_{v,Ed} = \frac{11.66}{8} = 1.46\ kN$

$F_{t,Rd} = 203.33\ kN$

$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$UC_1 = \frac{21.22}{203.33} = 0.10 < 1.00 \Rightarrow akkoord$

$UC_2 = \frac{1.46}{135.55} = 0.01 < 1.00 \Rightarrow akkoord$

$UC_3 = 0.01 + \frac{0.10}{1.40} = 0.09 < 1.00 \Rightarrow akkoord$

Gezien de bijzonder lage schuifkracht wordt er niet getoetst op stuik.

13.3.2 Kopplaat

$m = 0.5 * 180 - 0.5 * 12 - 0.8 * 5 * \sqrt{2} = 78.3\ mm$

$e = \min(70\ ;1.25 * 78.3) = 70.0\ mm$

$m_2 = 0.5 * (280 - 2 * 20 - 180) - 0.8 * 5 * \sqrt{2} = 24.3\ mm$

$\lambda_1 = \frac{78.3}{78.3 + 70.0} = 0.53$

$\lambda_2 = \frac{24.3}{78.3 + 70.0} = 0.16 \Rightarrow \alpha \cong 7.50$

$\ell_{eff,1} = 2 * \pi * 78.3 = 492\ mm$

$\ell_{eff,2} = 7.50 * 78.3 = 498\ mm$

$\ell_{eff,3} = \pi * 79.3 + 218 = 587\ mm$

$\ell_{eff,4} = 0.5 * 180 + 2 * \pi * 78.3 - (2 * 78.3 + 0.625 * 70) = 382\ mm$

$M_{plt,Rd} = 0.25 * 260 * 20^2 * 235 * 10^{-6} = 6.11\ kNm$

$F_{T,1,Rd} = \frac{4 * 6.11 * 10^3}{78.3} = 312.13\ kN$

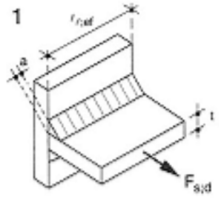
$F_{T,2,Rd} = \frac{2 * 6.11 * 10^3 + 70.0 * 2 * 203.33}{78.3 + 70.0} = 274.35\ kN$

$F_{T,3,Rd} = 2 * 203.33 = 406.66\ kN$

$UC_4 = \frac{2 * 21.22}{274.35} = 0.16 < 1.00 \Rightarrow akkoord$

13.3.3 Lassen

Basisgeval 1 (kracht haaks op las):



$F_{las,Ed} \cong 2 * 21.22 = 42.44\ kN$
$\ell_{las} = 150\ mm\ , a_{las} = 5\ mm$

$$\sigma_1 = \tau_{h,1} = \frac{42.44 * \sqrt{2} * 10^3}{4 * 5 * 150} = 20\ MPa$$

$$UC_5 = \frac{\sqrt{20^2 + 3 * (0^2 + 20^2)}}{\left[\frac{360}{0.8 * 1.25}\right]} = 0.11 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_6 = \frac{20}{\left[\frac{0.8 * 360}{1.25}\right]} = 0.09 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

13.3.4 Lijf kolom

$F_{t,Ed} = 21.22\ kN$

$e = 0.5 * (348 - 2 * (18 + 21) - 180) = 45.0\ mm$

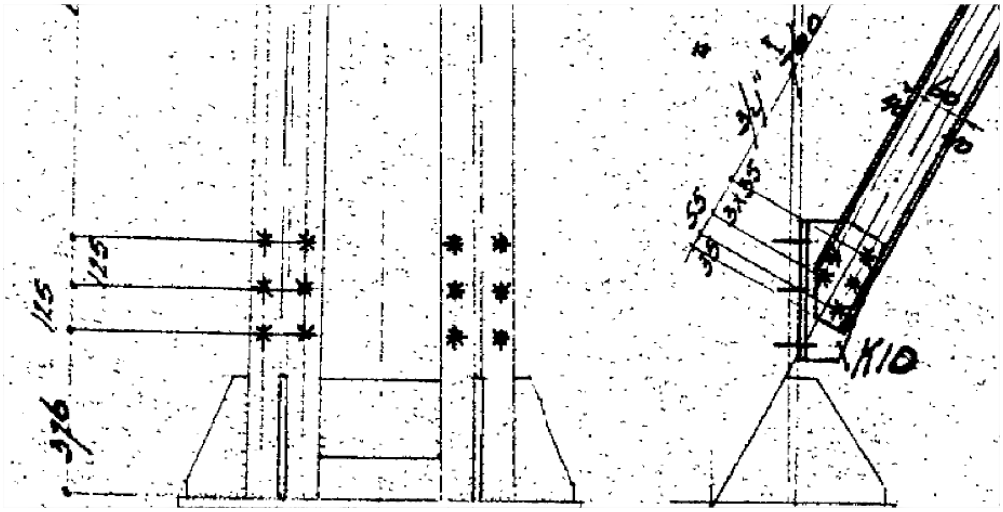
$M_{lijf,Ed} \cong 0.5 * 21.22 * 45.0 * 10^{-3} = 0.48\ kNm$

$b_{eff} = 70 + 0.5 * 180 = 160\ mm$

$M_{lijf,Rd} = 0.25 * 160 * 10.5^2 * 235 * 10^{-6} = 1.04\ kNm$

$$UC_7 = \frac{0.48}{1.04} = 0.46 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

13.4 Toets detail 3B



Figuur 20; Detail kolom-schetsplaat verbinding

3B: Verbindingskrachten diagonalen UPE14 - kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/4	FC11	K453	S271	-5.26	0.12	9.62	0.00	0.00	0.00
UGT-1/34	FC11	K453	S271	110.45	-2.42	-201.85	0.00	0.00	0.00
UGT-1/35	FC11	K453	S271	0.08	0.00	-0.15	0.00	0.00	0.00

3B: Verbindingskrachten diagonalen UPE14 - kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/38	FC11	K454	S270	-101.99	-2.23	-186.38	0.00	0.00	0.00
UGT-1/45	FC11	K454	S270	3.00	0.07	5.49	0.00	0.00	0.00
UGT-1/39	FC11	K454	S270	-1.85	-0.04	-3.38	0.00	0.00	0.00

13.4.1 Bouten verbinding diagonaal aan schetsplaat

$$F_{v,R,Ed} = \frac{\sqrt{110.45^2 + 201.85^2}}{5} = 46.02\ kN$$

$F_{t,Rd} = 141.12\ kN$

$F_{v,Rd} = 94.08\ kN$ (bouten M20-8.8, zie Bijlage J)

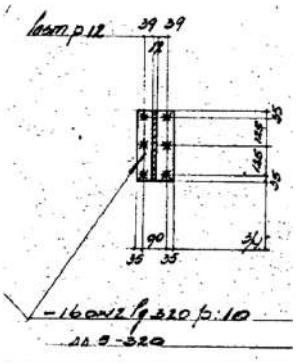
$$UC_1 = \frac{46.02}{94.08} = 0.49 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

De lijfdikte van een UNP14 (7 mm) is kleiner dan 13.1 mm, waardoor stuik maatgevend is (zie Bijlage J)

$$F_{b,Rd} = \frac{2.50 * 0.50 * 360 * 20 * 7}{1.25} * 10^{-3} = 50.40\ kN$$

$$UC_2 = \frac{46.02}{50.40} = 0.91 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

13.4.2 Bouten schetsplaat aan kolom INP45



Figuur 21; Detail schetsplaat

$$I_{boutgroep,My} = 2 * (35^2 + 160^2 + 285^2) = 216100\ mm^4$$

$$F_{t,Ed} = \frac{110.45}{6} + \frac{110.45 * 125 * 285}{216100} = 36.62\ kN$$

$$F_{v,Ed} = \frac{201.85}{6} = 33.64\ kN$$

$$F_{t,Rd} = 141.12\ kN$$

$$F_{v,Rd} = 94.08\ kN$$ (bouten M20-8.8, zie Bijlage J)

$$UC_3 = \frac{36.62}{141.12} = 0.26 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_4 = \frac{33.64}{94.08} = 0.36 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_5 = 0.36 + \frac{0.26}{1.40} = 0.55 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

De plaatdikte (12 mm) is kleiner dan 13.1 mm, waardoor stuik maatgevend is (zie Bijlage J)

$$F_{b,Rd} = \frac{2.50 * 0.50 * 360 * 20 * 12}{1.25} * 10^{-3} = 86.40\ kN$$

$$UC_6 = \frac{33.64}{86.40} = 0.39 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

13.4.3 Lijf schetsplaat

$$F_{t,Ed} = 110.45\ kN$$

$$M_{y,Ed} = \ 110.45 * 125 * 10^{-3} = 13.81\ kNm$$

$$V_{Ed} = 201.85\ kN$$

$$F_{t,Rd} = \ 12 * 320 * 235 * 10^{-3} = 902.40\ kN$$

$$M_{y,Rd} = 1/6 * 12 * 320^2 * 235 * 10^{-6} = \ 48.13\ kNm$$

$$V_{Rd} = 12 * 320 * \frac{235}{\sqrt{3}} * 10^{-3} = 521.00\ kN$$

$$UC_7 = \frac{110.45}{902.40} + \frac{13.81}{48.13} = 0.41 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_8 = \frac{201.85}{521.00} = 0.39 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_9 = \sqrt{0.41^2 + 0.39^2} = 0.57 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

13.4.4 Flens schetsplaat

$$F_{t,Ed} = \frac{110.45}{6} + \frac{110.45 * 125 * 285}{216100} = 36.62\ kN$$

$$e = 0.5 * 90 - 0.5 * 12 - 0.8 * 5 * \sqrt{2} = 33.3\ mm$$

$$M_{flens,Ed} = 36.62 * 33.3 * 10^{-3} = 1.22\ kNm$$

$$b_{eff} = 35 + 0.5 * 125 = 97.5\ mm$$

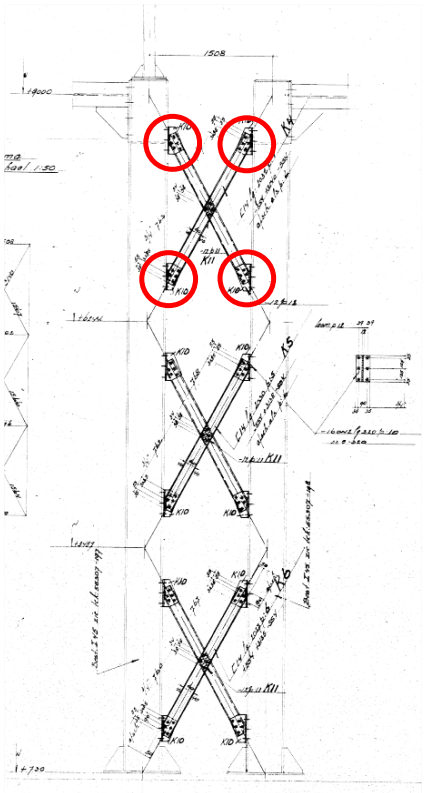
$$M_{lijf,Rd} = 0.25 * 97.5 * 12^2 * 235 * 10^{-6} = 0.83\ kNm$$

$$UC_{10} = \frac{1.22}{0.83} = 1.47 \quad > \quad 1.00 \quad \Rightarrow \quad niet\ akkoord$$

Maximaal toelaatbare kracht in diagonaal:

$$F_{t,Ed} = \frac{\sqrt{110.45^2 + 201.85^2}}{1.47} = 156.53\ kN$$

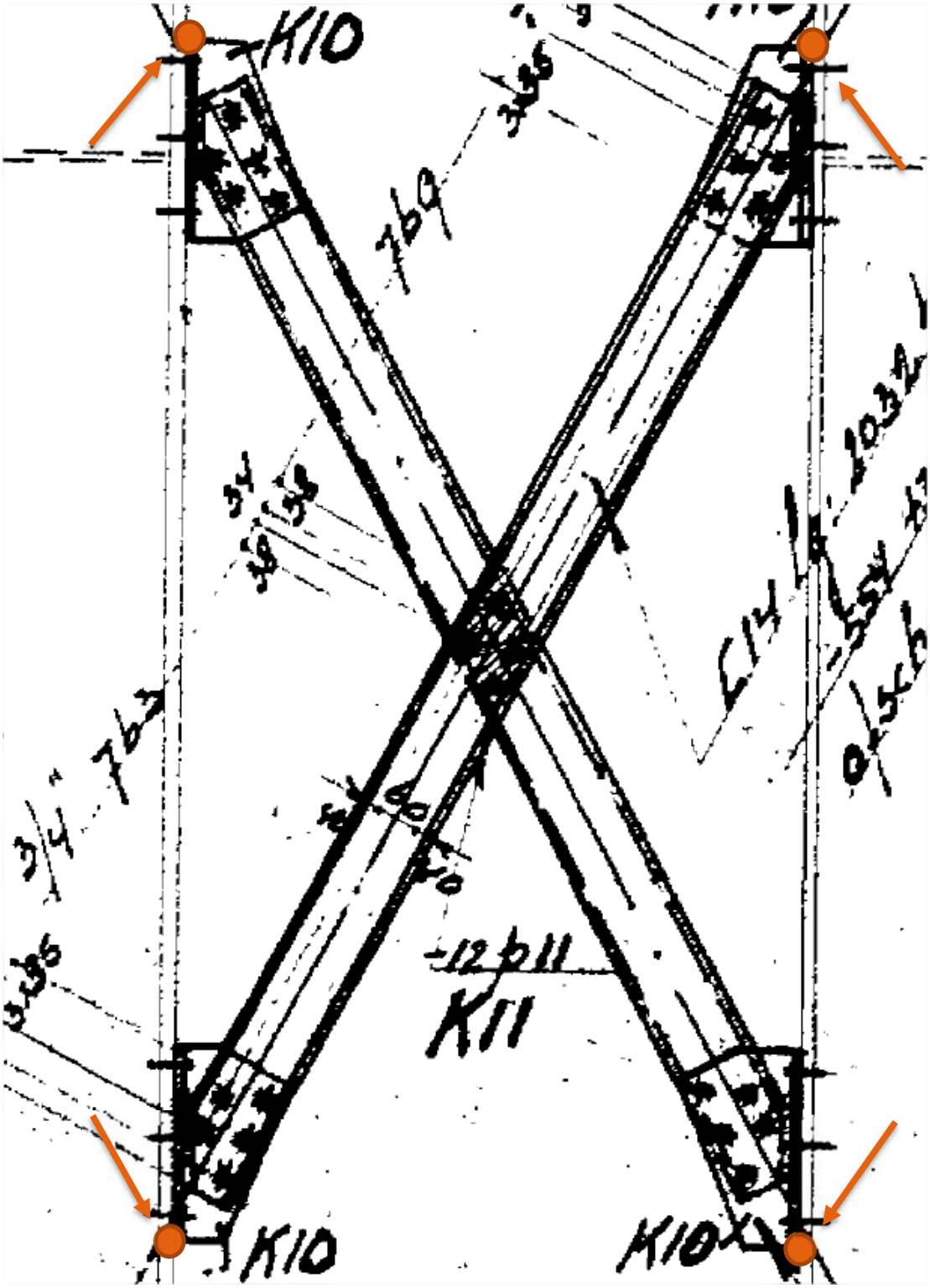
Dat betekent dat de volgende verbindingen moeten worden versterkt:



Figuur 22; te versterken verbindingen

13.4.5 Flens schetsplaat

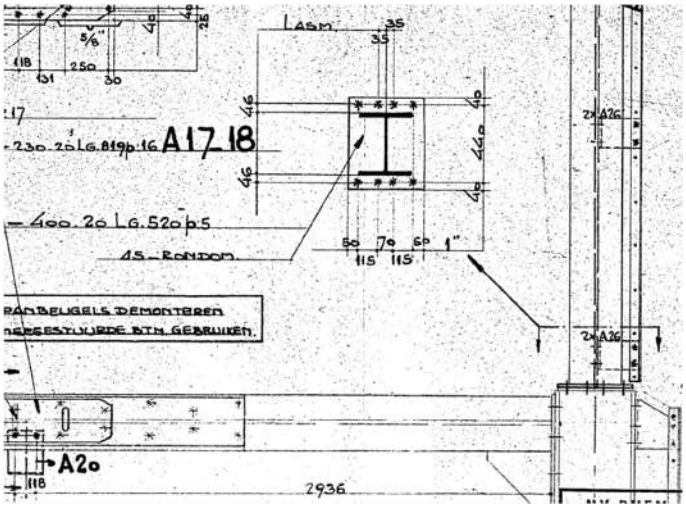
Het versterken kan worden uitgevoerd door de rand van de op trek belaste flens van de schetsplaat op het werk te lassen tegen de flens van de kolom. Dat moet op onderstaande posities gebeuren:



Figuur 23; Positie versterkingslassen

Las: a = 5 mm, lang 160 mm (UC = 0.36)

13.5 Toets detail 4B



Figuur 24; Detail kolom-kolom verbinding

4B: Verbindingskrachten kolom DIE36 - kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/5	FC5	K5	S329	-19.65	-3.32	-17.04	15.67	-48.11	-0.13
UGT-1/24	FC6	K7	S330	10.68	1.98	-16.36	-9.08	24.21	0.06
UGT-2/27	FC5	K5	S329	-10.81	-11.21	-14.91	46.35	-26.16	-0.12
UGT-1/9	FC6	K7	S330	5.39	14.05	-13.78	-59.29	12.24	0.27
UGT-2/52	FC6	K7	S330	1.22	1.81	-12.69	-8.27	3.74	0.06
UGT-2/26	FC5	K5	S329	-10.85	-2.93	-15.41	8.09	-25.64	-0.30
UGT-2/26	FC6	K7	S330	5.48	1.37	-13.78	-11.82	12.62	0.33

4B: Verbindingskrachten kolom DIE36 - kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-1/26	FC9	K5:2	S331	-12.02	0.00	-8.82	0.01	18.97	-0.09
UGT-1/26	FC10	K4:1	S331	12.02	0.00	-10.04	-0.01	-28.87	0.07
UGT-2/53	FC9	K5:2	S331	-11.32	-4.31	-8.42	0.01	15.88	-0.33
UGT-1/22	FC10	K4:1	S331	11.32	4.32	-10.42	-0.02	-32.07	0.16
UGT-1/11	FC10	K4:1	S331	11.91	0.00	-11.66	-0.01	-42.29	0.15
UGT-1/11	FC9	K5:2	S331	-11.91	0.00	-7.19	0.01	6.02	-0.19
UGT-1/36	FC10	K4:1	S331	11.32	4.32	-10.43	-0.02	-32.11	0.16
UGT-1/36	FC9	K5:2	S331	-11.32	4.30	-8.42	0.02	15.89	-0.26
UGT-2/19	FC9	K5:2	S331	-9.24	0.00	-9.68	0.00	25.37	0.00
UGT-2/30	FC9	K5:2	S331	-11.31	-4.31	-8.43	0.01	15.93	-0.33
UGT-2/29	FC10	K4:1	S331	11.55	-4.31	-10.53	-0.01	-32.98	0.27

De voetplaat van de kolom DIE36 is maatgevend ten opzichte van de kopplaat van de kolommen INP45.

13.5.1 Bouten

$I_{boutgroep,Mx} = 2 * (60^2 + 175^2 + 245^2 + 360^2) = 447700\ mm^4$

$I_{boutgroep,My} = 4 * (40^2 + 480^2) = 928000\ mm^4$

$$F_{t,Ed} = \frac{59.29 * 10^3 * 360}{447700} + \frac{12.24 * 10^3 * 480}{928000} = 54.00\ kN$$

$$F_{v,Ed} = \frac{\sqrt{5.39^2 + 14.05^2}}{8} = 1.88\ kN$$

$F_{t,Rd} = 203.33\ kN$
$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$$UC_1 = \frac{54.00}{203.33} = 0.27 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{1.88}{135.55} = 0.01 < 1.00 \Rightarrow akkoord$$

$$UC_3 = 0.01 + \frac{0.27}{1.40} = 0.20 < 1.00 \Rightarrow akkoord$$

De plaatdikte is groter dan 15.7 mm, waardoor stuik niet maatgevend is. (zie Bijlage J)

13.5.2 Kopplaat

$F_{t,Ed} = 54.00\ kN$

$e = 46 - 0.8 * 5 * \sqrt{2} = 40.3\ mm$

$M_{Ed} = 54.00 * 40.3 * 10^{-3} = 2.18\ kNm$

$b_e = 2.5 * 40.3 = 100\ mm$

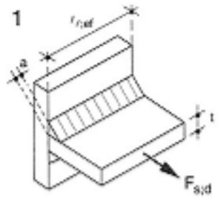
$M_{Rd} = 0.25 * 100 * 20^2 * 235 * 10^{-6} = 2.35\ kNm$

$$UC_4 = \frac{2.18}{2.35} = 0.93 < 1.00 \Rightarrow akkoord$$

13.5.3 Lassen

$F_{las,Ed} \cong 2 * 54.00 = 108.00\ kN$
$\ell_{las} = 100\ mm\ , a_{las} = 5\ mm$

Basisgeval 1 (kracht haaks op las):

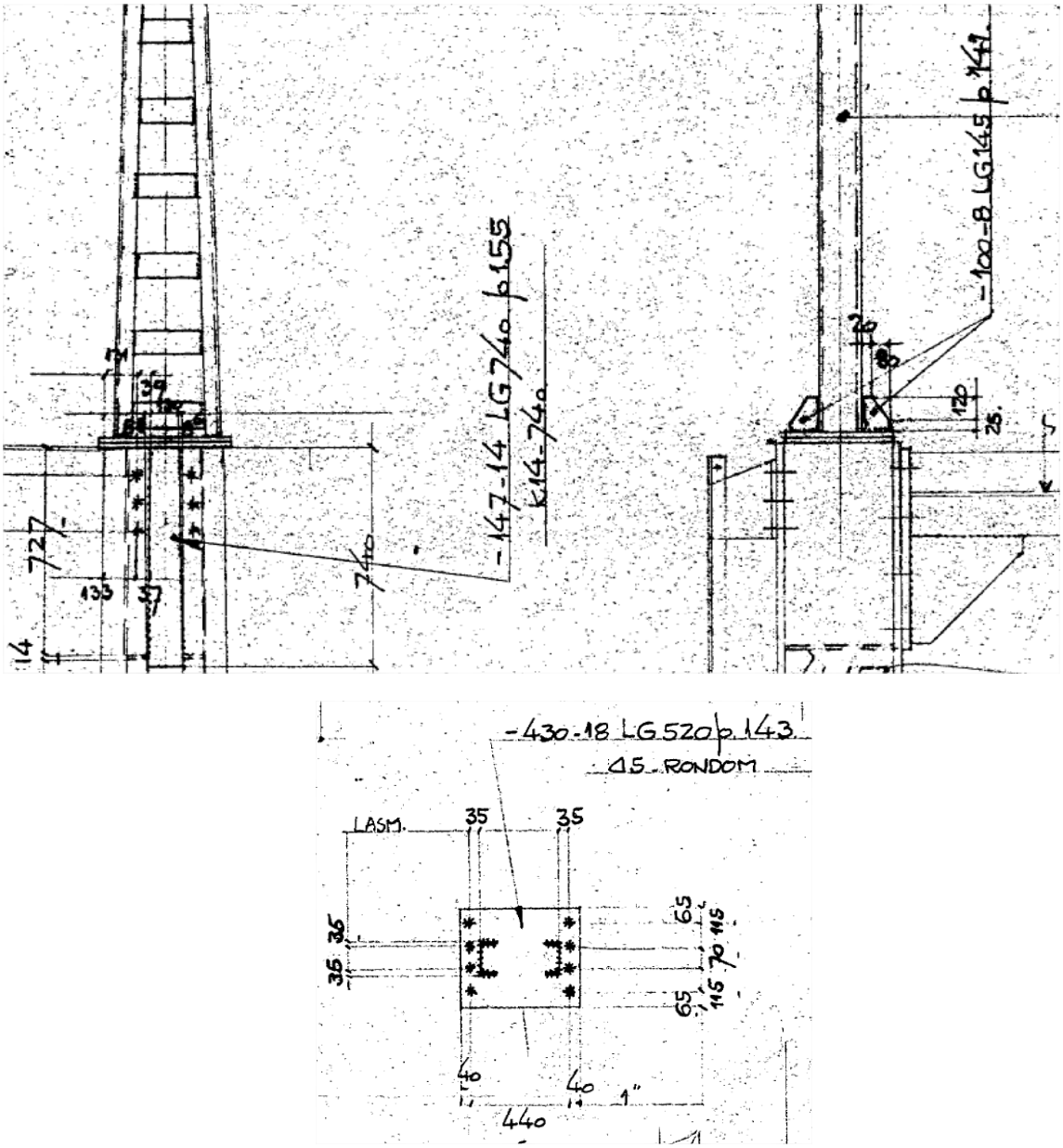


$$\sigma_1 = \tau_{h,1} = \frac{108.00 * \sqrt{2} * 10^3}{4 * 5 * 100} = 76\ MPa$$

$$UC_5 = \frac{\sqrt{76^2 + 3 * (0^2 + 76^2)}}{\left[\frac{360}{0.8 * 1.25}\right]} = 0.42 < 1.00 \Rightarrow akkoord$$

$$UC_6 = \frac{76}{\left[\frac{0.8 * 360}{1.25}\right]} = 0.33 < 1.00 \Rightarrow akkoord$$

13.6 Toets detail 5B



Figuur 25; Details kolom-bliksempiek verbinding

5B: Verbindingskrachten bliksempiek - kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-2/5	FC8	K11	S332	-7.80	-2.60	-3.11	12.38	-30.53	0.00
UGT-1/38	FC8	K11	S332	2.77	5.46	-2.81	-25.09	7.12	0.00
UGT-2/18	FC8	K11	S332	-2.07	-6.09	-2.70	25.58	-9.62	0.00
UGT-1/8	FC8	K11	S332	0.26	6.63	-2.81	-27.82	1.21	0.00
UGT-1/36	FC8	K11	S332	0.10	2.00	-3.77	-9.21	0.47	0.00
UGT-1/53	FC8	K11	S332	-0.25	-0.82	-2.35	3.98	-6.93	0.00
UGT-1/40	FC8	K11	S332	-0.86	4.21	-2.84	-16.57	-4.02	0.00
UGT-2/39	FC8	K11	S332	-0.86	1.86	-2.84	-11.12	-4.02	0.00

5B: Verbindingskrachten bliksempiek - kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
UGT-2/19	FC8	K11	S332	-2.47	0.00	-2.71	0.00	-5.75	0.00
UGT-1/11	FC8	K11	S332	9.79	-1.01	-2.28	4.71	39.80	0.00
UGT-2/42	FC8	K11	S332	2.18	-2.77	-2.25	10.14	10.14	0.00
UGT-1/1	FC8	K11	S332	2.65	3.41	-2.65	-13.12	12.33	0.00
UGT-1/40	FC8	K11	S332	0.00	0.00	-4.71	0.00	0.00	0.00
UGT-1/54	FC8	K11	S332	3.62	0.83	-2.22	-1.14	16.85	0.00
UGT-2/55	FC8	K11	S332	4.55	-1.20	-2.39	2.83	21.16	0.00

De voetplaat van de bliksempiek is maatgevend ten opzichte van de kopplaat van de kolommen INP45.

13.6.1 Bouten

$I_{boutgroep,Mx} = 2 * (60^2 + 175^2 + 245^2 + 360^2) = 447700\ mm^4$

$I_{boutgroep,My} = 4 * (40^2 + 480^2) = 928000\ mm^4$

$$F_{t,Ed} = \frac{12.38 * 10^3 * 360}{447700} + \frac{30.53 * 10^3 * 480}{928000} = 25.75\ kN$$

$$F_{v,Ed} = \frac{\sqrt{7.80^2 + 3.60^2}}{8} = 1.07\ kN$$

$F_{t,Rd} = 203.33\ kN$

$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$$UC_1 = \frac{25.75}{203.33} = 0.13 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{1.07}{135.55} = 0.01 < 1.00 \Rightarrow akkoord$$

$$UC_3 = 0.01 + \frac{0.13}{1.40} = 0.10 < 1.00 \Rightarrow akkoord$$

De plaatdikte is groter dan 15.7 mm, waardoor stuik niet maatgevend is. (zie Bijlage J)

13.6.2 Kopplaat

$F_{t,Ed} = 25.75\ kN$

$e = 35 - 0.8 * 5 * \sqrt{2} = 29.3\ mm$

$M_{Ed} = 25.75 * 29.3 * 10^{-3} = 0.76\ kNm$

$b_e = 2.5 * 29.3 = 73\ mm$

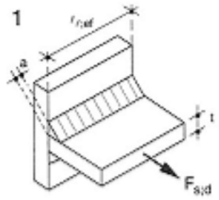
$M_{Rd} = 0.25 * 73 * 18^2 * 235 * 10^{-6} = 1.39\ kNm$

$$UC_4 = \frac{0.76}{1.39} = 0.55 < 1.00 \Rightarrow akkoord$$

13.6.3 Lassen

$F_{las,Ed} \cong 2 * 25.75 = 51.50\ kN$
$\ell_{las} = 73\ mm\ , a_{las} = 5\ mm$

Basisgeval 1 (kracht haaks op las):



$$\sigma_1 = \tau_{h,1} = \frac{51.50 * \sqrt{2} * 10^3}{4 * 5 * 73} = 50\ MPa$$

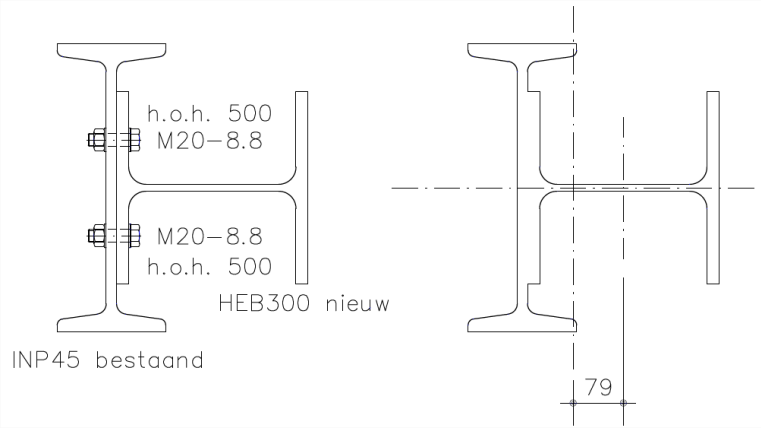
$$UC_5 = \frac{\sqrt{50^2 + 3 * (0^2 + 50^2)}}{\left[\frac{360}{0.8 * 1.25}\right]} = 0.28 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

$$UC_6 = \frac{50}{\left[\frac{0.8 * 360}{1.25}\right]} = 0.22 \ < \ 1.00 \quad \Rightarrow \quad akkoord$$

13.7 Toets detail 6B

Dit detail is komen te vervallen !!!

13.8 Toets detail 7B



Figuur 26; Doorsnede versterkt profiel

7B: Verbindingskrachten versterking kolom INP45 juk 64

Staaf	css	dx	BG	N	Vy	Vz	Mx	My	Mz
		[mm]		[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
S276	samenges	80	UGT-1/19	-1604.03	-58.36	-32.49	2.41	-4.11	155.74
S248	samenges	0	UGT-2/4	139.68	0.46	-0.52	0.03	-0.13	-28.42
S276	samenges	80	UGT-2/2	-1450.71	-61.13	-40.33	3.64	-4.72	110.42
S282	samenges	565	UGT-1/3	-538.47	80.05	15.96	2.34	-5.12	-81.22
S282	samenges	2360	UGT-1/3	-788.44	70.29	27.13	-0.80	23.12	-13.72
S282	samenges	2360	UGT-1/22	-536.89	46.06	24.09	-0.97	23.16	-2.23
S276	samenges	0	UGT-2/5	-938.75	-50.14	-39.60	4.38	-1.07	32.41
S282	samenges	2756	UGT-2/15	-67.39	3.32	-6.48	0.47	-20.56	-7.78
S282	samenges	2756	UGT-1/3	-789.48	70.28	27.13	-0.80	33.86	14.11
S282	samenges	565	UGT-1/23	-540.60	74.37	0.30	1.47	-8.13	-81.48
S275	samenges	2532	UGT-1/3	-1473.16	69.14	-5.81	-0.42	-0.44	205.86

7B: Verbindingskrachten versterking kolom INP45 juk 65

Staaf	css	dx	BG	N	Vy	Vz	Mx	My	Mz
		[mm]		[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
S273	samenges	80	UGT-1/2	-1661.25	-71.93	71.81	-3.79	7.67	93.08
S273	samenges	0	UGT-2/9	105.26	-0.28	-8.34	0.21	0.18	-18.91
S273	samenges	80	UGT-1/5	-1572.88	-73.35	68.29	-3.84	7.83	71.82
S284	samenges	565	UGT-1/1	-389.37	68.55	-18.60	-2.33	9.89	-73.17
S284	samenges	2360	UGT-1/10	-354.28	41.64	-29.68	1.72	-29.74	3.99
S273	samenges	0	UGT-1/2	-1661.04	-71.93	71.81	-3.79	1.92	98.84
S273	samenges	0	UGT-1/5	-1572.67	-73.35	68.27	-3.84	2.37	77.69
S272	samenges	0	UGT-1/11	-912.64	26.77	-3.53	2.05	-1.50	13.34
S284	samenges	2756	UGT-1/12	-355.17	41.58	-29.66	1.72	-41.50	20.49
S284	samenges	0	UGT-1/13	-256.59	46.89	-11.32	-2.89	18.89	-66.12
S284	samenges	565	UGT-1/14	-389.88	68.54	-18.51	-2.33	9.87	-73.19
S272	samenges	2532	UGT-1/1	-1451.56	59.58	8.15	0.42	-0.29	160.90

13.8.1 Bouten

$S_{z,versterking} = 14910 * 79 = 1177890\ mm^3$

$I_{z,samen} = 45466 * 10^4\ mm^4$

bouten h.o.h. 500 mm

$$F_{v,Ed} = \frac{80.05 * 500 * 1177890}{2 * 45466 * 10^4} = 51.85\ kN$$

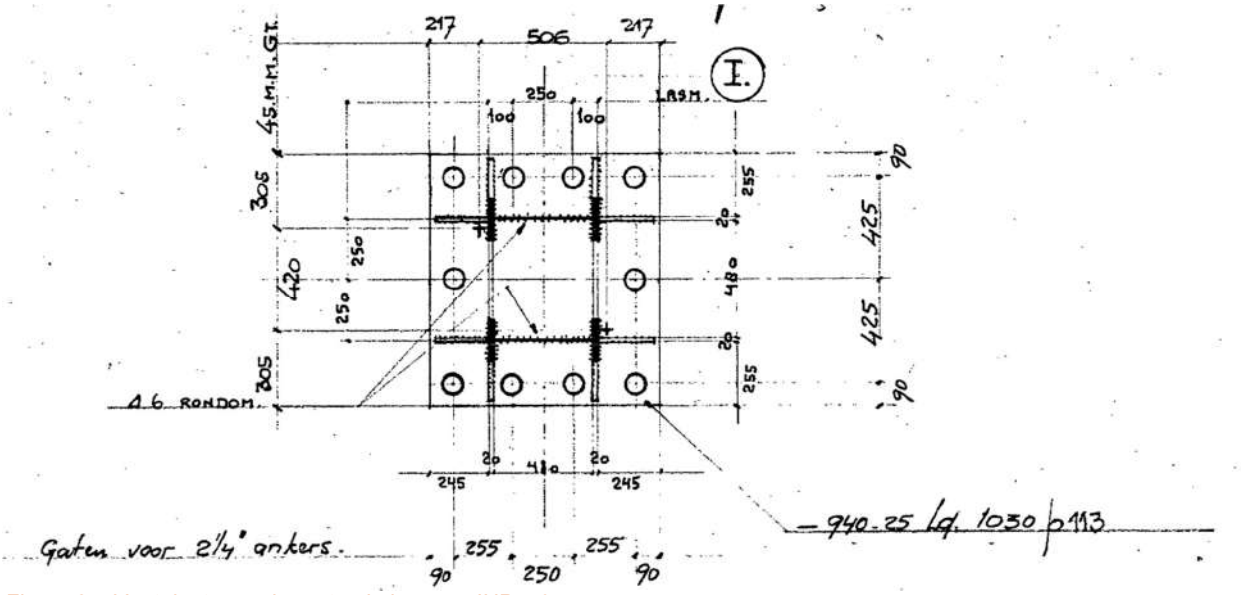
$F_{t,Rd} = 141.12\ kN$

$F_{v,Rd} = 94.08\ kN$ (bouten M20-8.8, zie Bijlage J)

$$UC_1 = \frac{51.85}{94.08} = 0.55 < 1.00 \Rightarrow akkoord$$

De flensdikte van de versterking is groter dan 11.5 mm (S355) en de lijfdikte van de INP-kolom is groter dan 15.7 mm (S235), waardoor stuik niet maatgevend is. (zie Bijlage J)

13.9 Toets detail 8B



Figuur 27; Voetplaat en ankergaten kolommen INP450

8B: Krachten op voet kolommen INP45 juk 64

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	-45.40	0.21	135.89	1.07	-29.71	0.25
UGT-2/5	FC2	K8	S244	120.69	-47.40	950.45	357.66	210.14	10.62
UGT-1/7	FC2	K8	S244	98.72	-119.14	761.30	770.25	167.37	23.27
UGT-2/10	FC3	K438	S250	28.11	22.63	-642.21	83.68	143.89	5.29
UGT-2/5	FC3	K438	S250	50.04	-7.41	-825.71	116.74	185.34	-2.02
UGT-2/18	FC4	K513	S322	-2.16	16.96	35.71	-139.36	7.60	-0.02
UGT-1/3	FC2	K8	S244	90.98	-115.56	669.05	957.58	146.75	20.82
UGT-1/11	FC3	K438	S250	-1.20	-47.05	-286.09	341.07	65.02	-6.79
UGT-1/8	FC2	K8	S244	98.56	-119.00	757.43	771.62	166.52	23.29

8B: Krachten op voet kolommen INP45 juk 65

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/5	FC3	K438	S250	-159.49	-76.54	1393.89	676.32	-308.62	-11.36
UGT-2/19	FC2	K8	S244	47.02	0.14	157.62	0.64	34.50	0.11
UGT-1/14	FC3	K438	S250	-131.51	-91.02	1120.16	813.31	-247.14	-13.23
UGT-2/9	FC2	K8	S244	35.71	20.72	62.04	-108.01	12.84	-3.15
UGT-1/5	FC2	K8	S244	-92.18	-46.43	-1263.07	361.21	-282.27	4.90
UGT-2/9	FC1	K6	S246	1.04	17.52	56.04	-144.01	0.05	0.02
UGT-1/1	FC3	K438	S250	-130.78	-90.99	1112.34	814.14	-245.39	-13.22
UGT-1/23	FC3	K438	S250	-115.85	-87.49	945.61	736.20	-208.03	-13.50
UGT-1/22	FC2	K8	S244	-42.04	-70.22	-744.53	431.67	-166.04	9.57

13.9.1 Ankers

$I_{boutgroep,Mx} = 2 * 255^2 + 2 * 505^2 + 3 * 760^2 = 2372900\ mm^4$

$I_{boutgroep,My} = 2 * 425^2 + 4 * 850^2 = 3251250\ mm^4$

$$F_{t,Ed,max} = \frac{1263.07}{10} + \frac{361.21 * 10^3 * 760}{2372900} + \frac{282.27 * 10^3 * 850}{3251250} = 315.79\ kN$$

$$F_{v,Ed,max} = \frac{\sqrt{159.49^2 + 76.54^2}}{10} = 17.69\ kN$$

$F_{t,Rd} = 584.64\ kN$ (bouten M56-8.8, zie Bijlage J)

$$F_{v,Rd} = \frac{0.248 * 400 * 2030 * 10^{-3}}{1.25} = 161.10\ kN$$

$$UC_1 = \frac{315.79}{584.64} = 0.54 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{17.69}{161.10} = 0.11 < 1.00 \Rightarrow akkoord$$

13.9.2 Voetplaat

$m = m_2 = 245 - 90 - 0.8 * 6 * \sqrt{2} = 148.2\ mm$

$e = \min(90\ ;\ 1.25 * 148.2) = 90.0\ mm$

$$\lambda_1 = \lambda_2 = \frac{148.2}{148.2 + 90.0} = 0.62 \Rightarrow \alpha \cong 5.00$$

$\ell_{eff,1} = 2 * \pi * 148.2 = 931\ mm$

$\ell_{eff,2} = 5.00 * 148.2 = 741\ mm$

$\ell_{eff,3} = \pi * 148.2 + 255 = 721\ mm$

$\ell_{eff,4} = 0.5 * 255 + 2 * \pi * 148.2 - (2 * 148.2 + 0.625 * 90) = 706\ mm$

$M_{plt,Rd} = 0.25 * 706 * 25^2 * 235 * 10^{-6} = 25.92\ kNm$

$$F_{T,1,Rd} = \frac{4 * 25.92 * 10^3}{148.2} = 699.69\ kN$$

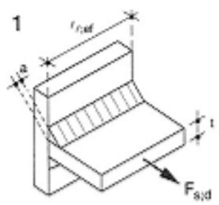
$$F_{T,2,Rd} = \frac{2 * 25.92 * 10^3 + 90.0 * 2 * 584.64}{148.2 + 90.0} = 659.43\ kN$$

$F_{T,3,Rd} = 2 * 584.64 = 1169.28\ kN$

$$UC_3 = \frac{2 * 315.79}{659.43} = 0.96 < 1.00 \Rightarrow akkoord$$

13.9.3 Lassen

Basisgeval 1 (kracht haaks op las):



$F_{las,Ed} \cong 2 * 315.79 = 631.58\ kN$
$\ell_{las} \cong 2 * 245 = 490\ mm\ ,\ a_{las} = 6\ mm$

$$\sigma_1 = \tau_{h,1} = \frac{631.58 * \sqrt{2} * 10^3}{4 * 6 * 490} = 76\ MPa$$

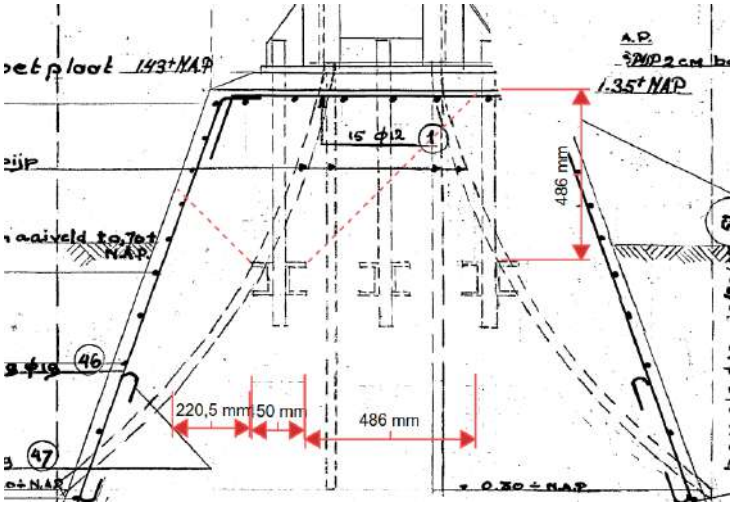
$$UC_4 = \frac{\sqrt{76^2 + 3 * (0^2 + 76^2)}}{\left[\frac{360}{0.8 * 1.25}\right]} = 0.42 < 1.00 \Rightarrow akkoord$$

$$UC_5 = \frac{76}{\left[\frac{0.8 * 360}{1.25}\right]} = 0.33 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

13.9.4 Uitbreken ankergroep

De verankering van de middenpoer is maatgevend.

De verankeringsplaat (2 U-profielen) onderaan de ankers moet de kracht inleiden in het beton. Getoetst wordt het afschuifvlak van de beton'kegel'.



Figuur 28; Afschuifvlak ankers

Het grootte van het afschuifoppervlak bedraagt:

$$A_{schuif} = \left(220 * \sqrt{2} + 150 + 486 * \sqrt{2}\right) * (0.5 * 2900) = 1665 * 10^3\ mm^2$$

De grootte van de trekkracht bedraagt:

$$F_{t,Ed,max} = 6 * \frac{1263.07}{10} + 4 * \frac{282.27 * 10^3 * 850}{3251250} + 2 * \frac{282.27 * 10^3 * 425}{3251250} = 1126.82\ kN$$

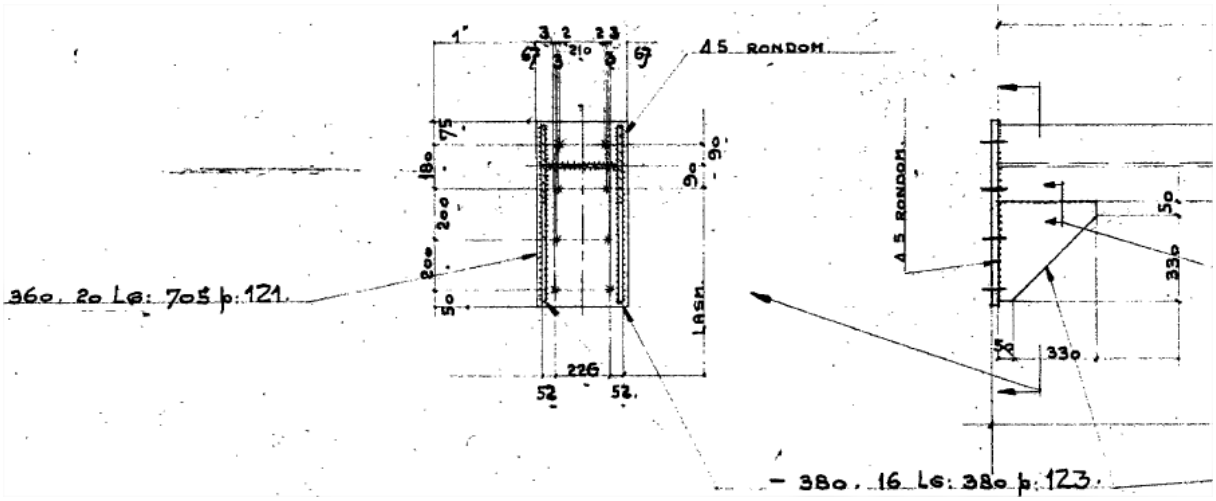
(de tweede rij ankers wordt conservatief ook meegerekend in de belasting)

$$\tau = \frac{1126.82 * 10^3}{1665 * 10^3} = 0.68\ MPa \quad < \quad 0.86\ MPa \quad \Rightarrow \quad akkoord$$

Opmerking bij toelaatbare afschuifspanning

In rapport 2018-0542-001 zijn de resultaten gegeven van het betononderzoek dat is uitgevoerd op de poeren van het lijnportaal. Hieruit wordt geconcludeerd dat de betondruksterkte een karakteristieke waarde heeft van 69,8N/mm², waarmee het beton in een klasse C60/75 valt. Voor deze toetsing wordt aangehouden een betonsterkteklasse B65 conform de VBC, waarbij de afschuifsterkte τ_1 = 0,86N/mm².

13.10 Toets detail 1N



Figuur 29; Detail kolom-ligger verbinding

1N: Verbindingskrachten ligger DIE34 - kolommen INP45 juk 64b

BG	Verbinding	Knoop	Liggers	Rx	Ry	Rz	Mx	My	Mz
				[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
Combi1/21	FC3	K5	S11	-68.86	0.16	-25.98	0.00	121.04	-0.08
Combi1/29	FC4	K9	S6	8.26	4.77	-8.92	0.00	-18.60	-0.15
Combi2/14	FC4	K9	S6	-54.20	-13.24	-7.91	0.00	26.58	0.38
Combi1/19	FC4	K9	S6	-10.15	7.07	-14.65	0.00	-23.88	-0.23
Combi2/11	FC3	K5	S11	-68.86	-4.61	-26.78	0.00	127.29	-0.23
Combi2/12	FC4	K9	S6	-54.50	-8.44	-7.06	0.00	33.22	0.23
Combi1/23	FC4	K9	S6	-54.20	-8.48	-7.91	0.00	26.58	0.23
Combi1/23	FC3	K5	S11	-66.24	-5.17	-23.77	0.00	112.44	-0.26
Combi1/13	FC4	K9	S6	-14.20	-0.30	-18.72	0.00	-35.19	0.00
Combi2/14	FC3	K5	S11	-66.24	-9.94	-23.77	0.00	112.44	-0.40

13.10.1 Bouten

$I_{boutgroep,My} = 2 * (40^2 + 240^2 + 440^2 + 620^2) = 1274400\ mm^4$

$$F_{t,Ed} = \frac{68.86}{8} + \frac{127.29 * 10^3 * 620}{1274400} = 70.54\ kN$$

$$F_{v,Ed} = \frac{\sqrt{4.61^2 + 26.78^2}}{8} = 3.39\ kN$$

$F_{t,Rd} = 203.33\ kN$
$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$$UC_1 = \frac{70.54}{203.33} = 0.35 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{3.39}{135.55} = 0.03 < 1.00 \Rightarrow akkoord$$

$$UC_3 = 0.03 + \frac{0.35}{1.40} = 0.28 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

De flensdikte van een INP45 en de dikte van de kopplaat zijn groter dan 15.7 mm, waardoor stuik niet maatgevend is (zie Bijlage J)

13.10.2 Kopplaat

$m = 0.5 * 180 - 0.5 * 10 - 0.8 * 5 * \sqrt{2} = 79.3\ mm$

$e = \min(75\ ; 1.25 * 79.3) = \ 75.0\ mm$

$m_2 = 0.5 * (330 - 2 * 17 - 218) - 0.8 * 5 * \sqrt{2} = 41.8\ mm$

$\lambda_1 = \frac{79.3}{79.3 + 75.0} = 0.51$

$\lambda_2 = \frac{41.8}{79.3 + 75.0} = 0.27 \quad \Rightarrow \quad \alpha \cong 2 * \pi$

$\ell_{eff,1} = 2 * \pi * 79.3 = 498\ mm$

$\ell_{eff,2} = 2 * \pi * 79.3 = 498\ mm$

$\ell_{eff,3} = \ \pi * 79.3 + 218 = 467\ mm$

$\ell_{eff,4} = 0.5 * 218 + 2 * \pi * 79.3 - (2 * 79.3 + 0.625 * 75) = 481\ mm$

$M_{plt,Rd} = 0.25 * 360 * 20^2 * 355 * 10^{-6} = \ 12.78\ kNm$

$F_{T,1,Rd} = \frac{4 * 12.78 * 10^3}{79.3} = 644.64\ kN$

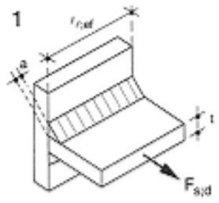
$F_{T,2,Rd} = \frac{2 * 12.78 * 10^3 + 75.0 * 2 * 203.33}{79.3 + 75.0} = 363.32\ kN$

$F_{T,3,Rd} = 2 * 203.33 = 406.66\ kN$

$UC_4 = \frac{2 * 70.54}{363.32} = 0.39 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$

13.10.3 Lassen

Basisgeval 1 (kracht haaks op las):



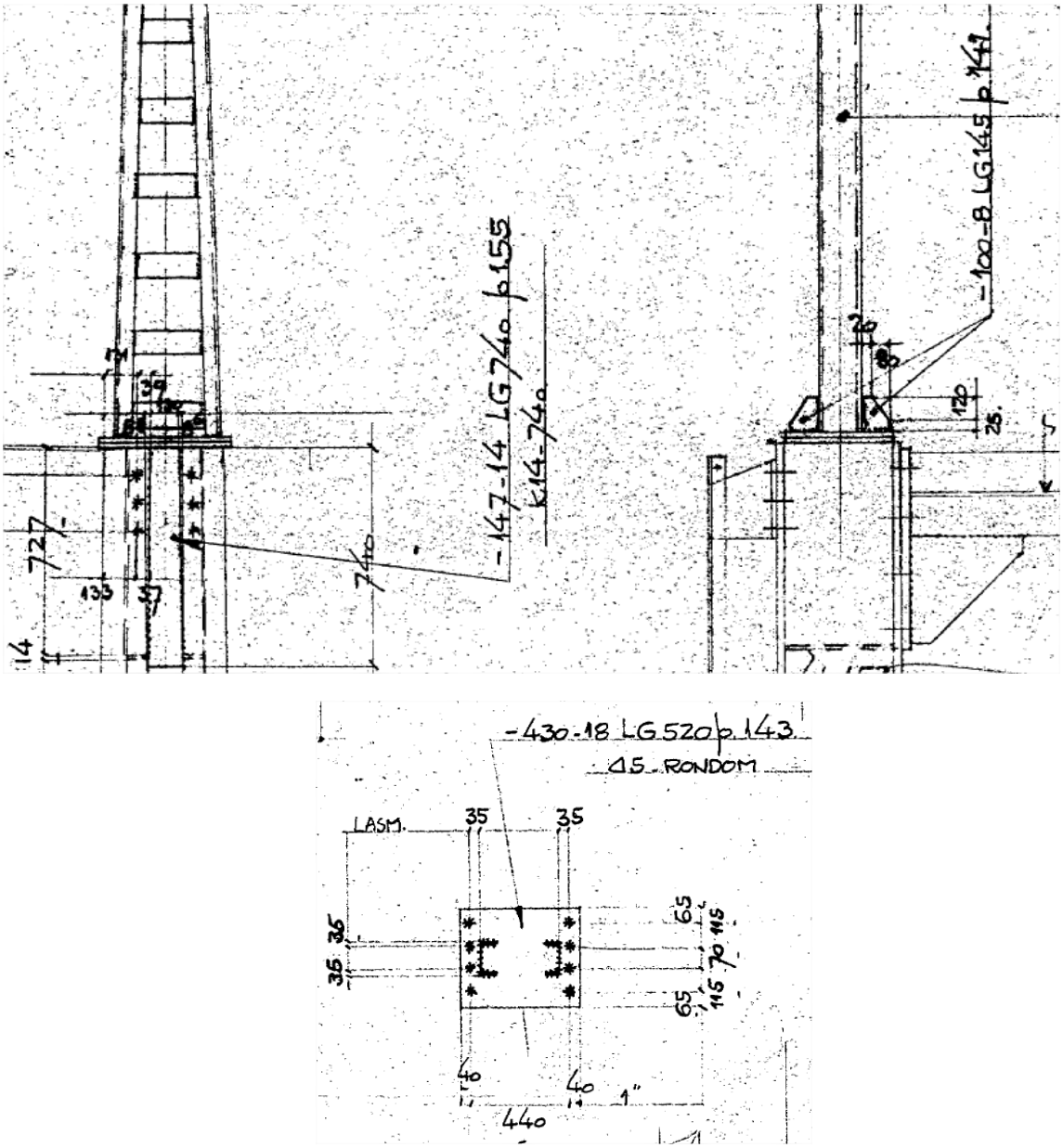
$F_{las,Ed} \cong 2 * 70.54 = 141.08\ kN$
$\ell_{las} = 150\ mm\ , a_{las} = 5\ mm$

$\sigma_1 = \tau_{h,1} = \frac{141.05 * \sqrt{2} * 10^3}{4 * 5 * 150} = 67\ MPa$

$UC_5 = \frac{\sqrt{67^2 + 3 * (0^2 + 67^2)}}{\left[\frac{490}{0.9 * 1.25}\right]} = 0.31 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$

$UC_6 = \frac{67}{\left[\frac{0.9 * 490}{1.25}\right]} = 0.19 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$

13.11 Toets detail 5N



Figuur 30; Details kolom-bliksempiek verbinding

5N: Verbindingskrachten bliksempiek - kolommen INP45 juk 64b

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi2/15	FC3	K5	S51	-10.60	0.49	-3.49	-2.23	-41.48	0.00
Combi1/27	FC3	K5	S51	2.77	0.00	-4.74	0.00	6.23	0.00
Combi2/5	FC4	K9	S52	-2.29	-2.30	-2.87	7.46	-10.30	0.00
Combi1/19	FC3	K5	S51	-2.65	2.16	-2.90	-6.82	-11.91	0.00
Combi1/25	FC3	K5	S51	0.00	1.28	-4.74	-2.89	0.00	0.00
Combi1/30	FC3	K5	S51	2.77	0.00	-2.74	0.00	6.23	0.00
Combi2/31	FC3	K5	S51	-2.85	-2.14	-2.85	6.76	-12.81	0.00

De voetplaat van de bliksempiek is maatgevend ten opzichte van de kopplaat van de kolommen INP45.

13.11.1 Bouten

$I_{boutgroep,Mx} = 2 * (60^2 + 175^2 + 245^2 + 360^2) = 447700\ mm^4$

$I_{boutgroep,My} = 4 * (40^2 + 480^2) = 928000\ mm^4$

$F_{t,Ed} = \frac{2.23 * 10^3 * 360}{447700} + \frac{41.48 * 10^3 * 480}{928000} = 23.25\ kN$

$F_{v,Ed} = \frac{\sqrt{10.60^2 + 0.49^2}}{8} = 1.33\ kN$

$F_{t,Rd} = 203.33\ kN$

$F_{v,Rd} = 135.55\ kN$ (bouten M24-8.8, zie Bijlage J)

$UC_1 = \frac{23.25}{203.33} = 0.11 < 1.00 \Rightarrow akkoord$

$UC_2 = \frac{1.33}{135.55} = 0.01 < 1.00 \Rightarrow akkoord$

$UC_3 = 0.01 + \frac{0.11}{1.40} = 0.09 < 1.00 \Rightarrow akkoord$

De plaatdikte is groter dan 15.7 mm, waardoor stuik niet maatgevend is. (zie Bijlage J)

13.11.2 Kopplaat

$F_{t,Ed} = 23.25\ kN$

$e = 35 - 0.8 * 5 * \sqrt{2} = 29.3\ mm$

$M_{Ed} = 23.25 * 29.3 * 10^{-3} = 0.68\ kNm$

$b_e = 2.5 * 29.3 = 73\ mm$

$M_{Rd} = 0.25 * 73 * 18^2 * 355 * 10^{-6} = 2.10\ kNm$

$UC_4 = \frac{0.68}{2.10} = 0.32 < 1.00 \Rightarrow akkoord$

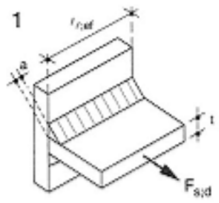
13.11.3 Lassen

$F_{las,Ed} \cong 2 * 23.25 = 46.50\ kN$
$\ell_{las} = 73\ mm\ , a_{las} = 5\ mm$

Basisgeval 1 (kracht haaks op las):

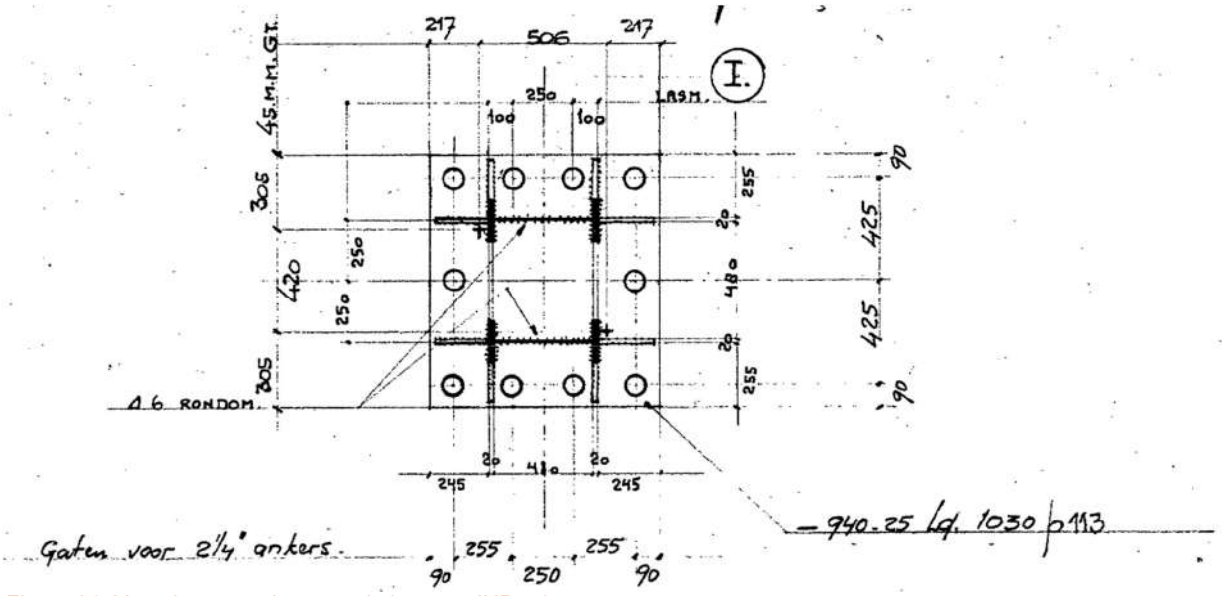
$\sigma_1 = \tau_{h,1} = \frac{46.50 * \sqrt{2} * 10^3}{4 * 5 * 73} = 45\ MPa$

$UC_5 = \frac{\sqrt{45^2 + 3 * (0^2 + 45^2)}}{\left[\frac{490}{0.9 * 1.25}\right]} = 0.21 < 1.00 \Rightarrow akkoord$



$$UC_6 = \frac{45}{\left[\frac{0.9 * 490}{1.25}\right]} = 0.13 \quad < \quad 1.00 \quad \Rightarrow \quad akkoord$$

13.12 Toets detail 8N



Figuur 31; Voetplaat en ankergaten kolommen INP450

8N: Krachten op voet kolommen INP45 juk 64b

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC2	K3	S8	-12.24	0.00	36.60	0.00	-53.33	0.00
Combi2/11	FC1	K1	S7	83.46	4.97	53.23	-42.60	571.63	0.23
Combi1/19	FC2	K3	S8	12.40	-16.69	41.01	112.98	136.26	0.23
Combi2/14	FC2	K3	S8	59.38	22.70	34.30	-161.78	486.58	-0.38
Combi2/12	FC2	K3	S8	68.18	9.04	33.44	-77.33	535.50	-0.23
Combi2/14	FC1	K1	S7	72.22	19.21	50.16	-132.22	510.26	0.40

13.12.1 Ankers

$$I_{boutgroep,Mx} = 2 * 255^2 + 2 * 505^2 + 3 * 760^2 = 2372900\ mm^4$$

$$I_{boutgroep,My} = 2 * 425^2 + 4 * 850^2 = 3251250\ mm^4$$

$$F_{t,Ed,max} = \frac{161.78 * 10^3 * 760}{2372900} + \frac{486.58 * 10^3 * 850}{3251250} = 179.03\ kN$$

$$F_{v,Ed,max} = \frac{\sqrt{83.46^2 + 4.97^2}}{10} = 8.36\ kN$$

$$e = 160 + 0.5 * (56 + 25) = 201\ mm$$

$$M_{Ed} = \frac{8.36 * 201 * 10^{-3}}{2} = 0.84\ kNm$$

$F_{t,Rd} = 1169.28\ kN$

$F_{v,Rd} = 779.52\ kN$ (bouten M56-8.8, zie Bijlage J)

$$M_{Rd} = \frac{\pi * 50.8^3}{32} * 640 * 10^{-6} = 8.26\ kNm$$

$$UC_1 = \frac{179.03}{1169.28} + \frac{0.84}{8.26} = 0.26 < 1.00 \Rightarrow akkoord$$

$$UC_2 = \frac{8.36}{779.52} = 0.01 < 1.00 \Rightarrow akkoord$$

$$UC_3 = 0.01 + \frac{0.26}{1.40} = 0.19 < 1.00 \Rightarrow akkoord$$

13.12.2 Voetplaat

$m = m_2 = 245 - 90 - 0.8 * 6 * \sqrt{2} = 148.2\ mm$

$e = \min(90\ ;\ 1.25 * 148.2) = 90.0\ mm$

$$\lambda_1 = \lambda_2 = \frac{148.2}{148.2 + 90.0} = 0.62 \Rightarrow \alpha \cong 5.00$$

$\ell_{eff,1} = 2 * \pi * 148.2 = 931\ mm$

$\ell_{eff,2} = 5.00 * 148.2 = 741\ mm$

$\ell_{eff,3} = \pi * 148.2 + 255 = 721\ mm$

$\ell_{eff,4} = 0.5 * 255 + 2 * \pi * 148.2 - (2 * 148.2 + 0.625 * 90) = 706\ mm$

$M_{plt,Rd} = 0.25 * 706 * 25^2 * 355 * 10^{-6} = 39.16\ kNm$

$$F_{T,1,Rd} = \frac{4 * 39.16 * 10^3}{148.2} = 1056.98\ kN$$

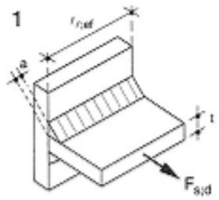
$$F_{T,2,Rd} = \frac{2 * 39.16 * 10^3 + 90.0 * 2 * 1169.28}{148.2 + 90.0} = 1212.39\ kN$$

$F_{T,3,Rd} = 2 * 1169.28 = 2338.56\ kN$

$$UC_4 = \frac{2 * 179.03}{1056.98} = 0.34 < 1.00 \Rightarrow akkoord$$

13.12.3 Lassen

Basisgeval 1 (kracht haaks op las):



$F_{las,Ed} \cong 2 * 179.03 = 358.06\ kN$
$\ell_{las} \cong 2 * 245 = 490\ mm\ ,\ a_{las} = 6\ mm$

$$\sigma_1 = \tau_{h,1} = \frac{358.06 * \sqrt{2} * 10^3}{4 * 6 * 490} = 43\ MPa$$

$$UC_5 = \frac{\sqrt{43^2 + 3 * (0^2 + 43^2)}}{\left[\frac{490}{0.9 * 1.25}\right]} = 0.20 < 1.00 \Rightarrow akkoord$$

$$UC_6 = \frac{43}{\left[\frac{0.9 * 490}{1.25}\right]} = 0.12 < 1.00 \Rightarrow akkoord$$

13.12.4 Uitbreken ankergroep

In de betonnen opstort is ruim voldoende ophangwapening aanwezig om uitbreken van de ankergroep te voorkomen.

BIJLAGE A

Belastingen uit lijn op juk 64

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1	LC 1001	K4:1NL.1#1a,Wind/10C,+90 degST	-4.752	-1.068	0.133
2	LC 1001	K5:1NL.1#1a,Wind/10C,+90 degST	-2.888	-3.915	0.417
3	LC 1001	K5:2NL.1#1a,Wind/10C,+90 degST	-2.931	-3.903	0.306
4	LC 1001	K6:1NL.1#1a,Wind/10C,+90 degST	-25.798	9.667	-5.955
5	LC 1001	K6:2NL.1#1a,Wind/10C,+90 degST	-25.476	9.985	-5.707
6	LC 1001	K6:3NL.1#1a,Wind/10C,+90 degST	-25.046	10.360	-5.451
7	LC 1001	K7:1NL.1#1a,Wind/10C,+90 degST	-8.263	-0.966	-5.515
8	LC 1001	K7:2NL.1#1a,Wind/10C,+90 degST	-9.130	-0.826	-5.580
9	LC 1001	K7:3NL.1#1a,Wind/10C,+90 degST	-9.906	-0.750	-5.646
10	LC 1001	K11:1NL.1#1a,Wind/10C,+90 degST	0.437	2.895	-0.076
11	LC 1001	K11:2NL.1#1a,Wind/10C,+90 degST	0.056	2.928	-0.086
12	LC 1001	K12:1NL.1#1a,Wind/10C,+90 degST	-1.385	2.532	-0.191
13	LC 1002	K4:1NL.1#1b,Wind/-20C,+90 degST	-3.856	1.740	-0.233
14	LC 1002	K5:1NL.1#1b,Wind/-20C,+90 degST	-1.406	-2.307	0.055
15	LC 1002	K5:2NL.1#1b,Wind/-20C,+90 degST	-1.408	-2.307	-0.025
16	LC 1002	K6:1NL.1#1b,Wind/-20C,+90 degST	-42.263	46.541	-6.050
17	LC 1002	K6:2NL.1#1b,Wind/-20C,+90 degST	-41.480	47.102	-5.771
18	LC 1002	K6:3NL.1#1b,Wind/-20C,+90 degST	-40.425	47.799	-5.471
19	LC 1002	K7:1NL.1#1b,Wind/-20C,+90 degST	0.842	24.181	-5.952
20	LC 1002	K7:2NL.1#1b,Wind/-20C,+90 degST	-1.535	24.610	-6.017
21	LC 1002	K7:3NL.1#1b,Wind/-20C,+90 degST	-3.653	24.856	-6.083
22	LC 1002	K11:1NL.1#1b,Wind/-20C,+90 degST	0.932	5.382	-0.098
23	LC 1002	K11:2NL.1#1b,Wind/-20C,+90 degST	0.260	5.455	-0.103
24	LC 1002	K12:1NL.1#1b,Wind/-20C,+90 degST	-2.513	4.878	-0.311
25	LC 1003	K4:1NL.1#3,Wind / Ice / -5C,+90 degST	-8.953	-2.649	-0.586
26	LC 1003	K5:1NL.1#3,Wind / Ice / -5C,+90 degST	-5.443	-8.157	0.172
27	LC 1003	K5:2NL.1#3,Wind / Ice / -5C,+90 degST	-5.484	-8.145	-0.119
28	LC 1003	K6:1NL.1#3,Wind / Ice / -5C,+90 degST	-34.989	23.253	-6.951
29	LC 1003	K6:2NL.1#3,Wind / Ice / -5C,+90 degST	-34.485	23.696	-6.607
30	LC 1003	K6:3NL.1#3,Wind / Ice / -5C,+90 degST	-33.795	24.233	-6.249
31	LC 1003	K7:1NL.1#3,Wind / Ice / -5C,+90 degST	-5.429	6.905	-6.383
32	LC 1003	K7:2NL.1#3,Wind / Ice / -5C,+90 degST	-6.982	7.174	-6.475
33	LC 1003	K7:3NL.1#3,Wind / Ice / -5C,+90 degST	-8.368	7.324	-6.569
34	LC 1003	K11:1NL.1#3,Wind / Ice / -5C,+90 degST	0.868	5.479	-0.236
35	LC 1003	K11:2NL.1#3,Wind / Ice / -5C,+90 degST	0.160	5.545	-0.284
36	LC 1003	K12:1NL.1#3,Wind / Ice / -5C,+90 degST	-2.592	4.836	-0.465
37	LC 1004	K4:1NL.1#4,Construction/Maintenance +5C,+90 degST	-2.691	0.016	-0.195
38	LC 1004	K5:1NL.1#4,Construction/Maintenance +5C,+90 degST	-1.342	-2.188	0.032
39	LC 1004	K5:2NL.1#4,Construction/Maintenance +5C,+90 degST	-1.344	-2.189	-0.046
40	LC 1004	K6:1NL.1#4,Construction/Maintenance +5C,+90 degST	-21.822	13.317	-6.489
41	LC 1004	K6:2NL.1#4,Construction/Maintenance +5C,+90 degST	-21.529	13.586	-6.253
42	LC 1004	K6:3NL.1#4,Construction/Maintenance +5C,+90 degST	-21.122	13.914	-6.009
43	LC 1004	K7:1NL.1#4,Construction/Maintenance +5C,+90 degST	-3.641	2.938	-6.051
44	LC 1004	K7:2NL.1#4,Construction/Maintenance +5C,+90 degST	-4.577	3.100	-6.116
45	LC 1004	K7:3NL.1#4,Construction/Maintenance +5C,+90 degST	-5.411	3.190	-6.182
46	LC 1004	K11:1NL.1#4,Construction/Maintenance +5C,+90 degST	0.440	2.582	-0.074
47	LC 1004	K11:2NL.1#4,Construction/Maintenance +5C,+90 degST	0.115	2.617	-0.084
48	LC 1004	K12:1NL.1#4,Construction/Maintenance +5C,+90 degST	-1.207	2.325	-0.178
49	LC 1005	K4:1NL.1#1a,Wind/10C,-90 degST	-3.309	-1.587	0.133
50	LC 1005	K5:1NL.1#1a,Wind/10C,-90 degST	-1.730	-4.547	0.417
51	LC 1005	K5:2NL.1#1a,Wind/10C,-90 degST	-1.658	-4.591	0.306
52	LC 1005	K6:1NL.1#1a,Wind/10C,-90 degST	-18.636	8.435	-5.955
53	LC 1005	K6:2NL.1#1a,Wind/10C,-90 degST	-18.478	8.649	-5.707
54	LC 1005	K6:3NL.1#1a,Wind/10C,-90 degST	-18.210	8.920	-5.451
55	LC 1005	K7:1NL.1#1a,Wind/10C,-90 degST	-1.737	-2.947	-5.515
56	LC 1005	K7:2NL.1#1a,Wind/10C,-90 degST	-2.503	-2.807	-5.580
57	LC 1005	K7:3NL.1#1a,Wind/10C,-90 degST	-3.179	-2.732	-5.646
58	LC 1005	K11:1NL.1#1a,Wind/10C,-90 degST	0.577	2.870	-0.076
59	LC 1005	K11:2NL.1#1a,Wind/10C,-90 degST	0.243	2.918	-0.086
60	LC 1005	K12:1NL.1#1a,Wind/10C,-90 degST	-1.243	2.605	-0.191
61	LC 1006	K4:1NL.1#1b,Wind/-20C,-90 degST	-3.573	1.638	-0.233
62	LC 1006	K5:1NL.1#1b,Wind/-20C,-90 degST	-1.179	-2.431	0.055
63	LC 1006	K5:2NL.1#1b,Wind/-20C,-90 degST	-1.158	-2.442	-0.025
64	LC 1006	K6:1NL.1#1b,Wind/-20C,-90 degST	-40.854	46.299	-6.050
65	LC 1006	K6:2NL.1#1b,Wind/-20C,-90 degST	-40.103	46.839	-5.771
66	LC 1006	K6:3NL.1#1b,Wind/-20C,-90 degST	-39.080	47.516	-5.471
67	LC 1006	K7:1NL.1#1b,Wind/-20C,-90 degST	2.126	23.792	-5.952
68	LC 1006	K7:2NL.1#1b,Wind/-20C,-90 degST	-0.231	24.221	-6.017
69	LC 1006	K7:3NL.1#1b,Wind/-20C,-90 degST	-2.330	24.466	-6.083
70	LC 1006	K11:1NL.1#1b,Wind/-20C,-90 degST	0.960	5.377	-0.098
71	LC 1006	K11:2NL.1#1b,Wind/-20C,-90 degST	0.297	5.454	-0.103
72	LC 1006	K12:1NL.1#1b,Wind/-20C,-90 degST	-2.486	4.893	-0.311
73	LC 1007	K4:1NL.1#3,Wind / Ice / -5C,-90 degST	-7.050	-3.333	-0.586
74	LC 1007	K5:1NL.1#3,Wind / Ice / -5C,-90 degST	-3.915	-8.991	0.172
75	LC 1007	K5:2NL.1#3,Wind / Ice / -5C,-90 degST	-3.806	-9.052	-0.119
76	LC 1007	K6:1NL.1#3,Wind / Ice / -5C,-90 degST	-31.677	22.578	-6.951
77	LC 1007	K6:2NL.1#3,Wind / Ice / -5C,-90 degST	-31.262	22.963	-6.607
78	LC 1007	K6:3NL.1#3,Wind / Ice / -5C,-90 degST	-30.662	23.444	-6.249
79	LC 1007	K7:1NL.1#3,Wind / Ice / -5C,-90 degST	-2.466	5.818	-6.383
80	LC 1007	K7:2NL.1#3,Wind / Ice / -5C,-90 degST	-3.965	6.087	-6.475
81	LC 1007	K7:3NL.1#3,Wind / Ice / -5C,-90 degST	-5.295	6.236	-6.569

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
82	LC 1007	K11:1NL.1#3,Wind / Ice / -5C,-90 degST	1.053	5.446	-0.236
83	LC 1007	K11:2NL.1#3,Wind / Ice / -5C,-90 degST	0.407	5.533	-0.284
84	LC 1007	K12:1NL.1#3,Wind / Ice / -5C,-90 degST	-2.405	4.931	-0.465
85	LC 1008	K4:1NL.1#4,Construction/Maintenance +5C,-90 degST	-2.408	-0.085	-0.195
86	LC 1008	K5:1NL.1#4,Construction/Maintenance +5C,-90 degST	-1.114	-2.313	0.032
87	LC 1008	K5:2NL.1#4,Construction/Maintenance +5C,-90 degST	-1.094	-2.324	-0.046
88	LC 1008	K6:1NL.1#4,Construction/Maintenance +5C,-90 degST	-20.413	13.075	-6.489
89	LC 1008	K6:2NL.1#4,Construction/Maintenance +5C,-90 degST	-20.152	13.324	-6.253
90	LC 1008	K6:3NL.1#4,Construction/Maintenance +5C,-90 degST	-19.777	13.632	-6.009
91	LC 1008	K7:1NL.1#4,Construction/Maintenance +5C,-90 degST	-2.357	2.548	-6.051
92	LC 1008	K7:2NL.1#4,Construction/Maintenance +5C,-90 degST	-3.274	2.711	-6.116
93	LC 1008	K7:3NL.1#4,Construction/Maintenance +5C,-90 degST	-4.088	2.801	-6.182
94	LC 1008	K11:1NL.1#4,Construction/Maintenance +5C,-90 degST	0.467	2.578	-0.074
95	LC 1008	K11:2NL.1#4,Construction/Maintenance +5C,-90 degST	0.152	2.615	-0.084
96	LC 1008	K12:1NL.1#4,Construction/Maintenance +5C,-90 degST	-1.179	2.339	-0.178
97	LC 1009	K4:1NL.1#1a,Wind/10C,+45 degST	-3.139	0.672	-0.226
98	LC 1009	K5:1NL.1#1a,Wind/10C,+45 degST	-1.297	-2.144	0.021
99	LC 1009	K5:2NL.1#1a,Wind/10C,+45 degST	-1.302	-2.147	-0.055
100	LC 1009	K6:1NL.1#1a,Wind/10C,+45 degST	-22.245	12.052	-6.528
101	LC 1009	K6:2NL.1#1a,Wind/10C,+45 degST	-21.887	12.314	-6.295
102	LC 1009	K6:3NL.1#1a,Wind/10C,+45 degST	-21.419	12.635	-6.056
103	LC 1009	K7:1NL.1#1a,Wind/10C,+45 degST	-4.925	0.488	-6.074
104	LC 1009	K7:2NL.1#1a,Wind/10C,+45 degST	-5.703	0.693	-6.138
105	LC 1009	K7:3NL.1#1a,Wind/10C,+45 degST	-6.407	0.837	-6.204
106	LC 1009	K11:1NL.1#1a,Wind/10C,+45 degST	0.380	2.353	-0.072
107	LC 1009	K11:2NL.1#1a,Wind/10C,+45 degST	0.072	2.495	-0.084
108	LC 1009	K12:1NL.1#1a,Wind/10C,+45 degST	-1.371	2.510	-0.189
109	LC 1010	K4:1NL.1#1b,Wind/-20C,+45 degST	-3.680	1.806	-0.256
110	LC 1010	K5:1NL.1#1b,Wind/-20C,+45 degST	-1.241	-2.227	0.029
111	LC 1010	K5:2NL.1#1b,Wind/-20C,+45 degST	-1.233	-2.231	-0.048
112	LC 1010	K6:1NL.1#1b,Wind/-20C,+45 degST	-41.844	46.537	-6.077
113	LC 1010	K6:2NL.1#1b,Wind/-20C,+45 degST	-41.061	47.095	-5.798
114	LC 1010	K6:3NL.1#1b,Wind/-20C,+45 degST	-40.005	47.790	-5.499
115	LC 1010	K7:1NL.1#1b,Wind/-20C,+45 degST	1.284	24.180	-5.978
116	LC 1010	K7:2NL.1#1b,Wind/-20C,+45 degST	-1.089	24.609	-6.043
117	LC 1010	K7:3NL.1#1b,Wind/-20C,+45 degST	-3.204	24.855	-6.109
118	LC 1010	K11:1NL.1#1b,Wind/-20C,+45 degST	0.939	5.380	-0.098
119	LC 1010	K11:2NL.1#1b,Wind/-20C,+45 degST	0.268	5.455	-0.103
120	LC 1010	K12:1NL.1#1b,Wind/-20C,+45 degST	-2.513	4.879	-0.311
121	LC 1011	K4:1NL.1#1a,Wind/10C,+45 degST	-7.621	-1.785	-0.802
122	LC 1011	K5:1NL.1#1a,Wind/10C,+45 degST	-4.138	-7.273	-0.066
123	LC 1011	K5:2NL.1#1a,Wind/10C,+45 degST	-4.123	-7.284	-0.336
124	LC 1011	K6:1NL.1#1a,Wind/10C,+45 degST	-33.674	23.606	-7.090
125	LC 1011	K6:2NL.1#1a,Wind/10C,+45 degST	-33.168	24.040	-6.750
126	LC 1011	K6:3NL.1#1a,Wind/10C,+45 degST	-32.476	24.567	-6.396
127	LC 1011	K7:1NL.1#1a,Wind/10C,+45 degST	-4.095	7.113	-6.519
128	LC 1011	K7:2NL.1#1a,Wind/10C,+45 degST	-5.630	7.381	-6.610
129	LC 1011	K7:3NL.1#1a,Wind/10C,+45 degST	-6.999	7.531	-6.705
130	LC 1011	K11:1NL.1#1a,Wind/10C,+45 degST	0.872	5.216	-0.234
131	LC 1011	K11:2NL.1#1a,Wind/10C,+45 degST	0.200	5.331	-0.282
132	LC 1011	K12:1NL.1#1a,Wind/10C,+45 degST	-2.580	4.819	-0.464
133	LC 1012	K4:1NL.1#4,Construction/Maintenance +5C,+45 degST	-2.525	0.088	-0.217
134	LC 1012	K5:1NL.1#4,Construction/Maintenance +5C,+45 degST	-1.179	-2.115	0.007
135	LC 1012	K5:2NL.1#4,Construction/Maintenance +5C,+45 degST	-1.173	-2.119	-0.068
136	LC 1012	K6:1NL.1#4,Construction/Maintenance +5C,+45 degST	-21.404	13.309	-6.515
137	LC 1012	K6:2NL.1#4,Construction/Maintenance +5C,+45 degST	-21.112	13.576	-6.280
138	LC 1012	K6:3NL.1#4,Construction/Maintenance +5C,+45 degST	-20.705	13.901	-6.036
139	LC 1012	K7:1NL.1#4,Construction/Maintenance +5C,+45 degST	-3.218	2.856	-6.077
140	LC 1012	K7:2NL.1#4,Construction/Maintenance +5C,+45 degST	-4.140	3.056	-6.142
141	LC 1012	K7:3NL.1#4,Construction/Maintenance +5C,+45 degST	-4.968	3.146	-6.208
142	LC 1012	K11:1NL.1#4,Construction/Maintenance +5C,+45 degST	0.443	2.555	-0.074
143	LC 1012	K11:2NL.1#4,Construction/Maintenance +5C,+45 degST	0.122	2.590	-0.084
144	LC 1012	K12:1NL.1#4,Construction/Maintenance +5C,+45 degST	-1.207	2.325	-0.178
145	LC 1013	K4:1NL.1#1a,Wind/10C,+45 degST	-2.703	0.695	-0.226
146	LC 1013	K5:1NL.1#1a,Wind/10C,+45 degST	-1.101	-2.251	0.021
147	LC 1013	K5:2NL.1#1a,Wind/10C,+45 degST	-1.082	-2.266	-0.055
148	LC 1013	K6:1NL.1#1a,Wind/10C,+45 degST	-18.485	12.426	-6.528
149	LC 1013	K6:2NL.1#1a,Wind/10C,+45 degST	-18.277	12.603	-6.295
150	LC 1013	K6:3NL.1#1a,Wind/10C,+45 degST	-17.958	12.839	-6.056
151	LC 1013	K7:1NL.1#1a,Wind/10C,+45 degST	-2.065	0.106	-6.074
152	LC 1013	K7:2NL.1#1a,Wind/10C,+45 degST	-2.780	0.309	-6.138
153	LC 1013	K7:3NL.1#1a,Wind/10C,+45 degST	-3.420	0.455	-6.204
154	LC 1013	K11:1NL.1#1a,Wind/10C,+45 degST	0.445	2.341	-0.072
155	LC 1013	K11:2NL.1#1a,Wind/10C,+45 degST	0.182	2.490	-0.084
156	LC 1013	K12:1NL.1#1a,Wind/10C,+45 degST	-1.233	2.580	-0.189
157	LC 1014	K4:1NL.1#1b,Wind/-20C,+45 degST	-3.594	1.810	-0.256
158	LC 1014	K5:1NL.1#1b,Wind/-20C,+45 degST	-1.202	-2.248	0.029
159	LC 1014	K5:2NL.1#1b,Wind/-20C,+45 degST	-1.190	-2.255	-0.048
160	LC 1014	K6:1NL.1#1b,Wind/-20C,+45 degST	-41.103	46.610	-6.077
161	LC 1014	K6:2NL.1#1b,Wind/-20C,+45 degST	-40.350	47.152	-5.798
162	LC 1014	K6:3NL.1#1b,Wind/-20C,+45 degST	-39.324	47.830	-5.499

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
163	LC 1014	K7:1NL.1#1b,Wind/-20C,+45 degST	1.848	24.105	-5.978
164	LC 1014	K7:2NL.1#1b,Wind/-20C,+45 degST	-0.513	24.533	-6.043
165	LC 1014	K7:3NL.1#1b,Wind/-20C,+45 degST	-2.616	24.780	-6.109
166	LC 1014	K11:1NL.1#1b,Wind/-20C,+45 degST	0.952	5.378	-0.098
167	LC 1014	K11:2NL.1#1b,Wind/-20C,+45 degST	0.290	5.454	-0.103
168	LC 1014	K12:1NL.1#1b,Wind/-20C,+45 degST	-2.486	4.892	-0.311
169	LC 1015	K4:1NL.1#3,Wind / Ice / -5C,+45 degST	-7.045	-1.754	-0.802
170	LC 1015	K5:1NL.1#3,Wind / Ice / -5C,+45 degST	-3.878	-7.415	-0.066
171	LC 1015	K5:2NL.1#3,Wind / Ice / -5C,+45 degST	-3.832	-7.441	-0.336
172	LC 1015	K6:1NL.1#3,Wind / Ice / -5C,+45 degST	-32.108	23.812	-7.090
173	LC 1015	K6:2NL.1#3,Wind / Ice / -5C,+45 degST	-31.684	24.198	-6.750
174	LC 1015	K6:3NL.1#3,Wind / Ice / -5C,+45 degST	-31.075	24.679	-6.396
175	LC 1015	K7:1NL.1#3,Wind / Ice / -5C,+45 degST	-3.024	6.903	-6.519
176	LC 1015	K7:2NL.1#3,Wind / Ice / -5C,+45 degST	-4.524	7.171	-6.610
177	LC 1015	K7:3NL.1#3,Wind / Ice / -5C,+45 degST	-5.858	7.321	-6.705
178	LC 1015	K11:1NL.1#3,Wind / Ice / -5C,+45 degST	0.959	5.200	-0.234
179	LC 1015	K11:2NL.1#3,Wind / Ice / -5C,+45 degST	0.345	5.324	-0.282
180	LC 1015	K12:1NL.1#3,Wind / Ice / -5C,+45 degST	-2.399	4.912	-0.464
181	LC 1016	K4:1NL.1#4,Construction/Maintenance +5C,+45 degST	-2.439	0.093	-0.217
182	LC 1016	K5:1NL.1#4,Construction/Maintenance +5C,+45 degST	-1.140	-2.136	0.007
183	LC 1016	K5:2NL.1#4,Construction/Maintenance +5C,+45 degST	-1.130	-2.143	-0.068
184	LC 1016	K6:1NL.1#4,Construction/Maintenance +5C,+45 degST	-20.664	13.382	-6.515
185	LC 1016	K6:2NL.1#4,Construction/Maintenance +5C,+45 degST	-20.401	13.632	-6.280
186	LC 1016	K6:3NL.1#4,Construction/Maintenance +5C,+45 degST	-20.023	13.941	-6.036
187	LC 1016	K7:1NL.1#4,Construction/Maintenance +5C,+45 degST	-2.654	2.781	-6.077
188	LC 1016	K7:2NL.1#4,Construction/Maintenance +5C,+45 degST	-3.564	2.981	-6.142
189	LC 1016	K7:3NL.1#4,Construction/Maintenance +5C,+45 degST	-4.380	3.071	-6.208
190	LC 1016	K11:1NL.1#4,Construction/Maintenance +5C,+45 degST	0.455	2.553	-0.074
191	LC 1016	K11:2NL.1#4,Construction/Maintenance +5C,+45 degST	0.143	2.589	-0.084
192	LC 1016	K12:1NL.1#4,Construction/Maintenance +5C,+45 degST	-1.180	2.339	-0.178
193	LC 1017	K4:1NL.1#1a,Wind/10C,-45 degST	-3.674	-1.506	0.072
194	LC 1017	K5:1NL.1#1a,Wind/10C,-45 degST	-2.510	-3.457	0.317
195	LC 1017	K5:2NL.1#1a,Wind/10C,-45 degST	-2.537	-3.439	0.213
196	LC 1017	K6:1NL.1#1a,Wind/10C,-45 degST	-22.252	7.956	-6.145
197	LC 1017	K6:2NL.1#1a,Wind/10C,-45 degST	-22.059	8.169	-5.898
198	LC 1017	K6:3NL.1#1a,Wind/10C,-45 degST	-21.765	8.441	-5.645
199	LC 1017	K7:1NL.1#1a,Wind/10C,-45 degST	-6.996	-0.971	-5.690
200	LC 1017	K7:2NL.1#1a,Wind/10C,-45 degST	-7.786	-0.910	-5.756
201	LC 1017	K7:3NL.1#1a,Wind/10C,-45 degST	-8.481	-0.908	-5.824
202	LC 1017	K11:1NL.1#1a,Wind/10C,-45 degST	0.387	2.419	-0.072
203	LC 1017	K11:2NL.1#1a,Wind/10C,-45 degST	0.081	2.342	-0.083
204	LC 1017	K12:1NL.1#1a,Wind/10C,-45 degST	-0.985	1.920	-0.157
205	LC 1018	K4:1NL.1#1b,Wind/-20C,-45 degST	-3.771	1.750	-0.239
206	LC 1018	K5:1NL.1#1b,Wind/-20C,-45 degST	-1.365	-2.276	0.047
207	LC 1018	K5:2NL.1#1b,Wind/-20C,-45 degST	-1.363	-2.277	-0.033
208	LC 1018	K6:1NL.1#1b,Wind/-20C,-45 degST	-41.891	46.489	-6.059
209	LC 1018	K6:2NL.1#1b,Wind/-20C,-45 degST	-41.124	47.040	-5.780
210	LC 1018	K6:3NL.1#1b,Wind/-20C,-45 degST	-40.085	47.728	-5.481
211	LC 1018	K7:1NL.1#1b,Wind/-20C,-45 degST	1.050	24.199	-5.961
212	LC 1018	K7:2NL.1#1b,Wind/-20C,-45 degST	-1.321	24.627	-6.026
213	LC 1018	K7:3NL.1#1b,Wind/-20C,-45 degST	-3.433	24.873	-6.092
214	LC 1018	K11:1NL.1#1b,Wind/-20C,-45 degST	0.938	5.380	-0.098
215	LC 1018	K11:2NL.1#1b,Wind/-20C,-45 degST	0.271	5.455	-0.103
216	LC 1018	K12:1NL.1#1b,Wind/-20C,-45 degST	-2.500	4.886	-0.311
217	LC 1019	K4:1NL.1#3,Wind / Ice / -5C,-45 degST	-8.208	-2.687	-0.638
218	LC 1019	K5:1NL.1#3,Wind / Ice / -5C,-45 degST	-5.111	-7.859	0.101
219	LC 1019	K5:2NL.1#3,Wind / Ice / -5C,-45 degST	-5.135	-7.847	-0.185
220	LC 1019	K6:1NL.1#3,Wind / Ice / -5C,-45 degST	-33.951	23.127	-6.998
221	LC 1019	K6:2NL.1#3,Wind / Ice / -5C,-45 degST	-33.497	23.533	-6.654
222	LC 1019	K6:3NL.1#3,Wind / Ice / -5C,-45 degST	-32.858	24.036	-6.297
223	LC 1019	K7:1NL.1#3,Wind / Ice / -5C,-45 degST	-4.942	6.917	-6.429
224	LC 1019	K7:2NL.1#3,Wind / Ice / -5C,-45 degST	-6.469	7.183	-6.520
225	LC 1019	K7:3NL.1#3,Wind / Ice / -5C,-45 degST	-7.827	7.337	-6.615
226	LC 1019	K11:1NL.1#3,Wind / Ice / -5C,-45 degST	0.871	5.243	-0.234
227	LC 1019	K11:2NL.1#3,Wind / Ice / -5C,-45 degST	0.218	5.264	-0.282
228	LC 1019	K12:1NL.1#3,Wind / Ice / -5C,-45 degST	-2.360	4.606	-0.450
229	LC 1020	K4:1NL.1#4,Construction/Maintenance +5C,-45 degST	-2.593	0.002	-0.201
230	LC 1020	K5:1NL.1#4,Construction/Maintenance +5C,-45 degST	-1.301	-2.160	0.024
231	LC 1020	K5:2NL.1#4,Construction/Maintenance +5C,-45 degST	-1.301	-2.161	-0.053
232	LC 1020	K6:1NL.1#4,Construction/Maintenance +5C,-45 degST	-21.452	13.261	-6.497
233	LC 1020	K6:2NL.1#4,Construction/Maintenance +5C,-45 degST	-21.175	13.521	-6.262
234	LC 1020	K6:3NL.1#4,Construction/Maintenance +5C,-45 degST	-20.785	13.839	-6.018
235	LC 1020	K7:1NL.1#4,Construction/Maintenance +5C,-45 degST	-3.444	2.913	-6.060
236	LC 1020	K7:2NL.1#4,Construction/Maintenance +5C,-45 degST	-4.372	3.074	-6.124
237	LC 1020	K7:3NL.1#4,Construction/Maintenance +5C,-45 degST	-5.197	3.164	-6.191
238	LC 1020	K11:1NL.1#4,Construction/Maintenance +5C,-45 degST	0.442	2.555	-0.074
239	LC 1020	K11:2NL.1#4,Construction/Maintenance +5C,-45 degST	0.125	2.590	-0.084
240	LC 1020	K12:1NL.1#4,Construction/Maintenance +5C,-45 degST	-1.178	2.302	-0.177
241	LC 1021	K4:1NL.1#1a,Wind/10C,-45 degST	-2.669	-2.048	0.072
242	LC 1021	K5:1NL.1#1a,Wind/10C,-45 degST	-1.549	-3.981	0.317
243	LC 1021	K5:2NL.1#1a,Wind/10C,-45 degST	-1.486	-4.007	0.213

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
244	LC 1021	K6:1NL.1#1a,Wind/10C,-45 degST	-17.811	6.351	-6.145
245	LC 1021	K6:2NL.1#1a,Wind/10C,-45 degST	-17.631	6.546	-5.898
246	LC 1021	K6:3NL.1#1a,Wind/10C,-45 degST	-17.351	6.800	-5.645
247	LC 1021	K7:1NL.1#1a,Wind/10C,-45 degST	-2.290	-2.569	-5.690
248	LC 1021	K7:2NL.1#1a,Wind/10C,-45 degST	-3.043	-2.506	-5.756
249	LC 1021	K7:3NL.1#1a,Wind/10C,-45 degST	-3.701	-2.506	-5.824
250	LC 1021	K11:1NL.1#1a,Wind/10C,-45 degST	0.462	2.406	-0.072
251	LC 1021	K11:2NL.1#1a,Wind/10C,-45 degST	0.158	2.338	-0.083
252	LC 1021	K12:1NL.1#1a,Wind/10C,-45 degST	-0.981	1.922	-0.157
253	LC 1022	K4:1NL.1#1b,Wind/-20C,-45 degST	-3.573	1.643	-0.239
254	LC 1022	K5:1NL.1#1b,Wind/-20C,-45 degST	-1.176	-2.379	0.047
255	LC 1022	K5:2NL.1#1b,Wind/-20C,-45 degST	-1.157	-2.389	-0.033
256	LC 1022	K6:1NL.1#1b,Wind/-20C,-45 degST	-41.017	46.173	-6.059
257	LC 1022	K6:2NL.1#1b,Wind/-20C,-45 degST	-40.253	46.721	-5.780
258	LC 1022	K6:3NL.1#1b,Wind/-20C,-45 degST	-39.217	47.405	-5.481
259	LC 1022	K7:1NL.1#1b,Wind/-20C,-45 degST	1.976	23.884	-5.961
260	LC 1022	K7:2NL.1#1b,Wind/-20C,-45 degST	-0.387	24.313	-6.026
261	LC 1022	K7:3NL.1#1b,Wind/-20C,-45 degST	-2.493	24.559	-6.092
262	LC 1022	K11:1NL.1#1b,Wind/-20C,-45 degST	0.953	5.378	-0.098
263	LC 1022	K11:2NL.1#1b,Wind/-20C,-45 degST	0.286	5.454	-0.103
264	LC 1022	K12:1NL.1#1b,Wind/-20C,-45 degST	-2.499	4.886	-0.311
265	LC 1023	K4:1NL.1#3,Wind / Ice / -5C,-45 degST	-6.882	-3.402	-0.638
266	LC 1023	K5:1NL.1#3,Wind / Ice / -5C,-45 degST	-3.844	-8.551	0.101
267	LC 1023	K5:2NL.1#3,Wind / Ice / -5C,-45 degST	-3.749	-8.596	-0.185
268	LC 1023	K6:1NL.1#3,Wind / Ice / -5C,-45 degST	-31.889	22.246	-6.998
269	LC 1023	K6:2NL.1#3,Wind / Ice / -5C,-45 degST	-31.443	22.642	-6.654
270	LC 1023	K6:3NL.1#3,Wind / Ice / -5C,-45 degST	-30.812	23.135	-6.297
271	LC 1023	K7:1NL.1#3,Wind / Ice / -5C,-45 degST	-2.736	6.040	-6.429
272	LC 1023	K7:2NL.1#3,Wind / Ice / -5C,-45 degST	-4.242	6.307	-6.520
273	LC 1023	K7:3NL.1#3,Wind / Ice / -5C,-45 degST	-5.579	6.460	-6.615
274	LC 1023	K11:1NL.1#3,Wind / Ice / -5C,-45 degST	0.970	5.225	-0.234
275	LC 1023	K11:2NL.1#3,Wind / Ice / -5C,-45 degST	0.320	5.258	-0.282
276	LC 1023	K12:1NL.1#3,Wind / Ice / -5C,-45 degST	-2.354	4.609	-0.450
277	LC 1024	K4:1NL.1#4,Construction/Maintenance +5C,-45 degST	-2.395	-0.105	-0.201
278	LC 1024	K5:1NL.1#4,Construction/Maintenance +5C,-45 degST	-1.113	-2.263	0.024
279	LC 1024	K5:2NL.1#4,Construction/Maintenance +5C,-45 degST	-1.094	-2.272	-0.053
280	LC 1024	K6:1NL.1#4,Construction/Maintenance +5C,-45 degST	-20.578	12.945	-6.497
281	LC 1024	K6:2NL.1#4,Construction/Maintenance +5C,-45 degST	-20.304	13.201	-6.262
282	LC 1024	K6:3NL.1#4,Construction/Maintenance +5C,-45 degST	-19.917	13.516	-6.018
283	LC 1024	K7:1NL.1#4,Construction/Maintenance +5C,-45 degST	-2.518	2.598	-6.060
284	LC 1024	K7:2NL.1#4,Construction/Maintenance +5C,-45 degST	-3.438	2.760	-6.124
285	LC 1024	K7:3NL.1#4,Construction/Maintenance +5C,-45 degST	-4.257	2.850	-6.191
286	LC 1024	K11:1NL.1#4,Construction/Maintenance +5C,-45 degST	0.456	2.553	-0.074
287	LC 1024	K11:2NL.1#4,Construction/Maintenance +5C,-45 degST	0.140	2.589	-0.084
288	LC 1024	K12:1NL.1#4,Construction/Maintenance +5C,-45 degST	-1.178	2.303	-0.177
289	LC 1025	K4:1NL.1#1a,Wind/10C,+0 degST	-2.428	-0.070	-0.211
290	LC 1025	K5:1NL.1#1a,Wind/10C,+0 degST	-1.103	-2.192	0.013
291	LC 1025	K5:2NL.1#1a,Wind/10C,+0 degST	-1.088	-2.197	-0.064
292	LC 1025	K6:1NL.1#1a,Wind/10C,+0 degST	-19.172	9.733	-6.556
293	LC 1025	K6:2NL.1#1a,Wind/10C,+0 degST	-18.870	9.907	-6.326
294	LC 1025	K6:3NL.1#1a,Wind/10C,+0 degST	-18.510	10.199	-6.087
295	LC 1025	K7:1NL.1#1a,Wind/10C,+0 degST	-3.484	-0.003	-6.087
296	LC 1025	K7:2NL.1#1a,Wind/10C,+0 degST	-4.223	0.125	-6.152
297	LC 1025	K7:3NL.1#1a,Wind/10C,+0 degST	-4.877	0.199	-6.219
298	LC 1025	K11:1NL.1#1a,Wind/10C,+0 degST	0.374	2.125	-0.070
299	LC 1025	K11:2NL.1#1a,Wind/10C,+0 degST	0.109	2.155	-0.081
300	LC 1025	K12:1NL.1#1a,Wind/10C,+0 degST	-1.057	2.009	-0.162
301	LC 1026	K4:1NL.1#1b,Wind/-20C+,0 degST	-3.617	1.774	-0.255
302	LC 1026	K5:1NL.1#1b,Wind/-20C+,0 degST	-1.206	-2.243	0.029
303	LC 1026	K5:2NL.1#1b,Wind/-20C+,0 degST	-1.196	-2.249	-0.049
304	LC 1026	K6:1NL.1#1b,Wind/-20C+,0 degST	-41.429	46.388	-6.078
305	LC 1026	K6:2NL.1#1b,Wind/-20C+,0 degST	-40.656	46.940	-5.800
306	LC 1026	K6:3NL.1#1b,Wind/-20C+,0 degST	-39.611	47.628	-5.501
307	LC 1026	K7:1NL.1#1b,Wind/-20C+,0 degST	1.574	24.125	-5.979
308	LC 1026	K7:2NL.1#1b,Wind/-20C+,0 degST	-0.793	24.554	-6.044
309	LC 1026	K7:3NL.1#1b,Wind/-20C+,0 degST	-2.902	24.800	-6.110
310	LC 1026	K11:1NL.1#1b,Wind/-20C+,0 degST	0.944	5.366	-0.098
311	LC 1026	K11:2NL.1#1b,Wind/-20C+,0 degST	0.278	5.441	-0.103
312	LC 1026	K12:1NL.1#1b,Wind/-20C+,0 degST	-2.504	4.884	-0.311
313	LC 1027	K4:1NL.1#3,Wind / Ice / -5C,+0 degST	-7.078	-2.185	-0.795
314	LC 1027	K5:1NL.1#3,Wind / Ice / -5C,+0 degST	-3.902	-7.376	-0.070
315	LC 1027	K5:2NL.1#3,Wind / Ice / -5C,+0 degST	-3.864	-7.396	-0.340
316	LC 1027	K6:1NL.1#3,Wind / Ice / -5C,+0 degST	-32.704	23.171	-7.095
317	LC 1027	K6:2NL.1#3,Wind / Ice / -5C,+0 degST	-32.227	23.583	-6.755
318	LC 1027	K6:3NL.1#3,Wind / Ice / -5C,+0 degST	-31.564	24.092	-6.401
319	LC 1027	K7:1NL.1#3,Wind / Ice / -5C,+0 degST	-3.491	6.965	-6.521
320	LC 1027	K7:2NL.1#3,Wind / Ice / -5C,+0 degST	-5.009	7.234	-6.613
321	LC 1027	K7:3NL.1#3,Wind / Ice / -5C,+0 degST	-6.360	7.383	-6.707
322	LC 1027	K11:1NL.1#3,Wind / Ice / -5C,+0 degST	0.903	5.136	-0.234
323	LC 1027	K11:2NL.1#3,Wind / Ice / -5C,+0 degST	0.265	5.208	-0.282
324	LC 1027	K12:1NL.1#3,Wind / Ice / -5C,+0 degST	-2.403	4.621	-0.452

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
325	LC 1028	K4:1NL.1#4,Construction/Maintenance +5C,+0 degST	-2.445	0.028	-0.216
326	LC 1028	K5:1NL.1#4,Construction/Maintenance +5C,+0 degST	-1.145	-2.131	0.007
327	LC 1028	K5:2NL.1#4,Construction/Maintenance +5C,+0 degST	-1.135	-2.137	-0.069
328	LC 1028	K6:1NL.1#4,Construction/Maintenance +5C,+0 degST	-20.990	13.160	-6.516
329	LC 1028	K6:2NL.1#4,Construction/Maintenance +5C,+0 degST	-20.707	13.420	-6.281
330	LC 1028	K6:3NL.1#4,Construction/Maintenance +5C,+0 degST	-20.310	13.739	-6.038
331	LC 1028	K7:1NL.1#4,Construction/Maintenance +5C,+0 degST	-2.930	2.797	-6.077
332	LC 1028	K7:2NL.1#4,Construction/Maintenance +5C,+0 degST	-3.852	2.959	-6.142
333	LC 1028	K7:3NL.1#4,Construction/Maintenance +5C,+0 degST	-4.672	3.048	-6.208
334	LC 1028	K11:1NL.1#4,Construction/Maintenance +5C,+0 degST	0.447	2.541	-0.073
335	LC 1028	K11:2NL.1#4,Construction/Maintenance +5C,+0 degST	0.132	2.576	-0.084
336	LC 1028	K12:1NL.1#4,Construction/Maintenance +5C,+0 degST	-1.186	2.306	-0.177
337	LC 1029	K4:1NL.1#1a,Wind/10C,-0 degST	-2.484	0.065	-0.211
338	LC 1029	K5:1NL.1#1a,Wind/10C,-0 degST	-1.246	-2.114	0.013
339	LC 1029	K5:2NL.1#1a,Wind/10C,-0 degST	-1.241	-2.114	-0.064
340	LC 1029	K6:1NL.1#1a,Wind/10C,-0 degST	-18.808	10.256	-6.556
341	LC 1029	K6:2NL.1#1a,Wind/10C,-0 degST	-18.580	10.396	-6.326
342	LC 1029	K6:3NL.1#1a,Wind/10C,-0 degST	-18.294	10.655	-6.087
343	LC 1029	K7:1NL.1#1a,Wind/10C,-0 degST	-3.543	0.214	-6.087
344	LC 1029	K7:2NL.1#1a,Wind/10C,-0 degST	-4.282	0.342	-6.152
345	LC 1029	K7:3NL.1#1a,Wind/10C,-0 degST	-4.937	0.415	-6.219
346	LC 1029	K11:1NL.1#1a,Wind/10C,-0 degST	0.374	2.125	-0.070
347	LC 1029	K11:2NL.1#1a,Wind/10C,-0 degST	0.111	2.155	-0.081
348	LC 1029	K12:1NL.1#1a,Wind/10C,-0 degST	-1.010	2.033	-0.162
349	LC 1030	K4:1NL.1#1b,Wind/-20C,-0 degST	-3.628	1.801	-0.255
350	LC 1030	K5:1NL.1#1b,Wind/-20C,-0 degST	-1.234	-2.228	0.029
351	LC 1030	K5:2NL.1#1b,Wind/-20C,-0 degST	-1.226	-2.233	-0.049
352	LC 1030	K6:1NL.1#1b,Wind/-20C,-0 degST	-41.358	46.490	-6.078
353	LC 1030	K6:2NL.1#1b,Wind/-20C,-0 degST	-40.599	47.036	-5.800
354	LC 1030	K6:3NL.1#1b,Wind/-20C,-0 degST	-39.568	47.718	-5.501
355	LC 1030	K7:1NL.1#1b,Wind/-20C,-0 degST	1.563	24.168	-5.979
356	LC 1030	K7:2NL.1#1b,Wind/-20C,-0 degST	-0.804	24.597	-6.044
357	LC 1030	K7:3NL.1#1b,Wind/-20C,-0 degST	-2.914	24.843	-6.110
358	LC 1030	K11:1NL.1#1b,Wind/-20C,-0 degST	0.943	5.366	-0.098
359	LC 1030	K11:2NL.1#1b,Wind/-20C,-0 degST	0.278	5.441	-0.103
360	LC 1030	K12:1NL.1#1b,Wind/-20C,-0 degST	-2.495	4.888	-0.311
361	LC 1031	K4:1NL.1#3,Wind / Ice / -5C,-0 degST	-7.152	-2.008	-0.795
362	LC 1031	K5:1NL.1#3,Wind / Ice / -5C,-0 degST	-4.092	-7.273	-0.070
363	LC 1031	K5:2NL.1#3,Wind / Ice / -5C,-0 degST	-4.068	-7.286	-0.340
364	LC 1031	K6:1NL.1#3,Wind / Ice / -5C,-0 degST	-32.591	23.458	-7.095
365	LC 1031	K6:2NL.1#3,Wind / Ice / -5C,-0 degST	-32.155	23.851	-6.755
366	LC 1031	K6:3NL.1#3,Wind / Ice / -5C,-0 degST	-31.532	24.342	-6.401
367	LC 1031	K7:1NL.1#3,Wind / Ice / -5C,-0 degST	-3.610	7.084	-6.521
368	LC 1031	K7:2NL.1#3,Wind / Ice / -5C,-0 degST	-5.128	7.352	-6.613
369	LC 1031	K7:3NL.1#3,Wind / Ice / -5C,-0 degST	-6.479	7.502	-6.707
370	LC 1031	K11:1NL.1#3,Wind / Ice / -5C,-0 degST	0.903	5.136	-0.234
371	LC 1031	K11:2NL.1#3,Wind / Ice / -5C,-0 degST	0.267	5.208	-0.282
372	LC 1031	K12:1NL.1#3,Wind / Ice / -5C,-0 degST	-2.341	4.652	-0.452
373	LC 1032	K4:1NL.1#4,Construction/Maintenance +5C,-0 degST	-2.456	0.054	-0.216
374	LC 1032	K5:1NL.1#4,Construction/Maintenance +5C,-0 degST	-1.173	-2.116	0.007
375	LC 1032	K5:2NL.1#4,Construction/Maintenance +5C,-0 degST	-1.165	-2.121	-0.069
376	LC 1032	K6:1NL.1#4,Construction/Maintenance +5C,-0 degST	-20.918	13.263	-6.516
377	LC 1032	K6:2NL.1#4,Construction/Maintenance +5C,-0 degST	-20.650	13.517	-6.281
378	LC 1032	K6:3NL.1#4,Construction/Maintenance +5C,-0 degST	-20.268	13.829	-6.038
379	LC 1032	K7:1NL.1#4,Construction/Maintenance +5C,-0 degST	-2.942	2.840	-6.077
380	LC 1032	K7:2NL.1#4,Construction/Maintenance +5C,-0 degST	-3.863	3.001	-6.142
381	LC 1032	K7:3NL.1#4,Construction/Maintenance +5C,-0 degST	-4.684	3.091	-6.208
382	LC 1032	K11:1NL.1#4,Construction/Maintenance +5C,-0 degST	0.447	2.541	-0.073
383	LC 1032	K11:2NL.1#4,Construction/Maintenance +5C,-0 degST	0.132	2.576	-0.084
384	LC 1032	K12:1NL.1#4,Construction/Maintenance +5C,-0 degST	-1.176	2.311	-0.177
385	LC 1033	K4:1NL.1#1a,gunstig,Wind/10C,+90 degST	-4.494	-0.949	0.284
386	LC 1033	K5:1NL.1#1a,gunstig,Wind/10C,+90 degST	-2.732	-3.626	0.514
387	LC 1033	K5:2NL.1#1a,gunstig,Wind/10C,+90 degST	-2.775	-3.614	0.423
388	LC 1033	K6:1NL.1#1a,gunstig,Wind/10C,+90 degST	-22.035	8.804	-3.983
389	LC 1033	K6:2NL.1#1a,gunstig,Wind/10C,+90 degST	-21.746	9.079	-3.810
390	LC 1033	K6:3NL.1#1a,gunstig,Wind/10C,+90 degST	-21.365	9.402	-3.630
391	LC 1033	K7:1NL.1#1a,gunstig,Wind/10C,+90 degST	-7.129	0.188	-3.767
392	LC 1033	K7:2NL.1#1a,gunstig,Wind/10C,+90 degST	-7.889	0.311	-3.808
393	LC 1033	K7:3NL.1#1a,gunstig,Wind/10C,+90 degST	-8.571	0.377	-3.849
394	LC 1033	K11:1NL.1#1a,gunstig,Wind/10C,+90 degST	0.412	2.758	-0.056
395	LC 1033	K11:2NL.1#1a,gunstig,Wind/10C,+90 degST	0.049	2.789	-0.060
396	LC 1033	K12:1NL.1#1a,gunstig,Wind/10C,+90 degST	-1.324	2.414	-0.163
397	LC 1034	K4:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-3.327	2.262	-0.160
398	LC 1034	K5:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-1.004	-1.569	0.064
399	LC 1034	K5:2NL.1#1b,gunstig,Wind/-20C,+90 degST	-1.009	-1.569	0.011
400	LC 1034	K6:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-38.981	49.386	-4.322
401	LC 1034	K6:2NL.1#1b,gunstig,Wind/-20C,+90 degST	-38.188	49.917	-4.121
402	LC 1034	K6:3NL.1#1b,gunstig,Wind/-20C,+90 degST	-37.128	50.580	-3.901
403	LC 1034	K7:1NL.1#1b,gunstig,Wind/-20C,+90 degST	3.060	28.164	-4.461
404	LC 1034	K7:2NL.1#1b,gunstig,Wind/-20C,+90 degST	0.698	28.594	-4.501
405	LC 1034	K7:3NL.1#1b,gunstig,Wind/-20C,+90 degST	-1.408	28.842	-4.543

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
406	LC 1034	K11:1NL.1#1b,gunstig,Wind/-20C,+90 degST	0.918	5.303	-0.078
407	LC 1034	K11:2NL.1#1b,gunstig,Wind/-20C,+90 degST	0.256	5.376	-0.077
408	LC 1034	K12:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-2.483	4.819	-0.286
409	LC 1035	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-8.519	-2.350	-0.477
410	LC 1035	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-5.151	-7.622	0.221
411	LC 1035	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-5.195	-7.609	-0.046
412	LC 1035	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-30.783	23.737	-5.168
413	LC 1035	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-30.299	24.135	-4.904
414	LC 1035	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-29.646	24.618	-4.626
415	LC 1035	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-3.608	9.646	-4.823
416	LC 1035	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-5.090	9.905	-4.890
417	LC 1035	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-6.413	10.051	-4.960
418	LC 1035	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	0.835	5.296	-0.216
419	LC 1035	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	0.150	5.360	-0.257
420	LC 1035	K12:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-2.510	4.676	-0.435
421	LC 1036	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-2.047	0.284	-0.110
422	LC 1036	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-0.958	-1.485	0.047
423	LC 1036	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-0.963	-1.484	-0.004
424	LC 1036	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-16.584	12.460	-4.757
425	LC 1036	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-16.334	12.670	-4.603
426	LC 1036	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-15.992	12.927	-4.443
427	LC 1036	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-1.876	5.128	-4.527
428	LC 1036	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-2.691	5.271	-4.568
429	LC 1036	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-3.418	5.351	-4.609
430	LC 1036	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	0.394	2.321	-0.052
431	LC 1036	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	0.102	2.352	-0.057
432	LC 1036	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-1.092	2.100	-0.145
433	LC 1037	K4:1NL.1#1a,gunstig,Wind/10C,-90 degST	-3.049	-1.468	0.284
434	LC 1037	K5:1NL.1#1a,gunstig,Wind/10C,-90 degST	-1.572	-4.259	0.514
435	LC 1037	K5:2NL.1#1a,gunstig,Wind/10C,-90 degST	-1.501	-4.302	0.423
436	LC 1037	K6:1NL.1#1a,gunstig,Wind/10C,-90 degST	-14.869	7.569	-3.983
437	LC 1037	K6:2NL.1#1a,gunstig,Wind/10C,-90 degST	-14.743	7.741	-3.810
438	LC 1037	K6:3NL.1#1a,gunstig,Wind/10C,-90 degST	-14.525	7.960	-3.630
439	LC 1037	K7:1NL.1#1a,gunstig,Wind/10C,-90 degST	-0.598	-1.795	-3.767
440	LC 1037	K7:2NL.1#1a,gunstig,Wind/10C,-90 degST	-1.258	-1.673	-3.808
441	LC 1037	K7:3NL.1#1a,gunstig,Wind/10C,-90 degST	-1.839	-1.607	-3.849
442	LC 1037	K11:1NL.1#1a,gunstig,Wind/10C,-90 degST	0.553	2.733	-0.056
443	LC 1037	K11:2NL.1#1a,gunstig,Wind/10C,-90 degST	0.236	2.779	-0.060
444	LC 1037	K12:1NL.1#1a,gunstig,Wind/10C,-90 degST	-1.183	2.487	-0.163
445	LC 1038	K4:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-3.043	2.160	-0.160
446	LC 1038	K5:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-0.777	-1.694	0.064
447	LC 1038	K5:2NL.1#1b,gunstig,Wind/-20C,-90 degST	-0.759	-1.704	0.011
448	LC 1038	K6:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-37.572	49.144	-4.322
449	LC 1038	K6:2NL.1#1b,gunstig,Wind/-20C,-90 degST	-36.810	49.654	-4.121
450	LC 1038	K6:3NL.1#1b,gunstig,Wind/-20C,-90 degST	-35.783	50.297	-3.901
451	LC 1038	K7:1NL.1#1b,gunstig,Wind/-20C,-90 degST	4.344	27.775	-4.461
452	LC 1038	K7:2NL.1#1b,gunstig,Wind/-20C,-90 degST	2.002	28.204	-4.501
453	LC 1038	K7:3NL.1#1b,gunstig,Wind/-20C,-90 degST	-0.085	28.452	-4.543
454	LC 1038	K11:1NL.1#1b,gunstig,Wind/-20C,-90 degST	0.946	5.298	-0.078
455	LC 1038	K11:2NL.1#1b,gunstig,Wind/-20C,-90 degST	0.293	5.374	-0.077
456	LC 1038	K12:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-2.455	4.833	-0.286
457	LC 1039	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-6.615	-3.034	-0.477
458	LC 1039	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-3.623	-8.455	0.221
459	LC 1039	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-3.517	-8.516	-0.046
460	LC 1039	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-27.470	23.061	-5.168
461	LC 1039	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-27.076	23.402	-4.904
462	LC 1039	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-26.512	23.828	-4.626
463	LC 1039	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-0.645	8.559	-4.823
464	LC 1039	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-2.072	8.818	-4.890
465	LC 1039	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-3.340	8.963	-4.960
466	LC 1039	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	1.021	5.263	-0.216
467	LC 1039	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	0.397	5.347	-0.257
468	LC 1040	K12:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-2.323	4.772	-0.435
469	LC 1040	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-1.763	0.182	-0.110
470	LC 1040	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-0.730	-1.609	0.047
471	LC 1040	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-0.713	-1.619	-0.004
472	LC 1040	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-15.175	12.218	-4.757
473	LC 1040	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-14.957	12.408	-4.603
474	LC 1040	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-14.647	12.644	-4.443
475	LC 1040	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-0.592	4.738	-4.527
476	LC 1040	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-1.387	4.881	-4.568
477	LC 1040	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-2.094	4.962	-4.609
478	LC 1040	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	0.422	2.316	-0.052
479	LC 1040	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	0.139	2.350	-0.057
480	LC 1040	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-1.064	2.115	-0.145
481	LC 1041	K4:1NL.1#1a,gunstig,Wind/10C,+45 degST	-2.650	1.214	-0.150
482	LC 1041	K5:1NL.1#1a,gunstig,Wind/10C,+45 degST	-0.908	-1.430	0.035
483	LC 1041	K5:2NL.1#1a,gunstig,Wind/10C,+45 degST	-0.917	-1.434	-0.014
484	LC 1041	K6:1NL.1#1a,gunstig,Wind/10C,+45 degST	-17.731	12.395	-4.782
485	LC 1041	K6:2NL.1#1a,gunstig,Wind/10C,+45 degST	-17.414	12.646	-4.631
486	LC 1041	K6:3NL.1#1a,gunstig,Wind/10C,+45 degST	-17.006	12.943	-4.473

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
487	LC 1041	K7:1NL.1#1a,gunstig,Wind/10C,+45 degST	-3.232	2.384	-4.545
488	LC 1041	K7:2NL.1#1a,gunstig,Wind/10C,+45 degST	-3.866	2.605	-4.585
489	LC 1041	K7:3NL.1#1a,gunstig,Wind/10C,+45 degST	-4.442	2.817	-4.626
490	LC 1041	K11:1NL.1#1a,gunstig,Wind/10C,+45 degST	0.337	2.111	-0.050
491	LC 1041	K11:2NL.1#1a,gunstig,Wind/10C,+45 degST	0.061	2.277	-0.057
492	LC 1041	K12:1NL.1#1a,gunstig,Wind/10C,+45 degST	-1.307	2.386	-0.161
493	LC 1042	K4:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-3.117	2.414	-0.197
494	LC 1042	K5:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.797	-1.415	0.023
495	LC 1042	K5:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.794	-1.418	-0.025
496	LC 1042	K6:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-38.505	49.482	-4.366
497	LC 1042	K6:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-37.711	50.010	-4.167
498	LC 1042	K6:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-36.651	50.670	-3.948
499	LC 1042	K7:1NL.1#1b,gunstig,Wind/-20C,+45 degST	3.551	28.256	-4.503
500	LC 1042	K7:2NL.1#1b,gunstig,Wind/-20C,+45 degST	1.192	28.685	-4.544
501	LC 1042	K7:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.911	28.934	-4.585
502	LC 1042	K11:1NL.1#1b,gunstig,Wind/-20C,+45 degST	0.926	5.302	-0.078
503	LC 1042	K11:2NL.1#1b,gunstig,Wind/-20C,+45 degST	0.264	5.376	-0.077
504	LC 1042	K12:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-2.483	4.819	-0.286
505	LC 1043	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-7.112	-1.360	-0.717
506	LC 1043	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.773	-6.604	-0.044
507	LC 1043	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.761	-6.613	-0.288
508	LC 1043	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-29.312	24.369	-5.356
509	LC 1043	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-28.825	24.756	-5.097
510	LC 1043	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-28.166	25.233	-4.825
511	LC 1043	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-2.144	10.056	-5.006
512	LC 1043	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.592	10.391	-5.074
513	LC 1043	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-4.898	10.537	-5.143
514	LC 1043	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	0.836	5.007	-0.213
515	LC 1043	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	0.189	5.119	-0.256
516	LC 1043	K12:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-2.499	4.660	-0.434
517	LC 1044	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.839	0.420	-0.144
518	LC 1044	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.756	-1.340	0.009
519	LC 1044	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.753	-1.343	-0.039
520	LC 1044	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-16.118	12.539	-4.798
521	LC 1044	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-15.867	12.746	-4.646
522	LC 1044	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-15.525	13.000	-4.486
523	LC 1044	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.408	5.130	-4.567
524	LC 1044	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.215	5.272	-4.608
525	LC 1044	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.934	5.352	-4.649
526	LC 1044	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	0.394	2.281	-0.052
527	LC 1044	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	0.107	2.312	-0.057
528	LC 1044	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.092	2.101	-0.145
529	LC 1045	K4:1NL.1#1a,gunstig,Wind/10C,+45 degST	-2.214	1.238	-0.150
530	LC 1045	K5:1NL.1#1a,gunstig,Wind/10C,+45 degST	-0.711	-1.538	0.035
531	LC 1045	K5:2NL.1#1a,gunstig,Wind/10C,+45 degST	-0.697	-1.553	-0.014
532	LC 1045	K6:1NL.1#1a,gunstig,Wind/10C,+45 degST	-13.970	12.769	-4.782
533	LC 1045	K6:2NL.1#1a,gunstig,Wind/10C,+45 degST	-13.803	12.934	-4.631
534	LC 1045	K6:3NL.1#1a,gunstig,Wind/10C,+45 degST	-13.545	13.146	-4.473
535	LC 1045	K7:1NL.1#1a,gunstig,Wind/10C,+45 degST	-0.372	2.002	-4.545
536	LC 1045	K7:2NL.1#1a,gunstig,Wind/10C,+45 degST	-0.943	2.221	-4.585
537	LC 1045	K7:3NL.1#1a,gunstig,Wind/10C,+45 degST	-1.455	2.434	-4.626
538	LC 1045	K11:1NL.1#1a,gunstig,Wind/10C,+45 degST	0.403	2.099	-0.050
539	LC 1045	K11:2NL.1#1a,gunstig,Wind/10C,+45 degST	0.171	2.271	-0.057
540	LC 1045	K12:1NL.1#1a,gunstig,Wind/10C,+45 degST	-1.170	2.456	-0.161
541	LC 1046	K4:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-3.031	2.419	-0.197
542	LC 1046	K5:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.758	-1.436	0.023
543	LC 1046	K5:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.750	-1.441	-0.025
544	LC 1046	K6:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-37.765	49.556	-4.366
545	LC 1046	K6:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-37.000	50.067	-4.167
546	LC 1046	K6:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-35.970	50.710	-3.948
547	LC 1046	K7:1NL.1#1b,gunstig,Wind/-20C,+45 degST	4.114	28.180	-4.503
548	LC 1046	K7:2NL.1#1b,gunstig,Wind/-20C,+45 degST	1.768	28.610	-4.544
549	LC 1046	K7:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-0.322	28.859	-4.585
550	LC 1046	K11:1NL.1#1b,gunstig,Wind/-20C,+45 degST	0.938	5.300	-0.078
551	LC 1046	K11:2NL.1#1b,gunstig,Wind/-20C,+45 degST	0.286	5.375	-0.077
552	LC 1046	K12:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-2.456	4.833	-0.286
553	LC 1047	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-6.535	-1.329	-0.717
554	LC 1047	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.513	-6.746	-0.044
555	LC 1047	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.470	-6.770	-0.288
556	LC 1047	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-27.746	24.575	-5.356
557	LC 1047	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-27.341	24.915	-5.097
558	LC 1047	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-26.764	25.345	-4.825
559	LC 1047	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-1.073	9.846	-5.006
560	LC 1047	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-2.486	10.180	-5.074
561	LC 1047	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-3.757	10.327	-5.143
562	LC 1047	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	0.922	4.991	-0.213
563	LC 1047	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	0.334	5.112	-0.256
564	LC 1047	K12:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-2.317	4.753	-0.434
565	LC 1048	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.753	0.425	-0.144
566	LC 1048	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.718	-1.361	0.009
567	LC 1048	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.710	-1.366	-0.039

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
568	LC 1048	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-15.377	12.613	-4.798
569	LC 1048	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-15.156	12.803	-4.646
570	LC 1048	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-14.843	13.040	-4.486
571	LC 1048	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-0.845	5.054	-4.567
572	LC 1048	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.639	5.197	-4.608
573	LC 1048	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.346	5.277	-4.649
574	LC 1048	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	0.407	2.278	-0.052
575	LC 1048	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	0.129	2.311	-0.057
576	LC 1048	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-1.065	2.114	-0.145
577	LC 1049	K4:1NL.1#1a,gunstig,Wind/10C,-45 degST	-3.190	-1.664	0.224
578	LC 1049	K5:1NL.1#1a,gunstig,Wind/10C,-45 degST	-2.325	-3.117	0.404
579	LC 1049	K5:2NL.1#1a,gunstig,Wind/10C,-45 degST	-2.353	-3.097	0.320
580	LC 1049	K6:1NL.1#1a,gunstig,Wind/10C,-45 degST	-17.329	5.637	-4.235
581	LC 1049	K6:2NL.1#1a,gunstig,Wind/10C,-45 degST	-17.194	5.788	-4.066
582	LC 1049	K6:3NL.1#1a,gunstig,Wind/10C,-45 degST	-16.989	5.976	-3.890
583	LC 1049	K7:1NL.1#1a,gunstig,Wind/10C,-45 degST	-5.790	0.096	-3.993
584	LC 1049	K7:2NL.1#1a,gunstig,Wind/10C,-45 degST	-6.461	0.058	-4.035
585	LC 1049	K7:3NL.1#1a,gunstig,Wind/10C,-45 degST	-7.038	-0.022	-4.079
586	LC 1049	K11:1NL.1#1a,gunstig,Wind/10C,-45 degST	0.346	2.190	-0.051
587	LC 1049	K11:2NL.1#1a,gunstig,Wind/10C,-45 degST	0.068	2.077	-0.056
588	LC 1049	K12:1NL.1#1a,gunstig,Wind/10C,-45 degST	-0.828	1.613	-0.120
589	LC 1050	K4:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-3.222	2.283	-0.170
590	LC 1050	K5:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.950	-1.517	0.051
591	LC 1050	K5:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.952	-1.516	-0.001
592	LC 1050	K6:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-38.669	49.502	-4.336
593	LC 1050	K6:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-37.892	50.020	-4.135
594	LC 1050	K6:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-36.849	50.670	-3.914
595	LC 1050	K7:1NL.1#1b,gunstig,Wind/-20C,-45 degST	3.283	28.211	-4.475
596	LC 1050	K7:2NL.1#1b,gunstig,Wind/-20C,-45 degST	0.930	28.645	-4.516
597	LC 1050	K7:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-1.170	28.893	-4.558
598	LC 1050	K11:1NL.1#1b,gunstig,Wind/-20C,-45 degST	0.925	5.302	-0.078
599	LC 1050	K11:2NL.1#1b,gunstig,Wind/-20C,-45 degST	0.267	5.375	-0.077
600	LC 1050	K12:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-2.464	4.815	-0.285
601	LC 1051	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-7.721	-2.411	-0.534
602	LC 1051	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-4.800	-7.289	0.142
603	LC 1051	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-4.826	-7.275	-0.119
604	LC 1051	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-29.581	23.489	-5.231
605	LC 1051	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-29.151	23.847	-4.967
606	LC 1051	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-28.554	24.290	-4.691
607	LC 1051	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-3.075	9.747	-4.884
608	LC 1051	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-4.528	10.008	-4.952
609	LC 1051	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-5.832	10.075	-5.021
610	LC 1051	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	0.834	5.034	-0.213
611	LC 1051	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	0.207	5.052	-0.255
612	LC 1051	K12:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-2.257	4.405	-0.418
613	LC 1052	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.910	0.244	-0.117
614	LC 1052	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.906	-1.435	0.035
615	LC 1052	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.908	-1.434	-0.015
616	LC 1052	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-16.118	12.299	-4.772
617	LC 1052	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-15.886	12.498	-4.619
618	LC 1052	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-15.563	12.743	-4.459
619	LC 1052	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.674	5.089	-4.540
620	LC 1052	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-2.476	5.236	-4.581
621	LC 1052	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-3.192	5.316	-4.623
622	LC 1052	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	0.393	2.281	-0.052
623	LC 1052	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	0.110	2.299	-0.057
624	LC 1052	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.055	2.060	-0.143
625	LC 1053	K4:1NL.1#1a,gunstig,Wind/10C,-45 degST	-2.183	-2.207	0.224
626	LC 1053	K5:1NL.1#1a,gunstig,Wind/10C,-45 degST	-1.363	-3.642	0.404
627	LC 1053	K5:2NL.1#1a,gunstig,Wind/10C,-45 degST	-1.301	-3.666	0.320
628	LC 1053	K6:1NL.1#1a,gunstig,Wind/10C,-45 degST	-12.884	4.030	-4.235
629	LC 1053	K6:2NL.1#1a,gunstig,Wind/10C,-45 degST	-12.763	4.163	-4.066
630	LC 1053	K6:3NL.1#1a,gunstig,Wind/10C,-45 degST	-12.570	4.333	-3.890
631	LC 1053	K7:1NL.1#1a,gunstig,Wind/10C,-45 degST	-1.081	-1.504	-3.993
632	LC 1053	K7:2NL.1#1a,gunstig,Wind/10C,-45 degST	-1.714	-1.541	-4.035
633	LC 1053	K7:3NL.1#1a,gunstig,Wind/10C,-45 degST	-2.254	-1.622	-4.079
634	LC 1053	K11:1NL.1#1a,gunstig,Wind/10C,-45 degST	0.421	2.177	-0.051
635	LC 1053	K11:2NL.1#1a,gunstig,Wind/10C,-45 degST	0.145	2.073	-0.056
636	LC 1053	K12:1NL.1#1a,gunstig,Wind/10C,-45 degST	-0.823	1.615	-0.120
637	LC 1054	K4:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-3.025	2.177	-0.170
638	LC 1054	K5:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.762	-1.620	0.051
639	LC 1054	K5:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.746	-1.628	-0.001
640	LC 1054	K6:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-37.795	49.187	-4.336
641	LC 1054	K6:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-37.021	49.701	-4.135
642	LC 1054	K6:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-35.981	50.347	-3.914
643	LC 1054	K7:1NL.1#1b,gunstig,Wind/-20C,-45 degST	4.209	27.897	-4.475
644	LC 1054	K7:2NL.1#1b,gunstig,Wind/-20C,-45 degST	1.863	28.331	-4.516
645	LC 1054	K7:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-0.230	28.579	-4.558
646	LC 1054	K11:1NL.1#1b,gunstig,Wind/-20C,-45 degST	0.939	5.299	-0.078
647	LC 1054	K11:2NL.1#1b,gunstig,Wind/-20C,-45 degST	0.282	5.375	-0.077
648	LC 1054	K12:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-2.463	4.815	-0.285

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
649	LC 1055	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-6.395	-3.126	-0.534
650	LC 1055	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-3.533	-7.981	0.142
651	LC 1055	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-3.440	-8.024	-0.119
652	LC 1055	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-27.519	22.608	-5.231
653	LC 1055	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-27.096	22.956	-4.967
654	LC 1055	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-26.507	23.389	-4.691
655	LC 1055	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-0.868	8.869	-4.884
656	LC 1055	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-2.301	9.131	-4.952
657	LC 1055	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-3.585	9.198	-5.021
658	LC 1055	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	0.933	5.016	-0.213
659	LC 1055	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	0.309	5.047	-0.255
660	LC 1055	K12:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-2.252	4.408	-0.418
661	LC 1056	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.712	0.137	-0.117
662	LC 1056	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.717	-1.538	0.035
663	LC 1056	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.702	-1.546	-0.015
664	LC 1056	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-15.244	11.984	-4.772
665	LC 1056	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-15.014	12.179	-4.619
666	LC 1056	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-14.694	12.421	-4.459
667	LC 1056	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-0.748	4.775	-4.540
668	LC 1056	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.542	4.922	-4.581
669	LC 1056	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-2.251	5.002	-4.623
670	LC 1056	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	0.408	2.278	-0.052
671	LC 1056	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	0.125	2.298	-0.057
672	LC 1056	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-1.054	2.061	-0.143
673	LC 1057	K4:1NL.1#1a,gunstig,Wind/10C,+0 degST	-1.808	0.307	-0.134
674	LC 1057	K5:1NL.1#1a,gunstig,Wind/10C,+0 degST	-0.700	-1.454	0.021
675	LC 1057	K5:2NL.1#1a,gunstig,Wind/10C,+0 degST	-0.687	-1.455	-0.028
676	LC 1057	K6:1NL.1#1a,gunstig,Wind/10C,+0 degST	-13.889	8.821	-4.827
677	LC 1057	K6:2NL.1#1a,gunstig,Wind/10C,+0 degST	-13.671	8.999	-4.677
678	LC 1057	K6:3NL.1#1a,gunstig,Wind/10C,+0 degST	-13.321	9.112	-4.523
679	LC 1057	K7:1NL.1#1a,gunstig,Wind/10C,+0 degST	-1.807	1.753	-4.567
680	LC 1057	K7:2NL.1#1a,gunstig,Wind/10C,+0 degST	-2.394	1.857	-4.607
681	LC 1057	K7:3NL.1#1a,gunstig,Wind/10C,+0 degST	-2.917	1.914	-4.649
682	LC 1057	K11:1NL.1#1a,gunstig,Wind/10C,+0 degST	0.314	1.785	-0.048
683	LC 1057	K11:2NL.1#1a,gunstig,Wind/10C,+0 degST	0.092	1.810	-0.054
684	LC 1057	K12:1NL.1#1a,gunstig,Wind/10C,+0 degST	-0.930	1.760	-0.128
685	LC 1058	K4:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-3.046	2.373	-0.196
686	LC 1058	K5:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-0.762	-1.430	0.023
687	LC 1058	K5:2NL.1#1b,gunstig,Wind/-20C+,0 degST	-0.755	-1.434	-0.026
688	LC 1058	K6:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-38.171	49.468	-4.366
689	LC 1058	K6:2NL.1#1b,gunstig,Wind/-20C+,0 degST	-37.385	49.990	-4.167
690	LC 1058	K6:3NL.1#1b,gunstig,Wind/-20C+,0 degST	-36.332	50.645	-3.948
691	LC 1058	K7:1NL.1#1b,gunstig,Wind/-20C+,0 degST	3.843	28.205	-4.505
692	LC 1058	K7:2NL.1#1b,gunstig,Wind/-20C+,0 degST	1.490	28.635	-4.545
693	LC 1058	K7:3NL.1#1b,gunstig,Wind/-20C+,0 degST	-0.606	28.883	-4.586
694	LC 1058	K11:1NL.1#1b,gunstig,Wind/-20C+,0 degST	0.932	5.301	-0.078
695	LC 1058	K11:2NL.1#1b,gunstig,Wind/-20C+,0 degST	0.275	5.375	-0.077
696	LC 1058	K12:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-2.468	4.813	-0.285
697	LC 1059	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-6.538	-1.801	-0.708
698	LC 1059	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-3.536	-6.705	-0.048
699	LC 1059	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-3.501	-6.723	-0.292
700	LC 1059	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-28.260	23.804	-5.364
701	LC 1059	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-27.804	24.168	-5.104
702	LC 1059	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-27.178	24.621	-4.832
703	LC 1059	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-1.535	9.917	-5.010
704	LC 1059	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-2.978	10.174	-5.078
705	LC 1059	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-4.262	10.320	-5.147
706	LC 1059	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	0.864	4.914	-0.212
707	LC 1059	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	0.254	4.983	-0.255
708	LC 1059	K12:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-2.306	4.432	-0.420
709	LC 1060	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-1.741	0.332	-0.142
710	LC 1060	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-0.721	-1.356	0.008
711	LC 1060	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-0.715	-1.359	-0.039
712	LC 1060	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-15.664	12.323	-4.800
713	LC 1060	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-15.424	12.524	-4.648
714	LC 1060	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-15.093	12.770	-4.489
715	LC 1060	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-1.116	5.079	-4.569
716	LC 1060	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-1.917	5.222	-4.609
717	LC 1060	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-2.630	5.302	-4.651
718	LC 1060	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	0.399	2.267	-0.052
719	LC 1060	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	0.117	2.298	-0.057
720	LC 1060	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-1.059	2.058	-0.143
721	LC 1061	K4:1NL.1#1a,gunstig,Wind/10C,-0 degST	-1.865	0.441	-0.134
722	LC 1061	K5:1NL.1#1a,gunstig,Wind/10C,-0 degST	-0.844	-1.375	0.021
723	LC 1061	K5:2NL.1#1a,gunstig,Wind/10C,-0 degST	-0.841	-1.372	-0.028
724	LC 1061	K6:1NL.1#1a,gunstig,Wind/10C,-0 degST	-13.524	9.343	-4.827
725	LC 1061	K6:2NL.1#1a,gunstig,Wind/10C,-0 degST	-13.381	9.488	-4.677
726	LC 1061	K6:3NL.1#1a,gunstig,Wind/10C,-0 degST	-13.106	9.568	-4.523
727	LC 1061	K7:1NL.1#1a,gunstig,Wind/10C,-0 degST	-1.865	1.970	-4.567
728	LC 1061	K7:2NL.1#1a,gunstig,Wind/10C,-0 degST	-2.453	2.073	-4.607
729	LC 1061	K7:3NL.1#1a,gunstig,Wind/10C,-0 degST	-2.976	2.130	-4.649

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
730	LC 1061	K11:1NL.1#1a,gunstig,Wind/10C,-0 degST	0.314	1.785	-0.048
731	LC 1061	K11:2NL.1#1a,gunstig,Wind/10C,-0 degST	0.093	1.810	-0.054
732	LC 1061	K12:1NL.1#1a,gunstig,Wind/10C,-0 degST	-0.883	1.784	-0.128
733	LC 1062	K4:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-3.057	2.399	-0.196
734	LC 1062	K5:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-0.790	-1.415	0.023
735	LC 1062	K5:2NL.1#1b,gunstig,Wind/-20C,-0 degST	-0.785	-1.418	-0.026
736	LC 1062	K6:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-38.099	49.571	-4.366
737	LC 1062	K6:2NL.1#1b,gunstig,Wind/-20C,-0 degST	-37.327	50.086	-4.167
738	LC 1062	K6:3NL.1#1b,gunstig,Wind/-20C,-0 degST	-36.289	50.735	-3.948
739	LC 1062	K7:1NL.1#1b,gunstig,Wind/-20C,-0 degST	3.831	28.248	-4.505
740	LC 1062	K7:2NL.1#1b,gunstig,Wind/-20C,-0 degST	1.479	28.677	-4.545
741	LC 1062	K7:3NL.1#1b,gunstig,Wind/-20C,-0 degST	-0.618	28.926	-4.586
742	LC 1062	K11:1NL.1#1b,gunstig,Wind/-20C,-0 degST	0.932	5.301	-0.078
743	LC 1062	K11:2NL.1#1b,gunstig,Wind/-20C,-0 degST	0.275	5.375	-0.077
744	LC 1062	K12:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-2.459	4.817	-0.285
745	LC 1063	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-6.613	-1.623	-0.708
746	LC 1063	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-3.726	-6.602	-0.048
747	LC 1063	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-3.704	-6.613	-0.292
748	LC 1063	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-28.147	24.091	-5.364
749	LC 1063	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-27.731	24.437	-5.104
750	LC 1063	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-27.146	24.871	-4.832
751	LC 1063	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-1.655	10.036	-5.010
752	LC 1063	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-3.097	10.293	-5.078
753	LC 1063	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-4.382	10.439	-5.147
754	LC 1063	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	0.864	4.914	-0.212
755	LC 1063	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	0.256	4.983	-0.255
756	LC 1063	K12:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-2.245	4.464	-0.420
757	LC 1064	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-1.752	0.359	-0.142
758	LC 1064	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-0.750	-1.340	0.008
759	LC 1064	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-0.745	-1.343	-0.039
760	LC 1064	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-15.592	12.426	-4.800
761	LC 1064	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-15.367	12.620	-4.648
762	LC 1064	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-15.050	12.860	-4.489
763	LC 1064	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-1.128	5.122	-4.569
764	LC 1064	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-1.928	5.264	-4.609
765	LC 1064	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-2.641	5.345	-4.651
766	LC 1064	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	0.398	2.267	-0.052
767	LC 1064	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	0.118	2.298	-0.057
768	LC 1064	K12:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-1.050	2.063	-0.143
769	LC 1065	K4:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-0.001	-0.001	-2.000
770	LC 1065	K5:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-0.961	-1.761	0.004
771	LC 1065	K5:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-0.954	-1.765	-0.051
772	LC 1065	K6:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-16.275	9.116	-5.465
773	LC 1065	K6:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-16.073	9.313	-5.298
774	LC 1065	K6:3NL.1#5a,Break Shield wire 1, Ahead,+10CST	-15.786	9.555	-5.124
775	LC 1065	K7:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-2.732	0.964	-5.131
776	LC 1065	K7:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-3.405	1.081	-5.178
777	LC 1065	K7:3NL.1#5a,Break Shield wire 1, Ahead,+10CST	-4.004	1.145	-5.226
778	LC 1065	K11:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	0.347	1.975	-0.052
779	LC 1065	K11:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	0.102	2.002	-0.060
780	LC 1065	K12:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-0.916	1.791	-0.122
781	LC 1066	K4:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-1.987	-0.041	-0.156
782	LC 1066	K5:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-0.001	-0.001	-1.000
783	LC 1066	K5:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-0.954	-1.765	-0.051
784	LC 1066	K6:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-16.275	9.116	-5.465
785	LC 1066	K6:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-16.073	9.313	-5.298
786	LC 1066	K6:3NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-15.786	9.555	-5.124
787	LC 1066	K7:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-2.732	0.964	-5.131
788	LC 1066	K7:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-3.405	1.081	-5.178
789	LC 1066	K7:3NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-4.004	1.145	-5.226
790	LC 1066	K11:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	0.347	1.975	-0.052
791	LC 1066	K11:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	0.102	2.002	-0.060
792	LC 1066	K12:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-0.916	1.791	-0.122
793	LC 1067	K4:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-1.987	-0.041	-0.156
794	LC 1067	K5:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-0.961	-1.761	0.004
795	LC 1067	K5:2NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-0.001	-0.001	-1.000
796	LC 1067	K6:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-16.275	9.116	-5.465
797	LC 1067	K6:2NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-16.073	9.313	-5.298
798	LC 1067	K6:3NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-15.786	9.555	-5.124
799	LC 1067	K7:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-2.732	0.964	-5.131
800	LC 1067	K7:2NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-3.405	1.081	-5.178
801	LC 1067	K7:3NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-4.004	1.145	-5.226
802	LC 1067	K11:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	0.347	1.975	-0.052
803	LC 1067	K11:2NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	0.102	2.002	-0.060
804	LC 1067	K12:1NL.1#5a,Break Shieldwire 3 , Ahead,+10CST	-0.916	1.791	-0.122
805	LC 1068	K4:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-1.987	-0.041	-0.156
806	LC 1068	K5:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-0.961	-1.761	0.004
807	LC 1068	K5:2NL.1#5a,Break Shield wire 4, Ahead,+10CST	-0.954	-1.765	-0.051
808	LC 1068	K6:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-16.275	9.116	-5.465
809	LC 1068	K6:2NL.1#5a,Break Shield wire 4, Ahead,+10CST	-16.073	9.313	-5.298
810	LC 1068	K6:3NL.1#5a,Break Shield wire 4, Ahead,+10CST	-15.786	9.555	-5.124

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
811	LC 1068	K7:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-2.732	0.964	-5.131
812	LC 1068	K7:2NL.1#5a,Break Shield wire 4, Ahead,+10CST	-3.405	1.081	-5.178
813	LC 1068	K7:3NL.1#5a,Break Shield wire 4, Ahead,+10CST	-4.004	1.145	-5.226
814	LC 1068	K11:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	0.347	1.975	-0.052
815	LC 1068	K11:2NL.1#5a,Break Shield wire 4, Ahead,+10CST	0.102	2.002	-0.060
816	LC 1068	K12:1NL.1#5a,Break Shield wire 4, Ahead,+10CST	-0.001	-0.001	-1.000
817	LC 1069	K4:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-1.987	-0.041	-0.156
818	LC 1069	K5:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-0.961	-1.761	0.004
819	LC 1069	K5:2NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-0.954	-1.765	-0.051
820	LC 1069	K6:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-16.275	9.116	-5.465
821	LC 1069	K6:2NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-16.073	9.313	-5.298
822	LC 1069	K6:3NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-15.786	9.555	-5.124
823	LC 1069	K7:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-2.732	0.964	-5.131
824	LC 1069	K7:2NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-3.405	1.081	-5.178
825	LC 1069	K7:3NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-4.004	1.145	-5.226
826	LC 1069	K11:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-0.001	-0.001	-1.000
827	LC 1069	K11:2NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	0.102	2.002	-0.060
828	LC 1069	K12:1NL.1#5a,Break Shieldwire 5 , Ahead,+10CST	-0.916	1.791	-0.122
829	LC 1070	K4:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-1.987	-0.041	-0.156
830	LC 1070	K5:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-0.961	-1.761	0.004
831	LC 1070	K5:2NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-0.954	-1.765	-0.051
832	LC 1070	K6:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-16.275	9.116	-5.465
833	LC 1070	K6:2NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-16.073	9.313	-5.298
834	LC 1070	K6:3NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-15.786	9.555	-5.124
835	LC 1070	K7:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-2.732	0.964	-5.131
836	LC 1070	K7:2NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-3.405	1.081	-5.178
837	LC 1070	K7:3NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-4.004	1.145	-5.226
838	LC 1070	K11:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	0.347	1.975	-0.052
839	LC 1070	K11:2NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-0.001	-0.001	-1.000
840	LC 1070	K12:1NL.1#5a,Break Shieldwire 6 , Ahead,+10CST	-0.916	1.791	-0.122
841	LC 1071	K4:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-1.987	-0.041	-0.156
842	LC 1071	K5:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-0.961	-1.761	0.004
843	LC 1071	K5:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-0.954	-1.765	-0.051
844	LC 1071	K6:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-16.275	9.116	-5.465
845	LC 1071	K6:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-16.073	9.313	-5.298
846	LC 1071	K6:3NL.1#5a,Break Conductor 1, Ahead,+10CST	-15.786	9.555	-5.124
847	LC 1071	K7:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-0.001	-0.001	-2.000
848	LC 1071	K7:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-3.405	1.081	-5.178
849	LC 1071	K7:3NL.1#5a,Break Conductor 1, Ahead,+10CST	-4.004	1.145	-5.226
850	LC 1071	K11:1NL.1#5a,Break Conductor 1, Ahead,+10CST	0.347	1.975	-0.052
851	LC 1071	K11:2NL.1#5a,Break Conductor 1, Ahead,+10CST	0.102	2.002	-0.060
852	LC 1071	K12:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-0.916	1.791	-0.122
853	LC 1072	K4:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-1.987	-0.041	-0.156
854	LC 1072	K5:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-0.961	-1.761	0.004
855	LC 1072	K5:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	-0.954	-1.765	-0.051
856	LC 1072	K6:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-16.275	9.116	-5.465
857	LC 1072	K6:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	-16.073	9.313	-5.298
858	LC 1072	K6:3NL.1#5a,Break Conductor 2 , Ahead,+10CST	-15.786	9.555	-5.124
859	LC 1072	K7:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-2.732	0.964	-5.131
860	LC 1072	K7:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	-0.001	-0.001	-2.000
861	LC 1072	K7:3NL.1#5a,Break Conductor 2 , Ahead,+10CST	-4.004	1.145	-5.226
862	LC 1072	K11:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	0.347	1.975	-0.052
863	LC 1072	K11:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	0.102	2.002	-0.060
864	LC 1072	K12:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-0.916	1.791	-0.122
865	LC 1073	K4:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-1.987	-0.041	-0.156
866	LC 1073	K5:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-0.961	-1.761	0.004
867	LC 1073	K5:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-0.954	-1.765	-0.051
868	LC 1073	K6:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-16.275	9.116	-5.465
869	LC 1073	K6:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-16.073	9.313	-5.298
870	LC 1073	K6:3NL.1#5a,Break Conductor 3 , Ahead,+10CST	-15.786	9.555	-5.124
871	LC 1073	K7:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-2.732	0.964	-5.131
872	LC 1073	K7:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-3.405	1.081	-5.178
873	LC 1073	K7:3NL.1#5a,Break Conductor 3 , Ahead,+10CST	-0.001	-0.001	-2.000
874	LC 1073	K11:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	0.347	1.975	-0.052
875	LC 1073	K11:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	0.102	2.002	-0.060
876	LC 1073	K12:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-0.916	1.791	-0.122
877	LC 1074	K4:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-1.987	-0.041	-0.156
878	LC 1074	K5:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-0.961	-1.761	0.004
879	LC 1074	K5:2NL.1#5a,Break Conductor 4, Ahead,+10CST	-0.954	-1.765	-0.051
880	LC 1074	K6:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-5.508	9.280	-4.488
881	LC 1074	K6:2NL.1#5a,Break Conductor 4, Ahead,+10CST	-16.073	9.313	-5.298
882	LC 1074	K6:3NL.1#5a,Break Conductor 4, Ahead,+10CST	-15.786	9.555	-5.124
883	LC 1074	K7:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-2.732	0.964	-5.131
884	LC 1074	K7:2NL.1#5a,Break Conductor 4, Ahead,+10CST	-3.405	1.081	-5.178
885	LC 1074	K7:3NL.1#5a,Break Conductor 4, Ahead,+10CST	-4.004	1.145	-5.226
886	LC 1074	K11:1NL.1#5a,Break Conductor 4, Ahead,+10CST	0.347	1.975	-0.052
887	LC 1074	K11:2NL.1#5a,Break Conductor 4, Ahead,+10CST	0.102	2.002	-0.060
888	LC 1074	K12:1NL.1#5a,Break Conductor 4, Ahead,+10CST	-0.916	1.791	-0.122
889	LC 1075	K4:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-1.987	-0.041	-0.156
890	LC 1075	K5:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-0.961	-1.761	0.004
891	LC 1075	K5:2NL.1#5a,Break Conductor 5, Ahead,+10CST	-0.954	-1.765	-0.051

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
892	LC 1075	K6:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-16.275	9.116	-5.465
893	LC 1075	K6:2NL.1#5a,Break Conductor 5, Ahead,+10CST	-5.372	9.360	-4.432
894	LC 1075	K6:3NL.1#5a,Break Conductor 5, Ahead,+10CST	-15.786	9.555	-5.124
895	LC 1075	K7:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-2.732	0.964	-5.131
896	LC 1075	K7:2NL.1#5a,Break Conductor 5, Ahead,+10CST	-3.405	1.081	-5.178
897	LC 1075	K7:3NL.1#5a,Break Conductor 5, Ahead,+10CST	-4.004	1.145	-5.226
898	LC 1075	K11:1NL.1#5a,Break Conductor 5, Ahead,+10CST	0.347	1.975	-0.052
899	LC 1075	K11:2NL.1#5a,Break Conductor 5, Ahead,+10CST	0.102	2.002	-0.060
900	LC 1075	K12:1NL.1#5a,Break Conductor 5, Ahead,+10CST	-0.916	1.791	-0.122
901	LC 1076	K4:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-1.987	-0.041	-0.156
902	LC 1076	K5:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-0.961	-1.761	0.004
903	LC 1076	K5:2NL.1#5a,Break Conductor 6, Ahead,+10CST	-0.954	-1.765	-0.051
904	LC 1076	K6:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-16.275	9.116	-5.465
905	LC 1076	K6:2NL.1#5a,Break Conductor 6, Ahead,+10CST	-16.073	9.313	-5.298
906	LC 1076	K6:3NL.1#5a,Break Conductor 6, Ahead,+10CST	-5.193	9.460	-4.374
907	LC 1076	K7:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-2.732	0.964	-5.131
908	LC 1076	K7:2NL.1#5a,Break Conductor 6, Ahead,+10CST	-3.405	1.081	-5.178
909	LC 1076	K7:3NL.1#5a,Break Conductor 6, Ahead,+10CST	-4.004	1.145	-5.226
910	LC 1076	K11:1NL.1#5a,Break Conductor 6, Ahead,+10CST	0.347	1.975	-0.052
911	LC 1076	K11:2NL.1#5a,Break Conductor 6, Ahead,+10CST	0.102	2.002	-0.060
912	LC 1076	K12:1NL.1#5a,Break Conductor 6, Ahead,+10CST	-0.916	1.791	-0.122
913	LC 1077	K4:1NL.1#6,Permanent,+10CST	-2.525	-0.273	-0.207
914	LC 1077	K5:1NL.1#6,Permanent,+10CST	-1.284	-2.354	0.001
915	LC 1077	K5:2NL.1#6,Permanent,+10CST	-1.274	-2.359	-0.073
916	LC 1077	K6:1NL.1#6,Permanent,+10CST	-20.393	9.831	-7.414
917	LC 1077	K6:2NL.1#6,Permanent,+10CST	-20.158	10.076	-7.191
918	LC 1077	K6:3NL.1#6,Permanent,+10CST	-19.819	10.374	-6.961
919	LC 1077	K7:1NL.1#6,Permanent,+10CST	-4.053	-0.472	-6.939
920	LC 1077	K7:2NL.1#6,Permanent,+10CST	-4.839	-0.337	-7.002
921	LC 1077	K7:3NL.1#6,Permanent,+10CST	-5.538	-0.263	-7.067
922	LC 1077	K11:1NL.1#6,Permanent,+10CST	0.394	2.242	-0.067
923	LC 1077	K11:2NL.1#6,Permanent,+10CST	0.116	2.274	-0.079
924	LC 1077	K12:1NL.1#6,Permanent,+10CST	-1.031	2.015	-0.147
925	LC 1078	K4:1NL.1#6,gunstig,Permanent,+10CST	-1.828	0.019	-0.141
926	LC 1078	K5:1NL.1#6,gunstig,Permanent,+10CST	-0.868	-1.590	0.004
927	LC 1078	K5:2NL.1#6,gunstig,Permanent,+10CST	-0.861	-1.594	-0.045
928	LC 1078	K6:1NL.1#6,gunstig,Permanent,+10CST	-15.061	8.868	-4.910
929	LC 1078	K6:2NL.1#6,gunstig,Permanent,+10CST	-14.870	9.052	-4.759
930	LC 1078	K6:3NL.1#6,gunstig,Permanent,+10CST	-14.599	9.277	-4.601
931	LC 1078	K7:1NL.1#6,gunstig,Permanent,+10CST	-2.357	1.363	-4.614
932	LC 1078	K7:2NL.1#6,gunstig,Permanent,+10CST	-2.997	1.475	-4.657
933	LC 1078	K7:3NL.1#6,gunstig,Permanent,+10CST	-3.566	1.536	-4.700
934	LC 1078	K11:1NL.1#6,gunstig,Permanent,+10CST	0.335	1.903	-0.048
935	LC 1078	K11:2NL.1#6,gunstig,Permanent,+10CST	0.099	1.929	-0.055
936	LC 1078	K12:1NL.1#6,gunstig,Permanent,+10CST	-0.880	1.720	-0.115
937	LC 1079	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-3.495	-0.526	-0.060
938	LC 1079	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-2.005	-2.861	0.186
939	LC 1079	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-2.027	-2.854	0.095
940	LC 1079	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-22.141	9.744	-6.337
941	LC 1079	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-21.864	10.015	-6.100
942	LC 1079	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-21.486	10.339	-5.856
943	LC 1079	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-5.991	-0.064	-5.874
944	LC 1079	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-6.789	0.069	-5.939
945	LC 1079	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-7.502	0.141	-6.005
946	LC 1079	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	0.392	2.472	-0.073
947	LC 1079	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	0.073	2.502	-0.084
948	LC 1079	K12:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-1.169	2.182	-0.172
949	LC 1080	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-3.828	1.744	-0.236
950	LC 1080	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-1.387	-2.292	0.051
951	LC 1080	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-1.387	-2.293	-0.029
952	LC 1080	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-42.198	46.552	-6.054
953	LC 1080	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-41.416	47.112	-5.774
954	LC 1080	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-40.361	47.809	-5.475
955	LC 1080	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	0.905	24.192	-5.956
956	LC 1080	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-1.471	24.620	-6.021
957	LC 1080	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-3.589	24.866	-6.087
958	LC 1080	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	0.933	5.381	-0.098
959	LC 1080	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	0.262	5.455	-0.103
960	LC 1080	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-2.512	4.879	-0.311
961	LC 1081	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-5.368	-0.587	-0.256
962	LC 1081	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-2.954	-4.431	0.163
963	LC 1081	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-2.977	-4.425	0.012
964	LC 1081	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-30.851	23.737	-6.498
965	LC 1081	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-30.377	24.131	-6.218
966	LC 1081	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-29.731	24.612	-5.925
967	LC 1081	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-3.405	9.268	-6.099
968	LC 1081	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-4.889	9.528	-6.172
969	LC 1081	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-6.211	9.674	-6.247
970	LC 1081	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	0.692	4.231	-0.131
971	LC 1081	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	0.152	4.285	-0.151
972	LC 1081	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-1.997	3.778	-0.302

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
973	LC 1082	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-2.667	0.025	-0.198
974	LC 1082	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-1.323	-2.175	0.028
975	LC 1082	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-1.324	-2.175	-0.050
976	LC 1082	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-21.756	13.328	-6.492
977	LC 1082	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-21.465	13.597	-6.257
978	LC 1082	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-21.059	13.924	-6.013
979	LC 1082	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-3.578	2.948	-6.055
980	LC 1082	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-4.514	3.111	-6.120
981	LC 1082	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-5.347	3.201	-6.186
982	LC 1082	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	0.441	2.582	-0.074
983	LC 1082	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	0.117	2.617	-0.084
984	LC 1082	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-1.206	2.325	-0.178
985	LC 1083	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.644	-0.832	-0.060
986	LC 1083	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-1.321	-3.234	0.186
987	LC 1083	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-1.276	-3.260	0.095
988	LC 1083	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-17.912	9.017	-6.337
989	LC 1083	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-17.731	9.227	-6.100
990	LC 1083	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-17.449	9.490	-5.856
991	LC 1083	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.137	-1.233	-5.874
992	LC 1083	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.876	-1.101	-5.939
993	LC 1083	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-3.530	-1.029	-6.005
994	LC 1083	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	0.475	2.457	-0.073
995	LC 1083	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	0.183	2.496	-0.084
996	LC 1083	K12:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-1.085	2.225	-0.172
997	LC 1084	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-3.567	1.650	-0.236
998	LC 1084	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-1.177	-2.406	0.051
999	LC 1084	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-1.157	-2.417	-0.029
1000	LC 1084	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-40.897	46.329	-6.054
1001	LC 1084	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-40.145	46.870	-5.774
1002	LC 1084	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-39.120	47.548	-5.475
1003	LC 1084	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	2.090	23.832	-5.956
1004	LC 1084	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-0.268	24.261	-6.021
1005	LC 1084	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-2.367	24.507	-6.087
1006	LC 1084	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	0.959	5.377	-0.098
1007	LC 1084	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	0.296	5.454	-0.103
1008	LC 1084	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-2.487	4.892	-0.311
1009	LC 1085	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-4.338	-0.957	-0.256
1010	LC 1085	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-2.128	-4.882	0.163
1011	LC 1085	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-2.069	-4.915	0.012
1012	LC 1085	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-28.371	23.261	-6.498
1013	LC 1085	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-27.960	23.615	-6.218
1014	LC 1085	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-27.377	24.056	-5.925
1015	LC 1085	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-1.171	8.503	-6.099
1016	LC 1085	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-2.615	8.763	-6.172
1017	LC 1085	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-3.899	8.909	-6.247
1018	LC 1085	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	0.793	4.213	-0.131
1019	LC 1085	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	0.286	4.278	-0.151
1020	LC 1085	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-1.895	3.830	-0.302
1021	LC 1086	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-2.405	-0.069	-0.198
1022	LC 1086	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-1.113	-2.289	0.028
1023	LC 1086	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-1.094	-2.300	-0.050
1024	LC 1086	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-20.455	13.105	-6.492
1025	LC 1086	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-20.193	13.355	-6.257
1026	LC 1086	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-19.817	13.663	-6.013
1027	LC 1086	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-2.393	2.589	-6.055
1028	LC 1086	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-3.310	2.751	-6.120
1029	LC 1086	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-4.126	2.841	-6.186
1030	LC 1086	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	0.466	2.578	-0.074
1031	LC 1086	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	0.151	2.615	-0.084
1032	LC 1086	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-1.180	2.339	-0.178
1033	LC 1087	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.703	0.216	-0.220
1034	LC 1087	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.223	-2.103	0.009
1035	LC 1087	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.222	-2.106	-0.066
1036	LC 1087	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-20.403	10.450	-6.556
1037	LC 1087	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-20.121	10.713	-6.326
1038	LC 1087	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-19.739	11.024	-6.087
1039	LC 1087	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-4.337	0.303	-6.088
1040	LC 1087	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-5.094	0.471	-6.153
1041	LC 1087	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-5.773	0.580	-6.219
1042	LC 1087	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	0.370	2.220	-0.071
1043	LC 1087	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	0.084	2.289	-0.082
1044	LC 1087	K12:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.162	2.171	-0.171
1045	LC 1088	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-3.677	1.807	-0.256
1046	LC 1088	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.239	-2.227	0.029
1047	LC 1088	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.231	-2.232	-0.048
1048	LC 1088	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-41.815	46.539	-6.077
1049	LC 1088	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-41.034	47.097	-5.798
1050	LC 1088	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-39.979	47.791	-5.499
1051	LC 1088	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	1.306	24.177	-5.978
1052	LC 1088	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.067	24.606	-6.043
1053	LC 1088	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-3.182	24.852	-6.109

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1054	LC 1088	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	0.940	5.380	-0.098
1055	LC 1088	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	0.269	5.455	-0.103
1056	LC 1088	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-2.512	4.879	-0.311
1057	LC 1089	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.578	0.002	-0.395
1058	LC 1089	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.180	-3.827	0.010
1059	LC 1089	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.172	-3.833	-0.128
1060	LC 1089	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-29.940	23.934	-6.587
1061	LC 1089	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-29.427	24.254	-6.310
1062	LC 1089	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-28.781	24.728	-6.020
1063	LC 1089	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.476	9.387	-6.184
1064	LC 1089	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-3.948	9.648	-6.258
1065	LC 1089	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-5.260	9.794	-6.332
1066	LC 1089	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	0.694	4.083	-0.129
1067	LC 1089	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	0.173	4.164	-0.150
1068	LC 1089	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-1.989	3.767	-0.301
1069	LC 1090	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.515	0.077	-0.217
1070	LC 1090	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.178	-2.115	0.007
1071	LC 1090	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.171	-2.119	-0.068
1072	LC 1090	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-21.336	13.244	-6.515
1073	LC 1090	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-21.046	13.510	-6.281
1074	LC 1090	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-20.641	13.834	-6.037
1075	LC 1090	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-3.196	2.853	-6.077
1076	LC 1090	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-4.118	3.053	-6.142
1077	LC 1090	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-4.946	3.143	-6.208
1078	LC 1090	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	0.443	2.555	-0.074
1079	LC 1090	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	0.122	2.590	-0.084
1080	LC 1090	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.206	2.326	-0.178
1081	LC 1091	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.445	0.230	-0.220
1082	LC 1091	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.107	-2.167	0.009
1083	LC 1091	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.092	-2.177	-0.066
1084	LC 1091	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-18.181	10.671	-6.556
1085	LC 1091	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-17.987	10.884	-6.326
1086	LC 1091	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-17.694	11.144	-6.087
1087	LC 1091	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.647	0.078	-6.088
1088	LC 1091	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-3.367	0.245	-6.153
1089	LC 1091	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-4.008	0.354	-6.219
1090	LC 1091	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	0.409	2.213	-0.071
1091	LC 1091	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	0.149	2.285	-0.082
1092	LC 1091	K12:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-1.081	2.212	-0.171
1093	LC 1092	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-3.597	1.811	-0.256
1094	LC 1092	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.203	-2.247	0.029
1095	LC 1092	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-1.191	-2.253	-0.048
1096	LC 1092	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-41.131	46.607	-6.077
1097	LC 1092	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-40.377	47.150	-5.798
1098	LC 1092	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-39.350	47.828	-5.499
1099	LC 1092	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	1.826	24.108	-5.978
1100	LC 1092	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-0.535	24.536	-6.043
1101	LC 1092	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-2.638	24.782	-6.109
1102	LC 1092	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	0.952	5.378	-0.098
1103	LC 1092	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	0.289	5.454	-0.103
1104	LC 1092	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-2.487	4.892	-0.311
1105	LC 1093	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.266	0.019	-0.395
1106	LC 1093	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.039	-3.903	0.010
1107	LC 1093	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-2.015	-3.918	-0.128
1108	LC 1093	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-28.718	24.079	-6.587
1109	LC 1093	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-28.262	24.366	-6.310
1110	LC 1093	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-27.674	24.807	-6.020
1111	LC 1093	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-1.601	9.240	-6.184
1112	LC 1093	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-3.049	9.499	-6.258
1113	LC 1093	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.337	9.646	-6.332
1114	LC 1093	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	0.740	4.074	-0.129
1115	LC 1093	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	0.252	4.160	-0.150
1116	LC 1093	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-1.891	3.817	-0.301
1117	LC 1094	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.435	0.081	-0.217
1118	LC 1094	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.142	-2.135	0.007
1119	LC 1094	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.131	-2.141	-0.068
1120	LC 1094	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-20.652	13.312	-6.515
1121	LC 1094	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-20.389	13.562	-6.281
1122	LC 1094	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-20.012	13.871	-6.037
1123	LC 1094	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.676	2.784	-6.077
1124	LC 1094	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-3.586	2.984	-6.142
1125	LC 1094	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-4.403	3.074	-6.208
1126	LC 1094	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	0.455	2.553	-0.074
1127	LC 1094	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	0.142	2.589	-0.084
1128	LC 1094	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-1.181	2.338	-0.178
1129	LC 1095	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.968	-0.693	-0.092
1130	LC 1095	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-1.807	-2.636	0.137
1131	LC 1095	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-1.820	-2.627	0.049
1132	LC 1095	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-20.495	9.150	-6.412
1133	LC 1095	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-20.280	9.377	-6.177
1134	LC 1095	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-19.971	9.650	-5.934

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1135	LC 1095	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-5.311	-0.107	-5.945
1136	LC 1095	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-6.073	-0.014	-6.010
1137	LC 1095	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-6.745	0.056	-6.076
1138	LC 1095	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	0.371	2.240	-0.071
1139	LC 1095	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	0.091	2.229	-0.082
1140	LC 1095	K12:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-0.984	1.920	-0.157
1141	LC 1096	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-3.756	1.759	-0.242
1142	LC 1096	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.350	-2.267	0.044
1143	LC 1096	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.348	-2.268	-0.035
1144	LC 1096	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-41.848	46.493	-6.062
1145	LC 1096	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-41.081	47.044	-5.783
1146	LC 1096	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-40.042	47.732	-5.484
1147	LC 1096	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	1.094	24.203	-5.964
1148	LC 1096	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.276	24.632	-6.029
1149	LC 1096	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-3.388	24.878	-6.095
1150	LC 1096	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	0.939	5.380	-0.098
1151	LC 1096	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	0.272	5.455	-0.103
1152	LC 1096	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-2.500	4.886	-0.311
1153	LC 1097	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.903	-0.643	-0.288
1154	LC 1097	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.755	-4.234	0.118
1155	LC 1097	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.768	-4.227	-0.030
1156	LC 1097	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-30.095	23.632	-6.529
1157	LC 1097	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-29.658	23.997	-6.249
1158	LC 1097	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-29.049	24.453	-5.956
1159	LC 1097	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-3.038	9.286	-6.127
1160	LC 1097	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.505	9.545	-6.200
1161	LC 1097	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-5.808	9.696	-6.276
1162	LC 1097	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	0.693	4.096	-0.129
1163	LC 1097	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	0.183	4.124	-0.150
1164	LC 1097	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-1.863	3.639	-0.294
1165	LC 1098	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.578	0.010	-0.203
1166	LC 1098	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.287	-2.151	0.021
1167	LC 1098	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.285	-2.151	-0.056
1168	LC 1098	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-21.409	13.265	-6.500
1169	LC 1098	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-21.132	13.525	-6.265
1170	LC 1098	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-20.742	13.843	-6.021
1171	LC 1098	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-3.399	2.917	-6.063
1172	LC 1098	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-4.327	3.079	-6.127
1173	LC 1098	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-5.156	3.130	-6.194
1174	LC 1098	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	0.442	2.555	-0.074
1175	LC 1098	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	0.125	2.590	-0.084
1176	LC 1098	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.178	2.302	-0.177
1177	LC 1099	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.375	-1.013	-0.092
1178	LC 1099	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-1.240	-2.946	0.137
1179	LC 1099	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-1.200	-2.962	0.049
1180	LC 1099	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-17.872	8.203	-6.412
1181	LC 1099	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-17.665	8.419	-6.177
1182	LC 1099	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-17.364	8.681	-5.934
1183	LC 1099	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.532	-1.051	-5.945
1184	LC 1099	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-3.272	-0.956	-6.010
1185	LC 1099	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-3.923	-0.887	-6.076
1186	LC 1099	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	0.415	2.232	-0.071
1187	LC 1099	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	0.137	2.226	-0.082
1188	LC 1099	K12:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-0.981	1.921	-0.157
1189	LC 1100	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-3.574	1.661	-0.242
1190	LC 1100	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.176	-2.362	0.044
1191	LC 1100	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-1.158	-2.371	-0.035
1192	LC 1100	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-41.041	46.202	-6.062
1193	LC 1100	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-40.277	46.750	-5.783
1194	LC 1100	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-39.241	47.434	-5.484
1195	LC 1100	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	1.949	23.913	-5.964
1196	LC 1100	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-0.414	24.342	-6.029
1197	LC 1100	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-2.520	24.588	-6.095
1198	LC 1100	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	0.953	5.378	-0.098
1199	LC 1100	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	0.286	5.454	-0.103
1200	LC 1100	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-2.499	4.886	-0.311
1201	LC 1101	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.186	-1.029	-0.288
1202	LC 1101	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.070	-4.608	0.118
1203	LC 1101	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.018	-4.632	-0.030
1204	LC 1101	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-28.553	23.012	-6.529
1205	LC 1101	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-28.122	23.370	-6.249
1206	LC 1101	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-27.518	23.819	-5.956
1207	LC 1101	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-1.394	8.669	-6.127
1208	LC 1101	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-2.846	8.928	-6.200
1209	LC 1101	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.136	9.078	-6.276
1210	LC 1101	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	0.746	4.087	-0.129
1211	LC 1101	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	0.238	4.121	-0.150
1212	LC 1101	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-1.860	3.640	-0.294
1213	LC 1102	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.396	-0.088	-0.203
1214	LC 1102	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.112	-2.246	0.021
1215	LC 1102	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.095	-2.254	-0.056

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1216	LC 1102	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-20.602	12.974	-6.500
1217	LC 1102	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-20.328	13.230	-6.265
1218	LC 1102	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-19.940	13.545	-6.021
1219	LC 1102	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.544	2.627	-6.063
1220	LC 1102	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-3.465	2.789	-6.127
1221	LC 1102	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-4.288	2.840	-6.194
1222	LC 1102	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	0.456	2.553	-0.074
1223	LC 1102	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	0.139	2.589	-0.084
1224	LC 1102	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-1.178	2.303	-0.177
1225	LC 1103	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-2.340	-0.146	-0.212
1226	LC 1103	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-1.114	-2.143	0.006
1227	LC 1103	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-1.102	-2.148	-0.070
1228	LC 1103	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-18.875	9.546	-6.567
1229	LC 1103	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-18.630	9.782	-6.337
1230	LC 1103	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-18.287	10.068	-6.100
1231	LC 1103	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-3.478	0.075	-6.093
1232	LC 1103	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-4.218	0.203	-6.157
1233	LC 1103	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-4.874	0.273	-6.224
1234	LC 1103	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	0.374	2.125	-0.070
1235	LC 1103	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	0.110	2.155	-0.081
1236	LC 1103	K12:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-1.015	1.949	-0.159
1237	LC 1104	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-3.617	1.775	-0.255
1238	LC 1104	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-1.207	-2.243	0.029
1239	LC 1104	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-1.197	-2.248	-0.049
1240	LC 1104	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-41.424	46.396	-6.079
1241	LC 1104	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-40.654	46.943	-5.800
1242	LC 1104	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-39.609	47.632	-5.501
1243	LC 1104	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	1.574	24.127	-5.979
1244	LC 1104	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-0.793	24.556	-6.044
1245	LC 1104	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-2.902	24.802	-6.110
1246	LC 1104	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	0.944	5.366	-0.098
1247	LC 1104	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	0.278	5.441	-0.103
1248	LC 1104	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-2.504	4.884	-0.311
1249	LC 1105	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-4.248	-0.268	-0.389
1250	LC 1105	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-2.052	-3.881	0.007
1251	LC 1105	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-2.031	-3.891	-0.130
1252	LC 1105	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-29.260	23.704	-6.589
1253	LC 1105	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-28.803	24.080	-6.311
1254	LC 1105	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-28.174	24.543	-6.021
1255	LC 1105	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-2.019	9.204	-6.186
1256	LC 1105	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-3.475	9.463	-6.259
1257	LC 1105	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-4.770	9.609	-6.334
1258	LC 1105	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	0.708	4.026	-0.129
1259	LC 1105	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	0.208	4.083	-0.150
1260	LC 1105	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-1.891	3.654	-0.295
1261	LC 1106	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-2.445	0.029	-0.216
1262	LC 1106	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-1.146	-2.131	0.007
1263	LC 1106	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-1.136	-2.136	-0.069
1264	LC 1106	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-20.987	13.164	-6.516
1265	LC 1106	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-20.705	13.424	-6.281
1266	LC 1106	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-20.309	13.743	-6.038
1267	LC 1106	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-2.931	2.799	-6.077
1268	LC 1106	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-3.852	2.960	-6.142
1269	LC 1106	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-4.672	3.050	-6.208
1270	LC 1106	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	0.447	2.541	-0.073
1271	LC 1106	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	0.132	2.576	-0.084
1272	LC 1106	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-1.185	2.306	-0.177
1273	LC 1107	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-2.373	-0.066	-0.212
1274	LC 1107	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-1.199	-2.096	0.006
1275	LC 1107	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-1.193	-2.099	-0.070
1276	LC 1107	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-18.660	9.855	-6.567
1277	LC 1107	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-18.458	10.071	-6.337
1278	LC 1107	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-18.160	10.338	-6.100
1279	LC 1107	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-3.513	0.203	-6.093
1280	LC 1107	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-4.252	0.331	-6.157
1281	LC 1107	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-4.909	0.401	-6.224
1282	LC 1107	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	0.374	2.125	-0.070
1283	LC 1107	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	0.111	2.155	-0.081
1284	LC 1107	K12:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-0.987	1.963	-0.159
1285	LC 1108	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-3.628	1.800	-0.255
1286	LC 1108	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-1.233	-2.229	0.029
1287	LC 1108	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-1.225	-2.233	-0.049
1288	LC 1108	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-41.358	46.491	-6.079
1289	LC 1108	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-40.601	47.032	-5.800
1290	LC 1108	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-39.570	47.715	-5.501
1291	LC 1108	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	1.563	24.166	-5.979
1292	LC 1108	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-0.804	24.595	-6.044
1293	LC 1108	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-2.913	24.841	-6.110
1294	LC 1108	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	0.943	5.366	-0.098
1295	LC 1108	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	0.278	5.441	-0.103
1296	LC 1108	K12:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-2.495	4.888	-0.311

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1297	LC 1109	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-4.289	-0.172	-0.389
1298	LC 1109	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-2.154	-3.825	0.007
1299	LC 1109	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-2.141	-3.832	-0.130
1300	LC 1109	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-29.159	23.906	-6.589
1301	LC 1109	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-28.731	24.269	-6.311
1302	LC 1109	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-28.131	24.719	-6.021
1303	LC 1109	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-2.082	9.288	-6.186
1304	LC 1109	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-3.537	9.547	-6.259
1305	LC 1109	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-4.833	9.692	-6.334
1306	LC 1109	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	0.708	4.026	-0.129
1307	LC 1109	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	0.209	4.083	-0.150
1308	LC 1109	K12:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-1.857	3.671	-0.295
1309	LC 1110	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-2.456	0.053	-0.216
1310	LC 1110	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-1.172	-2.117	0.007
1311	LC 1110	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-1.164	-2.121	-0.069
1312	LC 1110	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-20.921	13.259	-6.516
1313	LC 1110	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-20.652	13.513	-6.281
1314	LC 1110	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-20.270	13.826	-6.038
1315	LC 1110	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-2.941	2.838	-6.077
1316	LC 1110	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-3.863	2.999	-6.142
1317	LC 1110	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-4.683	3.089	-6.208
1318	LC 1110	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	0.447	2.541	-0.073
1319	LC 1110	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	0.132	2.576	-0.084
1320	LC 1110	K12:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-1.177	2.311	-0.177
1321	LC 1111	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-3.495	-0.526	-0.060
1322	LC 1111	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-2.005	-2.861	0.186
1323	LC 1111	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-22.141	9.744	-6.337
1324	LC 1111	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-21.864	10.015	-6.100
1325	LC 1111	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-21.486	10.339	-5.856
1326	LC 1111	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	0.392	2.472	-0.073
1327	LC 1111	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	0.073	2.502	-0.084
1328	LC 1111	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR1	-1.169	2.182	-0.172
1329	LC 1112	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-3.828	1.744	-0.236
1330	LC 1112	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-1.387	-2.292	0.051
1331	LC 1112	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-42.198	46.552	-6.054
1332	LC 1112	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-41.416	47.112	-5.774
1333	LC 1112	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-40.361	47.809	-5.475
1334	LC 1112	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	0.933	5.381	-0.098
1335	LC 1112	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	0.262	5.455	-0.103
1336	LC 1112	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR1	-2.512	4.879	-0.311
1337	LC 1113	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-5.368	-0.587	-0.256
1338	LC 1113	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-2.954	-4.431	0.163
1339	LC 1113	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-30.851	23.737	-6.498
1340	LC 1113	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-30.377	24.131	-6.218
1341	LC 1113	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-29.731	24.612	-5.925
1342	LC 1113	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	0.692	4.231	-0.131
1343	LC 1113	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	0.152	4.285	-0.151
1344	LC 1113	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR1	-1.997	3.778	-0.302
1345	LC 1114	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-2.667	0.025	-0.198
1346	LC 1114	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-1.323	-2.175	0.028
1347	LC 1114	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-21.756	13.328	-6.492
1348	LC 1114	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-21.465	13.597	-6.257
1349	LC 1114	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-21.059	13.924	-6.013
1350	LC 1114	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	0.441	2.582	-0.074
1351	LC 1114	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	0.117	2.617	-0.084
1352	LC 1114	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR1	-1.206	2.325	-0.178
1353	LC 1115	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-2.644	-0.832	-0.060
1354	LC 1115	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-1.321	-3.234	0.186
1355	LC 1115	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-17.912	9.017	-6.337
1356	LC 1115	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-17.731	9.227	-6.100
1357	LC 1115	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-17.449	9.490	-5.856
1358	LC 1115	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	0.475	2.457	-0.073
1359	LC 1115	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	0.183	2.496	-0.084
1360	LC 1115	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR1	-1.085	2.225	-0.172
1361	LC 1116	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-3.567	1.650	-0.236
1362	LC 1116	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-1.177	-2.406	0.051
1363	LC 1116	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-40.897	46.329	-6.054
1364	LC 1116	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-40.145	46.870	-5.774
1365	LC 1116	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-39.120	47.548	-5.475
1366	LC 1116	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	0.959	5.377	-0.098
1367	LC 1116	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	0.296	5.454	-0.103
1368	LC 1116	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR1	-2.487	4.892	-0.311
1369	LC 1117	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-4.338	-0.957	-0.256
1370	LC 1117	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-2.128	-4.882	0.163
1371	LC 1117	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-28.371	23.261	-6.498
1372	LC 1117	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-27.960	23.615	-6.218
1373	LC 1117	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-27.377	24.056	-5.925
1374	LC 1117	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	0.793	4.213	-0.131
1375	LC 1117	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	0.286	4.278	-0.151
1376	LC 1117	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR1	-1.895	3.830	-0.302
1377	LC 1118	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-2.405	-0.069	-0.198

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1378	LC 1118	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-1.113	-2.289	0.028
1379	LC 1118	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-20.455	13.105	-6.492
1380	LC 1118	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-20.193	13.355	-6.257
1381	LC 1118	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-19.817	13.663	-6.013
1382	LC 1118	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	0.466	2.578	-0.074
1383	LC 1118	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	0.151	2.615	-0.084
1384	LC 1118	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR1	-1.180	2.339	-0.178
1385	LC 1119	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-2.703	0.216	-0.220
1386	LC 1119	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-1.223	-2.103	0.009
1387	LC 1119	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-20.403	10.450	-6.556
1388	LC 1119	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-20.121	10.713	-6.326
1389	LC 1119	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-19.739	11.024	-6.087
1390	LC 1119	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	0.370	2.220	-0.071
1391	LC 1119	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	0.084	2.289	-0.082
1392	LC 1119	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-1.162	2.171	-0.171
1393	LC 1120	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-3.677	1.807	-0.256
1394	LC 1120	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-1.239	-2.227	0.029
1395	LC 1120	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-41.815	46.539	-6.077
1396	LC 1120	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-41.034	47.097	-5.798
1397	LC 1120	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-39.979	47.791	-5.499
1398	LC 1120	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	0.940	5.380	-0.098
1399	LC 1120	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	0.269	5.455	-0.103
1400	LC 1120	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-2.512	4.879	-0.311
1401	LC 1121	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-4.578	0.002	-0.395
1402	LC 1121	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-2.180	-3.827	0.010
1403	LC 1121	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-29.940	23.934	-6.587
1404	LC 1121	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-29.427	24.254	-6.310
1405	LC 1121	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-28.781	24.728	-6.020
1406	LC 1121	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	0.694	4.083	-0.129
1407	LC 1121	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	0.173	4.164	-0.150
1408	LC 1121	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-1.989	3.767	-0.301
1409	LC 1122	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-2.515	0.077	-0.217
1410	LC 1122	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-1.178	-2.115	0.007
1411	LC 1122	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-21.336	13.244	-6.515
1412	LC 1122	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-21.046	13.510	-6.281
1413	LC 1122	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-20.641	13.834	-6.037
1414	LC 1122	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	0.443	2.555	-0.074
1415	LC 1122	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	0.122	2.590	-0.084
1416	LC 1122	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-1.206	2.326	-0.178
1417	LC 1123	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-2.445	0.230	-0.220
1418	LC 1123	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-1.107	-2.167	0.009
1419	LC 1123	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-18.181	10.671	-6.556
1420	LC 1123	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-17.987	10.884	-6.326
1421	LC 1123	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-17.694	11.144	-6.087
1422	LC 1123	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	0.409	2.213	-0.071
1423	LC 1123	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	0.149	2.285	-0.082
1424	LC 1123	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR1	-1.081	2.212	-0.171
1425	LC 1124	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-3.597	1.811	-0.256
1426	LC 1124	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-1.203	-2.247	0.029
1427	LC 1124	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-41.131	46.607	-6.077
1428	LC 1124	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-40.377	47.150	-5.798
1429	LC 1124	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-39.350	47.828	-5.499
1430	LC 1124	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	0.952	5.378	-0.098
1431	LC 1124	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	0.289	5.454	-0.103
1432	LC 1124	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR1	-2.487	4.892	-0.311
1433	LC 1125	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-4.266	0.019	-0.395
1434	LC 1125	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-2.039	-3.903	0.010
1435	LC 1125	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-28.718	24.079	-6.587
1436	LC 1125	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-28.262	24.366	-6.310
1437	LC 1125	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-27.674	24.807	-6.020
1438	LC 1125	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	0.740	4.074	-0.129
1439	LC 1125	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	0.252	4.160	-0.150
1440	LC 1125	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR1	-1.891	3.817	-0.301
1441	LC 1126	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-2.435	0.081	-0.217
1442	LC 1126	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-1.142	-2.135	0.007
1443	LC 1126	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-20.652	13.312	-6.515
1444	LC 1126	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-20.389	13.562	-6.281
1445	LC 1126	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-20.012	13.871	-6.037
1446	LC 1126	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	0.455	2.553	-0.074
1447	LC 1126	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	0.142	2.589	-0.084
1448	LC 1126	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR1	-1.181	2.338	-0.178
1449	LC 1127	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-2.968	-0.693	-0.092
1450	LC 1127	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-1.807	-2.636	0.137
1451	LC 1127	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-20.495	9.150	-6.412
1452	LC 1127	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-20.280	9.377	-6.177
1453	LC 1127	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-19.971	9.650	-5.934
1454	LC 1127	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	0.371	2.240	-0.071
1455	LC 1127	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	0.091	2.229	-0.082
1456	LC 1127	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-0.984	1.920	-0.157
1457	LC 1128	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-3.756	1.759	-0.242
1458	LC 1128	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-1.350	-2.267	0.044

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1459	LC 1128	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-41.848	46.493	-6.062
1460	LC 1128	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-41.081	47.044	-5.783
1461	LC 1128	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-40.042	47.732	-5.484
1462	LC 1128	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	0.939	5.380	-0.098
1463	LC 1128	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	0.272	5.455	-0.103
1464	LC 1128	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-2.500	4.886	-0.311
1465	LC 1129	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-4.903	-0.643	-0.288
1466	LC 1129	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-2.755	-4.234	0.118
1467	LC 1129	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-30.095	23.632	-6.529
1468	LC 1129	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-29.658	23.997	-6.249
1469	LC 1129	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-29.049	24.453	-5.956
1470	LC 1129	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	0.693	4.096	-0.129
1471	LC 1129	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	0.183	4.124	-0.150
1472	LC 1129	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-1.863	3.639	-0.294
1473	LC 1130	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-2.578	0.010	-0.203
1474	LC 1130	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-1.287	-2.151	0.021
1475	LC 1130	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-21.409	13.265	-6.500
1476	LC 1130	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-21.132	13.525	-6.265
1477	LC 1130	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-20.742	13.843	-6.021
1478	LC 1130	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	0.442	2.555	-0.074
1479	LC 1130	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	0.125	2.590	-0.084
1480	LC 1130	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-1.178	2.302	-0.177
1481	LC 1131	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-2.375	-1.013	-0.092
1482	LC 1131	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-1.240	-2.946	0.137
1483	LC 1131	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-17.872	8.203	-6.412
1484	LC 1131	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-17.665	8.419	-6.177
1485	LC 1131	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-17.364	8.681	-5.934
1486	LC 1131	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	0.415	2.232	-0.071
1487	LC 1131	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	0.137	2.226	-0.082
1488	LC 1131	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR1	-0.981	1.921	-0.157
1489	LC 1132	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-3.574	1.661	-0.242
1490	LC 1132	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-1.176	-2.362	0.044
1491	LC 1132	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-41.041	46.202	-6.062
1492	LC 1132	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-40.277	46.750	-5.783
1493	LC 1132	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-39.241	47.434	-5.484
1494	LC 1132	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	0.953	5.378	-0.098
1495	LC 1132	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	0.286	5.454	-0.103
1496	LC 1132	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR1	-2.499	4.886	-0.311
1497	LC 1133	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-4.186	-1.029	-0.288
1498	LC 1133	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-2.070	-4.608	0.118
1499	LC 1133	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-28.553	23.012	-6.529
1500	LC 1133	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-28.122	23.370	-6.249
1501	LC 1133	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-27.518	23.819	-5.956
1502	LC 1133	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	0.746	4.087	-0.129
1503	LC 1133	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	0.238	4.121	-0.150
1504	LC 1133	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR1	-1.860	3.640	-0.294
1505	LC 1134	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-2.396	-0.088	-0.203
1506	LC 1134	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-1.112	-2.246	0.021
1507	LC 1134	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-20.602	12.974	-6.500
1508	LC 1134	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-20.328	13.230	-6.265
1509	LC 1134	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-19.940	13.545	-6.021
1510	LC 1134	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	0.456	2.553	-0.074
1511	LC 1134	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	0.139	2.589	-0.084
1512	LC 1134	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR1	-1.178	2.303	-0.177
1513	LC 1135	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-2.340	-0.146	-0.212
1514	LC 1135	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-1.114	-2.143	0.006
1515	LC 1135	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-18.875	9.546	-6.567
1516	LC 1135	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-18.630	9.782	-6.337
1517	LC 1135	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-18.287	10.068	-6.100
1518	LC 1135	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	0.374	2.125	-0.070
1519	LC 1135	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	0.110	2.155	-0.081
1520	LC 1135	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR1	-1.015	1.949	-0.159
1521	LC 1136	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-3.617	1.775	-0.255
1522	LC 1136	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-1.207	-2.243	0.029
1523	LC 1136	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-41.424	46.396	-6.079
1524	LC 1136	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-40.654	46.943	-5.800
1525	LC 1136	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-39.609	47.632	-5.501
1526	LC 1136	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	0.944	5.366	-0.098
1527	LC 1136	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	0.278	5.441	-0.103
1528	LC 1136	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR1	-2.504	4.884	-0.311
1529	LC 1137	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-4.248	-0.268	-0.389
1530	LC 1137	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-2.052	-3.881	0.007
1531	LC 1137	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-29.260	23.704	-6.589
1532	LC 1137	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-28.803	24.080	-6.311
1533	LC 1137	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-28.174	24.543	-6.021
1534	LC 1137	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	0.708	4.026	-0.129
1535	LC 1137	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	0.208	4.083	-0.150
1536	LC 1137	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR1	-1.891	3.654	-0.295
1537	LC 1138	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-2.445	0.029	-0.216
1538	LC 1138	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-1.146	-2.131	0.007
1539	LC 1138	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-20.987	13.164	-6.516

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1540	LC 1138	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-20.705	13.424	-6.281
1541	LC 1138	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-20.309	13.743	-6.038
1542	LC 1138	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	0.447	2.541	-0.073
1543	LC 1138	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	0.132	2.576	-0.084
1544	LC 1138	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR1	-1.185	2.306	-0.177
1545	LC 1139	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-2.373	-0.066	-0.212
1546	LC 1139	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-1.199	-2.096	0.006
1547	LC 1139	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-18.660	9.855	-6.567
1548	LC 1139	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-18.458	10.071	-6.337
1549	LC 1139	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-18.160	10.338	-6.100
1550	LC 1139	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	0.374	2.125	-0.070
1551	LC 1139	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	0.111	2.155	-0.081
1552	LC 1139	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR1	-0.987	1.963	-0.159
1553	LC 1140	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-3.628	1.800	-0.255
1554	LC 1140	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-1.233	-2.229	0.029
1555	LC 1140	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-41.358	46.491	-6.079
1556	LC 1140	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-40.601	47.032	-5.800
1557	LC 1140	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-39.570	47.715	-5.501
1558	LC 1140	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	0.943	5.366	-0.098
1559	LC 1140	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	0.278	5.441	-0.103
1560	LC 1140	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR1	-2.495	4.888	-0.311
1561	LC 1141	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-4.289	-0.172	-0.389
1562	LC 1141	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-2.154	-3.825	0.007
1563	LC 1141	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-29.159	23.906	-6.589
1564	LC 1141	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-28.731	24.269	-6.311
1565	LC 1141	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-28.131	24.719	-6.021
1566	LC 1141	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	0.708	4.026	-0.129
1567	LC 1141	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	0.209	4.083	-0.150
1568	LC 1141	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR1	-1.857	3.671	-0.295
1569	LC 1142	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-2.456	0.053	-0.216
1570	LC 1142	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-1.172	-2.117	0.007
1571	LC 1142	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-20.921	13.259	-6.516
1572	LC 1142	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-20.652	13.513	-6.281
1573	LC 1142	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-20.270	13.826	-6.038
1574	LC 1142	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	0.447	2.541	-0.073
1575	LC 1142	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	0.132	2.576	-0.084
1576	LC 1142	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR1	-1.177	2.311	-0.177
1577	LC 1142	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-3.495	-0.526	-0.060
1578	LC 1143	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-2.027	-2.854	0.095
1579	LC 1143	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-7.060	10.872	-2.939
1580	LC 1143	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-6.881	10.980	-2.862
1581	LC 1143	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-6.651	11.112	-2.783
1582	LC 1143	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-5.991	-0.064	-5.874
1583	LC 1143	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-6.789	0.069	-5.939
1584	LC 1143	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-7.502	0.141	-6.005
1585	LC 1143	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	0.392	2.472	-0.073
1586	LC 1143	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	0.073	2.502	-0.084
1587	LC 1143	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR2	-1.169	2.182	-0.172
1588	LC 1144	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-3.828	1.744	-0.236
1589	LC 1144	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-1.387	-2.293	-0.029
1590	LC 1144	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-17.557	29.267	-2.762
1591	LC 1144	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-17.123	29.521	-2.663
1592	LC 1144	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-16.552	29.843	-2.555
1593	LC 1144	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	0.905	24.192	-5.956
1594	LC 1144	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-1.471	24.620	-6.021
1595	LC 1144	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-3.589	24.866	-6.087
1596	LC 1144	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	0.933	5.381	-0.098
1597	LC 1144	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	0.262	5.455	-0.103
1598	LC 1144	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR2	-2.512	4.879	-0.311
1599	LC 1145	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-5.368	-0.587	-0.256
1600	LC 1145	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-2.977	-4.425	0.012
1601	LC 1145	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-11.300	18.491	-2.939
1602	LC 1145	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-11.017	18.658	-2.845
1603	LC 1145	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-10.647	18.868	-2.745
1604	LC 1145	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-3.405	9.268	-6.099
1605	LC 1145	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-4.889	9.528	-6.172
1606	LC 1145	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-6.211	9.674	-6.247
1607	LC 1145	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	0.692	4.231	-0.131
1608	LC 1145	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	0.152	4.285	-0.151
1609	LC 1145	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR2	-1.997	3.778	-0.302
1610	LC 1146	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-2.667	0.025	-0.198
1611	LC 1146	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-1.324	-2.175	-0.050
1612	LC 1146	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-7.511	12.341	-2.925
1613	LC 1146	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-7.325	12.451	-2.847
1614	LC 1146	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-7.081	12.589	-2.765
1615	LC 1146	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-3.578	2.948	-6.055
1616	LC 1146	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-4.514	3.111	-6.120
1617	LC 1146	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-5.347	3.201	-6.186
1618	LC 1146	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	0.441	2.582	-0.074
1619	LC 1146	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	0.117	2.617	-0.084
1620	LC 1146	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR2	-1.206	2.325	-0.178

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1621	LC 1147	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-2.644	-0.832	-0.060
1622	LC 1147	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-1.276	-3.260	0.095
1623	LC 1147	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-5.968	11.078	-2.939
1624	LC 1147	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-5.826	11.158	-2.862
1625	LC 1147	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-5.632	11.264	-2.783
1626	LC 1147	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-2.137	-1.233	-5.874
1627	LC 1147	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-2.876	-1.101	-5.939
1628	LC 1147	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-3.530	-1.029	-6.005
1629	LC 1147	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	0.475	2.457	-0.073
1630	LC 1147	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	0.183	2.496	-0.084
1631	LC 1147	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR2	-1.085	2.225	-0.172
1632	LC 1148	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-3.567	1.650	-0.236
1633	LC 1148	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-1.157	-2.417	-0.029
1634	LC 1148	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-17.222	29.330	-2.762
1635	LC 1148	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-16.799	29.576	-2.663
1636	LC 1148	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-16.239	29.889	-2.555
1637	LC 1148	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	2.090	23.832	-5.956
1638	LC 1148	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-0.268	24.261	-6.021
1639	LC 1148	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-2.367	24.507	-6.087
1640	LC 1148	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	0.959	5.377	-0.098
1641	LC 1148	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	0.296	5.454	-0.103
1642	LC 1148	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR2	-2.487	4.892	-0.311
1643	LC 1149	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-4.338	-0.957	-0.256
1644	LC 1149	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-2.069	-4.915	0.012
1645	LC 1149	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-10.729	18.626	-2.939
1646	LC 1149	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-10.470	18.775	-2.845
1647	LC 1149	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-10.123	18.967	-2.745
1648	LC 1149	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-1.171	8.503	-6.099
1649	LC 1149	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-2.615	8.763	-6.172
1650	LC 1149	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-3.899	8.909	-6.247
1651	LC 1149	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	0.793	4.213	-0.131
1652	LC 1149	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	0.286	4.278	-0.151
1653	LC 1149	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR2	-1.895	3.830	-0.302
1654	LC 1150	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-2.405	-0.069	-0.198
1655	LC 1150	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-1.094	-2.300	-0.050
1656	LC 1150	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-7.176	12.404	-2.925
1657	LC 1150	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-7.000	12.506	-2.847
1658	LC 1150	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-6.767	12.636	-2.765
1659	LC 1150	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-2.393	2.589	-6.055
1660	LC 1150	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-3.310	2.751	-6.120
1661	LC 1150	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-4.126	2.841	-6.186
1662	LC 1150	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	0.466	2.578	-0.074
1663	LC 1150	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	0.151	2.615	-0.084
1664	LC 1150	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR2	-1.180	2.339	-0.178
1665	LC 1151	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-2.703	0.216	-0.220
1666	LC 1151	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-1.222	-2.106	-0.066
1667	LC 1151	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-6.966	10.840	-2.939
1668	LC 1151	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-6.787	10.947	-2.863
1669	LC 1151	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-6.558	11.080	-2.783
1670	LC 1151	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-4.337	0.303	-6.088
1671	LC 1151	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-5.094	0.471	-6.153
1672	LC 1151	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-5.773	0.580	-6.219
1673	LC 1151	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	0.370	2.220	-0.071
1674	LC 1151	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	0.084	2.289	-0.082
1675	LC 1151	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-1.162	2.171	-0.171
1676	LC 1152	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-3.677	1.807	-0.256
1677	LC 1152	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-1.231	-2.232	-0.048
1678	LC 1152	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-17.535	29.267	-2.762
1679	LC 1152	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-17.101	29.522	-2.663
1680	LC 1152	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-16.529	29.843	-2.555
1681	LC 1152	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	1.306	24.177	-5.978
1682	LC 1152	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-1.067	24.606	-6.043
1683	LC 1152	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-3.182	24.852	-6.109
1684	LC 1152	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	0.940	5.380	-0.098
1685	LC 1152	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	0.269	5.455	-0.103
1686	LC 1152	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-2.512	4.879	-0.311
1687	LC 1153	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-4.578	0.002	-0.395
1688	LC 1153	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-2.172	-3.833	-0.128
1689	LC 1153	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-11.266	18.492	-2.939
1690	LC 1153	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.963	18.625	-2.845
1691	LC 1153	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.593	18.835	-2.746
1692	LC 1153	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-2.476	9.387	-6.184
1693	LC 1153	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-3.948	9.648	-6.258
1694	LC 1153	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-5.260	9.794	-6.332
1695	LC 1153	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	0.694	4.083	-0.129
1696	LC 1153	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	0.173	4.164	-0.150
1697	LC 1153	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-1.989	3.767	-0.301
1698	LC 1154	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-2.515	0.077	-0.217
1699	LC 1154	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-1.171	-2.119	-0.068
1700	LC 1154	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.469	12.308	-2.925
1701	LC 1154	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.283	12.417	-2.848

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1702	LC 1154	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.039	12.555	-2.766
1703	LC 1154	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-3.196	2.853	-6.077
1704	LC 1154	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-4.118	3.053	-6.142
1705	LC 1154	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-4.946	3.143	-6.208
1706	LC 1154	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	0.443	2.555	-0.074
1707	LC 1154	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	0.122	2.590	-0.084
1708	LC 1154	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-1.206	2.326	-0.178
1709	LC 1155	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-2.445	0.230	-0.220
1710	LC 1155	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-1.092	-2.177	-0.066
1711	LC 1155	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-6.023	11.044	-2.939
1712	LC 1155	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-5.881	11.123	-2.863
1713	LC 1155	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-5.688	11.228	-2.783
1714	LC 1155	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-2.647	0.078	-6.088
1715	LC 1155	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-3.367	0.245	-6.153
1716	LC 1155	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-4.008	0.354	-6.219
1717	LC 1155	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	0.409	2.213	-0.071
1718	LC 1155	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	0.149	2.285	-0.082
1719	LC 1155	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR2	-1.081	2.212	-0.171
1720	LC 1156	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-3.597	1.811	-0.256
1721	LC 1156	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-1.191	-2.253	-0.048
1722	LC 1156	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-17.244	29.330	-2.762
1723	LC 1156	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-16.822	29.576	-2.663
1724	LC 1156	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-16.262	29.889	-2.555
1725	LC 1156	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	1.826	24.108	-5.978
1726	LC 1156	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-0.535	24.536	-6.043
1727	LC 1156	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-2.638	24.782	-6.109
1728	LC 1156	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	0.952	5.378	-0.098
1729	LC 1156	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	0.289	5.454	-0.103
1730	LC 1156	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR2	-2.487	4.892	-0.311
1731	LC 1157	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-4.266	0.019	-0.395
1732	LC 1157	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-2.015	-3.918	-0.128
1733	LC 1157	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.764	18.625	-2.939
1734	LC 1157	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.485	18.740	-2.845
1735	LC 1157	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-10.140	18.932	-2.746
1736	LC 1157	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-1.601	9.240	-6.184
1737	LC 1157	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-3.049	9.499	-6.258
1738	LC 1157	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-4.337	9.646	-6.332
1739	LC 1157	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	0.740	4.074	-0.129
1740	LC 1157	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	0.252	4.160	-0.150
1741	LC 1157	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR2	-1.891	3.817	-0.301
1742	LC 1158	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-2.435	0.081	-0.217
1743	LC 1158	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-1.131	-2.141	-0.068
1744	LC 1158	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.178	12.371	-2.925
1745	LC 1158	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-7.004	12.472	-2.848
1746	LC 1158	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-6.771	12.601	-2.766
1747	LC 1158	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-2.676	2.784	-6.077
1748	LC 1158	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-3.586	2.984	-6.142
1749	LC 1158	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-4.403	3.074	-6.208
1750	LC 1158	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	0.455	2.553	-0.074
1751	LC 1158	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	0.142	2.589	-0.084
1752	LC 1158	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR2	-1.181	2.338	-0.178
1753	LC 1159	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-2.968	-0.693	-0.092
1754	LC 1159	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-1.820	-2.627	0.049
1755	LC 1159	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.424	10.437	-2.944
1756	LC 1159	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.271	10.526	-2.868
1757	LC 1159	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.070	10.639	-2.789
1758	LC 1159	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-5.311	-0.107	-5.945
1759	LC 1159	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.073	-0.014	-6.010
1760	LC 1159	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-6.745	0.056	-6.076
1761	LC 1159	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	0.371	2.240	-0.071
1762	LC 1159	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	0.091	2.229	-0.082
1763	LC 1159	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-0.984	1.920	-0.157
1764	LC 1160	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-3.756	1.759	-0.242
1765	LC 1160	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-1.348	-2.268	-0.035
1766	LC 1160	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-17.420	29.231	-2.762
1767	LC 1160	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-16.992	29.481	-2.664
1768	LC 1160	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-16.428	29.797	-2.556
1769	LC 1160	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	1.094	24.203	-5.964
1770	LC 1160	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-1.276	24.632	-6.029
1771	LC 1160	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-3.388	24.878	-6.095
1772	LC 1160	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	0.939	5.380	-0.098
1773	LC 1160	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	0.272	5.455	-0.103
1774	LC 1160	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-2.500	4.886	-0.311
1775	LC 1161	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-4.903	-0.643	-0.288
1776	LC 1161	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-2.768	-4.227	-0.030
1777	LC 1161	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-11.021	18.390	-2.940
1778	LC 1161	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.752	18.547	-2.847
1779	LC 1161	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.398	18.746	-2.748
1780	LC 1161	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-3.038	9.286	-6.127
1781	LC 1161	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-4.505	9.545	-6.200
1782	LC 1161	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-5.808	9.696	-6.276

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1783	LC 1161	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	0.693	4.096	-0.129
1784	LC 1161	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	0.183	4.124	-0.150
1785	LC 1161	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-1.863	3.639	-0.294
1786	LC 1162	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-2.578	0.010	-0.203
1787	LC 1162	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-1.285	-2.151	-0.056
1788	LC 1162	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-7.374	12.305	-2.926
1789	LC 1162	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-7.194	12.410	-2.848
1790	LC 1162	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-6.957	12.543	-2.766
1791	LC 1162	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-3.399	2.917	-6.063
1792	LC 1162	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-4.327	3.079	-6.127
1793	LC 1162	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-5.156	3.130	-6.194
1794	LC 1162	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	0.442	2.555	-0.074
1795	LC 1162	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	0.125	2.590	-0.084
1796	LC 1162	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-1.178	2.302	-0.177
1797	LC 1163	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-2.375	-1.013	-0.092
1798	LC 1163	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-1.200	-2.962	0.049
1799	LC 1163	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-5.967	10.440	-2.944
1800	LC 1163	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-5.814	10.529	-2.868
1801	LC 1163	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-5.612	10.642	-2.789
1802	LC 1163	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-2.532	-1.051	-5.945
1803	LC 1163	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-3.272	-0.956	-6.010
1804	LC 1163	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-3.923	-0.887	-6.076
1805	LC 1163	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	0.415	2.232	-0.071
1806	LC 1163	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	0.137	2.226	-0.082
1807	LC 1163	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR2	-0.981	1.921	-0.157
1808	LC 1164	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-3.574	1.661	-0.242
1809	LC 1164	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-1.158	-2.371	-0.035
1810	LC 1164	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-17.279	29.232	-2.762
1811	LC 1164	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-16.852	29.481	-2.664
1812	LC 1164	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-16.288	29.798	-2.556
1813	LC 1164	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	1.949	23.913	-5.964
1814	LC 1164	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-0.414	24.342	-6.029
1815	LC 1164	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-2.520	24.588	-6.095
1816	LC 1164	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	0.953	5.378	-0.098
1817	LC 1164	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	0.286	5.454	-0.103
1818	LC 1164	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR2	-2.499	4.886	-0.311
1819	LC 1165	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-4.186	-1.029	-0.288
1820	LC 1165	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-2.018	-4.632	-0.030
1821	LC 1165	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.810	18.391	-2.940
1822	LC 1165	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.540	18.548	-2.847
1823	LC 1165	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-10.185	18.748	-2.748
1824	LC 1165	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-1.394	8.669	-6.127
1825	LC 1165	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-2.846	8.928	-6.200
1826	LC 1165	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-4.136	9.078	-6.276
1827	LC 1165	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	0.746	4.087	-0.129
1828	LC 1165	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	0.238	4.121	-0.150
1829	LC 1165	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR2	-1.860	3.640	-0.294
1830	LC 1166	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-2.396	-0.088	-0.203
1831	LC 1166	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-1.095	-2.254	-0.056
1832	LC 1166	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-7.233	12.306	-2.926
1833	LC 1166	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-7.053	12.411	-2.848
1834	LC 1166	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-6.816	12.544	-2.766
1835	LC 1166	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-2.544	2.627	-6.063
1836	LC 1166	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-3.465	2.789	-6.127
1837	LC 1166	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-4.288	2.840	-6.194
1838	LC 1166	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	0.456	2.553	-0.074
1839	LC 1166	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	0.139	2.589	-0.084
1840	LC 1166	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR2	-1.178	2.303	-0.177
1841	LC 1167	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-2.340	-0.146	-0.212
1842	LC 1167	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-1.102	-2.148	-0.070
1843	LC 1167	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-6.355	10.465	-2.943
1844	LC 1167	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-6.193	10.561	-2.867
1845	LC 1167	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-5.980	10.682	-2.788
1846	LC 1167	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-3.478	0.075	-6.093
1847	LC 1167	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-4.218	0.203	-6.157
1848	LC 1167	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-4.874	0.273	-6.224
1849	LC 1167	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	0.374	2.125	-0.070
1850	LC 1167	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	0.110	2.155	-0.081
1851	LC 1167	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR2	-1.015	1.949	-0.159
1852	LC 1168	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-3.617	1.775	-0.255
1853	LC 1168	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-1.197	-2.248	-0.049
1854	LC 1168	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-17.387	29.219	-2.762
1855	LC 1168	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-16.956	29.471	-2.664
1856	LC 1168	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-16.389	29.789	-2.556
1857	LC 1168	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	1.574	24.127	-5.979
1858	LC 1168	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-0.793	24.556	-6.044
1859	LC 1168	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-2.902	24.802	-6.110
1860	LC 1168	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	0.944	5.366	-0.098
1861	LC 1168	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	0.278	5.441	-0.103
1862	LC 1168	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR2	-2.504	4.884	-0.311
1863	LC 1169	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-4.248	-0.268	-0.389

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1864	LC 1169	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-2.031	-3.891	-0.130
1865	LC 1169	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-11.024	18.431	-2.940
1866	LC 1169	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-10.748	18.593	-2.846
1867	LC 1169	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-10.385	18.798	-2.747
1868	LC 1169	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-2.019	9.204	-6.186
1869	LC 1169	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-3.475	9.463	-6.259
1870	LC 1169	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-4.770	9.609	-6.334
1871	LC 1169	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	0.708	4.026	-0.129
1872	LC 1169	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	0.208	4.083	-0.150
1873	LC 1169	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR2	-1.891	3.654	-0.295
1874	LC 1170	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-2.445	0.029	-0.216
1875	LC 1170	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-1.136	-2.136	-0.069
1876	LC 1170	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-7.341	12.293	-2.926
1877	LC 1170	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-7.158	12.400	-2.848
1878	LC 1170	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-6.917	12.536	-2.766
1879	LC 1170	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-2.931	2.799	-6.077
1880	LC 1170	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-3.852	2.960	-6.142
1881	LC 1170	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-4.672	3.050	-6.208
1882	LC 1170	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	0.447	2.541	-0.073
1883	LC 1170	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	0.132	2.576	-0.084
1884	LC 1170	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR2	-1.185	2.306	-0.177
1885	LC 1171	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-2.373	-0.066	-0.212
1886	LC 1171	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-1.193	-2.099	-0.070
1887	LC 1171	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-6.115	10.546	-2.943
1888	LC 1171	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-5.971	10.629	-2.867
1889	LC 1171	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-5.777	10.736	-2.788
1890	LC 1171	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-3.513	0.203	-6.093
1891	LC 1171	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-4.252	0.331	-6.157
1892	LC 1171	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-4.909	0.401	-6.224
1893	LC 1171	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	0.374	2.125	-0.070
1894	LC 1171	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	0.111	2.155	-0.081
1895	LC 1171	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR2	-0.987	1.963	-0.159
1896	LC 1172	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-3.628	1.800	-0.255
1897	LC 1172	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-1.225	-2.233	-0.049
1898	LC 1172	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-17.313	29.244	-2.762
1899	LC 1172	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-16.888	29.491	-2.664
1900	LC 1172	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-16.327	29.806	-2.556
1901	LC 1172	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	1.563	24.166	-5.979
1902	LC 1172	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-0.804	24.595	-6.044
1903	LC 1172	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-2.913	24.841	-6.110
1904	LC 1172	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	0.943	5.366	-0.098
1905	LC 1172	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	0.278	5.441	-0.103
1906	LC 1172	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR2	-2.495	4.888	-0.311
1907	LC 1173	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-4.289	-0.172	-0.389
1908	LC 1173	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-2.141	-3.832	-0.130
1909	LC 1173	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-10.887	18.484	-2.940
1910	LC 1173	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-10.623	18.637	-2.846
1911	LC 1173	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-10.273	18.833	-2.747
1912	LC 1173	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-2.082	9.288	-6.186
1913	LC 1173	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-3.537	9.547	-6.259
1914	LC 1173	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-4.833	9.692	-6.334
1915	LC 1173	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	0.708	4.026	-0.129
1916	LC 1173	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	0.209	4.083	-0.150
1917	LC 1173	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR2	-1.857	3.671	-0.295
1918	LC 1174	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-2.456	0.053	-0.216
1919	LC 1174	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-1.164	-2.121	-0.069
1920	LC 1174	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-7.267	12.318	-2.926
1921	LC 1174	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-7.090	12.421	-2.848
1922	LC 1174	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-6.855	12.552	-2.766
1923	LC 1174	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-2.941	2.838	-6.077
1924	LC 1174	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-3.863	2.999	-6.142
1925	LC 1174	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-4.683	3.089	-6.208
1926	LC 1174	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	0.447	2.541	-0.073
1927	LC 1174	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	0.132	2.576	-0.084
1928	LC 1174	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR2	-1.177	2.311	-0.177
1929	LC 1175	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-3.495	-0.526	-0.060
1930	LC 1175	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-2.005	-2.861	0.186
1931	LC 1175	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-2.027	-2.854	0.095
1932	LC 1175	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-22.141	9.744	-6.337
1933	LC 1175	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-21.864	10.015	-6.100
1934	LC 1175	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-21.486	10.339	-5.856
1935	LC 1175	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	0.392	2.472	-0.073
1936	LC 1175	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR3	-1.169	2.182	-0.172
1937	LC 1176	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-3.828	1.744	-0.236
1938	LC 1176	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-1.387	-2.292	0.051
1939	LC 1176	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-1.387	-2.293	-0.029
1940	LC 1176	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-42.198	46.552	-6.054
1941	LC 1176	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-41.416	47.112	-5.774
1942	LC 1176	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-40.361	47.809	-5.475
1943	LC 1176	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	0.933	5.381	-0.098
1944	LC 1176	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR3	-2.512	4.879	-0.311

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1945	LC 1177	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-5.368	-0.587	-0.256
1946	LC 1177	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-2.954	-4.431	0.163
1947	LC 1177	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-2.977	-4.425	0.012
1948	LC 1177	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-30.851	23.737	-6.498
1949	LC 1177	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-30.377	24.131	-6.218
1950	LC 1177	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-29.731	24.612	-5.925
1951	LC 1177	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	0.692	4.231	-0.131
1952	LC 1177	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR3	-1.997	3.778	-0.302
1953	LC 1178	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-2.667	0.025	-0.198
1954	LC 1178	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-1.323	-2.175	0.028
1955	LC 1178	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-1.324	-2.175	-0.050
1956	LC 1178	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-21.756	13.328	-6.492
1957	LC 1178	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-21.465	13.597	-6.257
1958	LC 1178	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-21.059	13.924	-6.013
1959	LC 1178	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	0.441	2.582	-0.074
1960	LC 1178	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR3	-1.206	2.325	-0.178
1961	LC 1179	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-2.644	-0.832	-0.060
1962	LC 1179	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-1.321	-3.234	0.186
1963	LC 1179	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-1.276	-3.260	0.095
1964	LC 1179	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-17.912	9.017	-6.337
1965	LC 1179	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-17.731	9.227	-6.100
1966	LC 1179	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-17.449	9.490	-5.856
1967	LC 1179	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	0.475	2.457	-0.073
1968	LC 1179	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR3	-1.085	2.225	-0.172
1969	LC 1180	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-3.567	1.650	-0.236
1970	LC 1180	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-1.177	-2.406	0.051
1971	LC 1180	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-1.157	-2.417	-0.029
1972	LC 1180	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-40.897	46.329	-6.054
1973	LC 1180	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-40.145	46.870	-5.774
1974	LC 1180	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-39.120	47.548	-5.475
1975	LC 1180	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	0.959	5.377	-0.098
1976	LC 1180	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR3	-2.487	4.892	-0.311
1977	LC 1181	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-4.338	-0.957	-0.256
1978	LC 1181	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-2.128	-4.882	0.163
1979	LC 1181	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-2.069	-4.915	0.012
1980	LC 1181	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-28.371	23.261	-6.498
1981	LC 1181	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-27.960	23.615	-6.218
1982	LC 1181	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-27.377	24.056	-5.925
1983	LC 1181	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	0.793	4.213	-0.131
1984	LC 1181	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR3	-1.895	3.830	-0.302
1985	LC 1182	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-2.405	-0.069	-0.198
1986	LC 1182	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-1.113	-2.289	0.028
1987	LC 1182	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-1.094	-2.300	-0.050
1988	LC 1182	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-20.455	13.105	-6.492
1989	LC 1182	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-20.193	13.355	-6.257
1990	LC 1182	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-19.817	13.663	-6.013
1991	LC 1182	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	0.466	2.578	-0.074
1992	LC 1182	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR3	-1.180	2.339	-0.178
1993	LC 1183	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-2.703	0.216	-0.220
1994	LC 1183	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.223	-2.103	0.009
1995	LC 1183	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.222	-2.106	-0.066
1996	LC 1183	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-20.403	10.450	-6.556
1997	LC 1183	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-20.121	10.713	-6.326
1998	LC 1183	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-19.739	11.024	-6.087
1999	LC 1183	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	0.370	2.220	-0.071
2000	LC 1183	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.162	2.171	-0.171
2001	LC 1184	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-3.677	1.807	-0.256
2002	LC 1184	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-1.239	-2.227	0.029
2003	LC 1184	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-1.231	-2.232	-0.048
2004	LC 1184	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-41.815	46.539	-6.077
2005	LC 1184	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-41.034	47.097	-5.798
2006	LC 1184	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-39.979	47.791	-5.499
2007	LC 1184	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	0.940	5.380	-0.098
2008	LC 1184	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-2.512	4.879	-0.311
2009	LC 1185	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-4.578	0.002	-0.395
2010	LC 1185	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-2.180	-3.827	0.010
2011	LC 1185	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-2.172	-3.833	-0.128
2012	LC 1185	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-29.940	23.934	-6.587
2013	LC 1185	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-29.427	24.254	-6.310
2014	LC 1185	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-28.781	24.728	-6.020
2015	LC 1185	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	0.694	4.083	-0.129
2016	LC 1185	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-1.989	3.767	-0.301
2017	LC 1186	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-2.515	0.077	-0.217
2018	LC 1186	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.178	-2.115	0.007
2019	LC 1186	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.171	-2.119	-0.068
2020	LC 1186	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-21.336	13.244	-6.515
2021	LC 1186	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-21.046	13.510	-6.281
2022	LC 1186	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-20.641	13.834	-6.037
2023	LC 1186	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	0.443	2.555	-0.074
2024	LC 1186	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.206	2.326	-0.178
2025	LC 1187	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-2.445	0.230	-0.220

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2026	LC 1187	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.107	-2.167	0.009
2027	LC 1187	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.092	-2.177	-0.066
2028	LC 1187	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-18.181	10.671	-6.556
2029	LC 1187	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-17.987	10.884	-6.326
2030	LC 1187	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-17.694	11.144	-6.087
2031	LC 1187	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	0.409	2.213	-0.071
2032	LC 1187	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR3	-1.081	2.212	-0.171
2033	LC 1188	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-3.597	1.811	-0.256
2034	LC 1188	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-1.203	-2.247	0.029
2035	LC 1188	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-1.191	-2.253	-0.048
2036	LC 1188	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-41.131	46.607	-6.077
2037	LC 1188	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-40.377	47.150	-5.798
2038	LC 1188	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-39.350	47.828	-5.499
2039	LC 1188	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	0.952	5.378	-0.098
2040	LC 1188	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR3	-2.487	4.892	-0.311
2041	LC 1189	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-4.266	0.019	-0.395
2042	LC 1189	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-2.039	-3.903	0.010
2043	LC 1189	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-2.015	-3.918	-0.128
2044	LC 1189	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-28.718	24.079	-6.587
2045	LC 1189	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-28.262	24.366	-6.310
2046	LC 1189	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-27.674	24.807	-6.020
2047	LC 1189	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	0.740	4.074	-0.129
2048	LC 1189	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR3	-1.891	3.817	-0.301
2049	LC 1190	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-2.435	0.081	-0.217
2050	LC 1190	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.142	-2.135	0.007
2051	LC 1190	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.131	-2.141	-0.068
2052	LC 1190	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-20.652	13.312	-6.515
2053	LC 1190	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-20.389	13.562	-6.281
2054	LC 1190	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-20.012	13.871	-6.037
2055	LC 1190	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	0.455	2.553	-0.074
2056	LC 1190	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR3	-1.181	2.338	-0.178
2057	LC 1191	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-2.968	-0.693	-0.092
2058	LC 1191	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-1.807	-2.636	0.137
2059	LC 1191	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-1.820	-2.627	0.049
2060	LC 1191	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-20.495	9.150	-6.412
2061	LC 1191	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-20.280	9.377	-6.177
2062	LC 1191	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-19.971	9.650	-5.934
2063	LC 1191	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	0.371	2.240	-0.071
2064	LC 1191	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-0.984	1.920	-0.157
2065	LC 1192	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-3.756	1.759	-0.242
2066	LC 1192	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-1.350	-2.267	0.044
2067	LC 1192	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-1.348	-2.268	-0.035
2068	LC 1192	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-41.848	46.493	-6.062
2069	LC 1192	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-41.081	47.044	-5.783
2070	LC 1192	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-40.042	47.732	-5.484
2071	LC 1192	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	0.939	5.380	-0.098
2072	LC 1192	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-2.500	4.886	-0.311
2073	LC 1193	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-4.903	-0.643	-0.288
2074	LC 1193	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-2.755	-4.234	0.118
2075	LC 1193	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-2.768	-4.227	-0.030
2076	LC 1193	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-30.095	23.632	-6.529
2077	LC 1193	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-29.658	23.997	-6.249
2078	LC 1193	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-29.049	24.453	-5.956
2079	LC 1193	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	0.693	4.096	-0.129
2080	LC 1193	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-1.863	3.639	-0.294
2081	LC 1194	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-2.578	0.010	-0.203
2082	LC 1194	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.287	-2.151	0.021
2083	LC 1194	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.285	-2.151	-0.056
2084	LC 1194	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-21.409	13.265	-6.500
2085	LC 1194	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-21.132	13.525	-6.265
2086	LC 1194	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-20.742	13.843	-6.021
2087	LC 1194	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	0.442	2.555	-0.074
2088	LC 1194	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.178	2.302	-0.177
2089	LC 1195	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-2.375	-1.013	-0.092
2090	LC 1195	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-1.240	-2.946	0.137
2091	LC 1195	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-1.200	-2.962	0.049
2092	LC 1195	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-17.872	8.203	-6.412
2093	LC 1195	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-17.665	8.419	-6.177
2094	LC 1195	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-17.364	8.681	-5.934
2095	LC 1195	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	0.415	2.232	-0.071
2096	LC 1195	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR3	-0.981	1.921	-0.157
2097	LC 1196	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-3.574	1.661	-0.242
2098	LC 1196	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-1.176	-2.362	0.044
2099	LC 1196	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-1.158	-2.371	-0.035
2100	LC 1196	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-41.041	46.202	-6.062
2101	LC 1196	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-40.277	46.750	-5.783
2102	LC 1196	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-39.241	47.434	-5.484
2103	LC 1196	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	0.953	5.378	-0.098
2104	LC 1196	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR3	-2.499	4.886	-0.311
2105	LC 1197	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-4.186	-1.029	-0.288
2106	LC 1197	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-2.070	-4.608	0.118

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2107	LC 1197	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-2.018	-4.632	-0.030
2108	LC 1197	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-28.553	23.012	-6.529
2109	LC 1197	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-28.122	23.370	-6.249
2110	LC 1197	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-27.518	23.819	-5.956
2111	LC 1197	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	0.746	4.087	-0.129
2112	LC 1197	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR3	-1.860	3.640	-0.294
2113	LC 1198	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-2.396	-0.088	-0.203
2114	LC 1198	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.112	-2.246	0.021
2115	LC 1198	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.095	-2.254	-0.056
2116	LC 1198	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-20.602	12.974	-6.500
2117	LC 1198	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-20.328	13.230	-6.265
2118	LC 1198	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-19.940	13.545	-6.021
2119	LC 1198	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	0.456	2.553	-0.074
2120	LC 1198	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR3	-1.178	2.303	-0.177
2121	LC 1199	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-2.340	-0.146	-0.212
2122	LC 1199	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-1.114	-2.143	0.006
2123	LC 1199	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-1.102	-2.148	-0.070
2124	LC 1199	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-18.875	9.546	-6.567
2125	LC 1199	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-18.630	9.782	-6.337
2126	LC 1199	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-18.287	10.068	-6.100
2127	LC 1199	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	0.374	2.125	-0.070
2128	LC 1199	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR3	-1.015	1.949	-0.159
2129	LC 1200	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-3.617	1.775	-0.255
2130	LC 1200	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-1.207	-2.243	0.029
2131	LC 1200	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-1.197	-2.248	-0.049
2132	LC 1200	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-41.424	46.396	-6.079
2133	LC 1200	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-40.654	46.943	-5.800
2134	LC 1200	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-39.609	47.632	-5.501
2135	LC 1200	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	0.944	5.366	-0.098
2136	LC 1200	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR3	-2.504	4.884	-0.311
2137	LC 1201	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-4.248	-0.268	-0.389
2138	LC 1201	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-2.052	-3.881	0.007
2139	LC 1201	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-2.031	-3.891	-0.130
2140	LC 1201	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-29.260	23.704	-6.589
2141	LC 1201	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-28.803	24.080	-6.311
2142	LC 1201	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-28.174	24.543	-6.021
2143	LC 1201	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	0.708	4.026	-0.129
2144	LC 1201	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR3	-1.891	3.654	-0.295
2145	LC 1202	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-2.445	0.029	-0.216
2146	LC 1202	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-1.146	-2.131	0.007
2147	LC 1202	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-1.136	-2.136	-0.069
2148	LC 1202	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-20.987	13.164	-6.516
2149	LC 1202	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-20.705	13.424	-6.281
2150	LC 1202	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-20.309	13.743	-6.038
2151	LC 1202	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	0.447	2.541	-0.073
2152	LC 1202	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR3	-1.185	2.306	-0.177
2153	LC 1203	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-2.373	-0.066	-0.212
2154	LC 1203	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-1.199	-2.096	0.006
2155	LC 1203	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-1.193	-2.099	-0.070
2156	LC 1203	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-18.660	9.855	-6.567
2157	LC 1203	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-18.458	10.071	-6.337
2158	LC 1203	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-18.160	10.338	-6.100
2159	LC 1203	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	0.374	2.125	-0.070
2160	LC 1203	K12:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR3	-0.987	1.963	-0.159
2161	LC 1204	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-3.628	1.800	-0.255
2162	LC 1204	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-1.233	-2.229	0.029
2163	LC 1204	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-1.225	-2.233	-0.049
2164	LC 1204	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-41.358	46.491	-6.079
2165	LC 1204	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-40.601	47.032	-5.800
2166	LC 1204	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-39.570	47.715	-5.501
2167	LC 1204	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	0.943	5.366	-0.098
2168	LC 1204	K12:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR3	-2.495	4.888	-0.311
2169	LC 1205	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-4.289	-0.172	-0.389
2170	LC 1205	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-2.154	-3.825	0.007
2171	LC 1205	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-2.141	-3.832	-0.130
2172	LC 1205	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-29.159	23.906	-6.589
2173	LC 1205	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-28.731	24.269	-6.311
2174	LC 1205	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-28.131	24.719	-6.021
2175	LC 1205	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	0.708	4.026	-0.129
2176	LC 1205	K12:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR3	-1.857	3.671	-0.295
2177	LC 1206	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-2.456	0.053	-0.216
2178	LC 1206	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-1.172	-2.117	0.007
2179	LC 1206	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-1.164	-2.121	-0.069
2180	LC 1206	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-20.921	13.259	-6.516
2181	LC 1206	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-20.652	13.513	-6.281
2182	LC 1206	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-20.270	13.826	-6.038
2183	LC 1206	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	0.447	2.541	-0.073
2184	LC 1206	K12:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR3	-1.177	2.311	-0.177
2185	LC 1207	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-3.495	-0.526	-0.060
2186	LC 1207	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-2.005	-2.861	0.186
2187	LC 1207	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-2.027	-2.854	0.095

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2188	LC 1207	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-7.060	10.872	-2.939
2189	LC 1207	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-6.881	10.980	-2.862
2190	LC 1207	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-6.651	11.112	-2.783
2191	LC 1207	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-5.991	-0.064	-5.874
2192	LC 1207	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-6.789	0.069	-5.939
2193	LC 1207	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	-7.502	0.141	-6.005
2194	LC 1207	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	0.392	2.472	-0.073
2195	LC 1207	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR4	0.073	2.502	-0.084
2196	LC 1208	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-3.828	1.744	-0.236
2197	LC 1208	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-1.387	-2.292	0.051
2198	LC 1208	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-1.387	-2.293	-0.029
2199	LC 1208	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-17.557	29.267	-2.762
2200	LC 1208	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-17.123	29.521	-2.663
2201	LC 1208	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-16.552	29.843	-2.555
2202	LC 1208	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	0.905	24.192	-5.956
2203	LC 1208	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-1.471	24.620	-6.021
2204	LC 1208	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	-3.589	24.866	-6.087
2205	LC 1208	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	0.933	5.381	-0.098
2206	LC 1208	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR4	0.262	5.455	-0.103
2207	LC 1209	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-5.368	-0.587	-0.256
2208	LC 1209	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-2.954	-4.431	0.163
2209	LC 1209	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-2.977	-4.425	0.012
2210	LC 1209	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-11.300	18.491	-2.939
2211	LC 1209	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-11.017	18.658	-2.845
2212	LC 1209	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-10.647	18.868	-2.745
2213	LC 1209	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-3.405	9.268	-6.099
2214	LC 1209	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-4.889	9.528	-6.172
2215	LC 1209	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	-6.211	9.674	-6.247
2216	LC 1209	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	0.692	4.231	-0.131
2217	LC 1209	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR4	0.152	4.285	-0.151
2218	LC 1210	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-2.667	0.025	-0.198
2219	LC 1210	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-1.323	-2.175	0.028
2220	LC 1210	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-1.324	-2.175	-0.050
2221	LC 1210	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-7.511	12.341	-2.925
2222	LC 1210	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-7.325	12.451	-2.847
2223	LC 1210	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-7.081	12.589	-2.765
2224	LC 1210	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-3.578	2.948	-6.055
2225	LC 1210	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-4.514	3.111	-6.120
2226	LC 1210	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	-5.347	3.201	-6.186
2227	LC 1210	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	0.441	2.582	-0.074
2228	LC 1210	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR4	0.117	2.617	-0.084
2229	LC 1211	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-2.644	-0.832	-0.060
2230	LC 1211	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-1.321	-3.234	0.186
2231	LC 1211	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-1.276	-3.260	0.095
2232	LC 1211	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-5.968	11.078	-2.939
2233	LC 1211	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-5.826	11.158	-2.862
2234	LC 1211	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-5.632	11.264	-2.783
2235	LC 1211	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-2.137	-1.233	-5.874
2236	LC 1211	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-2.876	-1.101	-5.939
2237	LC 1211	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	-3.530	-1.029	-6.005
2238	LC 1211	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	0.475	2.457	-0.073
2239	LC 1211	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR4	0.183	2.496	-0.084
2240	LC 1212	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-3.567	1.650	-0.236
2241	LC 1212	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-1.177	-2.406	0.051
2242	LC 1212	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-1.157	-2.417	-0.029
2243	LC 1212	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-17.222	29.330	-2.762
2244	LC 1212	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-16.799	29.576	-2.663
2245	LC 1212	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-16.239	29.889	-2.555
2246	LC 1212	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	2.090	23.832	-5.956
2247	LC 1212	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-0.268	24.261	-6.021
2248	LC 1212	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	-2.367	24.507	-6.087
2249	LC 1212	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	0.959	5.377	-0.098
2250	LC 1212	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR4	0.296	5.454	-0.103
2251	LC 1213	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-4.338	-0.957	-0.256
2252	LC 1213	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-2.128	-4.882	0.163
2253	LC 1213	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-2.069	-4.915	0.012
2254	LC 1213	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-10.729	18.626	-2.939
2255	LC 1213	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-10.470	18.775	-2.845
2256	LC 1213	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-10.123	18.967	-2.745
2257	LC 1213	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-1.171	8.503	-6.099
2258	LC 1213	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-2.615	8.763	-6.172
2259	LC 1213	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	-3.899	8.909	-6.247
2260	LC 1213	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	0.793	4.213	-0.131
2261	LC 1213	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR4	0.286	4.278	-0.151
2262	LC 1214	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-2.405	-0.069	-0.198
2263	LC 1214	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-1.113	-2.289	0.028
2264	LC 1214	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-1.094	-2.300	-0.050
2265	LC 1214	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-7.176	12.404	-2.925
2266	LC 1214	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-7.000	12.506	-2.847
2267	LC 1214	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-6.767	12.636	-2.765
2268	LC 1214	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-2.393	2.589	-6.055

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2269	LC 1214	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-3.310	2.751	-6.120
2270	LC 1214	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	-4.126	2.841	-6.186
2271	LC 1214	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	0.466	2.578	-0.074
2272	LC 1214	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR4	0.151	2.615	-0.084
2273	LC 1215	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-2.703	0.216	-0.220
2274	LC 1215	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-1.223	-2.103	0.009
2275	LC 1215	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-1.222	-2.106	-0.066
2276	LC 1215	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-6.966	10.840	-2.939
2277	LC 1215	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-6.787	10.947	-2.863
2278	LC 1215	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-6.558	11.080	-2.783
2279	LC 1215	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-4.337	0.303	-6.088
2280	LC 1215	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-5.094	0.471	-6.153
2281	LC 1215	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-5.773	0.580	-6.219
2282	LC 1215	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	0.370	2.220	-0.071
2283	LC 1215	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	0.084	2.289	-0.082
2284	LC 1216	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-3.677	1.807	-0.256
2285	LC 1216	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.239	-2.227	0.029
2286	LC 1216	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.231	-2.232	-0.048
2287	LC 1216	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-17.535	29.267	-2.762
2288	LC 1216	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-17.101	29.522	-2.663
2289	LC 1216	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-16.529	29.843	-2.555
2290	LC 1216	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	1.306	24.177	-5.978
2291	LC 1216	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.067	24.606	-6.043
2292	LC 1216	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-3.182	24.852	-6.109
2293	LC 1216	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	0.940	5.380	-0.098
2294	LC 1216	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	0.269	5.455	-0.103
2295	LC 1217	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-4.578	0.002	-0.395
2296	LC 1217	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.180	-3.827	0.010
2297	LC 1217	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.172	-3.833	-0.128
2298	LC 1217	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-11.266	18.492	-2.939
2299	LC 1217	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.963	18.625	-2.845
2300	LC 1217	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.593	18.835	-2.746
2301	LC 1217	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.476	9.387	-6.184
2302	LC 1217	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-3.948	9.648	-6.258
2303	LC 1217	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-5.260	9.794	-6.332
2304	LC 1217	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	0.694	4.083	-0.129
2305	LC 1217	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	0.173	4.164	-0.150
2306	LC 1218	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-2.515	0.077	-0.217
2307	LC 1218	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-1.178	-2.115	0.007
2308	LC 1218	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-1.171	-2.119	-0.068
2309	LC 1218	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.469	12.308	-2.925
2310	LC 1218	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.283	12.417	-2.848
2311	LC 1218	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.039	12.555	-2.766
2312	LC 1218	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-3.196	2.853	-6.077
2313	LC 1218	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-4.118	3.053	-6.142
2314	LC 1218	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-4.946	3.143	-6.208
2315	LC 1218	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	0.443	2.555	-0.074
2316	LC 1218	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	0.122	2.590	-0.084
2317	LC 1219	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-2.445	0.230	-0.220
2318	LC 1219	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-1.107	-2.167	0.009
2319	LC 1219	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-1.092	-2.177	-0.066
2320	LC 1219	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-6.023	11.044	-2.939
2321	LC 1219	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-5.881	11.123	-2.863
2322	LC 1219	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-5.688	11.228	-2.783
2323	LC 1219	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-2.647	0.078	-6.088
2324	LC 1219	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-3.367	0.245	-6.153
2325	LC 1219	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	-4.008	0.354	-6.219
2326	LC 1219	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	0.409	2.213	-0.071
2327	LC 1219	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR4	0.149	2.285	-0.082
2328	LC 1220	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-3.597	1.811	-0.256
2329	LC 1220	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.203	-2.247	0.029
2330	LC 1220	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-1.191	-2.253	-0.048
2331	LC 1220	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-17.244	29.330	-2.762
2332	LC 1220	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-16.822	29.576	-2.663
2333	LC 1220	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-16.262	29.889	-2.555
2334	LC 1220	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	1.826	24.108	-5.978
2335	LC 1220	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-0.535	24.536	-6.043
2336	LC 1220	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	-2.638	24.782	-6.109
2337	LC 1220	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	0.952	5.378	-0.098
2338	LC 1220	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR4	0.289	5.454	-0.103
2339	LC 1221	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-4.266	0.019	-0.395
2340	LC 1221	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.039	-3.903	0.010
2341	LC 1221	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-2.015	-3.918	-0.128
2342	LC 1221	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.764	18.625	-2.939
2343	LC 1221	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.485	18.740	-2.845
2344	LC 1221	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-10.140	18.932	-2.746
2345	LC 1221	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-1.601	9.240	-6.184
2346	LC 1221	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-3.049	9.499	-6.258
2347	LC 1221	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	-4.337	9.646	-6.332
2348	LC 1221	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	0.740	4.074	-0.129
2349	LC 1221	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR4	0.252	4.160	-0.150

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2350	LC 1222	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-2.435	0.081	-0.217
2351	LC 1222	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-1.142	-2.135	0.007
2352	LC 1222	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-1.131	-2.141	-0.068
2353	LC 1222	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.178	12.371	-2.925
2354	LC 1222	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-7.004	12.472	-2.848
2355	LC 1222	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-6.771	12.601	-2.766
2356	LC 1222	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-2.676	2.784	-6.077
2357	LC 1222	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-3.586	2.984	-6.142
2358	LC 1222	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	-4.403	3.074	-6.208
2359	LC 1222	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	0.455	2.553	-0.074
2360	LC 1222	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR4	0.142	2.589	-0.084
2361	LC 1223	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-2.968	-0.693	-0.092
2362	LC 1223	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-1.807	-2.636	0.137
2363	LC 1223	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-1.820	-2.627	0.049
2364	LC 1223	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.424	10.437	-2.944
2365	LC 1223	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.271	10.526	-2.868
2366	LC 1223	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.070	10.639	-2.789
2367	LC 1223	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-5.311	-0.107	-5.945
2368	LC 1223	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.073	-0.014	-6.010
2369	LC 1223	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-6.745	0.056	-6.076
2370	LC 1223	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	0.371	2.240	-0.071
2371	LC 1223	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	0.091	2.229	-0.082
2372	LC 1224	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-3.756	1.759	-0.242
2373	LC 1224	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.350	-2.267	0.044
2374	LC 1224	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.348	-2.268	-0.035
2375	LC 1224	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-17.420	29.231	-2.762
2376	LC 1224	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-16.992	29.481	-2.664
2377	LC 1224	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-16.428	29.797	-2.556
2378	LC 1224	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	1.094	24.203	-5.964
2379	LC 1224	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.276	24.632	-6.029
2380	LC 1224	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-3.388	24.878	-6.095
2381	LC 1224	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	0.939	5.380	-0.098
2382	LC 1224	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	0.272	5.455	-0.103
2383	LC 1225	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-4.903	-0.643	-0.288
2384	LC 1225	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.755	-4.234	0.118
2385	LC 1225	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.768	-4.227	-0.030
2386	LC 1225	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-11.021	18.390	-2.940
2387	LC 1225	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.752	18.547	-2.847
2388	LC 1225	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.398	18.746	-2.748
2389	LC 1225	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-3.038	9.286	-6.127
2390	LC 1225	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-4.505	9.545	-6.200
2391	LC 1225	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-5.808	9.696	-6.276
2392	LC 1225	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	0.693	4.096	-0.129
2393	LC 1225	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	0.183	4.124	-0.150
2394	LC 1226	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-2.578	0.010	-0.203
2395	LC 1226	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-1.287	-2.151	0.021
2396	LC 1226	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-1.285	-2.151	-0.056
2397	LC 1226	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-7.374	12.305	-2.926
2398	LC 1226	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-7.194	12.410	-2.848
2399	LC 1226	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-6.957	12.543	-2.766
2400	LC 1226	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-3.399	2.917	-6.063
2401	LC 1226	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-4.327	3.079	-6.127
2402	LC 1226	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-5.156	3.130	-6.194
2403	LC 1226	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	0.442	2.555	-0.074
2404	LC 1226	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	0.125	2.590	-0.084
2405	LC 1227	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-2.375	-1.013	-0.092
2406	LC 1227	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-1.240	-2.946	0.137
2407	LC 1227	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-1.200	-2.962	0.049
2408	LC 1227	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-5.967	10.440	-2.944
2409	LC 1227	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-5.814	10.529	-2.868
2410	LC 1227	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-5.612	10.642	-2.789
2411	LC 1227	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-2.532	-1.051	-5.945
2412	LC 1227	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-3.272	-0.956	-6.010
2413	LC 1227	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	-3.923	-0.887	-6.076
2414	LC 1227	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	0.415	2.232	-0.071
2415	LC 1227	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR4	0.137	2.226	-0.082
2416	LC 1228	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-3.574	1.661	-0.242
2417	LC 1228	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.176	-2.362	0.044
2418	LC 1228	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-1.158	-2.371	-0.035
2419	LC 1228	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-17.279	29.232	-2.762
2420	LC 1228	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-16.852	29.481	-2.664
2421	LC 1228	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-16.288	29.798	-2.556
2422	LC 1228	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	1.949	23.913	-5.964
2423	LC 1228	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-0.414	24.342	-6.029
2424	LC 1228	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	-2.520	24.588	-6.095
2425	LC 1228	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	0.953	5.378	-0.098
2426	LC 1228	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR4	0.286	5.454	-0.103
2427	LC 1229	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-4.186	-1.029	-0.288
2428	LC 1229	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.070	-4.608	0.118
2429	LC 1229	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.018	-4.632	-0.030
2430	LC 1229	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.810	18.391	-2.940

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2431	LC 1229	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.540	18.548	-2.847
2432	LC 1229	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-10.185	18.748	-2.748
2433	LC 1229	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-1.394	8.669	-6.127
2434	LC 1229	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-2.846	8.928	-6.200
2435	LC 1229	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	-4.136	9.078	-6.276
2436	LC 1229	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	0.746	4.087	-0.129
2437	LC 1229	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR4	0.238	4.121	-0.150
2438	LC 1230	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-2.396	-0.088	-0.203
2439	LC 1230	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-1.112	-2.246	0.021
2440	LC 1230	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-1.095	-2.254	-0.056
2441	LC 1230	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-7.233	12.306	-2.926
2442	LC 1230	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-7.053	12.411	-2.848
2443	LC 1230	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-6.816	12.544	-2.766
2444	LC 1230	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-2.544	2.627	-6.063
2445	LC 1230	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-3.465	2.789	-6.127
2446	LC 1230	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	-4.288	2.840	-6.194
2447	LC 1230	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	0.456	2.553	-0.074
2448	LC 1230	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR4	0.139	2.589	-0.084
2449	LC 1231	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-2.340	-0.146	-0.212
2450	LC 1231	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-1.114	-2.143	0.006
2451	LC 1231	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-1.102	-2.148	-0.070
2452	LC 1231	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-6.355	10.465	-2.943
2453	LC 1231	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-6.193	10.561	-2.867
2454	LC 1231	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-5.980	10.682	-2.788
2455	LC 1231	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-3.478	0.075	-6.093
2456	LC 1231	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-4.218	0.203	-6.157
2457	LC 1231	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	-4.874	0.273	-6.224
2458	LC 1231	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	0.374	2.125	-0.070
2459	LC 1231	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR4	0.110	2.155	-0.081
2460	LC 1232	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-3.617	1.775	-0.255
2461	LC 1232	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-1.207	-2.243	0.029
2462	LC 1232	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-1.197	-2.248	-0.049
2463	LC 1232	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-17.387	29.219	-2.762
2464	LC 1232	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-16.956	29.471	-2.664
2465	LC 1232	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-16.389	29.789	-2.556
2466	LC 1232	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	1.574	24.127	-5.979
2467	LC 1232	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-0.793	24.556	-6.044
2468	LC 1232	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	-2.902	24.802	-6.110
2469	LC 1232	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	0.944	5.366	-0.098
2470	LC 1232	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR4	0.278	5.441	-0.103
2471	LC 1233	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-4.248	-0.268	-0.389
2472	LC 1233	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-2.052	-3.881	0.007
2473	LC 1233	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-2.031	-3.891	-0.130
2474	LC 1233	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-11.024	18.431	-2.940
2475	LC 1233	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-10.748	18.593	-2.846
2476	LC 1233	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-10.385	18.798	-2.747
2477	LC 1233	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-2.019	9.204	-6.186
2478	LC 1233	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-3.475	9.463	-6.259
2479	LC 1233	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	-4.770	9.609	-6.334
2480	LC 1233	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	0.708	4.026	-0.129
2481	LC 1233	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR4	0.208	4.083	-0.150
2482	LC 1234	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-2.445	0.029	-0.216
2483	LC 1234	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-1.146	-2.131	0.007
2484	LC 1234	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-1.136	-2.136	-0.069
2485	LC 1234	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-7.341	12.293	-2.926
2486	LC 1234	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-7.158	12.400	-2.848
2487	LC 1234	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-6.917	12.536	-2.766
2488	LC 1234	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-2.931	2.799	-6.077
2489	LC 1234	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-3.852	2.960	-6.142
2490	LC 1234	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	-4.672	3.050	-6.208
2491	LC 1234	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	0.447	2.541	-0.073
2492	LC 1234	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR4	0.132	2.576	-0.084
2493	LC 1235	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-2.373	-0.066	-0.212
2494	LC 1235	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-1.199	-2.096	0.006
2495	LC 1235	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-1.193	-2.099	-0.070
2496	LC 1235	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-6.115	10.546	-2.943
2497	LC 1235	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-5.971	10.629	-2.867
2498	LC 1235	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-5.777	10.736	-2.788
2499	LC 1235	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-3.513	0.203	-6.093
2500	LC 1235	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-4.252	0.331	-6.157
2501	LC 1235	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	-4.909	0.401	-6.224
2502	LC 1235	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	0.374	2.125	-0.070
2503	LC 1235	K11:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR4	0.111	2.155	-0.081
2504	LC 1236	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-3.628	1.800	-0.255
2505	LC 1236	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-1.233	-2.229	0.029
2506	LC 1236	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-1.225	-2.233	-0.049
2507	LC 1236	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-17.313	29.244	-2.762
2508	LC 1236	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-16.888	29.491	-2.664
2509	LC 1236	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-16.327	29.806	-2.556
2510	LC 1236	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	1.563	24.166	-5.979
2511	LC 1236	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-0.804	24.595	-6.044

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2512	LC 1236	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	-2.913	24.841	-6.110
2513	LC 1236	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	0.943	5.366	-0.098
2514	LC 1236	K11:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR4	0.278	5.441	-0.103
2515	LC 1237	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-4.289	-0.172	-0.389
2516	LC 1237	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-2.154	-3.825	0.007
2517	LC 1237	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-2.141	-3.832	-0.130
2518	LC 1237	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-10.887	18.484	-2.940
2519	LC 1237	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-10.623	18.637	-2.846
2520	LC 1237	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-10.273	18.833	-2.747
2521	LC 1237	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-2.082	9.288	-6.186
2522	LC 1237	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-3.537	9.547	-6.259
2523	LC 1237	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	-4.833	9.692	-6.334
2524	LC 1237	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	0.708	4.026	-0.129
2525	LC 1237	K11:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR4	0.209	4.083	-0.150
2526	LC 1238	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-2.456	0.053	-0.216
2527	LC 1238	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-1.172	-2.117	0.007
2528	LC 1238	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-1.164	-2.121	-0.069
2529	LC 1238	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-7.267	12.318	-2.926
2530	LC 1238	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-7.090	12.421	-2.848
2531	LC 1238	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-6.855	12.552	-2.766
2532	LC 1238	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-2.941	2.838	-6.077
2533	LC 1238	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-3.863	2.999	-6.142
2534	LC 1238	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	-4.683	3.089	-6.208
2535	LC 1238	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	0.447	2.541	-0.073
2536	LC 1238	K11:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR4	0.132	2.576	-0.084

BIJLAGE B

Belastingen uit lijn op juk 65

Projectnaam: TenneT 150 kV Station Waalwijk
Onderdeel: Juk 65; Belastingen uit lijn
Documentnummer: ---
Revisie: A
Bijlage: B-1

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1	LC 1001	K4:1NL.1#1a,Wind/10C,+90 deg	4.148	-0.558	0.299
2	LC 1001	K5:1NL.1#1a,Wind/10C,+90 deg	3.847	-0.401	0.443
3	LC 1001	K5:2NL.1#1a,Wind/10C,+90 deg	4.318	-0.655	0.262
4	LC 1001	K6:1NL.1#1a,Wind/10C,+90 deg	24.949	10.376	-4.671
5	LC 1001	K6:2NL.1#1a,Wind/10C,+90 deg	24.780	10.730	-4.367
6	LC 1001	K6:3NL.1#1a,Wind/10C,+90 deg	24.544	11.128	-4.052
7	LC 1001	K7:1NL.1#1a,Wind/10C,+90 deg	24.072	11.986	-5.086
8	LC 1001	K7:2NL.1#1a,Wind/10C,+90 deg	24.821	11.508	-5.283
9	LC 1001	K7:3NL.1#1a,Wind/10C,+90 deg	25.449	11.080	-5.479
10	LC 1002	K4:1NL.1#1b,Wind/-20C,+90 deg	3.743	1.448	0.068
11	LC 1002	K5:1NL.1#1b,Wind/-20C,+90 deg	3.404	1.622	0.156
12	LC 1002	K5:2NL.1#1b,Wind/-20C,+90 deg	3.892	1.353	0.039
13	LC 1002	K6:1NL.1#1b,Wind/-20C,+90 deg	43.220	43.535	-4.217
14	LC 1002	K6:2NL.1#1b,Wind/-20C,+90 deg	42.711	44.095	-3.868
15	LC 1002	K6:3NL.1#1b,Wind/-20C,+90 deg	42.031	44.750	-3.498
16	LC 1002	K7:1NL.1#1b,Wind/-20C,+90 deg	32.000	31.505	-4.932
17	LC 1002	K7:2NL.1#1b,Wind/-20C,+90 deg	33.225	30.770	-5.142
18	LC 1002	K7:3NL.1#1b,Wind/-20C,+90 deg	34.235	30.120	-5.348
19	LC 1003	K4:1NL.1#3,Wind / Ice / -5C,+90 deg	7.858	-1.321	0.041
20	LC 1003	K5:1NL.1#3,Wind / Ice / -5C,+90 deg	7.319	-1.013	0.427
21	LC 1003	K5:2NL.1#3,Wind / Ice / -5C,+90 deg	8.130	-1.471	-0.138
22	LC 1003	K6:1NL.1#3,Wind / Ice / -5C,+90 deg	35.187	22.755	-4.876
23	LC 1003	K6:2NL.1#3,Wind / Ice / -5C,+90 deg	34.915	23.233	-4.456
24	LC 1003	K6:3NL.1#3,Wind / Ice / -5C,+90 deg	34.528	23.783	-4.018
25	LC 1003	K7:1NL.1#3,Wind / Ice / -5C,+90 deg	30.903	20.784	-5.541
26	LC 1003	K7:2NL.1#3,Wind / Ice / -5C,+90 deg	31.942	20.131	-5.822
27	LC 1003	K7:3NL.1#3,Wind / Ice / -5C,+90 deg	32.800	19.551	-6.100
28	LC 1004	K4:1NL.1#4,Construction/Maintenance +5C,+90 deg	2.546	0.098	0.032
29	LC 1004	K5:1NL.1#4,Construction/Maintenance +5C,+90 deg	2.356	0.203	0.134
30	LC 1004	K5:2NL.1#4,Construction/Maintenance +5C,+90 deg	2.632	0.044	-0.011
31	LC 1004	K6:1NL.1#4,Construction/Maintenance +5C,+90 deg	22.006	13.247	-5.072
32	LC 1004	K6:2NL.1#4,Construction/Maintenance +5C,+90 deg	21.862	13.542	-4.786
33	LC 1004	K6:3NL.1#4,Construction/Maintenance +5C,+90 deg	21.647	13.882	-4.490
34	LC 1004	K7:1NL.1#4,Construction/Maintenance +5C,+90 deg	19.759	12.822	-5.512
35	LC 1004	K7:2NL.1#4,Construction/Maintenance +5C,+90 deg	20.407	12.411	-5.708
36	LC 1004	K7:3NL.1#4,Construction/Maintenance +5C,+90 deg	20.939	12.046	-5.902
37	LC 1005	K4:1NL.1#1a,Wind/10C,-90 deg	3.303	-0.771	0.299
38	LC 1005	K5:1NL.1#1a,Wind/10C,-90 deg	3.143	-0.651	0.443
39	LC 1005	K5:2NL.1#1a,Wind/10C,-90 deg	3.326	-0.835	0.262
40	LC 1005	K6:1NL.1#1a,Wind/10C,-90 deg	19.605	10.095	-4.671
41	LC 1005	K6:2NL.1#1a,Wind/10C,-90 deg	19.597	10.352	-4.367
42	LC 1005	K6:3NL.1#1a,Wind/10C,-90 deg	19.522	10.654	-4.052
43	LC 1005	K7:1NL.1#1a,Wind/10C,-90 deg	18.318	11.821	-5.086
44	LC 1005	K7:2NL.1#1a,Wind/10C,-90 deg	18.885	11.442	-5.283
45	LC 1005	K7:3NL.1#1a,Wind/10C,-90 deg	19.330	11.112	-5.479
46	LC 1006	K4:1NL.1#1b,Wind/-20C,-90 deg	3.576	1.406	0.068
47	LC 1006	K5:1NL.1#1b,Wind/-20C,-90 deg	3.265	1.573	0.156
48	LC 1006	K5:2NL.1#1b,Wind/-20C,-90 deg	3.697	1.318	0.039
49	LC 1006	K6:1NL.1#1b,Wind/-20C,-90 deg	42.168	43.480	-4.217
50	LC 1006	K6:2NL.1#1b,Wind/-20C,-90 deg	41.690	44.020	-3.868
51	LC 1006	K6:3NL.1#1b,Wind/-20C,-90 deg	41.042	44.656	-3.498
52	LC 1006	K7:1NL.1#1b,Wind/-20C,-90 deg	30.866	31.472	-4.932
53	LC 1006	K7:2NL.1#1b,Wind/-20C,-90 deg	32.056	30.757	-5.142
54	LC 1006	K7:3NL.1#1b,Wind/-20C,-90 deg	33.030	30.126	-5.348
55	LC 1007	K4:1NL.1#3,Wind / Ice / -5C,-90 deg	6.742	-1.602	0.041
56	LC 1007	K5:1NL.1#3,Wind / Ice / -5C,-90 deg	6.390	-1.342	0.427
57	LC 1007	K5:2NL.1#3,Wind / Ice / -5C,-90 deg	6.820	-1.708	-0.138
58	LC 1007	K6:1NL.1#3,Wind / Ice / -5C,-90 deg	32.868	22.600	-4.876
59	LC 1007	K6:2NL.1#3,Wind / Ice / -5C,-90 deg	32.684	23.026	-4.456
60	LC 1007	K6:3NL.1#3,Wind / Ice / -5C,-90 deg	32.386	23.523	-4.018
61	LC 1007	K7:1NL.1#3,Wind / Ice / -5C,-90 deg	28.359	20.694	-5.541
62	LC 1007	K7:2NL.1#3,Wind / Ice / -5C,-90 deg	29.298	20.095	-5.822
63	LC 1007	K7:3NL.1#3,Wind / Ice / -5C,-90 deg	30.056	19.569	-6.100
64	LC 1008	K4:1NL.1#4,Construction/Maintenance +5C,-90 deg	2.380	0.057	0.032
65	LC 1008	K5:1NL.1#4,Construction/Maintenance +5C,-90 deg	2.217	0.154	0.134
66	LC 1008	K5:2NL.1#4,Construction/Maintenance +5C,-90 deg	2.437	0.008	-0.011
67	LC 1008	K6:1NL.1#4,Construction/Maintenance +5C,-90 deg	20.954	13.191	-5.072
68	LC 1008	K6:2NL.1#4,Construction/Maintenance +5C,-90 deg	20.841	13.468	-4.786
69	LC 1008	K6:3NL.1#4,Construction/Maintenance +5C,-90 deg	20.658	13.788	-4.490
70	LC 1008	K7:1NL.1#4,Construction/Maintenance +5C,-90 deg	18.626	12.790	-5.512
71	LC 1008	K7:2NL.1#4,Construction/Maintenance +5C,-90 deg	19.238	12.398	-5.708
72	LC 1008	K7:3NL.1#4,Construction/Maintenance +5C,-90 deg	19.734	12.053	-5.902
73	LC 1009	K4:1NL.1#1a,Wind/10C,+45 deg	3.195	-1.155	0.250
74	LC 1009	K5:1NL.1#1a,Wind/10C,+45 deg	3.042	-1.076	0.400
75	LC 1009	K5:2NL.1#1a,Wind/10C,+45 deg	3.272	-1.192	0.203
76	LC 1009	K6:1NL.1#1a,Wind/10C,+45 deg	21.579	8.502	-4.834
77	LC 1009	K6:2NL.1#1a,Wind/10C,+45 deg	21.539	8.739	-4.530
78	LC 1009	K6:3NL.1#1a,Wind/10C,+45 deg	21.435	9.025	-4.217
79	LC 1009	K7:1NL.1#1a,Wind/10C,+45 deg	20.193	9.446	-5.276
80	LC 1009	K7:2NL.1#1a,Wind/10C,+45 deg	20.762	9.098	-5.473
81	LC 1009	K7:3NL.1#1a,Wind/10C,+45 deg	21.225	8.797	-5.669

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
82	LC 1010	K4:1NL.1#1b,Wind/-20C,+45 deg	3.669	1.456	0.062
83	LC 1010	K5:1NL.1#1b,Wind/-20C,+45 deg	3.339	1.607	0.151
84	LC 1010	K5:2NL.1#1b,Wind/-20C,+45 deg	3.800	1.356	0.033
85	LC 1010	K6:1NL.1#1b,Wind/-20C,+45 deg	42.948	43.630	-4.225
86	LC 1010	K6:2NL.1#1b,Wind/-20C,+45 deg	42.458	44.173	-3.875
87	LC 1010	K6:3NL.1#1b,Wind/-20C,+45 deg	41.792	44.820	-3.505
88	LC 1010	K7:1NL.1#1b,Wind/-20C,+45 deg	31.653	31.544	-4.941
89	LC 1010	K7:2NL.1#1b,Wind/-20C,+45 deg	32.863	30.822	-5.151
90	LC 1010	K7:3NL.1#1b,Wind/-20C,+45 deg	33.852	30.193	-5.359
91	LC 1011	K4:1NL.1#1a,Wind/10C,+45 deg	7.238	-1.476	0.005
92	LC 1011	K5:1NL.1#1a,Wind/10C,+45 deg	6.809	-1.232	0.391
93	LC 1011	K5:2NL.1#1a,Wind/10C,+45 deg	7.421	-1.571	-0.179
94	LC 1011	K6:1NL.1#1a,Wind/10C,+45 deg	34.196	22.554	-4.917
95	LC 1011	K6:2NL.1#1a,Wind/10C,+45 deg	33.972	22.997	-4.497
96	LC 1011	K6:3NL.1#1a,Wind/10C,+45 deg	33.641	23.502	-4.059
97	LC 1011	K7:1NL.1#1a,Wind/10C,+45 deg	29.682	20.350	-5.590
98	LC 1011	K7:2NL.1#1a,Wind/10C,+45 deg	30.653	19.751	-5.871
99	LC 1011	K7:3NL.1#1a,Wind/10C,+45 deg	31.454	19.214	-6.149
100	LC 1012	K4:1NL.1#4,Construction/Maintenance +5C,+45 deg	2.463	0.078	0.028
101	LC 1012	K5:1NL.1#4,Construction/Maintenance +5C,+45 deg	2.287	0.175	0.130
102	LC 1012	K5:2NL.1#4,Construction/Maintenance +5C,+45 deg	2.535	0.032	-0.016
103	LC 1012	K6:1NL.1#4,Construction/Maintenance +5C,+45 deg	21.694	13.274	-5.080
104	LC 1012	K6:2NL.1#4,Construction/Maintenance +5C,+45 deg	21.570	13.553	-4.793
105	LC 1012	K6:3NL.1#4,Construction/Maintenance +5C,+45 deg	21.370	13.883	-4.498
106	LC 1012	K7:1NL.1#4,Construction/Maintenance +5C,+45 deg	19.360	12.753	-5.521
107	LC 1012	K7:2NL.1#4,Construction/Maintenance +5C,+45 deg	19.989	12.356	-5.717
108	LC 1012	K7:3NL.1#4,Construction/Maintenance +5C,+45 deg	20.504	12.006	-5.911
109	LC 1013	K4:1NL.1#1a,Wind/10C,+45 deg	2.704	-1.435	0.250
110	LC 1013	K5:1NL.1#1a,Wind/10C,+45 deg	2.588	-1.336	0.400
111	LC 1013	K5:2NL.1#1a,Wind/10C,+45 deg	2.737	-1.494	0.203
112	LC 1013	K6:1NL.1#1a,Wind/10C,+45 deg	18.745	7.674	-4.834
113	LC 1013	K6:2NL.1#1a,Wind/10C,+45 deg	18.721	7.893	-4.530
114	LC 1013	K6:3NL.1#1a,Wind/10C,+45 deg	18.633	8.162	-4.217
115	LC 1013	K7:1NL.1#1a,Wind/10C,+45 deg	17.312	8.693	-5.276
116	LC 1013	K7:2NL.1#1a,Wind/10C,+45 deg	17.846	8.326	-5.473
117	LC 1013	K7:3NL.1#1a,Wind/10C,+45 deg	18.272	8.007	-5.669
118	LC 1014	K4:1NL.1#1b,Wind/-20C,+45 deg	3.572	1.401	0.062
119	LC 1014	K5:1NL.1#1b,Wind/-20C,+45 deg	3.250	1.556	0.151
120	LC 1014	K5:2NL.1#1b,Wind/-20C,+45 deg	3.695	1.296	0.033
121	LC 1014	K6:1NL.1#1b,Wind/-20C,+45 deg	42.390	43.467	-4.225
122	LC 1014	K6:2NL.1#1b,Wind/-20C,+45 deg	41.903	44.006	-3.875
123	LC 1014	K6:3NL.1#1b,Wind/-20C,+45 deg	41.241	44.650	-3.505
124	LC 1014	K7:1NL.1#1b,Wind/-20C,+45 deg	31.086	31.395	-4.941
125	LC 1014	K7:2NL.1#1b,Wind/-20C,+45 deg	32.288	30.669	-5.151
126	LC 1014	K7:3NL.1#1b,Wind/-20C,+45 deg	33.270	30.037	-5.359
127	LC 1015	K4:1NL.1#3,Wind / Ice / -5C,+45 deg	6.588	-1.845	0.005
128	LC 1015	K5:1NL.1#3,Wind / Ice / -5C,+45 deg	6.210	-1.575	0.391
129	LC 1015	K5:2NL.1#3,Wind / Ice / -5C,+45 deg	6.715	-1.970	-0.179
130	LC 1015	K6:1NL.1#3,Wind / Ice / -5C,+45 deg	32.998	22.099	-4.917
131	LC 1015	K6:2NL.1#3,Wind / Ice / -5C,+45 deg	32.783	22.532	-4.497
132	LC 1015	K6:3NL.1#3,Wind / Ice / -5C,+45 deg	32.461	23.028	-4.059
133	LC 1015	K7:1NL.1#3,Wind / Ice / -5C,+45 deg	28.458	19.936	-5.590
134	LC 1015	K7:2NL.1#3,Wind / Ice / -5C,+45 deg	29.411	19.327	-5.871
135	LC 1015	K7:3NL.1#3,Wind / Ice / -5C,+45 deg	30.190	18.780	-6.149
136	LC 1016	K4:1NL.1#4,Construction/Maintenance +5C,+45 deg	2.366	0.023	0.028
137	LC 1016	K5:1NL.1#4,Construction/Maintenance +5C,+45 deg	2.198	0.123	0.130
138	LC 1016	K5:2NL.1#4,Construction/Maintenance +5C,+45 deg	2.430	-0.028	-0.016
139	LC 1016	K6:1NL.1#4,Construction/Maintenance +5C,+45 deg	21.136	13.111	-5.080
140	LC 1016	K6:2NL.1#4,Construction/Maintenance +5C,+45 deg	21.015	13.386	-4.793
141	LC 1016	K6:3NL.1#4,Construction/Maintenance +5C,+45 deg	20.819	13.713	-4.498
142	LC 1016	K7:1NL.1#4,Construction/Maintenance +5C,+45 deg	18.793	12.605	-5.521
143	LC 1016	K7:2NL.1#4,Construction/Maintenance +5C,+45 deg	19.415	12.204	-5.717
144	LC 1016	K7:3NL.1#4,Construction/Maintenance +5C,+45 deg	19.922	11.850	-5.911
145	LC 1017	K4:1NL.1#1a,Wind/10C,-45 deg	2.967	0.863	-0.006
146	LC 1017	K5:1NL.1#1a,Wind/10C,-45 deg	2.656	0.989	0.081
147	LC 1017	K5:2NL.1#1a,Wind/10C,-45 deg	3.127	0.784	-0.042
148	LC 1017	K6:1NL.1#1a,Wind/10C,-45 deg	22.482	12.540	-5.165
149	LC 1017	K6:2NL.1#1a,Wind/10C,-45 deg	22.280	12.863	-4.886
150	LC 1017	K6:3NL.1#1a,Wind/10C,-45 deg	21.986	13.202	-4.600
151	LC 1017	K7:1NL.1#1a,Wind/10C,-45 deg	21.635	14.166	-5.565
152	LC 1017	K7:2NL.1#1a,Wind/10C,-45 deg	22.395	13.722	-5.762
153	LC 1017	K7:3NL.1#1a,Wind/10C,-45 deg	23.040	13.317	-5.955
154	LC 1018	K4:1NL.1#1b,Wind/-20C,-45 deg	3.630	1.532	0.046
155	LC 1018	K5:1NL.1#1b,Wind/-20C,-45 deg	3.289	1.694	0.132
156	LC 1018	K5:2NL.1#1b,Wind/-20C,-45 deg	3.768	1.424	0.018
157	LC 1018	K6:1NL.1#1b,Wind/-20C,-45 deg	42.964	43.584	-4.242
158	LC 1018	K6:2NL.1#1b,Wind/-20C,-45 deg	42.455	44.140	-3.894
159	LC 1018	K6:3NL.1#1b,Wind/-20C,-45 deg	41.775	44.791	-3.525
160	LC 1018	K7:1NL.1#1b,Wind/-20C,-45 deg	31.740	31.573	-4.958
161	LC 1018	K7:2NL.1#1b,Wind/-20C,-45 deg	32.963	30.836	-5.167
162	LC 1018	K7:3NL.1#1b,Wind/-20C,-45 deg	33.969	30.185	-5.373

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
163	LC 1019	K4:1NL.1#3,Wind / Ice / -5C,-45 deg	7.043	-0.691	-0.118
164	LC 1019	K5:1NL.1#3,Wind / Ice / -5C,-45 deg	6.515	-0.391	0.238
165	LC 1019	K5:2NL.1#3,Wind / Ice / -5C,-45 deg	7.293	-0.836	-0.297
166	LC 1019	K6:1NL.1#3,Wind / Ice / -5C,-45 deg	34.364	23.154	-4.996
167	LC 1019	K6:2NL.1#3,Wind / Ice / -5C,-45 deg	34.088	23.619	-4.581
168	LC 1019	K6:3NL.1#3,Wind / Ice / -5C,-45 deg	33.691	24.164	-4.152
169	LC 1019	K7:1NL.1#3,Wind / Ice / -5C,-45 deg	30.059	21.152	-5.658
170	LC 1019	K7:2NL.1#3,Wind / Ice / -5C,-45 deg	31.090	20.496	-5.938
171	LC 1019	K7:3NL.1#3,Wind / Ice / -5C,-45 deg	31.959	19.947	-6.216
172	LC 1020	K4:1NL.1#4,Construction/Maintenance +5C,-45 deg	2.440	0.172	0.013
173	LC 1020	K5:1NL.1#4,Construction/Maintenance +5C,-45 deg	2.249	0.272	0.111
174	LC 1020	K5:2NL.1#4,Construction/Maintenance +5C,-45 deg	2.521	0.115	-0.030
175	LC 1020	K6:1NL.1#4,Construction/Maintenance +5C,-45 deg	21.755	13.287	-5.095
176	LC 1020	K6:2NL.1#4,Construction/Maintenance +5C,-45 deg	21.611	13.579	-4.811
177	LC 1020	K6:3NL.1#4,Construction/Maintenance +5C,-45 deg	21.396	13.916	-4.516
178	LC 1020	K7:1NL.1#4,Construction/Maintenance +5C,-45 deg	19.493	12.834	-5.534
179	LC 1020	K7:2NL.1#4,Construction/Maintenance +5C,-45 deg	20.137	12.422	-5.730
180	LC 1020	K7:3NL.1#4,Construction/Maintenance +5C,-45 deg	20.665	12.057	-5.924
181	LC 1021	K4:1NL.1#1a,Wind/10C,-45 deg	2.615	0.929	-0.006
182	LC 1021	K5:1NL.1#1a,Wind/10C,-45 deg	2.406	1.000	0.081
183	LC 1021	K5:2NL.1#1a,Wind/10C,-45 deg	2.671	0.907	-0.042
184	LC 1021	K6:1NL.1#1a,Wind/10C,-45 deg	18.936	13.087	-5.165
185	LC 1021	K6:2NL.1#1a,Wind/10C,-45 deg	18.879	13.331	-4.886
186	LC 1021	K6:3NL.1#1a,Wind/10C,-45 deg	18.729	13.591	-4.600
187	LC 1021	K7:1NL.1#1a,Wind/10C,-45 deg	17.725	14.756	-5.565
188	LC 1021	K7:2NL.1#1a,Wind/10C,-45 deg	18.339	14.428	-5.762
189	LC 1021	K7:3NL.1#1a,Wind/10C,-45 deg	18.838	14.140	-5.955
190	LC 1022	K4:1NL.1#1b,Wind/-20C,-45 deg	3.560	1.545	0.046
191	LC 1022	K5:1NL.1#1b,Wind/-20C,-45 deg	3.240	1.696	0.132
192	LC 1022	K5:2NL.1#1b,Wind/-20C,-45 deg	3.679	1.448	0.018
193	LC 1022	K6:1NL.1#1b,Wind/-20C,-45 deg	42.266	43.691	-4.242
194	LC 1022	K6:2NL.1#1b,Wind/-20C,-45 deg	41.785	44.232	-3.894
195	LC 1022	K6:3NL.1#1b,Wind/-20C,-45 deg	41.134	44.868	-3.525
196	LC 1022	K7:1NL.1#1b,Wind/-20C,-45 deg	30.970	31.689	-4.958
197	LC 1022	K7:2NL.1#1b,Wind/-20C,-45 deg	32.164	30.975	-5.167
198	LC 1022	K7:3NL.1#1b,Wind/-20C,-45 deg	33.142	30.347	-5.373
199	LC 1023	K4:1NL.1#3,Wind / Ice / -5C,-45 deg	6.577	-0.603	-0.118
200	LC 1023	K5:1NL.1#3,Wind / Ice / -5C,-45 deg	6.185	-0.377	0.238
201	LC 1023	K5:2NL.1#3,Wind / Ice / -5C,-45 deg	6.690	-0.674	-0.297
202	LC 1023	K6:1NL.1#3,Wind / Ice / -5C,-45 deg	32.929	23.454	-4.996
203	LC 1023	K6:2NL.1#3,Wind / Ice / -5C,-45 deg	32.732	23.877	-4.581
204	LC 1023	K6:3NL.1#3,Wind / Ice / -5C,-45 deg	32.415	24.378	-4.152
205	LC 1023	K7:1NL.1#3,Wind / Ice / -5C,-45 deg	28.424	21.475	-5.658
206	LC 1023	K7:2NL.1#3,Wind / Ice / -5C,-45 deg	29.374	20.884	-5.938
207	LC 1023	K7:3NL.1#3,Wind / Ice / -5C,-45 deg	30.163	20.399	-6.216
208	LC 1024	K4:1NL.1#4,Construction/Maintenance +5C,-45 deg	2.370	0.185	0.013
209	LC 1024	K5:1NL.1#4,Construction/Maintenance +5C,-45 deg	2.200	0.274	0.111
210	LC 1024	K5:2NL.1#4,Construction/Maintenance +5C,-45 deg	2.431	0.139	-0.030
211	LC 1024	K6:1NL.1#4,Construction/Maintenance +5C,-45 deg	21.056	13.395	-5.095
212	LC 1024	K6:2NL.1#4,Construction/Maintenance +5C,-45 deg	20.941	13.672	-4.811
213	LC 1024	K6:3NL.1#4,Construction/Maintenance +5C,-45 deg	20.754	13.992	-4.516
214	LC 1024	K7:1NL.1#4,Construction/Maintenance +5C,-45 deg	18.723	12.951	-5.534
215	LC 1024	K7:2NL.1#4,Construction/Maintenance +5C,-45 deg	19.338	12.562	-5.730
216	LC 1024	K7:3NL.1#4,Construction/Maintenance +5C,-45 deg	19.838	12.219	-5.924
217	LC 1025	K4:1NL.1#1a,Wind/10C,+0 deg	2.336	0.179	0.009
218	LC 1025	K5:1NL.1#1a,Wind/10C,+0 deg	2.155	0.183	0.111
219	LC 1025	K5:2NL.1#1a,Wind/10C,+0 deg	2.402	0.184	-0.036
220	LC 1025	K6:1NL.1#1a,Wind/10C,+0 deg	18.980	10.766	-5.191
221	LC 1025	K6:2NL.1#1a,Wind/10C,+0 deg	18.907	10.967	-4.912
222	LC 1025	K6:3NL.1#1a,Wind/10C,+0 deg	18.773	11.207	-4.624
223	LC 1025	K7:1NL.1#1a,Wind/10C,+0 deg	17.631	11.704	-5.605
224	LC 1025	K7:2NL.1#1a,Wind/10C,+0 deg	18.209	11.433	-5.799
225	LC 1025	K7:3NL.1#1a,Wind/10C,+0 deg	18.703	11.239	-5.991
226	LC 1026	K4:1NL.1#1b,Wind/-20C+,0 deg	3.573	1.515	0.047
227	LC 1026	K5:1NL.1#1b,Wind/-20C+,0 deg	3.256	1.677	0.133
228	LC 1026	K5:2NL.1#1b,Wind/-20C+,0 deg	3.703	1.428	0.018
229	LC 1026	K6:1NL.1#1b,Wind/-20C+,0 deg	42.543	43.680	-4.242
230	LC 1026	K6:2NL.1#1b,Wind/-20C+,0 deg	42.055	44.225	-3.894
231	LC 1026	K6:3NL.1#1b,Wind/-20C+,0 deg	41.397	44.866	-3.525
232	LC 1026	K7:1NL.1#1b,Wind/-20C+,0 deg	31.233	31.609	-4.960
233	LC 1026	K7:2NL.1#1b,Wind/-20C+,0 deg	32.431	30.892	-5.169
234	LC 1026	K7:3NL.1#1b,Wind/-20C+,0 deg	33.413	30.260	-5.375
235	LC 1027	K4:1NL.1#3,Wind / Ice / -5C,+0 deg	6.591	-0.949	-0.110
236	LC 1027	K5:1NL.1#3,Wind / Ice / -5C,+0 deg	6.191	-0.732	0.253
237	LC 1027	K5:2NL.1#3,Wind / Ice / -5C,+0 deg	6.731	-1.026	-0.293
238	LC 1027	K6:1NL.1#3,Wind / Ice / -5C,+0 deg	33.256	23.027	-5.001
239	LC 1027	K6:2NL.1#3,Wind / Ice / -5C,+0 deg	33.050	23.451	-4.586
240	LC 1027	K6:3NL.1#3,Wind / Ice / -5C,+0 deg	32.726	23.954	-4.155
241	LC 1027	K7:1NL.1#3,Wind / Ice / -5C,+0 deg	28.696	20.754	-5.667
242	LC 1027	K7:2NL.1#3,Wind / Ice / -5C,+0 deg	29.680	20.229	-5.947
243	LC 1027	K7:3NL.1#3,Wind / Ice / -5C,+0 deg	30.451	19.706	-6.224

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
244	LC 1028	K4:1NL.1#4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
245	LC 1028	K5:1NL.1#4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
246	LC 1028	K5:2NL.1#4,Construction/Maintenance +5C,+0 deg	2.442	0.096	-0.029
247	LC 1028	K6:1NL.1#4,Construction/Maintenance +5C,+0 deg	21.294	13.316	-5.096
248	LC 1028	K6:2NL.1#4,Construction/Maintenance +5C,+0 deg	21.172	13.597	-4.811
249	LC 1028	K6:3NL.1#4,Construction/Maintenance +5C,+0 deg	20.980	13.922	-4.516
250	LC 1028	K7:1NL.1#4,Construction/Maintenance +5C,+0 deg	18.952	12.797	-5.536
251	LC 1028	K7:2NL.1#4,Construction/Maintenance +5C,+0 deg	19.569	12.405	-5.731
252	LC 1028	K7:3NL.1#4,Construction/Maintenance +5C,+0 deg	20.072	12.060	-5.925
253	LC 1029	K4:1NL.1#1a,Wind/10C,-0 deg	2.359	0.091	0.009
254	LC 1029	K5:1NL.1#1a,Wind/10C,-0 deg	2.136	0.125	0.111
255	LC 1029	K5:2NL.1#1a,Wind/10C,-0 deg	2.465	0.065	-0.036
256	LC 1029	K6:1NL.1#1a,Wind/10C,-0 deg	19.716	10.336	-5.191
257	LC 1029	K6:2NL.1#1a,Wind/10C,-0 deg	19.567	10.569	-4.912
258	LC 1029	K6:3NL.1#1a,Wind/10C,-0 deg	19.359	10.840	-4.624
259	LC 1029	K7:1NL.1#1a,Wind/10C,-0 deg	18.455	11.313	-5.605
260	LC 1029	K7:2NL.1#1a,Wind/10C,-0 deg	19.120	10.973	-5.799
261	LC 1029	K7:3NL.1#1a,Wind/10C,-0 deg	19.701	10.706	-5.991
262	LC 1030	K4:1NL.1#1b,Wind/-20C,-0 deg	3.577	1.498	0.047
263	LC 1030	K5:1NL.1#1b,Wind/-20C,-0 deg	3.253	1.665	0.133
264	LC 1030	K5:2NL.1#1b,Wind/-20C,-0 deg	3.715	1.404	0.018
265	LC 1030	K6:1NL.1#1b,Wind/-20C,-0 deg	42.687	43.595	-4.242
266	LC 1030	K6:2NL.1#1b,Wind/-20C,-0 deg	42.185	44.146	-3.894
267	LC 1030	K6:3NL.1#1b,Wind/-20C,-0 deg	41.512	44.793	-3.525
268	LC 1030	K7:1NL.1#1b,Wind/-20C,-0 deg	31.395	31.532	-4.960
269	LC 1030	K7:2NL.1#1b,Wind/-20C,-0 deg	32.610	30.801	-5.169
270	LC 1030	K7:3NL.1#1b,Wind/-20C,-0 deg	33.610	30.155	-5.375
271	LC 1031	K4:1NL.1#3,Wind / Ice / -5C,-0 deg	6.621	-1.065	-0.110
272	LC 1031	K5:1NL.1#3,Wind / Ice / -5C,-0 deg	6.167	-0.809	0.253
273	LC 1031	K5:2NL.1#3,Wind / Ice / -5C,-0 deg	6.814	-1.184	-0.293
274	LC 1031	K6:1NL.1#3,Wind / Ice / -5C,-0 deg	33.552	22.790	-5.001
275	LC 1031	K6:2NL.1#3,Wind / Ice / -5C,-0 deg	33.304	23.232	-4.586
276	LC 1031	K6:3NL.1#3,Wind / Ice / -5C,-0 deg	32.939	23.752	-4.155
277	LC 1031	K7:1NL.1#3,Wind / Ice / -5C,-0 deg	29.039	20.539	-5.667
278	LC 1031	K7:2NL.1#3,Wind / Ice / -5C,-0 deg	30.072	19.976	-5.947
279	LC 1031	K7:3NL.1#3,Wind / Ice / -5C,-0 deg	30.891	19.414	-6.224
280	LC 1032	K4:1NL.1#4,Construction/Maintenance +5C,-0 deg	2.379	0.118	0.014
281	LC 1032	K5:1NL.1#4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
282	LC 1032	K5:2NL.1#4,Construction/Maintenance +5C,-0 deg	2.455	0.072	-0.029
283	LC 1032	K6:1NL.1#4,Construction/Maintenance +5C,-0 deg	21.438	13.232	-5.096
284	LC 1032	K6:2NL.1#4,Construction/Maintenance +5C,-0 deg	21.302	13.519	-4.811
285	LC 1032	K6:3NL.1#4,Construction/Maintenance +5C,-0 deg	21.095	13.850	-4.516
286	LC 1032	K7:1NL.1#4,Construction/Maintenance +5C,-0 deg	19.114	12.720	-5.536
287	LC 1032	K7:2NL.1#4,Construction/Maintenance +5C,-0 deg	19.749	12.314	-5.731
288	LC 1032	K7:3NL.1#4,Construction/Maintenance +5C,-0 deg	20.268	11.955	-5.925
289	LC 1033	K4:1NL.1#1a,gunstig,Wind/10C,+90 deg	3.907	-0.498	0.379
290	LC 1033	K5:1NL.1#1a,gunstig,Wind/10C,+90 deg	3.622	-0.342	0.495
291	LC 1033	K5:2NL.1#1a,gunstig,Wind/10C,+90 deg	4.074	-0.584	0.363
292	LC 1033	K6:1NL.1#1a,gunstig,Wind/10C,+90 deg	21.141	9.225	-3.178
293	LC 1033	K6:2NL.1#1a,gunstig,Wind/10C,+90 deg	20.978	9.528	-2.959
294	LC 1033	K6:3NL.1#1a,gunstig,Wind/10C,+90 deg	20.757	9.869	-2.731
295	LC 1033	K7:1NL.1#1a,gunstig,Wind/10C,+90 deg	20.031	9.841	-3.470
296	LC 1033	K7:2NL.1#1a,gunstig,Wind/10C,+90 deg	20.657	9.444	-3.597
297	LC 1033	K7:3NL.1#1a,gunstig,Wind/10C,+90 deg	21.184	9.087	-3.722
298	LC 1034	K4:1NL.1#1b,gunstig,Wind/-20C,+90 deg	3.185	1.922	0.057
299	LC 1034	K5:1NL.1#1b,gunstig,Wind/-20C,+90 deg	2.863	2.080	0.101
300	LC 1034	K5:2NL.1#1b,gunstig,Wind/-20C,+90 deg	3.330	1.831	0.050
301	LC 1034	K6:1NL.1#1b,gunstig,Wind/-20C,+90 deg	39.592	46.589	-3.070
302	LC 1034	K6:2NL.1#1b,gunstig,Wind/-20C,+90 deg	39.031	47.095	-2.822
303	LC 1034	K6:3NL.1#1b,gunstig,Wind/-20C,+90 deg	38.302	47.691	-2.554
304	LC 1034	K7:1NL.1#1b,gunstig,Wind/-20C,+90 deg	26.824	31.085	-3.660
305	LC 1034	K7:2NL.1#1b,gunstig,Wind/-20C,+90 deg	27.930	30.438	-3.799
306	LC 1034	K7:3NL.1#1b,gunstig,Wind/-20C,+90 deg	28.844	29.867	-3.934
307	LC 1035	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	7.485	-1.178	0.093
308	LC 1035	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	6.965	-0.881	0.446
309	LC 1035	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	7.750	-1.321	-0.066
310	LC 1035	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	30.848	22.740	-3.574
311	LC 1035	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	30.565	23.159	-3.248
312	LC 1035	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	30.176	23.641	-2.907
313	LC 1035	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	25.692	18.542	-4.123
314	LC 1035	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	26.581	17.990	-4.332
315	LC 1035	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+90 deg	27.317	17.500	-4.539
316	LC 1036	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	1.922	0.275	0.043
317	LC 1036	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	1.767	0.356	0.107
318	LC 1036	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	1.995	0.229	0.019
319	LC 1036	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	16.631	12.023	-3.835
320	LC 1036	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	16.490	12.244	-3.648
321	LC 1036	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	16.292	12.500	-3.454
322	LC 1036	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	13.838	9.712	-4.144
323	LC 1036	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	14.306	9.419	-4.268
324	LC 1036	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 deg	14.691	9.159	-4.391

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
325	LC 1037	K4:1NL.1#1a,gunstig,Wind/10C,-90 deg	3.062	-0.711	0.379
326	LC 1037	K5:1NL.1#1a,gunstig,Wind/10C,-90 deg	2.917	-0.592	0.495
327	LC 1037	K5:2NL.1#1a,gunstig,Wind/10C,-90 deg	3.082	-0.765	0.363
328	LC 1037	K6:1NL.1#1a,gunstig,Wind/10C,-90 deg	15.796	8.943	-3.178
329	LC 1037	K6:2NL.1#1a,gunstig,Wind/10C,-90 deg	15.793	9.150	-2.959
330	LC 1037	K6:3NL.1#1a,gunstig,Wind/10C,-90 deg	15.734	9.394	-2.731
331	LC 1037	K7:1NL.1#1a,gunstig,Wind/10C,-90 deg	14.275	9.675	-3.470
332	LC 1037	K7:2NL.1#1a,gunstig,Wind/10C,-90 deg	14.719	9.377	-3.597
333	LC 1037	K7:3NL.1#1a,gunstig,Wind/10C,-90 deg	15.064	9.118	-3.722
334	LC 1038	K4:1NL.1#1b,gunstig,Wind/-20C,-90 deg	3.019	1.880	0.057
335	LC 1038	K5:1NL.1#1b,gunstig,Wind/-20C,-90 deg	2.725	2.031	0.101
336	LC 1038	K5:2NL.1#1b,gunstig,Wind/-20C,-90 deg	3.135	1.796	0.050
337	LC 1038	K6:1NL.1#1b,gunstig,Wind/-20C,-90 deg	38.539	46.534	-3.070
338	LC 1038	K6:2NL.1#1b,gunstig,Wind/-20C,-90 deg	38.010	47.020	-2.822
339	LC 1038	K6:3NL.1#1b,gunstig,Wind/-20C,-90 deg	37.313	47.598	-2.554
340	LC 1038	K7:1NL.1#1b,gunstig,Wind/-20C,-90 deg	25.691	31.052	-3.660
341	LC 1038	K7:2NL.1#1b,gunstig,Wind/-20C,-90 deg	26.761	30.425	-3.799
342	LC 1038	K7:3NL.1#1b,gunstig,Wind/-20C,-90 deg	27.639	29.874	-3.934
343	LC 1039	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	6.369	-1.458	0.093
344	LC 1039	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	6.035	-1.210	0.446
345	LC 1039	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	6.440	-1.558	-0.066
346	LC 1039	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	28.529	22.586	-3.574
347	LC 1039	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	28.334	22.951	-3.248
348	LC 1039	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	28.034	23.380	-2.907
349	LC 1039	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	23.148	18.452	-4.123
350	LC 1039	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	23.936	17.954	-4.332
351	LC 1039	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-90 deg	24.572	17.517	-4.539
352	LC 1040	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	1.756	0.233	0.043
353	LC 1040	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	1.629	0.307	0.107
354	LC 1040	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	1.799	0.194	0.019
355	LC 1040	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	15.578	11.967	-3.835
356	LC 1040	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	15.469	12.170	-3.648
357	LC 1040	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	15.303	12.407	-3.454
358	LC 1040	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	12.705	9.679	-4.144
359	LC 1040	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	13.137	9.406	-4.268
360	LC 1040	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 deg	13.487	9.166	-4.391
361	LC 1041	K4:1NL.1#1a,gunstig,Wind/10C,+45 deg	2.744	-1.389	0.330
362	LC 1041	K5:1NL.1#1a,gunstig,Wind/10C,+45 deg	2.636	-1.335	0.457
363	LC 1041	K5:2NL.1#1a,gunstig,Wind/10C,+45 deg	2.803	-1.415	0.301
364	LC 1041	K6:1NL.1#1a,gunstig,Wind/10C,+45 deg	16.568	5.820	-3.406
365	LC 1041	K6:2NL.1#1a,gunstig,Wind/10C,+45 deg	16.561	5.975	-3.188
366	LC 1041	K6:3NL.1#1a,gunstig,Wind/10C,+45 deg	16.513	6.161	-2.961
367	LC 1041	K7:1NL.1#1a,gunstig,Wind/10C,+45 deg	14.881	5.500	-3.732
368	LC 1041	K7:2NL.1#1a,gunstig,Wind/10C,+45 deg	15.264	5.274	-3.859
369	LC 1041	K7:3NL.1#1a,gunstig,Wind/10C,+45 deg	15.578	5.077	-3.984
370	LC 1042	K4:1NL.1#1b,gunstig,Wind/-20C,+45 deg	3.091	1.942	0.047
371	LC 1042	K5:1NL.1#1b,gunstig,Wind/-20C,+45 deg	2.784	2.090	0.090
372	LC 1042	K5:2NL.1#1b,gunstig,Wind/-20C,+45 deg	3.224	1.859	0.039
373	LC 1042	K6:1NL.1#1b,gunstig,Wind/-20C,+45 deg	39.295	46.725	-3.086
374	LC 1042	K6:2NL.1#1b,gunstig,Wind/-20C,+45 deg	38.753	47.214	-2.837
375	LC 1042	K6:3NL.1#1b,gunstig,Wind/-20C,+45 deg	38.042	47.793	-2.568
376	LC 1042	K7:1NL.1#1b,gunstig,Wind/-20C,+45 deg	26.423	31.088	-3.676
377	LC 1042	K7:2NL.1#1b,gunstig,Wind/-20C,+45 deg	27.512	30.455	-3.815
378	LC 1042	K7:3NL.1#1b,gunstig,Wind/-20C,+45 deg	28.408	29.898	-3.950
379	LC 1043	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.816	-1.360	0.052
380	LC 1043	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.415	-1.136	0.406
381	LC 1043	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.992	-1.450	-0.111
382	LC 1043	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	29.728	22.487	-3.632
383	LC 1043	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	29.499	22.860	-3.306
384	LC 1043	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	29.173	23.287	-2.963
385	LC 1043	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	24.244	17.846	-4.189
386	LC 1043	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	25.056	17.353	-4.398
387	LC 1043	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	25.722	16.919	-4.606
388	LC 1044	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.802	0.228	0.036
389	LC 1044	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.663	0.294	0.100
390	LC 1044	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.856	0.188	0.011
391	LC 1044	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	16.188	11.869	-3.849
392	LC 1044	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	16.066	12.076	-3.663
393	LC 1044	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	15.889	12.317	-3.468
394	LC 1044	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	13.352	9.534	-4.160
395	LC 1044	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	13.794	9.262	-4.285
396	LC 1044	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	14.159	9.018	-4.407
397	LC 1045	K4:1NL.1#1a,gunstig,Wind/10C,+45 deg	2.252	-1.669	0.330
398	LC 1045	K5:1NL.1#1a,gunstig,Wind/10C,+45 deg	2.181	-1.595	0.457
399	LC 1045	K5:2NL.1#1a,gunstig,Wind/10C,+45 deg	2.267	-1.717	0.301
400	LC 1045	K6:1NL.1#1a,gunstig,Wind/10C,+45 deg	13.733	4.991	-3.406
401	LC 1045	K6:2NL.1#1a,gunstig,Wind/10C,+45 deg	13.742	5.128	-3.188
402	LC 1045	K6:3NL.1#1a,gunstig,Wind/10C,+45 deg	13.710	5.297	-2.961
403	LC 1045	K7:1NL.1#1a,gunstig,Wind/10C,+45 deg	11.999	4.745	-3.732
404	LC 1045	K7:2NL.1#1a,gunstig,Wind/10C,+45 deg	12.347	4.501	-3.859
405	LC 1045	K7:3NL.1#1a,gunstig,Wind/10C,+45 deg	12.623	4.286	-3.984

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
406	LC 1046	K4:1NL.1#1b,gunstig,Wind/-20C,+45 deg	2.994	1.887	0.047
407	LC 1046	K5:1NL.1#1b,gunstig,Wind/-20C,+45 deg	2.695	2.039	0.090
408	LC 1046	K5:2NL.1#1b,gunstig,Wind/-20C,+45 deg	3.119	1.800	0.039
409	LC 1046	K6:1NL.1#1b,gunstig,Wind/-20C,+45 deg	38.737	46.562	-3.086
410	LC 1046	K6:2NL.1#1b,gunstig,Wind/-20C,+45 deg	38.197	47.047	-2.837
411	LC 1046	K6:3NL.1#1b,gunstig,Wind/-20C,+45 deg	37.490	47.623	-2.568
412	LC 1046	K7:1NL.1#1b,gunstig,Wind/-20C,+45 deg	25.856	30.939	-3.676
413	LC 1046	K7:2NL.1#1b,gunstig,Wind/-20C,+45 deg	26.937	30.303	-3.815
414	LC 1046	K7:3NL.1#1b,gunstig,Wind/-20C,+45 deg	27.826	29.742	-3.950
415	LC 1047	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.167	-1.729	0.052
416	LC 1047	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	5.815	-1.479	0.406
417	LC 1047	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	6.286	-1.849	-0.111
418	LC 1047	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	28.530	22.032	-3.632
419	LC 1047	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	28.310	22.395	-3.306
420	LC 1047	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	27.993	22.813	-2.963
421	LC 1047	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	23.021	17.432	-4.189
422	LC 1047	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	23.813	16.929	-4.398
423	LC 1047	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 deg	24.459	16.485	-4.606
424	LC 1048	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.705	0.173	0.036
425	LC 1048	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.574	0.243	0.100
426	LC 1048	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	1.750	0.129	0.011
427	LC 1048	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	15.630	11.706	-3.849
428	LC 1048	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	15.511	11.909	-3.663
429	LC 1048	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	15.337	12.147	-3.468
430	LC 1048	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	12.784	9.385	-4.160
431	LC 1048	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	13.220	9.110	-4.285
432	LC 1048	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 deg	13.577	8.862	-4.407
433	LC 1049	K4:1NL.1#1a,gunstig,Wind/10C,-45 deg	2.494	1.324	-0.003
434	LC 1049	K5:1NL.1#1a,gunstig,Wind/10C,-45 deg	2.187	1.435	0.040
435	LC 1049	K5:2NL.1#1a,gunstig,Wind/10C,-45 deg	2.652	1.249	-0.018
436	LC 1049	K6:1NL.1#1a,gunstig,Wind/10C,-45 deg	17.930	12.544	-3.900
437	LC 1049	K6:2NL.1#1a,gunstig,Wind/10C,-45 deg	17.692	12.777	-3.720
438	LC 1049	K6:3NL.1#1a,gunstig,Wind/10C,-45 deg	17.415	13.079	-3.531
439	LC 1049	K7:1NL.1#1a,gunstig,Wind/10C,-45 deg	16.921	13.177	-4.164
440	LC 1049	K7:2NL.1#1a,gunstig,Wind/10C,-45 deg	17.587	12.843	-4.288
441	LC 1049	K7:3NL.1#1a,gunstig,Wind/10C,-45 deg	18.135	12.513	-4.411
442	LC 1050	K4:1NL.1#1b,gunstig,Wind/-20C,-45 deg	3.026	2.085	0.020
443	LC 1050	K5:1NL.1#1b,gunstig,Wind/-20C,-45 deg	2.701	2.233	0.058
444	LC 1050	K5:2NL.1#1b,gunstig,Wind/-20C,-45 deg	3.167	1.996	0.013
445	LC 1050	K6:1NL.1#1b,gunstig,Wind/-20C,-45 deg	39.266	46.752	-3.117
446	LC 1050	K6:2NL.1#1b,gunstig,Wind/-20C,-45 deg	38.704	47.253	-2.871
447	LC 1050	K6:3NL.1#1b,gunstig,Wind/-20C,-45 deg	37.973	47.844	-2.606
448	LC 1050	K7:1NL.1#1b,gunstig,Wind/-20C,-45 deg	26.514	31.245	-3.702
449	LC 1050	K7:2NL.1#1b,gunstig,Wind/-20C,-45 deg	27.618	30.597	-3.841
450	LC 1050	K7:3NL.1#1b,gunstig,Wind/-20C,-45 deg	28.529	30.025	-3.976
451	LC 1051	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.613	-0.438	-0.086
452	LC 1051	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.099	-0.166	0.234
453	LC 1051	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.853	-0.582	-0.245
454	LC 1051	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	29.861	23.409	-3.745
455	LC 1051	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	29.570	23.811	-3.428
456	LC 1051	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	29.173	24.277	-3.095
457	LC 1051	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	24.706	19.170	-4.286
458	LC 1051	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	25.625	18.684	-4.494
459	LC 1051	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	26.355	18.191	-4.701
460	LC 1052	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.776	0.415	0.011
461	LC 1052	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.619	0.486	0.069
462	LC 1052	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.845	0.370	-0.013
463	LC 1052	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	16.332	12.141	-3.873
464	LC 1052	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	16.187	12.363	-3.689
465	LC 1052	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	15.989	12.614	-3.496
466	LC 1052	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	13.524	9.812	-4.182
467	LC 1052	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	13.988	9.519	-4.306
468	LC 1052	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	14.392	9.288	-4.428
469	LC 1053	K4:1NL.1#1a,gunstig,Wind/10C,-45 deg	2.141	1.391	-0.003
470	LC 1053	K5:1NL.1#1a,gunstig,Wind/10C,-45 deg	1.938	1.445	0.040
471	LC 1053	K5:2NL.1#1a,gunstig,Wind/10C,-45 deg	2.196	1.371	-0.018
472	LC 1053	K6:1NL.1#1a,gunstig,Wind/10C,-45 deg	14.384	13.091	-3.900
473	LC 1053	K6:2NL.1#1a,gunstig,Wind/10C,-45 deg	14.291	13.246	-3.720
474	LC 1053	K6:3NL.1#1a,gunstig,Wind/10C,-45 deg	14.159	13.468	-3.531
475	LC 1053	K7:1NL.1#1a,gunstig,Wind/10C,-45 deg	13.011	13.767	-4.164
476	LC 1053	K7:2NL.1#1a,gunstig,Wind/10C,-45 deg	13.530	13.550	-4.288
477	LC 1053	K7:3NL.1#1a,gunstig,Wind/10C,-45 deg	13.934	13.336	-4.411
478	LC 1054	K4:1NL.1#1b,gunstig,Wind/-20C,-45 deg	2.957	2.098	0.020
479	LC 1054	K5:1NL.1#1b,gunstig,Wind/-20C,-45 deg	2.652	2.235	0.058
480	LC 1054	K5:2NL.1#1b,gunstig,Wind/-20C,-45 deg	3.077	2.020	0.013
481	LC 1054	K6:1NL.1#1b,gunstig,Wind/-20C,-45 deg	38.568	46.860	-3.117
482	LC 1054	K6:2NL.1#1b,gunstig,Wind/-20C,-45 deg	38.034	47.345	-2.871
483	LC 1054	K6:3NL.1#1b,gunstig,Wind/-20C,-45 deg	37.331	47.921	-2.606
484	LC 1054	K7:1NL.1#1b,gunstig,Wind/-20C,-45 deg	25.744	31.361	-3.702
485	LC 1054	K7:2NL.1#1b,gunstig,Wind/-20C,-45 deg	26.819	30.736	-3.841
486	LC 1054	K7:3NL.1#1b,gunstig,Wind/-20C,-45 deg	27.701	30.187	-3.976

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
487	LC 1055	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.147	-0.350	-0.086
488	LC 1055	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	5.769	-0.151	0.234
489	LC 1055	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	6.250	-0.420	-0.245
490	LC 1055	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	28.426	23.709	-3.745
491	LC 1055	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	28.214	24.069	-3.428
492	LC 1055	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	27.897	24.491	-3.095
493	LC 1055	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	23.070	19.493	-4.286
494	LC 1055	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	23.909	19.072	-4.494
495	LC 1055	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 deg	24.559	18.643	-4.701
496	LC 1056	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.707	0.429	0.011
497	LC 1056	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.570	0.488	0.069
498	LC 1056	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	1.755	0.394	-0.013
499	LC 1056	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	15.634	12.248	-3.873
500	LC 1056	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	15.517	12.455	-3.689
501	LC 1056	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	15.347	12.691	-3.496
502	LC 1056	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	12.754	9.928	-4.182
503	LC 1056	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	13.189	9.658	-4.306
504	LC 1056	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 deg	13.565	9.450	-4.428
505	LC 1057	K4:1NL.1#1a,gunstig,Wind/10C,+0 deg	1.736	0.460	0.012
506	LC 1057	K5:1NL.1#1a,gunstig,Wind/10C,+0 deg	1.566	0.395	0.077
507	LC 1057	K5:2NL.1#1a,gunstig,Wind/10C,+0 deg	1.800	0.492	-0.013
508	LC 1057	K6:1NL.1#1a,gunstig,Wind/10C,+0 deg	13.686	9.542	-3.941
509	LC 1057	K6:2NL.1#1a,gunstig,Wind/10C,+0 deg	13.601	9.628	-3.759
510	LC 1057	K6:3NL.1#1a,gunstig,Wind/10C,+0 deg	13.472	9.743	-3.569
511	LC 1057	K7:1NL.1#1a,gunstig,Wind/10C,+0 deg	12.022	9.108	-4.226
512	LC 1057	K7:2NL.1#1a,gunstig,Wind/10C,+0 deg	12.470	9.020	-4.349
513	LC 1057	K7:3NL.1#1a,gunstig,Wind/10C,+0 deg	12.851	8.955	-4.470
514	LC 1058	K4:1NL.1#1b,gunstig,Wind/-20C+,0 deg	2.969	2.069	0.020
515	LC 1058	K5:1NL.1#1b,gunstig,Wind/-20C+,0 deg	2.662	2.206	0.059
516	LC 1058	K5:2NL.1#1b,gunstig,Wind/-20C+,0 deg	3.088	1.976	0.013
517	LC 1058	K6:1NL.1#1b,gunstig,Wind/-20C+,0 deg	38.844	46.848	-3.117
518	LC 1058	K6:2NL.1#1b,gunstig,Wind/-20C+,0 deg	38.304	47.338	-2.871
519	LC 1058	K6:3NL.1#1b,gunstig,Wind/-20C+,0 deg	37.595	47.919	-2.606
520	LC 1058	K7:1NL.1#1b,gunstig,Wind/-20C+,0 deg	25.971	31.211	-3.704
521	LC 1058	K7:2NL.1#1b,gunstig,Wind/-20C+,0 deg	27.048	30.584	-3.843
522	LC 1058	K7:3NL.1#1b,gunstig,Wind/-20C+,0 deg	27.933	30.032	-3.979
523	LC 1059	K4:1NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	6.132	-0.746	-0.077
524	LC 1059	K5:1NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	5.752	-0.549	0.250
525	LC 1059	K5:2NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	6.267	-0.809	-0.240
526	LC 1059	K6:1NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	28.680	23.139	-3.750
527	LC 1059	K6:2NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	28.455	23.507	-3.433
528	LC 1059	K6:3NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	28.127	23.939	-3.102
529	LC 1059	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	23.193	18.504	-4.299
530	LC 1059	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	23.983	18.016	-4.507
531	LC 1059	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+0 deg	24.664	17.655	-4.713
532	LC 1060	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	1.689	0.339	0.013
533	LC 1060	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	1.556	0.404	0.072
534	LC 1060	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	1.742	0.311	-0.012
535	LC 1060	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	15.789	12.039	-3.876
536	LC 1060	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	15.671	12.245	-3.691
537	LC 1060	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	15.497	12.484	-3.499
538	LC 1060	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	12.929	9.671	-4.185
539	LC 1060	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	13.363	9.399	-4.308
540	LC 1060	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 deg	13.737	9.194	-4.431
541	LC 1061	K4:1NL.1#1a,gunstig,Wind/10C,-0 deg	1.759	0.372	0.012
542	LC 1061	K5:1NL.1#1a,gunstig,Wind/10C,-0 deg	1.547	0.336	0.077
543	LC 1061	K5:2NL.1#1a,gunstig,Wind/10C,-0 deg	1.863	0.373	-0.013
544	LC 1061	K6:1NL.1#1a,gunstig,Wind/10C,-0 deg	14.421	9.111	-3.941
545	LC 1061	K6:2NL.1#1a,gunstig,Wind/10C,-0 deg	14.262	9.230	-3.759
546	LC 1061	K6:3NL.1#1a,gunstig,Wind/10C,-0 deg	14.058	9.376	-3.569
547	LC 1061	K7:1NL.1#1a,gunstig,Wind/10C,-0 deg	12.845	8.717	-4.226
548	LC 1061	K7:2NL.1#1a,gunstig,Wind/10C,-0 deg	13.381	8.559	-4.349
549	LC 1061	K7:3NL.1#1a,gunstig,Wind/10C,-0 deg	13.849	8.422	-4.470
550	LC 1062	K4:1NL.1#1b,gunstig,Wind/-20C,-0 deg	2.973	2.052	0.020
551	LC 1062	K5:1NL.1#1b,gunstig,Wind/-20C,-0 deg	2.658	2.194	0.059
552	LC 1062	K5:2NL.1#1b,gunstig,Wind/-20C,-0 deg	3.100	1.952	0.013
553	LC 1062	K6:1NL.1#1b,gunstig,Wind/-20C,-0 deg	38.989	46.763	-3.117
554	LC 1062	K6:2NL.1#1b,gunstig,Wind/-20C,-0 deg	38.434	47.260	-2.871
555	LC 1062	K6:3NL.1#1b,gunstig,Wind/-20C,-0 deg	37.710	47.847	-2.606
556	LC 1062	K7:1NL.1#1b,gunstig,Wind/-20C,-0 deg	26.133	31.134	-3.704
557	LC 1062	K7:2NL.1#1b,gunstig,Wind/-20C,-0 deg	27.228	30.493	-3.843
558	LC 1062	K7:3NL.1#1b,gunstig,Wind/-20C,-0 deg	28.130	29.927	-3.979
559	LC 1063	K4:1NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	6.162	-0.862	-0.077
560	LC 1063	K5:1NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	5.728	-0.627	0.250
561	LC 1063	K5:2NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	6.350	-0.967	-0.240
562	LC 1063	K6:1NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	28.975	22.902	-3.750
563	LC 1063	K6:2NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	28.709	23.289	-3.433
564	LC 1063	K6:3NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	28.340	23.737	-3.102
565	LC 1063	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	23.537	18.289	-4.299
566	LC 1063	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	24.374	17.763	-4.507
567	LC 1063	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-0 deg	25.104	17.363	-4.713

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
568	LC 1064	K4:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	1.694	0.322	0.013
569	LC 1064	K5:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	1.553	0.392	0.072
570	LC 1064	K5:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	1.755	0.288	-0.012
571	LC 1064	K6:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	15.934	11.954	-3.876
572	LC 1064	K6:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	15.801	12.166	-3.691
573	LC 1064	K6:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	15.612	12.411	-3.499
574	LC 1064	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	13.091	9.594	-4.185
575	LC 1064	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	13.543	9.309	-4.308
576	LC 1064	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 deg	13.934	9.089	-4.431
577	LC 1065	K4:1NL.1#5a,Break Shield wire 1, Ahead,+10C	0.000	0.000	-2.000
578	LC 1065	K5:1NL.1#5a,Break Shield wire 1, Ahead,+10C	1.787	0.126	0.081
579	LC 1065	K5:2NL.1#5a,Break Shield wire 1, Ahead,+10C	1.980	0.008	-0.024
580	LC 1065	K6:1NL.1#5a,Break Shield wire 1, Ahead,+10C	16.566	9.367	-4.460
581	LC 1065	K6:2NL.1#5a,Break Shield wire 1, Ahead,+10C	16.478	9.588	-4.258
582	LC 1065	K6:3NL.1#5a,Break Shield wire 1, Ahead,+10C	16.338	9.843	-4.048
583	LC 1065	K7:1NL.1#5a,Break Shield wire 1, Ahead,+10C	15.189	9.694	-4.764
584	LC 1065	K7:2NL.1#5a,Break Shield wire 1, Ahead,+10C	15.680	9.379	-4.905
585	LC 1065	K7:3NL.1#5a,Break Shield wire 1, Ahead,+10C	16.081	9.101	-5.045
586	LC 1066	K4:1NL.1#5a,Break Shieldwire 2 , Ahead,+10C	1.925	0.047	0.009
587	LC 1066	K5:1NL.1#5a,Break Shieldwire 2 , Ahead,+10C	0.000	0.000	-2.000
588	LC 1066	K5:2NL.1#5a,Break Shieldwire 2 , Ahead,+10C	1.980	0.008	-0.024
589	LC 1066	K6:1NL.1#5a,Break Shieldwire 2 , Ahead,+10C	16.566	9.367	-4.460
590	LC 1066	K6:2NL.1#5a,Break Shieldwire 2 , Ahead,+10C	16.478	9.588	-4.258
591	LC 1066	K6:3NL.1#5a,Break Shieldwire 2 , Ahead,+10C	16.338	9.843	-4.048
592	LC 1066	K7:1NL.1#5a,Break Shieldwire 2 , Ahead,+10C	15.189	9.694	-4.764
593	LC 1066	K7:2NL.1#5a,Break Shieldwire 2 , Ahead,+10C	15.680	9.379	-4.905
594	LC 1066	K7:3NL.1#5a,Break Shieldwire 2 , Ahead,+10C	16.081	9.101	-5.045
595	LC 1067	K4:1NL.1#5a,Break Shieldwire 3 , Ahead,+10C	1.925	0.047	0.009
596	LC 1067	K5:1NL.1#5a,Break Shieldwire 3 , Ahead,+10C	1.787	0.126	0.081
597	LC 1067	K5:2NL.1#5a,Break Shieldwire 3 , Ahead,+10C	0.000	0.000	-2.000
598	LC 1067	K6:1NL.1#5a,Break Shieldwire 3 , Ahead,+10C	16.566	9.367	-4.460
599	LC 1067	K6:2NL.1#5a,Break Shieldwire 3 , Ahead,+10C	16.478	9.588	-4.258
600	LC 1067	K6:3NL.1#5a,Break Shieldwire 3 , Ahead,+10C	16.338	9.843	-4.048
601	LC 1067	K7:1NL.1#5a,Break Shieldwire 3 , Ahead,+10C	15.189	9.694	-4.764
602	LC 1067	K7:2NL.1#5a,Break Shieldwire 3 , Ahead,+10C	15.680	9.379	-4.905
603	LC 1067	K7:3NL.1#5a,Break Shieldwire 3 , Ahead,+10C	16.081	9.101	-5.045
604	LC 1068	K4:1NL.1#5a,Break Shield wire 4, Ahead,+10C	1.925	0.047	0.009
605	LC 1068	K5:1NL.1#5a,Break Shield wire 4, Ahead,+10C	1.787	0.126	0.081
606	LC 1068	K5:2NL.1#5a,Break Shield wire 4, Ahead,+10C	1.980	0.008	-0.024
607	LC 1068	K6:1NL.1#5a,Break Shield wire 4, Ahead,+10C	16.566	9.367	-4.460
608	LC 1068	K6:2NL.1#5a,Break Shield wire 4, Ahead,+10C	16.478	9.588	-4.258
609	LC 1068	K6:3NL.1#5a,Break Shield wire 4, Ahead,+10C	16.338	9.843	-4.048
610	LC 1068	K7:1NL.1#5a,Break Shield wire 4, Ahead,+10C	15.189	9.694	-4.764
611	LC 1068	K7:2NL.1#5a,Break Shield wire 4, Ahead,+10C	15.680	9.379	-4.905
612	LC 1068	K7:3NL.1#5a,Break Shield wire 4, Ahead,+10C	16.081	9.101	-5.045
613	LC 1069	K4:1NL.1#5a,Break Shieldwire 5 , Ahead,+10C	1.925	0.047	0.009
614	LC 1069	K5:1NL.1#5a,Break Shieldwire 5 , Ahead,+10C	1.787	0.126	0.081
615	LC 1069	K5:2NL.1#5a,Break Shieldwire 5 , Ahead,+10C	1.980	0.008	-0.024
616	LC 1069	K6:1NL.1#5a,Break Shieldwire 5 , Ahead,+10C	16.566	9.367	-4.460
617	LC 1069	K6:2NL.1#5a,Break Shieldwire 5 , Ahead,+10C	16.478	9.588	-4.258
618	LC 1069	K6:3NL.1#5a,Break Shieldwire 5 , Ahead,+10C	16.338	9.843	-4.048
619	LC 1069	K7:1NL.1#5a,Break Shieldwire 5 , Ahead,+10C	15.189	9.694	-4.764
620	LC 1069	K7:2NL.1#5a,Break Shieldwire 5 , Ahead,+10C	15.680	9.379	-4.905
621	LC 1069	K7:3NL.1#5a,Break Shieldwire 5 , Ahead,+10C	16.081	9.101	-5.045
622	LC 1070	K4:1NL.1#5a,Break Shieldwire 6 , Ahead,+10C	1.925	0.047	0.009
623	LC 1070	K5:1NL.1#5a,Break Shieldwire 6 , Ahead,+10C	1.787	0.126	0.081
624	LC 1070	K5:2NL.1#5a,Break Shieldwire 6 , Ahead,+10C	1.980	0.008	-0.024
625	LC 1070	K6:1NL.1#5a,Break Shieldwire 6 , Ahead,+10C	16.566	9.367	-4.460
626	LC 1070	K6:2NL.1#5a,Break Shieldwire 6 , Ahead,+10C	16.478	9.588	-4.258
627	LC 1070	K6:3NL.1#5a,Break Shieldwire 6 , Ahead,+10C	16.338	9.843	-4.048
628	LC 1070	K7:1NL.1#5a,Break Shieldwire 6 , Ahead,+10C	15.189	9.694	-4.764
629	LC 1070	K7:2NL.1#5a,Break Shieldwire 6 , Ahead,+10C	15.680	9.379	-4.905
630	LC 1070	K7:3NL.1#5a,Break Shieldwire 6 , Ahead,+10C	16.081	9.101	-5.045
631	LC 1071	K4:1NL.1#5a,Break Conductor 1, Ahead,+10C	1.925	0.047	0.009
632	LC 1071	K5:1NL.1#5a,Break Conductor 1, Ahead,+10C	1.787	0.126	0.081
633	LC 1071	K5:2NL.1#5a,Break Conductor 1, Ahead,+10C	1.980	0.008	-0.024
634	LC 1071	K6:1NL.1#5a,Break Conductor 1, Ahead,+10C	16.566	9.367	-4.460
635	LC 1071	K6:2NL.1#5a,Break Conductor 1, Ahead,+10C	16.478	9.588	-4.258
636	LC 1071	K6:3NL.1#5a,Break Conductor 1, Ahead,+10C	16.338	9.843	-4.048
637	LC 1071	K7:1NL.1#5a,Break Conductor 1, Ahead,+10C	4.994	9.584	-4.604
638	LC 1071	K7:2NL.1#5a,Break Conductor 1, Ahead,+10C	15.680	9.379	-4.905
639	LC 1071	K7:3NL.1#5a,Break Conductor 1, Ahead,+10C	16.081	9.101	-5.045
640	LC 1072	K4:1NL.1#5a,Break Conductor 2 , Ahead,+10C	1.925	0.047	0.009
641	LC 1072	K5:1NL.1#5a,Break Conductor 2 , Ahead,+10C	1.787	0.126	0.081
642	LC 1072	K5:2NL.1#5a,Break Conductor 2 , Ahead,+10C	1.980	0.008	-0.024
643	LC 1072	K6:1NL.1#5a,Break Conductor 2 , Ahead,+10C	16.566	9.367	-4.460
644	LC 1072	K6:2NL.1#5a,Break Conductor 2 , Ahead,+10C	16.478	9.588	-4.258
645	LC 1072	K6:3NL.1#5a,Break Conductor 2 , Ahead,+10C	16.338	9.843	-4.048
646	LC 1072	K7:1NL.1#5a,Break Conductor 2 , Ahead,+10C	15.189	9.694	-4.764
647	LC 1072	K7:2NL.1#5a,Break Conductor 2 , Ahead,+10C	5.263	9.439	-4.658
648	LC 1072	K7:3NL.1#5a,Break Conductor 2 , Ahead,+10C	16.081	9.101	-5.045

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
649	LC 1073	K4:1NL.1#5a,Break Conductor 3 , Ahead,+10C	1.925	0.047	0.009
650	LC 1073	K5:1NL.1#5a,Break Conductor 3 , Ahead,+10C	1.787	0.126	0.081
651	LC 1073	K5:2NL.1#5a,Break Conductor 3 , Ahead,+10C	1.980	0.008	-0.024
652	LC 1073	K6:1NL.1#5a,Break Conductor 3 , Ahead,+10C	16.566	9.367	-4.460
653	LC 1073	K6:2NL.1#5a,Break Conductor 3 , Ahead,+10C	16.478	9.588	-4.258
654	LC 1073	K6:3NL.1#5a,Break Conductor 3 , Ahead,+10C	16.338	9.843	-4.048
655	LC 1073	K7:1NL.1#5a,Break Conductor 3 , Ahead,+10C	15.189	9.694	-4.764
656	LC 1073	K7:2NL.1#5a,Break Conductor 3 , Ahead,+10C	15.680	9.379	-4.905
657	LC 1073	K7:3NL.1#5a,Break Conductor 3 , Ahead,+10C	5.485	9.312	-4.712
658	LC 1074	K4:1NL.1#5a,Break Conductor 4, Ahead,+10C	1.925	0.047	0.009
659	LC 1074	K5:1NL.1#5a,Break Conductor 4, Ahead,+10C	1.787	0.126	0.081
660	LC 1074	K5:2NL.1#5a,Break Conductor 4, Ahead,+10C	1.980	0.008	-0.024
661	LC 1074	K6:1NL.1#5a,Break Conductor 4, Ahead,+10C	5.474	9.300	-4.500
662	LC 1074	K6:2NL.1#5a,Break Conductor 4, Ahead,+10C	16.478	9.588	-4.258
663	LC 1074	K6:3NL.1#5a,Break Conductor 4, Ahead,+10C	16.338	9.843	-4.048
664	LC 1074	K7:1NL.1#5a,Break Conductor 4, Ahead,+10C	15.189	9.694	-4.764
665	LC 1074	K7:2NL.1#5a,Break Conductor 4, Ahead,+10C	15.680	9.379	-4.905
666	LC 1074	K7:3NL.1#5a,Break Conductor 4, Ahead,+10C	16.081	9.101	-5.045
667	LC 1075	K4:1NL.1#5a,Break Conductor 5, Ahead,+10C	1.925	0.047	0.009
668	LC 1075	K5:1NL.1#5a,Break Conductor 5, Ahead,+10C	1.787	0.126	0.081
669	LC 1075	K5:2NL.1#5a,Break Conductor 5, Ahead,+10C	1.980	0.008	-0.024
670	LC 1075	K6:1NL.1#5a,Break Conductor 5, Ahead,+10C	16.566	9.367	-4.460
671	LC 1075	K6:2NL.1#5a,Break Conductor 5, Ahead,+10C	5.360	9.367	-4.447
672	LC 1075	K6:3NL.1#5a,Break Conductor 5, Ahead,+10C	16.338	9.843	-4.048
673	LC 1075	K7:1NL.1#5a,Break Conductor 5, Ahead,+10C	15.189	9.694	-4.764
674	LC 1075	K7:2NL.1#5a,Break Conductor 5, Ahead,+10C	15.680	9.379	-4.905
675	LC 1075	K7:3NL.1#5a,Break Conductor 5, Ahead,+10C	16.081	9.101	-5.045
676	LC 1076	K4:1NL.1#5a,Break Conductor 6, Ahead,+10C	1.925	0.047	0.009
677	LC 1076	K5:1NL.1#5a,Break Conductor 6, Ahead,+10C	1.787	0.126	0.081
678	LC 1076	K5:2NL.1#5a,Break Conductor 6, Ahead,+10C	1.980	0.008	-0.024
679	LC 1076	K6:1NL.1#5a,Break Conductor 6, Ahead,+10C	16.566	9.367	-4.460
680	LC 1076	K6:2NL.1#5a,Break Conductor 6, Ahead,+10C	16.478	9.588	-4.258
681	LC 1076	K6:3NL.1#5a,Break Conductor 6, Ahead,+10C	5.216	9.447	-4.392
682	LC 1076	K7:1NL.1#5a,Break Conductor 6, Ahead,+10C	15.189	9.694	-4.764
683	LC 1076	K7:2NL.1#5a,Break Conductor 6, Ahead,+10C	15.680	9.379	-4.905
684	LC 1076	K7:3NL.1#5a,Break Conductor 6, Ahead,+10C	16.081	9.101	-5.045
685	LC 1077	K4:1NL.1#6,Permanent,+10C	2.435	-0.093	0.005
686	LC 1077	K5:1NL.1#6,Permanent,+10C	2.267	0.006	0.103
687	LC 1077	K5:2NL.1#6,Permanent,+10C	2.500	-0.139	-0.040
688	LC 1077	K6:1NL.1#6,Permanent,+10C	20.701	10.444	-6.093
689	LC 1077	K6:2NL.1#6,Permanent,+10C	20.609	10.722	-5.825
690	LC 1077	K6:3NL.1#6,Permanent,+10C	20.454	11.041	-5.547
691	LC 1077	K7:1NL.1#6,Permanent,+10C	19.561	11.845	-6.485
692	LC 1077	K7:2NL.1#6,Permanent,+10C	20.183	11.444	-6.675
693	LC 1077	K7:3NL.1#6,Permanent,+10C	20.691	11.089	-6.863
694	LC 1078	K4:1NL.1#6,gunstig,Permanent,+10C	1.772	0.084	0.009
695	LC 1078	K5:1NL.1#6,gunstig,Permanent,+10C	1.643	0.157	0.073
696	LC 1078	K5:2NL.1#6,gunstig,Permanent,+10C	1.823	0.048	-0.020
697	LC 1078	K6:1NL.1#6,gunstig,Permanent,+10C	15.309	8.984	-3.999
698	LC 1078	K6:2NL.1#6,gunstig,Permanent,+10C	15.224	9.188	-3.816
699	LC 1078	K6:3NL.1#6,gunstig,Permanent,+10C	15.089	9.423	-3.626
700	LC 1078	K7:1NL.1#6,gunstig,Permanent,+10C	13.886	9.033	-4.277
701	LC 1078	K7:2NL.1#6,gunstig,Permanent,+10C	14.338	8.744	-4.405
702	LC 1078	K7:3NL.1#6,gunstig,Permanent,+10C	14.707	8.489	-4.531
703	LC 1079	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
704	LC 1079	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	2.916	-0.128	0.258
705	LC 1079	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	3.267	-0.321	0.097
706	LC 1079	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.828	10.211	-5.002
707	LC 1079	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.691	10.513	-4.715
708	LC 1079	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.491	10.856	-4.418
709	LC 1079	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	20.741	11.358	-5.413
710	LC 1079	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.396	10.940	-5.609
711	LC 1079	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+90 deg	21.941	10.567	-5.803
712	LC 1080	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
713	LC 1080	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	3.384	1.625	0.153
714	LC 1080	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	3.868	1.357	0.036
715	LC 1080	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	43.170	43.549	-4.220
716	LC 1080	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	42.662	44.108	-3.871
717	LC 1080	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	41.983	44.762	-3.501
718	LC 1080	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	31.906	31.459	-4.937
719	LC 1080	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	33.128	30.726	-5.147
720	LC 1080	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 deg	34.135	30.078	-5.353
721	LC 1081	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
722	LC 1081	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	4.549	-0.023	0.320
723	LC 1081	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	5.087	-0.325	0.042
724	LC 1081	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	31.145	22.845	-4.783
725	LC 1081	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	30.876	23.263	-4.440
726	LC 1081	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	30.499	23.744	-4.081
727	LC 1081	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	26.058	18.931	-5.358
728	LC 1081	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	26.952	18.373	-5.583
729	LC 1081	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 deg	27.691	17.878	-5.805

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
730	LC 1082	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
731	LC 1082	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	2.340	0.209	0.131
732	LC 1082	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	2.613	0.051	-0.013
733	LC 1082	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	21.953	13.265	-5.075
734	LC 1082	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	21.810	13.559	-4.790
735	LC 1082	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	21.596	13.898	-4.494
736	LC 1082	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	19.686	12.807	-5.516
737	LC 1082	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	20.331	12.397	-5.712
738	LC 1082	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 deg	20.862	12.034	-5.906
739	LC 1083	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139
740	LC 1083	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	2.500	-0.275	0.258
741	LC 1083	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	2.682	-0.427	0.097
742	LC 1083	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	18.671	10.045	-5.002
743	LC 1083	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	18.628	10.290	-4.715
744	LC 1083	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	18.524	10.576	-4.418
745	LC 1083	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	17.341	11.261	-5.413
746	LC 1083	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	17.889	10.901	-5.609
747	LC 1083	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-90 deg	18.326	10.586	-5.803
748	LC 1084	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
749	LC 1084	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	3.256	1.579	0.153
750	LC 1084	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	3.688	1.325	0.036
751	LC 1084	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	42.198	43.498	-4.220
752	LC 1084	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	41.720	44.039	-3.871
753	LC 1084	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	41.070	44.676	-3.501
754	LC 1084	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	30.860	31.430	-4.937
755	LC 1084	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	32.049	30.714	-5.147
756	LC 1084	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 deg	33.023	30.084	-5.353
757	LC 1085	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
758	LC 1085	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	4.046	-0.201	0.320
759	LC 1085	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	4.379	-0.454	0.042
760	LC 1085	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	29.365	22.737	-4.783
761	LC 1085	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	29.157	23.117	-4.440
762	LC 1085	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	28.843	23.561	-4.081
763	LC 1085	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	24.118	18.867	-5.358
764	LC 1085	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	24.943	18.348	-5.583
765	LC 1085	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 deg	25.611	17.891	-5.805
766	LC 1086	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
767	LC 1086	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	2.212	0.163	0.131
768	LC 1086	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	2.433	0.018	-0.013
769	LC 1086	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	20.982	13.214	-5.075
770	LC 1086	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	20.868	13.491	-4.790
771	LC 1086	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	20.683	13.812	-4.494
772	LC 1086	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	18.640	12.777	-5.516
773	LC 1086	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	19.252	12.386	-5.712
774	LC 1086	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 deg	19.750	12.040	-5.906
775	LC 1087	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112
776	LC 1087	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.522	-0.409	0.233
777	LC 1087	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.748	-0.530	0.065
778	LC 1087	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	20.255	9.556	-5.069
779	LC 1087	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	20.185	9.799	-4.781
780	LC 1087	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	20.051	10.091	-4.484
781	LC 1087	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.955	10.474	-5.489
782	LC 1087	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	19.524	10.121	-5.685
783	LC 1087	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	19.991	9.810	-5.879
784	LC 1088	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
785	LC 1088	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.328	1.619	0.148
786	LC 1088	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.790	1.365	0.031
787	LC 1088	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	42.922	43.632	-4.227
788	LC 1088	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	42.427	44.182	-3.878
789	LC 1088	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	41.761	44.829	-3.508
790	LC 1088	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	31.622	31.555	-4.945
791	LC 1088	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	32.831	30.833	-5.154
792	LC 1088	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	33.825	30.195	-5.360
793	LC 1089	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
794	LC 1089	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.215	-0.188	0.296
795	LC 1089	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.635	-0.417	0.013
796	LC 1089	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	30.403	22.678	-4.812
797	LC 1089	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	30.174	23.059	-4.467
798	LC 1089	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	29.830	23.521	-4.110
799	LC 1089	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	25.191	18.642	-5.389
800	LC 1089	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	26.042	18.115	-5.613
801	LC 1089	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	26.736	17.659	-5.837
802	LC 1090	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
803	LC 1090	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.278	0.182	0.127
804	LC 1090	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.524	0.041	-0.018
805	LC 1090	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.668	13.276	-5.082
806	LC 1090	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.539	13.562	-4.797
807	LC 1090	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.339	13.893	-4.501
808	LC 1090	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	19.334	12.756	-5.523
809	LC 1090	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	19.963	12.359	-5.719
810	LC 1090	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	20.477	12.008	-5.913

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
811	LC 1091	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
812	LC 1091	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.254	-0.563	0.233
813	LC 1091	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	2.432	-0.708	0.065
814	LC 1091	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.581	9.067	-5.069
815	LC 1091	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.520	9.300	-4.781
816	LC 1091	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.396	9.581	-4.484
817	LC 1091	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	17.253	10.029	-5.489
818	LC 1091	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	17.802	9.665	-5.685
819	LC 1091	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 deg	18.246	9.344	-5.879
820	LC 1092	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060
821	LC 1092	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.245	1.572	0.148
822	LC 1092	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	3.692	1.310	0.031
823	LC 1092	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	42.407	43.481	-4.227
824	LC 1092	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	41.914	44.029	-3.878
825	LC 1092	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	41.251	44.672	-3.508
826	LC 1092	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	31.098	31.418	-4.945
827	LC 1092	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	32.301	30.692	-5.154
828	LC 1092	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 deg	33.288	30.052	-5.360
829	LC 1093	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
830	LC 1093	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	3.891	-0.373	0.296
831	LC 1093	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	4.253	-0.632	0.013
832	LC 1093	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	29.473	22.358	-4.812
833	LC 1093	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	29.251	22.732	-4.467
834	LC 1093	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	28.913	23.187	-4.110
835	LC 1093	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	24.243	18.350	-5.389
836	LC 1093	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	25.081	17.817	-5.613
837	LC 1093	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 deg	25.760	17.354	-5.837
838	LC 1094	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
839	LC 1094	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.195	0.135	0.127
840	LC 1094	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	2.427	-0.014	-0.018
841	LC 1094	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.153	13.126	-5.082
842	LC 1094	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	21.026	13.409	-4.797
843	LC 1094	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	20.829	13.736	-4.501
844	LC 1094	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	18.810	12.619	-5.523
845	LC 1094	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	19.433	12.218	-5.719
846	LC 1094	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 deg	19.940	11.864	-5.913
847	LC 1095	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
848	LC 1095	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.343	0.478	0.094
849	LC 1095	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.688	0.309	-0.041
850	LC 1095	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.698	10.952	-5.191
851	LC 1095	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.527	11.212	-4.915
852	LC 1095	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.299	11.502	-4.628
853	LC 1095	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	19.617	12.122	-5.597
854	LC 1095	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.269	11.697	-5.791
855	LC 1095	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	20.826	11.355	-5.985
856	LC 1096	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046
857	LC 1096	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.287	1.694	0.132
858	LC 1096	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.765	1.425	0.018
859	LC 1096	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	42.937	43.588	-4.242
860	LC 1096	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	42.429	44.143	-3.894
861	LC 1096	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	41.745	44.802	-3.527
862	LC 1096	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	31.674	31.508	-4.958
863	LC 1096	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	32.894	30.773	-5.168
864	LC 1096	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	33.898	30.124	-5.374
865	LC 1097	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
866	LC 1097	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.028	0.441	0.187
867	LC 1097	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.549	0.150	-0.071
868	LC 1097	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	30.570	23.100	-4.862
869	LC 1097	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	30.297	23.509	-4.523
870	LC 1097	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	29.918	23.982	-4.169
871	LC 1097	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	25.496	19.203	-5.433
872	LC 1097	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	26.386	18.643	-5.658
873	LC 1097	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	27.119	18.146	-5.880
874	LC 1098	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
875	LC 1098	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.245	0.266	0.111
876	LC 1098	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.514	0.112	-0.030
877	LC 1098	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	21.728	13.292	-5.095
878	LC 1098	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	21.585	13.583	-4.811
879	LC 1098	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	21.371	13.919	-4.516
880	LC 1098	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	19.463	12.839	-5.534
881	LC 1098	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	20.106	12.428	-5.730
882	LC 1098	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	20.633	12.063	-5.924
883	LC 1099	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
884	LC 1099	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.195	0.485	0.094
885	LC 1099	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	2.418	0.382	-0.041
886	LC 1099	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	18.602	11.275	-5.191
887	LC 1099	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	18.517	11.488	-4.915
888	LC 1099	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	18.375	11.733	-4.628
889	LC 1099	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	17.307	12.470	-5.597
890	LC 1099	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	17.872	12.115	-5.791
891	LC 1099	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 deg	18.343	11.842	-5.985

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
892	LC 1100	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
893	LC 1100	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.242	1.696	0.132
894	LC 1100	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	3.682	1.447	0.018
895	LC 1100	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	42.293	43.687	-4.242
896	LC 1100	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	41.811	44.228	-3.894
897	LC 1100	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	41.153	44.873	-3.527
898	LC 1100	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	30.963	31.615	-4.958
899	LC 1100	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	32.157	30.902	-5.168
900	LC 1100	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 deg	33.134	30.274	-5.374
901	LC 1101	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008
902	LC 1101	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	3.850	0.448	0.187
903	LC 1101	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	4.223	0.238	-0.071
904	LC 1101	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	29.436	23.312	-4.862
905	LC 1101	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	29.219	23.690	-4.523
906	LC 1101	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	28.896	24.133	-4.169
907	LC 1101	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	24.221	19.431	-5.433
908	LC 1101	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	25.054	18.916	-5.658
909	LC 1101	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 deg	25.732	18.464	-5.880
910	LC 1102	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
911	LC 1102	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.199	0.268	0.111
912	LC 1102	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	2.431	0.134	-0.030
913	LC 1102	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	21.083	13.391	-5.095
914	LC 1102	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	20.966	13.668	-4.811
915	LC 1102	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	20.779	13.989	-4.516
916	LC 1102	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	18.752	12.946	-5.534
917	LC 1102	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	19.368	12.556	-5.730
918	LC 1102	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 deg	19.870	12.213	-5.924
919	LC 1103	K4:1NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
920	LC 1103	K5:1NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	2.099	0.109	0.109
921	LC 1103	K5:2NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	2.321	0.038	-0.037
922	LC 1103	K6:1NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.888	10.349	-5.202
923	LC 1103	K6:2NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.803	10.553	-4.924
924	LC 1103	K6:3NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.673	10.838	-4.638
925	LC 1103	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	17.590	11.265	-5.611
926	LC 1103	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.156	10.951	-5.805
927	LC 1103	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+0 deg	18.618	10.680	-5.998
928	LC 1104	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
929	LC 1104	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	3.249	1.667	0.133
930	LC 1104	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	3.703	1.427	0.018
931	LC 1104	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	42.543	43.685	-4.244
932	LC 1104	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	42.060	44.222	-3.894
933	LC 1104	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	41.401	44.863	-3.525
934	LC 1104	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	31.239	31.606	-4.960
935	LC 1104	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	32.438	30.888	-5.169
936	LC 1104	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 deg	33.421	30.256	-5.375
937	LC 1105	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014
938	LC 1105	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	3.823	0.195	0.197
939	LC 1105	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	4.213	-0.003	-0.068
940	LC 1105	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	29.722	23.028	-4.866
941	LC 1105	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	29.501	23.406	-4.526
942	LC 1105	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	29.168	23.855	-4.172
943	LC 1105	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	24.463	18.925	-5.440
944	LC 1105	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	25.294	18.408	-5.664
945	LC 1105	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 deg	26.011	18.021	-5.886
946	LC 1106	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
947	LC 1106	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
948	LC 1106	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	2.440	0.089	-0.029
949	LC 1106	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	21.299	13.313	-5.096
950	LC 1106	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	21.177	13.594	-4.811
951	LC 1106	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	20.984	13.919	-4.516
952	LC 1106	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	18.958	12.794	-5.536
953	LC 1106	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	19.576	12.402	-5.731
954	LC 1106	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 deg	20.079	12.056	-5.925
955	LC 1107	K4:1NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008
956	LC 1107	K5:1NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	2.088	0.074	0.109
957	LC 1107	K5:2NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	2.358	-0.033	-0.037
958	LC 1107	K6:1NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	19.323	10.095	-5.202
959	LC 1107	K6:2NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	19.194	10.318	-4.924
960	LC 1107	K6:3NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	19.020	10.621	-4.638
961	LC 1107	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	18.077	11.034	-5.611
962	LC 1107	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	18.694	10.679	-5.805
963	LC 1107	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-0 deg	19.208	10.365	-5.998
964	LC 1108	K4:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
965	LC 1108	K5:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	3.246	1.656	0.133
966	LC 1108	K5:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	3.715	1.405	0.018
967	LC 1108	K6:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	42.677	43.607	-4.244
968	LC 1108	K6:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	42.180	44.150	-3.894
969	LC 1108	K6:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	41.508	44.796	-3.525
970	LC 1108	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	31.389	31.535	-4.960
971	LC 1108	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	32.604	30.804	-5.169
972	LC 1108	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 deg	33.602	30.159	-5.375

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
973	LC 1109	K4:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
974	LC 1109	K5:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	3.809	0.153	0.197
975	LC 1109	K5:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	4.258	-0.089	-0.068
976	LC 1109	K6:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	29.956	22.862	-4.866
977	LC 1109	K6:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	29.706	23.252	-4.526
978	LC 1109	K6:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	29.344	23.713	-4.172
979	LC 1109	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	24.731	18.774	-5.440
980	LC 1109	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	25.596	18.230	-5.664
981	LC 1109	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 deg	26.346	17.815	-5.886
982	LC 1110	K4:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014
983	LC 1110	K5:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
984	LC 1110	K5:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	2.451	0.067	-0.029
985	LC 1110	K6:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	21.433	13.235	-5.096
986	LC 1110	K6:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	21.297	13.522	-4.811
987	LC 1110	K6:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	21.091	13.852	-4.516
988	LC 1110	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	19.108	12.723	-5.536
989	LC 1110	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	19.742	12.318	-5.731
990	LC 1110	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 deg	20.261	11.959	-5.925
991	LC 1111	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
992	LC 1111	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	2.916	-0.128	0.258
993	LC 1111	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.828	10.211	-5.002
994	LC 1111	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.691	10.513	-4.715
995	LC 1111	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.491	10.856	-4.418
996	LC 1111	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.741	11.682	-3.096
997	LC 1111	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.090	11.486	-3.171
998	LC 1111	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.381	11.311	-3.245
999	LC 1112	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
1000	LC 1112	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.384	1.625	0.153
1001	LC 1112	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	43.170	43.549	-4.220
1002	LC 1112	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	42.662	44.108	-3.871
1003	LC 1112	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	41.983	44.762	-3.501
1004	LC 1112	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	12.027	22.695	-3.014
1005	LC 1112	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	12.669	22.346	-3.096
1006	LC 1112	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	13.202	22.038	-3.176
1007	LC 1113	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
1008	LC 1113	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.549	-0.023	0.320
1009	LC 1113	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	31.145	22.845	-4.783
1010	LC 1113	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	30.876	23.263	-4.440
1011	LC 1113	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	30.499	23.744	-4.081
1012	LC 1113	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	8.952	16.495	-3.151
1013	LC 1113	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	9.428	16.233	-3.238
1014	LC 1113	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	9.824	16.000	-3.324
1015	LC 1114	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
1016	LC 1114	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.340	0.209	0.131
1017	LC 1114	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.953	13.265	-5.075
1018	LC 1114	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.810	13.559	-4.790
1019	LC 1114	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.596	13.898	-4.494
1020	LC 1114	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	6.558	12.200	-3.093
1021	LC 1114	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	6.907	12.009	-3.168
1022	LC 1114	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.196	11.841	-3.242
1023	LC 1115	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139
1024	LC 1115	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.500	-0.275	0.258
1025	LC 1115	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.671	10.045	-5.002
1026	LC 1115	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.628	10.290	-4.715
1027	LC 1115	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.524	10.576	-4.418
1028	LC 1115	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.554	11.915	-3.096
1029	LC 1115	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.868	11.755	-3.171
1030	LC 1115	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	6.124	11.616	-3.245
1031	LC 1116	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
1032	LC 1116	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.256	1.579	0.153
1033	LC 1116	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	42.198	43.498	-4.220
1034	LC 1116	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	41.720	44.039	-3.871
1035	LC 1116	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	41.070	44.676	-3.501
1036	LC 1116	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	11.662	22.766	-3.014
1037	LC 1116	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	12.293	22.428	-3.096
1038	LC 1116	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	12.815	22.132	-3.176
1039	LC 1117	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
1040	LC 1117	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.046	-0.201	0.320
1041	LC 1117	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	29.365	22.737	-4.783
1042	LC 1117	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	29.157	23.117	-4.440
1043	LC 1117	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	28.843	23.561	-4.081
1044	LC 1117	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	8.318	16.647	-3.151
1045	LC 1117	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	8.771	16.409	-3.238
1046	LC 1117	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	9.143	16.200	-3.324
1047	LC 1118	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
1048	LC 1118	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.212	0.163	0.131
1049	LC 1118	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.982	13.214	-5.075
1050	LC 1118	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.868	13.491	-4.790
1051	LC 1118	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.683	13.812	-4.494
1052	LC 1118	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.193	12.272	-3.093
1053	LC 1118	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.531	12.092	-3.168

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1054	LC 1118	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.809	11.935	-3.242
1055	LC 1119	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112
1056	LC 1119	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.522	-0.409	0.233
1057	LC 1119	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.255	9.556	-5.069
1058	LC 1119	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.185	9.799	-4.781
1059	LC 1119	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.051	10.091	-4.484
1060	LC 1119	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.998	11.087	-3.101
1061	LC 1119	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.307	10.920	-3.176
1062	LC 1119	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.563	10.773	-3.249
1063	LC 1120	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
1064	LC 1120	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.328	1.619	0.148
1065	LC 1120	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.922	43.632	-4.227
1066	LC 1120	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.427	44.182	-3.878
1067	LC 1120	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.761	44.829	-3.508
1068	LC 1120	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	11.912	22.730	-3.014
1069	LC 1120	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.549	22.387	-3.096
1070	LC 1120	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	13.075	22.085	-3.176
1071	LC 1121	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
1072	LC 1121	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.215	-0.188	0.296
1073	LC 1121	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	30.403	22.678	-4.812
1074	LC 1121	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	30.174	23.059	-4.467
1075	LC 1121	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.830	23.521	-4.110
1076	LC 1121	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.592	16.293	-3.153
1077	LC 1121	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.048	16.047	-3.240
1078	LC 1121	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.426	15.831	-3.325
1079	LC 1122	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
1080	LC 1122	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.278	0.182	0.127
1081	LC 1122	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.668	13.276	-5.082
1082	LC 1122	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.539	13.562	-4.797
1083	LC 1122	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.339	13.893	-4.501
1084	LC 1122	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.407	12.166	-3.093
1085	LC 1122	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.748	11.982	-3.168
1086	LC 1122	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.030	11.821	-3.243
1087	LC 1123	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
1088	LC 1123	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.254	-0.563	0.233
1089	LC 1123	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.581	9.067	-5.069
1090	LC 1123	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.520	9.300	-4.781
1091	LC 1123	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.396	9.581	-4.484
1092	LC 1123	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.559	11.091	-3.101
1093	LC 1123	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.871	10.923	-3.176
1094	LC 1123	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.129	10.775	-3.249
1095	LC 1124	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060
1096	LC 1124	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.245	1.572	0.148
1097	LC 1124	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.407	43.481	-4.227
1098	LC 1124	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.914	44.029	-3.878
1099	LC 1124	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.251	44.672	-3.508
1100	LC 1124	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	11.777	22.731	-3.014
1101	LC 1124	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.414	22.388	-3.096
1102	LC 1124	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.942	22.085	-3.176
1103	LC 1125	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
1104	LC 1125	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	3.891	-0.373	0.296
1105	LC 1125	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.473	22.358	-4.812
1106	LC 1125	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.251	22.732	-4.467
1107	LC 1125	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	28.913	23.187	-4.110
1108	LC 1125	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.389	16.295	-3.153
1109	LC 1125	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.846	16.049	-3.240
1110	LC 1125	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.225	15.832	-3.325
1111	LC 1126	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
1112	LC 1126	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.195	0.135	0.127
1113	LC 1126	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.153	13.126	-5.082
1114	LC 1126	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.026	13.409	-4.797
1115	LC 1126	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	20.829	13.736	-4.501
1116	LC 1126	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.272	12.167	-3.093
1117	LC 1126	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.614	11.983	-3.168
1118	LC 1126	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.896	11.821	-3.243
1119	LC 1127	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
1120	LC 1127	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.343	0.478	0.094
1121	LC 1127	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.698	10.952	-5.191
1122	LC 1127	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.527	11.212	-4.915
1123	LC 1127	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.299	11.502	-4.628
1124	LC 1127	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.666	11.667	-3.096
1125	LC 1127	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	7.015	11.470	-3.171
1126	LC 1127	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	7.317	11.312	-3.245
1127	LC 1128	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046
1128	LC 1128	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.287	1.694	0.132
1129	LC 1128	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.937	43.588	-4.242
1130	LC 1128	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.429	44.143	-3.894
1131	LC 1128	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.745	44.802	-3.527
1132	LC 1128	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.007	22.695	-3.014
1133	LC 1128	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.650	22.346	-3.096
1134	LC 1128	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	13.182	22.038	-3.176

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1135	LC 1129	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
1136	LC 1129	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.028	0.441	0.187
1137	LC 1129	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	30.570	23.100	-4.862
1138	LC 1129	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	30.297	23.509	-4.523
1139	LC 1129	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.918	23.982	-4.169
1140	LC 1129	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.921	16.496	-3.151
1141	LC 1129	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.397	16.233	-3.238
1142	LC 1129	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.794	16.001	-3.324
1143	LC 1130	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
1144	LC 1130	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.245	0.266	0.111
1145	LC 1130	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.728	13.292	-5.095
1146	LC 1130	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.585	13.583	-4.811
1147	LC 1130	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.371	13.919	-4.516
1148	LC 1130	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.538	12.200	-3.093
1149	LC 1130	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.887	12.010	-3.168
1150	LC 1130	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.176	11.841	-3.242
1151	LC 1131	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
1152	LC 1131	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.195	0.485	0.094
1153	LC 1131	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.602	11.275	-5.191
1154	LC 1131	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.517	11.488	-4.915
1155	LC 1131	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.375	11.733	-4.628
1156	LC 1131	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.611	11.896	-3.096
1157	LC 1131	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.923	11.736	-3.171
1158	LC 1131	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.187	11.615	-3.245
1159	LC 1132	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
1160	LC 1132	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.242	1.696	0.132
1161	LC 1132	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.293	43.687	-4.242
1162	LC 1132	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.811	44.228	-3.894
1163	LC 1132	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.153	44.873	-3.527
1164	LC 1132	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	11.682	22.766	-3.014
1165	LC 1132	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.313	22.428	-3.096
1166	LC 1132	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.835	22.131	-3.176
1167	LC 1133	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008
1168	LC 1133	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	3.850	0.448	0.187
1169	LC 1133	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.436	23.312	-4.862
1170	LC 1133	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.219	23.690	-4.523
1171	LC 1133	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	28.896	24.133	-4.169
1172	LC 1133	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.349	16.646	-3.151
1173	LC 1133	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.801	16.408	-3.238
1174	LC 1133	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.173	16.199	-3.324
1175	LC 1134	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
1176	LC 1134	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.199	0.268	0.111
1177	LC 1134	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.083	13.391	-5.095
1178	LC 1134	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.966	13.668	-4.811
1179	LC 1134	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.779	13.989	-4.516
1180	LC 1134	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.213	12.271	-3.093
1181	LC 1134	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.551	12.092	-3.168
1182	LC 1134	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.829	11.935	-3.242
1183	LC 1135	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
1184	LC 1135	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.099	0.109	0.109
1185	LC 1135	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.888	10.349	-5.202
1186	LC 1135	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.803	10.553	-4.924
1187	LC 1135	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.673	10.838	-4.638
1188	LC 1135	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.684	11.236	-3.100
1189	LC 1135	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.994	11.095	-3.175
1190	LC 1135	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	6.251	10.973	-3.249
1191	LC 1136	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
1192	LC 1136	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.249	1.667	0.133
1193	LC 1136	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	42.543	43.685	-4.244
1194	LC 1136	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	42.060	44.222	-3.894
1195	LC 1136	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	41.401	44.863	-3.525
1196	LC 1136	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	11.799	22.744	-3.014
1197	LC 1136	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	12.432	22.404	-3.096
1198	LC 1136	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	12.955	22.105	-3.176
1199	LC 1137	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014
1200	LC 1137	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	3.823	0.195	0.197
1201	LC 1137	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.722	23.028	-4.866
1202	LC 1137	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.501	23.406	-4.526
1203	LC 1137	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.168	23.855	-4.172
1204	LC 1137	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	8.424	16.357	-3.153
1205	LC 1137	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	8.873	16.117	-3.240
1206	LC 1137	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	9.263	15.941	-3.325
1207	LC 1138	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
1208	LC 1138	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
1209	LC 1138	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	21.299	13.313	-5.096
1210	LC 1138	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	21.177	13.594	-4.811
1211	LC 1138	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	20.984	13.919	-4.516
1212	LC 1138	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.294	12.180	-3.093
1213	LC 1138	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.631	11.999	-3.168
1214	LC 1138	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.909	11.841	-3.243
1215	LC 1139	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1216	LC 1139	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.088	0.074	0.109
1217	LC 1139	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.323	10.095	-5.202
1218	LC 1139	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.194	10.318	-4.924
1219	LC 1139	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.020	10.621	-4.638
1220	LC 1139	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	5.981	11.150	-3.100
1221	LC 1139	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.317	10.987	-3.175
1222	LC 1139	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.600	10.844	-3.249
1223	LC 1140	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
1224	LC 1140	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.246	1.656	0.133
1225	LC 1140	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	42.677	43.607	-4.244
1226	LC 1140	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	42.180	44.150	-3.894
1227	LC 1140	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	41.508	44.796	-3.525
1228	LC 1140	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	11.890	22.717	-3.014
1229	LC 1140	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	12.531	22.371	-3.096
1230	LC 1140	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	13.062	22.065	-3.176
1231	LC 1141	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
1232	LC 1141	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	3.809	0.153	0.197
1233	LC 1141	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.956	22.862	-4.866
1234	LC 1141	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.706	23.252	-4.526
1235	LC 1141	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.344	23.713	-4.172
1236	LC 1141	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	8.593	16.300	-3.153
1237	LC 1141	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	9.059	16.047	-3.240
1238	LC 1141	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	9.466	15.856	-3.325
1239	LC 1142	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014
1240	LC 1142	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
1241	LC 1142	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.433	13.235	-5.096
1242	LC 1142	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.297	13.522	-4.811
1243	LC 1142	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.091	13.852	-4.516
1244	LC 1142	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.385	12.153	-3.093
1245	LC 1142	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.730	11.966	-3.168
1246	LC 1142	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.016	11.801	-3.243
1247	LC 1143	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
1248	LC 1143	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.267	-0.321	0.097
1249	LC 1143	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.042	10.927	-2.955
1250	LC 1143	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.889	11.019	-2.882
1251	LC 1143	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.701	11.128	-2.806
1252	LC 1143	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	20.741	11.358	-5.413
1253	LC 1143	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.396	10.940	-5.609
1254	LC 1143	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.941	10.567	-5.803
1255	LC 1144	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
1256	LC 1144	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.868	1.357	0.036
1257	LC 1144	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	17.174	28.858	-2.787
1258	LC 1144	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	16.813	29.069	-2.694
1259	LC 1144	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	16.362	29.323	-2.594
1260	LC 1144	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	31.906	31.459	-4.937
1261	LC 1144	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	33.128	30.726	-5.147
1262	LC 1144	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	34.135	30.078	-5.353
1263	LC 1145	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
1264	LC 1145	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	5.087	-0.325	0.042
1265	LC 1145	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	11.136	18.361	-2.960
1266	LC 1145	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	10.897	18.501	-2.871
1267	LC 1145	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	10.602	18.669	-2.777
1268	LC 1145	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	26.058	18.931	-5.358
1269	LC 1145	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	26.952	18.373	-5.583
1270	LC 1145	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	27.691	17.878	-5.805
1271	LC 1146	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
1272	LC 1146	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.613	0.051	-0.013
1273	LC 1146	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.428	12.299	-2.942
1274	LC 1146	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.270	12.392	-2.868
1275	LC 1146	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.075	12.502	-2.791
1276	LC 1146	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	19.686	12.807	-5.516
1277	LC 1146	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	20.331	12.397	-5.712
1278	LC 1146	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	20.862	12.034	-5.906
1279	LC 1147	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139
1280	LC 1147	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.682	-0.427	0.097
1281	LC 1147	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.946	11.137	-2.955
1282	LC 1147	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.827	11.203	-2.882
1283	LC 1147	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.675	11.286	-2.806
1284	LC 1147	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	17.341	11.261	-5.413
1285	LC 1147	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	17.889	10.901	-5.609
1286	LC 1147	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.326	10.586	-5.803
1287	LC 1148	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
1288	LC 1148	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.688	1.325	0.036
1289	LC 1148	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.837	28.923	-2.787
1290	LC 1148	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.486	29.125	-2.694
1291	LC 1148	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.047	29.371	-2.594
1292	LC 1148	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	30.860	31.430	-4.937
1293	LC 1148	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	32.049	30.714	-5.147
1294	LC 1148	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	33.023	30.084	-5.353
1295	LC 1149	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
1296	LC 1149	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.379	-0.454	0.042

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1297	LC 1149	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.561	18.498	-2.960
1298	LC 1149	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.345	18.622	-2.871
1299	LC 1149	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.073	18.773	-2.777
1300	LC 1149	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	24.118	18.867	-5.358
1301	LC 1149	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	24.943	18.348	-5.583
1302	LC 1149	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	25.611	17.891	-5.805
1303	LC 1150	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
1304	LC 1150	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.433	0.018	-0.013
1305	LC 1150	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	7.090	12.364	-2.942
1306	LC 1150	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.943	12.448	-2.868
1307	LC 1150	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.759	12.551	-2.791
1308	LC 1150	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	18.640	12.777	-5.516
1309	LC 1150	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	19.252	12.386	-5.712
1310	LC 1150	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	19.750	12.040	-5.906
1311	LC 1151	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112
1312	LC 1151	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.748	-0.530	0.065
1313	LC 1151	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.384	10.477	-2.960
1314	LC 1151	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.255	10.552	-2.888
1315	LC 1151	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.094	10.642	-2.813
1316	LC 1151	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.955	10.474	-5.489
1317	LC 1151	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	19.524	10.121	-5.685
1318	LC 1151	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	19.991	9.810	-5.879
1319	LC 1152	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
1320	LC 1152	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.790	1.365	0.031
1321	LC 1152	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	17.072	28.890	-2.787
1322	LC 1152	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.716	29.097	-2.694
1323	LC 1152	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.271	29.347	-2.594
1324	LC 1152	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	31.622	31.555	-4.945
1325	LC 1152	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	32.831	30.833	-5.154
1326	LC 1152	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	33.825	30.195	-5.360
1327	LC 1153	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
1328	LC 1153	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.635	-0.417	0.013
1329	LC 1153	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.830	18.227	-2.962
1330	LC 1153	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.605	18.358	-2.874
1331	LC 1153	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.324	18.516	-2.780
1332	LC 1153	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.191	18.642	-5.389
1333	LC 1153	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	26.042	18.115	-5.613
1334	LC 1153	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	26.736	17.659	-5.837
1335	LC 1154	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
1336	LC 1154	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.524	0.041	-0.018
1337	LC 1154	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.306	12.298	-2.943
1338	LC 1154	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.154	12.386	-2.869
1339	LC 1154	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.965	12.492	-2.791
1340	LC 1154	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.334	12.756	-5.523
1341	LC 1154	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.963	12.359	-5.719
1342	LC 1154	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	20.477	12.008	-5.913
1343	LC 1155	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
1344	LC 1155	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.432	-0.708	0.065
1345	LC 1155	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.951	10.478	-2.960
1346	LC 1155	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.821	10.553	-2.888
1347	LC 1155	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.660	10.644	-2.813
1348	LC 1155	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	17.253	10.029	-5.489
1349	LC 1155	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	17.802	9.665	-5.685
1350	LC 1155	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.246	9.344	-5.879
1351	LC 1156	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060
1352	LC 1156	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.692	1.310	0.031
1353	LC 1156	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.939	28.890	-2.787
1354	LC 1156	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.583	29.097	-2.694
1355	LC 1156	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.138	29.347	-2.594
1356	LC 1156	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	31.098	31.418	-4.945
1357	LC 1156	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	32.301	30.692	-5.154
1358	LC 1156	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	33.288	30.052	-5.360
1359	LC 1157	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
1360	LC 1157	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.253	-0.632	0.013
1361	LC 1157	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.629	18.228	-2.962
1362	LC 1157	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.404	18.359	-2.874
1363	LC 1157	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.124	18.517	-2.780
1364	LC 1157	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	24.243	18.350	-5.389
1365	LC 1157	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.081	17.817	-5.613
1366	LC 1157	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.760	17.354	-5.837
1367	LC 1158	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
1368	LC 1158	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.427	-0.014	-0.018
1369	LC 1158	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.172	12.298	-2.943
1370	LC 1158	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.021	12.386	-2.869
1371	LC 1158	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.831	12.493	-2.791
1372	LC 1158	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	18.810	12.619	-5.523
1373	LC 1158	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.433	12.218	-5.719
1374	LC 1158	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.940	11.864	-5.913
1375	LC 1159	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
1376	LC 1159	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.688	0.309	-0.041
1377	LC 1159	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.979	10.928	-2.955

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1378	LC 1159	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.815	11.003	-2.882
1379	LC 1159	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.618	11.094	-2.806
1380	LC 1159	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	19.617	12.122	-5.597
1381	LC 1159	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.269	11.697	-5.791
1382	LC 1159	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.826	11.355	-5.985
1383	LC 1160	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046
1384	LC 1160	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.765	1.425	0.018
1385	LC 1160	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	17.155	28.858	-2.787
1386	LC 1160	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.793	29.069	-2.694
1387	LC 1160	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.343	29.323	-2.594
1388	LC 1160	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	31.674	31.508	-4.958
1389	LC 1160	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	32.894	30.773	-5.168
1390	LC 1160	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	33.898	30.124	-5.374
1391	LC 1161	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
1392	LC 1161	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.549	0.150	-0.071
1393	LC 1161	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	11.106	18.361	-2.960
1394	LC 1161	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.867	18.502	-2.871
1395	LC 1161	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.572	18.670	-2.777
1396	LC 1161	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.496	19.203	-5.433
1397	LC 1161	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	26.386	18.643	-5.658
1398	LC 1161	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	27.119	18.146	-5.880
1399	LC 1162	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
1400	LC 1162	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.514	0.112	-0.030
1401	LC 1162	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.408	12.300	-2.942
1402	LC 1162	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.251	12.392	-2.868
1403	LC 1162	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.055	12.503	-2.791
1404	LC 1162	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.463	12.839	-5.534
1405	LC 1162	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.106	12.428	-5.730
1406	LC 1162	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.633	12.063	-5.924
1407	LC 1163	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
1408	LC 1163	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.418	0.382	-0.041
1409	LC 1163	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.009	11.137	-2.955
1410	LC 1163	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.881	11.186	-2.882
1411	LC 1163	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.720	11.251	-2.806
1412	LC 1163	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	17.307	12.470	-5.597
1413	LC 1163	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	17.872	12.115	-5.791
1414	LC 1163	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.343	11.842	-5.985
1415	LC 1164	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
1416	LC 1164	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.682	1.447	0.018
1417	LC 1164	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.856	28.922	-2.787
1418	LC 1164	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.506	29.125	-2.694
1419	LC 1164	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.066	29.371	-2.594
1420	LC 1164	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	30.963	31.615	-4.958
1421	LC 1164	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	32.157	30.902	-5.168
1422	LC 1164	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	33.134	30.274	-5.374
1423	LC 1165	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008
1424	LC 1165	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.223	0.238	-0.071
1425	LC 1165	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.590	18.498	-2.960
1426	LC 1165	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.375	18.621	-2.871
1427	LC 1165	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.102	18.772	-2.777
1428	LC 1165	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	24.221	19.431	-5.433
1429	LC 1165	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.054	18.916	-5.658
1430	LC 1165	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.732	18.464	-5.880
1431	LC 1166	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
1432	LC 1166	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.431	0.134	-0.030
1433	LC 1166	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.110	12.364	-2.942
1434	LC 1166	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.963	12.448	-2.868
1435	LC 1166	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.779	12.551	-2.791
1436	LC 1166	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	18.752	12.946	-5.534
1437	LC 1166	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.368	12.556	-5.730
1438	LC 1166	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.870	12.213	-5.924
1439	LC 1167	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
1440	LC 1167	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.321	0.038	-0.037
1441	LC 1167	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	6.086	10.623	-2.959
1442	LC 1167	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.955	10.675	-2.887
1443	LC 1167	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.802	10.760	-2.812
1444	LC 1167	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	17.590	11.265	-5.611
1445	LC 1167	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.156	10.951	-5.805
1446	LC 1167	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.618	10.680	-5.998
1447	LC 1168	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
1448	LC 1168	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.703	1.427	0.018
1449	LC 1168	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.962	28.904	-2.787
1450	LC 1168	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.609	29.109	-2.694
1451	LC 1168	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.167	29.357	-2.594
1452	LC 1168	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	31.239	31.606	-4.960
1453	LC 1168	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	32.438	30.888	-5.169
1454	LC 1168	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	33.421	30.256	-5.375
1455	LC 1169	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014
1456	LC 1169	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.213	-0.003	-0.068
1457	LC 1169	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.690	18.324	-2.961
1458	LC 1169	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.470	18.451	-2.873

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1459	LC 1169	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.195	18.605	-2.779
1460	LC 1169	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	24.463	18.925	-5.440
1461	LC 1169	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	25.294	18.408	-5.664
1462	LC 1169	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	26.011	18.021	-5.886
1463	LC 1170	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
1464	LC 1170	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.440	0.089	-0.029
1465	LC 1170	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	7.196	12.312	-2.943
1466	LC 1170	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	7.047	12.398	-2.869
1467	LC 1170	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.861	12.502	-2.791
1468	LC 1170	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	18.958	12.794	-5.536
1469	LC 1170	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	19.576	12.402	-5.731
1470	LC 1170	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	20.079	12.056	-5.925
1471	LC 1171	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008
1472	LC 1171	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.358	-0.033	-0.037
1473	LC 1171	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.367	10.534	-2.959
1474	LC 1171	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.218	10.599	-2.887
1475	LC 1171	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.046	10.697	-2.812
1476	LC 1171	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	18.077	11.034	-5.611
1477	LC 1171	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	18.694	10.679	-5.805
1478	LC 1171	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.208	10.365	-5.998
1479	LC 1172	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
1480	LC 1172	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.715	1.405	0.018
1481	LC 1172	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	17.049	28.877	-2.787
1482	LC 1172	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	16.690	29.085	-2.694
1483	LC 1172	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	16.242	29.337	-2.594
1484	LC 1172	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	31.389	31.535	-4.960
1485	LC 1172	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	32.604	30.804	-5.169
1486	LC 1172	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	33.602	30.159	-5.375
1487	LC 1173	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
1488	LC 1173	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.258	-0.089	-0.068
1489	LC 1173	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.848	18.266	-2.961
1490	LC 1173	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.617	18.401	-2.873
1491	LC 1173	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.329	18.564	-2.779
1492	LC 1173	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	24.731	18.774	-5.440
1493	LC 1173	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	25.596	18.230	-5.664
1494	LC 1173	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	26.346	17.815	-5.886
1495	LC 1174	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014
1496	LC 1174	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.451	0.067	-0.029
1497	LC 1174	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.282	12.285	-2.943
1498	LC 1174	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.128	12.375	-2.869
1499	LC 1174	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.935	12.483	-2.791
1500	LC 1174	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	19.108	12.723	-5.536
1501	LC 1174	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	19.742	12.318	-5.731
1502	LC 1174	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	20.261	11.959	-5.925
1503	LC 1175	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
1504	LC 1175	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	2.916	-0.128	0.258
1505	LC 1175	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.267	-0.321	0.097
1506	LC 1175	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.828	10.211	-5.002
1507	LC 1175	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.691	10.513	-4.715
1508	LC 1175	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.491	10.856	-4.418
1509	LC 1175	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.741	11.682	-3.096
1510	LC 1175	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.090	11.486	-3.171
1511	LC 1175	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.381	11.311	-3.245
1512	LC 1176	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
1513	LC 1176	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.384	1.625	0.153
1514	LC 1176	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.868	1.357	0.036
1515	LC 1176	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	43.170	43.549	-4.220
1516	LC 1176	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	42.662	44.108	-3.871
1517	LC 1176	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	41.983	44.762	-3.501
1518	LC 1176	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	12.027	22.695	-3.014
1519	LC 1176	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	12.669	22.346	-3.096
1520	LC 1176	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	13.202	22.038	-3.176
1521	LC 1177	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
1522	LC 1177	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.549	-0.023	0.320
1523	LC 1177	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	5.087	-0.325	0.042
1524	LC 1177	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	31.145	22.845	-4.783
1525	LC 1177	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	30.876	23.263	-4.440
1526	LC 1177	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	30.499	23.744	-4.081
1527	LC 1177	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	8.952	16.495	-3.151
1528	LC 1177	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	9.428	16.233	-3.238
1529	LC 1177	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	9.824	16.000	-3.324
1530	LC 1178	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
1531	LC 1178	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.340	0.209	0.131
1532	LC 1178	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.613	0.051	-0.013
1533	LC 1178	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.953	13.265	-5.075
1534	LC 1178	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.810	13.559	-4.790
1535	LC 1178	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	21.596	13.898	-4.494
1536	LC 1178	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	6.558	12.200	-3.093
1537	LC 1178	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	6.907	12.009	-3.168
1538	LC 1178	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.196	11.841	-3.242
1539	LC 1179	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1540	LC 1179	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.500	-0.275	0.258
1541	LC 1179	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.682	-0.427	0.097
1542	LC 1179	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.671	10.045	-5.002
1543	LC 1179	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.628	10.290	-4.715
1544	LC 1179	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.524	10.576	-4.418
1545	LC 1179	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.554	11.915	-3.096
1546	LC 1179	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.868	11.755	-3.171
1547	LC 1179	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	6.124	11.616	-3.245
1548	LC 1180	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
1549	LC 1180	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.256	1.579	0.153
1550	LC 1180	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.688	1.325	0.036
1551	LC 1180	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	42.198	43.498	-4.220
1552	LC 1180	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	41.720	44.039	-3.871
1553	LC 1180	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	41.070	44.676	-3.501
1554	LC 1180	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	11.662	22.766	-3.014
1555	LC 1180	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	12.293	22.428	-3.096
1556	LC 1180	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	12.815	22.132	-3.176
1557	LC 1181	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
1558	LC 1181	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.046	-0.201	0.320
1559	LC 1181	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.379	-0.454	0.042
1560	LC 1181	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	29.365	22.737	-4.783
1561	LC 1181	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	29.157	23.117	-4.440
1562	LC 1181	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	28.843	23.561	-4.081
1563	LC 1181	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	8.318	16.647	-3.151
1564	LC 1181	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	8.771	16.409	-3.238
1565	LC 1181	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	9.143	16.200	-3.324
1566	LC 1182	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
1567	LC 1182	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.212	0.163	0.131
1568	LC 1182	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.433	0.018	-0.013
1569	LC 1182	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.982	13.214	-5.075
1570	LC 1182	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.868	13.491	-4.790
1571	LC 1182	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	20.683	13.812	-4.494
1572	LC 1182	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.193	12.272	-3.093
1573	LC 1182	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.531	12.092	-3.168
1574	LC 1182	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.809	11.935	-3.242
1575	LC 1183	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112
1576	LC 1183	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.522	-0.409	0.233
1577	LC 1183	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.748	-0.530	0.065
1578	LC 1183	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.255	9.556	-5.069
1579	LC 1183	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.185	9.799	-4.781
1580	LC 1183	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	20.051	10.091	-4.484
1581	LC 1183	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.998	11.087	-3.101
1582	LC 1183	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.307	10.920	-3.176
1583	LC 1183	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.563	10.773	-3.249
1584	LC 1184	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
1585	LC 1184	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.328	1.619	0.148
1586	LC 1184	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.790	1.365	0.031
1587	LC 1184	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.922	43.632	-4.227
1588	LC 1184	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.427	44.182	-3.878
1589	LC 1184	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.761	44.829	-3.508
1590	LC 1184	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	11.912	22.730	-3.014
1591	LC 1184	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.549	22.387	-3.096
1592	LC 1184	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	13.075	22.085	-3.176
1593	LC 1185	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
1594	LC 1185	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.215	-0.188	0.296
1595	LC 1185	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.635	-0.417	0.013
1596	LC 1185	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	30.403	22.678	-4.812
1597	LC 1185	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	30.174	23.059	-4.467
1598	LC 1185	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.830	23.521	-4.110
1599	LC 1185	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.592	16.293	-3.153
1600	LC 1185	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.048	16.047	-3.240
1601	LC 1185	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.426	15.831	-3.325
1602	LC 1186	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
1603	LC 1186	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.278	0.182	0.127
1604	LC 1186	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.524	0.041	-0.018
1605	LC 1186	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.668	13.276	-5.082
1606	LC 1186	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.539	13.562	-4.797
1607	LC 1186	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.339	13.893	-4.501
1608	LC 1186	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.407	12.166	-3.093
1609	LC 1186	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.748	11.982	-3.168
1610	LC 1186	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.030	11.821	-3.243
1611	LC 1187	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
1612	LC 1187	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.254	-0.563	0.233
1613	LC 1187	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.432	-0.708	0.065
1614	LC 1187	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.581	9.067	-5.069
1615	LC 1187	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.520	9.300	-4.781
1616	LC 1187	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.396	9.581	-4.484
1617	LC 1187	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.559	11.091	-3.101
1618	LC 1187	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.871	10.923	-3.176
1619	LC 1187	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.129	10.775	-3.249
1620	LC 1188	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1621	LC 1188	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.245	1.572	0.148
1622	LC 1188	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.692	1.310	0.031
1623	LC 1188	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	42.407	43.481	-4.227
1624	LC 1188	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.914	44.029	-3.878
1625	LC 1188	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	41.251	44.672	-3.508
1626	LC 1188	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	11.777	22.731	-3.014
1627	LC 1188	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.414	22.388	-3.096
1628	LC 1188	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	12.942	22.085	-3.176
1629	LC 1189	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
1630	LC 1189	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	3.891	-0.373	0.296
1631	LC 1189	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.253	-0.632	0.013
1632	LC 1189	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.473	22.358	-4.812
1633	LC 1189	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	29.251	22.732	-4.467
1634	LC 1189	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	28.913	23.187	-4.110
1635	LC 1189	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.389	16.295	-3.153
1636	LC 1189	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	8.846	16.049	-3.240
1637	LC 1189	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	9.225	15.832	-3.325
1638	LC 1190	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
1639	LC 1190	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.195	0.135	0.127
1640	LC 1190	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.427	-0.014	-0.018
1641	LC 1190	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.153	13.126	-5.082
1642	LC 1190	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	21.026	13.409	-4.797
1643	LC 1190	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	20.829	13.736	-4.501
1644	LC 1190	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.272	12.167	-3.093
1645	LC 1190	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.614	11.983	-3.168
1646	LC 1190	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.896	11.821	-3.243
1647	LC 1191	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
1648	LC 1191	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.343	0.478	0.094
1649	LC 1191	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.688	0.309	-0.041
1650	LC 1191	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.698	10.952	-5.191
1651	LC 1191	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.527	11.212	-4.915
1652	LC 1191	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.299	11.502	-4.628
1653	LC 1191	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.666	11.667	-3.096
1654	LC 1191	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	7.015	11.470	-3.171
1655	LC 1191	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	7.317	11.312	-3.245
1656	LC 1192	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046
1657	LC 1192	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.287	1.694	0.132
1658	LC 1192	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.765	1.425	0.018
1659	LC 1192	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.937	43.588	-4.242
1660	LC 1192	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.429	44.143	-3.894
1661	LC 1192	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.745	44.802	-3.527
1662	LC 1192	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.007	22.695	-3.014
1663	LC 1192	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.650	22.346	-3.096
1664	LC 1192	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	13.182	22.038	-3.176
1665	LC 1193	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
1666	LC 1193	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.028	0.441	0.187
1667	LC 1193	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.549	0.150	-0.071
1668	LC 1193	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	30.570	23.100	-4.862
1669	LC 1193	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	30.297	23.509	-4.523
1670	LC 1193	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.918	23.982	-4.169
1671	LC 1193	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.921	16.496	-3.151
1672	LC 1193	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.397	16.233	-3.238
1673	LC 1193	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.794	16.001	-3.324
1674	LC 1194	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
1675	LC 1194	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.245	0.266	0.111
1676	LC 1194	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.514	0.112	-0.030
1677	LC 1194	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.728	13.292	-5.095
1678	LC 1194	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.585	13.583	-4.811
1679	LC 1194	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.371	13.919	-4.516
1680	LC 1194	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.538	12.200	-3.093
1681	LC 1194	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.887	12.010	-3.168
1682	LC 1194	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.176	11.841	-3.242
1683	LC 1195	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
1684	LC 1195	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.195	0.485	0.094
1685	LC 1195	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.418	0.382	-0.041
1686	LC 1195	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.602	11.275	-5.191
1687	LC 1195	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.517	11.488	-4.915
1688	LC 1195	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.375	11.733	-4.628
1689	LC 1195	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.611	11.896	-3.096
1690	LC 1195	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.923	11.736	-3.171
1691	LC 1195	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.187	11.615	-3.245
1692	LC 1196	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
1693	LC 1196	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.242	1.696	0.132
1694	LC 1196	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.682	1.447	0.018
1695	LC 1196	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	42.293	43.687	-4.242
1696	LC 1196	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.811	44.228	-3.894
1697	LC 1196	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	41.153	44.873	-3.527
1698	LC 1196	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	11.682	22.766	-3.014
1699	LC 1196	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.313	22.428	-3.096
1700	LC 1196	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	12.835	22.131	-3.176
1701	LC 1197	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1702	LC 1197	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	3.850	0.448	0.187
1703	LC 1197	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.223	0.238	-0.071
1704	LC 1197	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.436	23.312	-4.862
1705	LC 1197	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	29.219	23.690	-4.523
1706	LC 1197	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	28.896	24.133	-4.169
1707	LC 1197	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.349	16.646	-3.151
1708	LC 1197	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	8.801	16.408	-3.238
1709	LC 1197	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	9.173	16.199	-3.324
1710	LC 1198	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
1711	LC 1198	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.199	0.268	0.111
1712	LC 1198	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.431	0.134	-0.030
1713	LC 1198	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	21.083	13.391	-5.095
1714	LC 1198	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.966	13.668	-4.811
1715	LC 1198	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.779	13.989	-4.516
1716	LC 1198	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.213	12.271	-3.093
1717	LC 1198	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.551	12.092	-3.168
1718	LC 1198	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.829	11.935	-3.242
1719	LC 1199	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
1720	LC 1199	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.099	0.109	0.109
1721	LC 1199	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.321	0.038	-0.037
1722	LC 1199	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.888	10.349	-5.202
1723	LC 1199	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.803	10.553	-4.924
1724	LC 1199	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.673	10.838	-4.638
1725	LC 1199	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.684	11.236	-3.100
1726	LC 1199	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.994	11.095	-3.175
1727	LC 1199	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	6.251	10.973	-3.249
1728	LC 1200	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
1729	LC 1200	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.249	1.667	0.133
1730	LC 1200	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.703	1.427	0.018
1731	LC 1200	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	42.543	43.685	-4.244
1732	LC 1200	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	42.060	44.222	-3.894
1733	LC 1200	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	41.401	44.863	-3.525
1734	LC 1200	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	11.799	22.744	-3.014
1735	LC 1200	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	12.432	22.404	-3.096
1736	LC 1200	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	12.955	22.105	-3.176
1737	LC 1201	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014
1738	LC 1201	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	3.823	0.195	0.197
1739	LC 1201	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.213	-0.003	-0.068
1740	LC 1201	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.722	23.028	-4.866
1741	LC 1201	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.501	23.406	-4.526
1742	LC 1201	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	29.168	23.855	-4.172
1743	LC 1201	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	8.424	16.357	-3.153
1744	LC 1201	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	8.873	16.117	-3.240
1745	LC 1201	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	9.263	15.941	-3.325
1746	LC 1202	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
1747	LC 1202	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
1748	LC 1202	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.440	0.089	-0.029
1749	LC 1202	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	21.299	13.313	-5.096
1750	LC 1202	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	21.177	13.594	-4.811
1751	LC 1202	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	20.984	13.919	-4.516
1752	LC 1202	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.294	12.180	-3.093
1753	LC 1202	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.631	11.999	-3.168
1754	LC 1202	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.909	11.841	-3.243
1755	LC 1203	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008
1756	LC 1203	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.088	0.074	0.109
1757	LC 1203	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.358	-0.033	-0.037
1758	LC 1203	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.323	10.095	-5.202
1759	LC 1203	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.194	10.318	-4.924
1760	LC 1203	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.020	10.621	-4.638
1761	LC 1203	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	5.981	11.150	-3.100
1762	LC 1203	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.317	10.987	-3.175
1763	LC 1203	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.600	10.844	-3.249
1764	LC 1204	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
1765	LC 1204	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.246	1.656	0.133
1766	LC 1204	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.715	1.405	0.018
1767	LC 1204	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	42.677	43.607	-4.244
1768	LC 1204	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	42.180	44.150	-3.894
1769	LC 1204	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	41.508	44.796	-3.525
1770	LC 1204	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	11.890	22.717	-3.014
1771	LC 1204	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	12.531	22.371	-3.096
1772	LC 1204	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	13.062	22.065	-3.176
1773	LC 1205	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
1774	LC 1205	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	3.809	0.153	0.197
1775	LC 1205	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.258	-0.089	-0.068
1776	LC 1205	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.956	22.862	-4.866
1777	LC 1205	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.706	23.252	-4.526
1778	LC 1205	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	29.344	23.713	-4.172
1779	LC 1205	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	8.593	16.300	-3.153
1780	LC 1205	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	9.059	16.047	-3.240
1781	LC 1205	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	9.466	15.856	-3.325
1782	LC 1206	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1783	LC 1206	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
1784	LC 1206	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.451	0.067	-0.029
1785	LC 1206	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.433	13.235	-5.096
1786	LC 1206	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.297	13.522	-4.811
1787	LC 1206	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	21.091	13.852	-4.516
1788	LC 1206	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.385	12.153	-3.093
1789	LC 1206	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.730	11.966	-3.168
1790	LC 1206	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.016	11.801	-3.243
1791	LC 1207	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.146	-0.255	0.139
1792	LC 1207	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	2.916	-0.128	0.258
1793	LC 1207	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	3.267	-0.321	0.097
1794	LC 1207	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	7.042	10.927	-2.955
1795	LC 1207	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.889	11.019	-2.882
1796	LC 1207	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	6.701	11.128	-2.806
1797	LC 1207	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	20.741	11.358	-5.413
1798	LC 1207	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.396	10.940	-5.609
1799	LC 1207	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+90 deg	21.941	10.567	-5.803
1800	LC 1208	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.727	1.463	0.064
1801	LC 1208	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.384	1.625	0.153
1802	LC 1208	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	3.868	1.357	0.036
1803	LC 1208	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	17.174	28.858	-2.787
1804	LC 1208	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	16.813	29.069	-2.694
1805	LC 1208	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	16.362	29.323	-2.594
1806	LC 1208	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	31.906	31.459	-4.937
1807	LC 1208	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	33.128	30.726	-5.147
1808	LC 1208	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+90 deg	34.135	30.078	-5.353
1809	LC 1209	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.909	-0.227	0.122
1810	LC 1209	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	4.549	-0.023	0.320
1811	LC 1209	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	5.087	-0.325	0.042
1812	LC 1209	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	11.136	18.361	-2.960
1813	LC 1209	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	10.897	18.501	-2.871
1814	LC 1209	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	10.602	18.669	-2.777
1815	LC 1209	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	26.058	18.931	-5.358
1816	LC 1209	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	26.952	18.373	-5.583
1817	LC 1209	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 deg	27.691	17.878	-5.805
1818	LC 1210	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.528	0.106	0.030
1819	LC 1210	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.340	0.209	0.131
1820	LC 1210	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	2.613	0.051	-0.013
1821	LC 1210	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.428	12.299	-2.942
1822	LC 1210	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.270	12.392	-2.868
1823	LC 1210	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	7.075	12.502	-2.791
1824	LC 1210	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	19.686	12.807	-5.516
1825	LC 1210	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	20.331	12.397	-5.712
1826	LC 1210	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 deg	20.862	12.034	-5.906
1827	LC 1211	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.647	-0.381	0.139
1828	LC 1211	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.500	-0.275	0.258
1829	LC 1211	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	2.682	-0.427	0.097
1830	LC 1211	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.946	11.137	-2.955
1831	LC 1211	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.827	11.203	-2.882
1832	LC 1211	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	5.675	11.286	-2.806
1833	LC 1211	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	17.341	11.261	-5.413
1834	LC 1211	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	17.889	10.901	-5.609
1835	LC 1211	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-90 deg	18.326	10.586	-5.803
1836	LC 1212	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.573	1.425	0.064
1837	LC 1212	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.256	1.579	0.153
1838	LC 1212	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	3.688	1.325	0.036
1839	LC 1212	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.837	28.923	-2.787
1840	LC 1212	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.486	29.125	-2.694
1841	LC 1212	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	16.047	29.371	-2.594
1842	LC 1212	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	30.860	31.430	-4.937
1843	LC 1212	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	32.049	30.714	-5.147
1844	LC 1212	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-90 deg	33.023	30.084	-5.353
1845	LC 1213	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.305	-0.379	0.122
1846	LC 1213	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.046	-0.201	0.320
1847	LC 1213	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	4.379	-0.454	0.042
1848	LC 1213	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.561	18.498	-2.960
1849	LC 1213	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.345	18.622	-2.871
1850	LC 1213	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	10.073	18.773	-2.777
1851	LC 1213	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	24.118	18.867	-5.358
1852	LC 1213	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	24.943	18.348	-5.583
1853	LC 1213	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 deg	25.611	17.891	-5.805
1854	LC 1214	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.375	0.068	0.030
1855	LC 1214	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.212	0.163	0.131
1856	LC 1214	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	2.433	0.018	-0.013
1857	LC 1214	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	7.090	12.364	-2.942
1858	LC 1214	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.943	12.448	-2.868
1859	LC 1214	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	6.759	12.551	-2.791
1860	LC 1214	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	18.640	12.777	-5.516
1861	LC 1214	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	19.252	12.386	-5.712
1862	LC 1214	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 deg	19.750	12.040	-5.906
1863	LC 1215	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.678	-0.492	0.112

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1864	LC 1215	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.522	-0.409	0.233
1865	LC 1215	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.748	-0.530	0.065
1866	LC 1215	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.384	10.477	-2.960
1867	LC 1215	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.255	10.552	-2.888
1868	LC 1215	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	6.094	10.642	-2.813
1869	LC 1215	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.955	10.474	-5.489
1870	LC 1215	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	19.524	10.121	-5.685
1871	LC 1215	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	19.991	9.810	-5.879
1872	LC 1216	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.658	1.465	0.060
1873	LC 1216	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.328	1.619	0.148
1874	LC 1216	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.790	1.365	0.031
1875	LC 1216	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	17.072	28.890	-2.787
1876	LC 1216	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.716	29.097	-2.694
1877	LC 1216	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.271	29.347	-2.594
1878	LC 1216	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	31.622	31.555	-4.945
1879	LC 1216	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	32.831	30.833	-5.154
1880	LC 1216	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	33.825	30.195	-5.360
1881	LC 1217	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.508	-0.342	0.096
1882	LC 1217	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.215	-0.188	0.296
1883	LC 1217	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.635	-0.417	0.013
1884	LC 1217	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.830	18.227	-2.962
1885	LC 1217	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.605	18.358	-2.874
1886	LC 1217	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.324	18.516	-2.780
1887	LC 1217	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.191	18.642	-5.389
1888	LC 1217	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	26.042	18.115	-5.613
1889	LC 1217	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	26.736	17.659	-5.837
1890	LC 1218	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.453	0.087	0.026
1891	LC 1218	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.278	0.182	0.127
1892	LC 1218	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.524	0.041	-0.018
1893	LC 1218	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.306	12.298	-2.943
1894	LC 1218	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.154	12.386	-2.869
1895	LC 1218	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.965	12.492	-2.791
1896	LC 1218	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.334	12.756	-5.523
1897	LC 1218	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.963	12.359	-5.719
1898	LC 1218	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	20.477	12.008	-5.913
1899	LC 1219	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.388	-0.657	0.112
1900	LC 1219	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.254	-0.563	0.233
1901	LC 1219	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	2.432	-0.708	0.065
1902	LC 1219	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.951	10.478	-2.960
1903	LC 1219	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.821	10.553	-2.888
1904	LC 1219	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	5.660	10.644	-2.813
1905	LC 1219	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	17.253	10.029	-5.489
1906	LC 1219	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	17.802	9.665	-5.685
1907	LC 1219	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+45 deg	18.246	9.344	-5.879
1908	LC 1220	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.569	1.414	0.060
1909	LC 1220	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.245	1.572	0.148
1910	LC 1220	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	3.692	1.310	0.031
1911	LC 1220	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.939	28.890	-2.787
1912	LC 1220	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.583	29.097	-2.694
1913	LC 1220	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	16.138	29.347	-2.594
1914	LC 1220	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	31.098	31.418	-4.945
1915	LC 1220	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	32.301	30.692	-5.154
1916	LC 1220	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+45 deg	33.288	30.052	-5.360
1917	LC 1221	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.157	-0.541	0.096
1918	LC 1221	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	3.891	-0.373	0.296
1919	LC 1221	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	4.253	-0.632	0.013
1920	LC 1221	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.629	18.228	-2.962
1921	LC 1221	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.404	18.359	-2.874
1922	LC 1221	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	10.124	18.517	-2.780
1923	LC 1221	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	24.243	18.350	-5.389
1924	LC 1221	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.081	17.817	-5.613
1925	LC 1221	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 deg	25.760	17.354	-5.837
1926	LC 1222	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.363	0.037	0.026
1927	LC 1222	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.195	0.135	0.127
1928	LC 1222	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	2.427	-0.014	-0.018
1929	LC 1222	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.172	12.298	-2.943
1930	LC 1222	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	7.021	12.386	-2.869
1931	LC 1222	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	6.831	12.493	-2.791
1932	LC 1222	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	18.810	12.619	-5.523
1933	LC 1222	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.433	12.218	-5.719
1934	LC 1222	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 deg	19.940	11.864	-5.913
1935	LC 1223	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.575	0.371	0.000
1936	LC 1223	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.343	0.478	0.094
1937	LC 1223	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.688	0.309	-0.041
1938	LC 1223	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.979	10.928	-2.955
1939	LC 1223	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.815	11.003	-2.882
1940	LC 1223	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.618	11.094	-2.806
1941	LC 1223	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	19.617	12.122	-5.597
1942	LC 1223	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.269	11.697	-5.791
1943	LC 1223	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	20.826	11.355	-5.985
1944	LC 1224	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.627	1.533	0.046

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1945	LC 1224	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.287	1.694	0.132
1946	LC 1224	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.765	1.425	0.018
1947	LC 1224	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	17.155	28.858	-2.787
1948	LC 1224	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.793	29.069	-2.694
1949	LC 1224	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.343	29.323	-2.594
1950	LC 1224	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	31.674	31.508	-4.958
1951	LC 1224	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	32.894	30.773	-5.168
1952	LC 1224	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	33.898	30.124	-5.374
1953	LC 1225	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.384	0.255	0.008
1954	LC 1225	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.028	0.441	0.187
1955	LC 1225	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.549	0.150	-0.071
1956	LC 1225	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	11.106	18.361	-2.960
1957	LC 1225	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.867	18.502	-2.871
1958	LC 1225	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.572	18.670	-2.777
1959	LC 1225	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.496	19.203	-5.433
1960	LC 1225	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	26.386	18.643	-5.658
1961	LC 1225	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	27.119	18.146	-5.880
1962	LC 1226	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.434	0.166	0.013
1963	LC 1226	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.245	0.266	0.111
1964	LC 1226	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.514	0.112	-0.030
1965	LC 1226	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.408	12.300	-2.942
1966	LC 1226	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.251	12.392	-2.868
1967	LC 1226	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.055	12.503	-2.791
1968	LC 1226	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.463	12.839	-5.534
1969	LC 1226	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.106	12.428	-5.730
1970	LC 1226	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	20.633	12.063	-5.924
1971	LC 1227	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.366	0.411	0.000
1972	LC 1227	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.195	0.485	0.094
1973	LC 1227	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	2.418	0.382	-0.041
1974	LC 1227	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	6.009	11.137	-2.955
1975	LC 1227	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.881	11.186	-2.882
1976	LC 1227	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	5.720	11.251	-2.806
1977	LC 1227	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	17.307	12.470	-5.597
1978	LC 1227	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	17.872	12.115	-5.791
1979	LC 1227	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-45 deg	18.343	11.842	-5.985
1980	LC 1228	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.563	1.545	0.046
1981	LC 1228	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.242	1.696	0.132
1982	LC 1228	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	3.682	1.447	0.018
1983	LC 1228	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.856	28.922	-2.787
1984	LC 1228	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.506	29.125	-2.694
1985	LC 1228	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	16.066	29.371	-2.594
1986	LC 1228	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	30.963	31.615	-4.958
1987	LC 1228	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	32.157	30.902	-5.168
1988	LC 1228	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-45 deg	33.134	30.274	-5.374
1989	LC 1229	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.132	0.303	0.008
1990	LC 1229	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	3.850	0.448	0.187
1991	LC 1229	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	4.223	0.238	-0.071
1992	LC 1229	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.590	18.498	-2.960
1993	LC 1229	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.375	18.621	-2.871
1994	LC 1229	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	10.102	18.772	-2.777
1995	LC 1229	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	24.221	19.431	-5.433
1996	LC 1229	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.054	18.916	-5.658
1997	LC 1229	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 deg	25.732	18.464	-5.880
1998	LC 1230	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.370	0.178	0.013
1999	LC 1230	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.199	0.268	0.111
2000	LC 1230	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	2.431	0.134	-0.030
2001	LC 1230	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	7.110	12.364	-2.942
2002	LC 1230	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.963	12.448	-2.868
2003	LC 1230	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	6.779	12.551	-2.791
2004	LC 1230	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	18.752	12.946	-5.534
2005	LC 1230	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.368	12.556	-5.730
2006	LC 1230	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 deg	19.870	12.213	-5.924
2007	LC 1231	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.260	0.057	0.008
2008	LC 1231	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.099	0.109	0.109
2009	LC 1231	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	2.321	0.038	-0.037
2010	LC 1231	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	6.086	10.623	-2.959
2011	LC 1231	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.955	10.675	-2.887
2012	LC 1231	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	5.802	10.760	-2.812
2013	LC 1231	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	17.590	11.265	-5.611
2014	LC 1231	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.156	10.951	-5.805
2015	LC 1231	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,+0 deg	18.618	10.680	-5.998
2016	LC 1232	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.573	1.514	0.047
2017	LC 1232	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.249	1.667	0.133
2018	LC 1232	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	3.703	1.427	0.018
2019	LC 1232	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.962	28.904	-2.787
2020	LC 1232	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.609	29.109	-2.694
2021	LC 1232	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	16.167	29.357	-2.594
2022	LC 1232	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	31.239	31.606	-4.960
2023	LC 1232	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	32.438	30.888	-5.169
2024	LC 1232	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,+0 deg	33.421	30.256	-5.375
2025	LC 1233	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.106	0.057	0.014

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
2026	LC 1233	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	3.823	0.195	0.197
2027	LC 1233	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	4.213	-0.003	-0.068
2028	LC 1233	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.690	18.324	-2.961
2029	LC 1233	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.470	18.451	-2.873
2030	LC 1233	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	10.195	18.605	-2.779
2031	LC 1233	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	24.463	18.925	-5.440
2032	LC 1233	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	25.294	18.408	-5.664
2033	LC 1233	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 deg	26.011	18.021	-5.886
2034	LC 1234	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.375	0.135	0.014
2035	LC 1234	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.205	0.231	0.113
2036	LC 1234	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	2.440	0.089	-0.029
2037	LC 1234	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	7.196	12.312	-2.943
2038	LC 1234	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	7.047	12.398	-2.869
2039	LC 1234	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	6.861	12.502	-2.791
2040	LC 1234	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	18.958	12.794	-5.536
2041	LC 1234	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	19.576	12.402	-5.731
2042	LC 1234	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 deg	20.079	12.056	-5.925
2043	LC 1235	K4:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.273	0.005	0.008
2044	LC 1235	K5:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.088	0.074	0.109
2045	LC 1235	K5:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	2.358	-0.033	-0.037
2046	LC 1235	K6:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.367	10.534	-2.959
2047	LC 1235	K6:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.218	10.599	-2.887
2048	LC 1235	K6:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	6.046	10.697	-2.812
2049	LC 1235	K7:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	18.077	11.034	-5.611
2050	LC 1235	K7:2NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	18.694	10.679	-5.805
2051	LC 1235	K7:3NL.3#Torsion,Ahead,1a,Wind/10C,-0 deg	19.208	10.365	-5.998
2052	LC 1236	K4:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.577	1.498	0.047
2053	LC 1236	K5:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.246	1.656	0.133
2054	LC 1236	K5:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	3.715	1.405	0.018
2055	LC 1236	K6:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	17.049	28.877	-2.787
2056	LC 1236	K6:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	16.690	29.085	-2.694
2057	LC 1236	K6:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	16.242	29.337	-2.594
2058	LC 1236	K7:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	31.389	31.535	-4.960
2059	LC 1236	K7:2NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	32.604	30.804	-5.169
2060	LC 1236	K7:3NL.3#Torsion,Ahead,1b,Wind/-20C,-0 deg	33.602	30.159	-5.375
2061	LC 1237	K4:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.123	-0.006	0.014
2062	LC 1237	K5:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	3.809	0.153	0.197
2063	LC 1237	K5:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	4.258	-0.089	-0.068
2064	LC 1237	K6:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.848	18.266	-2.961
2065	LC 1237	K6:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.617	18.401	-2.873
2066	LC 1237	K6:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	10.329	18.564	-2.779
2067	LC 1237	K7:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	24.731	18.774	-5.440
2068	LC 1237	K7:2NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	25.596	18.230	-5.664
2069	LC 1237	K7:3NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 deg	26.346	17.815	-5.886
2070	LC 1238	K4:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.379	0.119	0.014
2071	LC 1238	K5:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.202	0.220	0.113
2072	LC 1238	K5:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	2.451	0.067	-0.029
2073	LC 1238	K6:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.282	12.285	-2.943
2074	LC 1238	K6:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	7.128	12.375	-2.869
2075	LC 1238	K6:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	6.935	12.483	-2.791
2076	LC 1238	K7:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	19.108	12.723	-5.536
2077	LC 1238	K7:2NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	19.742	12.318	-5.731
2078	LC 1238	K7:3NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 deg	20.261	11.959	-5.925

BIJLAGE C

Belastingen uit lijn op juk 64b

Projectnaam: TenneT 150 kV Station Waalwijk
Onderdeel: Juk 64b; Belastingen uit lijn
Documentnummer: ---
Revisie: A
Bijlage: C-1

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
1	LC 1001	K7:1NL.1#1a,Wind/10C,+90 degST	-18.718	0.436	-5.909
2	LC 1001	K7:2NL.1#1a,Wind/10C,+90 degST	-17.924	-0.008	-5.986
3	LC 1001	K7:3NL.1#1a,Wind/10C,+90 degST	-17.203	-0.365	-6.062
4	LC 1001	K11:1NL.1#1a,Wind/10C,+90 degST	-3.883	0.187	-0.211
5	LC 1001	K11:2NL.1#1a,Wind/10C,+90 degST	-3.459	0.092	-0.229
6	LC 1002	K7:1NL.1#1b,Wind/-20C,+90 degST	-43.312	-2.982	-5.711
7	LC 1002	K7:2NL.1#1b,Wind/-20C,+90 degST	-41.062	-4.186	-5.803
8	LC 1002	K7:3NL.1#1b,Wind/-20C,+90 degST	-39.006	-5.147	-5.892
9	LC 1002	K11:1NL.1#1b,Wind/-20C,+90 degST	-6.142	-0.360	-0.249
10	LC 1002	K11:2NL.1#1b,Wind/-20C,+90 degST	-5.332	-0.541	-0.257
11	LC 1003	K7:1NL.1#3,Wind / Ice / -5C,+90 degST	-30.507	-0.715	-6.311
12	LC 1003	K7:2NL.1#3,Wind / Ice / -5C,+90 degST	-29.006	-1.521	-6.433
13	LC 1003	K7:3NL.1#3,Wind / Ice / -5C,+90 degST	-27.636	-2.165	-6.555
14	LC 1003	K11:1NL.1#3,Wind / Ice / -5C,+90 degST	-7.833	0.495	-0.757
15	LC 1003	K11:2NL.1#3,Wind / Ice / -5C,+90 degST	-6.940	0.312	-0.903
16	LC 1004	K7:1NL.1#4,Construction/Maintenance +5C,+90 degST	-18.059	-0.426	-5.908
17	LC 1004	K7:2NL.1#4,Construction/Maintenance +5C,+90 degST	-17.161	-0.902	-5.985
18	LC 1004	K7:3NL.1#4,Construction/Maintenance +5C,+90 degST	-16.341	-1.282	-6.061
19	LC 1004	K11:1NL.1#4,Construction/Maintenance +5C,+90 degST	-3.070	-0.046	-0.190
20	LC 1004	K11:2NL.1#4,Construction/Maintenance +5C,+90 degST	-2.678	-0.129	-0.214
21	LC 1005	K7:1NL.1#1a,Wind/10C,-90 degST	-15.049	0.535	-5.909
22	LC 1005	K7:2NL.1#1a,Wind/10C,-90 degST	-14.161	0.128	-5.986
23	LC 1005	K7:3NL.1#1a,Wind/10C,-90 degST	-13.347	-0.192	-6.062
24	LC 1005	K11:1NL.1#1a,Wind/10C,-90 degST	-3.579	0.219	-0.211
25	LC 1005	K11:2NL.1#1a,Wind/10C,-90 degST	-3.029	0.148	-0.229
26	LC 1006	K7:1NL.1#1b,Wind/-20C,-90 degST	-42.579	-2.962	-5.711
27	LC 1006	K7:2NL.1#1b,Wind/-20C,-90 degST	-40.309	-4.159	-5.803
28	LC 1006	K7:3NL.1#1b,Wind/-20C,-90 degST	-38.235	-5.112	-5.892
29	LC 1006	K11:1NL.1#1b,Wind/-20C,-90 degST	-6.081	-0.354	-0.249
30	LC 1006	K11:2NL.1#1b,Wind/-20C,-90 degST	-5.246	-0.530	-0.257
31	LC 1007	K7:1NL.1#3,Wind / Ice / -5C,-90 degST	-29.133	-0.656	-6.311
32	LC 1007	K7:2NL.1#3,Wind / Ice / -5C,-90 degST	-27.576	-1.440	-6.433
33	LC 1007	K7:3NL.1#3,Wind / Ice / -5C,-90 degST	-26.151	-2.062	-6.555
34	LC 1007	K11:1NL.1#3,Wind / Ice / -5C,-90 degST	-7.373	0.543	-0.757
35	LC 1007	K11:2NL.1#3,Wind / Ice / -5C,-90 degST	-6.288	0.397	-0.903
36	LC 1008	K7:1NL.1#4,Construction/Maintenance +5C,-90 degST	-17.325	-0.407	-5.908
37	LC 1008	K7:2NL.1#4,Construction/Maintenance +5C,-90 degST	-16.408	-0.875	-5.985
38	LC 1008	K7:3NL.1#4,Construction/Maintenance +5C,-90 degST	-15.570	-1.247	-6.061
39	LC 1008	K11:1NL.1#4,Construction/Maintenance +5C,-90 degST	-3.009	-0.040	-0.190
40	LC 1008	K11:2NL.1#4,Construction/Maintenance +5C,-90 degST	-2.592	-0.118	-0.214
41	LC 1009	K7:1NL.1#1a,Wind/10C,+45 degST	-16.350	1.160	-5.915
42	LC 1009	K7:2NL.1#1a,Wind/10C,+45 degST	-15.602	0.756	-5.992
43	LC 1009	K7:3NL.1#1a,Wind/10C,+45 degST	-14.941	0.457	-6.068
44	LC 1009	K11:1NL.1#1a,Wind/10C,+45 degST	-3.093	0.642	-0.209
45	LC 1009	K11:2NL.1#1a,Wind/10C,+45 degST	-2.698	0.543	-0.226
46	LC 1010	K7:1NL.1#1b,Wind/-20C,+45 degST	-43.070	-3.068	-5.712
47	LC 1010	K7:2NL.1#1b,Wind/-20C,+45 degST	-40.815	-4.270	-5.803
48	LC 1010	K7:3NL.1#1b,Wind/-20C,+45 degST	-38.755	-5.229	-5.893
49	LC 1010	K11:1NL.1#1b,Wind/-20C,+45 degST	-6.110	-0.367	-0.249
50	LC 1010	K11:2NL.1#1b,Wind/-20C,+45 degST	-5.293	-0.546	-0.256
51	LC 1011	K7:1NL.1#3,Wind / Ice / -5C,+45 degST	-29.903	-0.723	-6.313
52	LC 1011	K7:2NL.1#3,Wind / Ice / -5C,+45 degST	-28.400	-1.514	-6.434
53	LC 1011	K7:3NL.1#3,Wind / Ice / -5C,+45 degST	-27.027	-2.146	-6.556
54	LC 1011	K11:1NL.1#3,Wind / Ice / -5C,+45 degST	-7.357	0.636	-0.755
55	LC 1011	K11:2NL.1#3,Wind / Ice / -5C,+45 degST	-6.435	0.447	-0.900
56	LC 1012	K7:1NL.1#4,Construction/Maintenance +5C,+45 degST	-17.794	-0.419	-5.908
57	LC 1012	K7:2NL.1#4,Construction/Maintenance +5C,+45 degST	-16.895	-0.890	-5.985
58	LC 1012	K7:3NL.1#4,Construction/Maintenance +5C,+45 degST	-16.073	-1.265	-6.062
59	LC 1012	K11:1NL.1#4,Construction/Maintenance +5C,+45 degST	-3.007	-0.031	-0.189
60	LC 1012	K11:2NL.1#4,Construction/Maintenance +5C,+45 degST	-2.611	-0.116	-0.213
61	LC 1013	K7:1NL.1#11a,Wind/10C,+45 degST	-14.625	1.498	-5.915
62	LC 1013	K7:2NL.1#11a,Wind/10C,+45 degST	-13.836	1.108	-5.992
63	LC 1013	K7:3NL.1#11a,Wind/10C,+45 degST	-13.136	0.825	-6.068
64	LC 1013	K11:1NL.1#11a,Wind/10C,+45 degST	-2.960	0.742	-0.209
65	LC 1013	K11:2NL.1#11a,Wind/10C,+45 degST	-2.518	0.658	-0.226
66	LC 1014	K7:1NL.1#11b,Wind/-20C,+45 degST	-42.725	-3.000	-5.712
67	LC 1014	K7:2NL.1#11b,Wind/-20C,+45 degST	-40.462	-4.200	-5.803
68	LC 1014	K7:3NL.1#11b,Wind/-20C,+45 degST	-38.394	-5.155	-5.893
69	LC 1014	K11:1NL.1#11b,Wind/-20C,+45 degST	-6.083	-0.347	-0.249
70	LC 1014	K11:2NL.1#11b,Wind/-20C,+45 degST	-5.257	-0.523	-0.256
71	LC 1015	K7:1NL.1#13,Wind / Ice / -5C,+45 degST	-29.263	-0.521	-6.313
72	LC 1015	K7:2NL.1#13,Wind / Ice / -5C,+45 degST	-27.735	-1.304	-6.434
73	LC 1015	K7:3NL.1#13,Wind / Ice / -5C,+45 degST	-26.340	-1.926	-6.556
74	LC 1015	K11:1NL.1#13,Wind / Ice / -5C,+45 degST	-7.155	0.787	-0.755
75	LC 1015	K11:2NL.1#13,Wind / Ice / -5C,+45 degST	-6.162	0.621	-0.900
76	LC 1016	K7:1NL.1#14,Construction/Maintenance +5C,+45 degST	-17.449	-0.351	-5.908
77	LC 1016	K7:2NL.1#14,Construction/Maintenance +5C,+45 degST	-16.541	-0.819	-5.985
78	LC 1016	K7:3NL.1#14,Construction/Maintenance +5C,+45 degST	-15.713	-1.191	-6.062
79	LC 1016	K11:1NL.1#14,Construction/Maintenance +5C,+45 degST	-2.981	-0.011	-0.189
80	LC 1016	K11:2NL.1#14,Construction/Maintenance +5C,+45 degST	-2.575	-0.093	-0.213
81	LC 1017	K7:1NL.1#1a,Wind/10C,-45 degST	-17.149	-0.918	-5.929

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
82	LC 1017	K7:2NL.1#1a,Wind/10C,-45 degST	-16.383	-1.391	-6.004
83	LC 1017	K7:3NL.1#1a,Wind/10C,-45 degST	-15.683	-1.781	-6.080
84	LC 1017	K11:1NL.1#1a,Wind/10C,-45 degST	-3.173	-0.606	-0.175
85	LC 1017	K11:2NL.1#1a,Wind/10C,-45 degST	-2.816	-0.716	-0.204
86	LC 1018	K7:1NL.1#1b,Wind/-20C,-45 degST	-43.204	-3.012	-5.712
87	LC 1018	K7:2NL.1#1b,Wind/-20C,-45 degST	-40.951	-4.214	-5.803
88	LC 1018	K7:3NL.1#1b,Wind/-20C,-45 degST	-38.893	-5.173	-5.893
89	LC 1018	K11:1NL.1#1b,Wind/-20C,-45 degST	-6.113	-0.372	-0.248
90	LC 1018	K11:2NL.1#1b,Wind/-20C,-45 degST	-5.300	-0.552	-0.256
91	LC 1019	K7:1NL.1#3,Wind / Ice / -5C,-45 degST	-30.112	-0.928	-6.315
92	LC 1019	K7:2NL.1#3,Wind / Ice / -5C,-45 degST	-28.605	-1.729	-6.437
93	LC 1019	K7:3NL.1#3,Wind / Ice / -5C,-45 degST	-27.230	-2.369	-6.558
94	LC 1019	K11:1NL.1#3,Wind / Ice / -5C,-45 degST	-7.426	0.172	-0.740
95	LC 1019	K11:2NL.1#3,Wind / Ice / -5C,-45 degST	-6.540	-0.014	-0.891
96	LC 1020	K7:1NL.1#4,Construction/Maintenance +5C,-45 degST	-17.950	-0.456	-5.909
97	LC 1020	K7:2NL.1#4,Construction/Maintenance +5C,-45 degST	-17.050	-0.930	-5.985
98	LC 1020	K7:3NL.1#4,Construction/Maintenance +5C,-45 degST	-16.228	-1.308	-6.062
99	LC 1020	K11:1NL.1#4,Construction/Maintenance +5C,-45 degST	-3.017	-0.090	-0.187
100	LC 1020	K11:2NL.1#4,Construction/Maintenance +5C,-45 degST	-2.625	-0.174	-0.212
101	LC 1021	K7:1NL.1#11a,Wind/10C,-45 degST	-14.092	-1.138	-5.929
102	LC 1021	K7:2NL.1#11a,Wind/10C,-45 degST	-13.260	-1.599	-6.004
103	LC 1021	K7:3NL.1#11a,Wind/10C,-45 degST	-12.496	-1.974	-6.080
104	LC 1021	K11:1NL.1#11a,Wind/10C,-45 degST	-3.006	-0.671	-0.175
105	LC 1021	K11:2NL.1#11a,Wind/10C,-45 degST	-2.566	-0.776	-0.204
106	LC 1022	K7:1NL.1#11b,Wind/-20C,-45 degST	-42.592	-3.056	-5.712
107	LC 1022	K7:2NL.1#11b,Wind/-20C,-45 degST	-40.326	-4.256	-5.803
108	LC 1022	K7:3NL.1#11b,Wind/-20C,-45 degST	-38.256	-5.211	-5.893
109	LC 1022	K11:1NL.1#11b,Wind/-20C,-45 degST	-6.079	-0.385	-0.248
110	LC 1022	K11:2NL.1#11b,Wind/-20C,-45 degST	-5.250	-0.563	-0.256
111	LC 1023	K7:1NL.1#13,Wind / Ice / -5C,-45 degST	-29.051	-1.060	-6.315
112	LC 1023	K7:2NL.1#13,Wind / Ice / -5C,-45 degST	-27.506	-1.854	-6.437
113	LC 1023	K7:3NL.1#13,Wind / Ice / -5C,-45 degST	-26.092	-2.484	-6.558
114	LC 1023	K11:1NL.1#13,Wind / Ice / -5C,-45 degST	-7.174	0.073	-0.740
115	LC 1023	K11:2NL.1#13,Wind / Ice / -5C,-45 degST	-6.161	-0.103	-0.891
116	LC 1024	K7:1NL.1#14,Construction/Maintenance +5C,-45 degST	-17.339	-0.500	-5.909
117	LC 1024	K7:2NL.1#14,Construction/Maintenance +5C,-45 degST	-16.425	-0.972	-5.985
118	LC 1024	K7:3NL.1#14,Construction/Maintenance +5C,-45 degST	-15.590	-1.346	-6.062
119	LC 1024	K11:1NL.1#14,Construction/Maintenance +5C,-45 degST	-2.984	-0.103	-0.187
120	LC 1024	K11:2NL.1#14,Construction/Maintenance +5C,-45 degST	-2.575	-0.186	-0.212
121	LC 1025	K7:1NL.1#1a,Wind/10C,+0 degST	-14.550	-0.592	-5.930
122	LC 1025	K7:2NL.1#1a,Wind/10C,+0 degST	-13.685	-0.856	-6.005
123	LC 1025	K7:3NL.1#1a,Wind/10C,+0 degST	-12.944	-1.096	-6.080
124	LC 1025	K11:1NL.1#1a,Wind/10C,+0 degST	-2.778	-0.384	-0.177
125	LC 1025	K11:2NL.1#1a,Wind/10C,+0 degST	-2.315	-0.360	-0.205
126	LC 1026	K7:1NL.1#1b,Wind/-20C+,0 degST	-42.788	-3.059	-5.712
127	LC 1026	K7:2NL.1#1b,Wind/-20C+,0 degST	-40.528	-4.257	-5.803
128	LC 1026	K7:3NL.1#1b,Wind/-20C+,0 degST	-38.464	-5.212	-5.893
129	LC 1026	K11:1NL.1#1b,Wind/-20C+,0 degST	-6.081	-0.396	-0.248
130	LC 1026	K11:2NL.1#1b,Wind/-20C+,0 degST	-5.259	-0.575	-0.256
131	LC 1027	K7:1NL.1#3,Wind / Ice / -5C,+0 degST	-29.267	-0.975	-6.316
132	LC 1027	K7:2NL.1#3,Wind / Ice / -5C,+0 degST	-27.749	-1.760	-6.437
133	LC 1027	K7:3NL.1#3,Wind / Ice / -5C,+0 degST	-26.363	-2.384	-6.558
134	LC 1027	K11:1NL.1#3,Wind / Ice / -5C,+0 degST	-7.108	0.238	-0.742
135	LC 1027	K11:2NL.1#3,Wind / Ice / -5C,+0 degST	-6.129	0.138	-0.892
136	LC 1028	K7:1NL.1#4,Construction/Maintenance +5C,+0 degST	-17.534	-0.503	-5.909
137	LC 1028	K7:2NL.1#4,Construction/Maintenance +5C,+0 degST	-16.627	-0.973	-5.985
138	LC 1028	K7:3NL.1#4,Construction/Maintenance +5C,+0 degST	-15.779	-1.314	-6.062
139	LC 1028	K11:1NL.1#4,Construction/Maintenance +5C,+0 degST	-2.975	-0.087	-0.187
140	LC 1028	K11:2NL.1#4,Construction/Maintenance +5C,+0 degST	-2.569	-0.156	-0.212
141	LC 1029	K7:1NL.1#1a,Wind/10C,-0 degST	-15.653	-0.343	-5.930
142	LC 1029	K7:2NL.1#1a,Wind/10C,-0 degST	-14.789	-0.630	-6.005
143	LC 1029	K7:3NL.1#1a,Wind/10C,-0 degST	-14.046	-0.892	-6.080
144	LC 1029	K11:1NL.1#1a,Wind/10C,-0 degST	-2.847	-0.314	-0.177
145	LC 1029	K11:2NL.1#1a,Wind/10C,-0 degST	-2.396	-0.300	-0.205
146	LC 1030	K7:1NL.1#1b,Wind/-20C,-0 degST	-43.008	-3.009	-5.712
147	LC 1030	K7:2NL.1#1b,Wind/-20C,-0 degST	-40.749	-4.212	-5.803
148	LC 1030	K7:3NL.1#1b,Wind/-20C,-0 degST	-38.684	-5.172	-5.893
149	LC 1030	K11:1NL.1#1b,Wind/-20C,-0 degST	-6.095	-0.382	-0.248
150	LC 1030	K11:2NL.1#1b,Wind/-20C,-0 degST	-5.276	-0.563	-0.256
151	LC 1031	K7:1NL.1#3,Wind / Ice / -5C,-0 degST	-29.660	-0.826	-6.316
152	LC 1031	K7:2NL.1#3,Wind / Ice / -5C,-0 degST	-28.143	-1.625	-6.437
153	LC 1031	K7:3NL.1#3,Wind / Ice / -5C,-0 degST	-26.756	-2.262	-6.558
154	LC 1031	K11:1NL.1#3,Wind / Ice / -5C,-0 degST	-7.212	0.345	-0.742
155	LC 1031	K11:2NL.1#3,Wind / Ice / -5C,-0 degST	-6.252	0.229	-0.892
156	LC 1032	K7:1NL.1#4,Construction/Maintenance +5C,-0 degST	-17.755	-0.453	-5.909
157	LC 1032	K7:2NL.1#4,Construction/Maintenance +5C,-0 degST	-16.848	-0.928	-5.985
158	LC 1032	K7:3NL.1#4,Construction/Maintenance +5C,-0 degST	-16.000	-1.273	-6.062
159	LC 1032	K11:1NL.1#4,Construction/Maintenance +5C,-0 degST	-2.989	-0.073	-0.187
160	LC 1032	K11:2NL.1#4,Construction/Maintenance +5C,-0 degST	-2.586	-0.144	-0.212
161	LC 1033	K7:1NL.1#1a,gunstig,Wind/10C,+90 degST	-16.488	0.136	-4.306
162	LC 1033	K7:2NL.1#1a,gunstig,Wind/10C,+90 degST	-15.798	-0.259	-4.356

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
163	LC 1033	K7:3NL.1#1a,gunstig,Wind/10C,+90 degST	-15.172	-0.576	-4.407
164	LC 1033	K11:1NL.1#1a,gunstig,Wind/10C,+90 degST	-3.726	0.162	-0.161
165	LC 1033	K11:2NL.1#1a,gunstig,Wind/10C,+90 degST	-3.322	0.069	-0.164
166	LC 1034	K7:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-42.505	-3.413	-4.097
167	LC 1034	K7:2NL.1#1b,gunstig,Wind/-20C,+90 degST	-40.283	-4.608	-4.163
168	LC 1034	K7:3NL.1#1b,gunstig,Wind/-20C,+90 degST	-38.253	-5.561	-4.227
169	LC 1034	K11:1NL.1#1b,gunstig,Wind/-20C,+90 degST	-6.018	-0.424	-0.198
170	LC 1034	K11:2NL.1#1b,gunstig,Wind/-20C,+90 degST	-5.222	-0.605	-0.191
171	LC 1035	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-28.419	-1.326	-4.709
172	LC 1035	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-27.005	-2.095	-4.805
173	LC 1035	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-25.716	-2.709	-4.900
174	LC 1035	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-7.603	0.454	-0.705
175	LC 1035	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+90 degST	-6.738	0.275	-0.837
176	LC 1036	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-15.021	-1.158	-4.315
177	LC 1036	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-14.255	-1.575	-4.364
178	LC 1036	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-13.556	-1.908	-4.414
179	LC 1036	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-2.685	-0.150	-0.132
180	LC 1036	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+90 degST	-2.341	-0.230	-0.143
181	LC 1037	K7:1NL.1#1a,gunstig,Wind/10C,-90 degST	-12.819	0.235	-4.306
182	LC 1037	K7:2NL.1#1a,gunstig,Wind/10C,-90 degST	-12.036	-0.123	-4.356
183	LC 1037	K7:3NL.1#1a,gunstig,Wind/10C,-90 degST	-11.317	-0.404	-4.407
184	LC 1037	K11:1NL.1#1a,gunstig,Wind/10C,-90 degST	-3.421	0.193	-0.161
185	LC 1037	K11:2NL.1#1a,gunstig,Wind/10C,-90 degST	-2.891	0.125	-0.164
186	LC 1038	K7:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-41.771	-3.393	-4.097
187	LC 1038	K7:2NL.1#1b,gunstig,Wind/-20C,-90 degST	-39.530	-4.581	-4.163
188	LC 1038	K7:3NL.1#1b,gunstig,Wind/-20C,-90 degST	-37.482	-5.527	-4.227
189	LC 1038	K11:1NL.1#1b,gunstig,Wind/-20C,-90 degST	-5.957	-0.417	-0.198
190	LC 1038	K11:2NL.1#1b,gunstig,Wind/-20C,-90 degST	-5.136	-0.594	-0.191
191	LC 1039	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-27.044	-1.267	-4.709
192	LC 1039	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-25.575	-2.013	-4.805
193	LC 1039	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-24.231	-2.606	-4.900
194	LC 1039	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-7.142	0.502	-0.705
195	LC 1039	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-90 degST	-6.087	0.359	-0.837
196	LC 1040	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-14.287	-1.138	-4.315
197	LC 1040	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-13.503	-1.548	-4.364
198	LC 1040	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-12.785	-1.873	-4.414
199	LC 1040	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-2.624	-0.144	-0.132
200	LC 1040	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-90 degST	-2.255	-0.219	-0.143
201	LC 1041	K7:1NL.1#1a,gunstig,Wind/10C,+45 degST	-13.447	1.343	-4.315
202	LC 1041	K7:2NL.1#1a,gunstig,Wind/10C,+45 degST	-12.862	1.036	-4.365
203	LC 1041	K7:3NL.1#1a,gunstig,Wind/10C,+45 degST	-12.317	0.770	-4.415
204	LC 1041	K11:1NL.1#1a,gunstig,Wind/10C,+45 degST	-2.780	0.775	-0.159
205	LC 1041	K11:2NL.1#1a,gunstig,Wind/10C,+45 degST	-2.427	0.675	-0.161
206	LC 1042	K7:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-42.310	-3.437	-4.097
207	LC 1042	K7:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-40.083	-4.629	-4.163
208	LC 1042	K7:3NL.1#1b,gunstig,Wind/-20C,+45 degST	-38.048	-5.581	-4.227
209	LC 1042	K11:1NL.1#1b,gunstig,Wind/-20C,+45 degST	-5.978	-0.441	-0.198
210	LC 1042	K11:2NL.1#1b,gunstig,Wind/-20C,+45 degST	-5.177	-0.622	-0.191
211	LC 1043	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-27.768	-1.272	-4.711
212	LC 1043	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-26.357	-2.023	-4.806
213	LC 1043	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-25.068	-2.623	-4.901
214	LC 1043	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-7.088	0.617	-0.702
215	LC 1043	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+45 degST	-6.201	0.434	-0.834
216	LC 1044	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-14.732	-1.181	-4.315
217	LC 1044	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-13.966	-1.593	-4.365
218	LC 1044	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-13.266	-1.922	-4.414
219	LC 1044	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.607	-0.135	-0.131
220	LC 1044	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+45 degST	-2.256	-0.222	-0.142
221	LC 1045	K7:1NL.1#11a,gunstig,Wind/10C,+45 degST	-11.722	1.681	-4.315
222	LC 1045	K7:2NL.1#11a,gunstig,Wind/10C,+45 degST	-11.096	1.387	-4.365
223	LC 1045	K7:3NL.1#11a,gunstig,Wind/10C,+45 degST	-10.512	1.137	-4.415
224	LC 1045	K11:1NL.1#11a,gunstig,Wind/10C,+45 degST	-2.646	0.875	-0.159
225	LC 1045	K11:2NL.1#11a,gunstig,Wind/10C,+45 degST	-2.247	0.790	-0.161
226	LC 1046	K7:1NL.1#11b,gunstig,Wind/-20C,+45 degST	-41.965	-3.369	-4.097
227	LC 1046	K7:2NL.1#11b,gunstig,Wind/-20C,+45 degST	-39.730	-4.559	-4.163
228	LC 1046	K7:3NL.1#11b,gunstig,Wind/-20C,+45 degST	-37.687	-5.507	-4.227
229	LC 1046	K11:1NL.1#11b,gunstig,Wind/-20C,+45 degST	-5.951	-0.421	-0.198
230	LC 1046	K11:2NL.1#11b,gunstig,Wind/-20C,+45 degST	-5.141	-0.599	-0.191
231	LC 1047	K7:1NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-27.127	-1.070	-4.711
232	LC 1047	K7:2NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-25.692	-1.813	-4.806
233	LC 1047	K7:3NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-24.380	-2.403	-4.901
234	LC 1047	K11:1NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-6.887	0.769	-0.702
235	LC 1047	K11:2NL.1#13,gunstig,Wind / Ice / -5C,+45 degST	-5.929	0.609	-0.834
236	LC 1048	K7:1NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-14.387	-1.114	-4.315
237	LC 1048	K7:2NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-13.612	-1.523	-4.365
238	LC 1048	K7:3NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-12.905	-1.849	-4.414
239	LC 1048	K11:1NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-2.580	-0.115	-0.131
240	LC 1048	K11:2NL.1#14,gunstig,Construction/Maintenance +5C,+45 degST	-2.220	-0.199	-0.142
241	LC 1049	K7:1NL.1#1a,gunstig,Wind/10C,-45 degST	-14.204	-2.084	-4.338
242	LC 1049	K7:2NL.1#1a,gunstig,Wind/10C,-45 degST	-13.599	-2.515	-4.386
243	LC 1049	K7:3NL.1#1a,gunstig,Wind/10C,-45 degST	-13.001	-2.870	-4.434

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
244	LC 1049	K11:1NL.1#1a,gunstig,Wind/10C,-45 degST	-2.847	-0.862	-0.115
245	LC 1049	K11:2NL.1#1a,gunstig,Wind/10C,-45 degST	-2.539	-0.957	-0.132
246	LC 1050	K7:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-42.444	-3.381	-4.097
247	LC 1050	K7:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-40.219	-4.573	-4.163
248	LC 1050	K7:3NL.1#1b,gunstig,Wind/-20C,-45 degST	-38.186	-5.525	-4.227
249	LC 1050	K11:1NL.1#1b,gunstig,Wind/-20C,-45 degST	-5.981	-0.446	-0.197
250	LC 1050	K11:2NL.1#1b,gunstig,Wind/-20C,-45 degST	-5.183	-0.627	-0.190
251	LC 1051	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-27.976	-1.601	-4.714
252	LC 1051	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-26.558	-2.365	-4.809
253	LC 1051	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-25.263	-2.976	-4.904
254	LC 1051	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-7.168	0.094	-0.686
255	LC 1051	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-45 degST	-6.313	-0.090	-0.823
256	LC 1052	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-14.841	-1.280	-4.317
257	LC 1052	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-14.074	-1.696	-4.366
258	LC 1052	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-13.373	-2.028	-4.416
259	LC 1052	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-2.601	-0.237	-0.128
260	LC 1052	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-45 degST	-2.262	-0.313	-0.140
261	LC 1053	K7:1NL.1#11a,gunstig,Wind/10C,-45 degST	-11.147	-2.304	-4.338
262	LC 1053	K7:2NL.1#11a,gunstig,Wind/10C,-45 degST	-10.476	-2.723	-4.386
263	LC 1053	K7:3NL.1#11a,gunstig,Wind/10C,-45 degST	-9.815	-3.063	-4.434
264	LC 1053	K11:1NL.1#11a,gunstig,Wind/10C,-45 degST	-2.681	-0.927	-0.115
265	LC 1053	K11:2NL.1#11a,gunstig,Wind/10C,-45 degST	-2.289	-1.016	-0.132
266	LC 1054	K7:1NL.1#11b,gunstig,Wind/-20C,-45 degST	-41.832	-3.425	-4.097
267	LC 1054	K7:2NL.1#11b,gunstig,Wind/-20C,-45 degST	-39.594	-4.615	-4.163
268	LC 1054	K7:3NL.1#11b,gunstig,Wind/-20C,-45 degST	-37.549	-5.563	-4.227
269	LC 1054	K11:1NL.1#11b,gunstig,Wind/-20C,-45 degST	-5.948	-0.459	-0.197
270	LC 1054	K11:2NL.1#11b,gunstig,Wind/-20C,-45 degST	-5.133	-0.639	-0.190
271	LC 1055	K7:1NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-26.915	-1.733	-4.714
272	LC 1055	K7:2NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-25.458	-2.490	-4.809
273	LC 1055	K7:3NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-24.126	-3.091	-4.904
274	LC 1055	K11:1NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-6.917	-0.005	-0.686
275	LC 1055	K11:2NL.1#13,gunstig,Wind / Ice / -5C,-45 degST	-5.935	-0.179	-0.823
276	LC 1056	K7:1NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-14.229	-1.324	-4.317
277	LC 1056	K7:2NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-13.449	-1.738	-4.366
278	LC 1056	K7:3NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-12.736	-2.067	-4.416
279	LC 1056	K11:1NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-2.568	-0.250	-0.128
280	LC 1056	K11:2NL.1#14,gunstig,Construction/Maintenance +5C,-45 degST	-2.212	-0.325	-0.140
281	LC 1057	K7:1NL.1#1a,gunstig,Wind/10C,+0 degST	-11.416	-1.509	-4.339
282	LC 1057	K7:2NL.1#1a,gunstig,Wind/10C,+0 degST	-10.662	-1.684	-4.387
283	LC 1057	K7:3NL.1#1a,gunstig,Wind/10C,+0 degST	-9.985	-1.778	-4.435
284	LC 1057	K11:1NL.1#1a,gunstig,Wind/10C,+0 degST	-2.392	-0.618	-0.116
285	LC 1057	K11:2NL.1#1a,gunstig,Wind/10C,+0 degST	-1.955	-0.580	-0.132
286	LC 1058	K7:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-42.028	-3.428	-4.097
287	LC 1058	K7:2NL.1#1b,gunstig,Wind/-20C+,0 degST	-39.796	-4.617	-4.163
288	LC 1058	K7:3NL.1#1b,gunstig,Wind/-20C+,0 degST	-37.757	-5.564	-4.227
289	LC 1058	K11:1NL.1#1b,gunstig,Wind/-20C+,0 degST	-5.950	-0.449	-0.197
290	LC 1058	K11:2NL.1#1b,gunstig,Wind/-20C+,0 degST	-5.144	-0.627	-0.190
291	LC 1059	K7:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-27.131	-1.648	-4.714
292	LC 1059	K7:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-25.701	-2.396	-4.809
293	LC 1059	K7:3NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-24.397	-2.991	-4.904
294	LC 1059	K11:1NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-6.832	0.176	-0.688
295	LC 1059	K11:2NL.1#3,gunstig,Wind / Ice / -5C,+0 degST	-5.887	0.079	-0.824
296	LC 1060	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-14.401	-1.296	-4.317
297	LC 1060	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-13.608	-1.674	-4.366
298	LC 1060	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-12.905	-2.000	-4.416
299	LC 1060	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-2.555	-0.218	-0.128
300	LC 1060	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,+0 degST	-2.201	-0.284	-0.141
301	LC 1061	K7:1NL.1#1a,gunstig,Wind/10C,-0 degST	-12.519	-1.260	-4.339
302	LC 1061	K7:2NL.1#1a,gunstig,Wind/10C,-0 degST	-11.766	-1.459	-4.387
303	LC 1061	K7:3NL.1#1a,gunstig,Wind/10C,-0 degST	-11.087	-1.574	-4.435
304	LC 1061	K11:1NL.1#1a,gunstig,Wind/10C,-0 degST	-2.460	-0.548	-0.116
305	LC 1061	K11:2NL.1#1a,gunstig,Wind/10C,-0 degST	-2.036	-0.520	-0.132
306	LC 1062	K7:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-42.248	-3.378	-4.097
307	LC 1062	K7:2NL.1#1b,gunstig,Wind/-20C,-0 degST	-40.017	-4.572	-4.163
308	LC 1062	K7:3NL.1#1b,gunstig,Wind/-20C,-0 degST	-37.978	-5.523	-4.227
309	LC 1062	K11:1NL.1#1b,gunstig,Wind/-20C,-0 degST	-5.964	-0.434	-0.197
310	LC 1062	K11:2NL.1#1b,gunstig,Wind/-20C,-0 degST	-5.160	-0.615	-0.190
311	LC 1063	K7:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-27.524	-1.499	-4.714
312	LC 1063	K7:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-26.096	-2.261	-4.809
313	LC 1063	K7:3NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-24.789	-2.869	-4.904
314	LC 1063	K11:1NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-6.935	0.283	-0.688
315	LC 1063	K11:2NL.1#3,gunstig,Wind / Ice / -5C,-0 degST	-6.010	0.171	-0.824
316	LC 1064	K7:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-14.622	-1.246	-4.317
317	LC 1064	K7:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-13.829	-1.629	-4.366
318	LC 1064	K7:3NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-13.126	-1.959	-4.416
319	LC 1064	K11:1NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-2.569	-0.204	-0.128
320	LC 1064	K11:2NL.1#4,gunstig,Construction/Maintenance +5C,-0 degST	-2.217	-0.272	-0.141
321	LC 1065	K7:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	-13.111	-0.025	-4.831
322	LC 1065	K7:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-12.447	-0.367	-4.884
323	LC 1065	K7:3NL.1#5a,Break Shield wire 1, Ahead,+10CST	-11.840	-0.639	-4.936
324	LC 1065	K11:1NL.1#5a,Break Shield wire 1, Ahead,+10CST	0.000	0.000	-2.000

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
325	LC 1065	K11:2NL.1#5a,Break Shield wire 1, Ahead,+10CST	-2.016	-0.080	-0.146
326	LC 1066	K7:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-13.111	-0.025	-4.831
327	LC 1066	K7:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-12.447	-0.367	-4.884
328	LC 1066	K7:3NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-11.840	-0.639	-4.936
329	LC 1066	K11:1NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	-2.325	-0.019	-0.128
330	LC 1066	K11:2NL.1#5a,Break Shieldwire 2 , Ahead,+10CST	0.000	0.000	-2.000
331	LC 1067	K7:1NL.1#5a,Break Conductor 1, Ahead,+10CST	0.000	0.000	-2.000
332	LC 1067	K7:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-12.447	-0.367	-4.884
333	LC 1067	K7:3NL.1#5a,Break Conductor 1, Ahead,+10CST	-11.840	-0.639	-4.936
334	LC 1067	K11:1NL.1#5a,Break Conductor 1, Ahead,+10CST	-2.325	-0.019	-0.128
335	LC 1067	K11:2NL.1#5a,Break Conductor 1, Ahead,+10CST	-2.016	-0.080	-0.146
336	LC 1068	K7:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-13.111	-0.025	-4.831
337	LC 1068	K7:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	0.000	0.000	-2.000
338	LC 1068	K7:3NL.1#5a,Break Conductor 2 , Ahead,+10CST	-11.840	-0.639	-4.936
339	LC 1068	K11:1NL.1#5a,Break Conductor 2 , Ahead,+10CST	-2.325	-0.019	-0.128
340	LC 1068	K11:2NL.1#5a,Break Conductor 2 , Ahead,+10CST	-2.016	-0.080	-0.146
341	LC 1069	K7:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-13.111	-0.025	-4.831
342	LC 1069	K7:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-12.447	-0.367	-4.884
343	LC 1069	K7:3NL.1#5a,Break Conductor 3 , Ahead,+10CST	0.000	0.000	-2.000
344	LC 1069	K11:1NL.1#5a,Break Conductor 3 , Ahead,+10CST	-2.325	-0.019	-0.128
345	LC 1069	K11:2NL.1#5a,Break Conductor 3 , Ahead,+10CST	-2.016	-0.080	-0.146
346	LC 1070	K7:1NL.1#6,Permanent,+10CST	-15.650	0.305	-6.535
347	LC 1070	K7:2NL.1#6,Permanent,+10CST	-14.866	-0.093	-6.605
348	LC 1070	K7:3NL.1#6,Permanent,+10CST	-14.151	-0.411	-6.675
349	LC 1070	K11:1NL.1#6,Permanent,+10CST	-2.690	0.047	-0.167
350	LC 1070	K11:2NL.1#6,Permanent,+10CST	-2.335	-0.019	-0.192
351	LC 1071	K7:1NL.1#6,gunstig,Permanent,+10CST	-12.328	-0.177	-4.345
352	LC 1071	K7:2NL.1#6,gunstig,Permanent,+10CST	-11.699	-0.502	-4.393
353	LC 1071	K7:3NL.1#6,gunstig,Permanent,+10CST	-11.124	-0.762	-4.440
354	LC 1071	K11:1NL.1#6,gunstig,Permanent,+10CST	-2.217	-0.051	-0.117
355	LC 1071	K11:2NL.1#6,gunstig,Permanent,+10CST	-1.921	-0.111	-0.132
356	LC 1072	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-16.248	0.250	-5.924
357	LC 1072	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-15.506	-0.150	-5.999
358	LC 1072	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-14.830	-0.470	-6.075
359	LC 1072	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-3.065	0.084	-0.192
360	LC 1072	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+90 degB	-2.705	0.007	-0.215
361	LC 1073	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-43.191	-3.042	-5.712
362	LC 1073	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-40.940	-4.246	-5.803
363	LC 1073	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-38.883	-5.206	-5.893
364	LC 1073	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-6.128	-0.370	-0.249
365	LC 1073	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+90 degB	-5.316	-0.551	-0.256
366	LC 1074	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-27.553	-1.558	-5.950
367	LC 1074	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-26.154	-2.312	-6.041
368	LC 1074	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-24.878	-2.914	-6.131
369	LC 1074	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-5.139	0.050	-0.339
370	LC 1074	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+90 degB	-4.513	-0.084	-0.385
371	LC 1075	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-17.962	-0.455	-5.908
372	LC 1075	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-17.062	-0.930	-5.985
373	LC 1075	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-16.241	-1.310	-6.062
374	LC 1075	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-3.041	-0.056	-0.189
375	LC 1075	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+90 degB	-2.649	-0.139	-0.213
376	LC 1076	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-14.340	0.302	-5.924
377	LC 1076	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-13.549	-0.079	-5.999
378	LC 1076	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-12.826	-0.380	-6.075
379	LC 1076	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.907	0.101	-0.192
380	LC 1076	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-90 degB	-2.481	0.036	-0.215
381	LC 1077	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-42.604	-3.026	-5.712
382	LC 1077	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-40.338	-4.224	-5.803
383	LC 1077	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-38.266	-5.178	-5.893
384	LC 1077	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-6.079	-0.365	-0.249
385	LC 1077	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-90 degB	-5.247	-0.542	-0.256
386	LC 1078	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-26.580	-1.525	-5.950
387	LC 1078	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-25.150	-2.266	-6.041
388	LC 1078	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-23.841	-2.855	-6.131
389	LC 1078	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-4.948	0.070	-0.339
390	LC 1078	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-90 degB	-4.242	-0.049	-0.385
391	LC 1079	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-17.375	-0.440	-5.908
392	LC 1079	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-16.460	-0.909	-5.985
393	LC 1079	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-15.624	-1.282	-6.062
394	LC 1079	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-2.992	-0.051	-0.189
395	LC 1079	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-90 degB	-2.580	-0.130	-0.213
396	LC 1080	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-15.305	0.422	-5.926
397	LC 1080	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-14.566	0.031	-6.001
398	LC 1080	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-13.903	-0.270	-6.077
399	LC 1080	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.738	0.232	-0.190
400	LC 1080	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.384	0.146	-0.213
401	LC 1081	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-43.036	-3.061	-5.712
402	LC 1081	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-40.780	-4.263	-5.803
403	LC 1081	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-38.718	-5.221	-5.893
404	LC 1081	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-6.107	-0.365	-0.249
405	LC 1081	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-5.283	-0.555	-0.256

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
406	LC 1082	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-27.153	-1.536	-5.951
407	LC 1082	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-25.754	-2.280	-6.041
408	LC 1082	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-24.476	-2.874	-6.131
409	LC 1082	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.914	0.111	-0.337
410	LC 1082	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.274	-0.032	-0.383
411	LC 1083	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-17.759	-0.412	-5.908
412	LC 1083	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-16.859	-0.882	-5.985
413	LC 1083	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-16.037	-1.258	-6.062
414	LC 1083	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.997	-0.040	-0.189
415	LC 1083	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.600	-0.125	-0.213
416	LC 1084	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-14.408	0.598	-5.926
417	LC 1084	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-13.648	0.214	-6.001
418	LC 1084	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-12.965	-0.079	-6.077
419	LC 1084	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.669	0.284	-0.190
420	LC 1084	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+45 degB	-2.290	0.206	-0.213
421	LC 1085	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-42.760	-3.007	-5.712
422	LC 1085	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-40.497	-4.207	-5.803
423	LC 1085	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-38.430	-5.163	-5.893
424	LC 1085	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-6.086	-0.349	-0.249
425	LC 1085	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+45 degB	-5.254	-0.537	-0.256
426	LC 1086	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-26.697	-1.421	-5.951
427	LC 1086	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-25.284	-2.161	-6.041
428	LC 1086	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-23.993	-2.749	-6.131
429	LC 1086	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.830	0.174	-0.337
430	LC 1086	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+45 degB	-4.160	0.040	-0.383
431	LC 1087	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-17.483	-0.358	-5.908
432	LC 1087	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-16.577	-0.826	-5.985
433	LC 1087	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-15.749	-1.199	-6.062
434	LC 1087	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.975	-0.024	-0.189
435	LC 1087	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+45 degB	-2.571	-0.107	-0.213
436	LC 1088	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-15.684	-0.130	-5.930
437	LC 1088	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-14.963	-0.559	-6.005
438	LC 1088	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-14.284	-0.876	-6.080
439	LC 1088	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.776	-0.218	-0.178
440	LC 1088	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.441	-0.304	-0.205
441	LC 1089	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-43.142	-3.017	-5.712
442	LC 1089	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-40.888	-4.218	-5.803
443	LC 1089	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-38.829	-5.177	-5.893
444	LC 1089	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-6.102	-0.384	-0.248
445	LC 1089	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-5.295	-0.553	-0.256
446	LC 1090	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-27.339	-1.659	-5.952
447	LC 1090	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-25.937	-2.409	-6.042
448	LC 1090	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-24.656	-3.008	-6.132
449	LC 1090	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.936	-0.139	-0.330
450	LC 1090	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.317	-0.265	-0.378
451	LC 1091	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-17.889	-0.461	-5.909
452	LC 1091	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-16.987	-0.934	-5.985
453	LC 1091	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-16.164	-1.312	-6.062
454	LC 1091	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-3.003	-0.086	-0.187
455	LC 1091	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.614	-0.163	-0.212
456	LC 1092	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-14.094	-0.245	-5.930
457	LC 1092	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-13.339	-0.667	-6.005
458	LC 1092	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-12.628	-0.977	-6.080
459	LC 1092	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.690	-0.251	-0.178
460	LC 1092	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-45 degB	-2.311	-0.335	-0.205
461	LC 1093	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-42.653	-3.052	-5.712
462	LC 1093	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-40.389	-4.251	-5.803
463	LC 1093	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-38.319	-5.207	-5.893
464	LC 1093	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-6.075	-0.394	-0.248
465	LC 1093	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-45 degB	-5.255	-0.562	-0.256
466	LC 1094	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-26.557	-1.733	-5.952
467	LC 1094	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-25.132	-2.480	-6.042
468	LC 1094	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-23.830	-3.074	-6.132
469	LC 1094	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.832	-0.180	-0.330
470	LC 1094	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-45 degB	-4.160	-0.302	-0.378
471	LC 1095	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-17.400	-0.496	-5.909
472	LC 1095	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-16.488	-0.967	-5.985
473	LC 1095	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-15.654	-1.343	-6.062
474	LC 1095	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.976	-0.096	-0.187
475	LC 1095	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-45 degB	-2.573	-0.173	-0.212
476	LC 1096	K7:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-14.461	-0.066	-5.930
477	LC 1096	K7:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-13.692	-0.411	-6.005
478	LC 1096	K7:3NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-12.993	-0.676	-6.080
479	LC 1096	K11:1NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-2.609	-0.122	-0.179
480	LC 1096	K11:2NL.3#Bending,Ahead,1a,Wind/10C,+0 degB	-2.229	-0.146	-0.206
481	LC 1097	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-42.810	-3.054	-5.712
482	LC 1097	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-40.550	-4.253	-5.803
483	LC 1097	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-38.486	-5.208	-5.893
484	LC 1097	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-6.083	-0.394	-0.248
485	LC 1097	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,+0 degB	-5.261	-0.573	-0.256
486	LC 1098	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-26.734	-1.707	-5.953

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
487	LC 1098	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-25.325	-2.449	-6.043
488	LC 1098	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-24.038	-3.039	-6.133
489	LC 1098	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-4.794	-0.106	-0.330
490	LC 1098	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,+0 degB	-4.131	-0.196	-0.379
491	LC 1099	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-17.533	-0.467	-5.909
492	LC 1099	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-16.628	-0.936	-5.985
493	LC 1099	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-15.801	-1.310	-6.062
494	LC 1099	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-2.969	-0.075	-0.188
495	LC 1099	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,+0 degB	-2.571	-0.155	-0.212
496	LC 1100	K7:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-15.034	0.064	-5.930
497	LC 1100	K7:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-14.267	-0.293	-6.005
498	LC 1100	K7:3NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-13.567	-0.570	-6.080
499	LC 1100	K11:1NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-2.645	-0.085	-0.179
500	LC 1100	K11:2NL.3#Bending,Ahead,1a,Wind/10C,-0 degB	-2.271	-0.115	-0.206
501	LC 1101	K7:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-42.986	-3.014	-5.712
502	LC 1101	K7:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-40.727	-4.217	-5.803
503	LC 1101	K7:3NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-38.662	-5.176	-5.893
504	LC 1101	K11:1NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-6.094	-0.383	-0.248
505	LC 1101	K11:2NL.3#Bending,Ahead,1b,Wind/-20C,-0 degB	-5.274	-0.564	-0.256
506	LC 1102	K7:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-27.020	-1.622	-5.953
507	LC 1102	K7:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-25.611	-2.372	-6.043
508	LC 1102	K7:3NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-24.324	-2.970	-6.133
509	LC 1102	K11:1NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-4.837	-0.061	-0.330
510	LC 1102	K11:2NL.3#Bending,Ahead,3,Wind / Ice / -5C,-0 degB	-4.182	-0.158	-0.379
511	LC 1103	K7:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-17.709	-0.427	-5.909
512	LC 1103	K7:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-16.804	-0.900	-5.985
513	LC 1103	K7:3NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-15.978	-1.277	-6.062
514	LC 1103	K11:1NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-2.980	-0.064	-0.188
515	LC 1103	K11:2NL.3#Bending,Ahead,4,Construction/Maintenance +5C,-0 degB	-2.584	-0.145	-0.212
516	LC 1104	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+90 degTOR	-3.065	0.084	-0.192
517	LC 1105	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+90 degTOR	-6.128	-0.370	-0.249
518	LC 1106	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+90 degTOR	-5.139	0.050	-0.339
519	LC 1107	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+90 degTOR	-3.041	-0.056	-0.189
520	LC 1108	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-90 degTOR	-2.907	0.101	-0.192
521	LC 1109	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-90 degTOR	-6.079	-0.365	-0.249
522	LC 1110	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-90 degTOR	-4.948	0.070	-0.339
523	LC 1111	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-90 degTOR	-2.992	-0.051	-0.189
524	LC 1112	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+45 degTOR	-2.738	0.232	-0.190
525	LC 1113	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+45 degTOR	-6.107	-0.365	-0.249
526	LC 1114	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+45 degTOR	-4.914	0.111	-0.337
527	LC 1115	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+45 degTOR	-2.997	-0.040	-0.189
528	LC 1116	K11:1NL.3#Torsion,Ahead,11a,Wind/10C,+45 degTOR	-2.669	0.284	-0.190
529	LC 1117	K11:1NL.3#Torsion,Ahead,11b,Wind/-20C,+45 degTOR	-6.086	-0.349	-0.249
530	LC 1118	K11:1NL.3#Torsion,Ahead,13,Wind / Ice / -5C,+45 degTOR	-4.830	0.174	-0.337
531	LC 1119	K11:1NL.3#Torsion,Ahead,14,Construction/Maintenance +5C,+45 degTOR	-2.975	-0.024	-0.189
532	LC 1120	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-45 degTOR	-2.776	-0.218	-0.178
533	LC 1121	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-45 degTOR	-6.102	-0.384	-0.248
534	LC 1122	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-45 degTOR	-4.936	-0.139	-0.330
535	LC 1123	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-45 degTOR	-3.003	-0.086	-0.187
536	LC 1124	K11:1NL.3#Torsion,Ahead,11a,Wind/10C,-45 degTOR	-2.690	-0.251	-0.178
537	LC 1125	K11:1NL.3#Torsion,Ahead,11b,Wind/-20C,-45 degTOR	-6.075	-0.394	-0.248
538	LC 1126	K11:1NL.3#Torsion,Ahead,13,Wind / Ice / -5C,-45 degTOR	-4.832	-0.180	-0.330
539	LC 1127	K11:1NL.3#Torsion,Ahead,14,Construction/Maintenance +5C,-45 degTOR	-2.976	-0.096	-0.187
540	LC 1128	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,+0 degTOR	-2.609	-0.122	-0.179
541	LC 1129	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,+0 degTOR	-6.083	-0.394	-0.248
542	LC 1130	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,+0 degTOR	-4.794	-0.106	-0.330
543	LC 1131	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,+0 degTOR	-2.969	-0.075	-0.188
544	LC 1132	K11:1NL.3#Torsion,Ahead,1a,Wind/10C,-0 degTOR	-2.645	-0.085	-0.179
545	LC 1133	K11:1NL.3#Torsion,Ahead,1b,Wind/-20C,-0 degTOR	-6.094	-0.383	-0.248
546	LC 1134	K11:1NL.3#Torsion,Ahead,3,Wind / Ice / -5C,-0 degTOR	-4.837	-0.061	-0.330
547	LC 1135	K11:1NL.3#Torsion,Ahead,4,Construction/Maintenance +5C,-0 degTOR	-2.980	-0.064	-0.188
548	LC 1136	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,+90 degTOR	-2.705	0.007	-0.215
549	LC 1137	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,+90 degTOR	-5.316	-0.551	-0.256
550	LC 1138	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,+90 degTOR	-4.513	-0.084	-0.385
551	LC 1139	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,+90 degTOR	-2.649	-0.139	-0.213
552	LC 1140	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,-90 degTOR	-2.481	0.036	-0.215
553	LC 1141	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,-90 degTOR	-5.247	-0.542	-0.256
554	LC 1142	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,-90 degTOR	-4.242	-0.049	-0.385
555	LC 1143	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,-90 degTOR	-2.580	-0.130	-0.213
556	LC 1144	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,+45 degTOR	-2.384	0.146	-0.213
557	LC 1145	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,+45 degTOR	-5.283	-0.555	-0.256
558	LC 1146	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,+45 degTOR	-4.274	-0.032	-0.383
559	LC 1147	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,+45 degTOR	-2.600	-0.125	-0.213
560	LC 1148	K11:2NL.3#Torsion,Ahead,211a,Wind/10C,+45 degTOR	-2.290	0.206	-0.213
561	LC 1149	K11:2NL.3#Torsion,Ahead,211b,Wind/-20C,+45 degTOR	-5.254	-0.537	-0.256
562	LC 1150	K11:2NL.3#Torsion,Ahead,213,Wind / Ice / -5C,+45 degTOR	-4.160	0.040	-0.383
563	LC 1151	K11:2NL.3#Torsion,Ahead,214,Construction/Maintenance +5C,+45 degTOR	-2.571	-0.107	-0.213
564	LC 1152	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,-45 degTOR	-2.441	-0.304	-0.205
565	LC 1153	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,-45 degTOR	-5.295	-0.553	-0.256
566	LC 1154	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,-45 degTOR	-4.317	-0.265	-0.378
567	LC 1155	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,-45 degTOR	-2.614	-0.163	-0.212

NR	LC	Knoopnummers en belastingen	Belasting X-richting LCS [kN]	Belasting Y-richting LCS [kN]	Belasting Z-richting LCS [kN]
568	LC 1156	K11:2NL.3#Torsion,Ahead,211a,Wind/10C,-45 degTOR	-2.311	-0.335	-0.205
569	LC 1157	K11:2NL.3#Torsion,Ahead,211b,Wind/-20C,-45 degTOR	-5.255	-0.562	-0.256
570	LC 1158	K11:2NL.3#Torsion,Ahead,213,Wind / Ice / -5C,-45 degTOR	-4.160	-0.302	-0.378
571	LC 1159	K11:2NL.3#Torsion,Ahead,214,Construction/Maintenance +5C,-45 degTOR	-2.573	-0.173	-0.212
572	LC 1160	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,+0 degTOR	-2.229	-0.146	-0.206
573	LC 1161	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,+0 degTOR	-5.261	-0.573	-0.256
574	LC 1162	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,+0 degTOR	-4.131	-0.196	-0.379
575	LC 1163	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,+0 degTOR	-2.571	-0.155	-0.212
576	LC 1164	K11:2NL.3#Torsion,Ahead,21a,Wind/10C,-0 degTOR	-2.271	-0.115	-0.206
577	LC 1165	K11:2NL.3#Torsion,Ahead,21b,Wind/-20C,-0 degTOR	-5.274	-0.564	-0.256
578	LC 1166	K11:2NL.3#Torsion,Ahead,23,Wind / Ice / -5C,-0 degTOR	-4.182	-0.158	-0.379
579	LC 1167	K11:2NL.3#Torsion,Ahead,24,Construction/Maintenance +5C,-0 degTOR	-2.584	-0.145	-0.212

BIJLAGE D

In- en uitvoergegevens 3D raamwerkprogramma juk 64

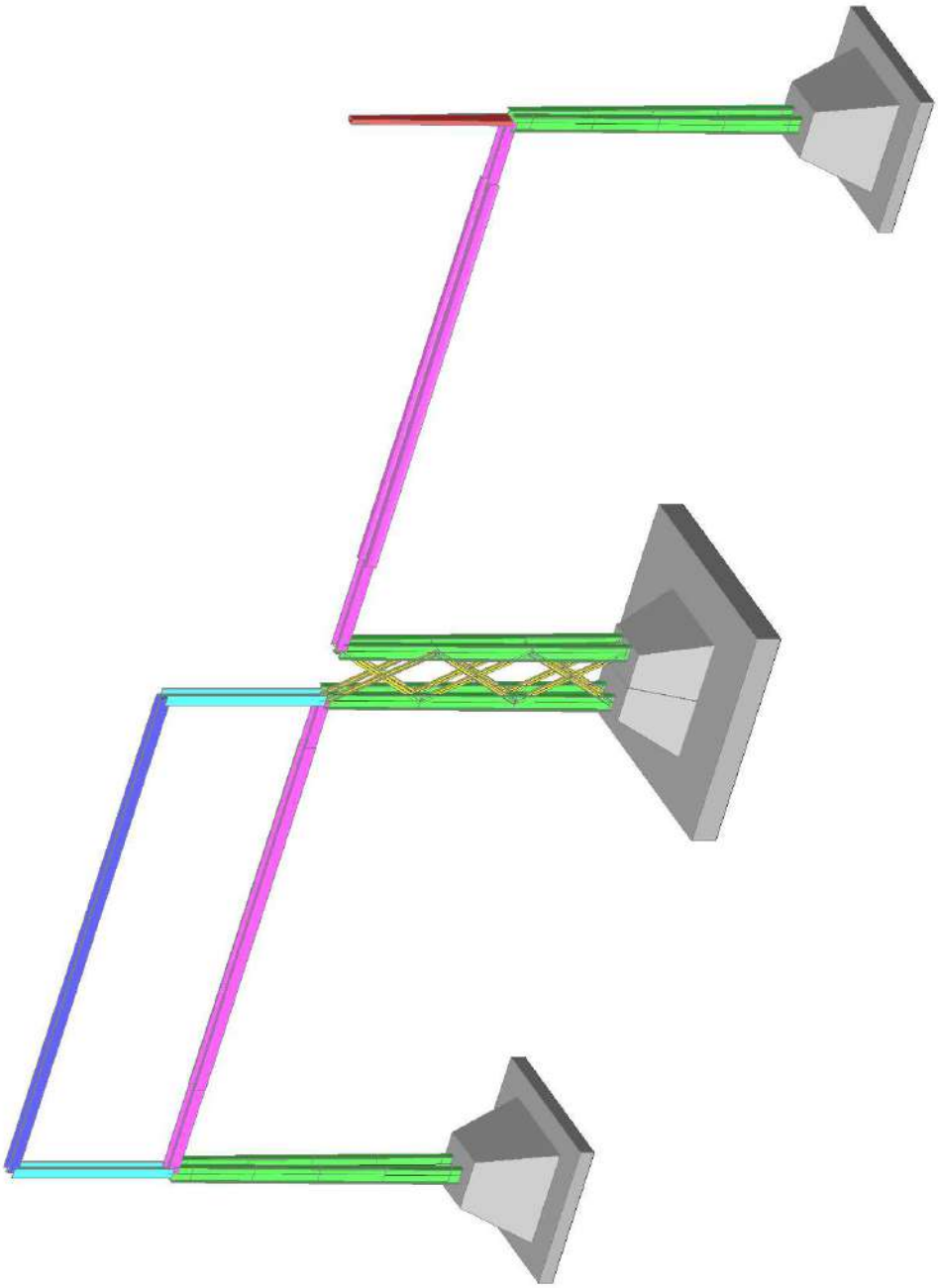
1. Inhoudsopgave

1. Inhoudsopgave **1**
2. Geometrie **3**
2.1. Perspectief constructie 3
2.2. Maatvoering 4
2.3. Materialen 5
2.4. Doorsneden 5
3. Belastingen **15**
3.1. Belastingsgevallen 15
3.2. BG1: e.g. constructie 22
3.3. BG2: grond op poer 22
3.4. BG3: wind op constructie; X-richting 23
3.5. BG4: wind op constructie; Y-richting 23
3.6. LC1001 / Totale waarde 24
3.7. LC1080 / Totale waarde 24
3.8. LC1159 / Totale waarde 25
3.9. LC1238 / Totale waarde 25
3.10. Combinaties 26
3.11. Resultaatklasses 33
4. Berekeningsverslag **34**
5. Reacties **56**
5.1. Oplegreacties kolom links; UGT, globale extremen 56
5.2. Oplegreacties kolom midden-links; UGT, globale extremen 56
5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen 56
5.4. Oplegreacties kolom rechts; UGT, globale extremen 56
6. Grondspanningen **57**
6.1. Grondspanningen onder betonpoeren; UGT 57
7. Staafkrachten **58**
7.1. Staafkrachten kolom INP45; UGT globale extremen 58
7.2. Staafkrachten kolom DIE36; UGT globale extremen 58
7.3. Staafkrachten ligger DIE34; UGT, globale extremen 58
7.4. Staafkrachten ligger DIE34+strippen; UGT, globale extremen 59
7.5. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen 59
7.6. Staafkrachten ligger DIN28; UGT globale extremen 59
7.7. Staafkrachten koppelplaat; UGT globale extremen 60
7.8. Staafkrachten diagonaal; UGT globale extremen 60
7.9. Staafkrachten bliksempiek; UGT globale extremen 60
7.10. Staafkrachten betonopstort links; UGT globale extremen 60
7.11. Staafkrachten betonopstort midden-links; UGT globale extremen 61
7.12. Staafkrachten betonopstort midden-rechts; UGT globale extremen 61
7.13. Staafkrachten betonopstort rechts; UGT globale extremen 61
8. Staafspanningen **62**
8.1. Von Mises spanningen kolom INP45; UGT, globale extremen 62
8.2. Von Mises spanningen kolom DIE36; UGT, globale extremen 62
8.3. Von Mises spanningen ligger DIE34; UGT, globale extremen 62
8.4. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen 62
8.5. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen 63
8.6. Von Mises spanningen ligger DIN28; UGT, globale extremen 63
8.7. Von Mises spanningen koppelplaat; UGT, globale extremen 63
8.8. Von Mises spanningen diagonaal; UGT, globale extremen 63
8.9. Von Mises spanningen bliksempiek; UGT, globale extremen 64
9. Normcontrole staal **65**
9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht 65
9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid 65
9.3. Staalcontrole kolom DIE36; UGT, grafisch overzicht 69
9.4. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid 69
9.5. Staalcontrole ligger DIE34; UGT, grafisch overzicht 73
9.6. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid 73
9.7. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht 77
9.8. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid 77
9.9. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht 81
9.10. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid 81
9.11. Staalcontrole ligger DIN28; UGT, grafisch overzicht 85
9.12. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid 85
9.13. Staalcontrole koppelplaat; UGT, grafisch overzicht 89
9.14. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 89
9.15. Staalcontrole diagonaal; UGT, grafisch overzicht 93

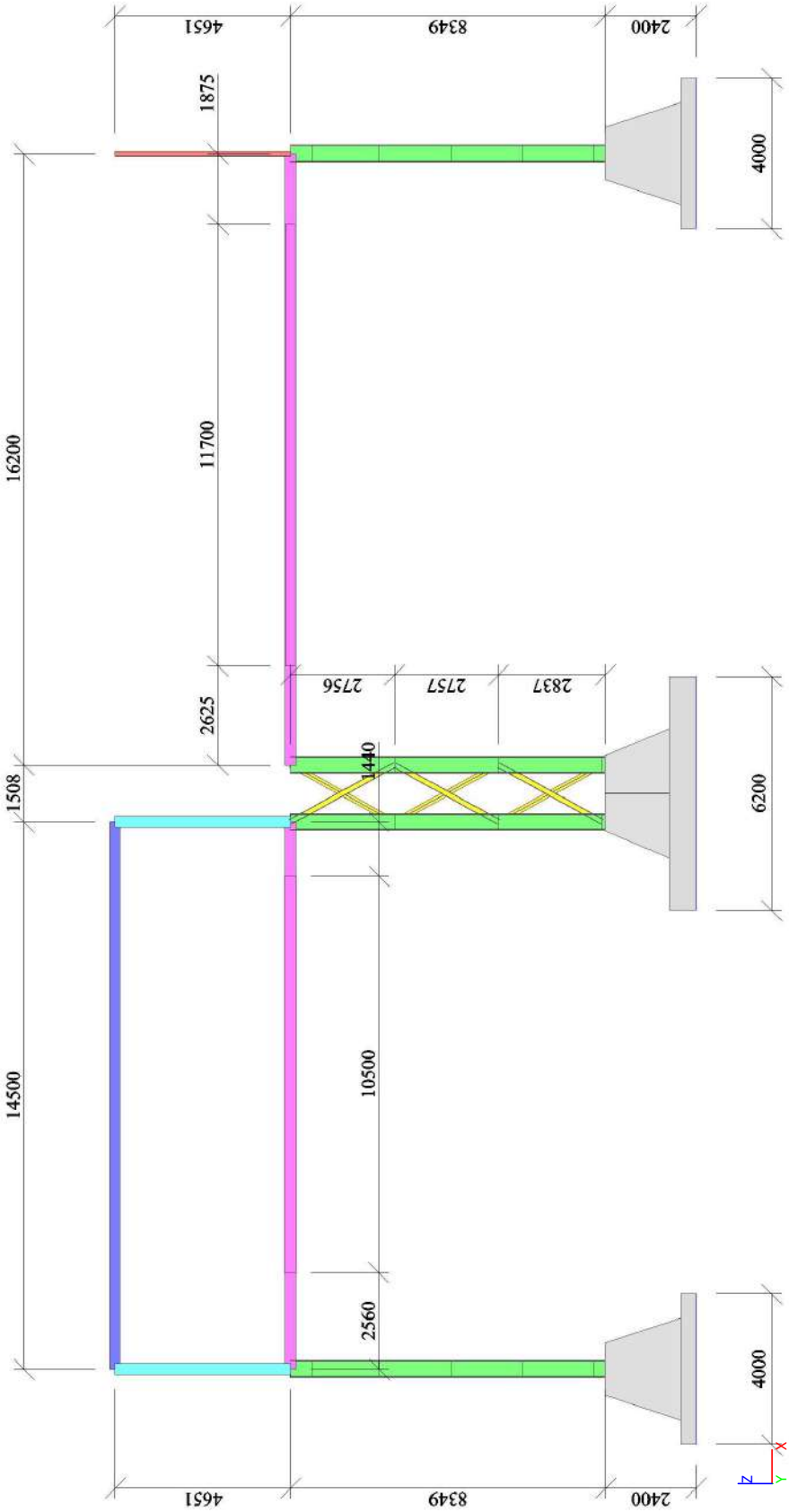
9.16. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid 93
9.17. Staalcontrole bliksempiek; UGT, grafisch overzicht 96
9.18. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 96

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 235	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	235.0 215.0	360.0 360.0	

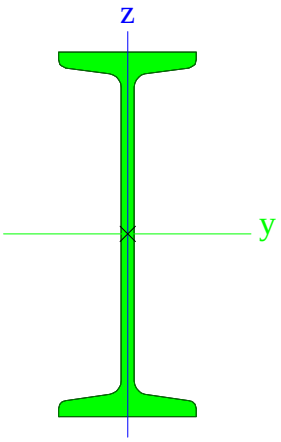
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C60/75	Beton	2500.0	2600.0	3.9100e+04	0.2	0.00	60.00	
Dummy beton	Beton	2500.0	2600.0	3.9100e+06	0.2	0.00	60.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom INP45		
Type	INP450	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	5.63e+05	5.63e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	8.11e+04	8.11e+04
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

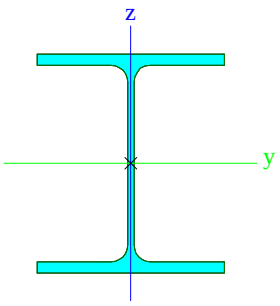
Afbeelding



Kolom DIE36		
Type	HEA360	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c

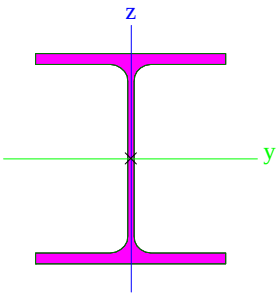
A [m²]	1.4300e-02	
A_y [m²], A_z [m²]	1.0125e-02	3.6844e-03
I_y [m⁴], I_z [m⁴]	3.3100e-04	7.8900e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8900e-03	5.2600e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0875e-03	8.0417e-04
I_w [m⁶], I_t [m⁴]	2.1766e-06	1.4900e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	175
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.91e+05	4.91e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.89e+05	1.89e+05
A_L [m²/m], A_D [m²/m]	1.8300e+00	1.8334e+00

Afbeelding



Ligger DIE34		
Type	HE340A	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3350e-02	
A_y [m²], A_z [m²]	9.5495e-03	3.3201e-03
I_y [m⁴], I_z [m⁴]	2.7690e-04	7.4360e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6780e-03	4.9570e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.8500e-03	7.5590e-04
I_w [m⁶], I_t [m⁴]	1.8240e-06	1.2720e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.35e+05	4.35e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.78e+05	1.78e+05
A_L [m²/m], A_D [m²/m]	1.7944e+00	1.7944e+00

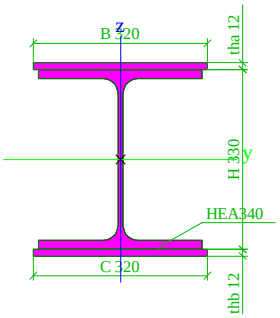
Afbeelding



Ligger DIE34+strippen		
Type	I + 2 PLud	
Uitgebreid	HEA340; 320; 320; 12; 12	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	c	c
A [m²]	2.1039e-02	
A_y [m²], A_z [m²]	1.6468e-02	3.6506e-03
I_y [m⁴], I_z [m⁴]	5.0182e-04	1.3990e-04

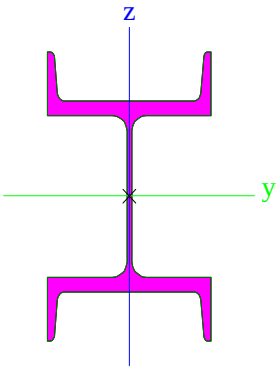
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.8351e-03	8.7437e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.1654e-03	1.3705e-03
I_w [m⁶], I_t [m⁴]	3.6743e-06	4.7425e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	160	177
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.44e+05	7.44e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.22e+05	3.22e+05
A_L [m²/m], A_D [m²/m]	1.9224e+00	1.9224e+00

Afbeelding



Ligger DIE34+UNP's		
Type	Grafische doorsnede	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.5114e-02	
A_y [m²], A_z [m²]	1.6554e-02	4.3472e-03
I_y [m⁴], I_z [m⁴]	7.2035e-04	2.3496e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.7183e-03	1.5664e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.1091e-03	2.0212e-03
I_w [m⁶], I_t [m⁴]	4.5518e-06	4.8902e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	0	0
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.66e+05	9.66e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	4.75e+05	4.75e+05
A_L [m²/m], A_D [m²/m]	2.4925e+00	2.4925e+00

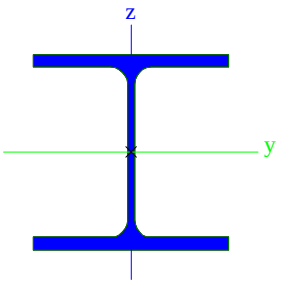
Afbeelding



Ligger DIN28		
Type	HEB280	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3140e-02	
A_y [m²], A_z [m²]	9.6422e-03	3.1403e-03
I_y [m⁴], I_z [m⁴]	1.9270e-04	6.5950e-05

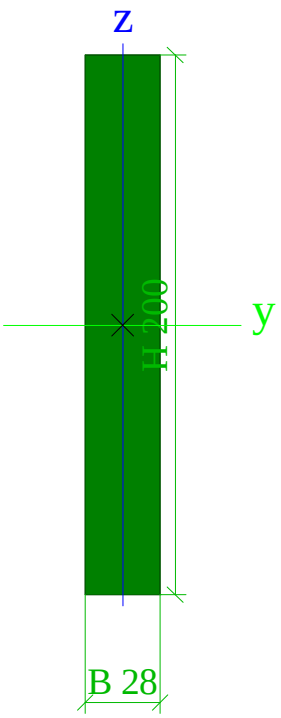
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3760e-03	4.7100e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.5340e-03	7.1760e-04
I_w [m⁶], I_t [m⁴]	1.1302e-06	1.4370e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	140	140
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3.61e+05	3.61e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.69e+05	1.69e+05
A_L [m²/m], A_D [m²/m]	1.6200e+00	1.6176e+00

Afbeelding



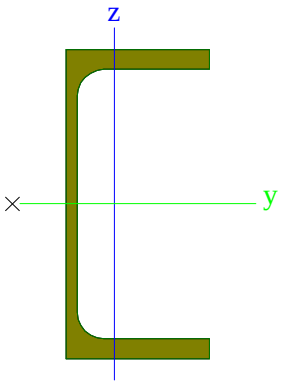
Plaat 2x14x200		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.58e+04	6.58e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.21e+03	9.21e+03
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

Afbeelding



Diagonaal UPE14		
Type	UPE140	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	c	c
A [m^2]	1.8400e-03	
A_y [m^2], A_z [m^2]	1.1000e-03	7.1956e-04
I_y [m^4], I_z [m^4]	5.9900e-06	7.8700e-07
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	8.5600e-05	1.8200e-05
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	9.8800e-05	3.2600e-05
I_w [m^6], I_t [m^4]	2.3372e-09	4.0500e-08
d_y [mm], d_z [mm]	-46	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	22	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.32e+04	2.32e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	7.66e+03	7.66e+03
A_L [m^2/m], A_D [m^2/m]	5.1970e-01	5.1965e-01

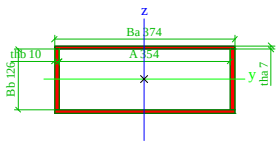
Afbeelding



Bliksempiek-1

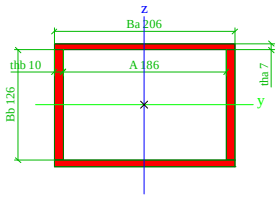
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	7.7560e-03	
A_y [m²], A_z [m²]	5.0496e-03	2.7596e-03
I_y [m⁴], I_z [m⁴]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.2757e-04	9.4821e-04
I_w [m⁶], I_t [m⁴]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.00e+05	1.00e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.23e+05	2.23e+05
A_L [m²/m], A_D [m²/m]	1.0280e+00	1.9880e+00

Afbeelding



Bliksempiek-2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	5.4040e-03	
A_y [m²], A_z [m²]	2.8012e-03	2.7167e-03
I_y [m⁴], I_z [m⁴]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.7117e-04	3.9549e-04
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.37e+04	6.37e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.29e+04	9.29e+04
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

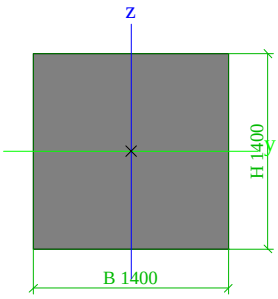
Afbeelding



Poer boven-IA		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	

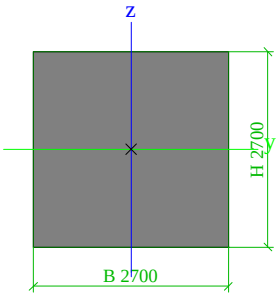
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Afbeelding



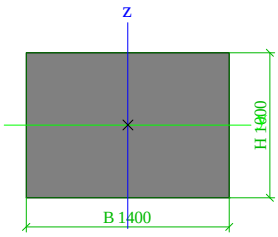
Poer onder-IA		
Type	Rechthoek	
Uitgebreid	2700; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	7.2900e+00	
A_y [m²], A_z [m²]	6.0750e+00	6.0750e+00
I_y [m⁴], I_z [m⁴]	4.4287e+00	4.4287e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.2805e+00	3.2805e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	4.9524e-02	7.4626e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	1350
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0800e+01	1.0800e+01

Afbeelding



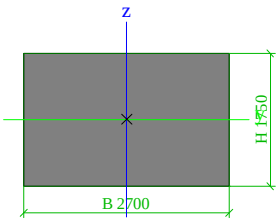
Poer boven-IB		
Type	Rechthoek	
Uitgebreid	1000; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.4000e+00	
A_y [m²], A_z [m²]	1.1667e+00	1.1667e+00
I_y [m⁴], I_z [m⁴]	1.1667e-01	2.2867e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.3333e-01	3.2667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	2.2616e-03	2.6127e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.8000e+00	4.8000e+00

Afbeelding



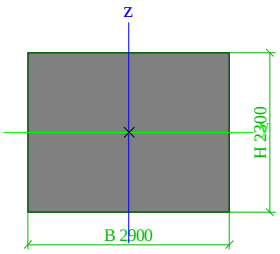
Poer onder-IB		
Type	Rechthoek	
Uitgebreid	1750; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	4.7250e+00	
A_y [m²], A_z [m²]	3.9375e+00	3.9375e+00
I_y [m⁴], I_z [m⁴]	1.2059e+00	2.8704e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3781e+00	2.1263e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2952e-01	2.8785e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	875
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	8.9000e+00	8.9000e+00

Afbeelding



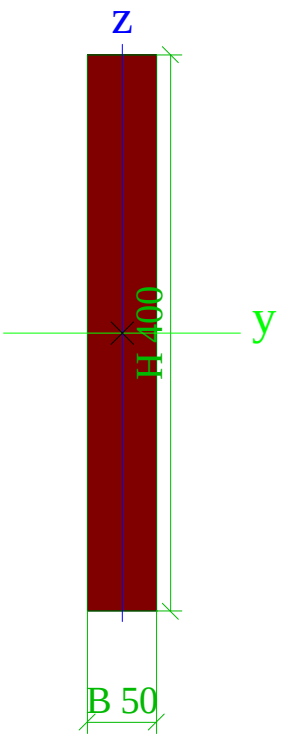
Poer onder-IV		
Type	Rechthoek	
Uitgebreid	2300; 2900	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	6.6700e+00	
A_y [m²], A_z [m²]	5.5583e+00	5.5583e+00
I_y [m⁴], I_z [m⁴]	2.9404e+00	4.6746e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.5568e+00	3.2238e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.3988e-01	6.0933e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1450	1150
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0400e+01	1.0400e+01

Afbeelding



Dummy 400x50		
Type	Rechthoek	
Uitgebreid	400; 50	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m^2]	2.0000e-02	
A_y [m^2], A_z [m^2]	1.6667e-02	1.6667e-02
I_y [m^4], I_z [m^4]	2.6667e-04	4.1667e-06
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	1.3333e-03	1.6667e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	2.0000e-03	2.5000e-04
I_w [m^6], I_t [m^4]	5.0391e-08	1.5278e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	25	200
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.70e+05	4.70e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	5.88e+04	5.88e+04
A_L [m^2/m], A_D [m^2/m]	9.0000e-01	9.0000e-01

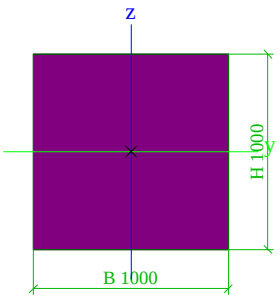
Afbeelding



Dummy beton		
Type	Rechthoek	
Uitgebreid	1000; 1000	
Onderdeelmateriaal	Dummy beton	
Bouwwijze	beton	

A [m²]	1.0000e+00	
A_y [m²], A_z [m²]	8.3333e-01	8.3333e-01
I_y [m⁴], I_z [m⁴]	8.3333e-02	8.3333e-02
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6667e-01	1.6667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2502e-04	1.4035e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	500	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.0000e+00	4.0000e+00

Afbeelding



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. staco	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie; X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie; Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1168	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1169	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1170	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1171	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1172	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1173	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1174	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1175	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1176	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1177	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1178	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1179	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1180	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1181	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1182	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1183	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1184	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1185	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1186	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1187	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1188	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1189	BC0	Variabel	EXCL MAST		Kort	Geen

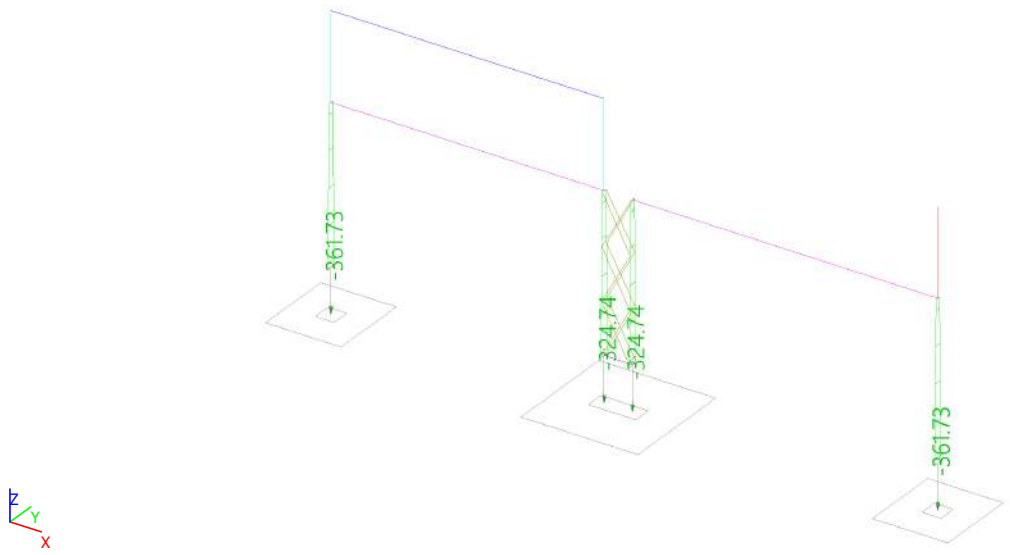
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1190	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1191	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1192	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1193	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1194	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1195	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1196	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1197	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1198	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1199	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1200	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1201	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1202	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1203	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1204	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1205	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1206	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1207	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1208	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1209	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1210	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1211	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1212	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1213	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1214	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1215	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1216	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1217	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1218	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1219	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1220	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1221	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1222	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1223	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1224	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1225	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1226	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1227	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1228	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1229	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1230	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1231	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1232	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1233	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1234	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1235	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1236	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1237	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1238	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

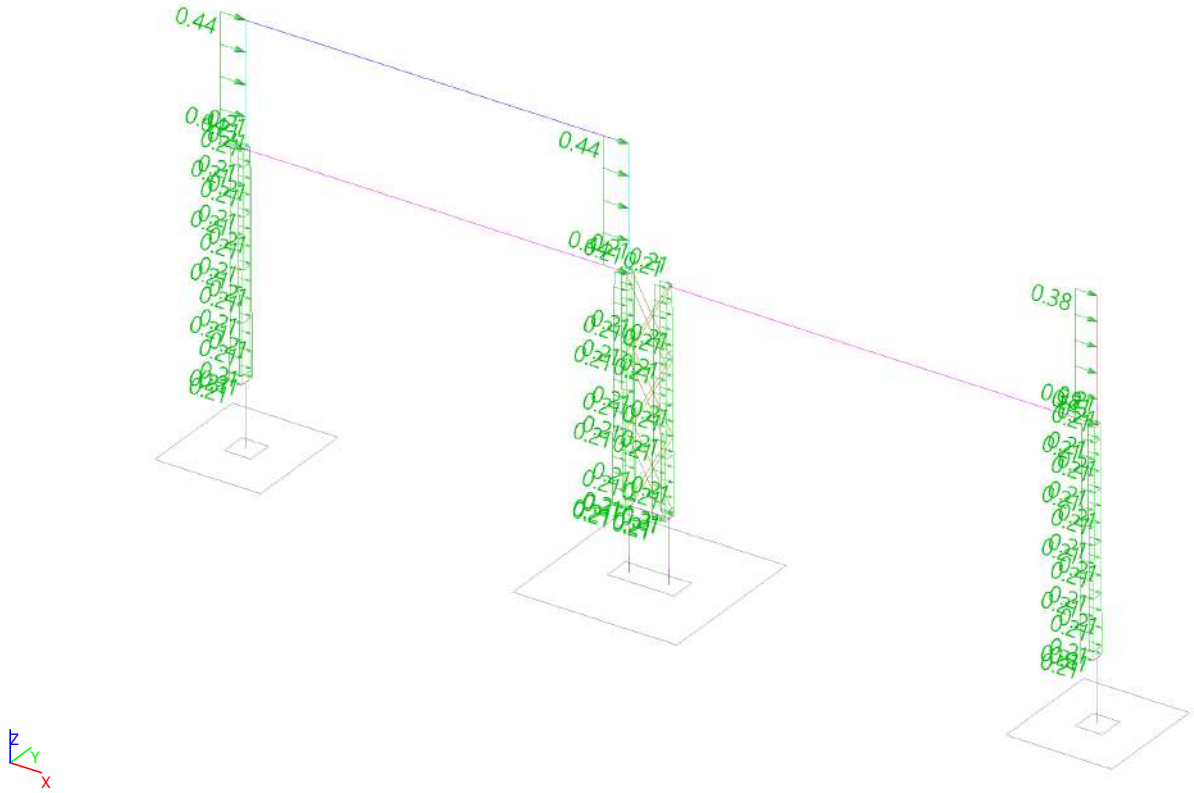
3.2. BG1: e.g. constructie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

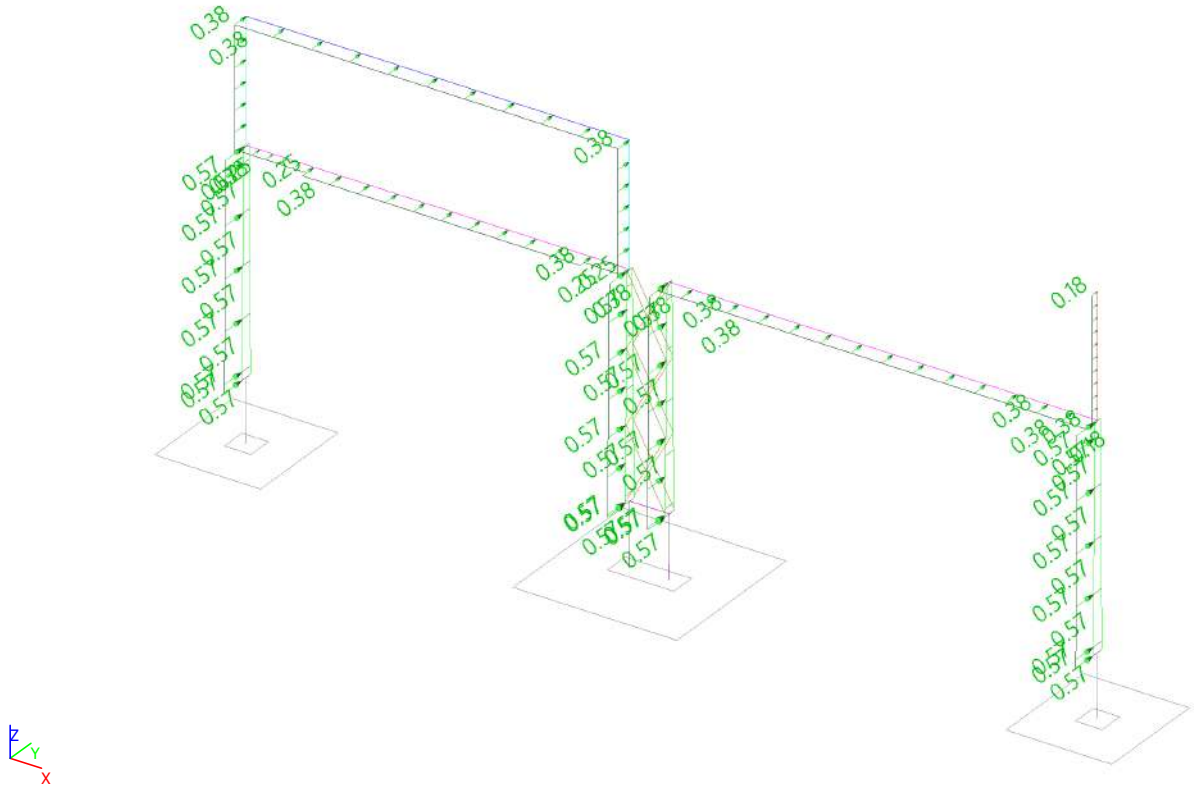
3.3. BG2: grond op poer



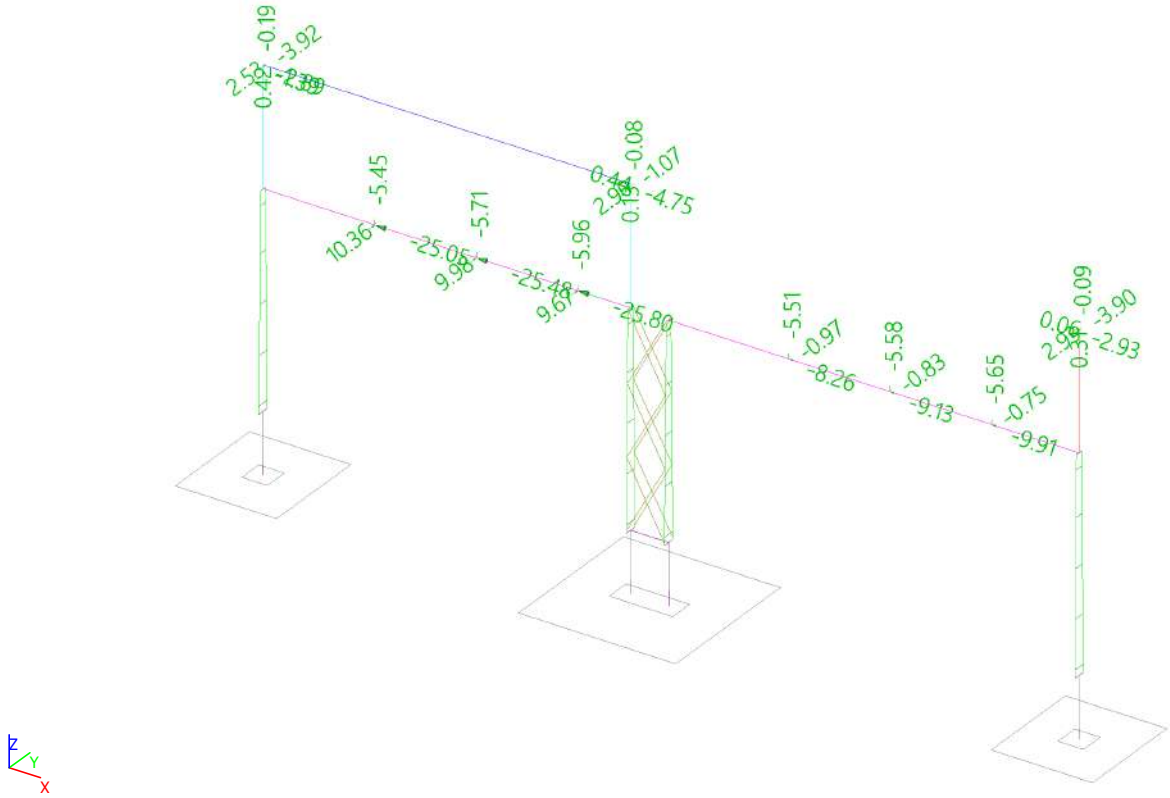
3.4. BG3: wind op constructie; X-richting



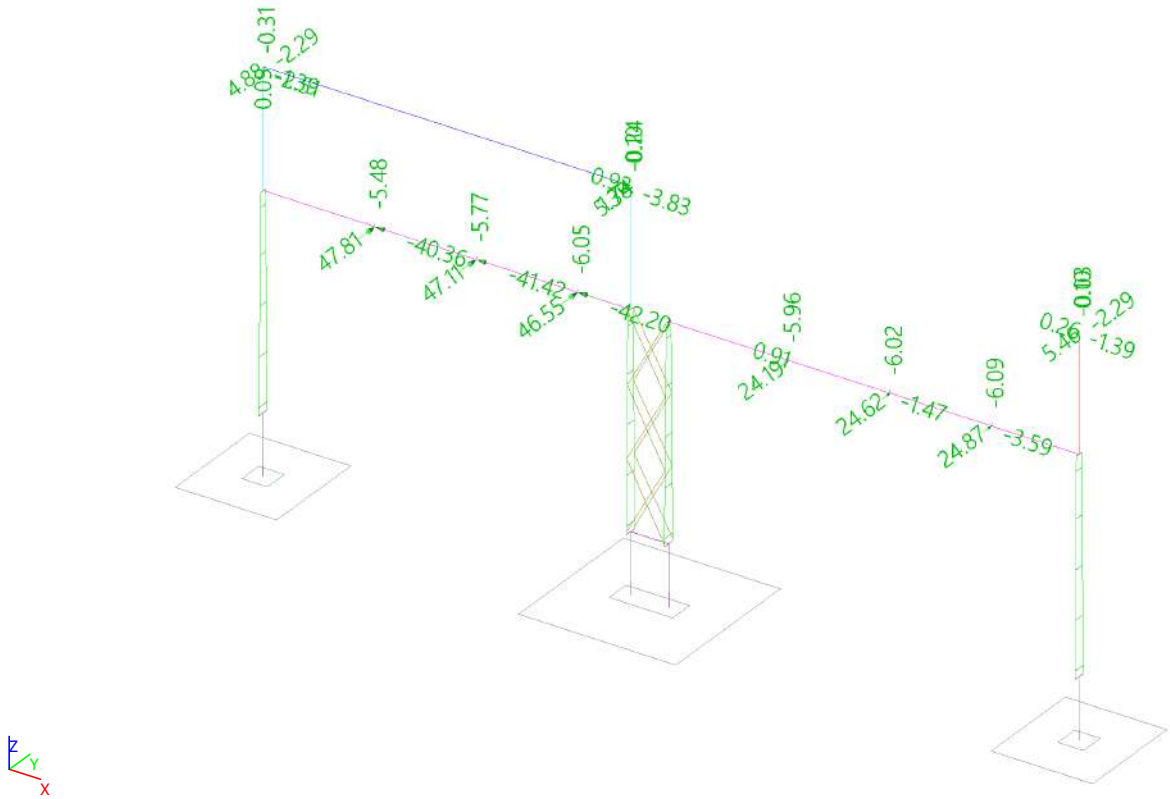
3.5. BG4: wind op constructie; Y-richting



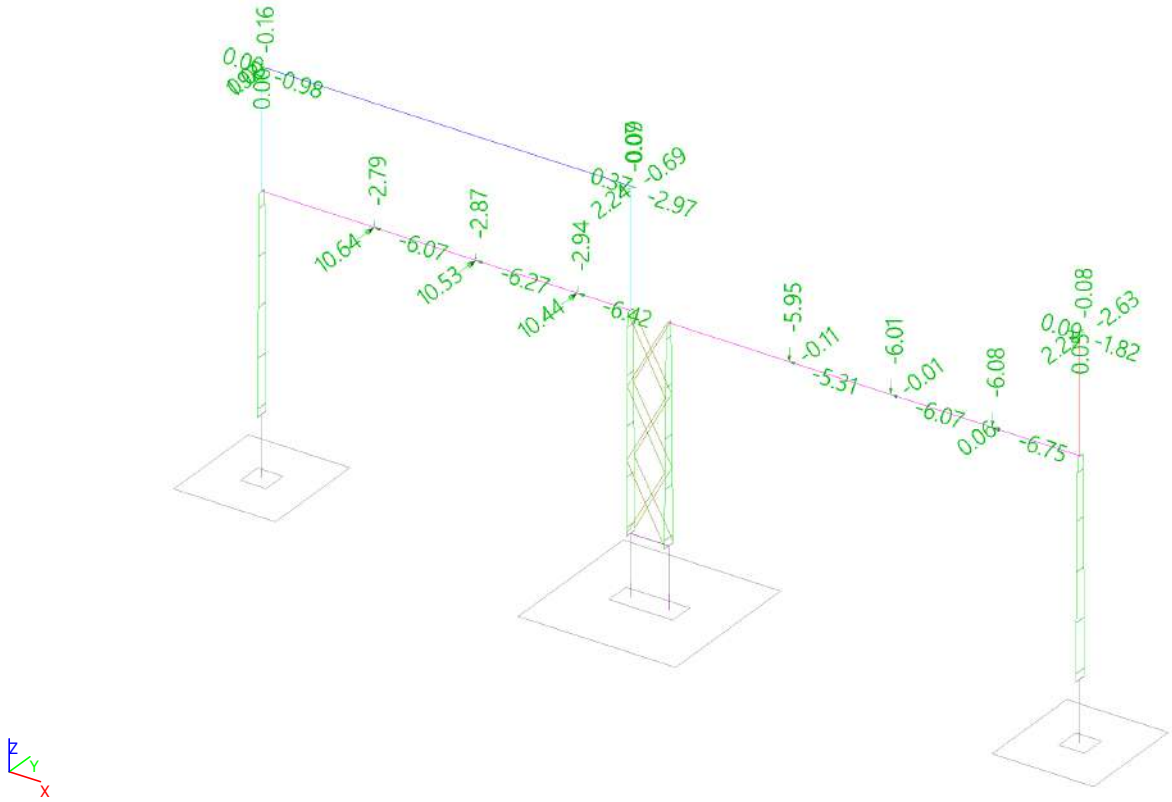
3.6. LC1001 / Totale waarde



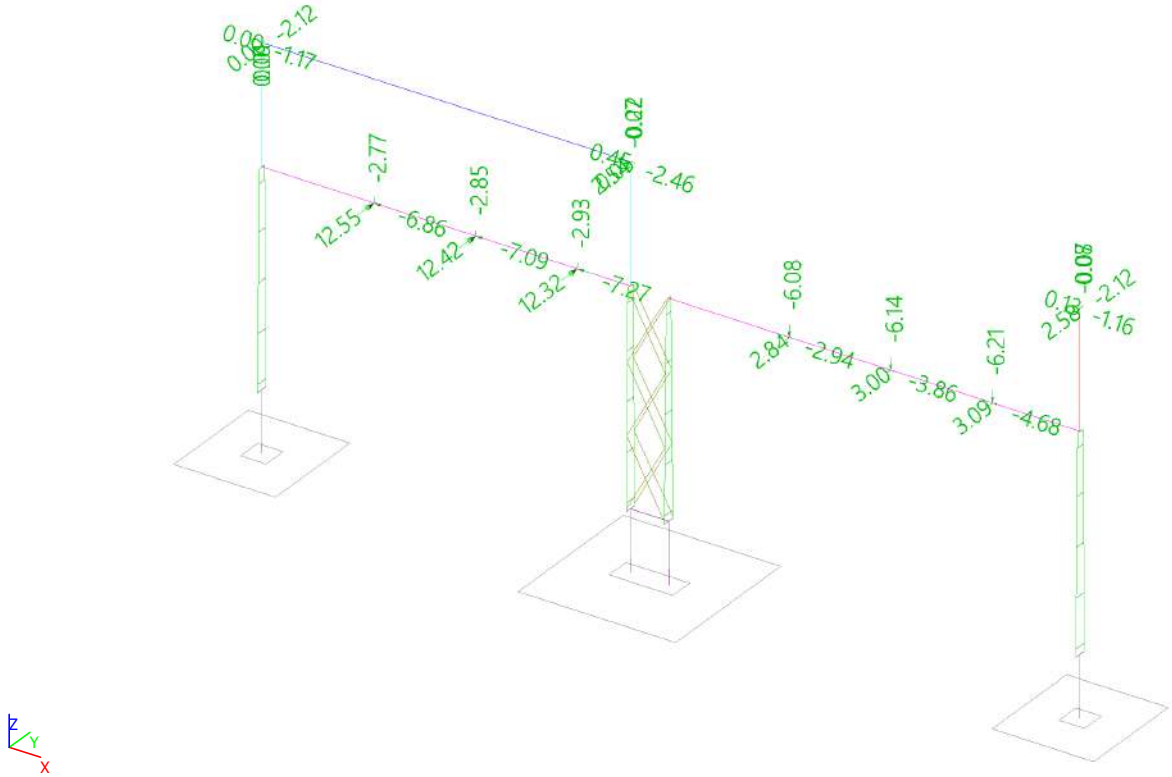
3.7. LC1080 / Totale waarde



3.8. LC1159 / Totale waarde



3.9. LC1238 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-1	Omhullend 1	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	1.40
			BG4 - wind op constructie; Y-richting	1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00
UGT-2	Omhullend 2	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	-1.40
			BG4 - wind op constructie; Y-richting	-1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00

3.11. Resultaatklasses

Naam	Omschrijving	Lijst
UGT	Sterkte en stabiliteit	UGT-1 - Omhullende - uiterst UGT-2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
Belastinggevallen	BG1
	BG3
	BG4
	BG2
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
	LC1168
	LC1169
	LC1170
	LC1171
	LC1172
	LC1173
	LC1174
	LC1175
	LC1176
	LC1177
	LC1178
	LC1179
	LC1180
	LC1181
	LC1182
	LC1183
	LC1184
	LC1185

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1186
	LC1187
	LC1188
	LC1189
	LC1190
	LC1191
	LC1192
	LC1193
	LC1194
	LC1195
	LC1196
	LC1197
	LC1198
	LC1199
	LC1200
	LC1201
	LC1202
	LC1203
	LC1204
	LC1205
	LC1206
	LC1207
	LC1208
	LC1209
	LC1210
	LC1211
	LC1212
	LC1213
	LC1214
	LC1215
	LC1216
	LC1217
	LC1218
	LC1219
	LC1220
	LC1221
	LC1222
	LC1223
	LC1224
	LC1225
	LC1226
	LC1227
	LC1228
	LC1229
	LC1230
	LC1231
	LC1232
	LC1233
	LC1234
	LC1235
	LC1236
	LC1237
	LC1238
Buigtheorie	Mindlin
Start berekening	17.06.2020 07:11
Einde berekening	17.06.2020 07:12

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	0.0	-1927.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	1927.3

	[kN]	X	Y	Z
BG BG3	last	19.9	0.0	0.0
	knoopreacties	0.0	-0.0	0.0
	lijnreactions	-1.1	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-18.8	0.0	0.0
BG BG4	last	0.0	40.1	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	-36.0	0.0
BG BG2	last	0.0	0.0	-1372.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	-0.0	1372.9
BG LC1001	last	-115.1	26.9	-33.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-2.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.8	-24.5	33.4
BG LC1002	last	-136.5	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.5	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	128.0	-203.1	36.1
BG LC1003	last	-145.5	89.5	-40.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	9.2	-8.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	136.3	-80.8	40.8
BG LC1004	last	-84.1	53.2	-37.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.3	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	78.9	-47.6	37.6
BG LC1005	last	-69.9	15.2	-33.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-1.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	65.5	-14.2	33.4
BG LC1006	last	-127.6	225.6	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-24.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.6	-201.1	36.1
BG LC1007	last	-121.0	81.7	-40.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.6	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	113.4	-74.0	40.8
BG LC1008	last	-75.2	50.9	-37.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-5.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	70.5	-45.6	37.6
BG LC1009	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1010	last	-133.4	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.0	-203.3	36.3
BG LC1011	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1012	last	-81.1	53.2	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.0	-47.6	37.9
BG LC1013	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1014	last	-133.4	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.0	-203.3	36.3
BG LC1015	last	-124.1	92.9	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.8	-9.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	116.3	-83.7	42.3
BG LC1016	last	-81.1	53.2	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.0	-47.6	37.9
BG LC1017	last	-98.6	20.1	-34.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-1.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.4	-18.4	34.7
BG LC1018	last	-134.6	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	126.2	-203.0	36.1
BG LC1019	last	-139.3	88.9	-41.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.8	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	-80.2	41.2
BG LC1020	last	-82.2	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	77.1	-47.3	37.7
BG LC1021	last	-98.6	20.1	-34.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-1.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.4	-18.4	34.7
BG LC1022	last	-134.6	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	126.2	-203.0	36.1
BG LC1023	last	-139.3	88.9	-41.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.8	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	-80.2	41.2
BG LC1024	last	-82.2	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	77.1	-47.3	37.7
BG LC1025	last	-74.3	32.0	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-3.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.7	-28.7	38.0
BG LC1026	last	-131.1	227.4	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-202.6	36.3
BG LC1027	last	-127.4	90.4	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-8.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.4	-81.5	42.3
BG LC1028	last	-78.8	52.3	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.9	-46.8	37.9
BG LC1029	last	-73.9	34.4	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.3	-30.9	38.0
BG LC1030	last	-131.0	227.9	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.8	-203.0	36.3
BG LC1031	last	-128.0	92.0	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.9	-82.9	42.3
BG LC1032	last	-78.7	52.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-47.2	37.9
BG LC1033	last	-99.6	27.9	-21.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-2.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	93.3	-25.3	21.9
BG LC1034	last	-118.6	250.1	-26.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.4	-27.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	111.2	-222.7	26.4
BG LC1035	last	-126.2	99.8	-30.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-9.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	118.3	-89.9	30.6
BG LC1036	last	-61.5	57.9	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.6	-51.6	27.8
BG LC1037	last	-54.3	16.2	-21.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-1.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.9	-15.0	21.9
BG LC1038	last	-109.7	247.8	-26.4

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-27.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	102.8	-220.7	26.4
BG LC1039	last	-101.8	92.0	-30.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-8.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	95.4	-83.1	30.6
BG LC1040	last	-52.6	55.6	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-6.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-49.6	27.8
BG LC1041	last	-69.1	50.9	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-45.4	28.0
BG LC1042	last	-115.0	251.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.8	-223.6	26.8
BG LC1043	last	-113.1	105.6	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-94.8	32.5
BG LC1044	last	-58.0	58.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.4	-52.1	28.2
BG LC1045	last	-69.1	50.9	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-45.4	28.0
BG LC1046	last	-115.0	251.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.8	-223.6	26.8
BG LC1047	last	-113.1	105.6	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-94.8	32.5
BG LC1048	last	-58.0	58.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.4	-52.1	28.2
BG LC1049	last	-79.1	15.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-1.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	74.1	-14.3	23.6
BG LC1050	last	-116.8	250.7	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.3	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	109.5	-223.2	26.5
BG LC1051	last	-119.3	99.0	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.5	-9.9	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	111.8	-89.1	31.1
BG LC1052	last	-59.2	57.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-51.0	27.9
BG LC1053	last	-79.1	15.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-1.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	74.1	-14.3	23.6
BG LC1054	last	-116.8	250.7	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.3	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	109.5	-223.2	26.5
BG LC1055	last	-119.3	99.0	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.5	-9.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	111.8	-89.1	31.1
BG LC1056	last	-59.2	57.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-51.0	27.9
BG LC1057	last	-51.7	35.2	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.5	-31.5	28.2
BG LC1058	last	-113.0	250.8	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-223.3	26.8
BG LC1059	last	-106.8	102.1	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.7	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	100.0	-91.8	32.5
BG LC1060	last	-55.6	57.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.1	-51.2	28.2
BG LC1061	last	-51.3	37.6	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.1	-33.6	28.2
BG LC1062	last	-112.9	251.3	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-27.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.8	-223.7	26.8
BG LC1063	last	-107.3	103.7	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.8	-10.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	100.6	-93.2	32.5
BG LC1064	last	-55.5	57.9	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.0	-51.6	28.2

	[kN]	X	Y	Z
BG LC1065	last	-60.7	33.4	-33.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.9	-29.9	33.7
BG LC1066	last	-61.7	35.1	-32.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.8	-31.3	32.9
BG LC1067	last	-61.7	35.1	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.8	-31.3	32.8
BG LC1068	last	-61.7	31.6	-32.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.9	-28.5	32.7
BG LC1069	last	-63.0	31.4	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.0	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	59.0	-28.1	32.8
BG LC1070	last	-62.7	31.4	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	58.8	-28.3	32.8
BG LC1071	last	-59.9	32.4	-28.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.1	-29.0	28.7
BG LC1072	last	-59.2	32.3	-28.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-28.9	28.7
BG LC1073	last	-58.6	32.2	-28.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.0	-28.9	28.6
BG LC1074	last	-51.9	33.5	-30.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.6	-30.0	30.9
BG LC1075	last	-51.9	33.4	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.7	-29.9	31.0
BG LC1076	last	-52.1	33.3	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.8	-29.8	31.1
BG LC1077	last	-80.4	30.8	-43.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.4	-27.7	43.1
BG LC1078	last	-57.5	34.0	-28.6
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.6	-3.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.9	-30.4	28.6
BG LC1079	last	-94.0	31.2	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.9	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	88.1	-28.1	36.2
BG LC1080	last	-136.0	228.0	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	127.5	-203.2	36.1
BG LC1081	last	-117.9	103.8	-37.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.4	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	110.5	-93.0	37.8
BG LC1082	last	-83.7	53.3	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	78.4	-47.7	37.7
BG LC1083	last	-67.3	24.2	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-2.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.1	-22.0	36.2
BG LC1084	last	-127.8	225.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-24.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.8	-201.3	36.1
BG LC1085	last	-100.7	98.7	-37.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-10.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.4	-88.5	37.8
BG LC1086	last	-75.5	51.2	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-5.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	70.7	-45.8	37.7
BG LC1087	last	-81.3	36.2	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.2	-32.5	38.0
BG LC1088	last	-133.2	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	124.9	-203.2	36.3
BG LC1089	last	-109.9	106.1	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-11.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	103.0	-94.9	38.8
BG LC1090	last	-80.8	53.0	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.7	-47.4	37.9
BG LC1091	last	-81.3	36.2	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-3.7	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	76.2	-32.5	38.0
BG LC1092	last	-133.2	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	124.9	-203.2	36.3
BG LC1093	last	-109.9	106.1	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-11.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	103.0	-94.9	38.8
BG LC1094	last	-80.8	53.0	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.7	-47.4	37.9
BG LC1095	last	-86.0	28.5	-36.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.4	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	80.6	-25.8	36.8
BG LC1096	last	-134.3	227.9	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.9	-203.1	36.2
BG LC1097	last	-113.6	103.4	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	106.4	-92.6	38.1
BG LC1098	last	-81.9	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.8	-47.3	37.7
BG LC1099	last	-86.0	28.5	-36.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.4	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	80.6	-25.8	36.8
BG LC1100	last	-134.3	227.9	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.9	-203.1	36.2
BG LC1101	last	-113.6	103.4	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	106.4	-92.6	38.1
BG LC1102	last	-81.9	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.8	-47.3	37.7
BG LC1103	last	-73.4	31.7	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	68.8	-28.5	38.1
BG LC1104	last	-131.1	227.4	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-202.6	36.3
BG LC1105	last	-105.8	104.3	-38.8

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-11.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	99.2	-93.3	38.8
BG LC1106	last	-78.8	52.3	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-46.8	37.9
BG LC1107	last	-73.2	33.2	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	68.6	-29.8	38.1
BG LC1108	last	-131.0	227.9	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.8	-203.0	36.3
BG LC1109	last	-106.0	105.4	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.7	-11.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	99.3	-94.3	38.8
BG LC1110	last	-78.7	52.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-47.2	37.9
BG LC1111	last	-71.7	33.9	-18.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	67.1	-30.2	18.5
BG LC1112	last	-130.5	156.6	-12.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.2	-139.7	12.5
BG LC1113	last	-100.4	79.8	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-71.2	19.3
BG LC1114	last	-68.9	46.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.5	-41.2	19.3
BG LC1115	last	-57.5	30.9	-18.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.8	-27.5	18.5
BG LC1116	last	-126.1	155.7	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	118.1	-138.9	18.0
BG LC1117	last	-91.0	77.4	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.8	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	85.2	-69.1	19.3
BG LC1118	last	-64.5	45.3	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.9	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	60.4	-40.4	19.3
BG LC1119	last	-64.9	37.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	60.7	-32.9	19.5
BG LC1120	last	-129.0	156.7	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	120.9	-139.7	18.1
BG LC1121	last	-96.0	81.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-8.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	-72.3	19.9
BG LC1122	last	-67.4	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-41.0	19.4
BG LC1123	last	-64.9	37.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	60.7	-32.9	19.5
BG LC1124	last	-129.0	156.7	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	120.9	-139.7	18.1
BG LC1125	last	-96.0	81.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-8.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	-72.3	19.9
BG LC1126	last	-67.4	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-41.0	19.4
BG LC1127	last	-66.0	31.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-27.9	18.8
BG LC1128	last	-129.4	156.5	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.2	-139.5	18.0
BG LC1129	last	-97.4	79.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	91.2	-70.6	19.5
BG LC1130	last	-67.8	45.9	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.4	-40.9	19.3
BG LC1131	last	-66.0	31.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-27.9	18.8

	[kN]	X	Y	Z
BG LC1132	last	-129.4	156.5	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.2	-139.5	18.0
BG LC1133	last	-97.4	79.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	91.2	-70.6	19.5
BG LC1134	last	-67.8	45.9	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.4	-40.9	19.3
BG LC1135	last	-59.8	33.3	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.9	-29.7	19.5
BG LC1136	last	-127.8	156.2	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.7	-139.3	18.1
BG LC1137	last	-93.5	79.9	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.5	-71.3	19.9
BG LC1138	last	-66.2	45.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-40.7	19.4
BG LC1139	last	-59.3	34.3	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-30.6	19.5
BG LC1140	last	-127.7	156.5	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.6	-139.6	18.1
BG LC1141	last	-93.4	80.7	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-8.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.4	-72.0	19.9
BG LC1142	last	-66.1	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-40.9	19.4
BG LC1143	last	-47.1	36.9	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	44.2	-32.9	26.7
BG LC1144	last	-61.9	177.5	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	58.1	-157.5	26.8
BG LC1145	last	-57.0	91.8	-27.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.5	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.4	-81.6	27.9
BG LC1146	last	-40.0	52.0	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.5	-46.3	27.5
BG LC1147	last	-30.3	33.2	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	1.9	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	28.5	-29.7	26.7
BG LC1148	last	-56.8	176.4	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-19.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.3	-156.6	26.8
BG LC1149	last	-46.2	89.0	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-9.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	43.4	-79.2	27.9
BG LC1150	last	-34.8	50.9	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.7	-45.3	27.5
BG LC1151	last	-40.1	39.0	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-34.7	27.7
BG LC1152	last	-60.3	177.6	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.6	-157.6	26.9
BG LC1153	last	-52.4	93.0	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.1	-82.7	28.4
BG LC1154	last	-38.4	51.8	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-46.0	27.6
BG LC1155	last	-40.1	39.0	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-34.7	27.7
BG LC1156	last	-60.3	177.6	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.6	-157.6	26.9
BG LC1157	last	-52.4	93.0	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.1	-82.7	28.4
BG LC1158	last	-38.4	51.8	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	36.0	-46.0	27.6
BG LC1159	last	-42.2	34.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	39.6	-30.9	27.0
BG LC1160	last	-60.8	177.4	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-157.5	26.9
BG LC1161	last	-54.2	91.2	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.8	-81.1	28.0
BG LC1162	last	-38.9	51.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.5	-46.0	27.5
BG LC1163	last	-42.2	34.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	39.6	-30.9	27.0
BG LC1164	last	-60.8	177.4	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-157.5	26.9
BG LC1165	last	-54.2	91.2	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.8	-81.1	28.0
BG LC1166	last	-38.9	51.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.5	-46.0	27.5
BG LC1167	last	-35.1	36.2	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.9	-32.3	27.7
BG LC1168	last	-58.9	177.2	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.3	-157.3	26.9
BG LC1169	last	-49.7	91.7	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.6	-81.6	28.4
BG LC1170	last	-37.1	51.4	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.8	-45.7	27.6
BG LC1171	last	-34.6	36.9	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.5	-32.9	27.7
BG LC1172	last	-58.8	177.4	-26.9

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.2	-157.5	26.9
BG LC1173	last	-49.6	92.3	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-10.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.5	-82.0	28.4
BG LC1174	last	-36.9	51.6	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.7	-45.9	27.6
BG LC1175	last	-73.8	28.5	-18.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-2.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.0	-26.0	18.3
BG LC1176	last	-132.2	148.9	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	123.8	-133.7	17.9
BG LC1177	last	-103.6	71.0	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	96.9	-64.4	19.2
BG LC1178	last	-70.4	41.4	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.5	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	65.8	-37.4	19.2
BG LC1179	last	-58.9	25.1	-18.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-2.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.1	-23.0	18.3
BG LC1180	last	-127.6	147.8	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-15.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.5	-132.7	17.9
BG LC1181	last	-93.3	68.2	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.4	-62.0	19.2
BG LC1182	last	-65.8	40.4	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.6	-36.5	19.2
BG LC1183	last	-66.2	32.6	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-29.5	19.5
BG LC1184	last	-130.5	149.0	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-133.8	18.1
BG LC1185	last	-98.4	73.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-7.0	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	92.1	-66.1	19.9
BG LC1186	last	-68.6	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.2	-37.3	19.4
BG LC1187	last	-66.2	32.6	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-29.5	19.5
BG LC1188	last	-130.5	149.0	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-133.8	18.1
BG LC1189	last	-98.4	73.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.1	-66.1	19.9
BG LC1190	last	-68.6	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.2	-37.3	19.4
BG LC1191	last	-68.0	26.4	-18.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.6	-24.1	18.7
BG LC1192	last	-131.0	148.8	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.7	-133.5	18.0
BG LC1193	last	-100.4	70.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-64.1	19.4
BG LC1194	last	-69.2	41.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-37.2	19.3
BG LC1195	last	-68.0	26.4	-18.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.6	-24.1	18.7
BG LC1196	last	-131.0	148.8	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.7	-133.5	18.0
BG LC1197	last	-100.4	70.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-64.1	19.4
BG LC1198	last	-69.2	41.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-37.2	19.3

	[kN]	X	Y	Z
BG LC1199	last	-61.0	29.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.1	-26.4	19.5
BG LC1200	last	-129.3	148.5	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.1	-133.3	18.1
BG LC1201	last	-95.7	72.0	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.6	-65.1	19.9
BG LC1202	last	-67.5	40.9	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.1	-37.0	19.4
BG LC1203	last	-60.7	30.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.7	-27.3	19.5
BG LC1204	last	-129.2	148.8	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.0	-133.6	18.1
BG LC1205	last	-95.8	72.8	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.6	-65.8	19.9
BG LC1206	last	-67.4	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-37.3	19.4
BG LC1207	last	-47.9	31.8	-26.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.0	-2.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	45.0	-29.0	26.3
BG LC1208	last	-60.8	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-152.0	26.5
BG LC1209	last	-57.9	83.6	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.3	-75.2	27.4
BG LC1210	last	-40.1	47.5	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.6	-42.8	27.3
BG LC1211	last	-30.6	27.8	-26.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	1.9	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	28.7	-25.4	26.3
BG LC1212	last	-55.5	169.1	-26.5
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.4	-18.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.0	-150.9	26.5
BG LC1213	last	-46.5	80.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	43.6	-72.4	27.4
BG LC1214	last	-34.8	46.3	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-4.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.6	-41.7	27.3
BG LC1215	last	-40.2	34.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-31.4	27.5
BG LC1216	last	-59.0	170.5	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.4	-152.1	26.6
BG LC1217	last	-52.6	85.4	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-76.7	28.1
BG LC1218	last	-38.3	47.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-42.6	27.4
BG LC1219	last	-40.2	34.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-31.4	27.5
BG LC1220	last	-59.0	170.5	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.4	-152.1	26.6
BG LC1221	last	-52.6	85.4	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-76.7	28.1
BG LC1222	last	-38.3	47.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-42.6	27.4
BG LC1223	last	-43.0	30.1	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.7	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	40.4	-27.3	26.7
BG LC1224	last	-59.7	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.0	-151.9	26.5
BG LC1225	last	-55.1	83.3	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-8.3	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	51.7	-75.0	27.6
BG LC1226	last	-39.0	47.2	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.6	-42.5	27.3
BG LC1227	last	-43.0	30.1	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.7	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	40.4	-27.3	26.7
BG LC1228	last	-59.7	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.0	-151.9	26.5
BG LC1229	last	-55.1	83.3	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	51.7	-75.0	27.6
BG LC1230	last	-39.0	47.2	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.6	-42.5	27.3
BG LC1231	last	-35.2	32.1	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.2	-3.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	33.0	-29.1	27.5
BG LC1232	last	-57.7	170.1	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.1	-151.7	26.6
BG LC1233	last	-49.8	84.2	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	-75.7	28.1
BG LC1234	last	-37.0	46.9	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.7	-42.2	27.4
BG LC1235	last	-34.8	32.9	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.7	-29.7	27.5
BG LC1236	last	-57.5	170.3	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.0	-151.9	26.6
BG LC1237	last	-49.9	84.8	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	-76.2	28.1
BG LC1238	last	-36.9	47.1	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.6	-42.4	27.4

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC1	K6	S246	**-1.40**	-0.02	**49.62**	1.04	**-1.81**	**0.05**
UGT-2/2	FC1	K6	S246	**7.35**	-60.60	61.10	518.61	19.71	-1.28
UGT-1/3	FC1	K6	S246	4.05	**-81.35**	57.90	**691.56**	14.08	-1.25
UGT-2/4	FC1	K6	S246	1.17	**16.26**	50.33	**-130.78**	0.91	-0.01
UGT-2/5	FC1	K6	S246	6.74	-25.98	**64.09**	202.16	**20.87**	-0.77
UGT-2/6	FC1	K6	S246	6.67	-64.88	58.66	557.72	17.23	**-1.32**

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC2	K8	S244	**24.30**	-0.13	**-41.80**	0.28	**-10.17**	-0.13
UGT-2/5	FC2	K8	S244	**120.41**	-49.86	**939.14**	321.00	**208.18**	10.49
UGT-1/7	FC2	K8	S244	98.77	**-122.90**	747.94	715.11	165.28	23.29
UGT-2/4	FC2	K8	S244	36.07	**17.54**	54.97	**-121.62**	11.55	**-2.60**
UGT-1/3	FC2	K8	S244	90.57	-121.15	653.25	**871.41**	144.19	20.62
UGT-1/8	FC2	K8	S244	98.77	-122.74	745.59	716.52	164.77	**23.31**

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	**-44.93**	0.16	**141.63**	0.33	**-30.99**	0.20
UGT-2/5	FC3	K438	S250	**48.88**	-4.86	**-821.83**	149.53	**184.70**	-0.80
UGT-1/9	FC3	K438	S250	22.77	**-43.27**	-552.54	505.37	124.32	-3.88
UGT-2/10	FC3	K438	S250	27.87	**24.87**	-638.09	119.67	142.86	6.28
UGT-2/4	FC3	K438	S250	-33.86	10.20	44.43	**-77.18**	-9.10	1.02
UGT-1/3	FC3	K438	S250	21.74	-43.23	-541.52	**505.57**	121.86	-3.84
UGT-1/11	FC3	K438	S250	-1.81	-42.07	-278.25	397.15	63.14	**-4.61**
UGT-2/12	FC3	K438	S250	27.22	24.84	-630.94	119.38	141.26	**6.29**

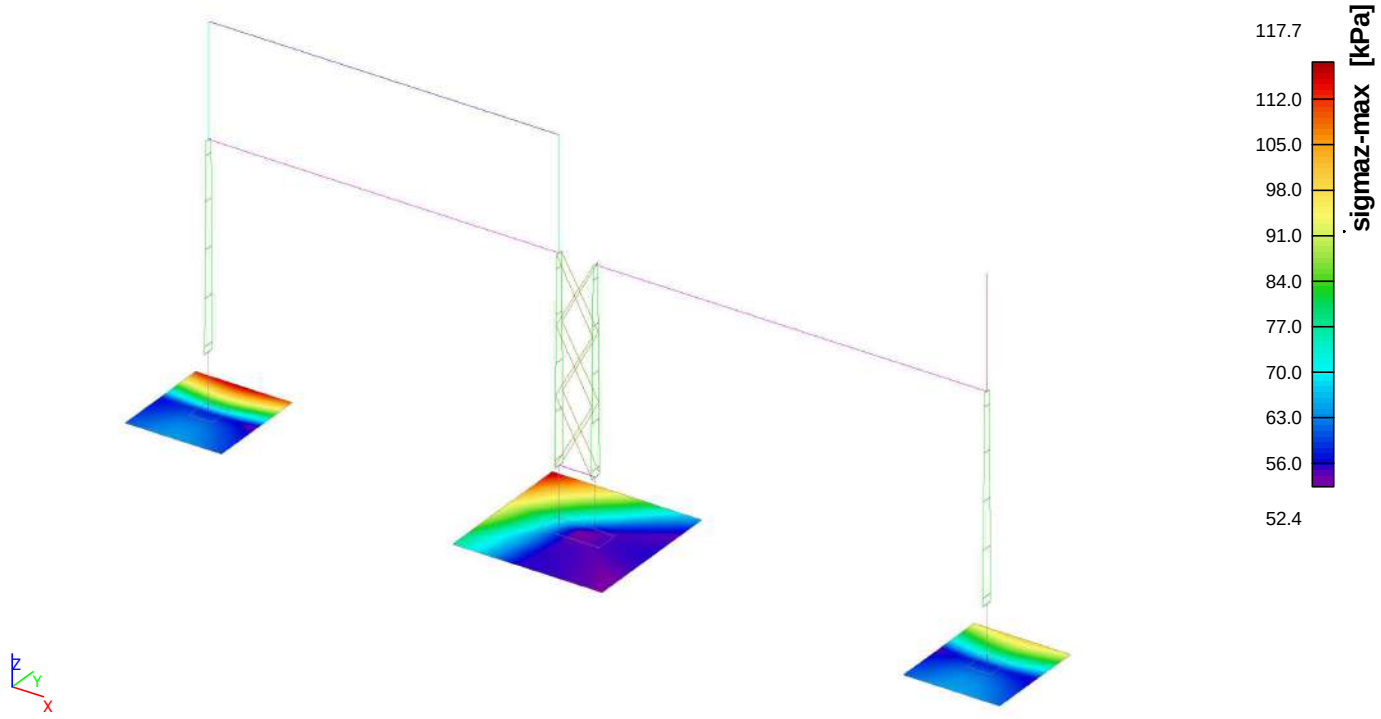
5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/13	FC4	K513	S322	**-8.17**	-15.03	52.51	124.66	0.57	0.18
UGT-2/14	FC4	K513	S322	**1.47**	-5.36	41.80	69.83	13.41	0.04
UGT-1/9	FC4	K513	S322	-3.42	**-61.67**	49.57	**507.96**	7.95	**0.53**
UGT-2/15	FC4	K513	S322	-4.67	**18.22**	50.98	-134.97	4.95	**-0.05**
UGT-2/16	FC4	K513	S322	-0.22	4.44	**41.45**	-57.62	10.93	0.08
UGT-1/17	FC4	K513	S322	-7.32	0.62	**53.88**	-5.69	3.28	0.01
UGT-2/18	FC4	K513	S322	-2.42	17.01	41.88	**-139.75**	7.76	0.04
UGT-1/1	FC4	K513	S322	-5.81	-0.01	43.02	0.09	**-3.82**	0.00
UGT-2/5	FC4	K513	S322	-2.69	-8.80	51.83	61.09	**14.38**	0.17

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren; UGT



7. Staafkrachten

7.1. Staafkrachten kolom INP45; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S276	Kolom INP45 - INP450	80	UGT-1/19	**-1707.72**	1.46	-22.51	1.73	-3.59	11.15
S266	Kolom INP45 - INP450	0	UGT-1/19	**1233.17**	3.98	-61.83	-1.09	-0.86	10.49
S266	Kolom INP45 - INP450	80	UGT-2/20	508.28	**-18.55**	-44.90	-1.17	-4.88	-5.67
S265	Kolom INP45 - INP450	80	UGT-1/19	1027.65	**73.74**	-36.60	0.35	-2.42	36.61
S266	Kolom INP45 - INP450	80	UGT-2/21	758.59	-15.97	**-78.10**	-1.63	-6.52	-3.85
S264	Kolom INP45 - INP450	2360	UGT-1/3	341.35	16.16	**23.76**	-0.95	58.08	-18.95
S266	Kolom INP45 - INP450	0	UGT-2/21	758.69	-15.98	-78.08	**-1.63**	-0.27	-2.58
S276	Kolom INP45 - INP450	0	UGT-2/5	-935.75	-15.93	-35.25	**3.69**	-1.24	-4.46
S261	Kolom INP45 - INP450	0	UGT-1/19	642.50	38.67	21.92	0.47	**-59.16**	-18.43
S262	Kolom INP45 - INP450	0	UGT-1/3	670.85	16.49	-22.12	0.06	**67.49**	-5.22
S282	Kolom INP45 - INP450	565	UGT-1/3	-506.69	51.15	9.27	0.90	-10.96	**-45.58**
S283	Kolom INP45 - INP450	1499	UGT-1/3	-938.23	48.70	-1.58	0.57	8.98	**48.27**

7.2. Staafkrachten kolom DIE36; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S329, S330
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S329	Kolom DIE36 - HEA360	0	UGT-2/5	**-17.26**	**-20.51**	-3.32	0.17	15.67	**50.28**
S330	Kolom DIE36 - HEA360	4651	UGT-2/5	**-6.38**	0.65	-2.65	-0.19	0.02	-0.02
S330	Kolom DIE36 - HEA360	0	UGT-1/22	-16.30	**11.31**	1.98	-0.07	-9.08	-27.43
S329	Kolom DIE36 - HEA360	4600	UGT-2/23	-10.17	-13.37	**-12.87**	0.19	0.63	-31.80
S330	Kolom DIE36 - HEA360	0	UGT-1/9	-13.63	6.05	**14.05**	-0.34	**-59.30**	-16.21
S330	Kolom DIE36 - HEA360	0	UGT-2/24	-13.64	6.12	1.37	**-0.41**	-11.83	-16.51
S329	Kolom DIE36 - HEA360	0	UGT-2/24	-15.55	-11.50	-2.93	**0.39**	8.09	27.47
S329	Kolom DIE36 - HEA360	0	UGT-2/25	-14.98	-11.19	-11.21	0.14	**46.35**	27.32
S329	Kolom DIE36 - HEA360	4651	UGT-2/5	-10.91	-15.05	-8.16	0.17	-0.02	**-38.30**

7.3. Staafkrachten ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S33, S40, S404, S406
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S40	Ligger DIE34 - HE340A	0	UGT-2/26	**-39.47**	24.54	-1.20	-0.02	-0.41	-53.35
S404	Ligger DIE34 - HE340A	0	UGT-2/2	**137.35**	-19.05	-83.41	0.01	94.87	-1.04
S406	Ligger DIE34 - HE340A	1875	UGT-1/17	-1.09	**-26.87**	0.54	-0.01	-0.01	-44.27
S40	Ligger DIE34 - HE340A	0	UGT-2/5	-36.17	**26.21**	10.01	-0.02	-4.42	-57.97
S404	Ligger DIE34 - HE340A	1440	UGT-1/3	119.13	-18.60	**-92.43**	0.01	**-28.71**	-29.76
S33	Ligger DIE34 - HE340A	0	UGT-1/3	7.42	18.21	**64.95**	0.01	-1.60	-47.18
S40	Ligger DIE34 - HE340A	0	UGT-2/27	-2.65	16.41	-4.32	**-0.06**	0.09	-34.38
S33	Ligger DIE34 - HE340A	0	UGT-2/28	7.77	15.89	33.04	**0.04**	-0.98	-38.95
S33	Ligger DIE34 - HE340A	2560	UGT-1/3	7.42	15.18	64.06	0.01	**163.53**	-4.44
S33	Ligger DIE34 - HE340A	0	UGT-2/5	18.67	22.67	29.30	0.02	-0.74	**-65.21**
S406	Ligger DIE34 - HE340A	0	UGT-2/5	-15.40	-22.35	-11.40	-0.02	21.20	**17.19**

7.4. Staafkrachten ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S403
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/1	**1.08**	8.40	0.02	0.00	-0.09	3.16
S403	Ligger DIE34+strippen - I + 2 PLud	9858	UGT-2/2	**137.35**	-17.85	-83.41	0.01	148.42	10.81
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/17	63.15	**-23.00**	-17.77	0.00	20.09	-11.35
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/5	18.67	**19.64**	29.30	0.02	74.28	-11.05
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/3	119.13	-16.90	**-91.92**	0.01	104.02	-4.20
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/3	7.42	15.18	**64.06**	0.01	163.53	-4.44
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/31	7.97	12.73	16.10	**-0.01**	41.98	-0.39
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/28	7.77	12.86	33.94	**0.04**	84.76	-2.15
S403	Ligger DIE34+strippen - I + 2 PLud	4258	UGT-2/4	6.31	0.86	-0.11	0.01	**-12.54**	21.98
S403	Ligger DIE34+strippen - I + 2 PLud	5858	UGT-1/3	43.71	0.30	10.21	0.01	**326.71**	36.68
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/22	49.37	-20.02	-16.44	0.00	18.64	**-12.13**
S403	Ligger DIE34+strippen - I + 2 PLud	5858	UGT-2/5	52.47	2.46	5.07	0.02	149.00	**46.98**

7.5. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S405
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/26	**-39.47**	21.44	-1.20	-0.02	-3.56	7.00
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/50	**7.34**	18.91	39.56	0.02	89.08	9.71
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/17	-1.09	**-24.65**	0.54	-0.01	-1.02	4.03
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/5	-36.17	**23.10**	10.01	-0.02	21.85	6.75
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/9	-3.95	-20.39	**-48.88**	0.02	92.06	6.29
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/9	-0.12	19.27	**43.22**	0.02	99.22	8.84
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/27	-2.65	13.30	-2.92	**-0.06**	-9.41	4.62
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/52	-9.06	21.04	37.39	**0.03**	87.21	11.13
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-2/15	-11.77	1.52	-0.79	-0.02	**-39.20**	72.34
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-1/9	-3.67	1.15	11.70	0.02	**240.76**	67.09
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/1	1.58	-13.94	-0.01	0.00	0.02	**-1.73**
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-2/5	-30.75	3.11	3.10	-0.02	55.48	**80.97**

7.6. Staafkrachten ligger DIN28; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S331
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S331	Ligger DIN28 - HEB280	0	UGT-2/29	**-9.76**	9.22	-3.86	0.01	0.10	-24.95
S331	Ligger DIN28 - HEB280	14500	UGT-1/30	**-7.46**	-8.43	-3.86	0.00	-0.03	-18.47
S331	Ligger DIN28 - HEB280	14500	UGT-1/1	-7.46	**-8.72**	0.00	0.00	0.00	-20.58
S331	Ligger DIN28 - HEB280	0	UGT-2/5	-9.61	**11.08**	0.00	0.02	0.17	**-38.30**
S331	Ligger DIN28 - HEB280	14500	UGT-1/31	-8.90	-7.96	**-3.86**	-0.01	0.04	-15.34
S331	Ligger DIN28 - HEB280	14500	UGT-2/32	-9.02	-7.82	**3.86**	0.04	0.28	-14.28
S331	Ligger DIN28 - HEB280	0	UGT-1/31	-8.90	8.91	3.86	**-0.01**	0.07	-22.22
S331	Ligger DIN28 - HEB280	0	UGT-2/32	-9.02	9.05	-3.85	**0.04**	0.22	-23.23
S331	Ligger DIN28 - HEB280	7250	UGT-2/4	-7.48	0.02	0.00	0.00	**-13.95**	12.08
S331	Ligger DIN28 - HEB280	7250	UGT-1/3	-8.22	0.95	0.00	0.01	**14.33**	11.70
S331	Ligger DIN28 - HEB280	9425	UGT-2/5	-9.61	0.11	0.00	0.02	0.18	**14.44**

7.7. Staafkrachten koppelplaat; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S392	Plaat 2x14x200 - Rechthoek	0	UGT-2/5	**-19.90**	0.69	-3.70	-0.08	0.25	0.09
S402	Plaat 2x14x200 - Rechthoek	0	UGT-2/21	**40.07**	-1.59	-80.70	-0.10	14.45	0.65
S396	Plaat 2x14x200 - Rechthoek	0	UGT-1/33	-2.05	**-6.07**	-365.68	-0.42	42.03	0.82
S390	Plaat 2x14x200 - Rechthoek	0	UGT-2/5	-0.12	**4.38**	-27.58	-0.08	3.88	-0.72
S396	Plaat 2x14x200 - Rechthoek	187	UGT-1/3	-2.00	-6.06	**-366.65**	-0.42	-26.29	-0.31
S364	Plaat 2x14x200 - Rechthoek	0	UGT-2/15	0.71	0.01	**53.43**	0.01	-4.97	0.00
S394	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	5.95	-0.46	-263.68	**-0.70**	22.96	-0.08
S384	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.67	1.51	-134.59	**0.76**	9.54	-0.07
S400	Plaat 2x14x200 - Rechthoek	277	UGT-1/3	1.18	-5.07	-271.87	0.04	**-32.58**	-0.19
S398	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.35	-5.24	-324.51	-0.07	**43.09**	1.04
S390	Plaat 2x14x200 - Rechthoek	0	UGT-2/21	-0.23	3.91	0.69	-0.20	0.00	**-1.09**
S400	Plaat 2x14x200 - Rechthoek	0	UGT-2/21	1.55	-5.39	-221.41	-0.10	34.84	**1.59**

7.8. Staafkrachten diagonaal; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S268	Diagonaal UPE14 - UPE140	0	UGT-2/21	**-180.49**	0.00	0.00	0.00	0.00	0.00
S271	Diagonaal UPE14 - UPE140	3142	UGT-1/8	**257.94**	0.00	0.00	0.00	0.00	0.00
S235	Diagonaal UPE14 - UPE140	0	UGT-1/34	-2.62	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.9. Staafkrachten bliksempiek; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S332
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S332	Bliksempiek-1 - Koker fl	0	UGT-1/35	**-3.77**	-3.18	0.10	0.00	-0.47	11.94
S332	Bliksempiek-1 - Koker fl	4651	UGT-1/36	**0.42**	3.61	-2.77	0.00	0.00	0.00
S332	Bliksempiek-1 - Koker fl	0	UGT-1/8	-2.81	**-6.63**	0.26	0.00	-1.21	**27.82**
S332	Bliksempiek-1 - Koker fl	4600	UGT-2/23	-0.14	**9.06**	-3.81	0.00	0.19	-0.46
S332	Bliksempiek-1 - Koker fl	0	UGT-2/5	-3.11	2.60	**-7.80**	0.00	**30.53**	-12.38
S332	Bliksempiek-1 - Koker fl	0	UGT-1/37	-2.81	-5.46	**2.77**	0.00	**-7.12**	25.09
S332	Bliksempiek-1 - Koker fl	0	UGT-1/9	-2.81	-5.13	-0.53	**0.00**	2.48	20.86
S332	Bliksempiek-1 - Koker fl	0	UGT-2/18	-2.70	6.09	-2.07	0.00	9.62	**-25.58**

7.10. Staafkrachten betonopstort links; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer boven-IA - Rechthoek	1600	UGT-2/5	**-286.86**	22.23	-6.12	-0.77	-31.29	241.50
S246	Poer boven-IA - Rechthoek	0	UGT-1/1	**-49.62**	0.02	**1.40**	**0.05**	1.81	1.04
S246	Poer boven-IA - Rechthoek	0	UGT-2/4	-50.33	**-16.26**	-1.17	-0.01	-0.91	-130.78
S246	Poer boven-IA - Rechthoek	0	UGT-1/3	-57.90	**81.35**	-4.05	-1.25	-14.08	691.56
S246	Poer boven-IA - Rechthoek	0	UGT-2/2	-61.10	60.60	**-7.35**	-1.28	-19.71	518.61
S246	Poer boven-IA - Rechthoek	0	UGT-2/6	-58.66	64.88	-6.67	**-1.32**	-17.23	557.72
S246	Poer boven-IA - Rechthoek	2000	UGT-2/2	-283.87	51.20	-6.71	-1.28	**-33.78**	630.46
S246	Poer boven-IA - Rechthoek	2000	UGT-1/1	-272.39	0.00	1.31	0.05	**4.52**	1.06
S246	Poer boven-IA - Rechthoek	2000	UGT-2/4	-273.10	-13.86	-1.10	-0.01	-3.18	**-160.91**
S246	Poer boven-IA - Rechthoek	2000	UGT-1/3	-280.67	68.79	-3.65	-1.25	-21.78	**841.75**

7.11. Staafkrachten betonopstort midden-links; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/5	**-1072.31**	48.08	-115.75	-4.32	-79.32	391.92
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**41.80**	0.13	**-24.30**	-0.13	**10.17**	0.28
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-54.97	**-17.54**	-36.07	-2.60	-11.55	-121.62
S244	Poer onder-IV - Rechthoek	0	UGT-1/7	-747.94	**122.90**	-98.77	23.29	-165.28	715.11
S244	Poer onder-IV - Rechthoek	0	UGT-2/5	-939.14	49.86	**-120.41**	10.49	-208.18	321.00
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	-786.42	115.96	-87.45	**-15.27**	-58.88	1043.32
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	-745.59	122.74	-98.77	**23.31**	-164.77	716.52
S244	Poer onder-IV - Rechthoek	360	UGT-2/5	-956.73	49.86	-120.41	10.49	**-251.53**	338.94
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-188.15	-16.76	-36.06	2.59	-41.75	**-152.53**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	-786.42	115.96	-87.45	-15.27	-90.36	**1085.07**

7.12. Staafkrachten betonopstort midden-rechts; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-274.81**	-0.17	44.44	0.15	34.73	0.10
S250	Poer onder-IV - Rechthoek	0	UGT-2/5	**821.83**	4.86	**-48.88**	-0.80	-184.70	149.53
S250	Poer onder-IV - Rechthoek	1440	UGT-2/10	504.92	**-26.83**	-24.22	-1.35	-8.01	82.90
S250	Poer onder-IV - Rechthoek	0	UGT-1/9	552.54	**43.27**	-22.77	-3.88	-124.32	505.37
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-141.63	-0.16	**44.93**	0.20	30.99	0.33
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	278.25	42.07	1.81	**-4.61**	-63.14	397.15
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	408.34	38.29	-18.56	**8.70**	-7.38	565.40
S250	Poer onder-IV - Rechthoek	360	UGT-2/5	804.24	4.86	-48.88	-0.80	**-202.29**	151.28
S250	Poer onder-IV - Rechthoek	1080	UGT-1/1	-199.11	-0.16	44.70	0.17	**53.73**	0.15
S250	Poer onder-IV - Rechthoek	1800	UGT-2/15	183.95	-17.47	2.58	-3.03	7.92	**-95.46**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	408.34	38.29	-18.56	8.70	-14.06	**579.18**

7.13. Staafkrachten betonopstort rechts; UGT globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer boven-IA - Rechthoek	1600	UGT-1/17	**-276.65**	-0.52	7.06	0.01	8.28	-6.63
S322	Poer boven-IA - Rechthoek	0	UGT-2/16	**-41.45**	-4.44	0.22	0.08	-10.93	-57.62
S322	Poer boven-IA - Rechthoek	0	UGT-2/15	-50.98	**-18.22**	4.67	**-0.05**	-4.95	-134.97
S322	Poer boven-IA - Rechthoek	0	UGT-1/9	-49.57	**61.67**	3.42	**0.53**	-7.95	507.96
S322	Poer boven-IA - Rechthoek	0	UGT-2/14	-41.80	5.36	**-1.47**	0.04	-13.41	69.83
S322	Poer boven-IA - Rechthoek	0	UGT-1/13	-52.51	15.03	**8.17**	0.18	-0.57	124.66
S322	Poer boven-IA - Rechthoek	2000	UGT-2/14	-264.57	4.20	-1.19	0.04	**-16.06**	79.39
S322	Poer boven-IA - Rechthoek	2000	UGT-1/38	-275.13	-2.07	7.55	0.01	**17.32**	-29.14
S322	Poer boven-IA - Rechthoek	2000	UGT-2/18	-264.65	-14.45	2.44	0.04	-2.91	**-171.22**
S322	Poer boven-IA - Rechthoek	2000	UGT-1/9	-272.34	52.38	3.40	0.53	-1.13	**622.06**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S275	2532	UGT-1/3	**-327.6**		0.9	**327.6**	0.0
S2	0	UGT-1/19		115.2	5.5	115.6	**0.0**
S248	0	UGT-1/3	-134.2		2.1	134.2	0.0
S4	2532	UGT-1/3		**273.4**	0.8	273.4	0.0
S262	0	UGT-1/9		104.6	**0.6**	104.6	0.0
S264	565	UGT-1/9		12.2	**18.9**	34.9	0.0
S284	1463	UGT-1/3	-13.7		14.6	**28.7**	0.0

8.2. Von Mises spanningen kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S329, S330
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S329	0	UGT-2/20	**-108.9**	2.2	**109.0**	**0.0**
S330	3067	UGT-1/43	**-18.2**	2.5	18.7	0.0
S330	3833	UGT-1/1	-27.8	**0.0**	27.8	0.0
S329	3067	UGT-1/8	-22.9	**3.9**	23.9	0.0
S330	3067	UGT-1/43	-18.2	2.5	**18.7**	0.0

8.3. Von Mises spanningen ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S33, S40, S404, S406
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S40	0	UGT-2/5	**-122.3**		0.3	122.3	0.0
S33	0	UGT-2/5		**133.4**	0.2	**133.4**	**0.0**
S404	1440	UGT-1/17		100.2	**0.0**	100.2	0.0
S406	937	UGT-1/53	-62.9		**0.3**	62.9	0.0
S40	1750	UGT-1/19	-54.0		0.2	**54.0**	0.0

8.4. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S403
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S403	0	UGT-1/8	63.6	0.0	63.6	**0.0**
S403	10500	UGT-1/3	**31.0**	29.1	59.2	0.0
S403	5858	UGT-1/44	**161.7**	0.0	161.7	0.0
S403	9858	UGT-2/14	71.3	**0.0**	71.3	0.0
S403	10500	UGT-1/3	31.0	**29.1**	59.2	0.0
S403	10500	UGT-1/3	31.0	29.1	**59.2**	0.0
S403	5858	UGT-1/44	161.7	0.0	**161.7**	0.0

8.5. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S405
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S405	6121	UGT-1/9	**-131.6**		0.0	131.6	0.0
S405	0	UGT-1/3		42.2	0.0	42.2	**0.0**
S405	2121	UGT-1/9	-98.5		0.0	98.5	0.0
S405	2121	UGT-1/3		**98.4**	0.0	98.4	0.0
S405	10910	UGT-1/19	-62.1		**0.0**	62.1	0.0
S405	2121	UGT-1/9	-98.5		**0.0**	98.5	0.0
S405	11700	UGT-1/19	-38.3		0.0	**38.3**	0.0
S405	6121	UGT-1/9	-131.6		0.0	**131.6**	0.0

8.6. Von Mises spanningen ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S331
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S331	0	UGT-2/5	**-82.2**	**0.2**	**82.2**	**0.0**
S331	3625	UGT-1/47	**-18.4**	0.2	18.4	0.0
S331	13775	UGT-1/1	-31.5	**0.0**	31.5	0.0
S331	3625	UGT-1/47	-18.4	0.2	**18.4**	0.0

8.7. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S398	0	UGT-1/3	**-270.6**		0.0	270.6	0.0
S351	0	UGT-1/3		1.4	55.8	96.6	**0.0**
S353	0	UGT-1/3	-162.3		0.0	162.3	0.0
S400	0	UGT-1/44		**279.0**	0.0	**279.0**	0.0
S400	277	UGT-1/3		181.8	**0.0**	181.8	0.0
S396	187	UGT-1/3	-12.3		**107.0**	185.8	0.0
S370	161	UGT-1/9		0.6	14.8	**25.6**	0.0

8.8. Von Mises spanningen diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S268	0	UGT-2/21	**-98.1**		0.0	98.1	0.0
S267	0	UGT-2/21		88.3	0.0	88.3	0.0
S235	0	UGT-2/21	-75.0		**0.0**	75.0	**0.0**
S271	3142	UGT-1/8		**140.2**	0.0	**140.2**	0.0
S279	0	UGT-2/5		19.7	0.0	**19.7**	0.0

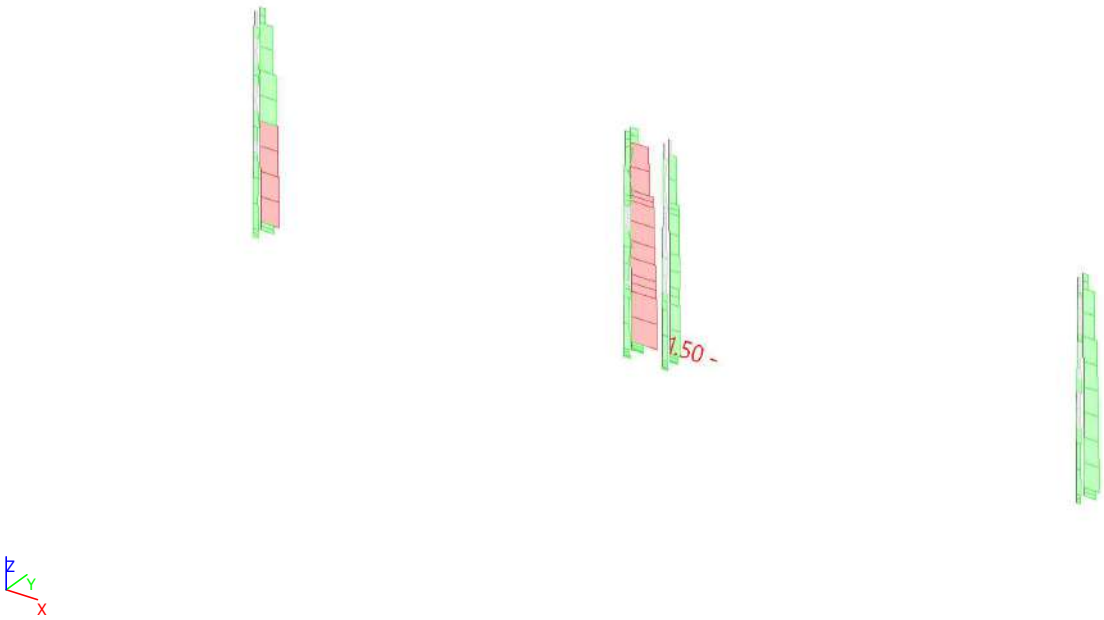
8.9. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S332
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S332	0	UGT-2/5	**-101.4**	0.0	**101.4**	**0.0**
S332	4651	UGT-1/47	**0.0**	4.4	7.6	0.0
S332	3721	UGT-2/5	-28.5	**0.0**	28.5	0.0
S332	4600	UGT-2/5	-2.2	**4.4**	7.9	0.0
S332	4600	UGT-2/5	-2.1	2.7	**5.2**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S275	2.532 / 2.757 m	INP450	S 235	UGT	1.50 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2.532 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-1571.76	kN
$V_{y,Ed}$	40.63	kN
$V_{z,Ed}$	-4.42	kN
T_{Ed}	-0.09	kNm
$M_{y,Ed}$	-1.09	kNm
$M_{z,Ed}$	44.81	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	5.109e+04	-8.442e+04	-1.65	23.80	0.38	2.50	38.87	43.19	102.45	1
3	SO	61	24	1.596e+05	2.951e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.50	1
4	I	369	16	1.053e+05	1.044e+05	0.99		1.00	22.78	28.00	34.00	38.11	1
5	SO	61	24	1.586e+05	2.941e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.51	1
7	SO	61	24	5.010e+04	-8.540e+04	-1.70	23.80	0.37	2.50	40.03	44.48	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m^2
$N_{c,Rd}$	3454.50	kN
Eenheidscontrole	0.45	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m^3
$M_{pl,y,Rd}$	564.00	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m^3
$M_{pl,z,Rd}$	81.08	kNm
Eenheidscontrole	0.55	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m^2
$V_{pl,y,Rd}$	1192.18	kN
Eenheidscontrole	0.03	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m^2
$V_{pl,z,Rd}$	1058.72	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.9	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	393.57	kNm
α	2.00	
$M_{N,z,Rd}$	81.00	kNm
β	2.27	

Eenheidscontrole (6.41) = 0.00 + 0.26 = 0.26 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2.532 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	5.109e+04	-8.442e+04	-1.65	23.80	0.38	2.50	38.87	43.19	102.45	1
3	SO	61	24	1.596e+05	2.951e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.50	1
4	I	369	16	1.053e+05	1.044e+05	0.99		1.00	22.78	28.00	34.00	38.11	1
5	SO	61	24	1.586e+05	2.941e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.51	1
7	SO	61	24	5.010e+04	-8.540e+04	-1.70	23.80	0.37	2.50	40.03	44.48	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings flexibel	
Systeemlengte L	2.757	1.895	m
Knikfactor k	0.97	1.42	
Kniklengte L_{cr}	2.672	2.698	m
Kritische Euler last N_{cr}	133088.03	4925.02	kN
Slankheid λ	15.13	78.65	
Relatieve slankheid λ_{rel}	0.16	0.84	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	1.00	0.70	
Knikweerstand $N_{b,Rd}$	3454.50	2421.75	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m²
Knikweerstand $N_{b,Rd}$	2421.75	kN
Eenheidscontrole	0.65	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m³
Elastisch kritisch moment M_{cr}	5191.07	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.33	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.93	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm

Mcr parameters		
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	1571.76	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	13.31	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	44.81	kNm
Karakteristieke drukweerstand N_{Rk}	3454.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	564.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	81.08	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	0.70	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.64	
Interactiefactor k_{yz}	0.92	
Interactiefactor k_{zy}	0.38	
Interactiefactor k_{zz}	1.53	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S275 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S275 positie 2.532 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	13.31	kNm
Veldmoment $M_{s,y}$	7.26	kNm
Factor $\alpha_{s,y}$	0.55	
Ratio van uiteinde momenten ψ_y	-0.13	
Equivalente moment factor C_{my}	0.64	
Zijdelings flexibel type z	Zijdelings flexibel	
Equivalente moment factor C_{mz}	0.90	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	-0.15	
Equivalente moment factor C_{mLT}	0.54	

Eenheidscontrole (6.61) = 0.45 + 0.02 + 0.51 = 0.98 -
Eenheidscontrole (6.62) = 0.65 + 0.01 + 0.84 = **1.50** -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

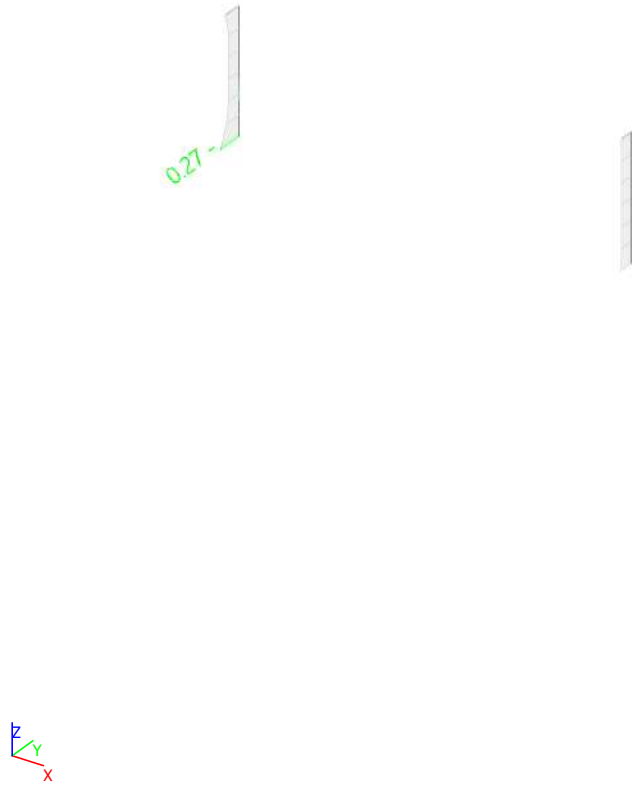
Plooiparameters		
Knik veldlengte a	2.757	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet NIET aan de stabiliteitscontrole!

9.3. Staalcontrole kolom DIE36; UGT, grafisch overzicht



9.4. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S329, S330

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S329	0.000 / 4.651 m	HEA360	S 235	UGT	0.27 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-17.26	kN
$V_{y,Ed}$	-20.51	kN
$V_{z,Ed}$	-3.32	kN
T_{Ed}	0.17	kNm
$M_{y,Ed}$	15.67	kNm
$M_{z,Ed}$	50.28	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	-2.706e+04	-1.023e+05								
3	SO	118	18	1.374e+04	8.896e+04	0.15	0.54	1.00	6.74	9.00	10.00	15.42	1
4	I	261	10	-4.969e+03	7.387e+03	-0.67		0.51	26.10	68.95	79.77	90.57	1
5	SO	118	18	2.948e+04	1.047e+05	0.28	0.52	1.00	6.74	9.00	10.00	15.09	1
7	SO	118	18	-1.132e+04	-8.654e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4300e-02	m^2
$N_{c,Rd}$	3360.50	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.0875e-03	m^3
$M_{pl,y,Rd}$	490.56	kNm
Eenheidscontrole	0.03	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	8.0417e-04	m^3
$M_{pl,z,Rd}$	188.98	kNm
Eenheidscontrole	0.27	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0870e-02	m^2
$V_{pl,y,Rd}$	1474.81	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.9200e-03	m^2
$V_{pl,z,Rd}$	667.53	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	2.0	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	490.56	kNm
α	2.00	
$M_{pl,z,Rd}$	188.98	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.27 = 0.27 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	-2.706e+04	-1.023e+05								
3	SO	118	18	1.374e+04	8.896e+04	0.15	0.54	1.00	6.74	9.00	10.00	15.42	1
4	I	261	10	-4.969e+03	7.387e+03	-0.67		0.51	26.10	68.95	79.77	90.57	1
5	SO	118	18	2.948e+04	1.047e+05	0.28	0.52	1.00	6.74	9.00	10.00	15.09	1
7	SO	118	18	-1.132e+04	-8.654e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	4.93	0.74	
Kniklengte L_{cr}	22.932	3.419	m
Kritische Euler last N_{cr}	1304.51	13993.02	kN
Slankheid λ	150.73	46.02	
Relatieve slankheid λ_{rel}	1.61	0.49	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Elastisch kritisch moment M_{cr}	2777.30	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.42	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Vorklengte L_g	4.651	m
Invloed van lastpositie	geen invloed	
Factor α	943.99	
Reductie factor k_{red}	1.00	
Coëfficiënt C	9.15	
Factor S	1949	mm
Kip moment factor C_1	1.76	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4300e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	8.0417e-04	m^3
Ontwerpdrukkracht N_{Ed}	17.26	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	15.67	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	50.28	kNm
Karakteristieke drukweerstand N_{Rk}	3360.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	490.56	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	188.98	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.54	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S329 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S329 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	50.28	kNm
Veldmoment $M_{s,z}$	4.74	kNm
Factor $\alpha_{s,z}$	0.09	
Ratio van uiteinde momenten ψ_z	-0.76	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	puntlast F	
Uiteinde moment $M_{h,LT}$	15.67	kNm
Veldmoment $M_{s,LT}$	0.40	kNm
Factor $\alpha_{s,LT}$	0.03	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.40	

Eenheidscontrole (6.61) = 0.01 + 0.03 + 0.06 = 0.10 -
Eenheidscontrole (6.62) = 0.01 + 0.02 + 0.11 = 0.13 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

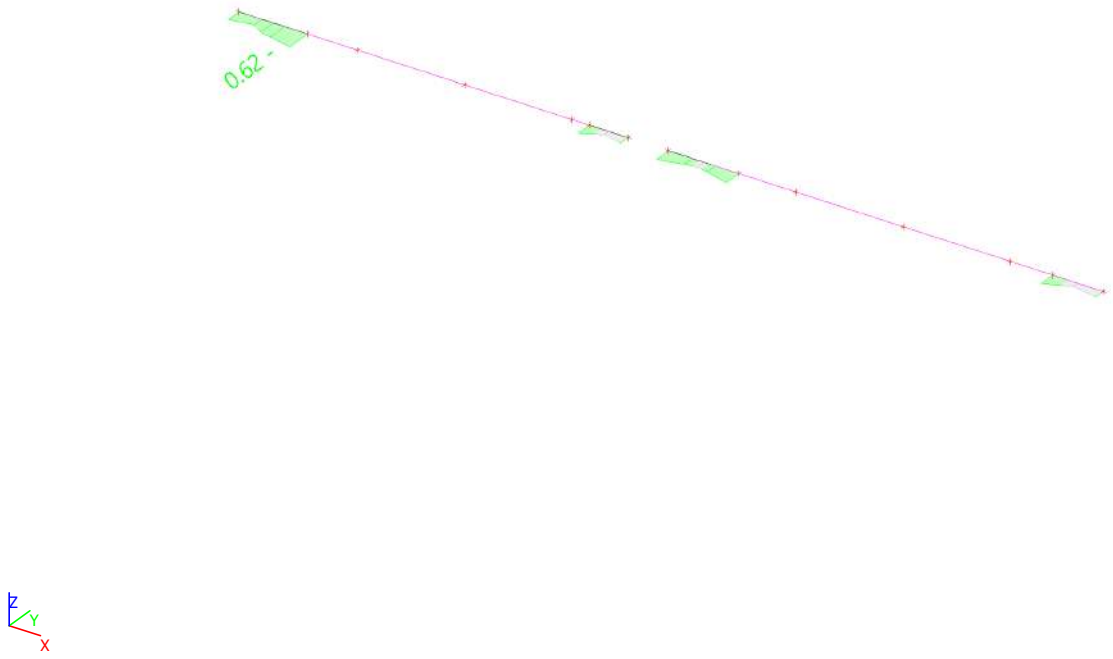
Plooiparameters		
Knik veldlengte a	4.651	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	315	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.50
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole ligger DIE34; UGT, grafisch overzicht



9.6. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S33, S40, S404, S406

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S33	2,560 / 2,560 m	HE340A	S 235	UGT	0,62 -

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1050

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,560 m

Interne krachten	Berekende	Eenheid
N_{Ed}	7,53	kN
$V_{y,Ed}$	15,20	kN
$V_{z,Ed}$	63,98	kN
T_{Ed}	0,01	kNm
$M_{y,Ed}$	163,33	kNm
$M_{z,Ed}$	-4,71	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	-9,098e+04	-8,349e+04								
3	SO	118	17	-9,500e+04	-1,025e+05								
4	I	243	10	-7,221e+04	7,108e+04	-1,02		0,49	25,58	73,01	84,17	125,97	1
5	SO	118	17	8,985e+04	8,236e+04	0,92	0,46	1,00	7,17	9,00	10,00	14,24	1
7	SO	118	17	9,388e+04	1,014e+05	0,93	0,44	1,00	7,17	9,00	10,00	13,86	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	1,3350e-02	m^2
$N_{pl,Rd}$	3137,25	kN
$N_{u,Rd}$	3460,32	kN
$N_{t,Rd}$	3137,25	kN
Eenheidscontrole	0,00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1,8500e-03	m^3
$M_{pl,y,Rd}$	434,75	kNm
Eenheidscontrole	0,38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7,5590e-04	m^3
$M_{pl,z,Rd}$	177,64	kNm
Eenheidscontrole	0,03	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,0247e-02	m^2
$V_{pl,y,Rd}$	1390,25	kN
Eenheidscontrole	0,01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,4978e-03	m^2
$V_{pl,z,Rd}$	610,24	kN
Eenheidscontrole	0,10	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	434,75	kNm
α	2,00	
$M_{pl,z,Rd}$	177,64	kNm
β	1,00	

Eenheidscontrole (6.41) = 0,14 + 0,03 = 0,17 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,560 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	-9,098e+04	-8,349e+04								
3	SO	118	17	-9,500e+04	-1,025e+05								
4	I	243	10	-7,221e+04	7,108e+04	-1,02		0,49	25,58	73,01	84,17	125,97	1
5	SO	118	17	8,985e+04	8,236e+04	0,92	0,46	1,00	7,17	9,00	10,00	14,24	1
7	SO	118	17	9,388e+04	1,014e+05	0,93	0,44	1,00	7,17	9,00	10,00	13,86	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Elastisch kritisch moment M_{cr}	337,86	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1,13	
Limietslankheid $\lambda_{rel,LT,0}$	0,40	
Kipcurve	b	
Imperfectie α_{LT}	0,34	
Kipfactor β	0,75	
Reductie factor χ_{LT}	0,62	
Correctiefactor k_c	0,94	
Correctiefactor f	0,98	
Gewijzigde reductiefactor $\chi_{LT,mod}$	0,63	
Rekenwaarde knikweerstand $M_{b,Rd}$	275,21	kNm
Eenheidscontrole	0,59	-

Mcr parameters		
LTB lengte L	14,500	m
Vorklengte L_g	14,500	m
Invloed van lastpositie	geen invloed	
Factor α	575,00	
Reductie factor k_{red}	1,00	
Coëfficiënt C	3,87	
Factor S	1931	mm
Kip moment factor C_1	1,14	
Kip moment factor C_2	0,00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.
Opmerking: De correctiefactor k_c wordt bepaald op basis van C_1.

Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	7,53	kN
Ontwerp buigende momenten $M_{y,Ed}$	163,33	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-4,71	kNm
Trekweerstand $N_{t,Rd}$	3137,25	kN
Buigweerstand $M_{b,y,Rd}$	275,21	kNm
Buigweerstand $M_{c,z,Rd,com}$	177,64	kNm

Eenheidscontrole = 0,59 + 0,03 - 0,00 = 0,62 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

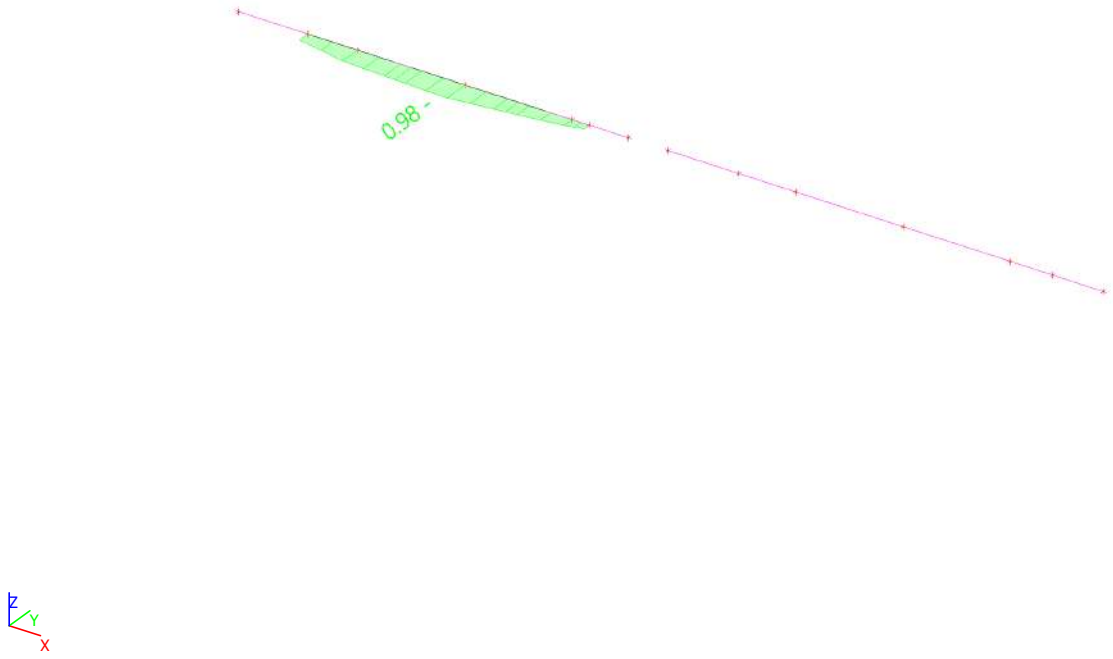
Plooiparameters		
Knik veldlengte a	2,560	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1,00	
Correctiefactor voor dwarskracht η	1,20	

Plooiverificatie	
Lijf slankheid h_w/t	31,26
Lijfslankheid limiet	60,00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht



9.8. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S403

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S403	**5,858 / 10,500 m**	**I + 2 PLud (HEA340; 320; 320; 12; 12)**	**S 235**	**UGT**	**0,98 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 5,858 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	43,71	kN
$V_{y,Ed}$	0,30	kN
$V_{z,Ed}$	10,21	kN
T_{Ed}	0,01	kNm
$M_{y,Ed}$	326,71	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	36,68	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-7,073e+04	-1,101e+05								
2	I	150	29	1,451e+05	1,058e+05	0,73		1,00	5,26	28,00	34,00	41,94	1
3	I	150	29	6,647e+04	1,058e+05	0,63		1,00	5,26	28,00	34,00	43,63	1
4	I	150	29	-1,494e+05	-1,101e+05								
5	I	8	10	-1,061e+05	-1,006e+05								
6	I	297	10	-1,006e+05	9,635e+04	-1,04		0,49	31,26	73,59	84,83	129,50	1
7	I	8	10	9,635e+04	1,018e+05	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,532e+05	1,506e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,357e+04	-7,620e+04								
10	UO	10	12	-1,549e+05	-1,575e+05								
13	UO	10	12	7,195e+04	6,932e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	2,1039e-02	m^2
$N_{pl,Rd}$	4944,14	kN
$N_{u,Rd}$	5453,28	kN
$N_{t,Rd}$	4944,14	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3,1654e-03	m^3
$M_{pl,y,Rd}$	743,86	kNm
Eenheidscontrole	0,44	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	1,3705e-03	m^3
$M_{pl,z,Rd}$	322,07	kNm
Eenheidscontrole	0,11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6468e-02	m^2
$V_{pl,y,Rd}$	2234,36	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	3,6506e-03	m^2
$V_{pl,z,Rd}$	495,31	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	4944,14	kN
$M_{pl,y,Rd}$	743,86	kNm
$M_{pl,z,Rd}$	322,07	kNm

Eenheidscontrole (6.2) = 0,01 + 0,44 + 0,11 = 0,56 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 5,858 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-7,073e+04	-1,101e+05								
2	I	150	29	1,451e+05	1,058e+05	0,73		1,00	5,26	28,00	34,00	41,94	1
3	I	150	29	6,647e+04	1,058e+05	0,63		1,00	5,26	28,00	34,00	43,63	1
4	I	150	29	-1,494e+05	-1,101e+05								
5	I	8	10	-1,061e+05	-1,006e+05								
6	I	297	10	-1,006e+05	9,635e+04	-1,04		0,49	31,26	73,59	84,83	129,50	1
7	I	8	10	9,635e+04	1,018e+05	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,532e+05	1,506e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,357e+04	-7,620e+04								
10	UO	10	12	-1,549e+05	-1,575e+05								
13	UO	10	12	7,195e+04	6,932e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3,1654e-03	m^3
Elastisch kritisch moment M_{cr}	856,97	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,93	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,50	
Rekenwaarde knikweerstand $M_{b,Rd}$	374,31	kNm
Eenheidscontrole	0,87	-

Mcr parameters		
LTB lengte L	14,500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

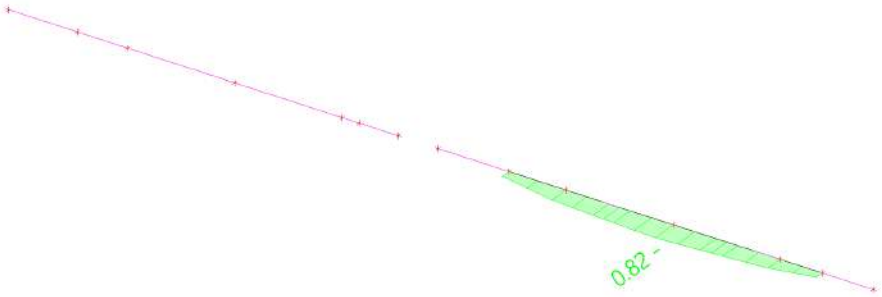
Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	43,71	kN
Ontwerp buigende momenten $M_{y,Ed}$	326,71	kNm
Ontwerp buigende momenten $M_{z,Ed}$	36,68	kNm
Trekweerstand $N_{t,Rd}$	4944,14	kN
Buigweerstand $M_{b,y,Rd}$	374,31	kNm
Buigweerstand $M_{c,z,Rd,com}$	322,07	kNm

Eenheidscontrole = 0,87 + 0,11 - 0,01 = 0,98 -

De staaf voldoet aan de stabiliteitscontrole.

9.9. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht





9.10. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S405

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S405	6,121 / 11,700 m	Grafische doorsnede	S 235	UGT	0,82 -

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Algemeen	

Waarschuwing: Sterktereductie gerelateerd aan de dikte wordt niet ondersteund voor dit type doorsnede.

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 6,121 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-4,86	kN
$V_{y,Ed}$	-3,40	kN
$V_{z,Ed}$	-16,98	kN

Interne krachten	Berekende	Eenheid
T_{Ed}	0,02	kNm
$M_{y,Ed}$	240,76	kNm
$M_{z,Ed}$	67,09	kNm

Classificatie voor doorsnede-ontwerp
Waarschuwing: Classificatie wordt niet ondersteund voor dit type doorsnede.
De doorsnede wordt gecontroleerd als elastisch, klasse 3.

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2,5114e-02	m^2
$N_{c,Rd}$	5901,89	kN
Eenheidscontrole	0,00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,y,min}$	2,7183e-03	m^3
$M_{el,y,Rd}$	638,80	kNm
Eenheidscontrole	0,38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,z,min}$	1,5664e-03	m^3
$M_{el,z,Rd}$	368,11	kNm
Eenheidscontrole	0,18	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6554e-02	m^2
$V_{pl,y,Rd}$	2246,03	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,3472e-03	m^2
$V_{pl,z,Rd}$	589,81	kN
Eenheidscontrole	0,03	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	38	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.2 en formule (6.42)

Normaalspanningen		
Vezel	31	
$\sigma_{N,Ed}$	0,2	MPa
$\sigma_{My,Ed}$	88,6	MPa
$\sigma_{Mz,Ed}$	42,8	MPa
$\sigma_{tot,Ed}$	131,6	MPa
Eenheidscontrole	0,56	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	5688,94	1855,63	kN
Slankheid λ	95,65	167,48	
Relatieve slankheid λ_{rel}	1,02	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	16,200	m
Elastische kritische last $N_{cr,T}$	11328,76	kN
Elastische kritische last $N_{cr,TF}$	1855,63	kN
Relatieve slankheid $\lambda_{rel,T}$	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastisch kritisch moment M_{cr}	1007,79	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,80	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,58	
Rekenwaarde knikweerstand $M_{b,Rd}$	371,83	kNm
Eenheidscontrole	0,65	-

Mcr parameters		
LTB lengte L	16,200	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2,5114e-02	m^2
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastische doorsnedemodulus $W_{el,z}$	1,5664e-03	m^3
Ontwerpdrukkracht N_{Ed}	4,86	kN
Ontwerp buigende momenten $M_{y,Ed}$	240,76	kNm
Ontwerp buigende momenten $M_{z,Ed}$	67,09	kNm
Karakteristieke drukweerstand N_{Rk}	5901,89	kN
Karakteristieke momentweerstand $M_{y,Rk}$	638,80	kNm

Buig- en axiale drukcontrole paramaters		
Karakteristieke momentweerstand $M_{z,Rk}$	368,11	kNm
Reductie factor χ_y	1,00	
Reductie factor χ_z	1,00	
Reductie factor χ_{LT}	0,58	
Interactiefactor k_{yy}	0,95	
Interactiefactor k_{yz}	0,92	
Interactiefactor k_{zy}	1,00	
Interactiefactor k_{zz}	0,92	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-16,05	kNm
Veldmoment $M_{s,y}$	240,76	kNm
Factor $\alpha_{h,y}$	-0,07	
Ratio van uiteinde momenten ψ_y	0,03	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-45,81	kNm
Veldmoment $M_{s,z}$	67,09	kNm
Factor $\alpha_{h,z}$	-0,68	
Ratio van uiteinde momenten ψ_z	0,74	
Equivalente moment factor C_{mz}	0,92	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-16,05	kNm
Veldmoment $M_{s,LT}$	240,76	kNm
Factor $\alpha_{h,LT}$	-0,07	
Ratio van uiteinde momenten ψ_{LT}	0,03	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,00 + 0,61 + 0,17 = 0,78 -
Eenheidscontrole (6.62) = 0,00 + 0,65 + 0,17 = 0,82 -

De staaf voldoet aan de stabiliteitscontrole.

9.11. Staalcontrole ligger DIN28; UGT, grafisch overzicht





9.12. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S331

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S331	**0.000 / 14.500 m**	**HEB280**	**S 235**	**UGT**	**0.23 -**

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-9.61	kN
$V_{y,Ed}$	11.08	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.02	kNm
$M_{y,Ed}$	0.17	kNm
$M_{z,Ed}$	-38.30	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.760e+04	8.192e+04	0.21	0.53	1.00	6.15	9.00	10.00	15.26	1
3	SO	111	18	-1.637e+04	-8.069e+04								
4	I	196	11	6.462e+02	8.162e+02	0.79		1.00	18.67	28.00	34.00	40.96	1
5	SO	111	18	-1.614e+04	-8.046e+04								
7	SO	111	18	1.783e+04	8.215e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3140e-02	m^2
$N_{c,Rd}$	3087.90	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.5340e-03	m^3
$M_{pl,y,Rd}$	360.49	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.1760e-04	m^3
$M_{pl,z,Rd}$	168.64	kNm
Eenheidscontrole	0.23	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0442e-02	m^2
$V_{pl,y,Rd}$	1416.78	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.1130e-03	m^2
$V_{pl,z,Rd}$	558.04	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.2	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	360.49	kNm
α	2.00	
$M_{pl,z,Rd}$	168.64	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.23 = 0.23 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.760e+04	8.192e+04	0.21	0.53	1.00	6.15	9.00	10.00	15.26	1
3	SO	111	18	-1.637e+04	-8.069e+04								
4	I	196	11	6.462e+02	8.162e+02	0.79		1.00	18.67	28.00	34.00	40.96	1
5	SO	111	18	-1.614e+04	-8.046e+04								
7	SO	111	18	1.783e+04	8.215e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	14.500	14.500	m
Knikfactor k	1.00	1.00	
Kniklengte L_{cr}	14.500	14.500	m
Kritische Euler last N_{cr}	1899.61	650.13	kN
Slankheid λ	119.74	204.67	
Relatieve slankheid λ_{rel}	1.27	2.18	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Elastisch kritisch moment M_{cr}	301.73	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.09	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	14.500	m
Vorklengte L_g	14.500	m
Invloed van lastpositie	geen invloed	
Factor α	575.00	
Reductie factor k_{red}	1.00	
Coëfficiënt C	3.45	
Factor S	1430	mm
Kip moment factor C_1	1.05	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.1760e-04	m^3
Ontwerpdrukkracht N_{Ed}	9.61	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	0.19	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-38.30	kNm
Karakteristieke drukweerstand N_{Rk}	3087.90	kN
Karakteristieke momentweerstand $M_{y,Rk}$	360.49	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	168.64	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.96	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.58	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S331 positie 14.500 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S331 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lineair moment M	
Ratio van uiteinde momenten ψ_y	0.90	
Equivalente moment factor C_{my}	0.96	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-38.30	kNm
Veldmoment $M_{s,z}$	11.45	kNm
Factor $\alpha_{s,z}$	-0.30	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	0.90	
Equivalente moment factor C_{mLT}	0.96	

Eenheidscontrole (6.61) = 0.00 + 0.00 + 0.05 = 0.06 -
Eenheidscontrole (6.62) = 0.00 + 0.00 + 0.09 = 0.09 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

Plooiparameters		
Knik veldlengte a	14.500	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	244	mm
Lijfdikte t	11	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	23.24
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.13. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.14. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S398	0.000 / 0.232 m	Rechthoek (200; 28)	S 235	UGT	1.14 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-0.35	kN
$V_{y,Ed}$	-5.24	kN
$V_{z,Ed}$	-324.51	kN
T_{Ed}	-0.07	kNm
$M_{y,Ed}$	43.09	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	1.04	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-2.308e+05	2.309e+05	-1.00	0.85	0.50	7.14	18.00	19.99	19.36	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	5.6000e-03	m²
$N_{c,Rd}$	1316.00	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m³
$M_{pl,y,Rd}$	65.80	kNm
Eenheidscontrole	0.65	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m³
$M_{pl,z,Rd}$	9.21	kNm
Eenheidscontrole	0.11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,y,Rd}$	759.79	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,z,Rd}$	759.79	kN
Eenheidscontrole	0.43	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	1.4	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	65.80	kNm
α	1.00	
$M_{N,z,Rd}$	9.21	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.65 + 0.11 = 0.77 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-2.308e+05	2.309e+05	-1.00	0.85	0.50	7.14	18.00	19.99	19.36	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	0.402	0.402	m
Knikfactor k	2.73	0.84	
Kniklengte L_{cr}	1.099	0.338	m
Kritische Euler last N_{cr}	32039.51	6641.26	kN
Slankheid λ	19.03	41.80	
Relatieve slankheid λ_{rel}	0.20	0.45	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	0.402	m
Elastische kritische last $N_{cr,T}$	35677.12	kN
Relatieve slankheid $\lambda_{rel,T}$	0.19	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	1961.55	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.18	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.402	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.60	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	5.6000e-03	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.9200e-05	m^3
Ontwerpdrukkracht N_{Ed}	0.35	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	70.68	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	1.48	kNm
Karakteristieke drukweerstand N_{Rk}	1316.00	kN
Karakteristieke momentweerstand $M_{y,Rk}$	65.80	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	9.21	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.26	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.43	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S318 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S318 positie 0.000 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.2
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Resulterend belastingtype z	lineair moment M
Ratio van uiteinde momenten ψ_z	-0.42
Equivalente moment factor C_{mz}	0.43
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	-0.85
Equivalente moment factor C_{mLT}	0.40

Eenheidscontrole (6.61) = 0.00 + 0.97 + 0.04 = **1.01** -
Eenheidscontrole (6.62) = 0.00 + 1.07 + 0.07 = **1.14** -

De staaf voldoet NIET aan de stabiliteitscontrole!

9.15. Staalcontrole diagonaal; UGT, grafisch overzicht





9.16. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S235, S267..S271, S274, S277..S281

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S268	0.000 / 3.142 m	UPE140	S 235	UGT	0.82 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1176

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-180.49	kN
$V_{y,Ed}$	0.00	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.00	kNm
$M_{z,Ed}$	0.00	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	9.798e+04	9.798e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	9.798e+04	9.798e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	9.798e+04	9.798e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.8400e-03	m²
$N_{c,Rd}$	432.40	kN
Eenheidscontrole	0.42	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	9.798e+04	9.798e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	9.798e+04	9.798e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	9.798e+04	9.798e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	3.142	3.142	m
Knikfactor k	0.65	0.65	
Kniklengte L_{cr}	2.043	2.043	m
Kritische Euler last N_{cr}	2975.62	390.95	kN
Slankheid λ	35.80	98.77	
Relatieve slankheid λ_{rel}	0.38	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.91	0.51	
Knikweerstand $N_{b,Rd}$	392.28	220.76	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.8400e-03	m²
Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.82	-

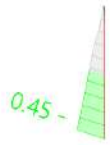
Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	3.142	m
Elastische kritische last $N_{cr,T}$	649.47	kN
Elastische kritische last $N_{cr,TF}$	390.95	kN
Relatieve slankheid $\lambda_{rel,T}$	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.51	
Oppervlakte van de doorsnede A	1.8400e-03	m²

Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.82	-

De staaf voldoet aan de stabiliteitscontrole.

9.17. Staalcontrole bliksempiek; UGT, grafisch overzicht





9.18. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S332

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S332	**0.000 / 4.651 m**	**Koker fl (374; 7; 126; 10; 354)**	**S 235**	**UGT**	**0.45 -**

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-3.11	kN
$V_{y,Ed}$	2.60	kN
$V_{z,Ed}$	-7.80	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	30.53	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-12.38	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	5.979e+04	6.021e+04	0.99	0.43	1.00	0.71	9.00	10.00	13.83	1
2	I	126	10	8.647e+04	-5.547e+04	-0.64		0.61	12.60	53.61	63.13	88.30	1
3	I	126	10	5.626e+04	-8.568e+04	-1.52		0.40	12.60	90.82	104.70	193.02	1
4	UO	5	7	-9.004e+04	-8.962e+04								
5	UO	5	7	9.041e+04	9.082e+04	1.00	0.43	1.00	0.71	9.00	10.00	13.78	1
6	I	4	10	8.647e+04	9.041e+04	0.96		1.00	0.35	28.00	34.00	38.58	1
7	UO	5	7	-5.942e+04	-5.900e+04								
8	I	4	10	-5.547e+04	-5.942e+04								
9	I	364	7	6.021e+04	9.041e+04	0.67		1.00	52.00	28.00	34.00	42.98	4
10	I	4	10	5.626e+04	6.021e+04	0.93		1.00	0.35	28.00	34.00	38.88	1
11	I	364	7	-8.962e+04	-5.942e+04								
12	I	4	10	-8.568e+04	-8.962e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My+
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
3	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
4	UO	5	-2.350e+05	-2.350e+05							
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2
7	UO	5	-2.350e+05	-2.350e+05							
8	I	4	-2.226e+05	-2.350e+05							
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	-2.350e+05	-2.350e+05							
12	I	4	-2.226e+05	-2.350e+05							

Effectieve doorsnede Mz-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.287e+05	-2.350e+05							
2	I	126	2.287e+05	2.287e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	-2.287e+05	-2.287e+05							
4	UO	5	-2.287e+05	-2.350e+05							
5	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
6	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
8	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
10	I	4	-2.287e+05	-2.287e+05							
11	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
12	I	4	-2.287e+05	-2.287e+05							

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	7.0288e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.5067e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.3936e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	7.0288e-03	m^2
$N_{c,Rd}$	1651.76	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.3936e-04	m^3
$M_{c,y,Rd}$	79.75	kNm
Eenheidscontrole	0.38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	187.45	kNm
Eenheidscontrole	0.07	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	685.11	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	374.41	kN
Eenheidscontrole	0.02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	7.0288e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.3936e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.4	MPa
$\sigma_{My,Ed}$	90.0	MPa
$\sigma_{Mz,Ed}$	15.5	MPa
$\sigma_{tot,Ed}$	105.9	MPa
Eenheidscontrole	0.45	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	2.20	0.92	
Kniklengte L_{cr}	10.239	4.262	m
Kritische Euler last N_{cr}	524.06	16491.48	kN
Slankheid λ	175.14	31.22	
Relatieve slankheid λ_{rel}	1.78	0.32	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.651	m
Elastische kritische last $N_{cr,T}$	264162.55	kN
Elastische kritische last $N_{cr,TF}$	524.06	kN
Relatieve slankheid $\lambda_{rel,T}$	1.78	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Elastisch kritisch moment M_{cr}	17006.54	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.07	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.89	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	7.0288e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	3.11	kN
Ontwerp buigende momenten $M_{y,Ed}$	30.53	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-12.38	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	1651.76	kN
Karakteristieke momentweerstand $M_{y,Rk}$	79.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	187.45	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.40	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.40	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	puntlast F	
Uiteinde moment $M_{h,z}$	-12.38	kNm
Veldmoment $M_{s,z}$	-0.42	kNm
Factor $\alpha_{s,z}$	0.03	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	30.53	kNm
Veldmoment $M_{s,LT}$	13.83	kNm
Factor $\alpha_{s,LT}$	0.45	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.56	

Eenheidscontrole (6.61) = 0.00 + 0.34 + 0.03 = 0.37 -
Eenheidscontrole (6.62) = 0.00 + 0.38 + 0.03 = 0.41 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE E

In- en uitvoergegevens 3D raamwerkprogramma juk 64, versterkt

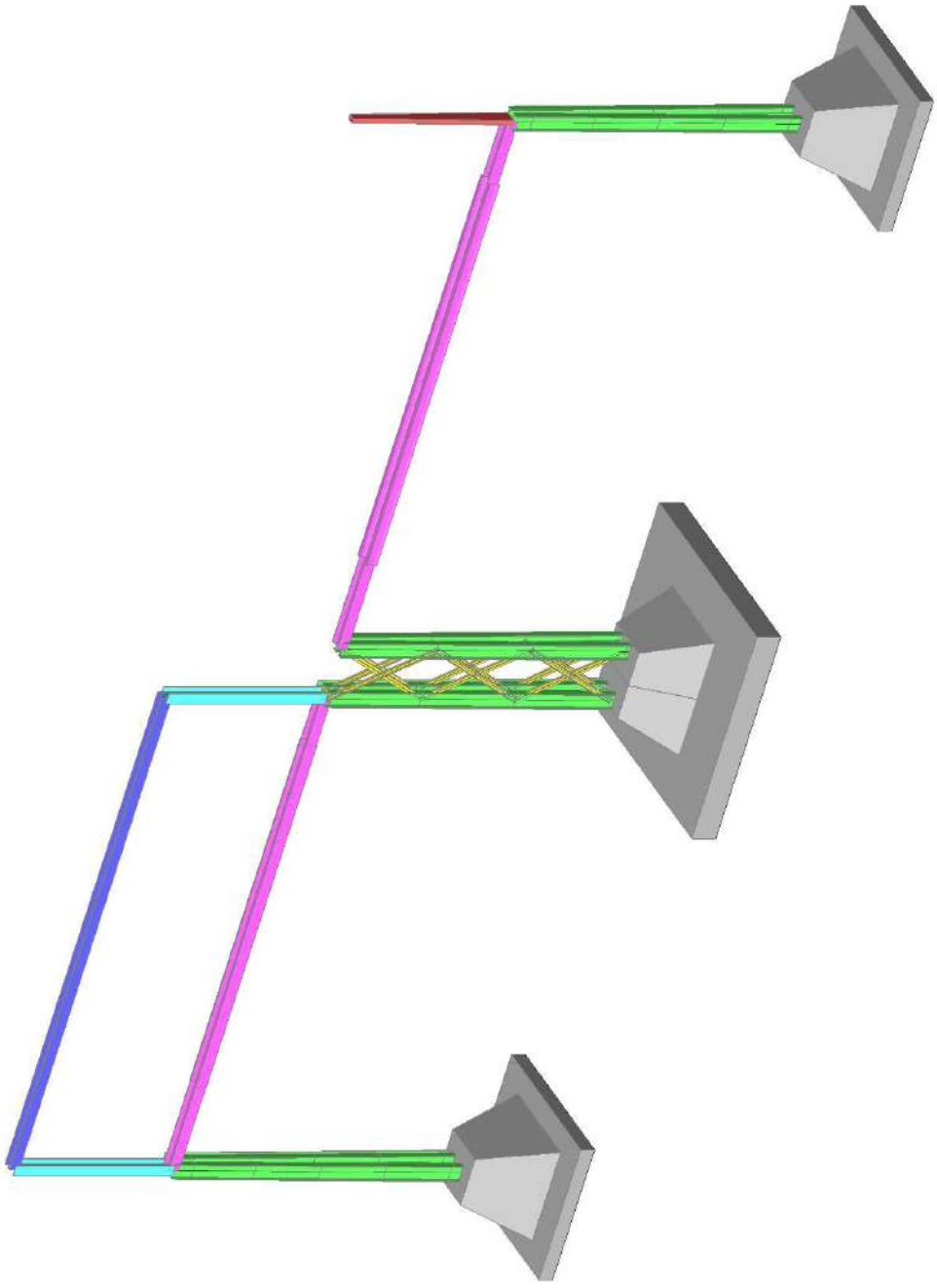
1. Inhoudsopgave

1. Inhoudsopgave **1**
2. Geometrie **3**
2.1. Perspectief constructie 3
2.2. Maatvoering 4
2.3. Materialen 5
2.4. Doorsneden 5
3. Belastingen **15**
3.1. Belastingsgevallen 15
3.2. BG1: e.g. constructie 22
3.3. BG2: grond op poer 22
3.4. BG3: wind op constructie; X-richting 23
3.5. BG4: wind op constructie; Y-richting 23
3.6. LC1001 / Totale waarde 24
3.7. LC1080 / Totale waarde 24
3.8. LC1159 / Totale waarde 25
3.9. LC1238 / Totale waarde 25
3.10. Combinaties 26
3.11. Resultaatklasses 33
4. Berekeningsverslag **34**
5. Reacties **56**
5.1. Oplegreacties kolom links; UGT, globale extremen 56
5.2. Oplegreacties kolom midden-links; UGT, globale extremen 56
5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen 56
5.4. Oplegreacties kolom rechts; UGT, globale extremen 56
6. Grondspanningen **57**
6.1. Grondspanningen onder betonpoeren; UGT 57
7. Staafkrachten **58**
7.1. Staafkrachten kolom INP45; UGT, globale extremen 58
7.2. Staafkrachten kolom INP45 versterkt; UGT, globale extremen 58
7.3. Staafkrachten kolom DIE36; UGT, globale extremen 58
7.4. Staafkrachten ligger DIE34; UGT, globale extremen 59
7.5. Staafkrachten ligger DIE34+strippen; UGT, globale extremen 59
7.6. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen 59
7.7. Staafkrachten ligger DIN28; UGT, globale extremen 60
7.8. Staafkrachten koppelplaat; UGT, globale extremen 60
7.9. Staafkrachten diagonaal; UGT, globale extremen 60
7.10. Staafkrachten bliksempiek; UGT, globale extremen 60
7.11. Staafkrachten betonopstort links; UGT, globale extremen 61
7.12. Staafkrachten betonopstort midden-links; UGT, globale extremen 61
7.13. Staafkrachten betonopstort midden-rechts; UGT, globale extremen 61
7.14. Staafkrachten betonopstort rechts; UGT, globale extremen 62
8. Staafspanningen **63**
8.1. Von Mises spanningen kolom INP45; UGT, globale extremen 63
8.2. Von Mises spanningen kolom INP45 versterkt; UGT, globale extremen 63
8.3. Von Mises spanningen kolom DIE36; UGT, globale extremen 63
8.4. Von Mises spanningen ligger DIE34; UGT, globale extremen 63
8.5. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen 64
8.6. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen 64
8.7. Von Mises spanningen ligger DIN28; UGT, globale extremen 64
8.8. Von Mises spanningen koppelplaat; UGT, globale extremen 64
8.9. Von Mises spanningen diagonaal; UGT, globale extremen 65
8.10. Von Mises spanningen bliksempiek; UGT, globale extremen 65
9. Normcontrole staal **66**
9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht 66
9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid 66
9.3. Staalcontrole kolom INP45 versterkt; UGT, grafisch overzicht 70
9.4. Staalcontrole kolom INP45 versterkt; UGT, maatgevende doorsnede, uitgebreid 70
9.5. Staalcontrole kolom DIE36; UGT, grafisch overzicht 75
9.6. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid 75
9.7. Staalcontrole ligger DIE34; UGT, grafisch overzicht 79
9.8. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid 79
9.9. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht 83
9.10. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid 83
9.11. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht 87
9.12. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid 87
9.13. Staalcontrole ligger DIN28; UGT, grafisch overzicht 91

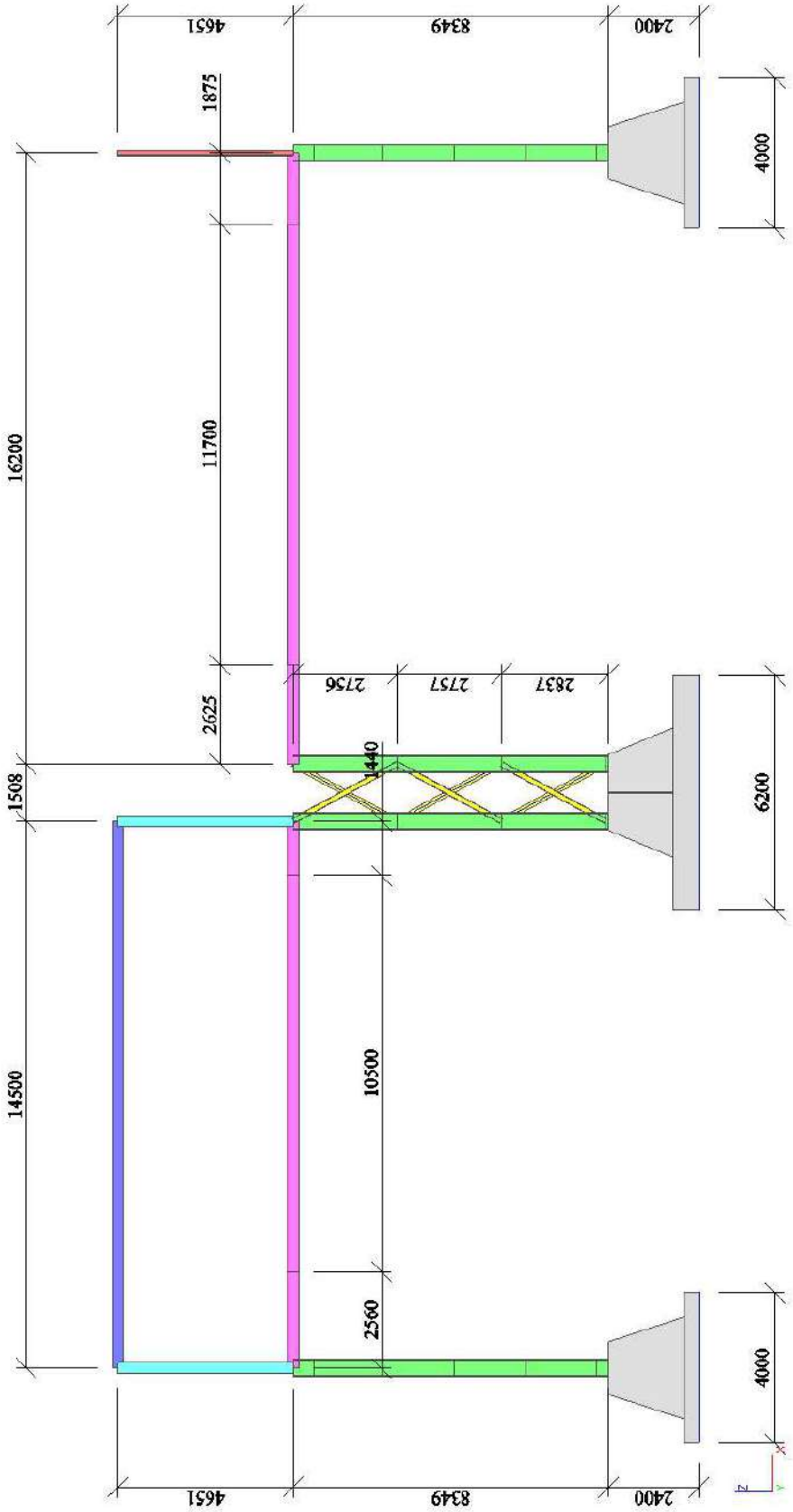
9.14. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid 91
9.15. Staalcontrole koppelplaat; UGT, grafisch overzicht 95
9.16. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 95
9.17. Staalcontrole diagonaal; UGT, grafisch overzicht 98
9.18. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid 98
9.19. Staalcontrole bliksempiek; UGT, grafisch overzicht 101
9.20. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 101

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 235	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	235.0 215.0	360.0 360.0	

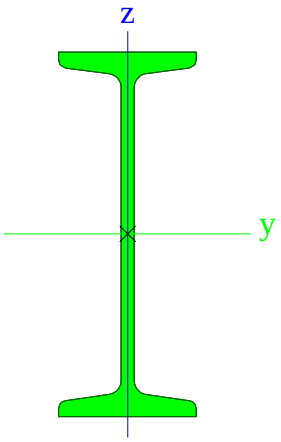
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C60/75	Beton	2500.0	2600.0	3.9100e+04	0.2	0.00	60.00	
Dummy beton	Beton	2500.0	2600.0	3.9100e+06	0.2	0.00	60.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom INP45		
Type	INP450	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	5.63e+05	5.63e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	8.11e+04	8.11e+04
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

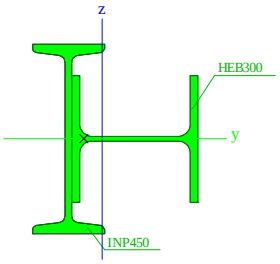
Afbeelding



Kolom-samengesteld		
Type	I + Ir	
Uitgebreid	INP450, HEB300	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	

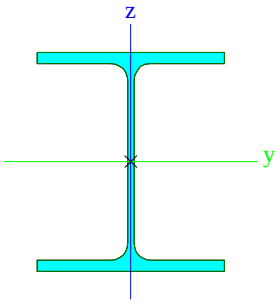
Knik y-y, Knik z-z	c	c
A [m²]	2.9616e-02	
A_y [m²], A_z [m²]	5.1391e-03	1.9650e-02
I_y [m⁴], I_z [m⁴]	5.4362e-04	4.5410e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.4161e-03	1.9877e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.2645e-03	2.5730e-03
I_w [m⁶], I_t [m⁴]	4.1252e-06	6.9763e-06
d_y [mm], d_z [mm]	-43	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	165	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.67e+05	7.67e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	6.05e+05	6.05e+05
A_L [m²/m], A_D [m²/m]	2.6069e+00	2.6069e+00

Afbeelding



Kolom DIE36		
Type	HEA360	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.4300e-02	
A_y [m²], A_z [m²]	1.0125e-02	3.6844e-03
I_y [m⁴], I_z [m⁴]	3.3100e-04	7.8900e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8900e-03	5.2600e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0875e-03	8.0417e-04
I_w [m⁶], I_t [m⁴]	2.1766e-06	1.4900e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	175
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.91e+05	4.91e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.89e+05	1.89e+05
A_L [m²/m], A_D [m²/m]	1.8300e+00	1.8334e+00

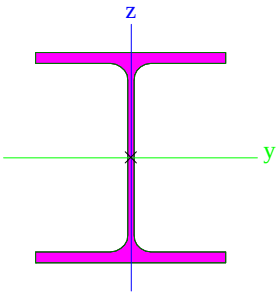
Afbeelding



Ligger DIE34		
Type	HE340A	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3350e-02	
A_y [m²], A_z [m²]	9.5495e-03	3.3201e-03
I_y [m⁴], I_z [m⁴]	2.7690e-04	7.4360e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6780e-03	4.9570e-04

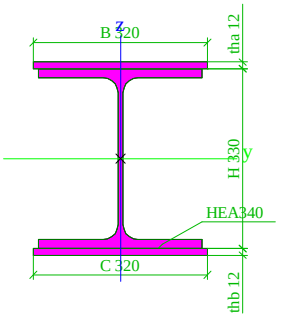
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.8500e-03	7.5590e-04
I_w [m⁶], I_t [m⁴]	1.8240e-06	1.2720e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.35e+05	4.35e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.78e+05	1.78e+05
A_L [m²/m], A_D [m²/m]	1.7944e+00	1.7944e+00

Afbeelding



Ligger DIE34+strippen		
Type	I + 2 PLud	
Uitgebreid	HEA340; 320; 320; 12; 12	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	c	c
A [m²]	2.1039e-02	
A_y [m²], A_z [m²]	1.6468e-02	3.6506e-03
I_y [m⁴], I_z [m⁴]	5.0182e-04	1.3990e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.8351e-03	8.7437e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.1654e-03	1.3705e-03
I_w [m⁶], I_t [m⁴]	3.6743e-06	4.7425e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	160	177
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.44e+05	7.44e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.22e+05	3.22e+05
A_L [m²/m], A_D [m²/m]	1.9224e+00	1.9224e+00

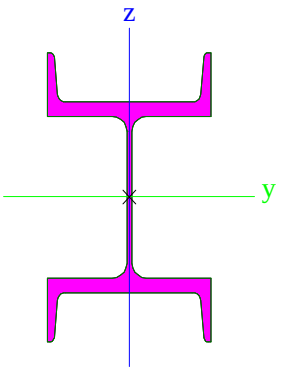
Afbeelding



Ligger DIE34+UNP's		
Type	Grafische doorsnede	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.5114e-02	
A_y [m²], A_z [m²]	1.6554e-02	4.3472e-03
I_y [m⁴], I_z [m⁴]	7.2035e-04	2.3496e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.7183e-03	1.5664e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.1091e-03	2.0212e-03
I_w [m⁶], I_t [m⁴]	4.5518e-06	4.8902e-06

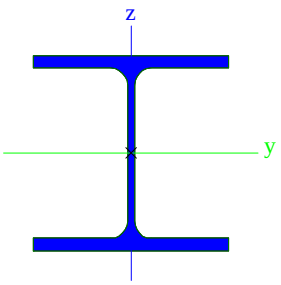
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	0	0
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.66e+05	9.66e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	4.75e+05	4.75e+05
A_L [m²/m], A_D [m²/m]	2.4925e+00	2.4925e+00

Afbeelding



Ligger DIN28		
Type	HEB280	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3140e-02	
A_y [m²], A_z [m²]	9.6422e-03	3.1403e-03
I_y [m⁴], I_z [m⁴]	1.9270e-04	6.5950e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3760e-03	4.7100e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.5340e-03	7.1760e-04
I_w [m⁶], I_t [m⁴]	1.1302e-06	1.4370e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	140	140
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3.61e+05	3.61e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.69e+05	1.69e+05
A_L [m²/m], A_D [m²/m]	1.6200e+00	1.6176e+00

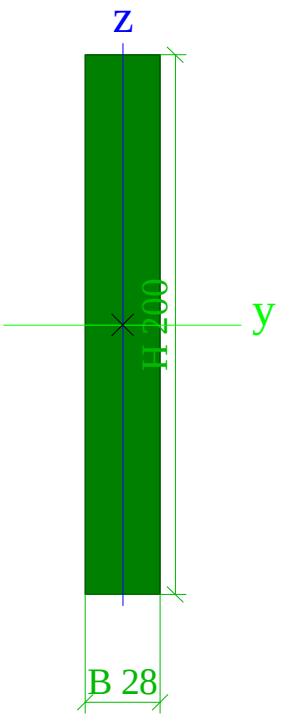
Afbeelding



Plaat 2x14x200		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06

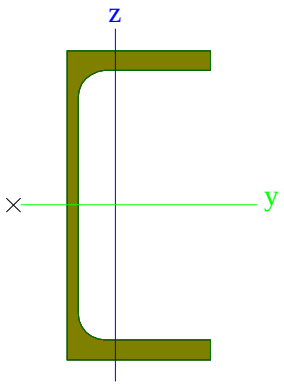
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.58e+04	6.58e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.21e+03	9.21e+03
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

Afbeelding



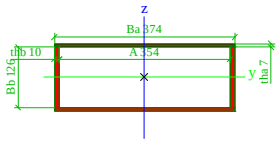
Diagonaal UPE14		
Type	UPE140	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	c	c
A [m²]	1.8400e-03	
A_y [m²], A_z [m²]	1.1000e-03	7.1956e-04
I_y [m⁴], I_z [m⁴]	5.9900e-06	7.8700e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	8.5600e-05	1.8200e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	9.8800e-05	3.2600e-05
I_w [m⁶], I_t [m⁴]	2.3372e-09	4.0500e-08
d_y [mm], d_z [mm]	-46	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	22	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.32e+04	2.32e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	7.66e+03	7.66e+03
A_L [m²/m], A_D [m²/m]	5.1970e-01	5.1965e-01

Afbeelding



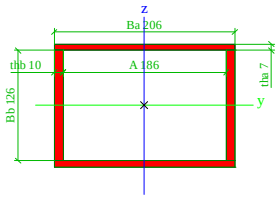
Bliksempiek-1		
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	7.7560e-03	
A_y [m²], A_z [m²]	5.0496e-03	2.7596e-03
I_y [m⁴], I_z [m⁴]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.2757e-04	9.4821e-04
I_w [m⁶], I_t [m⁴]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.00e+05	1.00e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.23e+05	2.23e+05
A_L [m²/m], A_D [m²/m]	1.0280e+00	1.9880e+00

Afbeelding



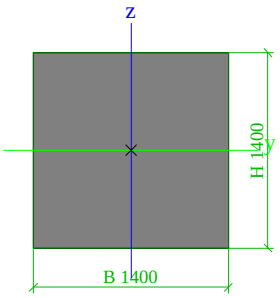
Bliksempiek-2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	5.4040e-03	
A_y [m²], A_z [m²]	2.8012e-03	2.7167e-03
I_y [m⁴], I_z [m⁴]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.7117e-04	3.9549e-04
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.37e+04	6.37e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.29e+04	9.29e+04
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

Afbeelding



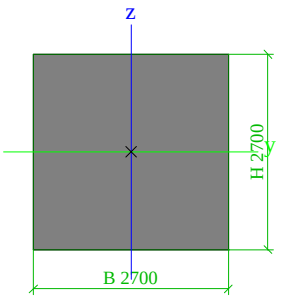
Poer boven-IA		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m^2]	1.9600e+00	
A_y [m^2], A_z [m^2]	1.6333e+00	1.6333e+00
I_y [m^4], I_z [m^4]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	0.0000e+00	0.0000e+00
I_w [m^6], I_t [m^4]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m^2/m], A_D [m^2/m]	5.6000e+00	5.6000e+00

Afbeelding



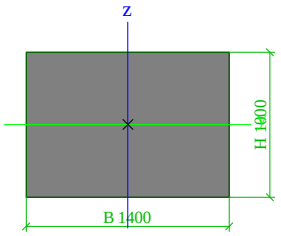
Poer onder-IA		
Type	Rechthoek	
Uitgebreid	2700; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m^2]	7.2900e+00	
A_y [m^2], A_z [m^2]	6.0750e+00	6.0750e+00
I_y [m^4], I_z [m^4]	4.4287e+00	4.4287e+00
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	3.2805e+00	3.2805e+00
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	0.0000e+00	0.0000e+00
I_w [m^6], I_t [m^4]	4.9524e-02	7.4626e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	1350
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m^2/m], A_D [m^2/m]	1.0800e+01	1.0800e+01

Afbeelding



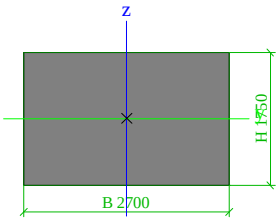
Poer boven-IB		
Type	Rechthoek	
Uitgebreid	1000; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.4000e+00	
A_y [m²], A_z [m²]	1.1667e+00	1.1667e+00
I_y [m⁴], I_z [m⁴]	1.1667e-01	2.2867e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.3333e-01	3.2667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	2.2616e-03	2.6127e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.8000e+00	4.8000e+00

Afbeelding



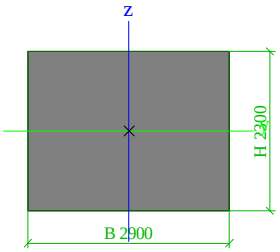
Poer onder-IB		
Type	Rechthoek	
Uitgebreid	1750; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	4.7250e+00	
A_y [m²], A_z [m²]	3.9375e+00	3.9375e+00
I_y [m⁴], I_z [m⁴]	1.2059e+00	2.8704e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3781e+00	2.1263e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2952e-01	2.8785e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	875
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	8.9000e+00	8.9000e+00

Afbeelding



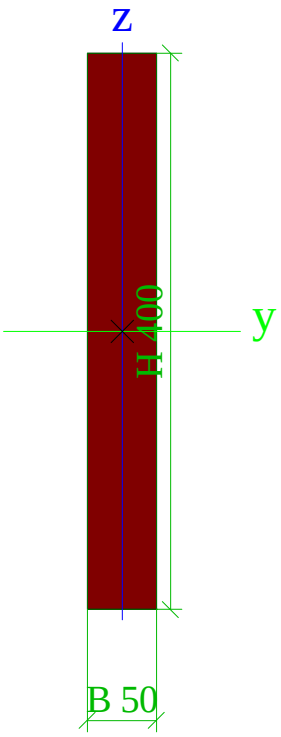
Poer onder-IV		
Type	Rechthoek	
Uitgebreid	2300; 2900	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	6.6700e+00	
A_y [m²], A_z [m²]	5.5583e+00	5.5583e+00
I_y [m⁴], I_z [m⁴]	2.9404e+00	4.6746e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.5568e+00	3.2238e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.3988e-01	6.0933e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1450	1150
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0400e+01	1.0400e+01

Afbeelding



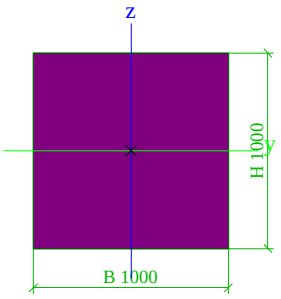
Dummy 400x50		
Type	Rechthoek	
Uitgebreid	400; 50	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.0000e-02	
A_y [m²], A_z [m²]	1.6667e-02	1.6667e-02
I_y [m⁴], I_z [m⁴]	2.6667e-04	4.1667e-06
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3333e-03	1.6667e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0000e-03	2.5000e-04
I_w [m⁶], I_t [m⁴]	5.0391e-08	1.5278e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	25	200
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.70e+05	4.70e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	5.88e+04	5.88e+04
A_L [m²/m], A_D [m²/m]	9.0000e-01	9.0000e-01

Afbeelding



Dummy beton		
Type	Rechthoek	
Uitgebreid	1000; 1000	
Onderdeelmateriaal	Dummy beton	
Bouwwijze	beton	
A [m²]	1.0000e+00	
A_y [m²], A_z [m²]	8.3333e-01	8.3333e-01
I_y [m⁴], I_z [m⁴]	8.3333e-02	8.3333e-02
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6667e-01	1.6667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2502e-04	1.4035e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	500	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.0000e+00	4.0000e+00

Afbeelding



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. staco	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie; X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie; Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1168	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1169	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1170	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1171	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1172	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1173	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1174	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1175	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1176	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1177	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1178	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1179	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1180	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1181	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1182	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1183	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1184	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1185	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1186	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1187	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1188	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1189	BC0	Variabel	EXCL MAST		Kort	Geen

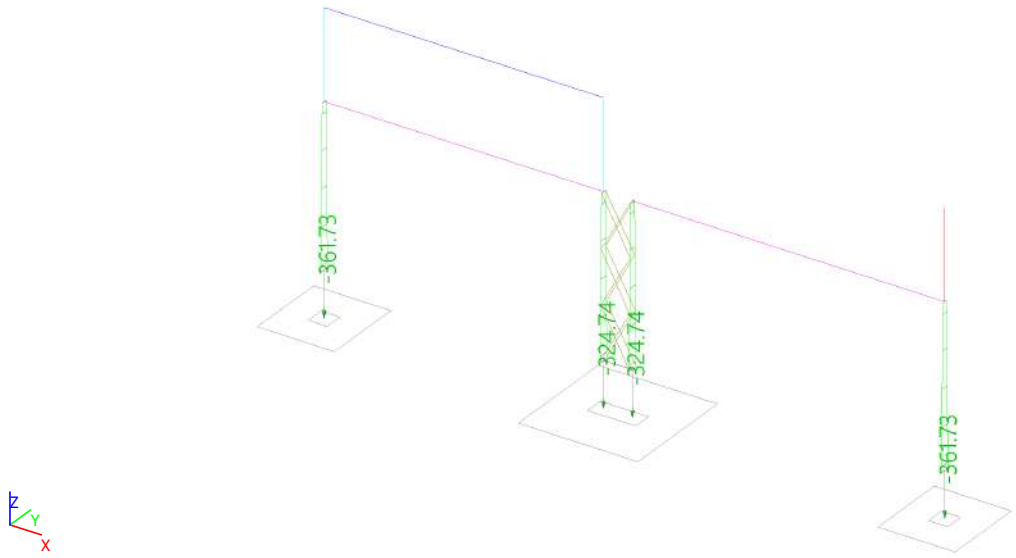
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1190	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1191	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1192	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1193	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1194	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1195	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1196	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1197	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1198	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1199	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1200	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1201	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1202	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1203	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1204	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1205	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1206	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1207	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1208	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1209	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1210	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1211	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1212	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1213	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1214	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1215	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1216	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1217	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1218	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1219	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1220	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1221	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1222	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1223	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1224	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1225	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1226	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1227	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1228	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1229	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1230	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1231	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1232	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1233	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1234	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1235	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1236	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1237	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1238	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

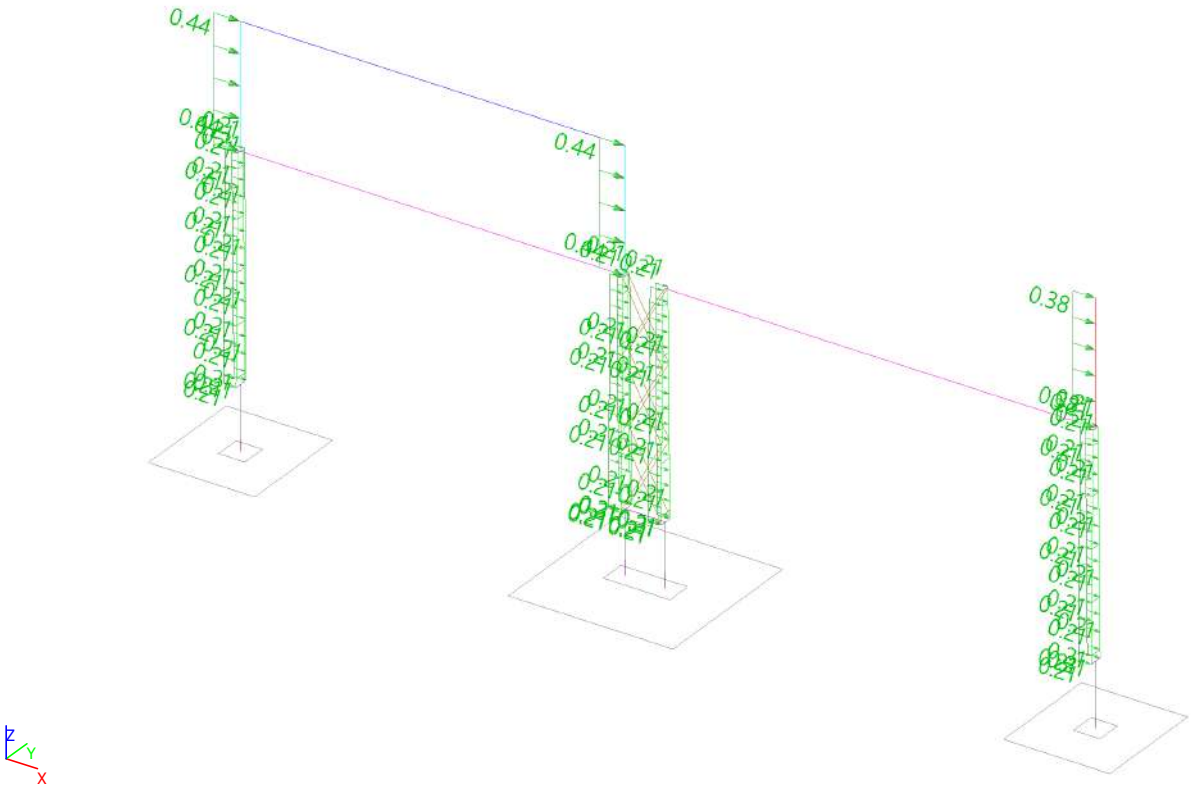
3.2. BG1: e.g. constructie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

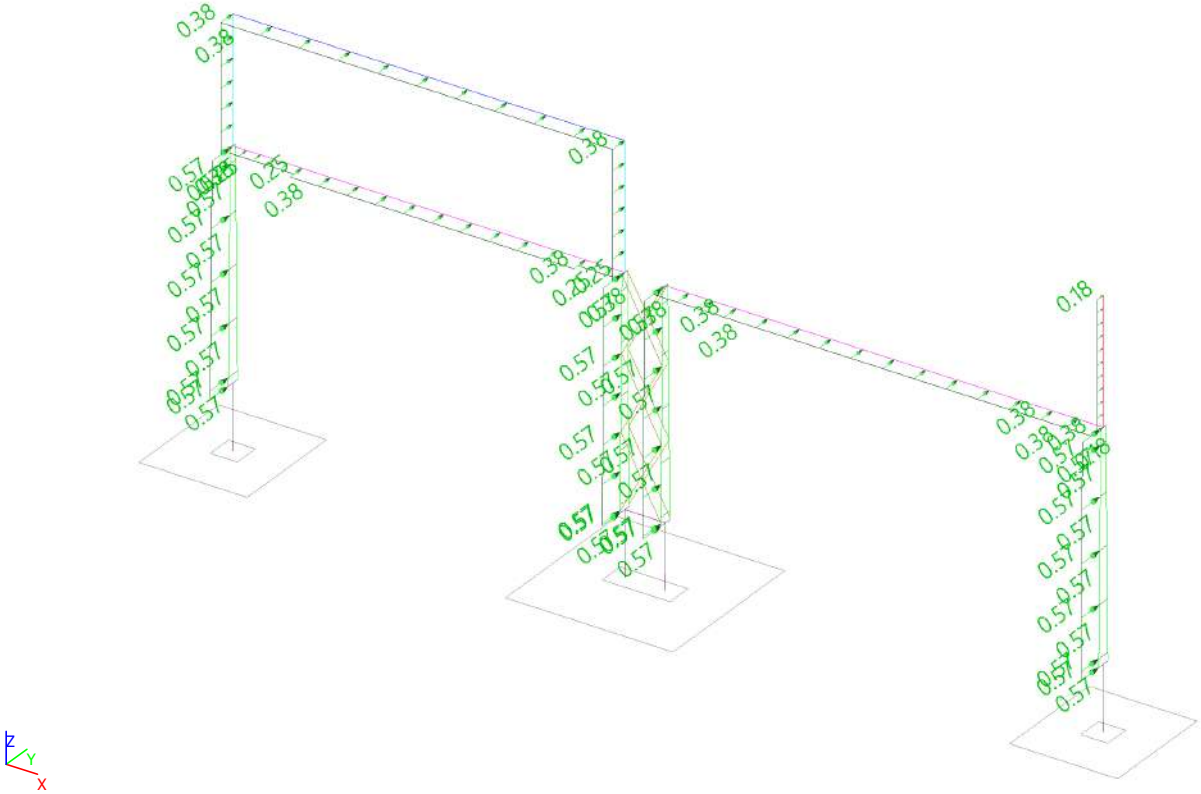
3.3. BG2: grond op poer



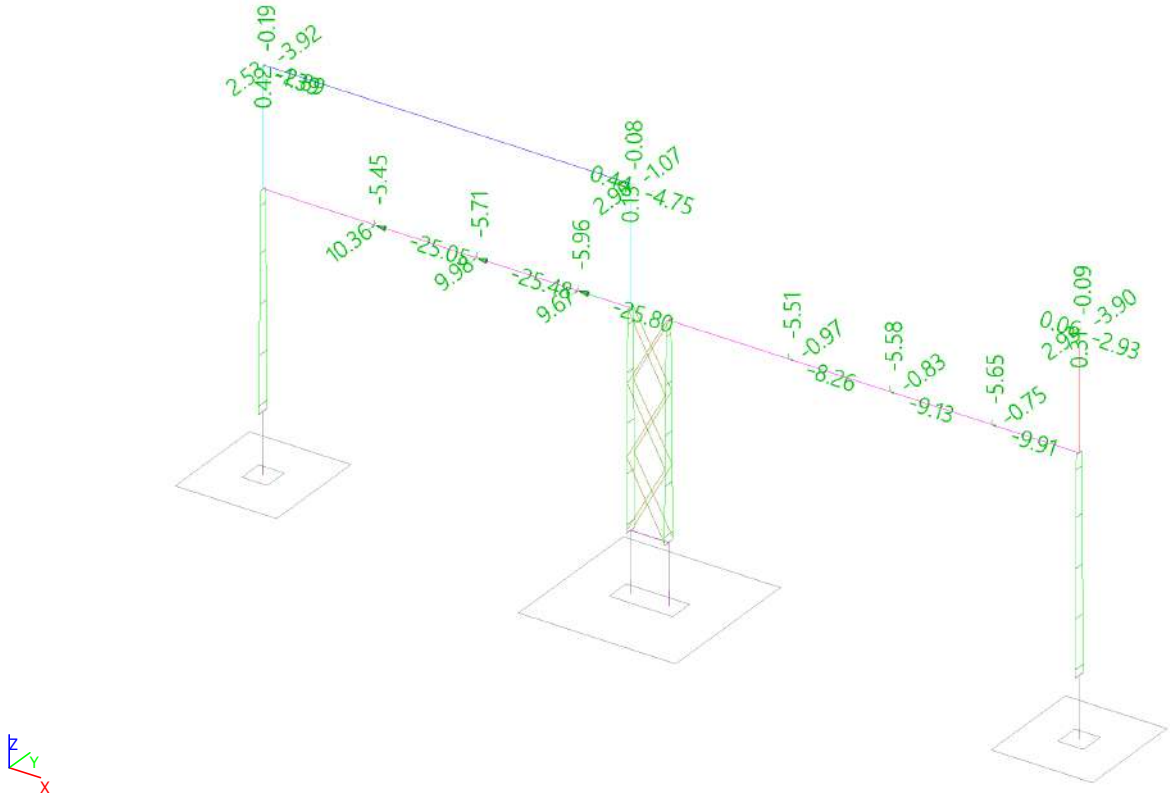
3.4. BG3: wind op constructie; X-richting



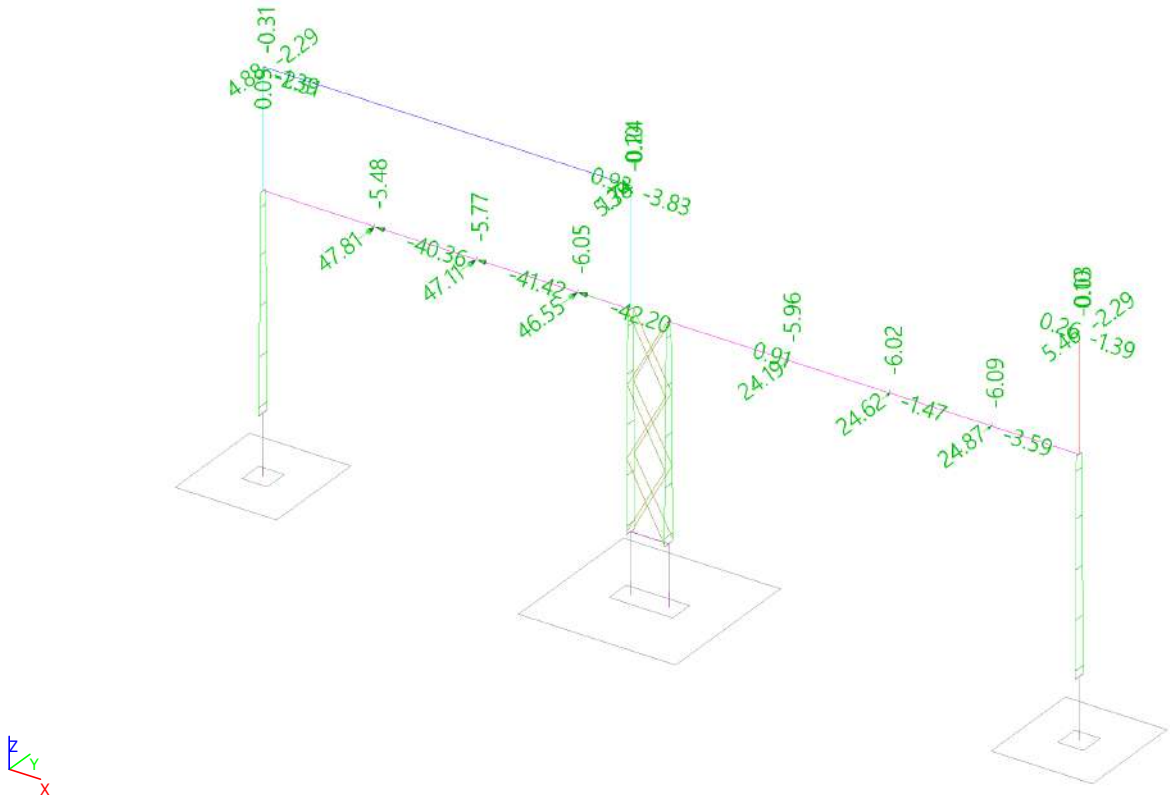
3.5. BG4: wind op constructie; Y-richting



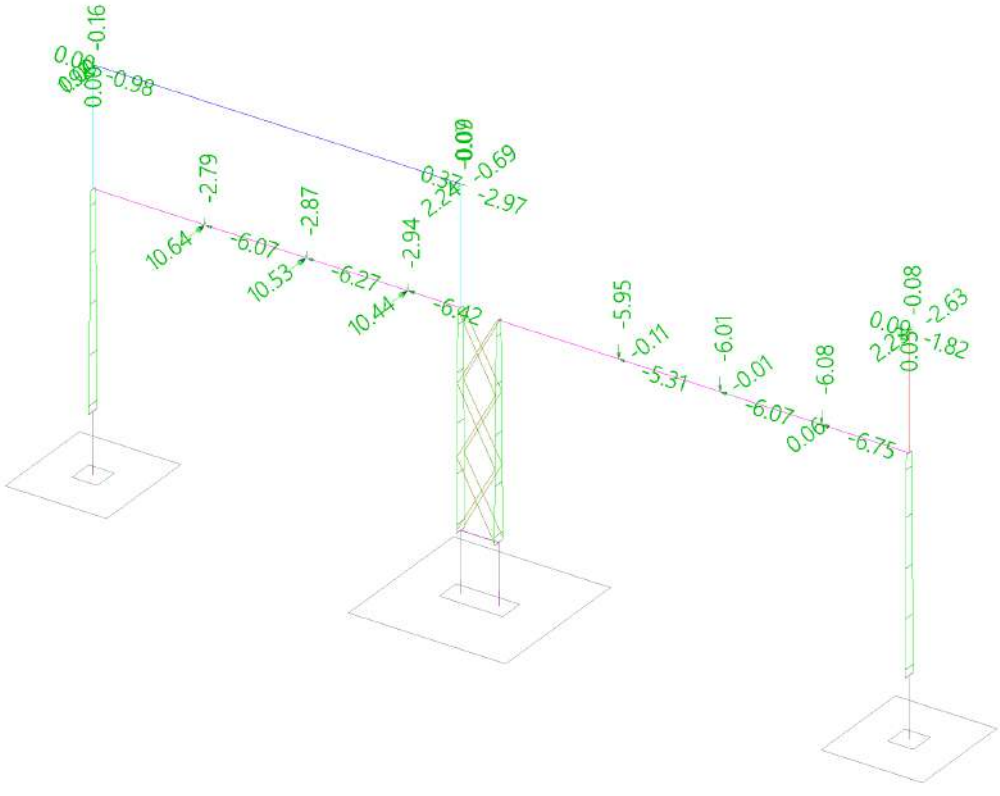
3.6. LC1001 / Totale waarde



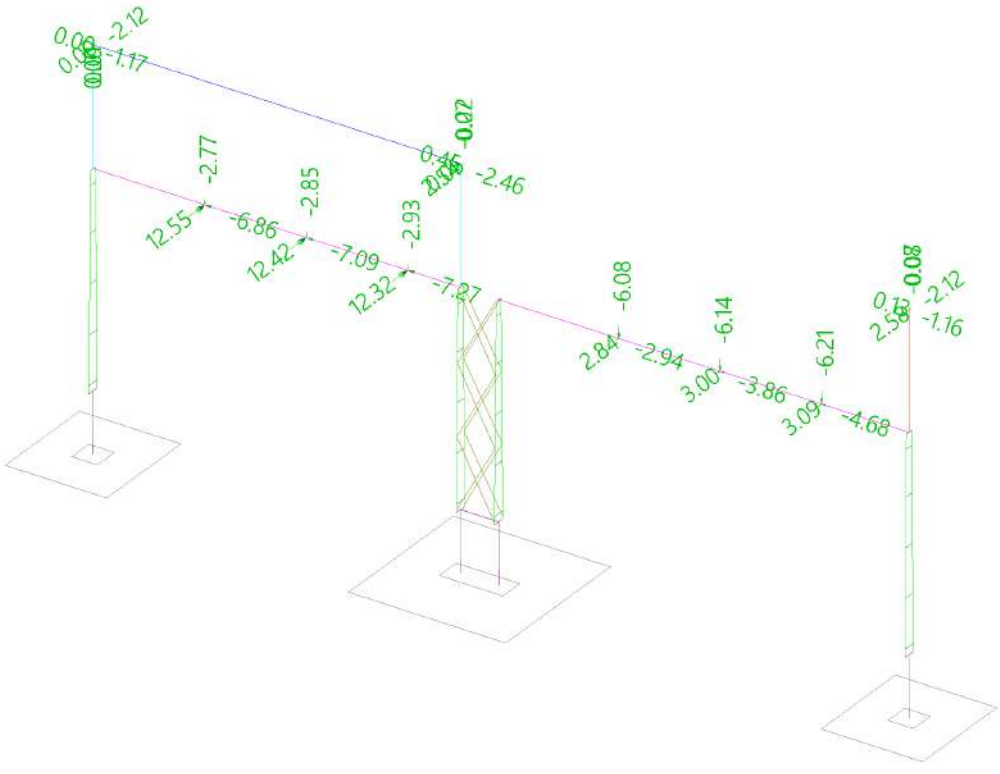
3.7. LC1080 / Totale waarde



3.8. LC1159 / Totale waarde



3.9. LC1238 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-1	Omhullend 1	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	1.40
			BG4 - wind op constructie; Y-richting	1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00
UGT-2	Omhullend 2	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	-1.40
			BG4 - wind op constructie; Y-richting	-1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00

3.11. Resultaatklasses

Naam	Omschrijving	Lijst
UGT	Sterkte en stabiliteit	UGT-1 - Omhullende - uiterst UGT-2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
Belastinggevallen	BG1
	BG3
	BG4
	BG2
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
	LC1168
	LC1169
	LC1170
	LC1171
	LC1172
	LC1173
	LC1174
	LC1175
	LC1176
	LC1177
	LC1178
	LC1179
	LC1180
	LC1181
	LC1182
	LC1183
	LC1184
	LC1185

Aantal 2D elementen	**7356**
Aantal 1D elementen	**200**
Aantal netknopen	**7808**
Aantal vergelijkingen	**46848**
	LC1186
	LC1187
	LC1188
	LC1189
	LC1190
	LC1191
	LC1192
	LC1193
	LC1194
	LC1195
	LC1196
	LC1197
	LC1198
	LC1199
	LC1200
	LC1201
	LC1202
	LC1203
	LC1204
	LC1205
	LC1206
	LC1207
	LC1208
	LC1209
	LC1210
	LC1211
	LC1212
	LC1213
	LC1214
	LC1215
	LC1216
	LC1217
	LC1218
	LC1219
	LC1220
	LC1221
	LC1222
	LC1223
	LC1224
	LC1225
	LC1226
	LC1227
	LC1228
	LC1229
	LC1230
	LC1231
	LC1232
	LC1233
	LC1234
	LC1235
	LC1236
	LC1237
	LC1238
Buigtheorie	Mindlin
Start berekening	17.06.2020 07:38
Einde berekening	17.06.2020 07:39

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	-0.0	-1946.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	0.1	1946.5

	[kN]	X	Y	Z
BG BG3	last	19.9	0.0	0.0
	knoopreacties	0.0	-0.0	0.0
	lijnreactions	-1.1	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-18.8	0.0	-0.0
BG BG4	last	0.0	40.1	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	-36.0	-0.0
BG BG2	last	0.0	0.0	-1372.9
	knoopreacties	0.0	-0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	-0.0	1372.9
BG LC1001	last	-115.1	26.9	-33.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-2.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.9	-24.5	33.4
BG LC1002	last	-136.5	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.5	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	128.0	-203.1	36.1
BG LC1003	last	-145.5	89.5	-40.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	9.2	-8.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	136.3	-80.8	40.8
BG LC1004	last	-84.1	53.2	-37.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.3	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	78.9	-47.6	37.6
BG LC1005	last	-69.9	15.2	-33.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-1.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	65.5	-14.2	33.4
BG LC1006	last	-127.6	225.6	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-24.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.6	-201.1	36.1
BG LC1007	last	-121.0	81.7	-40.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.6	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	113.4	-74.0	40.8
BG LC1008	last	-75.2	50.9	-37.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-5.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	70.5	-45.6	37.6
BG LC1009	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1010	last	-133.4	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.0	-203.3	36.3
BG LC1011	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1012	last	-81.1	53.2	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.0	-47.6	37.9
BG LC1013	last	-89.2	42.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.6	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	83.6	-38.3	37.9
BG LC1014	last	-133.4	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.0	-203.3	36.3
BG LC1015	last	-124.1	92.9	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.8	-9.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	116.3	-83.7	42.3
BG LC1016	last	-81.1	53.2	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.0	-47.6	37.9
BG LC1017	last	-98.6	20.1	-34.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-1.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.4	-18.4	34.7
BG LC1018	last	-134.6	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	126.2	-203.0	36.1
BG LC1019	last	-139.3	88.9	-41.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.8	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	-80.2	41.2
BG LC1020	last	-82.2	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	77.1	-47.3	37.7
BG LC1021	last	-98.6	20.1	-34.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-1.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.4	-18.4	34.7
BG LC1022	last	-134.6	227.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	126.2	-203.0	36.1
BG LC1023	last	-139.3	88.9	-41.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.8	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	-80.2	41.2
BG LC1024	last	-82.2	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	77.1	-47.3	37.7
BG LC1025	last	-74.3	32.0	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-3.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.7	-28.7	38.0
BG LC1026	last	-131.1	227.4	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-202.6	36.3
BG LC1027	last	-127.4	90.4	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-8.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.4	-81.5	42.3
BG LC1028	last	-78.8	52.3	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.9	-46.8	37.9
BG LC1029	last	-73.9	34.4	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.3	-30.9	38.0
BG LC1030	last	-131.0	227.9	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-203.0	36.3
BG LC1031	last	-128.0	92.0	-42.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.9	-82.9	42.3
BG LC1032	last	-78.7	52.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-47.2	37.9
BG LC1033	last	-99.6	27.9	-21.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-2.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	93.3	-25.3	21.9
BG LC1034	last	-118.6	250.1	-26.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.4	-27.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	111.2	-222.7	26.4
BG LC1035	last	-126.2	99.8	-30.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-9.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	118.3	-89.9	30.6
BG LC1036	last	-61.5	57.9	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.6	-51.6	27.8
BG LC1037	last	-54.3	16.2	-21.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-1.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.9	-15.0	21.9
BG LC1038	last	-109.7	247.8	-26.4

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.8	-27.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	102.9	-220.7	26.4
BG LC1039	last	-101.8	92.0	-30.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-8.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	95.4	-83.1	30.6
BG LC1040	last	-52.6	55.6	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-6.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-49.6	27.8
BG LC1041	last	-69.1	50.9	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-45.4	28.0
BG LC1042	last	-115.0	251.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.9	-223.6	26.8
BG LC1043	last	-113.1	105.6	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-94.8	32.5
BG LC1044	last	-58.0	58.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.4	-52.1	28.2
BG LC1045	last	-69.1	50.9	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-45.4	28.0
BG LC1046	last	-115.0	251.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.2	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	107.9	-223.6	26.8
BG LC1047	last	-113.1	105.6	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-94.8	32.5
BG LC1048	last	-58.0	58.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.4	-52.1	28.2
BG LC1049	last	-79.1	15.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-1.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	74.1	-14.3	23.6
BG LC1050	last	-116.8	250.7	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.3	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	109.5	-223.2	26.5
BG LC1051	last	-119.3	99.0	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.5	-9.9	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	111.8	-89.1	31.1
BG LC1052	last	-59.2	57.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-51.0	27.9
BG LC1053	last	-79.1	15.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-1.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	74.1	-14.3	23.6
BG LC1054	last	-116.8	250.7	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.3	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	109.5	-223.2	26.5
BG LC1055	last	-119.3	99.0	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.5	-9.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	111.8	-89.1	31.1
BG LC1056	last	-59.2	57.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-51.0	27.9
BG LC1057	last	-51.7	35.2	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.5	-31.5	28.2
BG LC1058	last	-113.0	250.8	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.0	-27.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-223.3	26.8
BG LC1059	last	-106.8	102.1	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.7	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	100.1	-91.8	32.5
BG LC1060	last	-55.6	57.5	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.1	-51.2	28.2
BG LC1061	last	-51.3	37.6	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.1	-33.6	28.2
BG LC1062	last	-112.9	251.3	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.0	-27.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	105.9	-223.7	26.8
BG LC1063	last	-107.3	103.7	-32.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.8	-10.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	100.6	-93.2	32.5
BG LC1064	last	-55.5	57.9	-28.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.0	-51.6	28.2

	[kN]	X	Y	Z
BG LC1065	last	-60.7	33.4	-33.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.9	-29.9	33.7
BG LC1066	last	-61.7	35.1	-32.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.8	-31.3	32.9
BG LC1067	last	-61.7	35.1	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.8	-31.3	32.8
BG LC1068	last	-61.7	31.6	-32.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.9	-28.5	32.7
BG LC1069	last	-63.0	31.4	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.0	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	59.0	-28.1	32.8
BG LC1070	last	-62.7	31.4	-32.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-3.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	58.8	-28.3	32.8
BG LC1071	last	-59.9	32.4	-28.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.1	-29.0	28.7
BG LC1072	last	-59.2	32.3	-28.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-28.9	28.7
BG LC1073	last	-58.6	32.2	-28.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.0	-28.9	28.6
BG LC1074	last	-51.9	33.5	-30.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.6	-30.1	30.9
BG LC1075	last	-51.9	33.4	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.7	-29.9	31.0
BG LC1076	last	-52.1	33.3	-31.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	48.8	-29.8	31.1
BG LC1077	last	-80.4	30.8	-43.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.0	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.4	-27.7	43.1
BG LC1078	last	-57.5	34.0	-28.6
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.6	-3.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.9	-30.4	28.6
BG LC1079	last	-94.0	31.2	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.9	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	88.1	-28.1	36.2
BG LC1080	last	-136.0	228.0	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.5	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	127.5	-203.2	36.1
BG LC1081	last	-117.9	103.8	-37.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.4	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	110.5	-93.0	37.8
BG LC1082	last	-83.7	53.3	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.2	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	78.4	-47.7	37.7
BG LC1083	last	-67.3	24.2	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-2.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.1	-22.0	36.2
BG LC1084	last	-127.8	225.9	-36.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-24.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.9	-201.3	36.1
BG LC1085	last	-100.7	98.7	-37.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-10.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.4	-88.5	37.8
BG LC1086	last	-75.5	51.2	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-5.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	70.7	-45.8	37.7
BG LC1087	last	-81.3	36.2	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.2	-32.5	38.0
BG LC1088	last	-133.2	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	124.9	-203.3	36.3
BG LC1089	last	-109.9	106.1	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-11.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	103.0	-94.9	38.8
BG LC1090	last	-80.8	53.0	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.7	-47.4	37.9
BG LC1091	last	-81.3	36.2	-38.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-3.7	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	76.2	-32.5	38.0
BG LC1092	last	-133.2	228.1	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	124.9	-203.3	36.3
BG LC1093	last	-109.9	106.1	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.9	-11.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	103.0	-94.9	38.8
BG LC1094	last	-80.8	53.0	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	75.7	-47.4	37.9
BG LC1095	last	-86.0	28.5	-36.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.4	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	80.6	-25.8	36.8
BG LC1096	last	-134.3	227.9	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.9	-203.1	36.2
BG LC1097	last	-113.6	103.4	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	106.4	-92.6	38.1
BG LC1098	last	-81.9	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.8	-47.3	37.7
BG LC1099	last	-86.0	28.5	-36.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.4	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	80.6	-25.8	36.8
BG LC1100	last	-134.3	227.9	-36.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	125.9	-203.1	36.2
BG LC1101	last	-113.6	103.4	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	7.1	-10.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	106.4	-92.6	38.1
BG LC1102	last	-81.9	52.9	-37.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	76.8	-47.3	37.7
BG LC1103	last	-73.4	31.7	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	68.8	-28.5	38.1
BG LC1104	last	-131.1	227.4	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-202.6	36.3
BG LC1105	last	-105.8	104.3	-38.8

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-11.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	99.2	-93.3	38.8
BG LC1106	last	-78.8	52.3	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.9	-46.8	37.9
BG LC1107	last	-73.2	33.2	-38.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	68.6	-29.8	38.1
BG LC1108	last	-131.0	227.9	-36.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.9	-203.0	36.3
BG LC1109	last	-106.0	105.4	-38.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-11.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	99.4	-94.3	38.8
BG LC1110	last	-78.7	52.8	-37.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.9	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	73.8	-47.2	37.9
BG LC1111	last	-71.7	33.9	-18.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	67.1	-30.2	18.5
BG LC1112	last	-130.5	156.6	-12.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-139.7	12.5
BG LC1113	last	-100.4	79.8	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-71.2	19.3
BG LC1114	last	-68.9	46.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.5	-41.2	19.3
BG LC1115	last	-57.5	30.9	-18.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.8	-27.5	18.5
BG LC1116	last	-126.1	155.7	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.0	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	118.2	-138.9	18.0
BG LC1117	last	-91.0	77.4	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	5.8	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	85.2	-69.1	19.3
BG LC1118	last	-64.5	45.3	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.1	-4.9	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	60.4	-40.4	19.3
BG LC1119	last	-64.9	37.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	60.7	-32.9	19.5
BG LC1120	last	-129.0	156.7	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	120.9	-139.7	18.1
BG LC1121	last	-96.0	81.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-8.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	-72.3	19.9
BG LC1122	last	-67.4	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-41.0	19.4
BG LC1123	last	-64.9	37.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-4.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	60.7	-32.9	19.5
BG LC1124	last	-129.0	156.7	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	120.9	-139.7	18.1
BG LC1125	last	-96.0	81.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-8.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	-72.3	19.9
BG LC1126	last	-67.4	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-41.0	19.4
BG LC1127	last	-66.0	31.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-27.9	18.8
BG LC1128	last	-129.4	156.5	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.2	-139.5	18.0
BG LC1129	last	-97.4	79.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	91.2	-70.6	19.5
BG LC1130	last	-67.8	45.9	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.4	-40.9	19.3
BG LC1131	last	-66.0	31.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-3.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-27.9	18.8

	[kN]	X	Y	Z
BG LC1132	last	-129.4	156.5	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.2	-139.5	18.0
BG LC1133	last	-97.4	79.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	91.2	-70.6	19.5
BG LC1134	last	-67.8	45.9	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.4	-40.9	19.3
BG LC1135	last	-59.8	33.3	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.9	-29.7	19.5
BG LC1136	last	-127.8	156.2	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-16.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.7	-139.3	18.1
BG LC1137	last	-93.5	79.9	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.5	-71.3	19.9
BG LC1138	last	-66.2	45.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-40.7	19.4
BG LC1139	last	-59.3	34.3	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	-30.6	19.5
BG LC1140	last	-127.7	156.5	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-17.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.6	-139.6	18.1
BG LC1141	last	-93.4	80.7	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-8.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.4	-72.0	19.9
BG LC1142	last	-66.1	46.0	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-5.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.8	-40.9	19.4
BG LC1143	last	-47.1	36.9	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	44.2	-32.9	26.7
BG LC1144	last	-61.9	177.5	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	58.1	-157.6	26.8
BG LC1145	last	-57.0	91.8	-27.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.5	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.4	-81.6	27.9
BG LC1146	last	-40.0	52.0	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.5	-46.3	27.5
BG LC1147	last	-30.3	33.2	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	1.9	-3.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	28.5	-29.7	26.7
BG LC1148	last	-56.8	176.4	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-19.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	53.3	-156.6	26.8
BG LC1149	last	-46.2	89.0	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-9.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	43.4	-79.2	27.9
BG LC1150	last	-34.8	50.9	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-5.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.7	-45.3	27.5
BG LC1151	last	-40.1	39.0	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-34.7	27.7
BG LC1152	last	-60.3	177.6	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.6	-157.6	26.9
BG LC1153	last	-52.4	93.0	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.1	-82.7	28.4
BG LC1154	last	-38.4	51.8	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-46.0	27.6
BG LC1155	last	-40.1	39.0	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-34.7	27.7
BG LC1156	last	-60.3	177.6	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.6	-157.6	26.9
BG LC1157	last	-52.4	93.0	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.2	-10.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.1	-82.7	28.4
BG LC1158	last	-38.4	51.8	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	36.0	-46.0	27.6
BG LC1159	last	-42.2	34.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	39.6	-30.9	27.0
BG LC1160	last	-60.8	177.4	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-157.5	26.9
BG LC1161	last	-54.2	91.2	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.8	-81.1	28.0
BG LC1162	last	-38.9	51.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.5	-46.0	27.5
BG LC1163	last	-42.2	34.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.6	-3.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	39.6	-30.9	27.0
BG LC1164	last	-60.8	177.4	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-157.5	26.9
BG LC1165	last	-54.2	91.2	-28.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	50.8	-81.1	28.0
BG LC1166	last	-38.9	51.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.5	-46.0	27.5
BG LC1167	last	-35.1	36.2	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.9	-32.3	27.7
BG LC1168	last	-58.9	177.2	-26.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.3	-157.3	26.9
BG LC1169	last	-49.7	91.7	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-10.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.6	-81.6	28.4
BG LC1170	last	-37.1	51.4	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.8	-45.7	27.6
BG LC1171	last	-34.6	36.9	-27.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.5	-32.9	27.7
BG LC1172	last	-58.8	177.4	-26.9

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.2	-157.5	26.9
BG LC1173	last	-49.6	92.3	-28.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-10.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.5	-82.0	28.4
BG LC1174	last	-36.9	51.6	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.7	-45.9	27.6
BG LC1175	last	-73.8	28.5	-18.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.7	-2.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	69.1	-26.0	18.3
BG LC1176	last	-132.2	148.9	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.4	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	123.8	-133.7	17.9
BG LC1177	last	-103.6	71.0	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.6	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	96.9	-64.4	19.2
BG LC1178	last	-70.4	41.4	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.5	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	65.8	-37.4	19.2
BG LC1179	last	-58.9	25.1	-18.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.8	-2.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.1	-23.0	18.3
BG LC1180	last	-127.6	147.8	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.1	-15.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	119.5	-132.7	17.9
BG LC1181	last	-93.3	68.2	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.0	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	87.4	-62.0	19.2
BG LC1182	last	-65.8	40.4	-19.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.2	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.6	-36.5	19.2
BG LC1183	last	-66.2	32.6	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-29.5	19.5
BG LC1184	last	-130.5	149.0	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-133.8	18.1
BG LC1185	last	-98.4	73.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-7.0	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	92.1	-66.1	19.9
BG LC1186	last	-68.6	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.2	-37.3	19.4
BG LC1187	last	-66.2	32.6	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	61.9	-29.5	19.5
BG LC1188	last	-130.5	149.0	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.3	-133.8	18.1
BG LC1189	last	-98.4	73.1	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.3	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	92.1	-66.1	19.9
BG LC1190	last	-68.6	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.2	-37.3	19.4
BG LC1191	last	-68.0	26.4	-18.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.6	-24.1	18.7
BG LC1192	last	-131.0	148.8	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.7	-133.5	18.0
BG LC1193	last	-100.4	70.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-64.1	19.4
BG LC1194	last	-69.2	41.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-37.2	19.3
BG LC1195	last	-68.0	26.4	-18.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.6	-24.1	18.7
BG LC1196	last	-131.0	148.8	-18.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.3	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	122.7	-133.5	18.0
BG LC1197	last	-100.4	70.7	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	94.0	-64.1	19.4
BG LC1198	last	-69.2	41.2	-19.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.4	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	64.7	-37.2	19.3

	[kN]	X	Y	Z
BG LC1199	last	-61.0	29.0	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.1	-26.4	19.5
BG LC1200	last	-129.3	148.5	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-15.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.1	-133.3	18.1
BG LC1201	last	-95.7	72.0	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.6	-65.1	19.9
BG LC1202	last	-67.5	40.9	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-3.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.1	-37.0	19.4
BG LC1203	last	-60.7	30.1	-19.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.9	-2.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.7	-27.3	19.5
BG LC1204	last	-129.2	148.8	-18.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	8.2	-15.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	121.0	-133.6	18.1
BG LC1205	last	-95.8	72.8	-19.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	6.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	89.6	-65.8	19.9
BG LC1206	last	-67.4	41.3	-19.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	4.3	-4.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	63.0	-37.3	19.4
BG LC1207	last	-47.9	31.8	-26.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.0	-2.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	45.0	-29.0	26.3
BG LC1208	last	-60.8	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	-152.0	26.5
BG LC1209	last	-57.9	83.6	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.3	-75.3	27.4
BG LC1210	last	-40.1	47.5	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.6	-42.8	27.3
BG LC1211	last	-30.6	27.8	-26.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	1.9	-2.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	28.7	-25.4	26.3
BG LC1212	last	-55.5	169.1	-26.5
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	3.4	-18.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	52.0	-150.9	26.5
BG LC1213	last	-46.5	80.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.9	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	43.6	-72.4	27.4
BG LC1214	last	-34.8	46.3	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-4.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.6	-41.7	27.3
BG LC1215	last	-40.2	34.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-31.4	27.5
BG LC1216	last	-59.0	170.5	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.4	-152.1	26.6
BG LC1217	last	-52.6	85.4	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-76.7	28.1
BG LC1218	last	-38.3	47.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-42.6	27.4
BG LC1219	last	-40.2	34.7	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.5	-3.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	37.7	-31.4	27.5
BG LC1220	last	-59.0	170.5	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.6	-18.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	55.4	-152.1	26.6
BG LC1221	last	-52.6	85.4	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	49.3	-76.7	28.1
BG LC1222	last	-38.3	47.3	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.0	-42.6	27.4
BG LC1223	last	-43.0	30.1	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.7	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	40.4	-27.3	26.7
BG LC1224	last	-59.7	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.0	-151.9	26.5
BG LC1225	last	-55.1	83.3	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-8.3	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	51.7	-75.0	27.6
BG LC1226	last	-39.0	47.2	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.6	-42.5	27.3
BG LC1227	last	-43.0	30.1	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.7	-2.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	40.4	-27.3	26.7
BG LC1228	last	-59.7	170.3	-26.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.7	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	56.0	-151.9	26.5
BG LC1229	last	-55.1	83.3	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.4	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	51.7	-75.0	27.6
BG LC1230	last	-39.0	47.2	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.4	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	36.6	-42.5	27.3
BG LC1231	last	-35.2	32.1	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.2	-3.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	33.0	-29.1	27.5
BG LC1232	last	-57.7	170.1	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.1	-151.7	26.6
BG LC1233	last	-49.8	84.2	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	-75.7	28.1
BG LC1234	last	-37.0	46.9	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.8	-42.2	27.4
BG LC1235	last	-34.8	32.9	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.1	-3.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	32.7	-29.7	27.5
BG LC1236	last	-57.5	170.3	-26.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.5	-18.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	54.0	-151.9	26.6
BG LC1237	last	-49.9	84.8	-28.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	3.1	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	-76.2	28.1
BG LC1238	last	-36.9	47.1	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	2.3	-4.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	34.7	-42.4	27.4

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC1	K6	S246	**-1.38**	-0.02	**60.66**	4.12	**-1.74**	**0.05**
UGT-2/2	FC1	K6	S246	**7.12**	-60.73	71.97	522.74	18.52	-1.70
UGT-1/3	FC1	K6	S246	3.82	**-81.50**	68.77	**695.90**	12.89	-1.73
UGT-2/4	FC1	K6	S246	1.20	**16.29**	61.37	**-127.91**	1.01	0.01
UGT-2/5	FC1	K6	S246	6.57	-26.06	**74.98**	205.91	**20.01**	-0.97
UGT-2/6	FC1	K6	S246	6.39	-65.19	69.49	563.87	15.63	**-1.77**

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC2	K8	S244	**24.60**	-0.20	**-31.12**	2.43	**-7.85**	-0.16
UGT-2/5	FC2	K8	S244	**120.47**	-48.17	**953.99**	350.57	**210.83**	10.69
UGT-1/7	FC2	K8	S244	99.20	**-119.98**	763.38	764.19	167.80	23.52
UGT-2/4	FC2	K8	S244	36.29	**17.02**	65.46	**-125.81**	13.90	**-2.61**
UGT-1/3	FC2	K8	S244	91.06	-117.68	669.47	**929.88**	146.71	20.75
UGT-1/8	FC2	K8	S244	99.21	-119.83	761.04	765.65	167.29	**23.54**

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	**-45.28**	0.23	**141.98**	1.22	**-31.02**	0.26
UGT-2/5	FC3	K438	S250	**49.15**	-6.55	**-825.61**	123.16	**185.28**	-1.74
UGT-1/9	FC3	K438	S250	22.76	**-46.80**	-557.75	450.38	125.65	-5.53
UGT-2/10	FC3	K438	S250	27.83	**22.99**	-641.49	88.43	143.72	5.22
UGT-2/4	FC3	K438	S250	-34.14	10.71	44.97	**-69.89**	-9.29	1.25
UGT-1/3	FC3	K438	S250	21.73	-46.76	-546.70	**450.67**	123.19	-5.49
UGT-1/11	FC3	K438	S250	-1.89	-44.65	-281.83	357.83	64.05	**-5.78**
UGT-2/12	FC3	K438	S250	27.18	22.98	-634.31	88.27	142.12	**5.23**

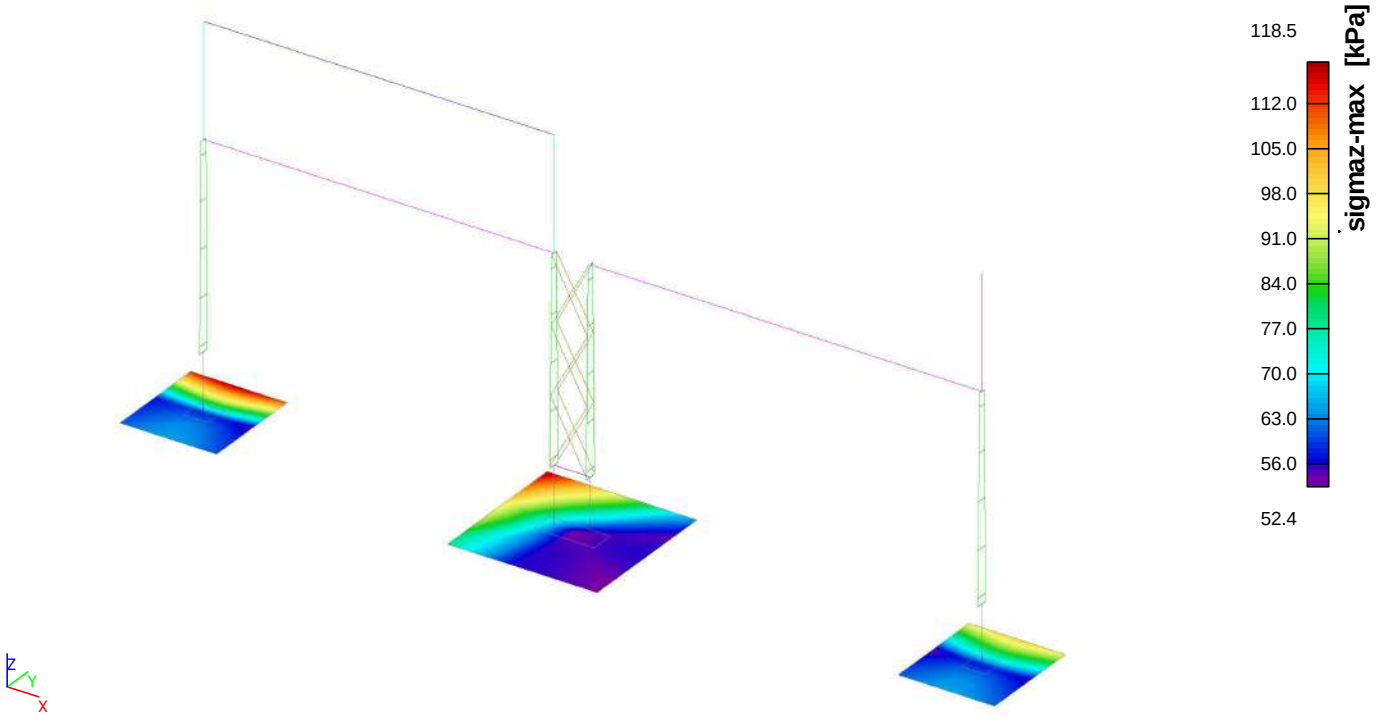
5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/13	FC4	K513	S322	**-8.25**	-14.97	52.56	124.11	0.22	0.17
UGT-2/14	FC4	K513	S322	**1.28**	-5.23	41.91	68.75	12.55	0.03
UGT-1/9	FC4	K513	S322	-3.66	**-61.47**	49.72	**506.23**	6.83	0.51
UGT-2/15	FC4	K513	S322	-4.70	**18.22**	50.99	-134.97	4.78	**-0.05**
UGT-2/16	FC4	K513	S322	-0.34	4.51	**41.52**	-58.20	10.32	0.07
UGT-1/17	FC4	K513	S322	-7.38	0.65	**53.91**	-5.94	3.00	0.01
UGT-2/18	FC4	K513	S322	-2.49	17.05	41.92	**-140.10**	7.39	0.04
UGT-1/1	FC4	K513	S322	-5.79	-0.02	43.02	0.14	**-3.72**	0.00
UGT-2/5	FC4	K513	S322	-2.86	-8.70	51.91	60.31	**13.55**	0.16
UGT-1/3	FC4	K513	S322	-3.70	-61.45	49.74	506.12	6.60	**0.51**

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren; UGT



7. Staafkrachten

7.1. Staafkrachten kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S2..S4, S252, S254, S256, S258, S260..S266, S272, S273, S284, S285, S292..S303
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S298	Kolom INP45 - INP450	305	UGT-1/9	**-965.95**	18.38	2.40	0.10	-2.68	17.45
S266	Kolom INP45 - INP450	0	UGT-1/19	**1129.37**	3.16	-51.32	-0.96	-1.03	9.76
S266	Kolom INP45 - INP450	80	UGT-2/20	475.11	**-18.88**	-41.68	-1.11	-4.57	-5.94
S265	Kolom INP45 - INP450	80	UGT-1/19	867.55	**139.00**	-29.26	0.22	-1.76	**41.18**
S266	Kolom INP45 - INP450	80	UGT-2/21	683.81	-16.59	**-70.45**	-1.53	-6.01	-4.43
S264	Kolom INP45 - INP450	2360	UGT-1/3	324.46	16.74	**23.37**	-0.95	60.48	-19.11
S266	Kolom INP45 - INP450	0	UGT-2/21	683.91	-16.60	-70.43	**-1.53**	-0.37	-3.11
S4	Kolom INP45 - INP450	0	UGT-2/21	255.50	17.44	4.86	**2.17**	0.09	7.12
S261	Kolom INP45 - INP450	0	UGT-1/19	598.41	19.79	21.69	0.54	**-58.12**	-9.22
S262	Kolom INP45 - INP450	0	UGT-1/3	609.35	17.07	-23.16	0.08	**69.74**	-6.14
S302	Kolom INP45 - INP450	0	UGT-1/9	-315.74	24.37	1.98	0.21	-19.17	**-21.41**

7.2. Staafkrachten kolom INP45 versterkt; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S248, S251, S253, S255, S257, S259, S275, S276, S282, S283
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S276	Kolom-samengesteld - I + Ir	80	UGT-1/19	**-1562.42**	-57.58	-29.28	2.39	-3.32	153.13
S248	Kolom-samengesteld - I + Ir	0	UGT-2/4	**139.91**	0.61	-0.58	0.04	-0.26	-27.94
S276	Kolom-samengesteld - I + Ir	80	UGT-2/2	-1418.06	**-60.58**	-37.54	3.61	-4.07	108.42
S282	Kolom-samengesteld - I + Ir	565	UGT-1/3	-550.80	**79.58**	13.01	2.40	-10.94	-81.23
S276	Kolom-samengesteld - I + Ir	80	UGT-2/5	-929.65	-50.10	**-38.49**	4.34	-4.00	27.74
S282	Kolom-samengesteld - I + Ir	2360	UGT-1/3	-806.59	69.96	**22.09**	-0.11	11.99	-16.34
S257	Kolom-samengesteld - I + Ir	0	UGT-1/3	-378.03	56.25	-2.22	**-1.00**	11.65	-52.42
S276	Kolom-samengesteld - I + Ir	0	UGT-2/5	-929.44	-50.10	-38.47	**4.34**	-0.92	31.75
S282	Kolom-samengesteld - I + Ir	2756	UGT-2/15	-63.11	3.46	-3.04	0.31	**-18.06**	-7.44
S282	Kolom-samengesteld - I + Ir	2756	UGT-1/11	-554.68	45.76	19.22	-0.37	**20.95**	13.64
S282	Kolom-samengesteld - I + Ir	565	UGT-1/22	-537.53	74.35	3.41	1.74	-13.48	**-81.83**
S275	Kolom-samengesteld - I + Ir	2532	UGT-1/3	-1436.64	68.57	-5.85	-0.07	0.13	**202.58**

7.3. Staafkrachten kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S329, S330
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S329	Kolom DIE36 - HEA360	0	UGT-2/5	**-17.23**	**-20.45**	-3.32	0.17	15.67	**50.24**
S330	Kolom DIE36 - HEA360	4651	UGT-2/5	**-6.41**	0.60	-2.65	-0.18	0.01	0.16
S330	Kolom DIE36 - HEA360	0	UGT-1/23	-16.31	**11.28**	1.98	-0.07	-9.09	-27.23
S329	Kolom DIE36 - HEA360	4600	UGT-2/24	-10.15	-13.33	**-12.87**	0.19	0.64	-31.65
S330	Kolom DIE36 - HEA360	0	UGT-1/9	-13.67	5.98	**14.05**	-0.35	**-59.30**	-15.67
S330	Kolom DIE36 - HEA360	0	UGT-2/25	-13.67	6.06	1.37	**-0.41**	-11.83	-16.06
S329	Kolom DIE36 - HEA360	0	UGT-2/25	-15.52	-11.44	-2.93	**0.40**	8.10	27.42
S329	Kolom DIE36 - HEA360	0	UGT-2/26	-14.97	-11.16	-11.21	0.15	**46.35**	27.27
S329	Kolom DIE36 - HEA360	4651	UGT-2/5	-10.88	-15.00	-8.16	0.17	-0.01	**-38.08**

7.4. Staafkrachten ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S33, S40, S404, S406
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S40	Ligger DIE34 - HE340A	0	UGT-2/27	**-39.58**	24.49	-1.16	-0.01	-1.08	-52.93
S404	Ligger DIE34 - HE340A	0	UGT-2/2	**137.51**	-19.18	-83.28	0.01	96.09	-1.88
S406	Ligger DIE34 - HE340A	1875	UGT-1/17	-1.15	**-26.90**	0.57	-0.01	-0.01	-44.48
S40	Ligger DIE34 - HE340A	0	UGT-2/5	-36.34	**26.13**	10.10	-0.02	-5.90	-57.23
S404	Ligger DIE34 - HE340A	1440	UGT-1/3	119.30	-18.73	**-92.27**	0.01	**-26.99**	-30.78
S33	Ligger DIE34 - HE340A	0	UGT-1/3	7.58	18.08	**65.10**	0.01	-2.08	-46.40
S40	Ligger DIE34 - HE340A	0	UGT-2/28	-2.80	16.32	-4.22	**-0.05**	-1.52	-33.52
S40	Ligger DIE34 - HE340A	0	UGT-1/29	-9.22	24.04	38.94	**0.04**	-15.28	-47.18
S33	Ligger DIE34 - HE340A	2560	UGT-1/3	7.58	15.06	64.21	0.01	**163.44**	-3.98
S33	Ligger DIE34 - HE340A	0	UGT-2/5	18.79	22.57	29.38	0.01	-0.95	**-64.58**
S406	Ligger DIE34 - HE340A	0	UGT-2/5	-15.56	-22.43	-11.30	-0.02	21.04	**16.76**

7.5. Staafkrachten ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S403
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/1	**1.05**	8.41	0.02	0.00	-0.10	3.12
S403	Ligger DIE34+strippen - I + 2 PLud	9858	UGT-2/2	**137.51**	-17.98	-83.28	0.01	149.56	10.04
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/17	63.16	**-23.04**	-17.73	0.00	20.53	-11.63
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/5	18.79	**19.54**	29.38	0.01	74.28	-10.68
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/3	119.30	-17.03	**-91.77**	0.01	105.52	-5.04
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/3	7.58	15.06	**64.21**	0.01	163.44	-3.98
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/31	7.99	12.69	16.16	**-0.01**	42.03	-0.28
S403	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/32	7.67	12.72	34.05	**0.03**	84.78	-1.56
S403	Ligger DIE34+strippen - I + 2 PLud	4258	UGT-2/4	6.28	0.87	-0.13	0.00	**-12.69**	21.97
S403	Ligger DIE34+strippen - I + 2 PLud	5858	UGT-1/3	43.87	0.17	10.36	0.01	**327.50**	36.41
S403	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/23	49.38	-20.05	-16.40	0.00	19.01	**-12.35**
S403	Ligger DIE34+strippen - I + 2 PLud	5858	UGT-2/5	52.59	2.36	5.15	0.01	149.47	**46.77**

7.6. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S405
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/27	**-39.58**	21.39	-1.16	-0.01	-4.12	7.29
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/50	**7.14**	18.79	39.74	0.03	86.68	10.59
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/17	-1.15	**-24.68**	0.57	-0.01	-1.07	3.88
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/5	-36.34	**23.02**	10.10	-0.02	20.61	7.28
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/9	-4.19	-20.53	**-48.68**	0.03	91.69	5.67
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/9	-0.36	19.12	**43.42**	0.03	96.44	9.89
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/28	-2.80	13.22	-2.82	**-0.05**	-10.76	5.25
S405	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/29	-9.22	20.94	37.54	**0.04**	85.10	11.86
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-2/15	-11.80	1.51	-0.79	-0.02	**-39.20**	72.32
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-1/9	-3.91	1.01	11.91	0.03	**239.24**	67.26
S405	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/1	1.59	-13.93	-0.02	0.00	0.03	**-1.68**
S405	Ligger DIE34+UNP's - Grafische doorsnede	6121	UGT-2/5	-30.91	3.03	3.19	-0.02	54.81	**81.00**

7.7. Staafkrachten ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S331
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S331	Ligger DIN28 - HEB280	0	UGT-2/33	**-9.72**	9.21	-3.86	0.00	0.10	-24.88
S331	Ligger DIN28 - HEB280	14500	UGT-1/34	**-7.44**	-8.44	-3.86	0.00	-0.03	-18.49
S331	Ligger DIN28 - HEB280	14500	UGT-1/1	-7.45	**-8.72**	0.00	0.00	0.00	-20.56
S331	Ligger DIN28 - HEB280	0	UGT-2/5	-9.55	**11.05**	0.00	0.01	0.17	**-38.08**
S331	Ligger DIN28 - HEB280	14500	UGT-1/8	-8.07	-7.26	**-3.86**	0.00	0.32	-10.29
S331	Ligger DIN28 - HEB280	14500	UGT-2/32	-8.98	-7.84	**3.86**	0.03	0.27	-14.39
S331	Ligger DIN28 - HEB280	0	UGT-1/31	-8.87	8.90	3.86	**-0.01**	0.06	-22.14
S331	Ligger DIN28 - HEB280	0	UGT-2/32	-8.98	9.04	-3.85	**0.03**	0.22	-23.09
S331	Ligger DIN28 - HEB280	7250	UGT-2/4	-7.48	0.02	0.00	0.00	**-13.95**	12.08
S331	Ligger DIN28 - HEB280	7250	UGT-1/3	-8.15	0.92	0.00	0.01	**14.33**	11.72
S331	Ligger DIN28 - HEB280	9425	UGT-2/5	-9.55	0.08	0.00	0.01	0.18	**14.40**

7.8. Staafkrachten koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S394	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	**-22.04**	-1.43	-162.97	**-0.76**	8.20	-0.10
S402	Plaat 2x14x200 - Rechthoek	0	UGT-1/19	**125.00**	-0.79	-74.06	0.07	10.20	0.35
S396	Plaat 2x14x200 - Rechthoek	0	UGT-1/35	6.51	**-9.08**	-250.50	-0.45	10.35	0.68
S390	Plaat 2x14x200 - Rechthoek	0	UGT-2/5	-0.04	**4.21**	-27.75	-0.06	3.90	-0.61
S396	Plaat 2x14x200 - Rechthoek	187	UGT-1/7	5.40	-4.45	**-255.80**	-0.31	-37.00	-0.31
S364	Plaat 2x14x200 - Rechthoek	0	UGT-2/15	0.71	0.01	**53.43**	0.01	-4.97	0.00
S384	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.52	1.17	-135.15	**0.66**	9.59	-0.06
S398	Plaat 2x14x200 - Rechthoek	232	UGT-1/3	1.59	-6.85	-254.65	-0.07	**-43.18**	-0.78
S366	Plaat 2x14x200 - Rechthoek	0	UGT-1/9	-0.79	-0.11	-198.28	-0.10	**23.00**	0.01
S396	Plaat 2x14x200 - Rechthoek	187	UGT-1/35	6.51	-9.08	-250.59	-0.45	-36.39	**-1.01**
S400	Plaat 2x14x200 - Rechthoek	0	UGT-2/21	-3.71	-5.48	-165.60	-0.09	13.37	**1.41**

7.9. Staafkrachten diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S268	Diagonaal UPE14 - UPE140	0	UGT-2/21	**-161.26**	0.00	0.00	0.00	0.00	0.00
S271	Diagonaal UPE14 - UPE140	3142	UGT-1/8	**236.17**	0.00	0.00	0.00	0.00	0.00
S235	Diagonaal UPE14 - UPE140	0	UGT-1/36	-2.51	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.10. Staafkrachten bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S332
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S332	Bliksempiek-2 - Koker fl	0	UGT-1/37	**-3.77**	-2.00	0.10	0.00	-0.47	9.21
S332	Bliksempiek-2 - Koker fl	4651	UGT-1/38	**0.42**	3.61	-2.77	0.00	0.00	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/8	-2.81	**-6.63**	0.26	0.00	-1.21	**27.82**
S332	Bliksempiek-2 - Koker fl	4600	UGT-2/24	-0.14	**9.06**	-3.81	0.00	0.19	-0.46
S332	Bliksempiek-2 - Koker fl	0	UGT-2/5	-3.11	2.60	**-7.80**	0.00	**30.53**	-12.38
S332	Bliksempiek-2 - Koker fl	0	UGT-1/39	-2.81	-5.46	**2.77**	0.00	**-7.12**	25.09
S332	Bliksempiek-2 - Koker fl	0	UGT-1/40	-2.84	-4.32	-1.15	**0.00**	5.35	17.09
S332	Bliksempiek-2 - Koker fl	0	UGT-2/18	-2.70	6.09	-2.07	0.00	9.62	**-25.58**

7.11. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer boven-IA - Rechthoek	1600	UGT-2/5	**-297.75**	22.26	-5.96	-0.97	-30.16	245.34
S246	Poer boven-IA - Rechthoek	0	UGT-1/1	**-60.66**	0.02	**1.38**	**0.05**	1.74	4.12
S246	Poer boven-IA - Rechthoek	0	UGT-2/4	-61.37	**-16.29**	-1.20	0.01	-1.01	-127.91
S246	Poer boven-IA - Rechthoek	0	UGT-1/3	-68.77	**81.50**	-3.82	-1.73	-12.89	695.90
S246	Poer boven-IA - Rechthoek	0	UGT-2/2	-71.97	60.73	**-7.12**	-1.70	-18.52	522.74
S246	Poer boven-IA - Rechthoek	0	UGT-2/6	-69.49	65.19	-6.39	**-1.77**	-15.63	563.87
S246	Poer boven-IA - Rechthoek	2000	UGT-2/5	-297.75	22.26	-5.96	-0.97	**-32.54**	254.24
S246	Poer boven-IA - Rechthoek	2000	UGT-1/1	-283.43	-0.04	1.29	0.05	**4.41**	4.11
S246	Poer boven-IA - Rechthoek	2000	UGT-2/4	-284.14	-13.92	-1.13	0.01	-3.33	**-158.12**
S246	Poer boven-IA - Rechthoek	2000	UGT-1/3	-291.54	68.88	-3.45	-1.73	-20.15	**846.33**

7.12. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/5	**-1087.17**	46.37	-115.78	-3.60	-77.59	419.06
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**31.12**	0.20	**-24.60**	-0.16	**7.85**	2.43
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-65.46	**-17.02**	-36.29	-2.61	-13.90	-125.81
S244	Poer onder-IV - Rechthoek	0	UGT-1/7	-763.38	**119.98**	-99.20	23.52	-167.80	764.19
S244	Poer onder-IV - Rechthoek	0	UGT-2/5	-953.99	48.17	**-120.47**	10.69	-210.83	350.57
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	-802.64	112.47	-87.89	**-14.10**	-57.21	1096.77
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	-761.04	119.83	-99.21	**23.54**	-167.29	765.65
S244	Poer onder-IV - Rechthoek	360	UGT-2/5	-971.58	48.17	-120.47	10.69	**-254.20**	367.91
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-198.64	-16.25	-36.26	2.43	-41.33	**-155.80**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	-802.64	112.47	-87.89	-14.10	-88.85	**1137.26**

7.13. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-275.15**	-0.24	44.81	0.19	35.16	0.88
S250	Poer onder-IV - Rechthoek	0	UGT-2/5	**825.61**	6.55	**-49.15**	-1.74	-185.28	123.16
S250	Poer onder-IV - Rechthoek	1440	UGT-2/10	508.31	**-24.96**	-24.15	-1.85	-7.77	54.35
S250	Poer onder-IV - Rechthoek	0	UGT-1/9	557.75	**46.80**	-22.76	-5.53	-125.65	450.38
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-141.98	-0.23	**45.28**	0.26	31.02	1.22
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	281.83	44.65	1.89	**-5.78**	-64.05	357.83
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	413.52	41.83	-18.51	**8.10**	-7.12	515.58
S250	Poer onder-IV - Rechthoek	360	UGT-2/5	808.02	6.55	-49.15	-1.74	**-202.98**	125.52
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	-233.93	-0.24	44.90	0.21	**54.13**	0.88
S250	Poer onder-IV - Rechthoek	1800	UGT-2/15	184.80	-17.43	2.66	-3.14	8.28	**-96.94**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	413.52	41.83	-18.51	8.10	-13.78	**530.64**

7.14. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer boven-IA - Rechthoek	1600	UGT-1/17	**-276.68**	-0.54	7.11	0.01	8.66	-6.92
S322	Poer boven-IA - Rechthoek	0	UGT-2/16	**-41.52**	-4.51	0.34	0.07	-10.32	-58.20
S322	Poer boven-IA - Rechthoek	0	UGT-2/15	-50.99	**-18.22**	4.70	**-0.05**	-4.78	-134.97
S322	Poer boven-IA - Rechthoek	0	UGT-1/9	-49.72	**61.47**	3.66	0.51	-6.83	506.23
S322	Poer boven-IA - Rechthoek	0	UGT-2/14	-41.91	5.23	**-1.28**	0.03	-12.55	68.75
S322	Poer boven-IA - Rechthoek	0	UGT-1/13	-52.56	14.97	**8.25**	0.17	-0.22	124.11
S322	Poer boven-IA - Rechthoek	0	UGT-1/3	-49.74	61.45	3.70	**0.51**	-6.60	506.12
S322	Poer boven-IA - Rechthoek	2000	UGT-2/14	-264.68	4.09	-1.02	0.03	**-14.85**	78.07
S322	Poer boven-IA - Rechthoek	2000	UGT-1/41	-275.15	-2.09	7.57	0.00	**17.46**	-29.36
S322	Poer boven-IA - Rechthoek	2000	UGT-2/18	-264.69	-14.49	2.51	0.04	-2.39	**-171.65**
S322	Poer boven-IA - Rechthoek	2000	UGT-1/9	-272.49	52.20	3.61	0.51	0.44	**619.94**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S2..S4, S252, S254, S256, S258, S260..S266, S272, S273, S284, S285, S292..S303
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S299	1895	UGT-1/9	**-181.8**		1.4	181.8	0.0
S2	0	UGT-1/19		106.8	4.2	107.0	**0.0**
S264	0	UGT-1/9	-56.7		12.3	60.6	0.0
S265	80	UGT-1/3		**262.9**	2.0	**263.0**	0.0
S4	637	UGT-1/3		108.1	**0.3**	108.1	0.0
S4	2532	UGT-1/3		64.2	**29.3**	81.8	0.0
S260	283	UGT-1/3		18.2	8.9	**23.8**	0.0

8.2. Von Mises spanningen kolom INP45 versterkt; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S248, S251, S253, S255, S257, S259, S275, S276, S282, S283
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S275	2532	UGT-1/3	**-150.4**	5.4	**150.7**	0.0
S259	565	UGT-1/3	**-10.2**	14.8	**27.6**	0.0
S248	0	UGT-1/3	-105.0	1.6	105.0	**0.0**
S275	637	UGT-1/3	-88.0	**0.2**	88.0	0.0
S282	1462	UGT-1/3	-19.2	**28.4**	52.8	0.0

8.3. Von Mises spanningen kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S329, S330
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S329	0	UGT-2/20	**-108.9**	2.3	**108.9**	**0.0**
S330	3067	UGT-1/45	**-18.7**	2.5	19.1	0.0
S330	3833	UGT-1/1	-27.8	**0.0**	27.8	0.0
S329	3067	UGT-1/8	-22.6	**3.9**	23.6	0.0
S330	3067	UGT-1/45	-18.7	2.5	**19.1**	0.0

8.4. Von Mises spanningen ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S33, S40, S404, S406
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S40	0	UGT-2/5	**-121.7**		0.2	121.7	0.0
S33	0	UGT-2/5		**132.2**	0.1	**132.2**	**0.0**
S404	1440	UGT-1/17		100.6	**0.0**	100.6	0.0
S40	2625	UGT-1/3		77.6	**0.4**	77.6	0.0
S40	1750	UGT-1/19	-49.8		0.4	**49.9**	0.0

8.5. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S403
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S403	0	UGT-1/8	63.1	0.0	63.1	**0.0**
S403	10500	UGT-1/3	**31.4**	29.1	59.4	0.0
S403	5858	UGT-1/22	**161.7**	0.0	161.7	0.0
S403	9858	UGT-2/14	70.9	**0.0**	70.9	0.0
S403	10500	UGT-1/3	31.4	**29.1**	59.4	0.0
S403	10500	UGT-1/3	31.4	29.1	**59.4**	0.0
S403	5858	UGT-1/22	161.7	0.0	**161.7**	0.0

8.6. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S405
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S405	6121	UGT-1/9	**-131.2**		0.0	131.2	0.0
S405	0	UGT-1/3		41.9	0.0	41.9	**0.0**
S405	2121	UGT-1/9	-98.1		0.0	98.1	0.0
S405	2121	UGT-1/3		**98.0**	0.0	98.0	0.0
S405	10910	UGT-1/19	-61.6		**0.0**	61.6	0.0
S405	2121	UGT-1/9	-98.1		**0.0**	98.1	0.0
S405	11700	UGT-1/19	-37.7		0.0	**37.7**	0.0
S405	6121	UGT-1/9	-131.2		0.0	**131.2**	0.0

8.7. Von Mises spanningen ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S331
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S331	0	UGT-2/5	**-81.7**	**0.1**	**81.7**	**0.0**
S331	3625	UGT-1/48	**-18.1**	0.1	18.1	0.0
S331	13775	UGT-1/1	-31.4	**0.0**	31.4	0.0
S331	3625	UGT-1/48	-18.1	0.1	**18.1**	0.0

8.8. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S400	277	UGT-1/3	**-225.9**		0.0	225.9	0.0
S353	0	UGT-1/3		1.3	54.8	94.9	0.0
S351	0	UGT-1/3	-3.5		36.6	63.5	**0.0**
S398	232	UGT-1/3		**261.4**	0.0	261.4	0.0
S388	0	UGT-1/35		112.6	**0.0**	112.6	0.0
S396	93	UGT-1/3		7.4	**76.8**	133.2	0.0
S392	161	UGT-1/19	-7.9		13.9	**25.3**	0.0
S398	232	UGT-1/3		261.4	0.0	**261.4**	0.0

8.9. Von Mises spanningen diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S268	0	UGT-2/21	**-87.6**		0.0	87.6	0.0
S267	0	UGT-2/21		80.0	0.0	80.0	0.0
S235	0	UGT-2/21	-69.6		**0.0**	69.6	**0.0**
S271	3142	UGT-1/8		**128.4**	0.0	**128.4**	0.0
S279	0	UGT-2/5		25.5	0.0	**25.5**	0.0

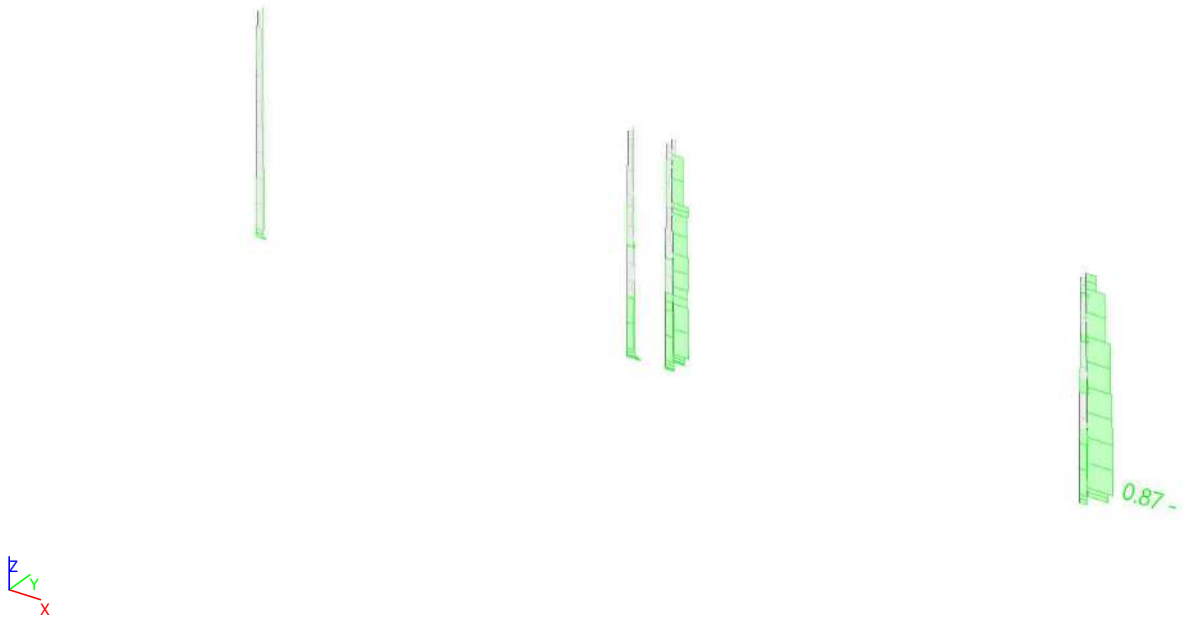
8.10. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S332
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S332	0	UGT-2/5	**-101.4**	0.0	**101.4**	**0.0**
S332	4651	UGT-1/52	**0.0**	4.4	7.6	0.0
S332	3721	UGT-2/5	-28.5	**0.0**	28.5	0.0
S332	4600	UGT-2/5	-2.2	**4.4**	7.9	0.0
S332	4600	UGT-2/5	-2.1	2.7	**5.2**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S2..S4, S252, S254, S256, S258, S260..S266, S272, S273, S284, S285, S292..S303

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S299	1.895 / 1.895 m	INP450	S 235	UGT	0.87 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.895 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-915.93	kN
$V_{y,Ed}$	19.56	kN
$V_{z,Ed}$	2.32	kN
T_{Ed}	0.14	kNm
$M_{y,Ed}$	-3.35	kNm
$M_{z,Ed}$	23.98	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	3.358e+04	-3.895e+04	-1.16	23.80	0.46	2.50	28.57	31.74	102.45	1
3	SO	61	24	9.165e+04	1.642e+05	0.56	0.47	1.00	2.50	9.00	10.00	14.47	1
4	I	369	16	6.241e+04	5.979e+04	0.96		1.00	22.78	28.00	34.00	38.56	1
5	SO	61	24	8.862e+04	1.611e+05	0.55	0.48	1.00	2.50	9.00	10.00	14.48	1
7	SO	61	24	3.055e+04	-4.198e+04	-1.37	23.80	0.42	2.50	32.92	36.58	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m²
$N_{c,Rd}$	3454.50	kN
Eenheidscontrole	0.27	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m³
$M_{pl,y,Rd}$	564.00	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m³
$M_{pl,z,Rd}$	81.08	kNm
Eenheidscontrole	0.30	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m²
$V_{pl,y,Rd}$	1192.18	kN
Eenheidscontrole	0.02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m²
$V_{pl,z,Rd}$	1058.72	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	1.4	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	530.66	kNm
α	2.00	
$M_{pl,z,Rd}$	81.08	kNm
β	1.33	

Eenheidscontrole (6.41) = 0.00 + 0.20 = 0.20 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 1.895 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	3.358e+04	-3.895e+04	-1.16	23.80	0.46	2.50	28.57	31.74	102.45	1
3	SO	61	24	9.165e+04	1.642e+05	0.56	0.47	1.00	2.50	9.00	10.00	14.47	1
4	I	369	16	6.241e+04	5.979e+04	0.96		1.00	22.78	28.00	34.00	38.56	1
5	SO	61	24	8.862e+04	1.611e+05	0.55	0.48	1.00	2.50	9.00	10.00	14.48	1
7	SO	61	24	3.055e+04	-4.198e+04	-1.37	23.80	0.42	2.50	32.92	36.58	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings flexibel	
Systeemlengte L	8.350	1.895	m
Knikfactor k	2.38	1.64	
Kniklengte L_{cr}	19.873	3.103	m
Kritische Euler last N_{cr}	2406.20	3723.57	kN
Slankheid λ	112.53	90.46	
Relatieve slankheid λ_{rel}	1.20	0.96	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	0.53	0.62	
Knikweerstand $N_{b,Rd}$	1834.82	2143.60	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Knikweerstand $N_{b,Rd}$	1834.82	kN
Eenheidscontrole	0.50	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Elastisch kritisch moment M_{cr}	3683.71	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.39	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.37	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	

Mcr parameters		
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	915.93	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	-20.14	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	23.98	kNm
Karakteristieke drukweerstand N_{Rk}	3454.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	564.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	81.08	kNm
Reductie factor χ_y	0.53	
Reductie factor χ_z	0.62	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.26	
Interactiefactor k_{yz}	0.85	
Interactiefactor k_{zy}	0.76	
Interactiefactor k_{zz}	1.41	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S303 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S299 positie 1.895 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.1
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Zijdelings flexibel type z	Zijdelings flexibel
Equivalente moment factor C_{mz}	0.90
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	0.43
Equivalente moment factor C_{mLT}	0.77

Eenheidscontrole (6.61) = 0.50 + 0.04 + 0.25 = 0.79 -
Eenheidscontrole (6.62) = 0.43 + 0.03 + 0.42 = 0.87 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

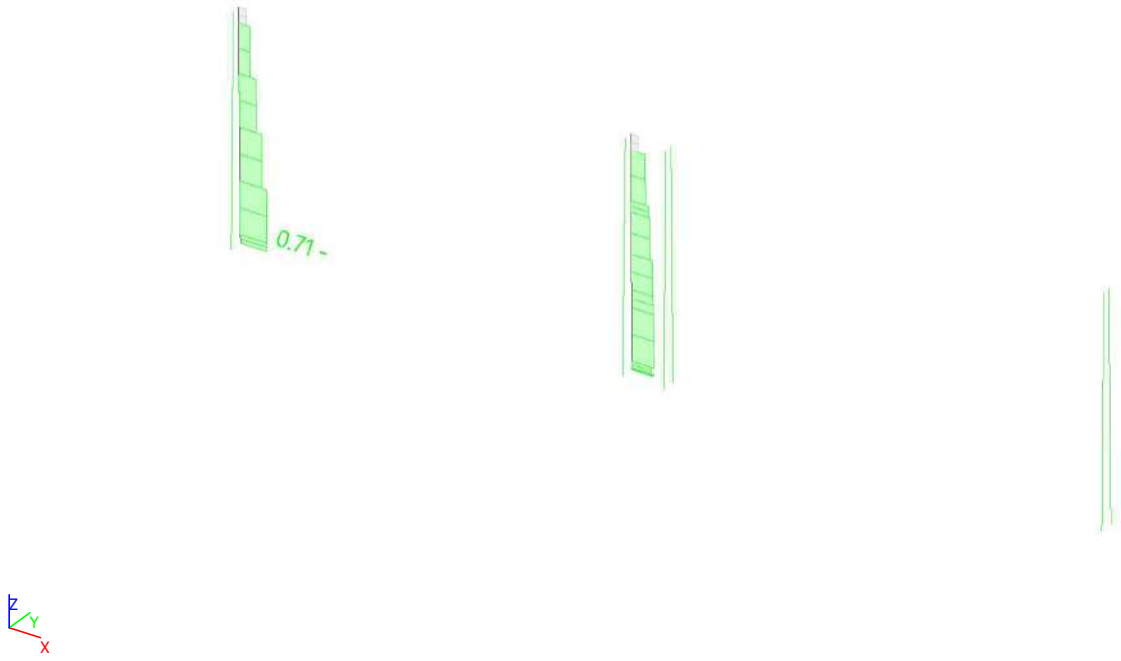
Plooiparameters		
Knik veldlengte a	1.895	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.3. Staalcontrole kolom INP45 versterkt; UGT, grafisch overzicht



9.4. Staalcontrole kolom INP45 versterkt; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S248, S251, S253, S255, S257, S259, S275, S276, S282, S283

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S251	**1.895 / 1.895 m**	**I + Ir (INP450, HEB300)**	**S 235**	**UGT**	**0.71 -**

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.895 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-905.47	kN
$V_{y,Ed}$	50.00	kN
$V_{z,Ed}$	-2.99	kN
T_{Ed}	-0.72	kNm
$M_{y,Ed}$	-7.24	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	157.08	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	85	24	3.596e+04	6.353e+03	0.18	0.54	1.00	3.50	9.00	10.00	15.36	1
2	UO	85	24	3.050e+04	8.951e+02	0.03	0.56	1.00	3.50	9.00	10.00	15.77	1
3	UO	85	24	-2.871e+04	8.951e+02	-32.08	23.80	0.03	3.50	1712.03	1902.25	102.45	1
4	UO	85	24	-2.325e+04	6.353e+03	-3.66	23.80	0.21	3.50	90.55	100.61	102.45	1
5	I	12	16	6.353e+03	6.197e+03	0.98		1.00	0.75	28.00	34.00	38.33	1
6	I	51	16	6.197e+03	5.547e+03	0.90		1.00	3.13	28.00	34.00	39.44	1
7	I	12	16	1.051e+03	8.951e+02	0.85		1.00	0.75	28.00	34.00	40.06	1
8	UO	150	19	1.057e+05	1.076e+05	0.98	0.44	1.00	7.89	9.00	10.00	13.88	1
9	I	150	35	6.933e+03	5.010e+03	0.72		1.00	4.26	28.00	34.00	42.05	1
10	I	150	35	8.856e+03	6.933e+03	0.78		1.00	4.26	28.00	34.00	41.10	1
11	UO	150	19	1.096e+05	1.076e+05	0.98	0.43	1.00	7.89	9.00	10.00	13.79	1
12	I	9	11	1.076e+05	1.043e+05	0.97		1.00	0.86	28.00	34.00	38.41	1
13	I	262	11	1.043e+05	1.306e+04	0.13		1.00	23.82	28.00	34.00	54.56	1
14	I	10	11	1.306e+04	9.754e+03	0.75		1.00	0.86	28.00	34.00	41.66	1
15	I	51	16	1.701e+03	1.051e+03	0.62		1.00	3.13	28.00	34.00	43.81	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2.9616e-02	m^2
$N_{c,Rd}$	6959.73	kN
Eenheidscontrole	0.13	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3.2645e-03	m^3
$M_{pl,y,Rd}$	767.16	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	2.5730e-03	m^3
$M_{pl,z,Rd}$	604.65	kNm
Eenheidscontrole	0.26	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.1391e-03	m^2
$V_{pl,y,Rd}$	697.25	kN
Eenheidscontrole	0.07	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.9650e-02	m^2
$V_{pl,z,Rd}$	2666.12	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	48	
τ_{Ed}	3.6	MPa
τ_{Rd}	135.7	MPa

Eenheidscontrole	0.03	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	6959.73	kN
$M_{pl,y,Rd}$	767.16	kNm
$M_{pl,z,Rd}$	604.65	kNm

Eenheidscontrole (6.2) = 0.13 + 0.01 + 0.26 = 0.40 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 1.895 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	85	24	3.596e+04	6.353e+03	0.18	0.54	1.00	3.50	9.00	10.00	15.36	1
2	UO	85	24	3.050e+04	8.951e+02	0.03	0.56	1.00	3.50	9.00	10.00	15.77	1
3	UO	85	24	-2.871e+04	8.951e+02	-32.08	23.80	0.03	3.50	1712.03	1902.25	102.45	1
4	UO	85	24	-2.325e+04	6.353e+03	-3.66	23.80	0.21	3.50	90.55	100.61	102.45	1
5	I	12	16	6.353e+03	6.197e+03	0.98		1.00	0.75	28.00	34.00	38.33	1
6	I	51	16	6.197e+03	5.547e+03	0.90		1.00	3.13	28.00	34.00	39.44	1
7	I	12	16	1.051e+03	8.951e+02	0.85		1.00	0.75	28.00	34.00	40.06	1
8	UO	150	19	1.057e+05	1.076e+05	0.98	0.44	1.00	7.89	9.00	10.00	13.88	1
9	I	150	35	6.933e+03	5.010e+03	0.72		1.00	4.26	28.00	34.00	42.05	1
10	I	150	35	8.856e+03	6.933e+03	0.78		1.00	4.26	28.00	34.00	41.10	1
11	UO	150	19	1.096e+05	1.076e+05	0.98	0.43	1.00	7.89	9.00	10.00	13.79	1
12	I	9	11	1.076e+05	1.043e+05	0.97		1.00	0.86	28.00	34.00	38.41	1
13	I	262	11	1.043e+05	1.306e+04	0.13		1.00	23.82	28.00	34.00	54.56	1
14	I	10	11	1.306e+04	9.754e+03	0.75		1.00	0.86	28.00	34.00	41.66	1
15	I	51	16	1.701e+03	1.051e+03	0.62		1.00	3.13	28.00	34.00	43.81	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings flexibel	
Systeemlengte L	8.350	1.895	m
Knikfactor k	2.38	3.48	
Kniklengte L_{cr}	19.873	6.590	m
Kritische Euler last N_{cr}	2852.92	21670.63	kN
Slankheid λ	146.68	53.22	
Relatieve slankheid λ_{rel}	1.56	0.57	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.30	0.80	
Knikweerstand $N_{b,Rd}$	2055.16	5602.14	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Knikweerstand $N_{b,Rd}$	2055.16	kN
Eenheidscontrole	0.44	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	1.895	m
Elastische kritische last $N_{cr,T}$	82933.03	kN
Elastische kritische last $N_{cr,TF}$	2847.74	kN
Relatieve slankheid $\lambda_{rel,T}$	1.56	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.29	
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Knikweerstand $N_{b,Rd}$	2052.22	kN
Eenheidscontrole	0.44	-

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3.2645e-03	m^3
Elastisch kritisch moment M_{cr}	43243.36	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.13	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.56	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	3.2645e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	2.5730e-03	m^3
Ontwerpdrukkracht N_{Ed}	905.47	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	12.63	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	157.08	kNm
Karakteristieke drukweerstand N_{Rk}	6959.73	kN
Karakteristieke momentweerstand $M_{y,Rk}$	767.16	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	604.65	kNm
Reductie factor χ_y	0.30	
Reductie factor χ_z	0.29	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	1.22	
Interactiefactor k_{yz}	0.59	
Interactiefactor k_{zy}	0.98	
Interactiefactor k_{zz}	0.98	

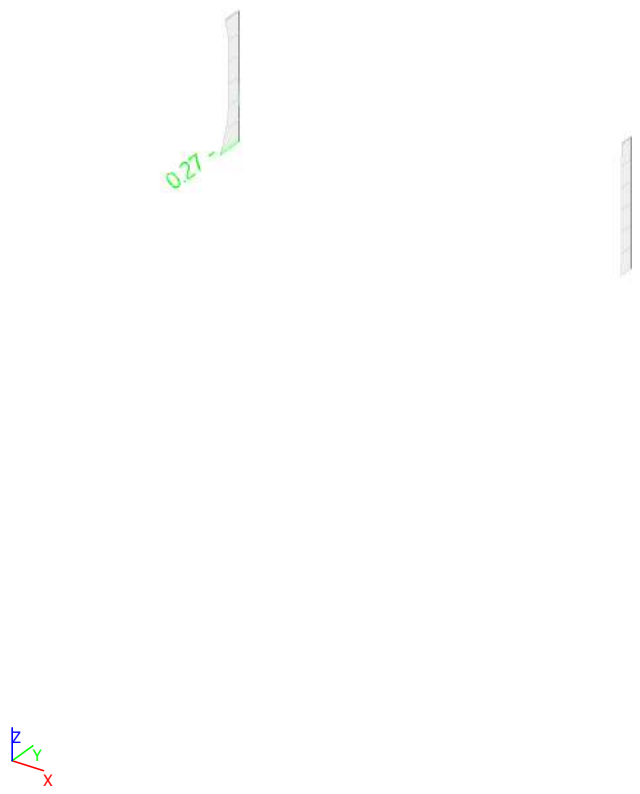
Maximum moment $M_{y,Ed}$ is afgeleid van balk S259 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S251 positie 1.895 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.2
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Zijdelings flexibel type z	Zijdelings flexibel
Equivalente moment factor C_{mz}	0.90
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	0.22
Equivalente moment factor C_{mLT}	0.69

Eenheidscontrole (6.61) = 0.44 + 0.02 + 0.15 = 0.61 -
Eenheidscontrole (6.62) = 0.44 + 0.02 + 0.25 = 0.71 -

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole kolom DIE36; UGT, grafisch overzicht



9.6. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S329, S330

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S329	0.000 / 4.651 m	HEA360	S 235	UGT	0.27 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-17.23	kN
$V_{y,Ed}$	-20.45	kN
$V_{z,Ed}$	-3.32	kN
T_{Ed}	0.17	kNm
$M_{y,Ed}$	15.67	kNm
$M_{z,Ed}$	50.24	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	-2.705e+04	-1.022e+05								
3	SO	118	18	1.372e+04	8.889e+04	0.15	0.54	1.00	6.74	9.00	10.00	15.42	1
4	I	261	10	-4.973e+03	7.387e+03	-0.67		0.51	26.10	68.96	79.77	90.61	1
5	SO	118	18	2.947e+04	1.046e+05	0.28	0.52	1.00	6.74	9.00	10.00	15.09	1
7	SO	118	18	-1.131e+04	-8.648e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4300e-02	m^2
$N_{c,Rd}$	3360.50	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.0875e-03	m^3
$M_{pl,y,Rd}$	490.56	kNm
Eenheidscontrole	0.03	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	8.0417e-04	m^3
$M_{pl,z,Rd}$	188.98	kNm
Eenheidscontrole	0.27	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0870e-02	m^2
$V_{pl,y,Rd}$	1474.81	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.9200e-03	m^2
$V_{pl,z,Rd}$	667.53	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	2.0	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	490.56	kNm
α	2.00	
$M_{pl,z,Rd}$	188.98	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.27 = 0.27 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	-2.705e+04	-1.022e+05								
3	SO	118	18	1.372e+04	8.889e+04	0.15	0.54	1.00	6.74	9.00	10.00	15.42	1
4	I	261	10	-4.973e+03	7.387e+03	-0.67		0.51	26.10	68.96	79.77	90.61	1
5	SO	118	18	2.947e+04	1.046e+05	0.28	0.52	1.00	6.74	9.00	10.00	15.09	1
7	SO	118	18	-1.131e+04	-8.648e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	4.59	0.74	
Kniklengte L_{cr}	21.348	3.420	m
Kritische Euler last N_{cr}	1505.29	13982.64	kN
Slankheid λ	140.32	46.04	
Relatieve slankheid λ_{rel}	1.49	0.49	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Elastisch kritisch moment M_{cr}	2776.85	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.42	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Vorklengte L_g	4.651	m
Invloed van lastpositie	geen invloed	
Factor α	943.99	
Reductie factor k_{red}	1.00	
Coëfficiënt C	9.15	
Factor S	1949	mm
Kip moment factor C_1	1.76	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4300e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	8.0417e-04	m^3
Ontwerpdrukkracht N_{Ed}	17.23	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	15.67	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	50.24	kNm
Karakteristieke drukweerstand N_{Rk}	3360.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	490.56	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	188.98	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.54	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S329 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S329 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	50.24	kNm
Veldmoment $M_{s,z}$	4.83	kNm
Factor $\alpha_{s,z}$	0.10	
Ratio van uiteinde momenten ψ_z	-0.76	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	puntlast F	
Uiteinde moment $M_{h,LT}$	15.67	kNm
Veldmoment $M_{s,LT}$	0.40	kNm
Factor $\alpha_{s,LT}$	0.03	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.40	

Eenheidscontrole (6.61) = 0.01 + 0.03 + 0.06 = 0.10 -
Eenheidscontrole (6.62) = 0.01 + 0.02 + 0.11 = 0.13 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

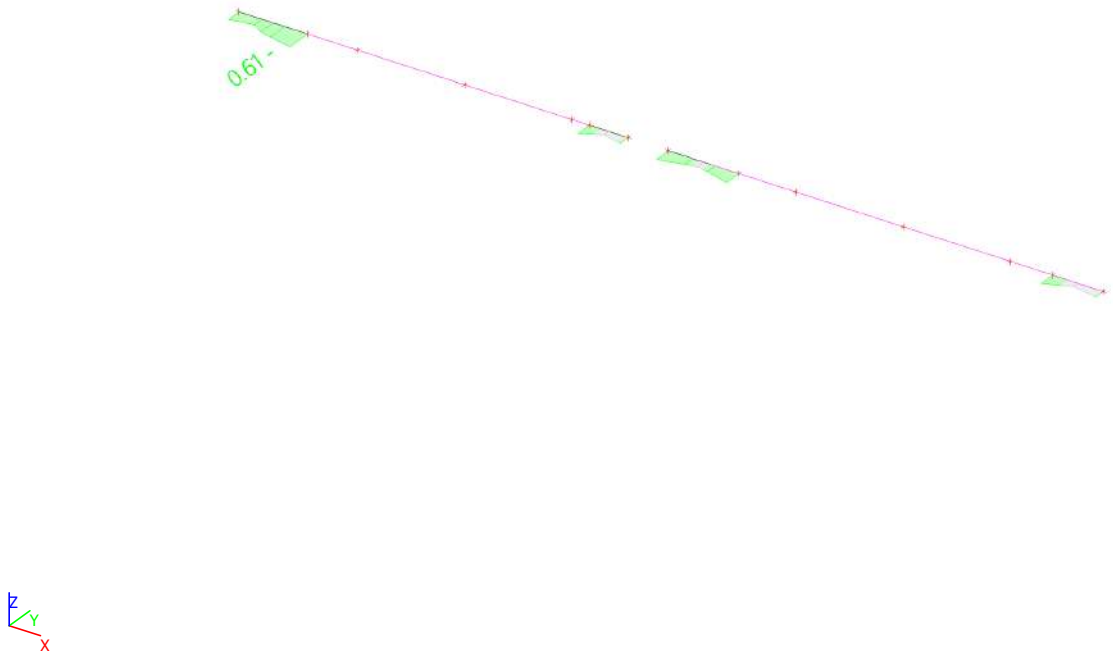
Plooiparameters		
Knik veldlengte a	4.651	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	315	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.50
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole ligger DIE34; UGT, grafisch overzicht



9.8. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S33, S40, S404, S406

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S33	2,560 / 2,560 m	HE340A	S 235	UGT	0,61 -

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1050

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,560 m

Interne krachten	Berekende	Eenheid
N_{Ed}	7,69	kN
$V_{y,Ed}$	15,08	kN
$V_{z,Ed}$	64,13	kN
T_{Ed}	0,01	kNm
$M_{y,Ed}$	163,24	kNm
$M_{z,Ed}$	-4,24	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	-9,114e+04	-8,439e+04								
3	SO	118	17	-9,477e+04	-1,015e+05								
4	I	243	10	-7,218e+04	7,103e+04	-1,02		0,49	25,58	73,04	84,19	126,02	1
5	SO	118	17	8,999e+04	8,324e+04	0,93	0,46	1,00	7,17	9,00	10,00	14,19	1
7	SO	118	17	9,361e+04	1,004e+05	0,93	0,44	1,00	7,17	9,00	10,00	13,85	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	1,3350e-02	m²
$N_{pl,Rd}$	3137,25	kN
$N_{u,Rd}$	3460,32	kN
$N_{t,Rd}$	3137,25	kN
Eenheidscontrole	0,00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1,8500e-03	m³
$M_{pl,y,Rd}$	434,75	kNm
Eenheidscontrole	0,38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7,5590e-04	m³
$M_{pl,z,Rd}$	177,64	kNm
Eenheidscontrole	0,02	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,0247e-02	m²
$V_{pl,y,Rd}$	1390,25	kN
Eenheidscontrole	0,01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,4978e-03	m²
$V_{pl,z,Rd}$	610,24	kN
Eenheidscontrole	0,11	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	434,75	kNm
α	2,00	
$M_{pl,z,Rd}$	177,64	kNm
β	1,00	

Eenheidscontrole (6.41) = 0,14 + 0,02 = 0,16 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4)
wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,560 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	-9,114e+04	-8,439e+04								
3	SO	118	17	-9,477e+04	-1,015e+05								
4	I	243	10	-7,218e+04	7,103e+04	-1,02		0,49	25,58	73,04	84,19	126,02	1
5	SO	118	17	8,999e+04	8,324e+04	0,93	0,46	1,00	7,17	9,00	10,00	14,19	1
7	SO	118	17	9,361e+04	1,004e+05	0,93	0,44	1,00	7,17	9,00	10,00	13,85	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Elastisch kritisch moment M_{cr}	337,62	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1,13	
Limietslankheid $\lambda_{rel,LT,0}$	0,40	
Kipcurve	b	
Imperfectie α_{LT}	0,34	
Kipfactor β	0,75	
Reductie factor χ_{LT}	0,62	
Correctiefactor k_c	0,94	
Correctiefactor f	0,98	
Gewijzigde reductiefactor $\chi_{LT,mod}$	0,63	
Rekenwaarde knikweerstand $M_{b,Rd}$	275,06	kNm
Eenheidscontrole	0,59	-

Mcr parameters		
LTB lengte L	14,500	m
Vorklengte L_g	14,500	m
Invloed van lastpositie	geen invloed	
Factor α	575,00	
Reductie factor k_{red}	1,00	
Coëfficiënt C	3,87	
Factor S	1931	mm
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.
Opmerking: De correctiefactor k_c wordt bepaald op basis van C_1.

Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	7,69	kN
Ontwerp buigende momenten $M_{y,Ed}$	163,24	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-4,24	kNm
Trekweerstand $N_{t,Rd}$	3137,25	kN
Buigweerstand $M_{b,y,Rd}$	275,06	kNm
Buigweerstand $M_{c,z,Rd,com}$	177,64	kNm

Eenheidscontrole = 0,59 + 0,02 - 0,00 = 0,61 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

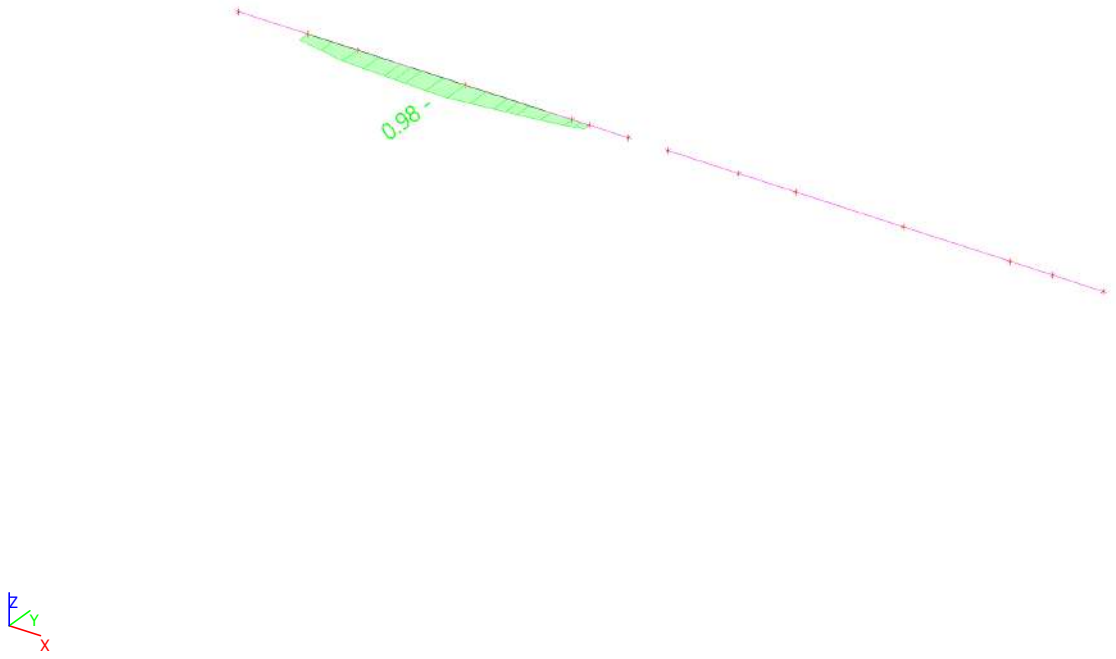
Plooiparameters		
Knik veldlengte a	2,560	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1,00	
Correctiefactor voor dwarskracht η	1,20	

Plooiverificatie	
Lijf slankheid h_w/t	31,26
Lijfslankheid limiet	60,00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.9. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht



9.10. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S403

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S403	**5,858 / 10,500 m**	**I + 2 PLud (HEA340; 320; 320; 12; 12)**	**S 235**	**UGT**	**0,98 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 5,858 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	43,87	kN
$V_{y,Ed}$	0,17	kN
$V_{z,Ed}$	10,36	kN
T_{Ed}	0,01	kNm
$M_{y,Ed}$	327,50	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	36,41	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-7,128e+04	-1,103e+05								
2	I	150	29	1,451e+05	1,061e+05	0,73		1,00	5,26	28,00	34,00	41,91	1
3	I	150	29	6,702e+04	1,061e+05	0,63		1,00	5,26	28,00	34,00	43,57	1
4	I	150	29	-1,494e+05	-1,103e+05								
5	I	8	10	-1,063e+05	-1,009e+05								
6	I	297	10	-1,009e+05	9,659e+04	-1,04		0,49	31,26	73,59	84,83	129,51	1
7	I	8	10	9,659e+04	1,021e+05	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,532e+05	1,506e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,416e+04	-7,677e+04								
10	UO	10	12	-1,549e+05	-1,575e+05								
13	UO	10	12	7,250e+04	6,990e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	2,1039e-02	m^2
$N_{pl,Rd}$	4944,14	kN
$N_{u,Rd}$	5453,28	kN
$N_{t,Rd}$	4944,14	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3,1654e-03	m^3
$M_{pl,y,Rd}$	743,86	kNm
Eenheidscontrole	0,44	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	1,3705e-03	m^3
$M_{pl,z,Rd}$	322,07	kNm
Eenheidscontrole	0,11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6468e-02	m^2
$V_{pl,y,Rd}$	2234,36	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	3,6506e-03	m^2
$V_{pl,z,Rd}$	495,31	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	4944,14	kN
$M_{pl,y,Rd}$	743,86	kNm
$M_{pl,z,Rd}$	322,07	kNm

Eenheidscontrole (6.2) = 0,01 + 0,44 + 0,11 = 0,56 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 5,858 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-7,128e+04	-1,103e+05								
2	I	150	29	1,451e+05	1,061e+05	0,73		1,00	5,26	28,00	34,00	41,91	1
3	I	150	29	6,702e+04	1,061e+05	0,63		1,00	5,26	28,00	34,00	43,57	1
4	I	150	29	-1,494e+05	-1,103e+05								
5	I	8	10	-1,063e+05	-1,009e+05								
6	I	297	10	-1,009e+05	9,659e+04	-1,04		0,49	31,26	73,59	84,83	129,51	1
7	I	8	10	9,659e+04	1,021e+05	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,532e+05	1,506e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,416e+04	-7,677e+04								
10	UO	10	12	-1,549e+05	-1,575e+05								
13	UO	10	12	7,250e+04	6,990e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3,1654e-03	m^3
Elastisch kritisch moment M_{cr}	856,97	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,93	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,50	
Rekenwaarde knikweerstand $M_{b,Rd}$	374,31	kNm
Eenheidscontrole	0,87	-

Mcr parameters		
LTB lengte L	14,500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

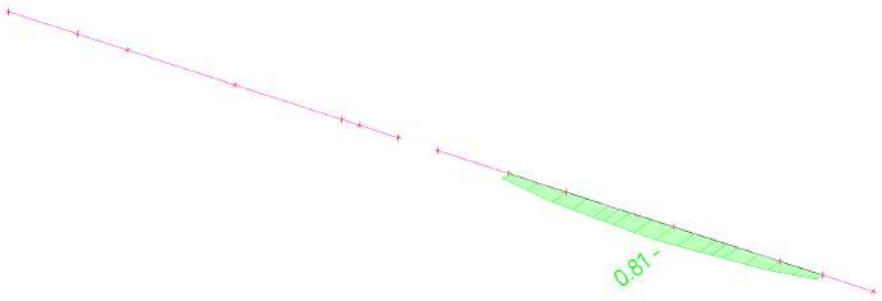
Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	43,87	kN
Ontwerp buigende momenten $M_{y,Ed}$	327,50	kNm
Ontwerp buigende momenten $M_{z,Ed}$	36,41	kNm
Trekweerstand $N_{t,Rd}$	4944,14	kN
Buigweerstand $M_{b,y,Rd}$	374,31	kNm
Buigweerstand $M_{c,z,Rd,com}$	322,07	kNm

Eenheidscontrole = 0,87 + 0,11 - 0,01 = 0,98 -

De staaf voldoet aan de stabiliteitscontrole.

9.11. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht





9.12. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S405

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S405	**6,121 / 11,700 m**	**Grafische doorsnede**	**S 235**	**UGT**	**0,81 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Algemeen	

Waarschuwing: Sterktereductie gerelateerd aan de dikte wordt niet ondersteund voor dit type doorsnede.

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 6,121 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-5,10	kN
$V_{y,Ed}$	-3,54	kN
$V_{z,Ed}$	-16,77	kN

Interne krachten	Berekende	Eenheid
T_{Ed}	0,03	kNm
$M_{y,Ed}$	239,24	kNm
$M_{z,Ed}$	67,26	kNm

Classificatie voor doorsnede-ontwerp
Waarschuwing: Classificatie wordt niet ondersteund voor dit type doorsnede.
De doorsnede wordt gecontroleerd als elastisch, klasse 3.

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2,5114e-02	m^2
$N_{c,Rd}$	5901,89	kN
Eenheidscontrole	0,00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,y,min}$	2,7183e-03	m^3
$M_{el,y,Rd}$	638,80	kNm
Eenheidscontrole	0,37	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,z,min}$	1,5664e-03	m^3
$M_{el,z,Rd}$	368,11	kNm
Eenheidscontrole	0,18	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6554e-02	m^2
$V_{pl,y,Rd}$	2246,03	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,3472e-03	m^2
$V_{pl,z,Rd}$	589,81	kN
Eenheidscontrole	0,03	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	38	
τ_{Ed}	0,2	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.2 en formule (6.42)

Normaalspanningen		
Vezel	31	
$\sigma_{N,Ed}$	0,2	MPa
$\sigma_{My,Ed}$	88,0	MPa
$\sigma_{Mz,Ed}$	42,9	MPa
$\sigma_{tot,Ed}$	131,2	MPa
Eenheidscontrole	0,56	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	5688,94	1855,63	kN
Slankheid λ	95,65	167,48	
Relatieve slankheid λ_{rel}	1,02	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	16,200	m
Elastische kritische last $N_{cr,T}$	11328,76	kN
Elastische kritische last $N_{cr,TF}$	1855,63	kN
Relatieve slankheid $\lambda_{rel,T}$	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastisch kritisch moment M_{cr}	1007,79	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,80	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,58	
Rekenwaarde knikweerstand $M_{b,Rd}$	371,83	kNm
Eenheidscontrole	0,64	-

Mcr parameters		
LTB lengte L	16,200	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2,5114e-02	m^2
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastische doorsnedemodulus $W_{el,z}$	1,5664e-03	m^3
Ontwerpdrukkracht N_{Ed}	5,10	kN
Ontwerp buigende momenten $M_{y,Ed}$	239,24	kNm
Ontwerp buigende momenten $M_{z,Ed}$	67,26	kNm
Karakteristieke drukweerstand N_{Rk}	5901,89	kN
Karakteristieke momentweerstand $M_{y,Rk}$	638,80	kNm

Buig- en axiale drukcontrole paramaters		
Karakteristieke momentweerstand $M_{z,Rk}$	368,11	kNm
Reductie factor χ_y	1,00	
Reductie factor χ_z	1,00	
Reductie factor χ_{LT}	0,58	
Interactiefactor k_{yy}	0,95	
Interactiefactor k_{yz}	0,92	
Interactiefactor k_{zy}	1,00	
Interactiefactor k_{zz}	0,92	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-19,38	kNm
Veldmoment $M_{s,y}$	239,24	kNm
Factor $\alpha_{h,y}$	-0,08	
Ratio van uiteinde momenten ψ_y	0,03	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-44,39	kNm
Veldmoment $M_{s,z}$	67,26	kNm
Factor $\alpha_{h,z}$	-0,66	
Ratio van uiteinde momenten ψ_z	0,79	
Equivalente moment factor C_{mz}	0,92	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-19,38	kNm
Veldmoment $M_{s,LT}$	239,24	kNm
Factor $\alpha_{h,LT}$	-0,08	
Ratio van uiteinde momenten ψ_{LT}	0,03	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,00 + 0,61 + 0,17 = 0,78 -
Eenheidscontrole (6.62) = 0,00 + 0,64 + 0,17 = 0,81 -

De staaf voldoet aan de stabiliteitscontrole.

9.13. Staalcontrole ligger DIN28; UGT, grafisch overzicht





9.14. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S331

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S331	**0.000 / 14.500 m**	**HEB280**	**S 235**	**UGT**	**0.23 -**

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-9.55	kN
$V_{y,Ed}$	11.05	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.01	kNm
$M_{y,Ed}$	0.17	kNm
$M_{z,Ed}$	-38.08	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.750e+04	8.145e+04	0.21	0.53	1.00	6.15	9.00	10.00	15.26	1
3	SO	111	18	-1.628e+04	-8.023e+04								
4	I	196	11	6.398e+02	8.145e+02	0.79		1.00	18.67	28.00	34.00	41.06	1
5	SO	111	18	-1.605e+04	-8.000e+04								
7	SO	111	18	1.773e+04	8.169e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3140e-02	m^2
$N_{c,Rd}$	3087.90	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.5340e-03	m^3
$M_{pl,y,Rd}$	360.49	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.1760e-04	m^3
$M_{pl,z,Rd}$	168.64	kNm
Eenheidscontrole	0.23	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0442e-02	m^2
$V_{pl,y,Rd}$	1416.78	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.1130e-03	m^2
$V_{pl,z,Rd}$	558.04	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.1	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	360.49	kNm
α	2.00	
$M_{pl,z,Rd}$	168.64	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.23 = 0.23 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.750e+04	8.145e+04	0.21	0.53	1.00	6.15	9.00	10.00	15.26	1
3	SO	111	18	-1.628e+04	-8.023e+04								
4	I	196	11	6.398e+02	8.145e+02	0.79		1.00	18.67	28.00	34.00	41.06	1
5	SO	111	18	-1.605e+04	-8.000e+04								
7	SO	111	18	1.773e+04	8.169e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	14.500	14.500	m
Knikfactor k	1.00	1.00	
Kniklengte L_{cr}	14.500	14.500	m
Kritische Euler last N_{cr}	1899.61	650.13	kN
Slankheid λ	119.74	204.67	
Relatieve slankheid λ_{rel}	1.27	2.18	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Elastisch kritisch moment M_{cr}	296.01	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.10	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	14.500	m
Vorklengte L_g	14.500	m
Invloed van lastpositie	geen invloed	
Factor α	575.00	
Reductie factor k_{red}	1.00	
Coëfficiënt C	3.39	
Factor S	1430	mm
Kip moment factor C_1	1.03	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.1760e-04	m^3
Ontwerpdrukkracht N_{Ed}	9.55	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	0.18	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-38.08	kNm
Karakteristieke drukweerstand N_{Rk}	3087.90	kN
Karakteristieke momentweerstand $M_{y,Rk}$	360.49	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	168.64	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.98	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.59	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S331 positie 14.500 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S331 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lineair moment M	
Ratio van uiteinde momenten ψ_y	0.94	
Equivalente moment factor C_{my}	0.97	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-38.08	kNm
Veldmoment $M_{s,z}$	11.46	kNm
Factor $\alpha_{s,z}$	-0.30	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	0.94	
Equivalente moment factor C_{mLT}	0.97	

Eenheidscontrole (6.61) = 0.00 + 0.00 + 0.05 = 0.06 -
Eenheidscontrole (6.62) = 0.00 + 0.00 + 0.09 = 0.09 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

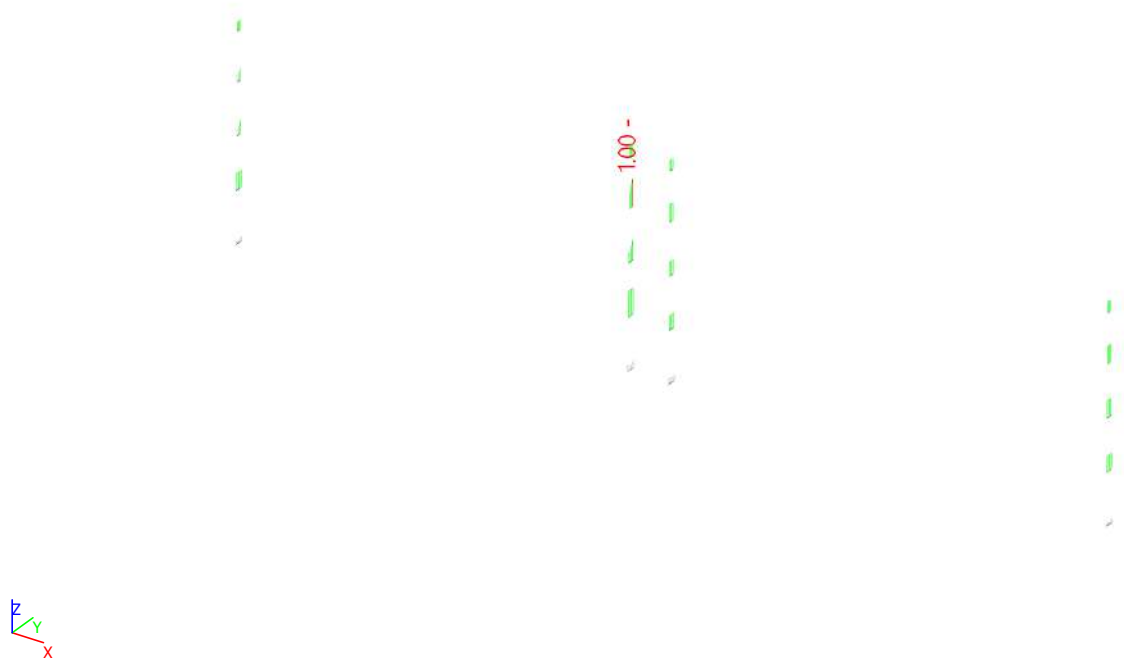
Plooiparameters		
Knik veldlengte a	14.500	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	244	mm
Lijfdikte t	11	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	23.24
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.15. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.16. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S396	0.187 / 0.187 m	Rechthoek (200; 28)	S 235	UGT	1.00 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1062

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.187 m

Interne krachten	Berekende	Eenheid
N_{Ed}	6.55	kN
$V_{y,Ed}$	-9.08	kN
$V_{z,Ed}$	-251.14	kN
T_{Ed}	-0.45	kNm
$M_{y,Ed}$	-36.48	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-1.01	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.942e+05	-1.966e+05	-1.01	23.80	0.50	7.14	25.69	28.54	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	5.6000e-03	m²
$N_{pl,Rd}$	1316.00	kN
$N_{u,Rd}$	1451.52	kN
$N_{t,Rd}$	1316.00	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m³
$M_{pl,y,Rd}$	65.80	kNm
Eenheidscontrole	0.55	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m³
$M_{pl,z,Rd}$	9.21	kNm
Eenheidscontrole	0.11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,y,Rd}$	759.79	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,z,Rd}$	759.79	kN
Eenheidscontrole	0.33	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	9.5	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.07	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1(5) en formule (6.1)

Elastische toetsing		
Vezel	3	
$\sigma_{N,Ed}$	-1.2	MPa
$\sigma_{My,Ed}$	-195.4	MPa
$\sigma_{Mz,Ed}$	-38.7	MPa
$\sigma_{tot,Ed}$	-235.2	MPa
$\tau_{Vy,Ed}$	0.0	MPa
$\tau_{Vz,Ed}$	0.0	MPa
$\tau_{t,Ed}$	0.0	MPa
$\tau_{tot,Ed}$	0.0	MPa

Elastische toetsing		
$\sigma_{von\ Mises,Ed}$	235.2	MPa
Eenheidscontrole	**1.00**	-

Opmerking: Voor deze doorsnede is in artikel 6.2.7(9) geen formule gegeven voor de plastische dwarskrachtweerstand gereduceerd met torsie. Daarom wordt het criterium elastisch vloeien volgens EN 1993-1-1 artikel 6.2.1(5) getoetst.

De staaf voldoet NIET aan de doorsnedecontrole!

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.187 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.942e+05	-1.966e+05	-1.01	23.80	0.50	7.14	25.69	28.54	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	2091.06	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.18	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

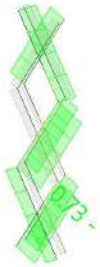
Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.357	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.42	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

De staaf voldoet aan de stabiliteitscontrole.

9.17. Staalcontrole diagonaal; UGT, grafisch overzicht





9.18. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S235, S267..S271, S274, S277..S281

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S268	0.000 / 3.142 m	UPE140	S 235	UGT	0.73 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1176

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-161.26	kN
$V_{y,Ed}$	0.00	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.00	kNm
$M_{z,Ed}$	0.00	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	8.754e+04	8.754e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	8.754e+04	8.754e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	8.754e+04	8.754e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.8400e-03	m²
$N_{c,Rd}$	432.40	kN
Eenheidscontrole	0.37	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	8.754e+04	8.754e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	8.754e+04	8.754e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	8.754e+04	8.754e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	3.142	3.142	m
Knikfactor k	0.65	0.65	
Kniklengte L_{cr}	2.043	2.043	m
Kritische Euler last N_{cr}	2975.62	390.95	kN
Slankheid λ	35.80	98.77	
Relatieve slankheid λ_{rel}	0.38	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.91	0.51	
Knikweerstand $N_{b,Rd}$	392.28	220.76	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.8400e-03	m²
Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.73	-

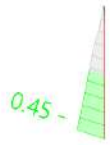
Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	3.142	m
Elastische kritische last $N_{cr,T}$	649.47	kN
Elastische kritische last $N_{cr,TF}$	390.95	kN
Relatieve slankheid $\lambda_{rel,T}$	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.51	
Oppervlakte van de doorsnede A	1.8400e-03	m²

Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.73	-

De staaf voldoet aan de stabiliteitscontrole.

9.19. Staalcontrole bliksempiek; UGT, grafisch overzicht





9.20. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S332

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S332	0.000 / 4.651 m	Koker fl (374; 7; 126; 10; 354)	S 235	UGT	0.45 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-3.11	kN
$V_{y,Ed}$	2.60	kN
$V_{z,Ed}$	-7.80	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	30.53	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-12.38	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	5.979e+04	6.021e+04	0.99	0.43	1.00	0.71	9.00	10.00	13.83	1
2	I	126	10	8.647e+04	-5.547e+04	-0.64		0.61	12.60	53.61	63.13	88.30	1
3	I	126	10	5.626e+04	-8.568e+04	-1.52		0.40	12.60	90.82	104.70	193.02	1
4	UO	5	7	-9.004e+04	-8.962e+04								
5	UO	5	7	9.041e+04	9.082e+04	1.00	0.43	1.00	0.71	9.00	10.00	13.78	1
6	I	4	10	8.647e+04	9.041e+04	0.96		1.00	0.35	28.00	34.00	38.58	1
7	UO	5	7	-5.942e+04	-5.900e+04								
8	I	4	10	-5.547e+04	-5.942e+04								
9	I	364	7	6.021e+04	9.041e+04	0.67		1.00	52.00	28.00	34.00	42.98	4
10	I	4	10	5.626e+04	6.021e+04	0.93		1.00	0.35	28.00	34.00	38.88	1
11	I	364	7	-8.962e+04	-5.942e+04								
12	I	4	10	-8.568e+04	-8.962e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My+
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
3	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
4	UO	5	-2.350e+05	-2.350e+05							
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2
7	UO	5	-2.350e+05	-2.350e+05							
8	I	4	-2.226e+05	-2.350e+05							
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	-2.350e+05	-2.350e+05							
12	I	4	-2.226e+05	-2.350e+05							

Effectieve doorsnede Mz-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.287e+05	-2.350e+05							
2	I	126	2.287e+05	2.287e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	-2.287e+05	-2.287e+05							
4	UO	5	-2.287e+05	-2.350e+05							
5	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
6	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
8	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
10	I	4	-2.287e+05	-2.287e+05							
11	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
12	I	4	-2.287e+05	-2.287e+05							

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	7.0288e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.5067e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.3936e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	7.0288e-03	m^2
$N_{c,Rd}$	1651.76	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.3936e-04	m^3
$M_{c,y,Rd}$	79.75	kNm
Eenheidscontrole	0.38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	187.45	kNm
Eenheidscontrole	0.07	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	685.11	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	374.41	kN
Eenheidscontrole	0.02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	7.0288e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.3936e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.4	MPa
$\sigma_{My,Ed}$	90.0	MPa
$\sigma_{Mz,Ed}$	15.5	MPa
$\sigma_{tot,Ed}$	105.9	MPa
Eenheidscontrole	0.45	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	2.20	0.92	
Kniklengte L_{cr}	10.228	4.262	m
Kritische Euler last N_{cr}	525.28	16492.64	kN
Slankheid λ	174.94	31.22	
Relatieve slankheid λ_{rel}	1.77	0.32	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.651	m
Elastische kritische last $N_{cr,T}$	264162.55	kN
Elastische kritische last $N_{cr,TF}$	525.28	kN
Relatieve slankheid $\lambda_{rel,T}$	1.77	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Elastisch kritisch moment M_{cr}	17006.54	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.07	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.89	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	7.0288e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	3.11	kN
Ontwerp buigende momenten $M_{y,Ed}$	30.53	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-12.38	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	1651.76	kN
Karakteristieke momentweerstand $M_{y,Rk}$	79.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	187.45	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.40	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.40	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	puntlast F	
Uiteinde moment $M_{h,z}$	-12.38	kNm
Veldmoment $M_{s,z}$	-0.42	kNm
Factor $\alpha_{s,z}$	0.03	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	30.53	kNm
Veldmoment $M_{s,LT}$	13.83	kNm
Factor $\alpha_{s,LT}$	0.45	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.56	

Eenheidscontrole (6.61) = 0.00 + 0.34 + 0.03 = 0.37 -
Eenheidscontrole (6.62) = 0.00 + 0.38 + 0.03 = 0.41 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE F

In- en uitvoergegevens 3D raamwerkprogramma juk 65

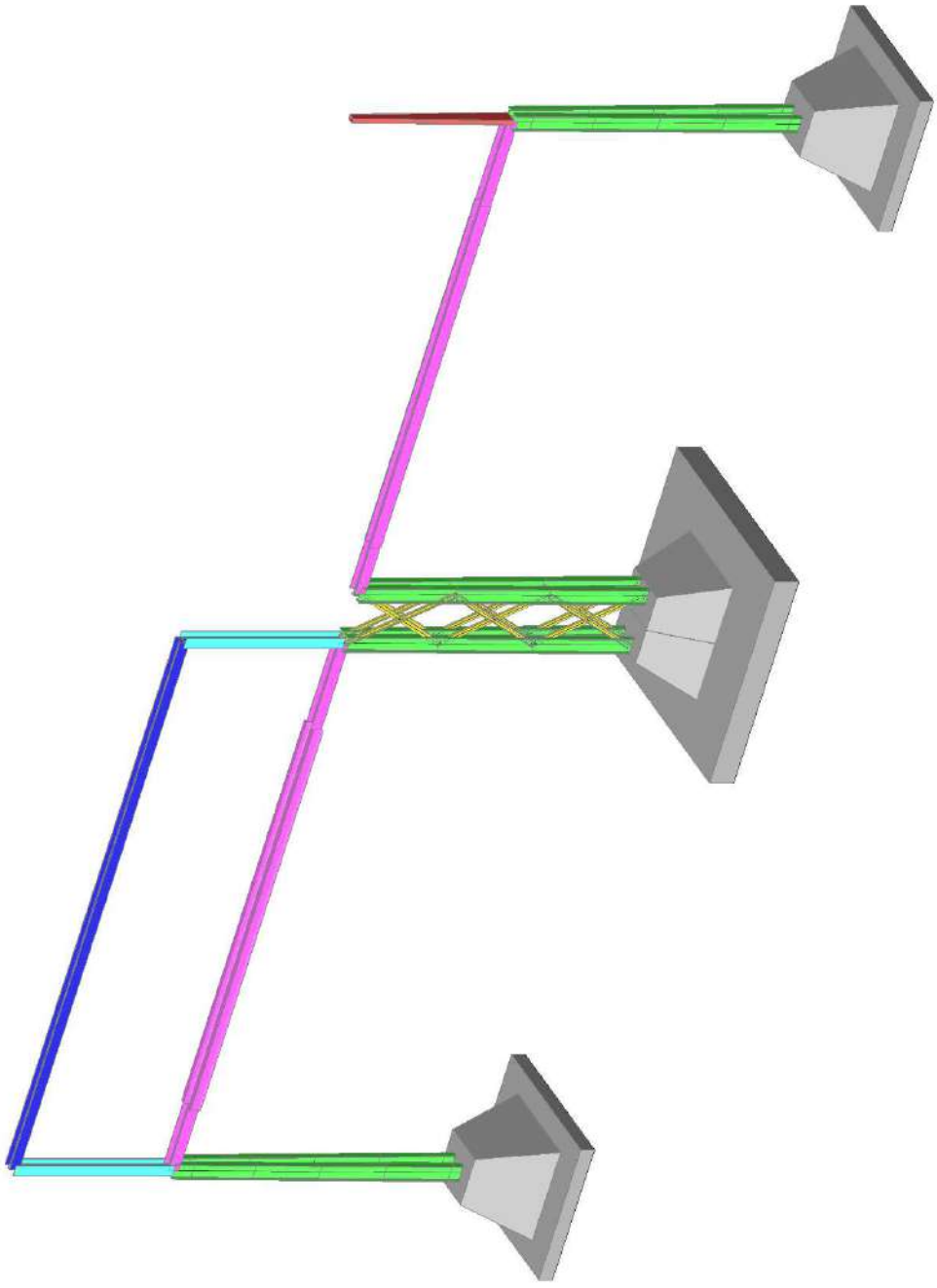
1. Inhoudsopgave

1. Inhoudsopgave **1**
2. Geometrie **3**
2.1. Perspectief constructie 3
2.2. Maatvoering 4
2.3. Materialen 5
2.4. Doorsneden 5
3. Belastingen **15**
3.1. Belastingsgevallen 15
3.2. BC1: e.g. constructie 22
3.3. BG2: grond op poer 22
3.4. BG3: wind op constructie; X-richting 23
3.5. BG4: wind op constructie; Y-richting 23
3.6. LC1001 / Totale waarde 24
3.7. LC1080 / Totale waarde 24
3.8. LC1159 / Totale waarde 25
3.9. LC1238 / Totale waarde 25
3.10. Combinaties 26
3.11. Resultaatklasses 33
4. Berekeningsverslag **34**
5. Reacties **56**
5.1. Oplegreacties kolom links; UGT, globale extremen 56
5.2. Oplegreacties kolom midden-links; UGT, globale extremen 56
5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen 56
5.4. Oplegreacties kolom rechts; UGT, globale extremen 56
6. Grondspanningen **57**
6.1. Grondspanningen onder betonpoeren 57
7. Staafkrachten **58**
7.1. Staafkrachten kolom INP45; UGT, globale extremen 58
7.2. Staafkrachten kolom DIE36; UGT, globale extremen 58
7.3. Staafkrachten ligger DIE34; UGT, globale extremen 58
7.4. Staafkrachten ligger DIE34+strippen; UGT, globale extremen 59
7.5. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen 59
7.6. Staafkrachten ligger DIN28; UGT, globale extremen 59
7.7. Staafkrachten koppelplaat; UGT, globale extremen 60
7.8. Staafkrachten diagonaal; UGT, globale extremen 60
7.9. Staafkrachten bliksempiek; UGT, globale extremen 60
7.10. Staafkrachten betonopstort links; UGT, globale extremen 60
7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen 61
7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen 61
7.13. Staafkrachten betonopstort rechts; UGT, globale extremen 61
8. Staafspanningen **62**
8.1. Von Mises spanningen kolom INP45; UGT, globale extremen 62
8.2. Von Mises spanningen kolom DIE36; UGT, globale extremen 62
8.3. Von Mises spanningen ligger DIE34; UGT, globale extremen 62
8.4. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen 62
8.5. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen 63
8.6. Von Mises spanningen ligger DIN28; UGT, globale extremen 63
8.7. Von Mises spanningen koppelplaat; UGT, globale extremen 63
8.8. Von Mises spanningen diagonaal; UGT, globale extremen 63
8.9. Von Mises spanningen bliksempiek; UGT, globale extremen 64
9. Normcontrole staal **65**
9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht 65
9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid 65
9.3. Staalcontrole kolom DIE36; UGT, grafisch overzicht 70
9.4. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid 70
9.5. Staalcontrole ligger DIE34; UGT, grafisch overzicht 74
9.6. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid 74
9.7. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht 79
9.8. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid 79
9.9. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht 83
9.10. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid 83
9.11. Staalcontrole ligger DIN28; UGT, grafisch overzicht 87
9.12. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid 87
9.13. Staalcontrole koppelplaat; UGT, grafisch overzicht 92
9.14. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 92
9.15. Staalcontrole diagonaal; UGT, grafisch overzicht 96

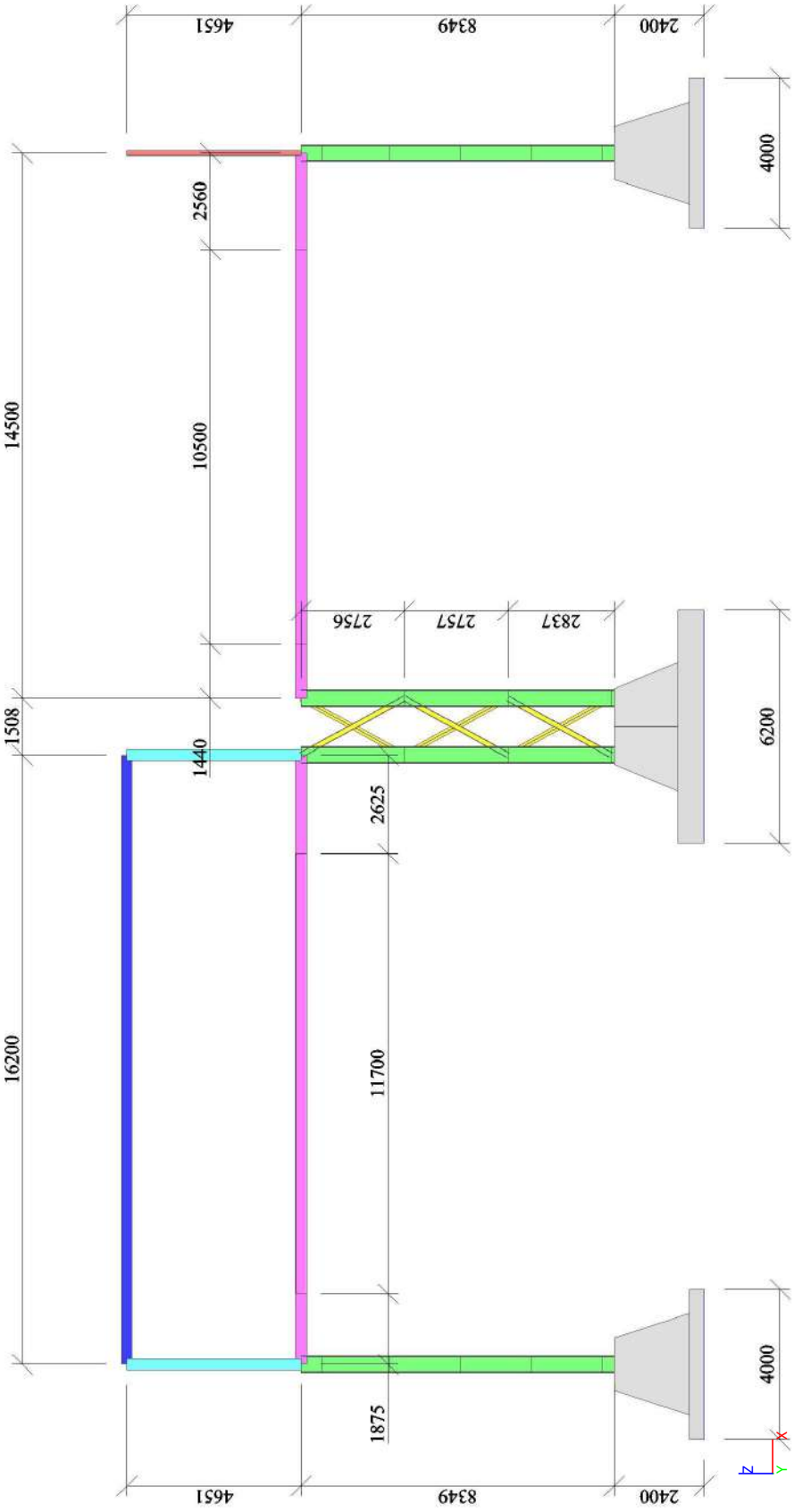
9.16. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid 96
9.17. Staalcontrole bliksempiek; UGT, grafisch overzicht 99
9.18. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 99

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 235	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	235.0 215.0	360.0 360.0	

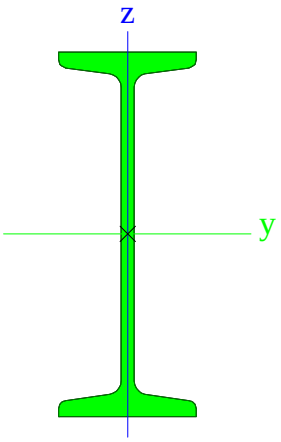
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C60/75	Beton	2500.0	2600.0	3.9100e+04	0.2	0.00	60.00	
Dummy beton	Beton	2500.0	2600.0	3.9100e+06	0.2	0.00	60.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom INP45		
Type	INP450	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	5.63e+05	5.63e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	8.11e+04	8.11e+04
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

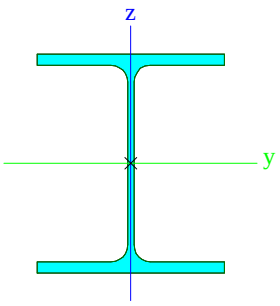
Afbeelding



Kolom DIE36		
Type	HEA360	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c

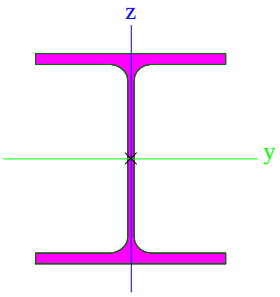
A [m²]	1.4300e-02	
A_y [m²], A_z [m²]	1.0125e-02	3.6844e-03
I_y [m⁴], I_z [m⁴]	3.3100e-04	7.8900e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8900e-03	5.2600e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0875e-03	8.0417e-04
I_w [m⁶], I_t [m⁴]	2.1766e-06	1.4900e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	175
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.91e+05	4.91e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.89e+05	1.89e+05
A_L [m²/m], A_D [m²/m]	1.8300e+00	1.8334e+00

Afbeelding



Ligger DIE34		
Type	HE340A	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3350e-02	
A_y [m²], A_z [m²]	9.5495e-03	3.3201e-03
I_y [m⁴], I_z [m⁴]	2.7690e-04	7.4360e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6780e-03	4.9570e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.8500e-03	7.5590e-04
I_w [m⁶], I_t [m⁴]	1.8240e-06	1.2720e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.35e+05	4.35e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.78e+05	1.78e+05
A_L [m²/m], A_D [m²/m]	1.7944e+00	1.7944e+00

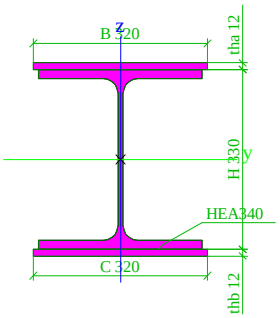
Afbeelding



Ligger DIE34+strippen		
Type	I + 2 PLud	
Uitgebreid	HEA340; 320; 320; 12; 12	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	c	c
A [m²]	2.1039e-02	
A_y [m²], A_z [m²]	1.6468e-02	3.6506e-03
I_y [m⁴], I_z [m⁴]	5.0182e-04	1.3990e-04

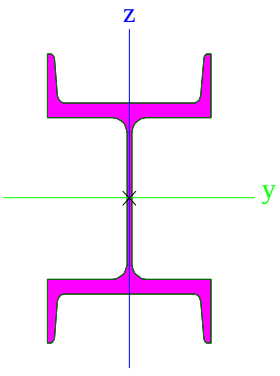
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.8351e-03	8.7437e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.1654e-03	1.3705e-03
I_w [m⁶], I_t [m⁴]	3.6743e-06	4.7425e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	160	177
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.44e+05	7.44e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.22e+05	3.22e+05
A_L [m²/m], A_D [m²/m]	1.9224e+00	1.9224e+00

Afbeelding



Ligger DIE34+UNP's		
Type	Grafische doorsnede	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.5114e-02	
A_y [m²], A_z [m²]	1.6554e-02	4.3472e-03
I_y [m⁴], I_z [m⁴]	7.2035e-04	2.3496e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.7183e-03	1.5664e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.1091e-03	2.0212e-03
I_w [m⁶], I_t [m⁴]	4.5518e-06	4.8902e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	0	0
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.66e+05	9.66e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	4.75e+05	4.75e+05
A_L [m²/m], A_D [m²/m]	2.4925e+00	2.4925e+00

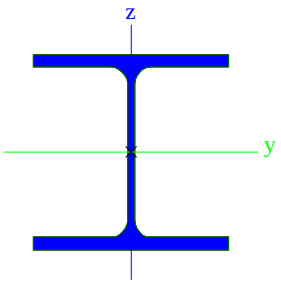
Afbeelding



Ligger DIN28		
Type	HEB280	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3140e-02	
A_y [m²], A_z [m²]	9.6422e-03	3.1403e-03
I_y [m⁴], I_z [m⁴]	1.9270e-04	6.5950e-05

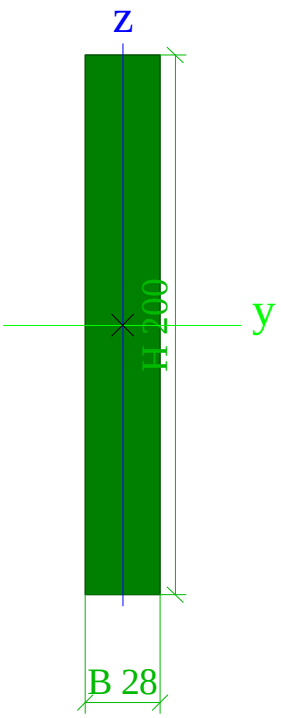
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3760e-03	4.7100e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.5340e-03	7.1760e-04
I_w [m⁶], I_t [m⁴]	1.1302e-06	1.4370e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	140	140
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3.61e+05	3.61e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.69e+05	1.69e+05
A_L [m²/m], A_D [m²/m]	1.6200e+00	1.6176e+00

Afbeelding



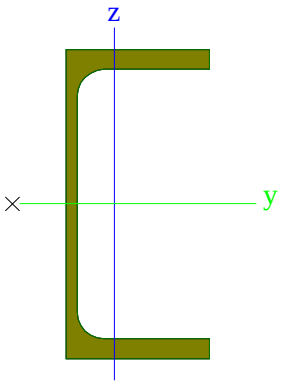
Plaat 2x14x200		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.58e+04	6.58e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.21e+03	9.21e+03
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

Afbeelding



Diagionaal UPE14		
Type	UPE140	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	c	c
A [m^2]	1.8400e-03	
A_y [m^2], A_z [m^2]	1.1000e-03	7.1956e-04
I_y [m^4], I_z [m^4]	5.9900e-06	7.8700e-07
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	8.5600e-05	1.8200e-05
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	9.8800e-05	3.2600e-05
I_w [m^6], I_t [m^4]	2.3372e-09	4.0500e-08
d_y [mm], d_z [mm]	-46	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	22	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.32e+04	2.32e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	7.66e+03	7.66e+03
A_L [m^2/m], A_D [m^2/m]	5.1970e-01	5.1965e-01

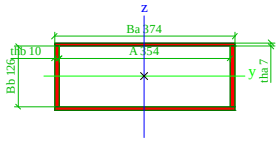
Afbeelding



Bliksempiek-1

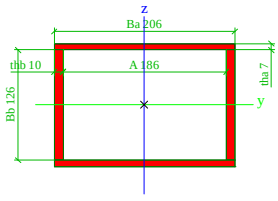
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	7.7560e-03	
A_y [m²], A_z [m²]	5.0496e-03	2.7596e-03
I_y [m⁴], I_z [m⁴]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.2757e-04	9.4821e-04
I_w [m⁶], I_t [m⁴]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.00e+05	1.00e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.23e+05	2.23e+05
A_L [m²/m], A_D [m²/m]	1.0280e+00	1.9880e+00

Afbeelding



Bliksempiek-2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	5.4040e-03	
A_y [m²], A_z [m²]	2.8012e-03	2.7167e-03
I_y [m⁴], I_z [m⁴]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.7117e-04	3.9549e-04
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.37e+04	6.37e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.29e+04	9.29e+04
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

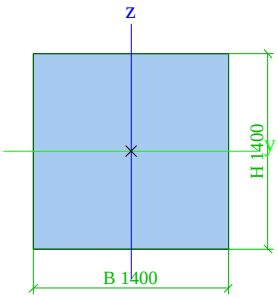
Afbeelding



Poer boven-IA		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	

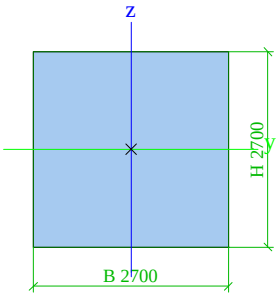
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Afbeelding



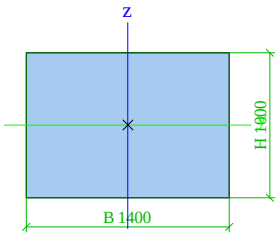
Poer onder-IA		
Type	Rechthoek	
Uitgebreid	2700; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	7.2900e+00	
A_y [m²], A_z [m²]	6.0750e+00	6.0750e+00
I_y [m⁴], I_z [m⁴]	4.4287e+00	4.4287e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.2805e+00	3.2805e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	4.9524e-02	7.4626e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	1350
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0800e+01	1.0800e+01

Afbeelding



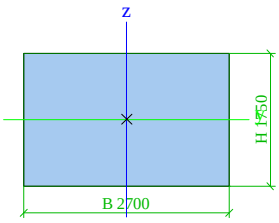
Poer boven-IB		
Type	Rechthoek	
Uitgebreid	1000; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.4000e+00	
A_y [m²], A_z [m²]	1.1667e+00	1.1667e+00
I_y [m⁴], I_z [m⁴]	1.1667e-01	2.2867e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.3333e-01	3.2667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	2.2616e-03	2.6127e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.8000e+00	4.8000e+00

Afbeelding



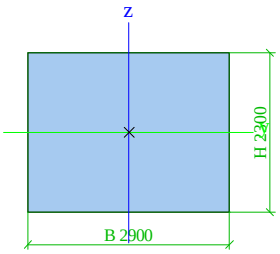
Poer onder-IB		
Type	Rechthoek	
Uitgebreid	1750; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	4.7250e+00	
A_y [m²], A_z [m²]	3.9375e+00	3.9375e+00
I_y [m⁴], I_z [m⁴]	1.2059e+00	2.8704e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3781e+00	2.1263e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2952e-01	2.8785e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	875
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	8.9000e+00	8.9000e+00

Afbeelding



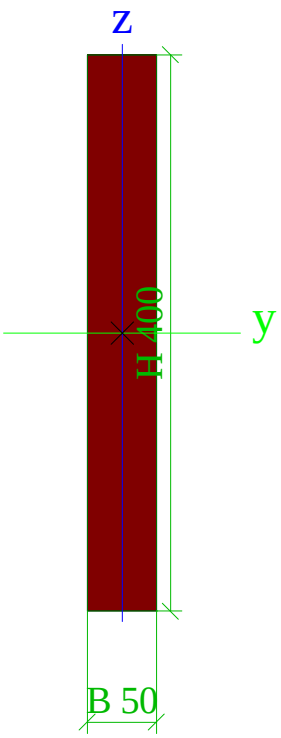
Poer onder-IV		
Type	Rechthoek	
Uitgebreid	2300; 2900	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	6.6700e+00	
A_y [m²], A_z [m²]	5.5583e+00	5.5583e+00
I_y [m⁴], I_z [m⁴]	2.9404e+00	4.6746e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.5568e+00	3.2238e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.3988e-01	6.0933e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1450	1150
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0400e+01	1.0400e+01

Afbeelding



Dummy 400x50		
Type	Rechthoek	
Uitgebreid	400; 50	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m^2]	2.0000e-02	
A_y [m^2], A_z [m^2]	1.6667e-02	1.6667e-02
I_y [m^4], I_z [m^4]	2.6667e-04	4.1667e-06
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	1.3333e-03	1.6667e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	2.0000e-03	2.5000e-04
I_w [m^6], I_t [m^4]	5.0391e-08	1.5278e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	25	200
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.70e+05	4.70e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	5.88e+04	5.88e+04
A_L [m^2/m], A_D [m^2/m]	9.0000e-01	9.0000e-01

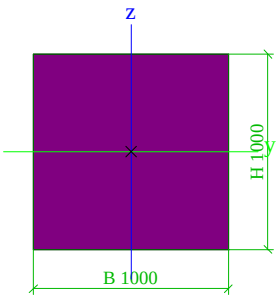
Afbeelding



Dummy beton		
Type	Rechthoek	
Uitgebreid	1000; 1000	
Onderdeelmateriaal	Dummy beton	
Bouwwijze	beton	

A [m²]	1.0000e+00	
A_y [m²], A_z [m²]	8.3333e-01	8.3333e-01
I_y [m⁴], I_z [m⁴]	8.3333e-02	8.3333e-02
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6667e-01	1.6667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2502e-04	1.4035e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	500	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.0000e+00	4.0000e+00

Afbeelding



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. staco	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie; X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie; Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1168	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1169	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1170	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1171	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1172	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1173	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1174	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1175	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1176	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1177	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1178	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1179	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1180	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1181	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1182	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1183	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1184	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1185	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1186	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1187	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1188	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1189	BC0	Variabel	EXCL MAST		Kort	Geen

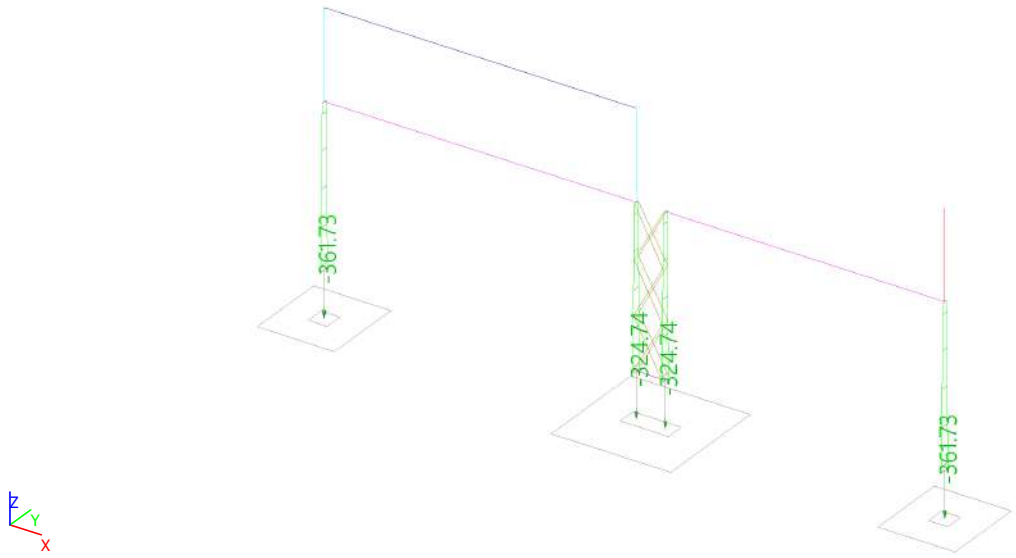
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1190	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1191	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1192	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1193	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1194	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1195	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1196	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1197	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1198	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1199	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1200	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1201	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1202	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1203	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1204	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1205	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1206	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1207	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1208	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1209	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1210	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1211	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1212	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1213	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1214	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1215	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1216	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1217	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1218	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1219	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1220	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1221	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1222	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1223	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1224	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1225	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1226	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1227	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1228	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1229	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1230	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1231	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1232	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1233	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1234	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1235	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1236	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1237	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1238	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

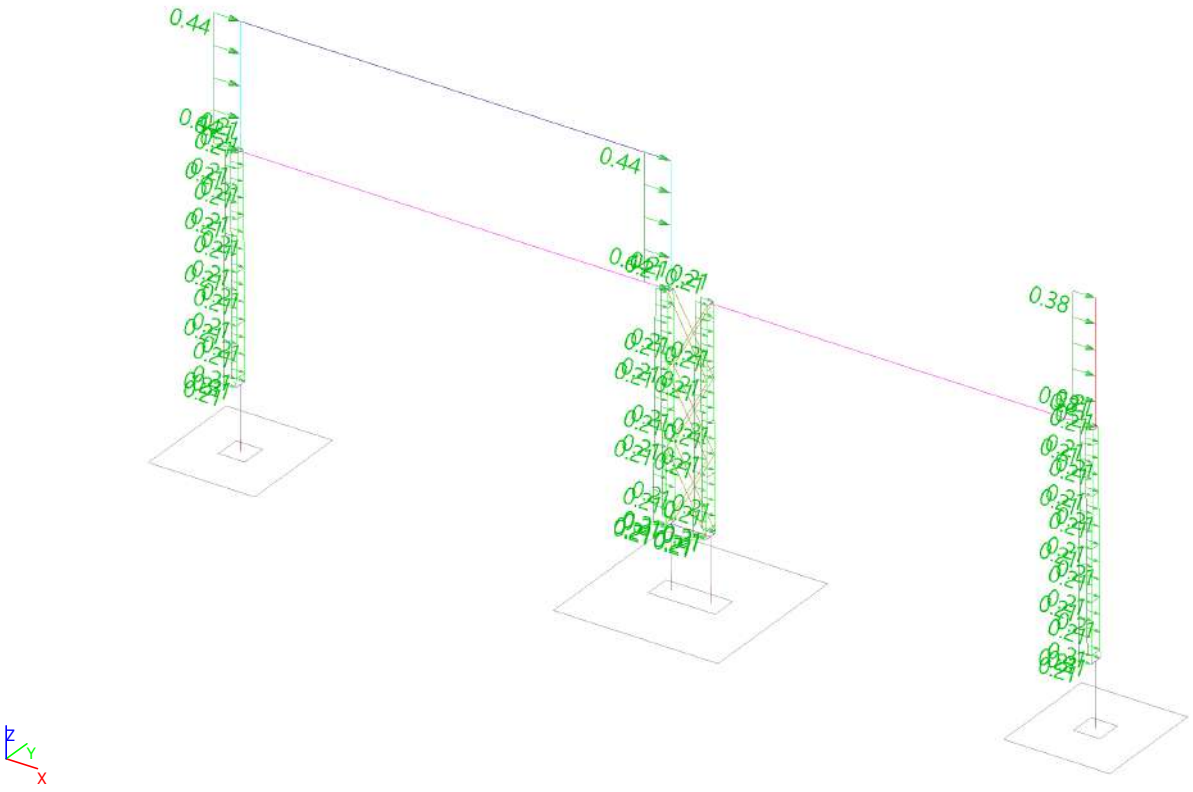
3.2. BC1: e.g. constructie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

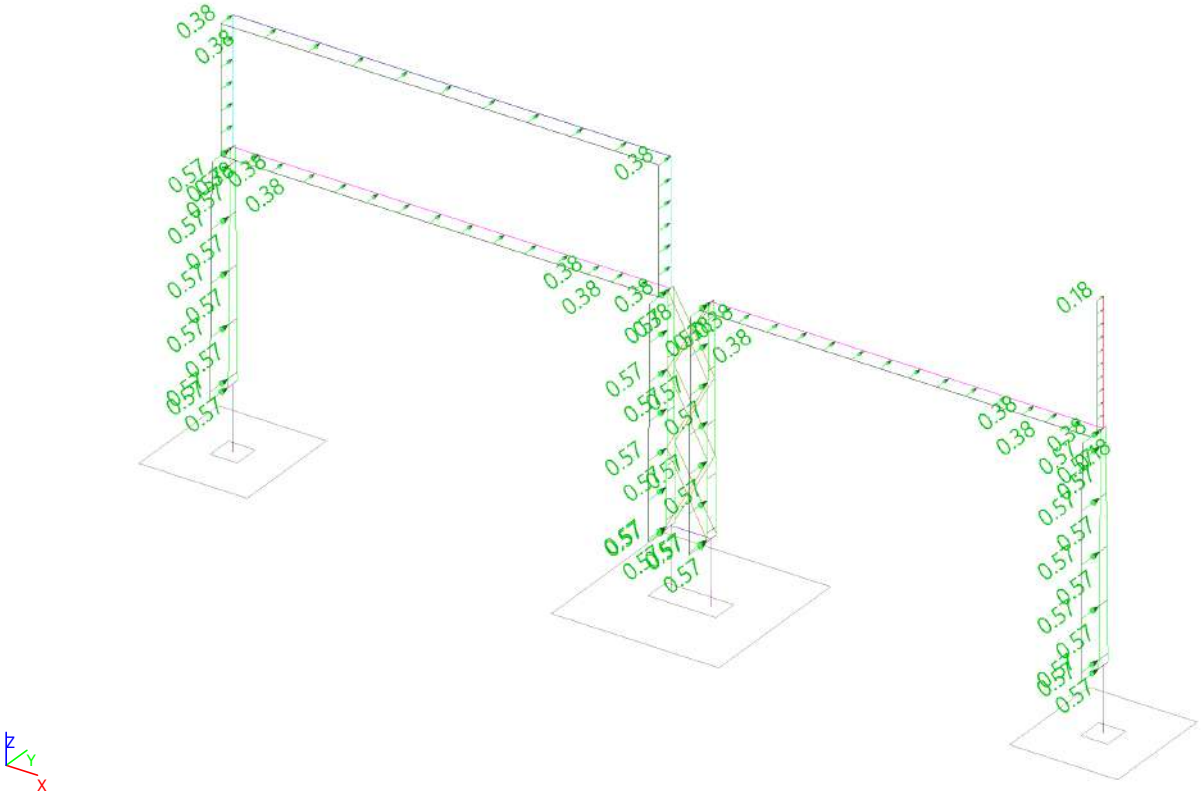
3.3. BG2: grond op poer



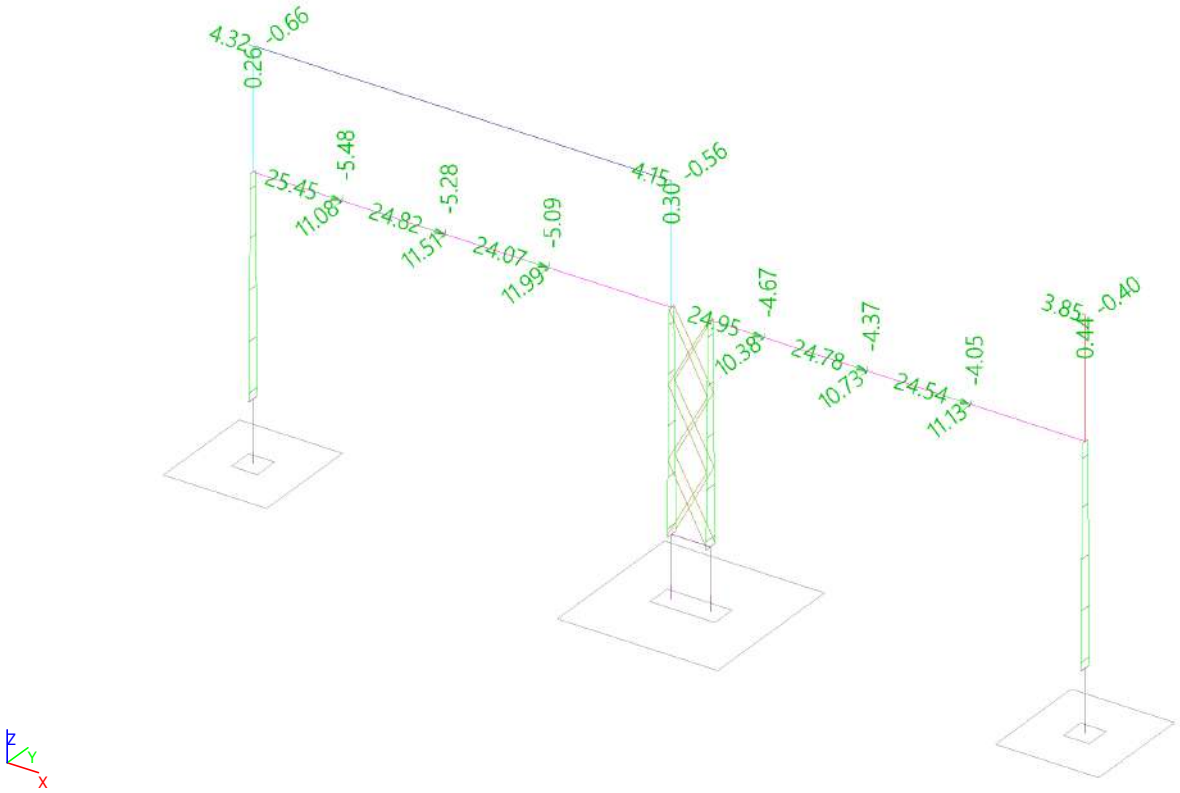
3.4. BG3: wind op constructie; X-richting



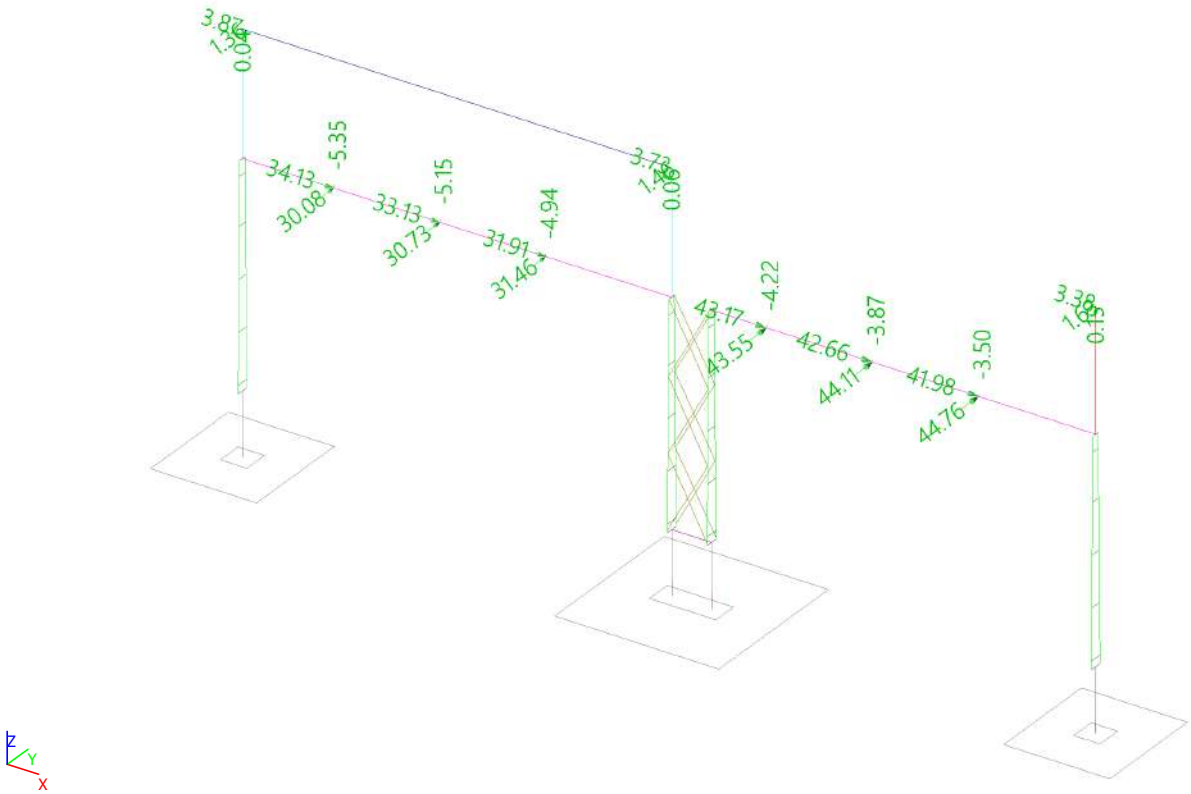
3.5. BG4: wind op constructie; Y-richting



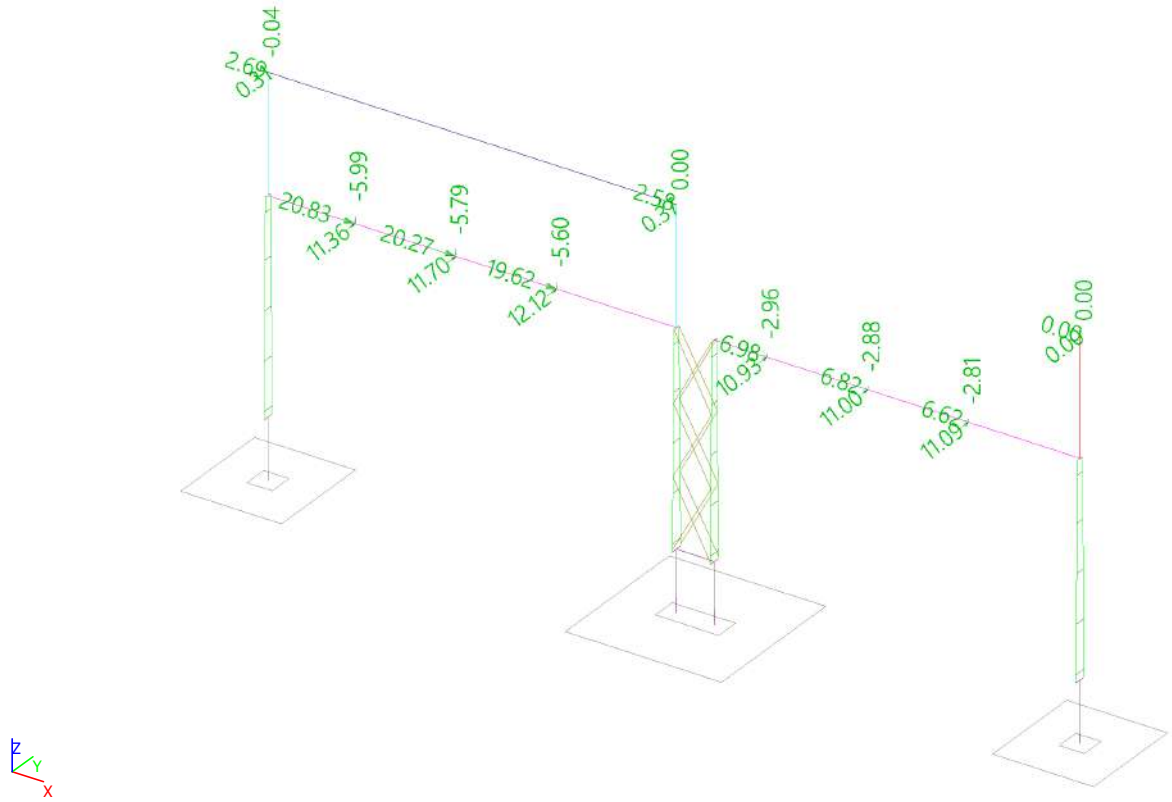
3.6. LC1001 / Totale waarde



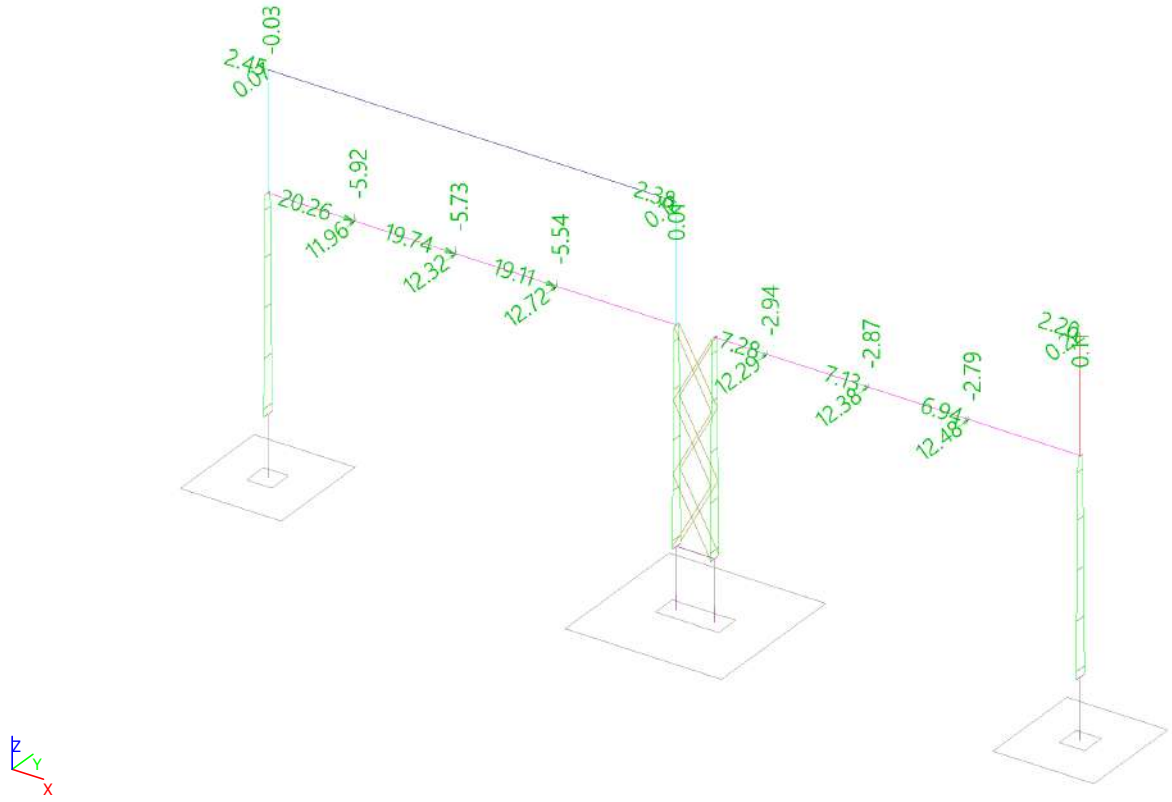
3.7. LC1080 / Totale waarde



3.8. LC1159 / Totale waarde



3.9. LC1238 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-1	Omhullend 1	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	1.40
			BG4 - wind op constructie; Y-richting	1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00
UGT-2	Omhullend 2	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	-1.40
			BG4 - wind op constructie; Y-richting	-1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00

3.11. Resultaatklasses

Naam	Omschrijving	Lijst
UGT	Sterkte en stabiliteit	UGT-1 - Omhullende - uiterst UGT-2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**7356**
Aantal 1D elementen	**197**
Aantal netknopen	**7805**
Aantal vergelijkingen	**46830**
Belastinggevallen	BG1
	BG3
	BG4
	BG2
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**7356**
Aantal 1D elementen	**197**
Aantal netknopen	**7805**
Aantal vergelijkingen	**46830**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**7356**
Aantal 1D elementen	**197**
Aantal netknopen	**7805**
Aantal vergelijkingen	**46830**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
	LC1168
	LC1169
	LC1170
	LC1171
	LC1172
	LC1173
	LC1174
	LC1175
	LC1176
	LC1177
	LC1178
	LC1179
	LC1180
	LC1181
	LC1182
	LC1183
	LC1184
	LC1185

Aantal 2D elementen	**7356**
Aantal 1D elementen	**197**
Aantal netknopen	**7805**
Aantal vergelijkingen	**46830**
	LC1186
	LC1187
	LC1188
	LC1189
	LC1190
	LC1191
	LC1192
	LC1193
	LC1194
	LC1195
	LC1196
	LC1197
	LC1198
	LC1199
	LC1200
	LC1201
	LC1202
	LC1203
	LC1204
	LC1205
	LC1206
	LC1207
	LC1208
	LC1209
	LC1210
	LC1211
	LC1212
	LC1213
	LC1214
	LC1215
	LC1216
	LC1217
	LC1218
	LC1219
	LC1220
	LC1221
	LC1222
	LC1223
	LC1224
	LC1225
	LC1226
	LC1227
	LC1228
	LC1229
	LC1230
	LC1231
	LC1232
	LC1233
	LC1234
	LC1235
	LC1236
	LC1237
	LC1238
Buigtheorie	Mindlin
Start berekening	17.06.2020 07:44
Einde berekening	17.06.2020 07:45

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	0.0	-1929.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	0.0	1929.0

	[kN]	X	Y	Z
BG BG3	last	19.9	0.0	0.0
	knoopreacties	0.0	-0.0	0.0
	lijnreactions	-1.1	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-18.8	0.0	0.0
BG BG4	last	0.0	41.2	0.0
	knoopreacties	-0.0	0.0	0.0
	lijnreactions	0.0	-4.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	-37.0	0.0
BG BG2	last	0.0	0.0	-1372.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	1372.9
BG LC1001	last	160.9	65.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-150.8	-58.2	27.9
BG LC1002	last	238.5	229.2	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-15.0	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-223.5	-204.3	26.7
BG LC1003	last	223.6	126.4	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.1	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-209.5	-113.0	30.5
BG LC1004	last	134.2	78.3	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.4	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-125.7	-69.8	31.3
BG LC1005	last	125.0	63.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.9	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-117.1	-56.5	27.9
BG LC1006	last	231.4	228.8	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-216.9	-203.9	26.7
BG LC1007	last	205.6	124.9	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.7	-111.7	30.5
BG LC1008	last	127.1	77.9	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.1	-69.5	31.3
BG LC1009	last	136.2	50.2	-29.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-5.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-127.7	-45.0	29.1
BG LC1010	last	236.4	229.6	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.5	-204.6	26.8
BG LC1011	last	215.1	124.1	-30.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-13.6	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-201.5	-111.0	30.9
BG LC1012	last	131.8	78.1	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.5	-69.6	31.4
BG LC1013	last	117.6	44.5	-29.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.2	-40.0	29.1
BG LC1014	last	232.7	228.5	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-218.1	-203.6	26.8
BG LC1015	last	205.8	120.3	-30.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.8	-107.7	30.9
BG LC1016	last	128.1	77.0	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.0	-68.6	31.4
BG LC1017	last	142.6	82.4	-31.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.0	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-133.6	-73.3	31.9
BG LC1018	last	236.6	229.8	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.7	-204.8	27.0
BG LC1019	last	216.1	130.6	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.6	-14.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-202.5	-116.6	31.7
BG LC1020	last	132.3	78.7	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.9	-70.1	31.5
BG LC1021	last	119.1	86.2	-31.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-9.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.6	-76.6	31.9
BG LC1022	last	231.9	230.5	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-25.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-217.4	-205.4	27.0
BG LC1023	last	205.5	132.8	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-14.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.5	-118.6	31.7
BG LC1024	last	127.7	79.4	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-119.6	-70.8	31.5
BG LC1025	last	118.1	67.9	-32.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-7.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.7	-60.5	32.0
BG LC1026	last	233.6	230.2	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.0	-205.1	27.0
BG LC1027	last	207.4	128.4	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.1	-13.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.3	-114.7	31.7
BG LC1028	last	129.1	78.6	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.9	-70.0	31.5
BG LC1029	last	122.9	65.0	-32.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.1	-57.9	32.0
BG LC1030	last	234.5	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.8	-204.6	27.0
BG LC1031	last	209.4	126.6	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.2	-13.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-196.2	-113.2	31.7
BG LC1032	last	130.0	78.0	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.8	-69.5	31.5
BG LC1033	last	136.4	55.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-5.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-127.8	-49.6	18.4
BG LC1034	last	209.9	238.6	-19.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.2	-26.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-196.7	-212.6	19.6
BG LC1035	last	193.4	120.2	-22.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.2	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-181.2	-107.5	22.3
BG LC1036	last	97.9	65.9	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.2	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-91.8	-58.8	23.6
BG LC1037	last	100.4	53.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-94.1	-47.9	18.4
BG LC1038	last	202.8	238.2	-19.6

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.7	-25.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-190.1	-212.3	19.6
BG LC1039	last	175.4	118.6	-22.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-12.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.3	-106.1	22.3
BG LC1040	last	90.9	65.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.1	-58.4	23.6
BG LC1041	last	103.5	29.7	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.5	-2.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-97.0	-26.7	20.0
BG LC1042	last	207.5	239.1	-19.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-26.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.5	-213.0	19.8
BG LC1043	last	183.6	116.8	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.6	-12.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-172.1	-104.5	22.7
BG LC1044	last	94.8	64.8	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.0	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-88.8	-57.8	23.7
BG LC1045	last	84.9	24.0	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-2.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.5	-21.7	20.0
BG LC1046	last	203.9	237.9	-19.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.8	-25.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-191.1	-212.0	19.8
BG LC1047	last	174.4	113.0	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-11.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.4	-101.2	22.7
BG LC1048	last	91.1	63.7	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.4	-56.8	23.7
BG LC1049	last	113.0	80.9	-24.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.1	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-105.9	-71.9	24.0
BG LC1050	last	207.5	240.0	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.5	-213.9	20.0
BG LC1051	last	184.9	126.4	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.6	-13.5	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-173.2	-112.8	23.8
BG LC1052	last	95.7	67.0	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.0	-7.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-89.6	-59.7	23.9
BG LC1053	last	89.6	84.7	-24.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-9.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.9	-75.2	24.0
BG LC1054	last	202.9	240.8	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.7	-26.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-190.2	-214.5	20.0
BG LC1055	last	174.2	128.6	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.3	-114.8	23.8
BG LC1056	last	91.0	67.7	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.3	-60.3	23.9
BG LC1057	last	83.2	57.3	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.0	-51.0	24.2
BG LC1058	last	204.4	240.2	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.8	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-191.6	-214.0	20.0
BG LC1059	last	175.3	122.7	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.2	-109.6	23.9
BG LC1060	last	92.0	66.1	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.2	-58.9	23.9
BG LC1061	last	88.0	54.5	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-6.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.4	-48.5	24.2
BG LC1062	last	205.4	239.6	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-26.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.5	-213.5	20.0
BG LC1063	last	177.3	120.9	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.2	-12.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-166.1	-108.0	23.9
BG LC1064	last	92.9	65.5	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.1	-58.4	23.9

	[kN]	X	Y	Z
BG LC1065	last	100.1	57.1	-29.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.8	-50.9	29.4
BG LC1066	last	100.2	57.0	-29.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.9	-50.8	29.5
BG LC1067	last	100.0	57.1	-29.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.8	-50.9	29.4
BG LC1068	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1069	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1070	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1071	last	91.8	57.0	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.0	-50.8	27.3
BG LC1072	last	91.6	57.2	-27.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.8	-51.0	27.2
BG LC1073	last	91.4	57.4	-27.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.7	-51.1	27.1
BG LC1074	last	90.9	57.1	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.9	27.5
BG LC1075	last	90.9	56.9	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.7	27.6
BG LC1076	last	90.9	56.8	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.6	27.8
BG LC1077	last	129.4	66.4	-37.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.2	-59.2	37.4
BG LC1078	last	93.8	54.1	-24.6
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-5.9	-5.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.9	-48.3	24.6
BG LC1079	last	138.4	63.7	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.7	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-129.7	-56.9	30.5
BG LC1080	last	238.0	229.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.9	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-223.0	-204.2	26.8
BG LC1081	last	187.8	124.5	-29.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.8	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-175.9	-111.1	29.6
BG LC1082	last	133.7	78.3	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.4	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-125.3	-69.8	31.3
BG LC1083	last	117.2	62.6	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-109.8	-55.9	30.5
BG LC1084	last	231.4	228.8	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-216.9	-203.9	26.8
BG LC1085	last	174.8	123.5	-29.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.8	-110.2	29.6
BG LC1086	last	127.2	78.0	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.2	-69.5	31.3
BG LC1087	last	126.9	58.4	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.9	-52.2	31.0
BG LC1088	last	236.2	229.7	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.3	-204.7	26.8
BG LC1089	last	181.7	122.7	-29.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.4	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-170.3	-109.6	29.8
BG LC1090	last	131.6	78.2	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.3	-69.7	31.4
BG LC1091	last	115.9	55.1	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-5.8	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-108.6	-49.2	31.0
BG LC1092	last	232.8	228.6	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-218.2	-203.8	26.8
BG LC1093	last	175.0	120.3	-29.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-12.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.0	-107.4	29.8
BG LC1094	last	128.2	77.1	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.1	-68.8	31.4
BG LC1095	last	129.8	70.0	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.7	-62.3	32.1
BG LC1096	last	236.3	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.4	-204.6	27.0
BG LC1097	last	182.7	127.4	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.5	-13.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-171.3	-113.6	30.4
BG LC1098	last	132.1	78.7	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.8	-70.1	31.5
BG LC1099	last	116.0	72.2	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-7.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-108.7	-64.3	32.1
BG LC1100	last	232.0	230.3	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-25.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-217.4	-205.2	27.0
BG LC1101	last	174.8	128.9	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-14.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.8	-115.0	30.4
BG LC1102	last	127.8	79.3	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.8	-70.7	31.5
BG LC1103	last	117.4	64.8	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.0	-57.8	32.1
BG LC1104	last	233.6	230.1	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.0	-205.1	27.0
BG LC1105	last	176.3	125.9	-30.4

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-13.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-165.2	-112.3	30.4
BG LC1106	last	129.1	78.5	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.0	-70.0	31.5
BG LC1107	last	120.2	63.2	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-112.7	-56.3	32.1
BG LC1108	last	234.5	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.8	-204.6	27.0
BG LC1109	last	177.9	124.7	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.2	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-166.7	-111.3	30.4
BG LC1110	last	130.0	78.0	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.8	-69.5	31.5
BG LC1111	last	92.3	65.7	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.4	-58.5	23.3
BG LC1112	last	172.8	202.6	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.0	-180.8	20.7
BG LC1113	last	130.2	118.3	-22.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-122.0	-105.6	22.6
BG LC1114	last	90.9	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.1	-68.7	23.7
BG LC1115	last	78.5	65.5	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.5	-58.4	23.3
BG LC1116	last	168.6	202.5	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.0	-180.8	20.7
BG LC1117	last	121.9	118.1	-22.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.2	-105.4	22.6
BG LC1118	last	86.7	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.4	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.2	-68.7	23.7
BG LC1119	last	84.6	61.3	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.2	-54.7	23.5
BG LC1120	last	171.6	202.9	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-160.8	-181.1	20.7
BG LC1121	last	126.2	116.9	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.2	-104.4	22.7
BG LC1122	last	89.5	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.8	-68.6	23.7
BG LC1123	last	77.7	59.5	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.8	-53.1	23.5
BG LC1124	last	169.5	202.4	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.9	-180.6	20.7
BG LC1125	last	122.1	115.5	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.4	-103.2	22.7
BG LC1126	last	87.3	76.4	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.8	-68.1	23.7
BG LC1127	last	87.4	69.0	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-7.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.9	-61.4	24.2
BG LC1128	last	171.9	202.8	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.1	-181.0	20.8
BG LC1129	last	127.3	120.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.3	-107.1	23.1
BG LC1130	last	90.0	77.3	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.3	-68.9	23.8
BG LC1131	last	77.8	70.6	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.8	-62.9	24.2

	[kN]	X	Y	Z
BG LC1132	last	168.9	203.4	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.3	-181.5	20.8
BG LC1133	last	121.9	121.1	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.2	-108.1	23.1
BG LC1134	last	87.0	77.8	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.5	-69.4	23.8
BG LC1135	last	78.7	65.2	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.7	-58.1	24.2
BG LC1136	last	170.0	203.2	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-159.3	-181.4	20.8
BG LC1137	last	122.9	119.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.1	-106.2	23.1
BG LC1138	last	87.9	77.2	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.3	-68.8	23.8
BG LC1139	last	80.8	64.1	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.7	-57.1	24.2
BG LC1140	last	170.7	202.9	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-159.9	-181.1	20.8
BG LC1141	last	124.1	118.2	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-116.2	-105.5	23.1
BG LC1142	last	88.5	76.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.9	-68.5	23.8
BG LC1143	last	91.1	65.4	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.4	-58.3	25.2
BG LC1144	last	157.1	182.3	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.3	-162.4	23.4
BG LC1145	last	123.3	110.2	-25.2
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-7.7	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.6	-98.3	25.2
BG LC1146	last	87.8	74.6	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.3	-66.5	25.7
BG LC1147	last	76.3	65.6	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-71.5	-58.5	25.2
BG LC1148	last	152.6	182.4	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-143.0	-162.5	23.4
BG LC1149	last	114.3	110.2	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.2	-98.3	25.2
BG LC1150	last	83.2	74.7	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.0	-66.6	25.7
BG LC1151	last	82.6	61.1	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-77.4	-54.5	25.5
BG LC1152	last	155.8	182.7	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.0	-162.8	23.4
BG LC1153	last	118.9	108.8	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-11.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.4	-97.0	25.3
BG LC1154	last	86.2	74.4	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.8	-66.4	25.8
BG LC1155	last	75.6	59.3	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.7	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-70.8	-53.0	25.5
BG LC1156	last	153.6	182.2	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-144.0	-162.3	23.4
BG LC1157	last	114.7	107.5	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-11.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.5	-95.9	25.3
BG LC1158	last	84.0	73.9	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.0	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-78.7	-65.9	25.8
BG LC1159	last	86.4	68.9	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-7.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.0	-61.4	26.1
BG LC1160	last	156.2	182.6	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.4	-162.7	23.5
BG LC1161	last	120.5	111.9	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-12.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-112.9	-99.8	25.6
BG LC1162	last	86.9	74.8	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.4	-66.7	25.8
BG LC1163	last	75.9	70.8	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-71.2	-63.1	26.1
BG LC1164	last	152.9	183.2	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-20.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-143.3	-163.2	23.5
BG LC1165	last	114.4	113.2	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-12.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.2	-101.0	25.6
BG LC1166	last	83.6	75.4	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.4	-67.2	25.8
BG LC1167	last	76.8	65.0	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.0	-58.0	26.1
BG LC1168	last	154.1	183.1	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.7	-20.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-144.5	-163.1	23.5
BG LC1169	last	115.4	110.8	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-12.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-108.2	-98.8	25.7
BG LC1170	last	84.5	74.7	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.2	-66.6	25.8
BG LC1171	last	79.2	63.9	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-74.3	-57.0	26.1
BG LC1172	last	154.9	182.7	-23.5

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-145.2	-162.8	23.5
BG LC1173	last	116.8	110.0	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-109.5	-98.1	25.7
BG LC1174	last	85.3	74.3	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.9	-66.3	25.8
BG LC1175	last	95.6	65.4	-23.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.1	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-89.5	-58.3	23.2
BG LC1176	last	176.7	203.9	-20.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-165.6	-181.9	20.6
BG LC1177	last	135.3	118.0	-22.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-126.7	-105.4	22.5
BG LC1178	last	93.5	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.6	-68.8	23.7
BG LC1179	last	81.2	65.1	-23.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-76.0	-58.1	23.2
BG LC1180	last	172.3	203.9	-20.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.4	-181.8	20.6
BG LC1181	last	126.3	117.6	-22.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.3	-105.1	22.5
BG LC1182	last	89.1	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.4	-68.7	23.7
BG LC1183	last	87.3	60.8	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.8	-54.3	23.4
BG LC1184	last	175.4	204.3	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.4	-182.2	20.7
BG LC1185	last	130.8	116.5	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-12.5	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-122.5	-104.0	22.7
BG LC1186	last	92.0	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.1	-68.7	23.7
BG LC1187	last	80.1	58.8	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.0	-52.5	23.4
BG LC1188	last	173.2	203.7	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.3	-181.7	20.7
BG LC1189	last	126.4	114.9	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.4	-102.7	22.7
BG LC1190	last	89.8	76.4	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.1	-68.1	23.7
BG LC1191	last	90.1	69.3	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.4	-61.7	24.2
BG LC1192	last	175.6	204.3	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.6	-182.1	20.8
BG LC1193	last	131.9	120.2	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-13.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.5	-107.2	23.1
BG LC1194	last	92.5	77.4	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.6	-69.0	23.8
BG LC1195	last	80.2	71.0	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.1	-63.2	24.2
BG LC1196	last	172.6	204.8	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.7	-182.6	20.8
BG LC1197	last	126.1	121.4	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.1	-108.3	23.1
BG LC1198	last	89.4	77.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.7	-69.5	23.8

	[kN]	X	Y	Z
BG LC1199	last	81.0	65.2	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.8	-58.1	24.2
BG LC1200	last	173.7	204.6	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.8	-182.5	20.8
BG LC1201	last	127.1	119.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.0	-106.1	23.1
BG LC1202	last	90.3	77.3	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.6	-68.9	23.8
BG LC1203	last	83.2	64.1	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-77.9	-57.1	24.2
BG LC1204	last	174.4	204.3	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.4	-182.2	20.8
BG LC1205	last	128.3	118.1	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.2	-105.4	23.1
BG LC1206	last	91.0	76.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-68.6	23.8
BG LC1207	last	94.0	65.2	-25.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-88.1	-58.2	25.0
BG LC1208	last	160.5	184.0	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.1	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-150.4	-163.7	23.3
BG LC1209	last	127.9	110.1	-24.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.8	-98.3	24.9
BG LC1210	last	90.1	74.8	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.5	-66.7	25.6
BG LC1211	last	78.8	65.3	-25.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.9	-58.3	25.0
BG LC1212	last	155.8	184.0	-23.3
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-9.8	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.1	-163.7	23.3
BG LC1213	last	118.4	110.0	-24.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-11.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.9	-98.1	24.9
BG LC1214	last	85.5	74.8	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.1	-66.7	25.6
BG LC1215	last	85.2	60.6	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.8	-54.2	25.3
BG LC1216	last	159.1	184.4	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-149.1	-164.1	23.3
BG LC1217	last	123.1	108.6	-25.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-11.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.3	-96.9	25.1
BG LC1218	last	88.5	74.6	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.9	-66.5	25.6
BG LC1219	last	77.8	58.8	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.9	-52.6	25.3
BG LC1220	last	156.9	183.8	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.0	-163.6	23.3
BG LC1221	last	118.5	107.1	-25.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-11.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.1	-95.6	25.1
BG LC1222	last	86.2	74.0	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.8	-66.0	25.6
BG LC1223	last	88.7	69.4	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-7.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.2	-61.8	26.0
BG LC1224	last	159.4	184.3	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-149.4	-164.0	23.4
BG LC1225	last	124.5	112.4	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.2	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-116.7	-100.1	25.5
BG LC1226	last	89.1	75.1	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.5	-66.9	25.7
BG LC1227	last	78.1	71.3	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.2	-63.5	26.0
BG LC1228	last	156.2	184.9	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.4	-164.5	23.4
BG LC1229	last	118.3	113.7	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-12.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.8	-101.3	25.5
BG LC1230	last	85.8	75.7	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.5	-67.4	25.7
BG LC1231	last	78.9	65.2	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.9	-58.1	26.0
BG LC1232	last	157.4	184.7	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.9	-20.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.5	-164.4	23.4
BG LC1233	last	119.3	111.0	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-12.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.8	-98.9	25.5
BG LC1234	last	86.7	74.9	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.3	-66.8	25.7
BG LC1235	last	81.3	64.0	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-76.2	-57.0	26.0
BG LC1236	last	158.1	184.4	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.9	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-148.2	-164.0	23.4
BG LC1237	last	120.7	110.1	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-113.1	-98.2	25.5
BG LC1238	last	87.5	74.5	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.0	-66.5	25.7

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC1	K6	S246	**-4.39**	-50.27	59.74	426.03	**-27.27**	-0.56
UGT-2/2	FC1	K6	S246	**4.17**	-16.86	63.47	138.81	-4.78	-0.19
UGT-1/3	FC1	K6	S246	-1.51	**-68.47**	58.84	**579.05**	-20.84	**-0.58**
UGT-2/4	FC1	K6	S246	1.51	**17.57**	55.45	**-144.66**	0.88	**0.02**
UGT-1/5	FC1	K6	S246	-1.02	-0.01	**54.85**	0.07	-1.63	0.00
UGT-2/6	FC1	K6	S246	3.20	-18.01	**64.96**	149.69	-10.31	-0.20
UGT-2/7	FC1	K6	S246	4.05	0.01	56.05	-0.08	**3.40**	0.00

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC2	K8	S244	**-90.65**	-39.42	**-1269.53**	460.81	**-284.02**	-0.07
UGT-2/7	FC2	K8	S244	**46.81**	-0.07	**155.91**	-0.19	**34.16**	0.13
UGT-1/8	FC2	K8	S244	-38.82	**-64.59**	-726.65	512.94	-162.24	**5.87**
UGT-2/4	FC2	K8	S244	35.19	**19.89**	58.28	**-119.28**	12.08	-2.69
UGT-1/3	FC2	K8	S244	-61.88	-59.01	-988.13	**600.50**	-220.93	2.46
UGT-2/9	FC2	K8	S244	-48.56	-5.27	-858.12	274.22	-192.54	**-4.73**

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/1	FC3	K438	S250	**-161.15**	-83.28	**1384.95**	570.36	**-307.56**	-9.37
UGT-2/7	FC3	K438	S250	**-22.64**	0.06	**-55.86**	0.30	**13.33**	-0.10
UGT-1/10	FC3	K438	S250	-133.24	**-98.58**	1107.37	694.14	-245.35	-10.97
UGT-2/4	FC3	K438	S250	-33.97	**8.58**	42.07	**-88.54**	-8.71	**0.24**
UGT-1/3	FC3	K438	S250	-132.51	-98.55	1099.50	**694.95**	-243.59	-10.96
UGT-1/11	FC3	K438	S250	-117.47	-94.31	931.45	628.26	-205.92	**-11.25**

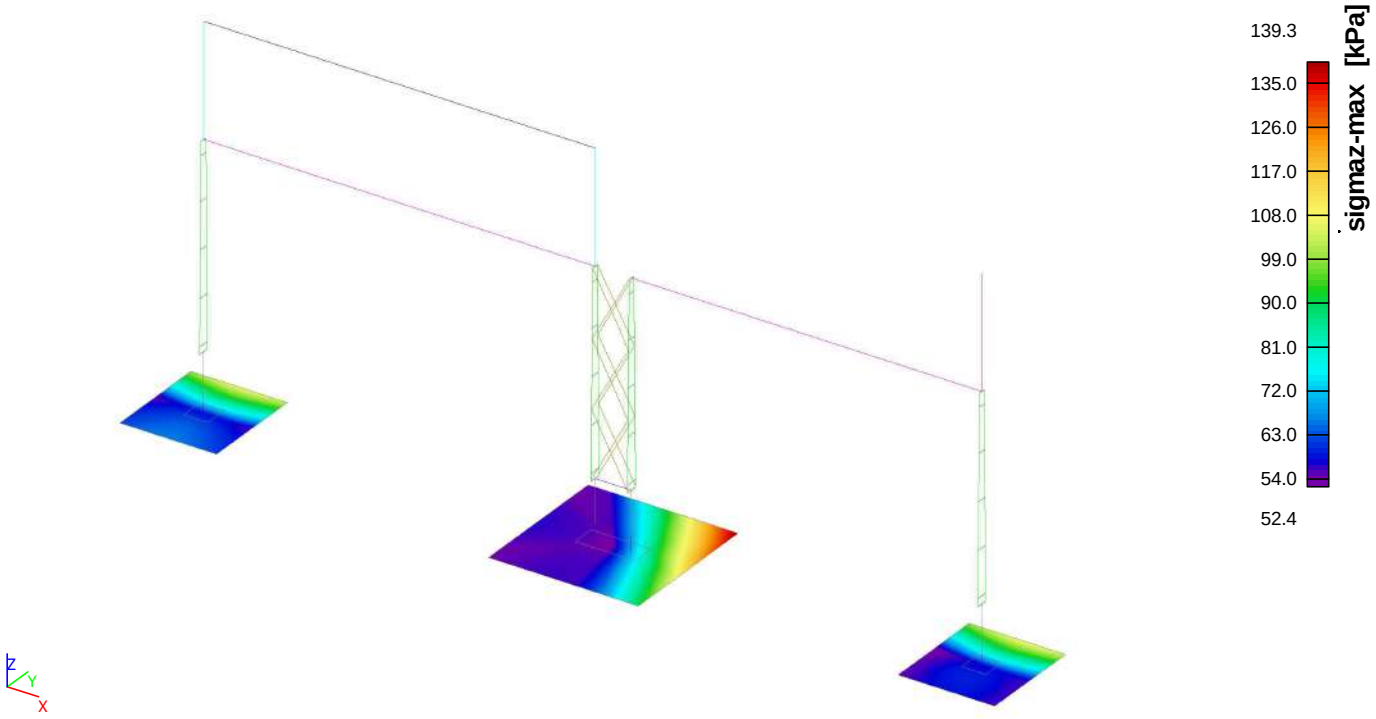
5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/12	FC4	K513	S322	**-10.14**	-56.35	46.06	478.41	-30.23	0.86
UGT-2/7	FC4	K513	S322	**-0.37**	0.00	**38.36**	-0.04	**1.25**	0.00
UGT-1/3	FC4	K513	S322	-6.99	**-72.46**	44.27	**590.29**	-24.05	**0.96**
UGT-2/4	FC4	K513	S322	-2.73	**11.69**	38.66	**-72.53**	-1.17	**-0.04**
UGT-1/13	FC4	K513	S322	-8.90	-13.42	**47.31**	112.07	-18.53	0.22
UGT-1/1	FC4	K513	S322	-10.12	-56.23	46.04	477.03	**-30.43**	0.86

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren



7. Staafkrachten

7.1. Staafkrachten kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S273	Kolom INP45 - INP450	80	UGT-1/14	**-1854.69**	-4.20	66.86	0.86	7.88	17.35
S265	Kolom INP45 - INP450	0	UGT-1/14	**1662.58**	-11.73	81.67	-1.25	2.11	13.89
S265	Kolom INP45 - INP450	80	UGT-2/15	805.35	**-25.82**	67.63	-0.96	7.32	-2.08
S266	Kolom INP45 - INP450	80	UGT-1/14	570.57	**60.98**	51.07	1.99	4.49	35.77
S284	Kolom INP45 - INP450	2360	UGT-1/16	-484.00	24.37	**-21.55**	0.21	-22.81	-16.64
S265	Kolom INP45 - INP450	80	UGT-1/1	1490.65	-19.79	**89.16**	-1.35	9.26	7.87
S4	Kolom INP45 - INP450	0	UGT-2/17	974.54	10.70	-5.42	**-2.00**	4.37	5.44
S2	Kolom INP45 - INP450	0	UGT-1/1	218.85	27.62	-4.96	**2.51**	27.41	12.69
S261	Kolom INP45 - INP450	0	UGT-2/18	608.10	14.90	17.30	0.56	**-47.77**	-7.85
S262	Kolom INP45 - INP450	0	UGT-1/19	427.13	32.90	-9.90	-0.32	**52.39**	-15.77
S284	Kolom INP45 - INP450	565	UGT-1/3	-406.73	39.59	-13.16	-1.02	10.69	**-35.91**
S285	Kolom INP45 - INP450	1499	UGT-1/3	-971.54	36.62	7.03	-0.54	-8.50	**36.96**

7.2. Staafkrachten kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S329, S330
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S330	Kolom DIE36 - HEA360	0	UGT-1/20	**-18.00**	14.90	0.00	-0.07	-0.01	-33.28
S329	Kolom DIE36 - HEA360	4651	UGT-1/21	**-7.18**	-3.40	-1.47	0.16	0.00	-4.61
S329	Kolom DIE36 - HEA360	0	UGT-2/22	-17.15	**-13.01**	0.00	0.07	0.00	31.38
S330	Kolom DIE36 - HEA360	0	UGT-1/21	-17.66	**22.25**	-1.32	-0.15	6.14	**-53.56**
S329	Kolom DIE36 - HEA360	0	UGT-2/23	-13.68	-4.80	**-8.75**	0.19	**34.95**	13.07
S330	Kolom DIE36 - HEA360	0	UGT-1/3	-16.34	13.81	**8.88**	-0.18	**-35.56**	-32.05
S330	Kolom DIE36 - HEA360	0	UGT-2/24	-16.50	14.87	-5.24	**-0.28**	18.62	-35.30
S329	Kolom DIE36 - HEA360	0	UGT-2/25	-14.19	-7.46	-5.34	**0.29**	19.07	19.78
S330	Kolom DIE36 - HEA360	4651	UGT-1/21	-11.77	19.39	-1.32	-0.15	0.00	**43.28**

7.3. Staafkrachten ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S33, S40, S404, S406
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S404	Ligger DIE34 - HE340A	0	UGT-1/54	**-97.06**	-21.33	-43.48	-0.02	102.27	-4.84
S40	Ligger DIE34 - HE340A	0	UGT-1/26	**129.70**	17.09	77.80	0.00	-19.13	-18.28
S404	Ligger DIE34 - HE340A	2625	UGT-1/21	-96.97	**-26.32**	-28.46	0.00	-5.89	**-74.61**
S33	Ligger DIE34 - HE340A	0	UGT-2/6	13.81	**26.00**	18.15	-0.01	-0.29	-46.58
S406	Ligger DIE34 - HE340A	2560	UGT-1/3	-4.34	-17.46	**-62.39**	0.00	-0.96	-46.64
S40	Ligger DIE34 - HE340A	0	UGT-1/3	109.60	15.47	**87.45**	0.00	-20.92	-16.09
S33	Ligger DIE34 - HE340A	0	UGT-1/8	7.49	22.79	53.19	**-0.03**	-0.76	-35.27
S33	Ligger DIE34 - HE340A	0	UGT-2/27	9.98	19.67	31.49	**0.03**	-0.61	-30.57
S40	Ligger DIE34 - HE340A	0	UGT-2/28	104.55	15.75	83.61	0.00	**-21.05**	-17.66
S406	Ligger DIE34 - HE340A	0	UGT-1/3	-4.34	-14.43	-61.03	0.00	**157.01**	-5.82
S33	Ligger DIE34 - HE340A	1875	UGT-1/21	-1.32	20.27	32.01	0.00	59.50	**14.66**

7.4. Staafkrachten ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S405
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S405	Ligger DIE34+strippen - I + 2 PLud	8642	UGT-2/55	**-11.91**	-9.64	-35.87	-0.02	157.90	22.11
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/26	**129.70**	15.39	77.80	0.00	92.90	5.10
S405	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/13	0.76	**-17.52**	-13.41	-0.01	34.12	-2.81
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/6	52.46	**20.12**	18.81	-0.01	22.84	-3.09
S405	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/3	-4.34	-14.43	**-61.03**	0.00	157.01	-5.82
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/3	109.60	13.76	**86.69**	0.00	104.46	4.96
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/8	42.64	14.33	54.56	**-0.02**	66.26	-0.08
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/27	123.83	15.73	74.79	**0.01**	87.87	3.82
S405	Ligger DIE34+strippen - I + 2 PLud	5642	UGT-2/4	-2.73	0.30	-0.09	0.00	**-13.92**	25.20
S405	Ligger DIE34+strippen - I + 2 PLud	4642	UGT-1/3	71.03	1.98	37.36	0.00	**313.69**	36.27
S405	Ligger DIE34+strippen - I + 2 PLud	10500	UGT-1/21	6.36	-17.26	-28.94	-0.01	73.60	**-12.58**
S405	Ligger DIE34+strippen - I + 2 PLud	4642	UGT-2/6	31.76	5.36	8.37	-0.01	68.38	**45.84**

7.5. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S403
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S403	Ligger DIE34+UNP's - Grafische doorsnede	9579	UGT-1/54	**-97.06**	-16.61	-43.48	-0.02	194.49	35.38
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/56	**15.25**	17.81	35.65	0.02	66.25	1.94
S403	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/21	-96.97	**-23.22**	-28.46	0.00	68.81	**-9.58**
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/6	13.81	**23.78**	18.15	-0.01	33.74	0.09
S403	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/35	-86.92	-21.43	**-46.87**	-0.01	110.71	-4.92
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/35	9.35	20.09	**52.37**	-0.01	98.35	8.77
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/8	7.49	20.57	52.19	**-0.03**	98.03	5.37
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/27	9.98	17.45	32.49	**0.03**	59.37	4.23
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-2/4	7.90	1.36	-0.16	0.01	**-15.98**	37.82
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-1/35	-23.79	2.31	19.05	-0.01	**260.85**	64.75
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-1/13	-17.43	3.82	7.08	-0.01	90.76	**71.28**

7.6. Staafkrachten ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S331
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S331	Ligger DIN28 - HEB280	0	UGT-2/30	**-12.09**	9.25	0.00	0.00	0.07	-22.41
S331	Ligger DIN28 - HEB280	16200	UGT-1/31	**-8.16**	-10.44	0.00	0.00	0.12	-31.93
S331	Ligger DIN28 - HEB280	16200	UGT-1/21	-11.53	**-11.81**	0.00	0.00	0.15	**-43.28**
S331	Ligger DIN28 - HEB280	0	UGT-2/7	-9.44	**9.67**	0.00	0.00	0.00	-25.33
S331	Ligger DIN28 - HEB280	16200	UGT-1/32	-11.13	-10.54	**-4.31**	-0.01	0.17	-32.86
S331	Ligger DIN28 - HEB280	16200	UGT-2/27	-8.85	-10.13	**4.31**	0.02	0.23	-29.37
S331	Ligger DIN28 - HEB280	0	UGT-1/33	-11.13	8.31	4.31	**-0.01**	0.21	-14.84
S331	Ligger DIN28 - HEB280	0	UGT-2/34	-8.88	8.74	-4.31	**0.02**	0.20	-18.13
S331	Ligger DIN28 - HEB280	8100	UGT-2/4	-9.41	-0.01	0.00	0.00	**-17.41**	14.85
S331	Ligger DIN28 - HEB280	8100	UGT-1/35	-11.29	-1.23	0.00	-0.01	**17.64**	14.28
S331	Ligger DIN28 - HEB280	5670	UGT-1/21	-11.53	0.44	0.00	0.00	0.16	**16.60**

7.7. Staafkrachten koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S402	Plaat 2x14x200 - Rechthoek	0	UGT-1/1	**-34.12**	1.91	-35.85	0.21	5.23	-0.76
S392	Plaat 2x14x200 - Rechthoek	0	UGT-1/1	**34.78**	-1.53	-68.50	-0.11	11.68	-0.10
S390	Plaat 2x14x200 - Rechthoek	0	UGT-1/1	0.00	**-6.75**	-214.30	-0.09	29.72	1.36
S400	Plaat 2x14x200 - Rechthoek	0	UGT-1/21	0.02	**6.37**	-75.49	0.09	10.47	-0.98
S386	Plaat 2x14x200 - Rechthoek	187	UGT-1/3	-1.35	3.28	**-355.30**	0.41	-32.87	0.71
S396	Plaat 2x14x200 - Rechthoek	0	UGT-2/4	0.83	0.11	**48.30**	0.02	-4.55	-0.03
S394	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.22	-1.40	-163.30	**-0.71**	11.73	0.23
S384	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.38	1.18	-259.09	**0.71**	18.51	0.06
S388	Plaat 2x14x200 - Rechthoek	232	UGT-1/3	-0.25	-1.35	-313.70	0.04	**-36.63**	0.30
S388	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	-0.25	-1.35	-313.59	0.04	**36.12**	0.61
S400	Plaat 2x14x200 - Rechthoek	0	UGT-2/17	0.90	5.84	-79.57	0.17	11.01	**-1.10**
S390	Plaat 2x14x200 - Rechthoek	0	UGT-2/17	0.85	-6.37	-187.57	-0.06	26.01	**1.38**

7.8. Staafkrachten diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S269	Diagionaal UPE14 - UPE140	0	UGT-1/1	**-183.70**	0.00	0.00	0.00	0.00	0.00
S270	Diagionaal UPE14 - UPE140	3142	UGT-1/36	**240.97**	0.00	0.00	0.00	0.00	0.00
S235	Diagionaal UPE14 - UPE140	0	UGT-1/37	-2.02	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.9. Staafkrachten bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S332
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S332	Bliksempiek-2 - Koker fl	0	UGT-1/38	**-4.71**	0.00	2.48	0.00	-5.76	0.00
S332	Bliksempiek-2 - Koker fl	4651	UGT-1/39	**0.49**	0.34	3.62	0.00	0.00	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/3	-2.65	**-3.41**	2.65	0.00	-12.33	**13.12**
S332	Bliksempiek-2 - Koker fl	0	UGT-2/40	-2.25	**2.77**	2.18	0.00	-10.14	**-10.14**
S332	Bliksempiek-2 - Koker fl	0	UGT-2/7	-2.71	0.00	**-2.47**	0.00	**5.75**	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/21	-2.28	1.01	**9.79**	0.00	**-39.80**	-4.71
S332	Bliksempiek-2 - Koker fl	0	UGT-1/41	-2.56	-2.75	3.26	**0.00**	-15.14	10.07

7.10. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer onder-IV - Rechthoek	1600	UGT-2/6	**-287.73**	15.27	-3.23	-0.20	5.17	176.88
S246	Poer onder-IV - Rechthoek	0	UGT-1/5	**-54.85**	0.01	1.02	0.00	1.63	0.07
S246	Poer onder-IV - Rechthoek	0	UGT-2/4	-55.45	**-17.57**	-1.51	**0.02**	-0.88	-144.66
S246	Poer onder-IV - Rechthoek	0	UGT-1/3	-58.84	**68.47**	1.51	**-0.58**	20.84	579.05
S246	Poer onder-IV - Rechthoek	0	UGT-2/2	-63.47	16.86	**-4.17**	-0.19	4.78	138.81
S246	Poer onder-IV - Rechthoek	0	UGT-1/1	-59.74	50.27	**4.39**	-0.56	27.27	426.03
S246	Poer onder-IV - Rechthoek	2000	UGT-2/7	-278.82	-0.01	-3.82	0.00	**-11.27**	-0.10
S246	Poer onder-IV - Rechthoek	2000	UGT-1/1	-282.51	42.53	3.76	-0.56	**35.42**	518.86
S246	Poer onder-IV - Rechthoek	2000	UGT-2/4	-278.22	-14.92	-1.44	0.02	-3.83	**-177.17**
S246	Poer onder-IV - Rechthoek	2000	UGT-1/3	-281.61	57.95	1.10	-0.58	23.45	**705.51**

7.11. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/7	**-289.08**	0.07	-46.24	0.11	-36.29	-0.09
S244	Poer onder-IV - Rechthoek	0	UGT-1/1	**1269.53**	39.42	**90.65**	-0.07	284.02	460.81
S244	Poer onder-IV - Rechthoek	0	UGT-2/4	-58.28	**-19.89**	-35.19	-2.69	-12.08	-119.28
S244	Poer onder-IV - Rechthoek	0	UGT-1/8	726.65	**64.59**	38.82	**5.87**	162.24	512.94
S244	Poer onder-IV - Rechthoek	0	UGT-2/7	-155.91	0.07	**-46.81**	0.13	-34.16	-0.19
S244	Poer onder-IV - Rechthoek	1440	UGT-1/3	854.96	54.27	56.37	**-14.83**	29.12	683.15
S244	Poer onder-IV - Rechthoek	1080	UGT-2/7	-213.39	0.07	-46.54	0.12	**-56.78**	-0.11
S244	Poer onder-IV - Rechthoek	360	UGT-1/1	1251.94	39.42	90.65	-0.07	**316.65**	475.00
S244	Poer onder-IV - Rechthoek	1800	UGT-2/4	-191.45	-19.08	-35.18	3.21	-39.70	**-154.39**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/3	854.96	54.27	56.37	-14.83	49.42	**702.68**

7.12. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/1	**-1518.12**	79.44	154.14	15.28	102.46	688.40
S250	Poer onder-IV - Rechthoek	0	UGT-2/7	**55.86**	-0.06	**22.64**	-0.10	**-13.33**	0.30
S250	Poer onder-IV - Rechthoek	0	UGT-2/4	-42.07	**-8.58**	33.97	0.24	8.71	-88.54
S250	Poer onder-IV - Rechthoek	0	UGT-1/10	-1107.37	**98.58**	133.24	-10.97	245.35	694.14
S250	Poer onder-IV - Rechthoek	0	UGT-1/1	-1384.95	83.28	**161.15**	-9.37	307.56	570.36
S250	Poer onder-IV - Rechthoek	0	UGT-1/11	-931.45	94.31	117.47	**-11.25**	205.92	628.26
S250	Poer onder-IV - Rechthoek	1440	UGT-1/3	-1232.68	93.71	127.04	**18.18**	83.64	834.49
S250	Poer onder-IV - Rechthoek	360	UGT-1/1	-1402.54	83.28	161.15	-9.37	**365.57**	600.34
S250	Poer onder-IV - Rechthoek	1800	UGT-2/4	-175.24	-7.80	34.04	-2.26	39.06	**-103.31**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/3	-1232.68	93.71	127.04	18.18	129.37	**868.23**

7.13. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer onder-IV - Rechthoek	1600	UGT-1/13	**-270.08**	11.38	8.21	0.22	32.37	132.32
S322	Poer onder-IV - Rechthoek	0	UGT-2/7	**-38.36**	0.00	**0.37**	0.00	**-1.25**	-0.04
S322	Poer onder-IV - Rechthoek	0	UGT-2/4	-38.66	**-11.69**	2.73	**-0.04**	1.17	-72.53
S322	Poer onder-IV - Rechthoek	0	UGT-1/3	-44.27	**72.46**	6.99	**0.96**	24.05	590.29
S322	Poer onder-IV - Rechthoek	0	UGT-1/12	-46.06	56.35	**10.14**	0.86	30.23	478.41
S322	Poer onder-IV - Rechthoek	2000	UGT-1/1	-268.81	47.57	9.20	0.86	**49.76**	580.86
S322	Poer onder-IV - Rechthoek	2000	UGT-2/4	-261.43	-10.26	2.60	-0.04	6.51	**-94.49**
S322	Poer onder-IV - Rechthoek	2000	UGT-1/3	-267.04	61.63	6.30	0.96	37.34	**724.42**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S272	2532	UGT-1/43	**-293.5**		1.3	**293.5**	0.0
S2	0	UGT-1/3		121.7	**21.4**	127.2	**0.0**
S248	0	UGT-1/3	-146.1		1.4	146.1	0.0
S2	2532	UGT-1/3		**232.3**	5.9	232.5	0.0
S284	2360	UGT-1/3	-195.5		**0.3**	195.5	0.0
S258	897	UGT-1/8		29.4	2.3	**29.7**	0.0

8.2. Von Mises spanningen kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S329, S330
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S330	0	UGT-2/15	**-111.5**	**2.4**	**111.6**	0.0
S329	2325	UGT-1/42	**-15.8**	2.4	16.3	0.0
S329	0	UGT-2/44	-65.5	1.3	65.6	**0.0**
S329	3720	UGT-2/7	-31.7	**0.0**	31.7	0.0
S329	2325	UGT-1/42	-15.8	2.4	**16.3**	0.0

8.3. Von Mises spanningen ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S33, S40, S404, S406
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S404	2625	UGT-1/21	**-161.3**		0.0	161.3	0.0
S33	0	UGT-2/29		95.7	0.1	95.7	**0.0**
S404	0	UGT-1/14	-83.1		0.1	83.1	0.0
S406	2560	UGT-1/21		**123.1**	0.2	123.1	0.0
S40	1440	UGT-1/48		81.4	**0.0**	81.4	0.0
S40	720	UGT-1/10		27.0	**28.2**	55.8	0.0
S40	720	UGT-1/10		27.0	28.2	**55.8**	0.0
S404	2625	UGT-1/21	-161.3		0.0	**161.3**	0.0

8.4. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S405
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S405	8642	UGT-1/3	**-115.6**		0.0	115.6	0.0
S405	0	UGT-1/10		30.7	**27.5**	**56.6**	**0.0**
S405	8642	UGT-1/3	-115.6		0.0	115.6	0.0
S405	4642	UGT-1/10		**155.5**	0.0	**155.5**	0.0
S405	1642	UGT-1/43		98.9	**0.0**	98.9	0.0

8.5. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S403
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S403	5579	UGT-1/35	**-139.5**		0.0	139.5	0.0
S403	0	UGT-1/14		42.3	0.0	**42.3**	**0.0**
S403	1579	UGT-1/35	-91.4		0.0	91.4	0.0
S403	1579	UGT-1/35		**90.8**	0.0	90.8	0.0
S403	11700	UGT-1/14	-47.5		**0.0**	47.5	0.0
S403	8579	UGT-1/8	-113.7		**0.0**	113.7	0.0
S403	5579	UGT-1/35	-139.5		0.0	**139.5**	0.0

8.6. Von Mises spanningen ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S331
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S331	16200	UGT-1/21	**-92.9**	0.0	92.9	0.0
S331	12150	UGT-2/4	**-21.4**	0.1	21.4	0.0
S331	0	UGT-2/7	-54.5	**0.0**	54.5	**0.0**
S331	2430	UGT-1/49	-23.6	**0.1**	23.6	0.0
S331	12150	UGT-2/4	-21.4	0.1	**21.4**	0.0
S331	16200	UGT-1/21	-92.9	0.0	**92.9**	0.0

8.7. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S390	0	UGT-1/10	**-235.3**		0.0	**235.3**	0.0
S360	0	UGT-1/35		47.4	0.0	47.4	0.0
S351	0	UGT-1/3	-0.2		51.1	88.4	**0.0**
S396	0	UGT-1/3		**131.5**	0.0	131.5	0.0
S398	232	UGT-1/32	-137.0		**0.0**	137.0	0.0
S386	93	UGT-1/3	-15.5		**103.9**	180.6	0.0
S360	161	UGT-1/35		0.2	16.0	**27.7**	0.0

8.8. Von Mises spanningen diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S269	0	UGT-1/1	**-99.8**		0.0	99.8	0.0
S235	0	UGT-1/1		97.8	**0.0**	97.8	**0.0**
S267	0	UGT-2/17	-89.0		0.0	89.0	0.0
S270	3142	UGT-1/36		**131.0**	0.0	**131.0**	0.0
S280	0	UGT-1/52		31.9	0.0	**31.9**	0.0

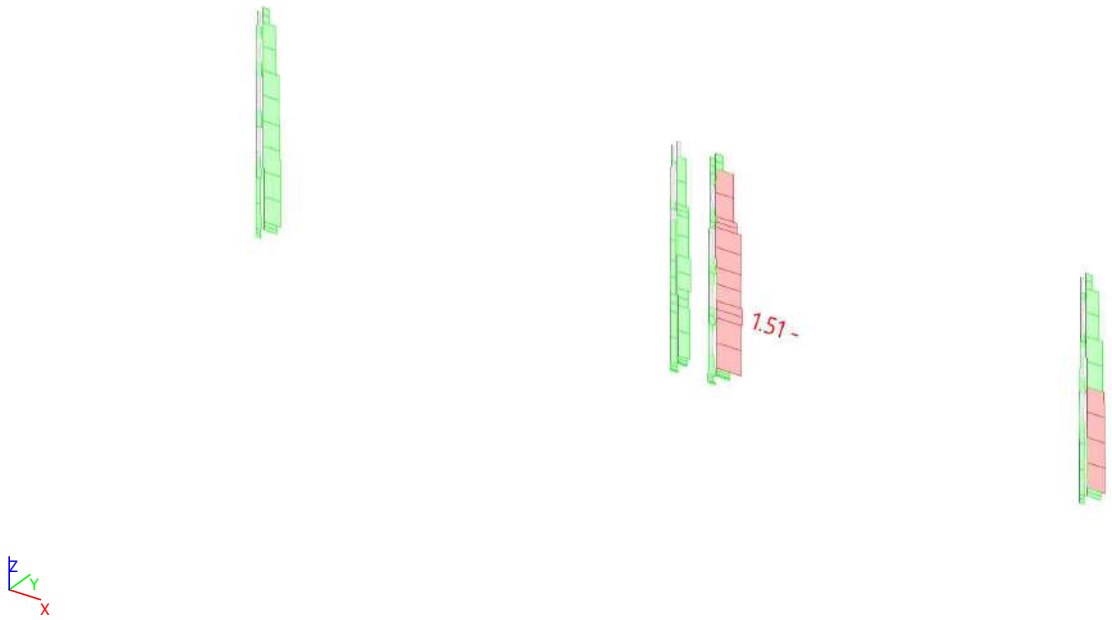
8.9. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S332
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S332	0	UGT-1/21	**-116.2**		0.0	**116.2**	**0.0**
S332	4186	UGT-1/21		**15.4**	0.0	15.4	0.0
S332	2791	UGT-1/21	-51.4		**0.0**	51.4	0.0
S332	4651	UGT-1/21		0.1	**3.1**	**5.3**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S2..S4, S248, S251..S266, S272, S273, S275, S276, S282..S285, S292..S303

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S272	0.637 / 2.757 m	INP450	S 235	UGT	1.51 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1050

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.637 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-1392.65	kN
$V_{y,Ed}$	33.02	kN
$V_{z,Ed}$	-4.04	kN
T_{Ed}	0.84	kNm
$M_{y,Ed}$	-0.12	kNm
$M_{z,Ed}$	35.83	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	4.959e+04	-5.875e+04	-1.18	23.80	0.46	2.50	29.06	32.29	102.45	1
3	SO	61	24	1.363e+05	2.447e+05	0.56	0.47	1.00	2.50	9.00	10.00	14.47	1
4	I	369	16	9.295e+04	9.285e+04	1.00		1.00	22.78	28.00	34.00	38.01	1
5	SO	61	24	1.362e+05	2.445e+05	0.56	0.47	1.00	2.50	9.00	10.00	14.47	1
7	SO	61	24	4.948e+04	-5.886e+04	-1.19	23.80	0.46	2.50	29.16	32.40	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m²
$N_{c,Rd}$	3454.50	kN
Eenheidscontrole	0.40	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m³
$M_{pl,y,Rd}$	564.00	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m³
$M_{pl,z,Rd}$	81.08	kNm
Eenheidscontrole	0.44	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m²
$V_{pl,y,Rd}$	1192.18	kN
Eenheidscontrole	0.03	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m²
$V_{pl,z,Rd}$	1058.72	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	8.3	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.06	-

Controle voor gecombineerde afschuiving en torsie voor V_y en $\tau_{t,Ed}$
Volgens EN 1993-1-1 artikel 6.2.6 & 6.2.7 en formule (6.25),(6.26)

$V_{pl,T,y,Rd}$	1162.73	kN
Eenheidscontrole	0.03	-

Controle voor gecombineerde afschuiving en torsie voor V_z en $\tau_{t,Ed}$
Volgens EN 1993-1-1 artikel 6.2.6 & 6.2.7 en formule (6.25),(6.26)

$V_{pl,T,z,Rd}$	1032.57	kN
Eenheidscontrole	0.00	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	431.01	kNm

α	2.00	
$M_{pl,z,Rd}$	81.08	kNm
β	2.02	

Eenheidscontrole (6.41) = 0.00 + 0.19 = 0.19 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2.532 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	6.497e+04	-4.592e+04	-0.71	13.77	0.59	2.50	20.07	22.30	77.94	1
3	SO	61	24	1.537e+05	2.646e+05	0.58	0.47	1.00	2.50	9.00	10.00	14.42	1
4	I	369	16	1.095e+05	1.109e+05	0.99		1.00	22.78	28.00	34.00	38.18	1
5	SO	61	24	1.554e+05	2.663e+05	0.58	0.47	1.00	2.50	9.00	10.00	14.42	1
7	SO	61	24	6.666e+04	-4.422e+04	-0.66	12.54	0.60	2.50	19.31	21.45	74.37	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings flexibel	
Systeemlengte L	2.757	1.895	m
Knikfactor k	1.00	1.79	
Kniklengte L_{cr}	2.748	3.399	m
Kritische Euler last N_{cr}	125847.92	3103.67	kN
Slankheid λ	15.56	99.08	
Relatieve slankheid λ_{rel}	0.17	1.06	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	1.00	0.56	
Knikweerstand $N_{b,Rd}$	3454.50	1943.36	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Knikweerstand $N_{b,Rd}$	1943.36	kN
Eenheidscontrole	0.72	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Elastisch kritisch moment M_{cr}	10691.93	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.23	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	3.98	
Kip moment factor C_2	0.89	
Kip moment factor C_3	0.41	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	1392.65	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	2.45	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	35.83	kNm
Karakteristieke drukweerstand N_{Rk}	3454.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	564.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	81.08	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	0.56	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.40	
Interactiefactor k_{yz}	1.08	
Interactiefactor k_{zy}	0.24	
Interactiefactor k_{zz}	1.80	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S272 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S272 positie 0.637 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	2.45	kNm
Veldmoment $M_{s,y}$	-0.18	kNm
Factor $\alpha_{s,y}$	-0.07	
Ratio van uiteinde momenten ψ_y	0.93	
Equivalente moment factor C_{my}	0.40	
Zijdelings flexibel type z	Zijdelings flexibel	
Equivalente moment factor C_{mz}	0.90	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-8.26	kNm
Veldmoment $M_{s,LT}$	2.45	kNm
Factor $\alpha_{s,LT}$	-0.30	
Ratio van uiteinde momenten ψ_{LT}	0.01	
Equivalente moment factor C_{mLT}	0.40	

Eenheidscontrole (6.61) = 0.40 + 0.00 + 0.48 = 0.88 -
Eenheidscontrole (6.62) = 0.72 + 0.00 + 0.80 = **1.51** -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

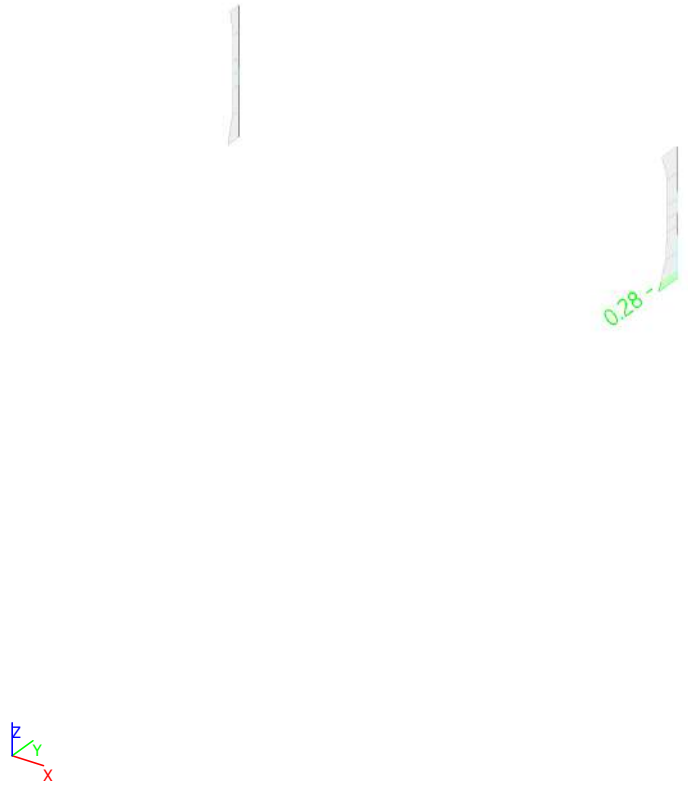
Plooiparameters		
Knik veldlengte a	2.757	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet NIET aan de stabiliteitscontrole!

9.3. Staalcontrole kolom DIE36; UGT, grafisch overzicht



9.4. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S329, S330

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S330	0.000 / 4.651 m	HEA360	S 235	UGT	0.28 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-17.66	kN
$V_{y,Ed}$	22.25	kN
$V_{z,Ed}$	-1.32	kN
T_{Ed}	-0.15	kNm
$M_{y,Ed}$	6.14	kNm
$M_{z,Ed}$	-53.56	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	1.988e+04	1.000e+05	0.20	0.53	1.00	6.74	9.00	10.00	15.30	1
3	SO	118	18	-2.358e+04	-1.037e+05								
4	I	261	10	-1.185e+03	3.658e+03	-0.32		0.51	26.10	68.88	79.69	70.29	1
5	SO	118	18	-1.741e+04	-9.755e+04								
7	SO	118	18	2.605e+04	1.062e+05	0.25	0.52	1.00	6.74	9.00	10.00	15.18	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4300e-02	m^2
$N_{c,Rd}$	3360.50	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.0875e-03	m^3
$M_{pl,y,Rd}$	490.56	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	8.0417e-04	m^3
$M_{pl,z,Rd}$	188.98	kNm
Eenheidscontrole	0.28	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0870e-02	m^2
$V_{pl,y,Rd}$	1474.81	kN
Eenheidscontrole	0.02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.9200e-03	m^2
$V_{pl,z,Rd}$	667.53	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	1.8	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	490.56	kNm
α	2.00	
$M_{pl,z,Rd}$	188.98	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.28 = 0.28 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	1.988e+04	1.000e+05	0.20	0.53	1.00	6.74	9.00	10.00	15.30	1
3	SO	118	18	-2.358e+04	-1.037e+05								
4	I	261	10	-1.185e+03	3.658e+03	-0.32		0.51	26.10	68.88	79.69	70.29	1
5	SO	118	18	-1.741e+04	-9.755e+04								
7	SO	118	18	2.605e+04	1.062e+05	0.25	0.52	1.00	6.74	9.00	10.00	15.18	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	4.91	0.75	
Kniklengte L_{cr}	22.846	3.509	m
Kritische Euler last N_{cr}	1314.34	13283.00	kN
Slankheid λ	150.17	47.24	
Relatieve slankheid λ_{rel}	1.60	0.50	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Elastisch kritisch moment M_{cr}	2759.66	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.42	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Vorklengte L_g	4.651	m
Invloed van lastpositie	geen invloed	
Factor α	943.75	
Reductie factor k_{red}	1.00	
Coëfficiënt C	9.09	
Factor S	1949	mm
Kip moment factor C_1	1.75	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4300e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	8.0417e-04	m^3
Ontwerpdrukkracht N_{Ed}	17.66	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	6.14	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-53.56	kNm
Karakteristieke drukweerstand N_{Rk}	3360.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	490.56	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	188.98	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.54	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S330 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S330 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-53.56	kNm
Veldmoment $M_{s,z}$	-3.47	kNm
Factor $\alpha_{s,z}$	0.06	
Ratio van uiteinde momenten ψ_z	-0.81	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.60	

Eenheidscontrole (6.61) = 0.01 + 0.01 + 0.07 = 0.08 -
Eenheidscontrole (6.62) = 0.01 + 0.01 + 0.11 = 0.13 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

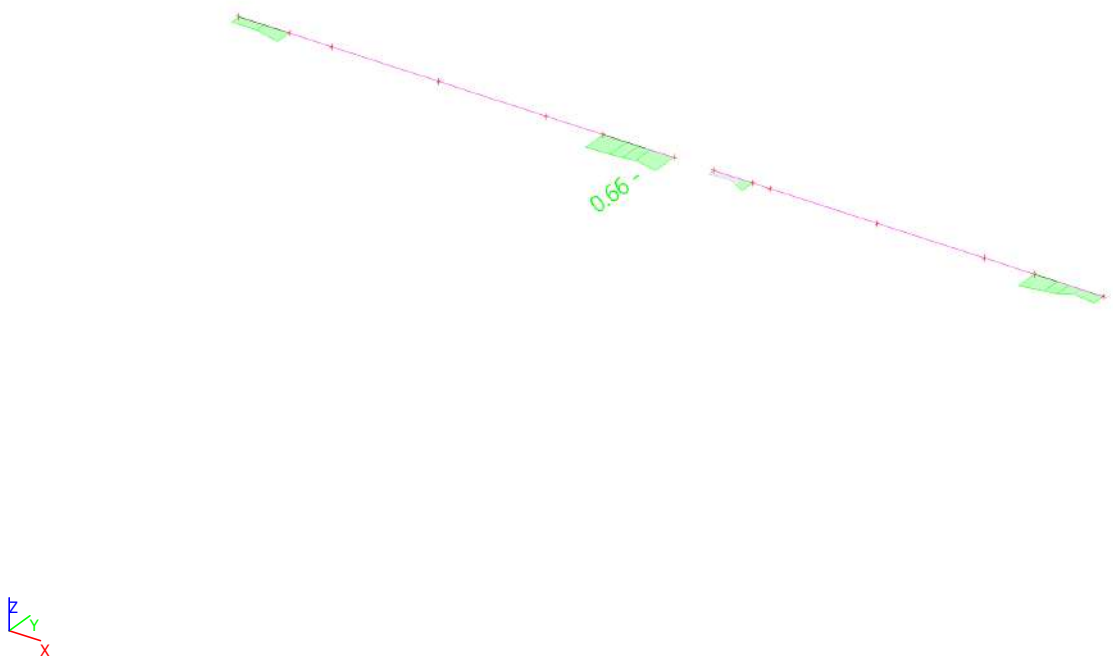
Plooiparameters		
Knik veldlengte a	4.651	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	315	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.50
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole ligger DIE34; UGT, grafisch overzicht



9.6. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S33, S40, S404, S406

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S404	2,625 / 2,625 m	HE340A	S 235	UGT	0,66 -

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG3 + 1,15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,625 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-96,97	kN
$V_{y,Ed}$	-26,32	kN
$V_{z,Ed}$	-28,46	kN
T_{Ed}	0,00	kNm
$M_{y,Ed}$	-5,89	kNm
$M_{z,Ed}$	-74,61	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	4,245e+04	1,611e+05	0,26	0,52	1,00	7,17	9,00	10,00	15,14	1
3	SO	118	17	-2,126e+04	-1,399e+05								
4	I	243	10	9,846e+03	4,680e+03	0,48		1,00	25,58	28,00	34,00	46,46	1
5	SO	118	17	-2,792e+04	-1,466e+05								
7	SO	118	17	3,579e+04	1,544e+05	0,23	0,53	1,00	7,17	9,00	10,00	15,22	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1,3350e-02	m^2
$N_{c,Rd}$	3137,25	kN
Eenheidscontrole	0,03	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1,8500e-03	m^3
$M_{pl,y,Rd}$	434,75	kNm
Eenheidscontrole	0,01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7,5590e-04	m^3
$M_{pl,z,Rd}$	177,64	kNm
Eenheidscontrole	0,42	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,0247e-02	m^2
$V_{pl,y,Rd}$	1390,25	kN
Eenheidscontrole	0,02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,4978e-03	m^2
$V_{pl,z,Rd}$	610,24	kN
Eenheidscontrole	0,05	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,0	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	434,75	kNm
α	2,00	
$M_{pl,z,Rd}$	177,64	kNm
β	1,00	

Eenheidscontrole (6.41) = 0,00 + 0,42 = 0,42 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,625 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	4,245e+04	1,611e+05	0,26	0,52	1,00	7,17	9,00	10,00	15,14	1
3	SO	118	17	-2,126e+04	-1,399e+05								
4	I	243	10	9,846e+03	4,680e+03	0,48		1,00	25,58	28,00	34,00	46,46	1
5	SO	118	17	-2,792e+04	-1,466e+05								
7	SO	118	17	3,579e+04	1,544e+05	0,23	0,53	1,00	7,17	9,00	10,00	15,22	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	2186,81	587,26	kN
Slankheid λ	112,48	217,06	
Relatieve slankheid λ_{rel}	1,20	2,31	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	
Knikcurve	b	c	
Imperfectie α	0,34	0,49	
Reductie factor χ	0,48	0,15	
Knikweerstand $N_{b,Rd}$	1503,83	478,04	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1,3350e-02	m^2
Knikweerstand $N_{b,Rd}$	478,04	kN
Eenheidscontrole	0,20	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Elastisch kritisch moment M_{cr}	296,83	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1,21	
Limietslankheid $\lambda_{rel,LT,0}$	0,40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	16,200	m
Vorklengte L_g	16,200	m
Invloed van lastpositie	geen invloed	
Factor α	575,00	
Reductie factor k_{red}	1,00	

Mcr parameters		
Coëfficiënt C	3,80	
Factor S	1931	mm
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1,3350e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7,5590e-04	m^3
Ontwerpdrukkracht N_{Ed}	96,97	kN
Ontwerp buigende momenten $M_{y,Ed}$	-5,89	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-74,61	kNm
Karakteristieke drukweerstand N_{Rk}	3137,25	kN
Karakteristieke momentweerstand $M_{y,Rk}$	434,75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	177,64	kNm
Reductie factor χ_y	0,48	
Reductie factor χ_z	0,15	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1,00	
Interactiefactor k_{yy}	1,00	
Interactiefactor k_{yz}	0,64	
Interactiefactor k_{zy}	0,60	
Interactiefactor k_{zz}	1,07	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-5,89	kNm
Veldmoment $M_{s,y}$	159,87	kNm
Factor $\alpha_{h,y}$	-0,04	
Ratio van uiteinde momenten ψ_y	0,09	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-74,61	kNm
Veldmoment $M_{s,z}$	68,71	kNm
Factor $\alpha_{s,z}$	-0,92	
Ratio van uiteinde momenten ψ_z	0,34	
Equivalente moment factor C_{mz}	0,84	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-5,89	kNm
Veldmoment $M_{s,LT}$	159,87	kNm
Factor $\alpha_{h,LT}$	-0,04	
Ratio van uiteinde momenten ψ_{LT}	0,09	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,06 + 0,01 + 0,27 = 0,35 -
Eenheidscontrole (6.62) = 0,20 + 0,01 + 0,45 = 0,66 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

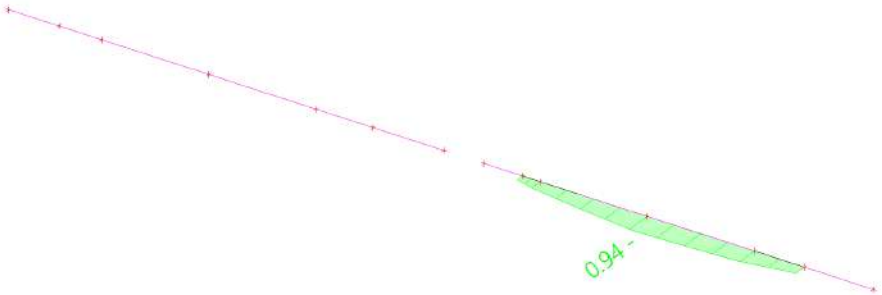
Plooiparameters		
Knik veldlengte a	2,625	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1,00	
Correctiefactor voor dwarskracht η	1,20	

Plooiverificatie	
Lijf slankheid h_w/t	31,26
Lijfslankheid limiet	60,00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht





9.8. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S405

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S405	**4,642 / 10,500 m**	**I + 2 PLud (HEA340; 320; 320; 12; 12)**	**S 235**	**UGT**	**0,94 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 4,642 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	32,99	kN
$V_{y,Ed}$	-0,89	kN
$V_{z,Ed}$	-9,99	kN
T_{Ed}	0,00	kNm
$M_{y,Ed}$	313,69	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	36,27	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-6,634e+04	-1,052e+05								
2	I	150	29	1,409e+05	1,020e+05	0,72		1,00	5,26	28,00	34,00	42,02	1
3	I	150	29	6,313e+04	1,020e+05	0,62		1,00	5,26	28,00	34,00	43,79	1
4	I	150	29	-1,441e+05	-1,052e+05								
5	I	8	10	-1,014e+05	-9,616e+04								
6	I	297	10	-9,616e+04	9,295e+04	-1,03		0,49	31,26	73,24	84,43	128,30	1
7	I	8	10	9,295e+04	9,820e+04	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,488e+05	1,462e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-6,900e+04	-7,159e+04								
10	UO	10	12	-1,494e+05	-1,520e+05								
13	UO	10	12	6,839e+04	6,579e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,99	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	2,1039e-02	m^2
$N_{pl,Rd}$	4944,14	kN
$N_{u,Rd}$	5453,28	kN
$N_{t,Rd}$	4944,14	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3,1654e-03	m^3
$M_{pl,y,Rd}$	743,86	kNm
Eenheidscontrole	0,42	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	1,3705e-03	m^3
$M_{pl,z,Rd}$	322,07	kNm
Eenheidscontrole	0,11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6468e-02	m^2
$V_{pl,y,Rd}$	2234,36	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	3,6506e-03	m^2
$V_{pl,z,Rd}$	495,31	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,0	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	4944,14	kN
$M_{pl,y,Rd}$	743,86	kNm
$M_{pl,z,Rd}$	322,07	kNm

Eenheidscontrole (6.2) = 0,01 + 0,42 + 0,11 = 0,54 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 4,642 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-6,634e+04	-1,052e+05								
2	I	150	29	1,409e+05	1,020e+05	0,72		1,00	5,26	28,00	34,00	42,02	1
3	I	150	29	6,313e+04	1,020e+05	0,62		1,00	5,26	28,00	34,00	43,79	1
4	I	150	29	-1,441e+05	-1,052e+05								
5	I	8	10	-1,014e+05	-9,616e+04								
6	I	297	10	-9,616e+04	9,295e+04	-1,03		0,49	31,26	73,24	84,43	128,30	1
7	I	8	10	9,295e+04	9,820e+04	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,488e+05	1,462e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-6,900e+04	-7,159e+04								
10	UO	10	12	-1,494e+05	-1,520e+05								
13	UO	10	12	6,839e+04	6,579e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,99	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3,1654e-03	m^3
Elastisch kritisch moment M_{cr}	856,97	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,93	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,50	
Rekenwaarde knikweerstand $M_{b,Rd}$	374,31	kNm
Eenheidscontrole	0,84	-

Mcr parameters		
LTB lengte L	14,500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

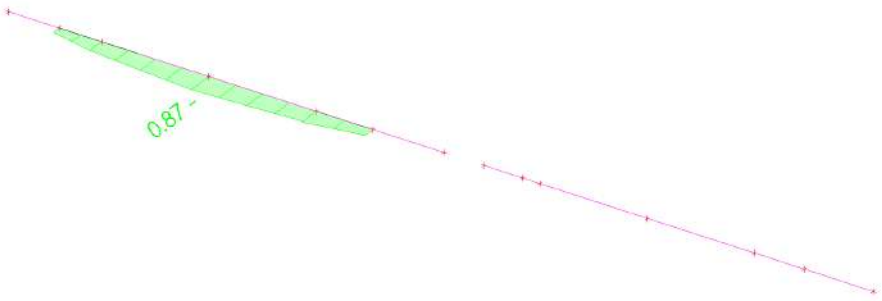
Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	32,99	kN
Ontwerp buigende momenten $M_{y,Ed}$	313,69	kNm
Ontwerp buigende momenten $M_{z,Ed}$	36,27	kNm
Trekweerstand $N_{t,Rd}$	4944,14	kN
Buigweerstand $M_{b,y,Rd}$	374,31	kNm
Buigweerstand $M_{c,z,Rd,com}$	322,07	kNm

Eenheidscontrole = 0,84 + 0,11 - 0,01 = 0,94 -

De staaf voldoet aan de stabiliteitscontrole.

9.9. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht





9.10. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S403

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S403	**5,579 / 11,700 m**	**Grafische doorsnede**	**S 235**	**UGT**	**0,87 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1022

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Algemeen	

Waarschuwing: Sterktereductie gerelateerd aan de dikte wordt niet ondersteund voor dit type doorsnede.

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 5,579 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-55,95	kN
$V_{y,Ed}$	-2,86	kN
$V_{z,Ed}$	-11,92	kN

Interne krachten	Berekende	Eenheid
T_{Ed}	-0,01	kNm
$M_{y,Ed}$	260,85	kNm
$M_{z,Ed}$	64,75	kNm

Classificatie voor doorsnede-ontwerp
Waarschuwing: Classificatie wordt niet ondersteund voor dit type doorsnede.
De doorsnede wordt gecontroleerd als elastisch, klasse 3.

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2,5114e-02	m^2
$N_{c,Rd}$	5901,89	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,y,min}$	2,7183e-03	m^3
$M_{el,y,Rd}$	638,80	kNm
Eenheidscontrole	0,41	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,z,min}$	1,5664e-03	m^3
$M_{el,z,Rd}$	368,11	kNm
Eenheidscontrole	0,18	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6554e-02	m^2
$V_{pl,y,Rd}$	2246,03	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,3472e-03	m^2
$V_{pl,z,Rd}$	589,81	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	38	
τ_{Ed}	0,1	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.2 en formule (6.42)

Normaalspanningen		
Vezel	31	
$\sigma_{N,Ed}$	2,2	MPa
$\sigma_{My,Ed}$	96,0	MPa
$\sigma_{Mz,Ed}$	41,3	MPa
$\sigma_{tot,Ed}$	139,5	MPa
Eenheidscontrole	0,59	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	5688,94	1855,63	kN
Slankheid λ	95,65	167,48	
Relatieve slankheid λ_{rel}	1,02	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	16,200	m
Elastische kritische last $N_{cr,T}$	11328,76	kN
Elastische kritische last $N_{cr,TF}$	1855,63	kN
Relatieve slankheid $\lambda_{rel,T}$	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastisch kritisch moment M_{cr}	1007,79	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,80	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,58	
Rekenwaarde knikweerstand $M_{b,Rd}$	371,83	kNm
Eenheidscontrole	0,70	-

Mcr parameters		
LTB lengte L	16,200	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2,5114e-02	m^2
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastische doorsnedemodulus $W_{el,z}$	1,5664e-03	m^3
Ontwerpdrukkracht N_{Ed}	55,95	kN
Ontwerp buigende momenten $M_{y,Ed}$	260,85	kNm
Ontwerp buigende momenten $M_{z,Ed}$	64,75	kNm
Karakteristieke drukweerstand N_{Rk}	5901,89	kN
Karakteristieke momentweerstand $M_{y,Rk}$	638,80	kNm

Buig- en axiale drukcontrole paramaters		
Karakteristieke momentweerstand $M_{z,Rk}$	368,11	kNm
Reductie factor χ_y	1,00	
Reductie factor χ_z	1,00	
Reductie factor χ_{LT}	0,58	
Interactiefactor k_{yy}	0,95	
Interactiefactor k_{yz}	0,90	
Interactiefactor k_{zy}	1,00	
Interactiefactor k_{zz}	0,90	

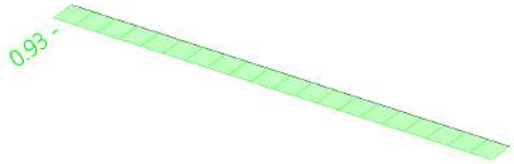
Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-14,15	kNm
Veldmoment $M_{s,y}$	260,85	kNm
Factor $\alpha_{h,y}$	-0,05	
Ratio van uiteinde momenten ψ_y	0,06	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-65,25	kNm
Veldmoment $M_{s,z}$	64,75	kNm
Factor $\alpha_{s,z}$	-0,99	
Ratio van uiteinde momenten ψ_z	0,47	
Equivalente moment factor C_{mz}	0,89	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-14,15	kNm
Veldmoment $M_{s,LT}$	260,85	kNm
Factor $\alpha_{h,LT}$	-0,05	
Ratio van uiteinde momenten ψ_{LT}	0,06	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,01 + 0,67 + 0,16 = 0,84 -
Eenheidscontrole (6.62) = 0,01 + 0,70 + 0,16 = 0,87 -

De staaf voldoet aan de stabiliteitscontrole.

9.11. Staalcontrole ligger DIN28; UGT, grafisch overzicht





9.12. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S331

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S331	0.000 / 16.200 m	HEB280	S 235	UGT	0.93 -

Combinatiesleutel
UGT / 1.15*BG1 - 1.40*BG4 + 1.15*BG2 + LC1065

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-12.07	kN
$V_{y,Ed}$	9.00	kN
$V_{z,Ed}$	-4.31	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.11	kNm
$M_{z,Ed}$	-20.36	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	9.872e+03	4.406e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1
3	SO	111	18	-8.188e+03	-4.238e+04								
4	I	196	11	8.615e+02	9.762e+02	0.88		1.00	18.67	28.00	34.00	39.62	1
5	SO	111	18	-8.034e+03	-4.222e+04								
7	SO	111	18	1.003e+04	4.422e+04	0.23	0.53	1.00	6.15	9.00	10.00	15.23	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3140e-02	m^2
$N_{c,Rd}$	3087.90	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.5340e-03	m^3
$M_{pl,y,Rd}$	360.49	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.1760e-04	m^3
$M_{pl,z,Rd}$	168.64	kNm
Eenheidscontrole	0.12	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0442e-02	m^2
$V_{pl,y,Rd}$	1416.78	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.1130e-03	m^2
$V_{pl,z,Rd}$	558.04	kN
Eenheidscontrole	0.01	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.0	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	360.49	kNm
α	2.00	
$M_{pl,z,Rd}$	168.64	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.12 = 0.12 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 16.200 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.295e+04	5.880e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.25	1
3	SO	111	18	-1.127e+04	-5.712e+04								
4	I	196	11	8.583e+02	9.794e+02	0.88		1.00	18.67	28.00	34.00	39.70	1
5	SO	111	18	-1.111e+04	-5.696e+04								
7	SO	111	18	1.311e+04	5.896e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	16.200	16.200	m
Knikfactor k	10.00	0.62	
Kniklengte L_{cr}	162.000	10.082	m
Kritische Euler last N_{cr}	15.22	1344.66	kN
Slankheid λ	1337.74	142.32	
Relatieve slankheid λ_{rel}	14.24	1.52	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	b	c	
Imperfectie α	0.34	0.49	
Reductie factor χ	0.00	0.31	
Knikweerstand $N_{b,Rd}$	14.87	956.01	kN

Waarschuwing: Slankheid 1337.74 is groter dan de limietwaarde van 1000.00.

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Knikweerstand $N_{b,Rd}$	14.87	kN
Eenheidscontrole	0.81	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Elastisch kritisch moment M_{cr}	288.51	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.12	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	16.200	m
Vorklengte L_g	16.200	m
Invloed van lastpositie	geen invloed	

Mcr parameters		
Factor α	575.00	
Reductie factor k_{red}	1.00	
Coëfficiënt C	3.69	
Factor S	1430	mm
Kip moment factor C_1	1.13	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.1760e-04	m^3
Ontwerpdrukkracht N_{Ed}	12.07	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	-17.34	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-27.30	kNm
Karakteristieke drukweerstand N_{Rk}	3087.90	kN
Karakteristieke momentweerstand $M_{y,Rk}$	360.49	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	168.64	kNm
Reductie factor χ_y	0.00	
Reductie factor χ_z	0.31	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.48	
Interactiefactor k_{yz}	0.32	
Interactiefactor k_{zy}	0.89	
Interactiefactor k_{zz}	0.53	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S331 positie 8.100 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S331 positie 16.200 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-27.30	kNm
Veldmoment $M_{s,z}$	14.34	kNm
Factor $\alpha_{s,z}$	-0.53	
Ratio van uiteinde momenten ψ_z	0.75	
Equivalente moment factor C_{mz}	0.52	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	0.12	kNm
Veldmoment $M_{s,LT}$	-17.34	kNm
Factor $\alpha_{h,LT}$	-0.01	
Ratio van uiteinde momenten ψ_{LT}	0.95	
Equivalente moment factor C_{mLT}	0.95	

Eenheidscontrole (6.61) = 0.81 + 0.07 + 0.05 = 0.93 -
Eenheidscontrole (6.62) = 0.01 + 0.04 + 0.09 = 0.14 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

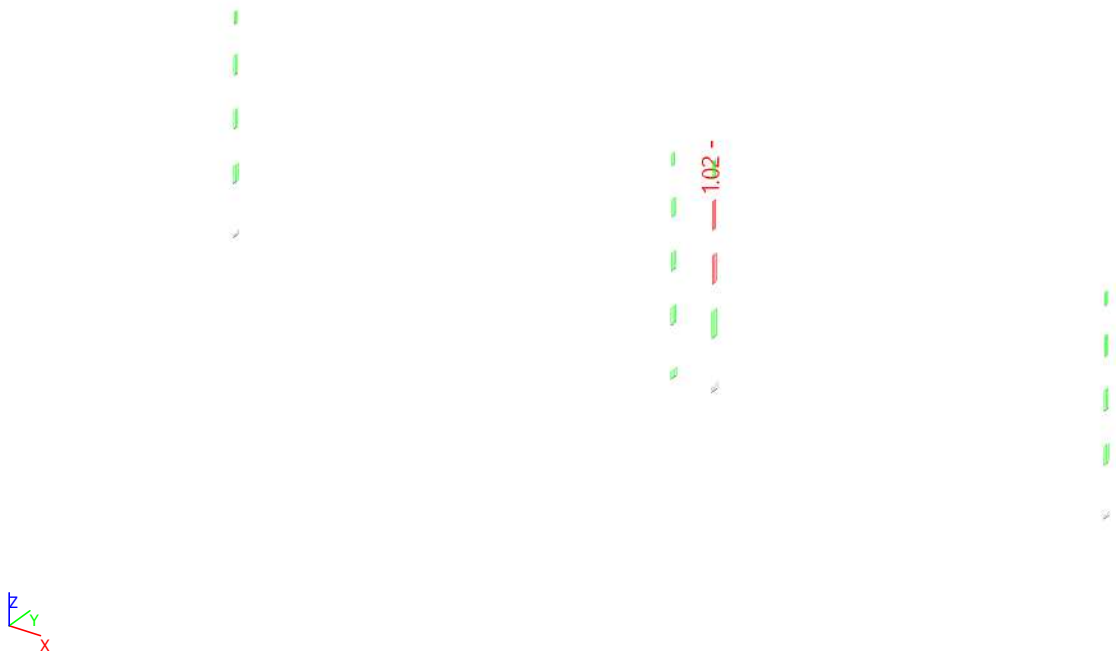
Plooiparameters		
Knik veldlengte a	16.200	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	244	mm
Lijfdikte t	11	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	23.24
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.13. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.14. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S386	0.187 / 0.187 m	Rechthoek (200; 28)	S 235	UGT	1.02 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.187 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-1.35	kN
$V_{y,Ed}$	3.28	kN
$V_{z,Ed}$	-355.30	kN
T_{Ed}	0.41	kNm
$M_{y,Ed}$	-32.87	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	0.71	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.763e+05	-1.758e+05	-1.00	23.69	0.50	7.14	25.40	28.23	102.22	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	5.6000e-03	m^2
$N_{c,Rd}$	1316.00	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m^3
$M_{pl,y,Rd}$	65.80	kNm
Eenheidscontrole	0.50	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m^3
$M_{pl,z,Rd}$	9.21	kNm
Eenheidscontrole	0.08	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m^2
$V_{pl,y,Rd}$	759.79	kN
Eenheidscontrole	0.00	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m^2
$V_{pl,z,Rd}$	759.79	kN
Eenheidscontrole	0.47	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	8.7	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.06	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1(5) en formule (6.1)

Elastische toetsing		
Vezel	1	
$\sigma_{N,Ed}$	0.2	MPa
$\sigma_{My,Ed}$	176.1	MPa
$\sigma_{Mz,Ed}$	27.0	MPa
$\sigma_{tot,Ed}$	203.3	MPa
$\tau_{Vy,Ed}$	0.0	MPa
$\tau_{Vz,Ed}$	0.0	MPa
$\tau_{t,Ed}$	0.0	MPa
$\tau_{tot,Ed}$	0.0	MPa
$\sigma_{von\ Mises,Ed}$	203.3	MPa
Eenheidscontrole	0.87	-

Opmerking: Voor deze doorsnede is in artikel 6.2.7(9) geen formule gegeven voor de plastische dwarskrachtweerstand gereduceerd met torsie. Daarom wordt het criterium elastisch vloeien volgens EN 1993-1-1 artikel 6.2.1(5) getoetst.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-1.787e+05	1.792e+05	-1.00	0.85	0.50	7.14	17.98	19.97	19.35	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	0.357	0.357	m
Knikfactor k	4.21	0.98	
Kniklengte L_{cr}	1.500	0.349	m
Kritische Euler last N_{cr}	17194.46	6222.75	kN
Slankheid λ	25.98	43.19	
Relatieve slankheid λ_{rel}	0.28	0.46	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	0.357	m
Elastische kritische last $N_{cr,T}$	36789.59	kN
Relatieve slankheid $\lambda_{rel,T}$	0.19	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	2245.46	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.17	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.357	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.60	
Kip moment factor C_2	0.00	
Kip moment factor C_3	0.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.

Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	5.6000e-03	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.9200e-05	m^3
Ontwerpdrukkracht N_{Ed}	1.35	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	63.59	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	0.98	kNm
Karakteristieke drukweerstand N_{Rk}	1316.00	kN
Karakteristieke momentweerstand $M_{y,Rk}$	65.80	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	9.21	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.32	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.53	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S313 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S385 positie 0.085 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.2
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Resulterend belastingtype z	lineair moment M
Ratio van uiteinde momenten ψ_z	-0.19
Equivalente moment factor C_{mz}	0.52
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	-0.99
Equivalente moment factor C_{mLT}	0.40

Eenheidscontrole (6.61) = 0.00 + 0.87 + 0.03 = 0.90 -
Eenheidscontrole (6.62) = 0.00 + 0.97 + 0.06 = **1.02** -

De staaf voldoet NIET aan de stabiliteitscontrole!

9.15. Staalcontrole diagonaal; UGT, grafisch overzicht





9.16. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S235, S267..S271, S274, S277..S281

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S269	0.000 / 3.142 m	UPE140	S 235	UGT	0.83 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1002

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-183.70	kN
$V_{y,Ed}$	0.00	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.00	kNm
$M_{z,Ed}$	0.00	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	9.972e+04	9.972e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	9.972e+04	9.972e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	9.972e+04	9.972e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.8400e-03	m²
$N_{c,Rd}$	432.40	kN
Eenheidscontrole	0.42	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	9.972e+04	9.972e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	9.972e+04	9.972e+04	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	9.972e+04	9.972e+04	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	3.142	3.142	m
Knikfactor k	0.65	0.65	
Kniklengte L_{cr}	2.043	2.043	m
Kritische Euler last N_{cr}	2975.62	390.95	kN
Slankheid λ	35.80	98.77	
Relatieve slankheid λ_{rel}	0.38	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.91	0.51	
Knikweerstand $N_{b,Rd}$	392.28	220.76	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.8400e-03	m²
Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.83	-

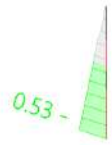
Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	3.142	m
Elastische kritische last $N_{cr,T}$	649.47	kN
Elastische kritische last $N_{cr,TF}$	390.95	kN
Relatieve slankheid $\lambda_{rel,T}$	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.51	
Oppervlakte van de doorsnede A	1.8400e-03	m²

Knikweerstand $N_{b,Rd}$	220.76	kN
Eenheidscontrole	0.83	-

De staaf voldoet aan de stabiliteitscontrole.

9.17. Staalcontrole bliksempiek; UGT, grafisch overzicht





9.18. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S332

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S332	**0.000 / 4.651 m**	**Koker fl (374; 7; 126; 10; 354)**	**S 235**	**UGT**	**0.53 -**

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-2.28	kN
$V_{y,Ed}$	1.01	kN
$V_{z,Ed}$	9.79	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	-39.80	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-4.71	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	-1.033e+05	-1.031e+05								
2	I	126	10	-8.649e+04	9.856e+04	-0.88		0.53	12.60	65.30	75.87	109.03	1
3	I	126	10	-9.798e+04	8.707e+04	-1.13		0.47	12.60	76.51	88.20	139.80	1
4	UO	5	7	9.205e+04	9.221e+04	1.00	0.43	1.00	0.71	9.00	10.00	13.80	1
5	UO	5	7	-9.163e+04	-9.147e+04								
6	I	4	10	-8.649e+04	-9.163e+04								
7	UO	5	7	1.037e+05	1.039e+05	1.00	0.43	1.00	0.71	9.00	10.00	13.77	1
8	I	4	10	9.856e+04	1.037e+05	0.95		1.00	0.35	28.00	34.00	38.67	1
9	I	364	7	-1.031e+05	-9.163e+04								
10	I	4	10	-9.798e+04	-1.031e+05								
11	I	364	7	9.221e+04	1.037e+05	0.89		1.00	52.00	28.00	34.00	39.52	4
12	I	4	10	8.707e+04	9.221e+04	0.94		1.00	0.35	28.00	34.00	38.75	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.350e+05	-2.350e+05							
2	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
3	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	-2.350e+05	-2.350e+05							
6	I	4	-2.226e+05	-2.350e+05							
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2
9	I	364	-2.350e+05	-2.350e+05							
10	I	4	-2.226e+05	-2.350e+05							

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2

Effectieve doorsnede Mz-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.287e+05	-2.350e+05							
2	I	126	2.287e+05	2.287e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	-2.287e+05	-2.287e+05							
4	UO	5	-2.287e+05	-2.350e+05							
5	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
6	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
8	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
10	I	4	-2.287e+05	-2.287e+05							
11	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
12	I	4	-2.287e+05	-2.287e+05							

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	7.0288e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.5067e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.3936e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	7.0288e-03	m^2
$N_{c,Rd}$	1651.76	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.3936e-04	m^3
$M_{c,y,Rd}$	79.75	kNm
Eenheidscontrole	0.50	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	187.45	kNm
Eenheidscontrole	0.03	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	685.11	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	374.41	kN
Eenheidscontrole	0.03	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	7.0288e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.3936e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.3	MPa
$\sigma_{My,Ed}$	117.3	MPa
$\sigma_{Mz,Ed}$	5.9	MPa
$\sigma_{tot,Ed}$	123.5	MPa
Eenheidscontrole	0.53	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	2.21	0.92	
Kniklengte L_{cr}	10.257	4.263	m
Kritische Euler last N_{cr}	522.28	16485.95	kN
Slankheid λ	175.44	31.23	
Relatieve slankheid λ_{rel}	1.78	0.32	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.651	m
Elastische kritische last $N_{cr,T}$	264162.55	kN
Elastische kritische last $N_{cr,TF}$	522.28	kN
Relatieve slankheid $\lambda_{rel,T}$	1.78	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Elastisch kritisch moment M_{cr}	16750.38	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.07	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.87	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	7.0288e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	2.28	kN
Ontwerp buigende momenten $M_{y,Ed}$	-39.80	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-4.71	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	1651.76	kN
Karakteristieke momentweerstand $M_{y,Rk}$	79.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	187.45	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.60	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.60	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lineair moment M	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.60	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-39.80	kNm
Veldmoment $M_{s,LT}$	-18.46	kNm
Factor $\alpha_{s,LT}$	0.46	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.57	

Eenheidscontrole (6.61) = 0.00 + 0.45 + 0.02 = 0.47 -
Eenheidscontrole (6.62) = 0.00 + 0.50 + 0.02 = 0.52 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE G

In- en uitvoergegevens 3D raamwerkprogramma juk 65, versterkt

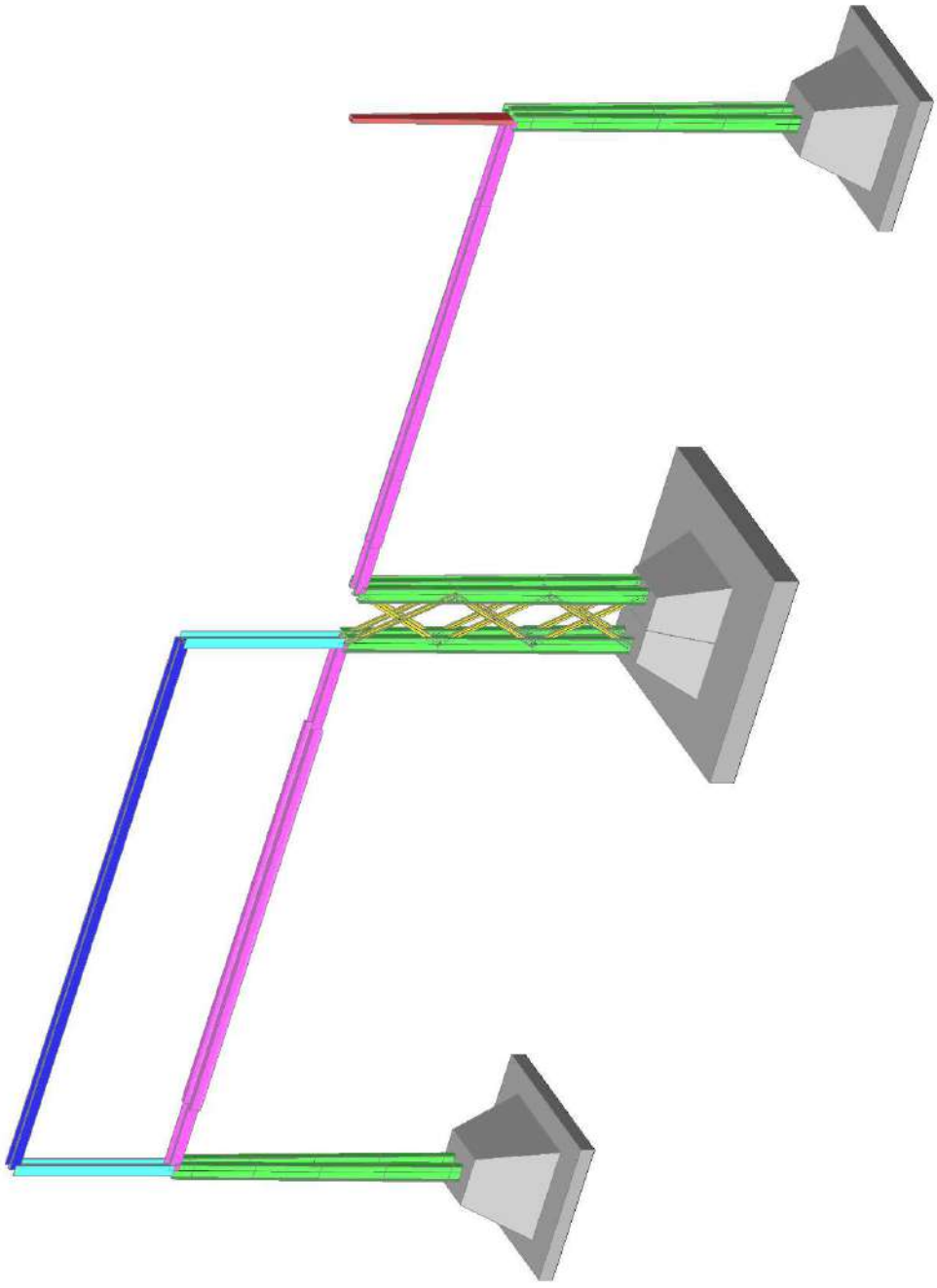
1. Inhoudsopgave

1. Inhoudsopgave **1**
2. Geometrie **3**
2.1. Perspectief constructie 3
2.2. Maatvoering 4
2.3. Materialen 5
2.4. Doorsneden 5
3. Belastingen **15**
3.1. Belastingsgevallen 15
3.2. BG1: e.g. constructie 22
3.3. BG2: grond op poer 22
3.4. BG3: wind op constructie; X-richting 23
3.5. BG4: wind op constructie; Y-richting 23
3.6. LC1001 / Totale waarde 24
3.7. LC1080 / Totale waarde 24
3.8. LC1159 / Totale waarde 25
3.9. LC1238 / Totale waarde 25
3.10. Combinaties 26
3.11. Resultaatklasses 33
4. Berekeningsverslag **34**
5. Reacties **56**
5.1. Oplegreacties kolom links; UGT, globale extremen 56
5.2. Oplegreacties kolom midden-links; UGT, globale extremen 56
5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen 56
5.4. Oplegreacties kolom rechts; UGT, globale extremen 56
6. Grondspanningen **57**
6.1. Grondspanningen onder betonpoeren; UGT 57
7. Staafkrachten **58**
7.1. Staafkrachten kolom INP45; UGT, globale extremen 58
7.2. Staafkrachten kolom INP45 versterkt; UGT, globale extremen 58
7.3. Staafkrachten kolom DIE36; UGT, globale extremen 58
7.4. Staafkrachten ligger DIE34; UGT, globale extremen 59
7.5. Staafkrachten ligger DIE34+strippen; UGT, globale extremen 59
7.6. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen 59
7.7. Staafkrachten ligger DIN28; UGT, globale extremen 60
7.8. Staafkrachten koppelplaat; UGT, globale extremen 60
7.9. Staafkrachten diagonaal; UGT, globale extremen 60
7.10. Staafkrachten bliksempiek; UGT, globale extremen 60
7.11. Staafkrachten betonopstort links; UGT, globale extremen 61
7.12. Staafkrachten betonopstort midden-links; UGT, globale extremen 61
7.13. Staafkrachten betonopstort midden-rechts; UGT, globale extremen 61
7.14. Staafkrachten betonopstort rechts; UGT, globale extremen 62
8. Staafspanningen **63**
8.1. Von Mises spanningen kolom INP45; UGT, globale extremen 63
8.2. Von Mises spanningen kolom INP45 versterkt; UGT, globale extremen 63
8.3. Von Mises spanningen kolom DIE36; UGT, globale extremen 63
8.4. Von Mises spanningen ligger DIE34; UGT, globale extremen 63
8.5. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen 64
8.6. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen 64
8.7. Von Mises spanningen ligger DIN28; UGT, globale extremen 64
8.8. Von Mises spanningen koppelplaat; UGT, globale extremen 64
8.9. Von Mises spanningen diagonaal; UGT, globale extremen 65
8.10. Von Mises spanningen bliksempiek; UGT, globale extremen 65
9. Normcontrole staal **66**
9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht 66
9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid 66
9.3. Staalcontrole kolom INP45 versterkt; UGT, grafisch overzicht 70
9.4. Staalcontrole kolom INP45 versterkt; UGT, maatgevende doorsnede, uitgebreid 70
9.5. Staalcontrole kolom DIE36; UGT, grafisch overzicht 75
9.6. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid 75
9.7. Staalcontrole ligger DIE34; UGT, grafisch overzicht 79
9.8. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid 79
9.9. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht 84
9.10. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid 84
9.11. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht 88
9.12. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid 88
9.13. Staalcontrole ligger DIN28; UGT, grafisch overzicht 92

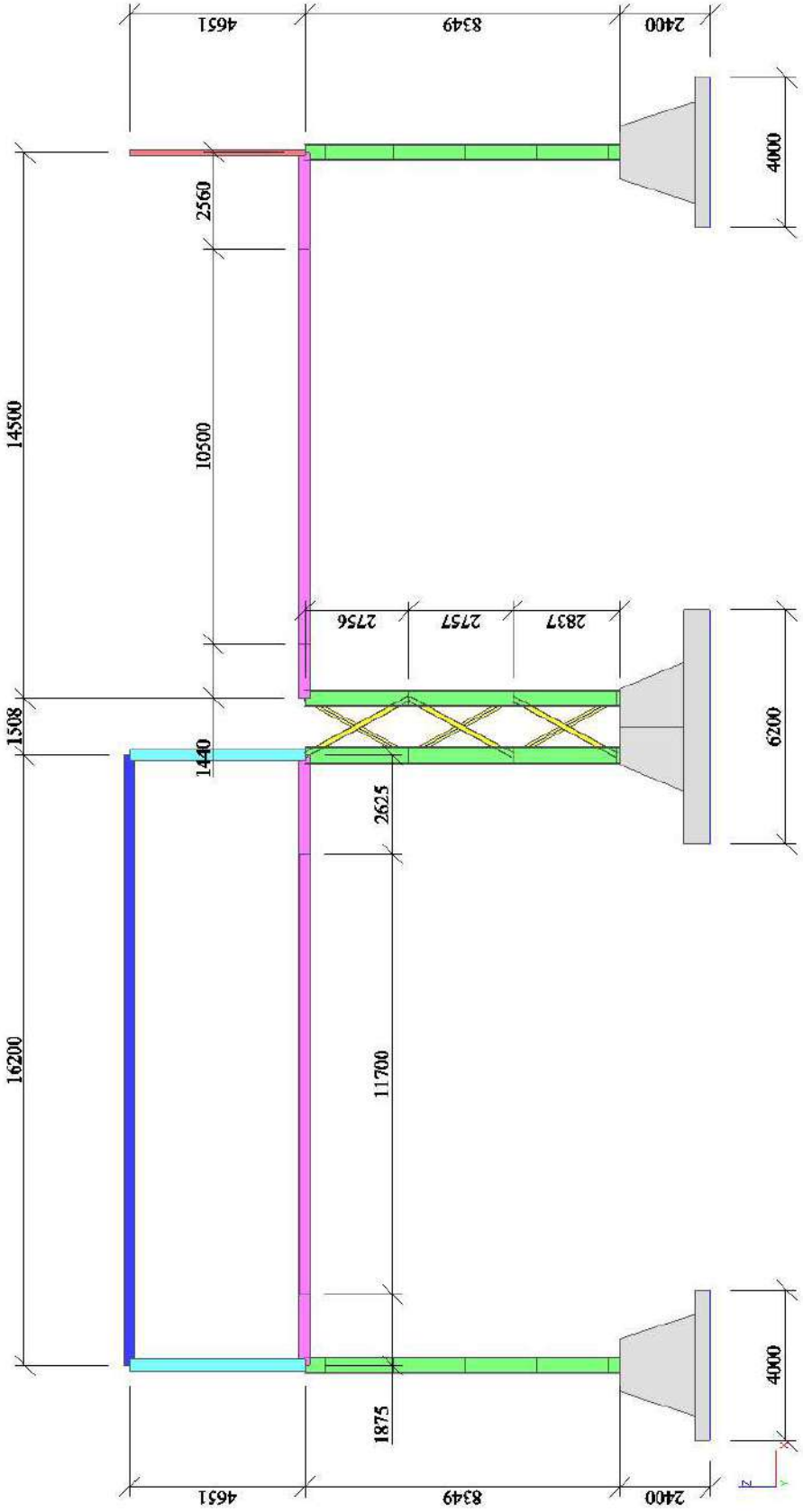
9.14. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid 92
9.15. Staalcontrole koppelplaat; UGT, grafisch overzicht 97
9.16. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 97
9.17. Staalcontrole diagonaal; UGT, grafisch overzicht 100
9.18. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid 100
9.19. Staalcontrole bliksempiek; UGT, grafisch overzicht 103
9.20. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 103

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 235	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	235.0 215.0	360.0 360.0	

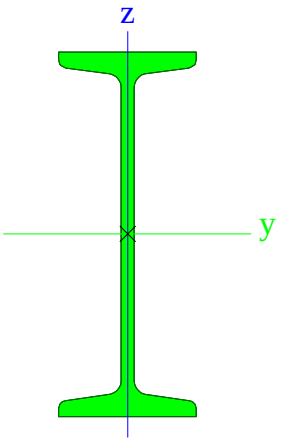
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C60/75	Beton	2500.0	2600.0	3.9100e+04	0.2	0.00	60.00	
Dummy beton	Beton	2500.0	2600.0	3.9100e+06	0.2	0.00	60.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom INP45		
Type	INP450	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	5.63e+05	5.63e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	8.11e+04	8.11e+04
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

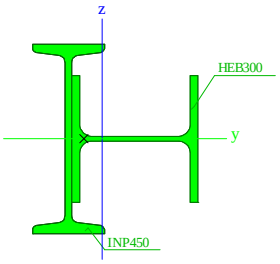
Afbeelding



Kolom-samengesteld		
Type	I + Ir	
Uitgebreid	INP450, HEB300	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	

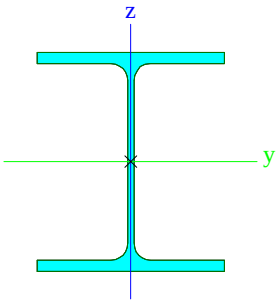
Knik y-y, Knik z-z	c	c
A [m²]	2.9616e-02	
A_y [m²], A_z [m²]	5.1391e-03	1.9650e-02
I_y [m⁴], I_z [m⁴]	5.4362e-04	4.5410e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.4161e-03	1.9877e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.2645e-03	2.5730e-03
I_w [m⁶], I_t [m⁴]	4.1252e-06	6.9763e-06
d_y [mm], d_z [mm]	-43	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	165	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.67e+05	7.67e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	6.05e+05	6.05e+05
A_L [m²/m], A_D [m²/m]	2.6069e+00	2.6069e+00

Afbeelding



Kolom DIE36		
Type	HEA360	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.4300e-02	
A_y [m²], A_z [m²]	1.0125e-02	3.6844e-03
I_y [m⁴], I_z [m⁴]	3.3100e-04	7.8900e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8900e-03	5.2600e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0875e-03	8.0417e-04
I_w [m⁶], I_t [m⁴]	2.1766e-06	1.4900e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	175
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.91e+05	4.91e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.89e+05	1.89e+05
A_L [m²/m], A_D [m²/m]	1.8300e+00	1.8334e+00

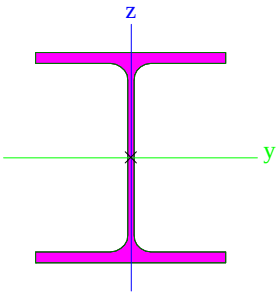
Afbeelding



Ligger DIE34		
Type	HE340A	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3350e-02	
A_y [m²], A_z [m²]	9.5495e-03	3.3201e-03
I_y [m⁴], I_z [m⁴]	2.7690e-04	7.4360e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6780e-03	4.9570e-04

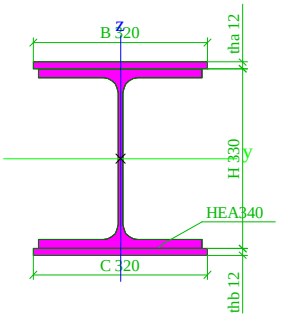
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.8500e-03	7.5590e-04
I_w [m⁶], I_t [m⁴]	1.8240e-06	1.2720e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.35e+05	4.35e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.78e+05	1.78e+05
A_L [m²/m], A_D [m²/m]	1.7944e+00	1.7944e+00

Afbeelding



Ligger DIE34+strippen		
Type	I + 2 PLud	
Uitgebreid	HEA340; 320; 320; 12; 12	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	c	c
A [m²]	2.1039e-02	
A_y [m²], A_z [m²]	1.6468e-02	3.6506e-03
I_y [m⁴], I_z [m⁴]	5.0182e-04	1.3990e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.8351e-03	8.7437e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	3.1654e-03	1.3705e-03
I_w [m⁶], I_t [m⁴]	3.6743e-06	4.7425e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	160	177
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	7.44e+05	7.44e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.22e+05	3.22e+05
A_L [m²/m], A_D [m²/m]	1.9224e+00	1.9224e+00

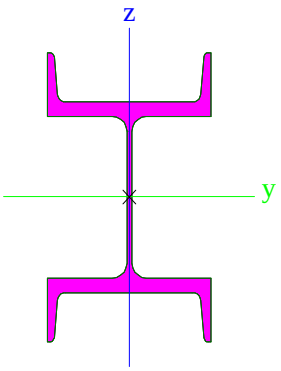
Afbeelding



Ligger DIE34+UNP's		
Type	Grafische doorsnede	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.5114e-02	
A_y [m²], A_z [m²]	1.6554e-02	4.3472e-03
I_y [m⁴], I_z [m⁴]	7.2035e-04	2.3496e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.7183e-03	1.5664e-03
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.1091e-03	2.0212e-03
I_w [m⁶], I_t [m⁴]	4.5518e-06	4.8902e-06

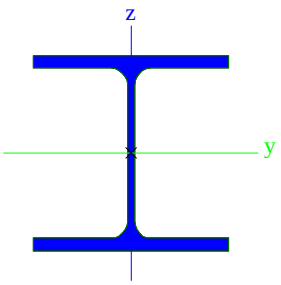
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	0	0
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.66e+05	9.66e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	4.75e+05	4.75e+05
A_L [m²/m], A_D [m²/m]	2.4925e+00	2.4925e+00

Afbeelding



Ligger DIN28		
Type	HEB280	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	b	c
A [m²]	1.3140e-02	
A_y [m²], A_z [m²]	9.6422e-03	3.1403e-03
I_y [m⁴], I_z [m⁴]	1.9270e-04	6.5950e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3760e-03	4.7100e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1.5340e-03	7.1760e-04
I_w [m⁶], I_t [m⁴]	1.1302e-06	1.4370e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	140	140
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3.61e+05	3.61e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.69e+05	1.69e+05
A_L [m²/m], A_D [m²/m]	1.6200e+00	1.6176e+00

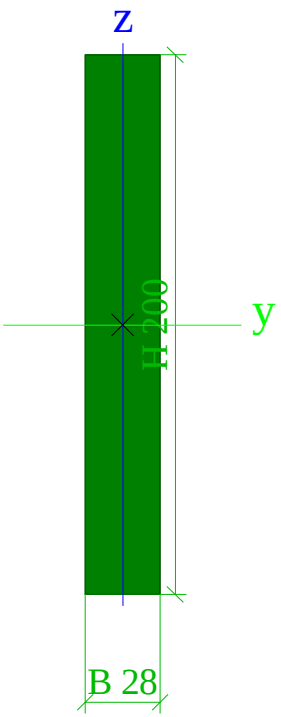
Afbeelding



Plaat 2x14x200		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06

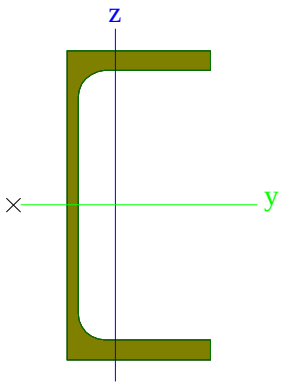
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.58e+04	6.58e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.21e+03	9.21e+03
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

Afbeelding



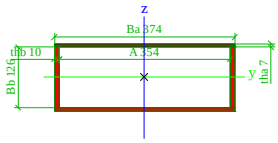
Diagionaal UPE14		
Type	UPE140	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	c	c
A [m²]	1.8400e-03	
A_y [m²], A_z [m²]	1.1000e-03	7.1956e-04
I_y [m⁴], I_z [m⁴]	5.9900e-06	7.8700e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	8.5600e-05	1.8200e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	9.8800e-05	3.2600e-05
I_w [m⁶], I_t [m⁴]	2.3372e-09	4.0500e-08
d_y [mm], d_z [mm]	-46	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	22	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.32e+04	2.32e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	7.66e+03	7.66e+03
A_L [m²/m], A_D [m²/m]	5.1970e-01	5.1965e-01

Afbeelding



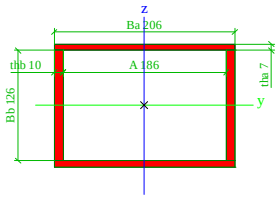
Bliksempiek-1		
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	7.7560e-03	
A_y [m²], A_z [m²]	5.0496e-03	2.7596e-03
I_y [m⁴], I_z [m⁴]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.2757e-04	9.4821e-04
I_w [m⁶], I_t [m⁴]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.00e+05	1.00e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.23e+05	2.23e+05
A_L [m²/m], A_D [m²/m]	1.0280e+00	1.9880e+00

Afbeelding



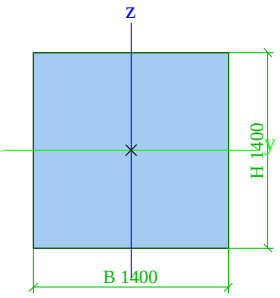
Bliksempiek-2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 235	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	5.4040e-03	
A_y [m²], A_z [m²]	2.8012e-03	2.7167e-03
I_y [m⁴], I_z [m⁴]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.7117e-04	3.9549e-04
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.37e+04	6.37e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	9.29e+04	9.29e+04
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

Afbeelding



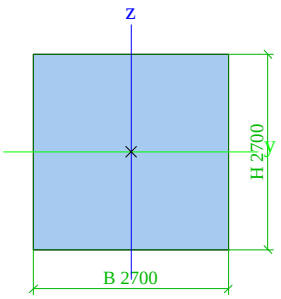
Poer boven-IA		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Afbeelding



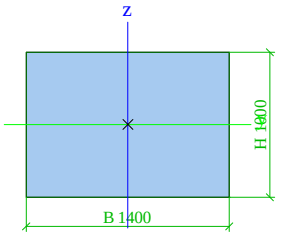
Poer onder-IA		
Type	Rechthoek	
Uitgebreid	2700; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	7.2900e+00	
A_y [m²], A_z [m²]	6.0750e+00	6.0750e+00
I_y [m⁴], I_z [m⁴]	4.4287e+00	4.4287e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.2805e+00	3.2805e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	4.9524e-02	7.4626e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	1350
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0800e+01	1.0800e+01

Afbeelding



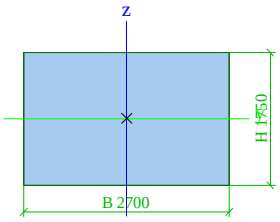
Poer boven-IB		
Type	Rechthoek	
Uitgebreid	1000; 1400	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	1.4000e+00	
A_y [m²], A_z [m²]	1.1667e+00	1.1667e+00
I_y [m⁴], I_z [m⁴]	1.1667e-01	2.2867e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.3333e-01	3.2667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	2.2616e-03	2.6127e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.8000e+00	4.8000e+00

Afbeelding



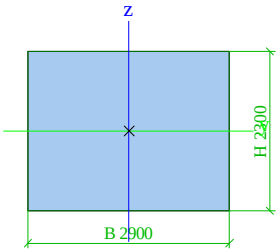
Poer onder-IB		
Type	Rechthoek	
Uitgebreid	1750; 2700	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	4.7250e+00	
A_y [m²], A_z [m²]	3.9375e+00	3.9375e+00
I_y [m⁴], I_z [m⁴]	1.2059e+00	2.8704e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3781e+00	2.1263e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2952e-01	2.8785e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1350	875
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	8.9000e+00	8.9000e+00

Afbeelding



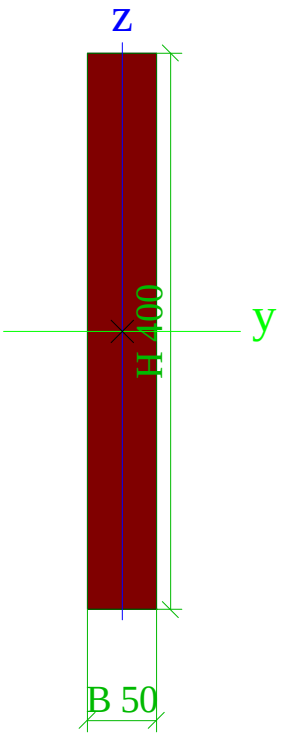
Poer onder-IV		
Type	Rechthoek	
Uitgebreid	2300; 2900	
Onderdeelmateriaal	C60/75	
Bouwwijze	beton	
A [m²]	6.6700e+00	
A_y [m²], A_z [m²]	5.5583e+00	5.5583e+00
I_y [m⁴], I_z [m⁴]	2.9404e+00	4.6746e+00
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.5568e+00	3.2238e+00
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.3988e-01	6.0933e+00
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	1450	1150
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	1.0400e+01	1.0400e+01

Afbeelding



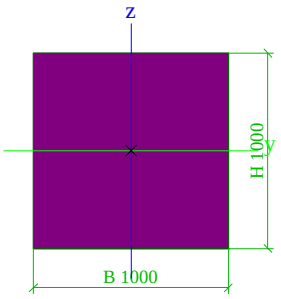
Dummy 400x50		
Type	Rechthoek	
Uitgebreid	400; 50	
Onderdeelmateriaal	S 235	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	2.0000e-02	
A_y [m²], A_z [m²]	1.6667e-02	1.6667e-02
I_y [m⁴], I_z [m⁴]	2.6667e-04	4.1667e-06
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.3333e-03	1.6667e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.0000e-03	2.5000e-04
I_w [m⁶], I_t [m⁴]	5.0391e-08	1.5278e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	25	200
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	4.70e+05	4.70e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	5.88e+04	5.88e+04
A_L [m²/m], A_D [m²/m]	9.0000e-01	9.0000e-01

Afbeelding



Dummy beton		
Type	Rechthoek	
Uitgebreid	1000; 1000	
Onderdeelmateriaal	Dummy beton	
Bouwwijze	beton	
A [m²]	1.0000e+00	
A_y [m²], A_z [m²]	8.3333e-01	8.3333e-01
I_y [m⁴], I_z [m⁴]	8.3333e-02	8.3333e-02
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.6667e-01	1.6667e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	1.2502e-04	1.4035e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	500	500
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	4.0000e+00	4.0000e+00

Afbeelding



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. staco	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie; X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie; Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1168	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1169	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1170	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1171	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1172	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1173	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1174	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1175	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1176	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1177	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1178	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1179	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1180	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1181	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1182	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1183	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1184	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1185	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1186	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1187	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1188	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1189	BC0	Variabel	EXCL MAST		Kort	Geen

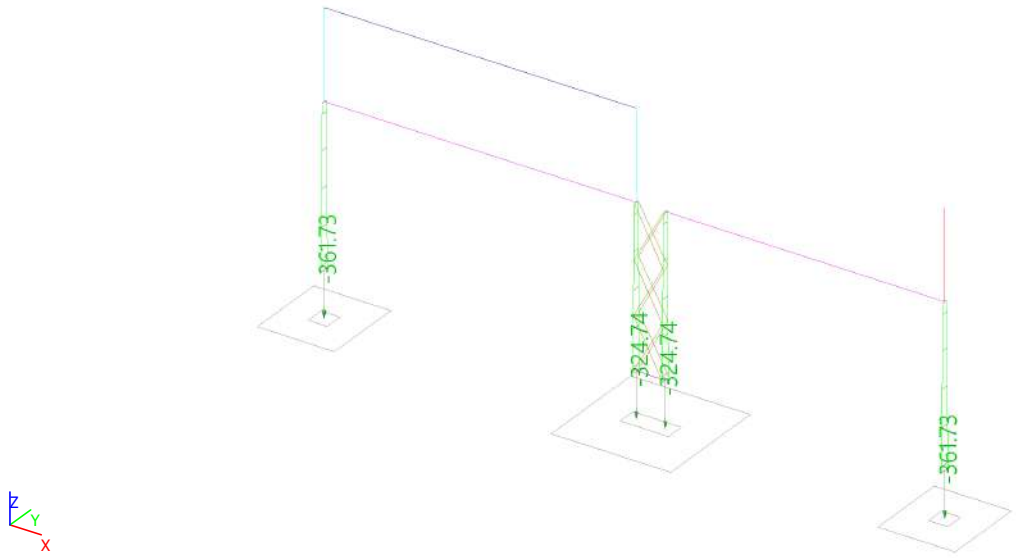
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1190	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1191	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1192	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1193	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1194	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1195	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1196	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1197	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1198	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1199	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1200	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1201	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1202	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1203	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1204	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1205	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1206	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1207	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1208	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1209	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1210	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1211	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1212	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1213	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1214	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1215	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1216	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1217	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1218	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1219	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1220	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1221	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1222	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1223	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1224	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1225	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1226	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1227	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1228	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1229	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1230	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1231	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1232	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1233	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1234	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1235	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1236	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1237	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1238	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

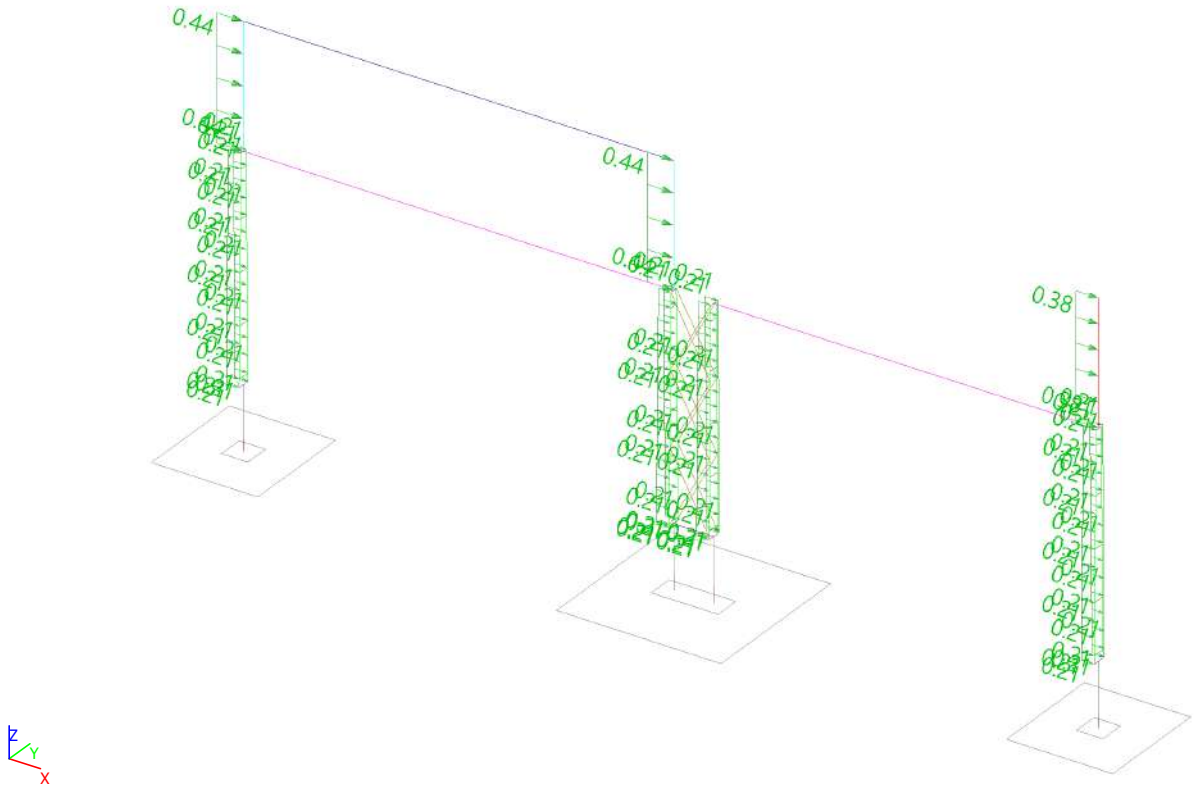
3.2. BG1: e.g. constructie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

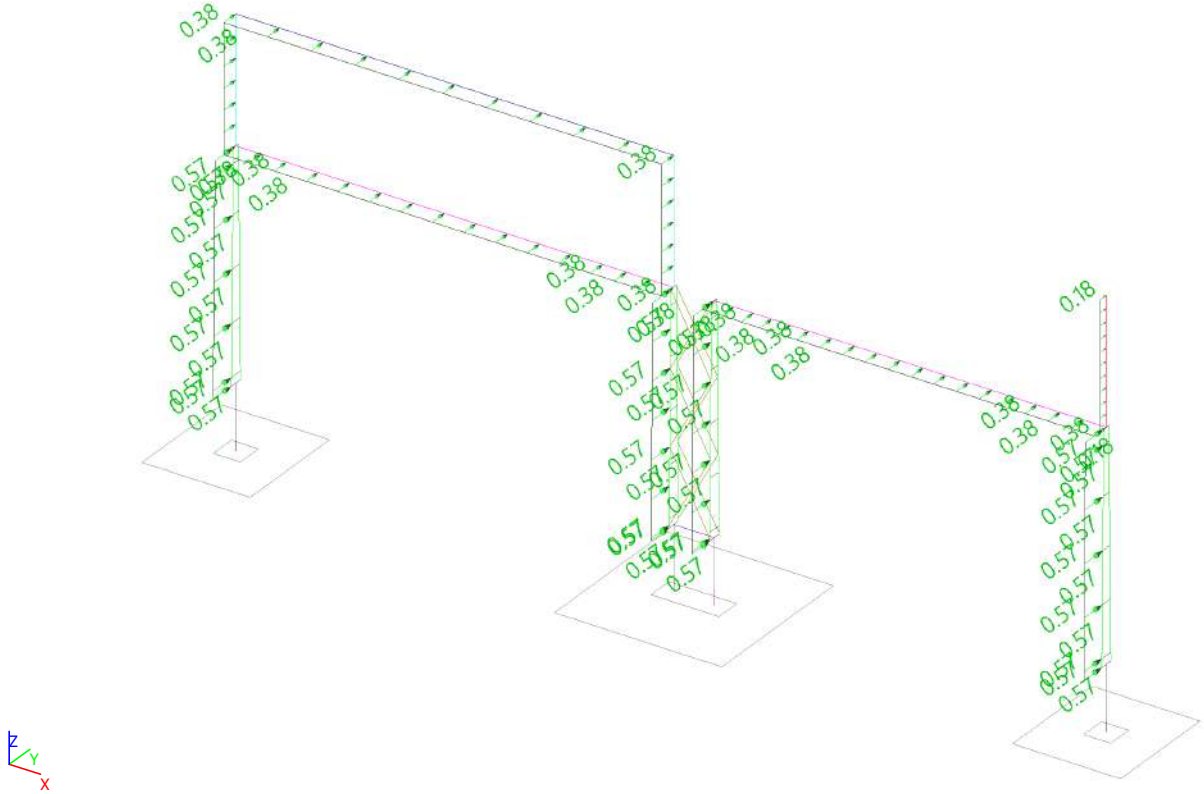
3.3. BG2: grond op poer



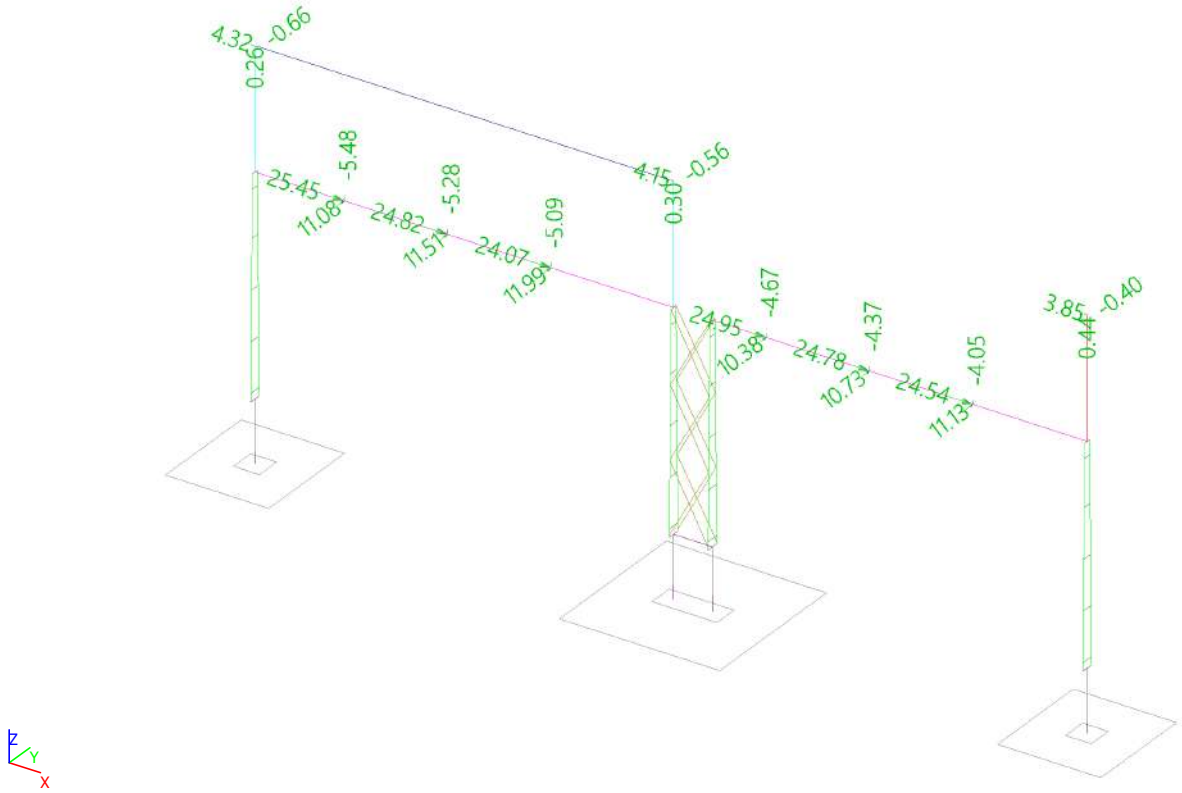
3.4. BG3: wind op constructie; X-richting



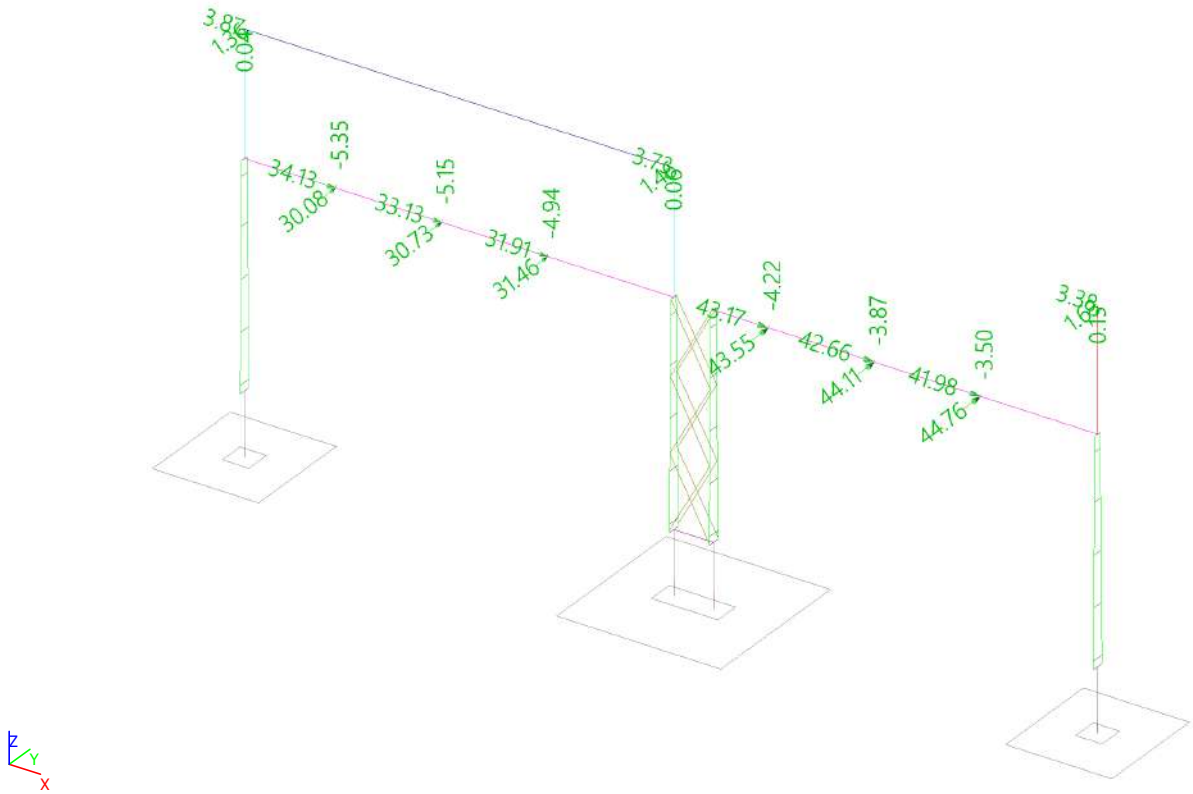
3.5. BG4: wind op constructie; Y-richting



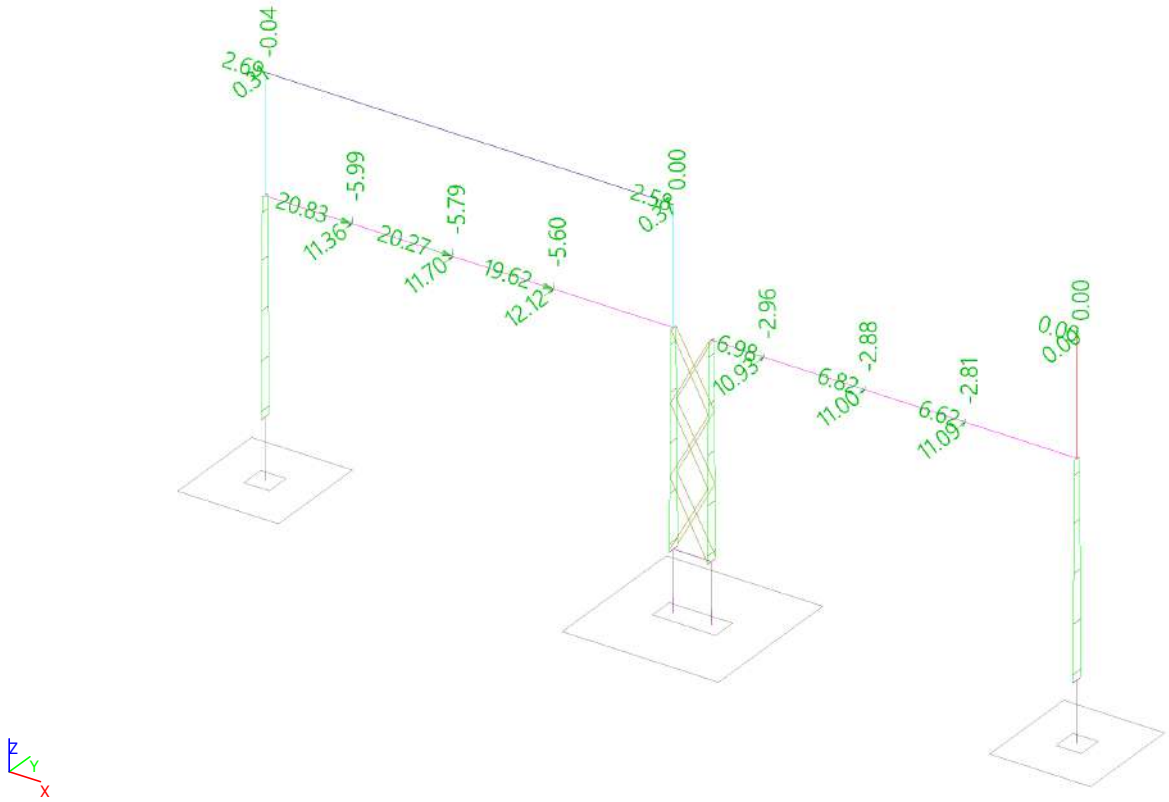
3.6. LC1001 / Totale waarde



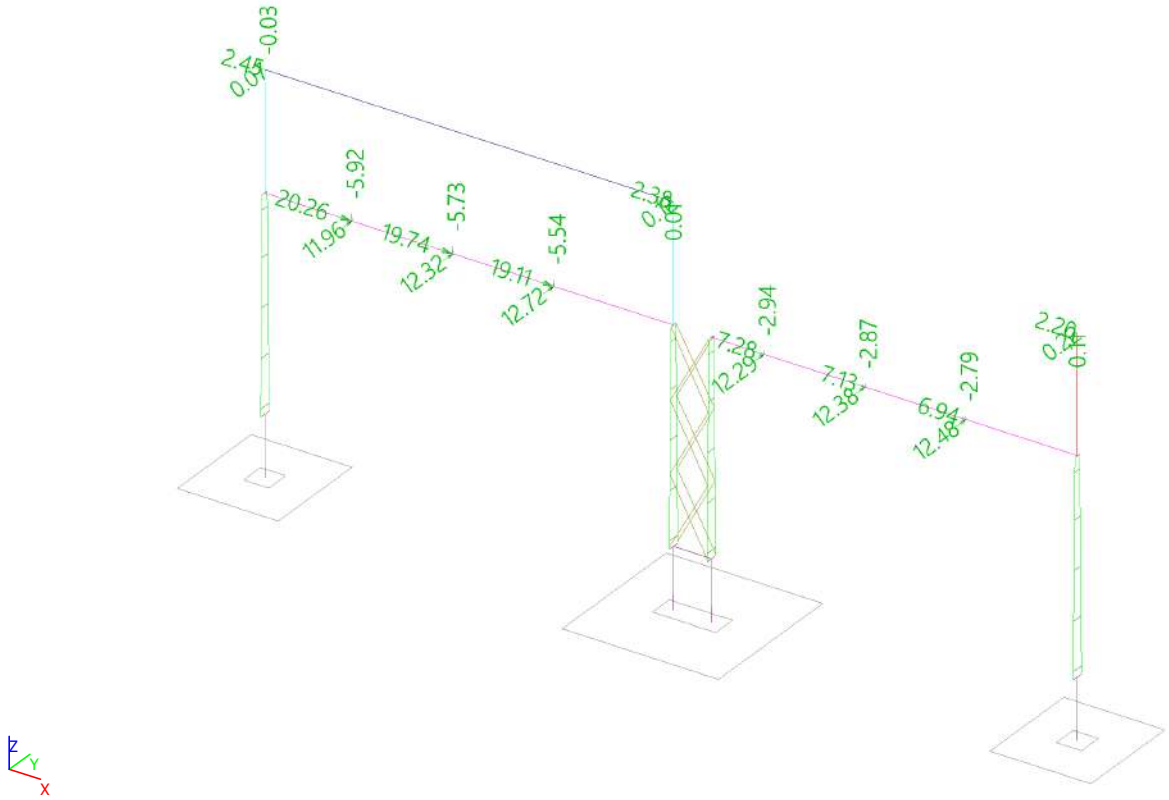
3.7. LC1080 / Totale waarde



3.8. LC1159 / Totale waarde



3.9. LC1238 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-1	Omhullend 1	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	1.40
			BG4 - wind op constructie; Y-richting	1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00
UGT-2	Omhullend 2	Omhullende - uiterst	BG1 - e.g. staco	1.15
			BG2 - grond op poer	1.15
			BG3 - wind op constructie; X-richting	-1.40
			BG4 - wind op constructie; Y-richting	-1.40
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
			LC1168 - BC0	1.00
			LC1169 - BC0	1.00
			LC1170 - BC0	1.00
			LC1171 - BC0	1.00
			LC1172 - BC0	1.00
			LC1173 - BC0	1.00
			LC1174 - BC0	1.00
			LC1175 - BC0	1.00
			LC1176 - BC0	1.00
			LC1177 - BC0	1.00
			LC1178 - BC0	1.00
			LC1179 - BC0	1.00
			LC1180 - BC0	1.00
			LC1181 - BC0	1.00
			LC1182 - BC0	1.00
			LC1183 - BC0	1.00
			LC1184 - BC0	1.00
			LC1185 - BC0	1.00
			LC1186 - BC0	1.00
			LC1187 - BC0	1.00
			LC1188 - BC0	1.00
			LC1189 - BC0	1.00
			LC1190 - BC0	1.00
			LC1191 - BC0	1.00
			LC1192 - BC0	1.00
			LC1193 - BC0	1.00
			LC1194 - BC0	1.00
			LC1195 - BC0	1.00
			LC1196 - BC0	1.00
			LC1197 - BC0	1.00
			LC1198 - BC0	1.00
			LC1199 - BC0	1.00
			LC1200 - BC0	1.00
			LC1201 - BC0	1.00
			LC1202 - BC0	1.00
			LC1203 - BC0	1.00
			LC1204 - BC0	1.00
			LC1205 - BC0	1.00
			LC1206 - BC0	1.00
			LC1207 - BC0	1.00
			LC1208 - BC0	1.00
			LC1209 - BC0	1.00
			LC1210 - BC0	1.00
			LC1211 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1212 - BC0	1.00
			LC1213 - BC0	1.00
			LC1214 - BC0	1.00
			LC1215 - BC0	1.00
			LC1216 - BC0	1.00
			LC1217 - BC0	1.00
			LC1218 - BC0	1.00
			LC1219 - BC0	1.00
			LC1220 - BC0	1.00
			LC1221 - BC0	1.00
			LC1222 - BC0	1.00
			LC1223 - BC0	1.00
			LC1224 - BC0	1.00
			LC1225 - BC0	1.00
			LC1226 - BC0	1.00
			LC1227 - BC0	1.00
			LC1228 - BC0	1.00
			LC1229 - BC0	1.00
			LC1230 - BC0	1.00
			LC1231 - BC0	1.00
			LC1232 - BC0	1.00
			LC1233 - BC0	1.00
			LC1234 - BC0	1.00
			LC1235 - BC0	1.00
			LC1236 - BC0	1.00
			LC1237 - BC0	1.00
			LC1238 - BC0	1.00

3.11. Resultaatklasses

Naam	Omschrijving	Lijst
UGT	Sterkte en stabiliteit	UGT-1 - Omhullende - uiterst UGT-2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**7356**
Aantal 1D elementen	**198**
Aantal netknopen	**7806**
Aantal vergelijkingen	**46836**
Belastinggevallen	BG1
	BG3
	BG4
	BG2
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**7356**
Aantal 1D elementen	**198**
Aantal netknopen	**7806**
Aantal vergelijkingen	**46836**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**7356**
Aantal 1D elementen	**198**
Aantal netknopen	**7806**
Aantal vergelijkingen	**46836**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
	LC1168
	LC1169
	LC1170
	LC1171
	LC1172
	LC1173
	LC1174
	LC1175
	LC1176
	LC1177
	LC1178
	LC1179
	LC1180
	LC1181
	LC1182
	LC1183
	LC1184
	LC1185

Aantal 2D elementen	**7356**
Aantal 1D elementen	**198**
Aantal netknopen	**7806**
Aantal vergelijkingen	**46836**
	LC1186
	LC1187
	LC1188
	LC1189
	LC1190
	LC1191
	LC1192
	LC1193
	LC1194
	LC1195
	LC1196
	LC1197
	LC1198
	LC1199
	LC1200
	LC1201
	LC1202
	LC1203
	LC1204
	LC1205
	LC1206
	LC1207
	LC1208
	LC1209
	LC1210
	LC1211
	LC1212
	LC1213
	LC1214
	LC1215
	LC1216
	LC1217
	LC1218
	LC1219
	LC1220
	LC1221
	LC1222
	LC1223
	LC1224
	LC1225
	LC1226
	LC1227
	LC1228
	LC1229
	LC1230
	LC1231
	LC1232
	LC1233
	LC1234
	LC1235
	LC1236
	LC1237
	LC1238
Buigtheorie	Mindlin
Start berekening	17.06.2020 07:48
Einde berekening	17.06.2020 07:50

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	-0.0	-1948.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.1	1948.2

	[kN]	X	Y	Z
BG BG3	last	19.9	0.0	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-1.1	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-18.8	0.0	0.0
BG BG4	last	0.0	41.2	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-4.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-0.0	-37.0	-0.0
BG BG2	last	0.0	0.0	-1372.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	-0.0	1372.9
BG LC1001	last	160.9	65.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-150.8	-58.2	27.9
BG LC1002	last	238.5	229.2	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.9	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-223.5	-204.3	26.7
BG LC1003	last	223.6	126.4	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.1	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-209.5	-113.0	30.5
BG LC1004	last	134.2	78.3	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.4	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-125.7	-69.8	31.3
BG LC1005	last	125.0	63.2	-27.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.9	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-117.2	-56.5	27.9
BG LC1006	last	231.4	228.8	-26.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-216.9	-203.9	26.7
BG LC1007	last	205.6	124.9	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.7	-111.7	30.5
BG LC1008	last	127.1	77.9	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.1	-69.5	31.3
BG LC1009	last	136.2	50.2	-29.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-5.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-127.7	-45.0	29.1
BG LC1010	last	236.4	229.6	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.6	-204.6	26.8
BG LC1011	last	215.1	124.1	-30.9
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-13.5	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-201.5	-111.0	30.9
BG LC1012	last	131.8	78.1	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.5	-69.6	31.4
BG LC1013	last	117.6	44.5	-29.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.2	-40.0	29.1
BG LC1014	last	232.7	228.5	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-218.1	-203.7	26.8
BG LC1015	last	205.8	120.3	-30.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.9	-107.7	30.9
BG LC1016	last	128.1	77.0	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.0	-68.7	31.4
BG LC1017	last	142.6	82.4	-31.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.0	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-133.6	-73.3	31.9
BG LC1018	last	236.6	229.8	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.7	-204.8	27.0
BG LC1019	last	216.1	130.6	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.6	-14.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-202.5	-116.6	31.7
BG LC1020	last	132.3	78.7	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-124.0	-70.1	31.5
BG LC1021	last	119.1	86.2	-31.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-9.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.6	-76.6	31.9
BG LC1022	last	231.9	230.5	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-25.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-217.4	-205.4	27.0
BG LC1023	last	205.5	132.8	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-14.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.6	-118.6	31.7
BG LC1024	last	127.7	79.4	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-119.6	-70.8	31.5
BG LC1025	last	118.1	67.9	-32.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-7.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.7	-60.5	32.0
BG LC1026	last	233.6	230.2	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.0	-205.1	27.0
BG LC1027	last	207.4	128.4	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-13.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.3	-114.7	31.7
BG LC1028	last	129.1	78.6	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.9	-70.0	31.5
BG LC1029	last	122.9	65.0	-32.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.1	-57.9	32.0
BG LC1030	last	234.5	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.9	-204.6	27.0
BG LC1031	last	209.4	126.6	-31.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.2	-13.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-196.2	-113.2	31.7
BG LC1032	last	130.0	78.0	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.8	-69.5	31.5
BG LC1033	last	136.4	55.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-5.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-127.8	-49.6	18.4
BG LC1034	last	209.9	238.6	-19.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.1	-26.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-196.8	-212.6	19.6
BG LC1035	last	193.4	120.2	-22.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.2	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-181.2	-107.5	22.3
BG LC1036	last	97.9	65.9	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.2	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-91.8	-58.8	23.6
BG LC1037	last	100.4	53.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-5.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-94.1	-47.9	18.4
BG LC1038	last	202.8	238.2	-19.6

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.7	-25.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-190.1	-212.3	19.6
BG LC1039	last	175.4	118.6	-22.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-12.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.4	-106.1	22.3
BG LC1040	last	90.9	65.5	-23.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.1	-58.4	23.6
BG LC1041	last	103.5	29.7	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.5	-2.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-97.0	-26.7	20.0
BG LC1042	last	207.5	239.1	-19.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-26.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.5	-213.0	19.8
BG LC1043	last	183.6	116.8	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.6	-12.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-172.1	-104.5	22.7
BG LC1044	last	94.8	64.8	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.0	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-88.8	-57.8	23.7
BG LC1045	last	84.9	24.0	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-2.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.5	-21.7	20.0
BG LC1046	last	203.9	237.9	-19.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.8	-25.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-191.1	-212.1	19.8
BG LC1047	last	174.4	113.0	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-11.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.4	-101.2	22.7
BG LC1048	last	91.1	63.7	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.4	-56.8	23.7
BG LC1049	last	113.0	80.9	-24.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.1	-9.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-105.9	-71.9	24.0
BG LC1050	last	207.5	240.0	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-13.0	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-194.5	-213.9	20.0
BG LC1051	last	184.9	126.4	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.6	-13.5	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-173.2	-112.8	23.8
BG LC1052	last	95.7	67.0	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.0	-7.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-89.6	-59.7	23.9
BG LC1053	last	89.6	84.7	-24.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-9.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.9	-75.2	24.0
BG LC1054	last	202.9	240.8	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.7	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-190.2	-214.5	20.0
BG LC1055	last	174.2	128.6	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.3	-114.8	23.8
BG LC1056	last	91.0	67.7	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.3	-60.4	23.9
BG LC1057	last	83.2	57.3	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.0	-51.0	24.2
BG LC1058	last	204.4	240.2	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.8	-26.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-191.6	-214.0	20.0
BG LC1059	last	175.3	122.7	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.2	-109.6	23.9
BG LC1060	last	92.0	66.1	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.2	-58.9	23.9
BG LC1061	last	88.0	54.5	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-6.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.4	-48.5	24.2
BG LC1062	last	205.4	239.6	-20.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-12.9	-26.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-192.5	-213.5	20.0
BG LC1063	last	177.3	120.9	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.2	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-166.1	-108.0	23.9
BG LC1064	last	92.9	65.5	-23.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.1	-58.4	23.9

	[kN]	X	Y	Z
BG LC1065	last	100.1	57.1	-29.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.8	-50.9	29.4
BG LC1066	last	100.2	57.0	-29.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.9	-50.9	29.5
BG LC1067	last	100.0	57.1	-29.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.3	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-93.8	-50.9	29.4
BG LC1068	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1069	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1070	last	102.0	57.2	-27.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.4	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-95.6	-50.9	27.4
BG LC1071	last	91.8	57.0	-27.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.0	-50.9	27.3
BG LC1072	last	91.6	57.2	-27.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.8	-51.0	27.2
BG LC1073	last	91.4	57.4	-27.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.7	-51.1	27.1
BG LC1074	last	90.9	57.1	-27.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.9	27.5
BG LC1075	last	90.9	56.9	-27.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.8	27.6
BG LC1076	last	90.9	56.8	-27.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-50.6	27.8
BG LC1077	last	129.4	66.4	-37.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-7.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.3	-59.2	37.4
BG LC1078	last	93.8	54.1	-24.6
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-5.9	-5.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.9	-48.3	24.6
BG LC1079	last	138.4	63.7	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.7	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-129.7	-56.9	30.5
BG LC1080	last	238.0	229.1	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.9	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-223.1	-204.2	26.8
BG LC1081	last	187.8	124.5	-29.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.8	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-176.0	-111.1	29.6
BG LC1082	last	133.7	78.3	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.4	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-125.3	-69.8	31.3
BG LC1083	last	117.2	62.6	-30.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-6.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-109.8	-55.9	30.5
BG LC1084	last	231.4	228.8	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-24.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-216.9	-203.9	26.8
BG LC1085	last	174.8	123.5	-29.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.8	-110.3	29.6
BG LC1086	last	127.2	78.0	-31.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.2	-69.5	31.3
BG LC1087	last	126.9	58.4	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.9	-52.2	31.0
BG LC1088	last	236.2	229.7	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.4	-204.7	26.8
BG LC1089	last	181.7	122.7	-29.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.4	-13.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-170.3	-109.6	29.8
BG LC1090	last	131.6	78.2	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.3	-69.7	31.4
BG LC1091	last	115.9	55.1	-31.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-5.8	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-108.6	-49.2	31.0
BG LC1092	last	232.8	228.6	-26.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-24.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-218.2	-203.8	26.8
BG LC1093	last	175.0	120.3	-29.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.0	-107.4	29.8
BG LC1094	last	128.2	77.1	-31.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.1	-68.8	31.4
BG LC1095	last	129.8	70.0	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.7	-62.3	32.1
BG LC1096	last	236.3	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.8	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-221.5	-204.6	27.0
BG LC1097	last	182.7	127.4	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.5	-13.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-171.3	-113.6	30.4
BG LC1098	last	132.1	78.7	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.8	-70.1	31.5
BG LC1099	last	116.0	72.2	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-7.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-108.7	-64.3	32.1
BG LC1100	last	232.0	230.3	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.5	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-217.5	-205.2	27.0
BG LC1101	last	174.8	128.9	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-14.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.8	-115.0	30.4
BG LC1102	last	127.8	79.3	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-8.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.8	-70.7	31.5
BG LC1103	last	117.4	64.8	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.0	-57.8	32.1
BG LC1104	last	233.6	230.1	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.6	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.0	-205.1	27.0
BG LC1105	last	176.3	125.9	-30.4

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-13.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-165.2	-112.3	30.4
BG LC1106	last	129.1	78.5	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.0	-70.0	31.5
BG LC1107	last	120.2	63.2	-32.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-112.7	-56.3	32.1
BG LC1108	last	234.5	229.6	-27.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-14.7	-25.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-219.8	-204.6	27.0
BG LC1109	last	177.9	124.7	-30.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.2	-13.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-166.7	-111.3	30.4
BG LC1110	last	130.0	78.0	-31.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-121.8	-69.6	31.5
BG LC1111	last	92.3	65.7	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.4	-58.5	23.3
BG LC1112	last	172.8	202.6	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.0	-180.8	20.7
BG LC1113	last	130.2	118.3	-22.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.2	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-122.0	-105.6	22.6
BG LC1114	last	90.9	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.1	-68.7	23.7
BG LC1115	last	78.5	65.5	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.5	-58.4	23.3
BG LC1116	last	168.6	202.5	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.0	-180.8	20.7
BG LC1117	last	121.9	118.1	-22.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.3	-105.4	22.6
BG LC1118	last	86.7	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.3	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.2	-68.7	23.7
BG LC1119	last	84.6	61.3	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-6.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.2	-54.7	23.5
BG LC1120	last	171.6	202.9	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-160.9	-181.1	20.7
BG LC1121	last	126.2	116.9	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.2	-104.4	22.7
BG LC1122	last	89.5	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.8	-68.6	23.7
BG LC1123	last	77.7	59.5	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-6.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.8	-53.1	23.5
BG LC1124	last	169.5	202.4	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.9	-180.6	20.7
BG LC1125	last	122.1	115.5	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.4	-103.2	22.7
BG LC1126	last	87.3	76.4	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.8	-68.1	23.7
BG LC1127	last	87.4	69.0	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-7.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.9	-61.4	24.2
BG LC1128	last	171.9	202.8	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.1	-181.1	20.8
BG LC1129	last	127.3	120.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.3	-107.1	23.1
BG LC1130	last	90.0	77.3	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.3	-68.9	23.8
BG LC1131	last	77.8	70.6	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.8	-62.9	24.2

	[kN]	X	Y	Z
BG LC1132	last	168.9	203.4	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.6	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-158.3	-181.5	20.8
BG LC1133	last	121.9	121.1	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-114.2	-108.1	23.1
BG LC1134	last	87.0	77.8	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.5	-69.4	23.8
BG LC1135	last	78.7	65.2	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.7	-58.1	24.2
BG LC1136	last	170.0	203.2	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-159.3	-181.4	20.8
BG LC1137	last	122.9	119.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.1	-106.2	23.1
BG LC1138	last	87.9	77.2	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.3	-68.8	23.8
BG LC1139	last	80.8	64.1	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.7	-57.1	24.2
BG LC1140	last	170.7	202.9	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.7	-21.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-160.0	-181.1	20.8
BG LC1141	last	124.1	118.2	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-116.2	-105.5	23.1
BG LC1142	last	88.5	76.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.9	-68.5	23.8
BG LC1143	last	91.1	65.4	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.4	-58.3	25.2
BG LC1144	last	157.1	182.3	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.3	-162.5	23.4
BG LC1145	last	123.3	110.2	-25.2
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-7.7	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.6	-98.3	25.2
BG LC1146	last	87.8	74.6	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.3	-66.5	25.7
BG LC1147	last	76.3	65.6	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-71.6	-58.5	25.2
BG LC1148	last	152.6	182.4	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.5	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-143.0	-162.5	23.4
BG LC1149	last	114.3	110.2	-25.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.2	-98.3	25.2
BG LC1150	last	83.2	74.7	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.0	-66.6	25.7
BG LC1151	last	82.6	61.1	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-77.5	-54.5	25.5
BG LC1152	last	155.8	182.7	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.0	-162.8	23.4
BG LC1153	last	118.9	108.8	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-11.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.4	-97.0	25.3
BG LC1154	last	86.2	74.4	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.8	-66.4	25.8
BG LC1155	last	75.6	59.3	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.7	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-70.8	-53.0	25.5
BG LC1156	last	153.6	182.2	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-144.0	-162.4	23.4
BG LC1157	last	114.7	107.5	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-11.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.5	-95.9	25.3
BG LC1158	last	84.0	73.9	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.0	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-78.7	-65.9	25.8
BG LC1159	last	86.4	68.9	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-7.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.0	-61.4	26.1
BG LC1160	last	156.2	182.6	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.4	-162.7	23.5
BG LC1161	last	120.5	111.9	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-12.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-112.9	-99.8	25.6
BG LC1162	last	86.9	74.8	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.4	-66.7	25.8
BG LC1163	last	75.9	70.8	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.7	-7.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-71.2	-63.1	26.1
BG LC1164	last	152.9	183.2	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-20.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-143.4	-163.2	23.5
BG LC1165	last	114.4	113.2	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-12.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-107.3	-101.0	25.6
BG LC1166	last	83.6	75.4	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-78.4	-67.2	25.8
BG LC1167	last	76.8	65.0	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.8	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.0	-58.0	26.1
BG LC1168	last	154.1	183.1	-23.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.6	-20.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-144.5	-163.1	23.5
BG LC1169	last	115.4	110.8	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.2	-12.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-108.2	-98.8	25.7
BG LC1170	last	84.5	74.7	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.2	-66.6	25.8
BG LC1171	last	79.2	63.9	-26.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.0	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-74.3	-57.0	26.1
BG LC1172	last	154.9	182.7	-23.5

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.7	-19.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-145.2	-162.8	23.5
BG LC1173	last	116.8	110.0	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.3	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-109.5	-98.1	25.7
BG LC1174	last	85.3	74.3	-25.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.0	-66.3	25.8
BG LC1175	last	95.6	65.4	-23.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-6.1	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-89.5	-58.3	23.2
BG LC1176	last	176.7	203.9	-20.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.1	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-165.6	-181.9	20.6
BG LC1177	last	135.3	118.0	-22.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.6	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-126.7	-105.4	22.5
BG LC1178	last	93.5	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-87.6	-68.8	23.7
BG LC1179	last	81.2	65.1	-23.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.2	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-76.0	-58.1	23.2
BG LC1180	last	172.3	203.9	-20.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.8	-22.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.4	-181.8	20.6
BG LC1181	last	126.3	117.6	-22.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.3	-105.1	22.5
BG LC1182	last	89.1	77.1	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.4	-68.7	23.7
BG LC1183	last	87.3	60.8	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.8	-54.3	23.4
BG LC1184	last	175.4	204.3	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.4	-182.2	20.7
BG LC1185	last	130.8	116.5	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-12.4	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	-122.6	-104.0	22.7
BG LC1186	last	92.0	77.0	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.2	-68.7	23.7
BG LC1187	last	80.1	58.8	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-6.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.0	-52.5	23.4
BG LC1188	last	173.2	203.7	-20.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.3	-181.7	20.7
BG LC1189	last	126.4	114.9	-22.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.4	-102.7	22.7
BG LC1190	last	89.8	76.4	-23.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.1	-68.1	23.7
BG LC1191	last	90.1	69.3	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-7.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.4	-61.7	24.2
BG LC1192	last	175.6	204.3	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-164.6	-182.2	20.8
BG LC1193	last	131.9	120.2	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.3	-13.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-123.5	-107.2	23.1
BG LC1194	last	92.5	77.4	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-86.6	-69.0	23.8
BG LC1195	last	80.2	71.0	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.1	-63.2	24.2
BG LC1196	last	172.6	204.8	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-161.7	-182.6	20.8
BG LC1197	last	126.1	121.4	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-13.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-118.1	-108.3	23.1
BG LC1198	last	89.4	77.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.8	-69.5	23.8

	[kN]	X	Y	Z
BG LC1199	last	81.0	65.2	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-75.8	-58.1	24.2
BG LC1200	last	173.7	204.6	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.9	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-162.8	-182.5	20.8
BG LC1201	last	127.1	119.0	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-12.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.1	-106.2	23.1
BG LC1202	last	90.3	77.3	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.7	-8.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.6	-68.9	23.8
BG LC1203	last	83.2	64.1	-24.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-77.9	-57.1	24.2
BG LC1204	last	174.4	204.3	-20.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-11.0	-22.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-163.4	-182.2	20.8
BG LC1205	last	128.3	118.1	-23.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.1	-12.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-120.2	-105.4	23.1
BG LC1206	last	91.0	76.9	-23.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.8	-8.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-85.2	-68.6	23.8
BG LC1207	last	94.0	65.2	-25.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.9	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-88.1	-58.2	25.0
BG LC1208	last	160.5	184.0	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-150.5	-163.7	23.3
BG LC1209	last	127.9	110.1	-24.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-8.0	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-119.8	-98.3	24.9
BG LC1210	last	90.1	74.8	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-84.5	-66.7	25.6
BG LC1211	last	78.8	65.3	-25.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.9	-58.3	25.0
BG LC1212	last	155.8	184.0	-23.3
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	-9.8	-20.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.1	-163.7	23.3
BG LC1213	last	118.4	110.0	-24.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-11.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.0	-98.1	24.9
BG LC1214	last	85.5	74.8	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.1	-66.7	25.6
BG LC1215	last	85.2	60.6	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.3	-6.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-79.8	-54.2	25.3
BG LC1216	last	159.1	184.4	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-149.2	-164.1	23.3
BG LC1217	last	123.1	108.6	-25.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.7	-11.7	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-115.4	-96.9	25.1
BG LC1218	last	88.5	74.6	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.9	-66.5	25.6
BG LC1219	last	77.8	58.8	-25.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-6.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-72.9	-52.6	25.3
BG LC1220	last	156.9	183.8	-23.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.0	-163.6	23.3
BG LC1221	last	118.5	107.1	-25.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-11.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.1	-95.6	25.1
BG LC1222	last	86.2	74.0	-25.6
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.8	-66.0	25.6
BG LC1223	last	88.7	69.4	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-7.6	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.2	-61.8	26.0
BG LC1224	last	159.4	184.3	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-10.0	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-149.5	-164.0	23.4
BG LC1225	last	124.5	112.4	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.8	-12.2	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	-116.7	-100.2	25.5
BG LC1226	last	89.1	75.1	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.6	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-83.5	-66.9	25.7
BG LC1227	last	78.1	71.3	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.8	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.2	-63.5	26.0
BG LC1228	last	156.2	184.9	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-146.4	-164.5	23.4
BG LC1229	last	118.3	113.7	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.4	-12.4	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-110.9	-101.3	25.5
BG LC1230	last	85.8	75.7	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-80.5	-67.4	25.7
BG LC1231	last	78.9	65.2	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-4.9	-7.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-73.9	-58.1	26.0
BG LC1232	last	157.4	184.7	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.8	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-147.5	-164.4	23.4
BG LC1233	last	119.3	111.0	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.5	-12.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-111.8	-99.0	25.5
BG LC1234	last	86.7	74.9	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.4	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-81.3	-66.8	25.7
BG LC1235	last	81.3	64.0	-26.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.1	-6.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-76.2	-57.0	26.0
BG LC1236	last	158.1	184.4	-23.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-9.9	-20.3	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-148.2	-164.1	23.4
BG LC1237	last	120.7	110.1	-25.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-7.6	-11.9	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-113.1	-98.2	25.5
BG LC1238	last	87.5	74.5	-25.7
	knoopreacties	0.0	0.0	0.0
	lijnreactions	-5.5	-8.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-82.0	-66.5	25.7

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/16	FC1	K6	S246	**-4.01**	-49.84	59.93	422.36	**-25.36**	-0.52
UGT-2/23	FC1	K6	S246	**4.26**	-16.75	63.51	137.81	-4.32	-0.18
UGT-1/5	FC1	K6	S246	-1.09	**-67.98**	59.05	**574.86**	-18.76	-0.54
UGT-2/7	FC1	K6	S246	1.47	**17.52**	55.43	**-144.24**	0.65	**0.02**
UGT-1/24	FC1	K6	S246	-1.02	-0.01	**54.85**	0.05	-1.64	0.00
UGT-2/4	FC1	K6	S246	3.32	-17.88	**65.02**	148.60	-9.74	-0.19
UGT-2/25	FC1	K6	S246	4.03	0.01	56.04	-0.05	**3.33**	0.00
UGT-1/13	FC1	K6	S246	-1.33	-67.78	60.74	570.55	-21.96	**-0.54**

5.2. Oplegreacties kolom midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/16	FC2	K8	S244	**-92.77**	-46.35	**-1277.27**	361.39	**-285.38**	4.85
UGT-2/25	FC2	K8	S244	**47.06**	0.15	**156.09**	0.67	**34.19**	0.11
UGT-1/26	FC2	K8	S244	-42.49	**-70.15**	-755.49	432.34	-168.43	**9.51**
UGT-2/7	FC2	K8	S244	35.67	**20.74**	59.10	**-108.34**	12.21	**-3.15**
UGT-1/5	FC2	K8	S244	-64.26	-66.80	-996.57	**487.84**	-222.41	8.01

5.3. Oplegreacties kolom midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC3
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/16	FC3	K438	S250	**-159.75**	-76.55	**1403.77**	675.53	**-310.79**	-11.33
UGT-2/25	FC3	K438	S250	**-22.87**	-0.15	**-45.03**	3.30	**11.09**	-0.18
UGT-1/18	FC3	K438	S250	-131.65	**-91.02**	1126.90	812.71	-248.62	-13.19
UGT-2/7	FC3	K438	S250	-34.36	**7.75**	52.26	**-95.76**	-10.87	**0.34**
UGT-1/5	FC3	K438	S250	-130.92	-90.98	1119.03	**813.53**	-246.86	-13.18
UGT-1/27	FC3	K438	S250	-115.92	-87.47	950.19	735.84	-209.04	**-13.47**

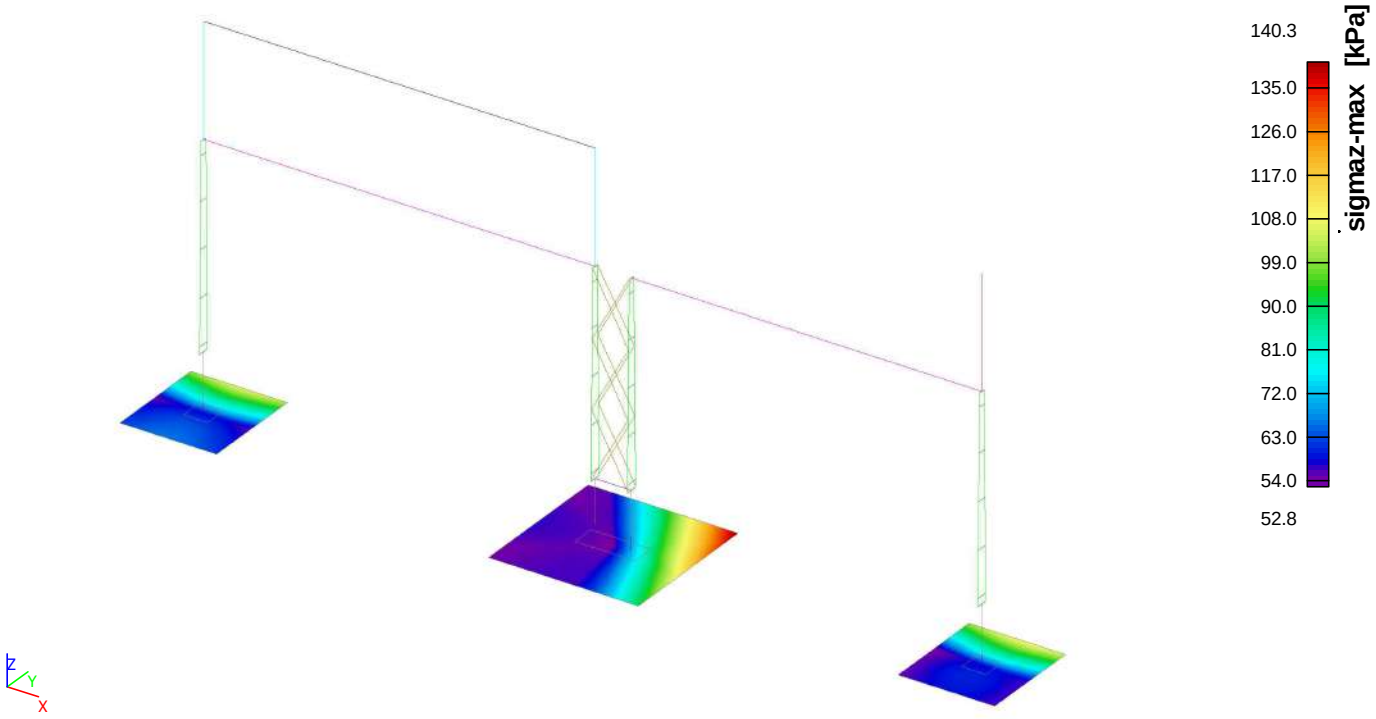
5.4. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC4
Klasse : UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
UGT-1/28	FC4	K513	S322	**-9.79**	-56.58	56.83	484.25	-28.65	1.68
UGT-2/25	FC4	K513	S322	**-0.38**	0.00	**49.40**	4.00	**1.26**	**0.02**
UGT-1/5	FC4	K513	S322	-6.61	**-72.72**	55.02	**596.47**	-22.33	1.75
UGT-2/7	FC4	K513	S322	-2.78	**11.71**	49.71	**-68.77**	-1.28	0.02
UGT-1/9	FC4	K513	S322	-8.76	-13.48	**58.25**	116.53	-17.86	0.63
UGT-1/16	FC4	K513	S322	-9.78	-56.46	56.81	482.88	**-28.85**	1.68
UGT-1/29	FC4	K513	S322	-9.04	-60.97	55.35	523.29	-25.05	**1.75**

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren; UGT



7. Staafkrachten

7.1. Staafkrachten kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S2..S4, S248, S251..S266, S275, S276, S282, S283, S292..S297
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S248	Kolom INP45 - INP450	305	UGT-1/5	**-1099.84**	19.85	-0.05	-0.13	8.61	19.40
S265	Kolom INP45 - INP450	0	UGT-1/22	**1455.07**	-10.18	58.52	-0.66	2.35	11.52
S265	Kolom INP45 - INP450	80	UGT-2/30	715.20	**-25.17**	57.60	-0.70	6.58	-3.06
S266	Kolom INP45 - INP450	80	UGT-1/22	362.77	**138.96**	38.68	1.71	3.85	**42.22**
S263	Kolom INP45 - INP450	2756	UGT-2/31	245.23	14.21	**-19.17**	-0.39	-45.95	-1.69
S265	Kolom INP45 - INP450	80	UGT-1/16	1302.31	-18.39	**67.98**	-0.81	7.77	5.82
S275	Kolom INP45 - INP450	0	UGT-1/22	-169.76	20.85	1.20	**-2.07**	9.88	10.05
S2	Kolom INP45 - INP450	0	UGT-1/16	93.91	13.46	-3.85	**2.04**	22.29	5.96
S261	Kolom INP45 - INP450	0	UGT-2/32	515.70	14.22	18.26	0.42	**-47.00**	-7.74
S262	Kolom INP45 - INP450	0	UGT-1/33	330.06	14.22	-13.42	-0.23	**53.76**	-6.65
S257	Kolom INP45 - INP450	0	UGT-1/13	-381.93	26.80	0.51	-0.22	7.39	**-23.32**

7.2. Staafkrachten kolom INP45 versterkt; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S272, S273, S284, S285, S298..S303
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S273	Kolom-samengesteld - I + Ir	80	UGT-1/22	**-1664.61**	-72.24	71.92	-3.81	7.68	92.61
S273	Kolom-samengesteld - I + Ir	0	UGT-2/7	**106.29**	-0.22	-8.40	0.22	0.18	-18.88
S273	Kolom-samengesteld - I + Ir	80	UGT-1/16	-1576.58	**-73.69**	68.40	-3.86	7.85	71.28
S284	Kolom-samengesteld - I + Ir	565	UGT-1/5	-391.01	**68.51**	-18.83	-2.31	11.21	-73.06
S284	Kolom-samengesteld - I + Ir	2360	UGT-1/34	-355.50	41.56	**-29.95**	1.74	-28.98	4.02
S273	Kolom-samengesteld - I + Ir	0	UGT-1/22	-1664.40	-72.23	**71.92**	-3.81	1.92	98.39
S273	Kolom-samengesteld - I + Ir	0	UGT-1/16	-1576.37	-73.69	68.37	**-3.86**	2.38	77.17
S272	Kolom-samengesteld - I + Ir	0	UGT-1/3	-917.44	26.76	-3.68	**2.05**	-1.11	13.01
S284	Kolom-samengesteld - I + Ir	2756	UGT-1/35	-356.39	41.50	-29.93	1.74	**-40.86**	20.50
S284	Kolom-samengesteld - I + Ir	0	UGT-1/36	-258.00	46.87	-11.67	-2.86	**20.74**	-66.02
S284	Kolom-samengesteld - I + Ir	565	UGT-1/18	-391.53	68.49	-18.74	-2.30	11.18	**-73.08**
S272	Kolom-samengesteld - I + Ir	2532	UGT-1/5	-1453.60	59.54	8.06	0.41	-0.28	**160.62**

7.3. Staafkrachten kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S329, S330
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S330	Kolom DIE36 - HEA360	0	UGT-1/37	**-17.99**	14.92	0.00	-0.06	-0.01	-33.45
S329	Kolom DIE36 - HEA360	4651	UGT-1/3	**-7.20**	-3.44	-1.47	0.16	0.01	-4.83
S329	Kolom DIE36 - HEA360	0	UGT-2/38	-17.16	**-13.02**	0.00	0.08	0.00	31.36
S330	Kolom DIE36 - HEA360	0	UGT-1/3	-17.64	**22.29**	-1.32	-0.14	6.13	**-53.95**
S329	Kolom DIE36 - HEA360	0	UGT-2/39	-13.70	-4.83	**-8.75**	0.19	**34.96**	13.04
S330	Kolom DIE36 - HEA360	0	UGT-1/5	-16.29	13.88	**8.88**	-0.16	**-35.59**	-32.73
S330	Kolom DIE36 - HEA360	0	UGT-2/40	-16.46	14.93	-5.24	**-0.26**	18.60	-35.84
S329	Kolom DIE36 - HEA360	0	UGT-2/41	-14.22	-7.50	-5.34	**0.29**	19.08	19.74
S330	Kolom DIE36 - HEA360	4651	UGT-1/3	-11.75	19.43	-1.32	-0.14	-0.01	**43.08**

7.4. Staafkrachten ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S33, S40, S404, S406
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S404	Ligger DIE34 - HE340A	0	UGT-1/1	**-97.28**	-21.22	-43.80	-0.03	97.95	-4.23
S40	Ligger DIE34 - HE340A	0	UGT-1/2	**130.01**	17.32	77.59	0.00	-16.59	-20.43
S404	Ligger DIE34 - HE340A	2625	UGT-1/3	-97.17	**-26.22**	-28.72	-0.02	-10.10	**-73.78**
S33	Ligger DIE34 - HE340A	0	UGT-2/4	13.71	**26.04**	18.02	-0.01	-0.28	-46.94
S406	Ligger DIE34 - HE340A	2560	UGT-1/5	-3.96	-17.19	**-62.65**	0.00	-1.75	-45.24
S40	Ligger DIE34 - HE340A	0	UGT-1/5	109.97	15.74	**87.19**	0.00	-17.84	-18.63
S33	Ligger DIE34 - HE340A	0	UGT-1/6	7.35	22.87	52.79	**-0.04**	-0.73	-35.89
S33	Ligger DIE34 - HE340A	0	UGT-2/7	7.94	15.97	-4.07	**0.01**	-0.02	-32.13
S404	Ligger DIE34 - HE340A	2625	UGT-1/5	-71.33	-22.27	-48.39	-0.03	**-22.28**	-57.20
S406	Ligger DIE34 - HE340A	0	UGT-1/5	-3.96	-14.16	-61.29	0.00	**156.90**	-5.11
S33	Ligger DIE34 - HE340A	1875	UGT-1/3	-1.53	20.36	31.75	-0.02	59.03	**14.07**

7.5. Staafkrachten ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S405, S407
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S405	Ligger DIE34+strippen - I + 2 PLud	6582	UGT-2/8	**-11.68**	-9.47	-36.03	-0.01	157.93	22.21
S407	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/2	**130.01**	15.61	77.59	0.00	95.13	3.28
S405	Ligger DIE34+strippen - I + 2 PLud	8440	UGT-1/9	0.89	**-17.43**	-13.47	0.00	34.05	-2.62
S407	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/4	52.57	**20.20**	18.73	0.00	23.44	-3.75
S405	Ligger DIE34+strippen - I + 2 PLud	8440	UGT-1/5	-3.96	-14.16	**-61.29**	0.00	156.90	-5.11
S407	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/5	109.97	14.04	**86.42**	0.00	107.16	2.81
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-1/10	26.07	7.89	24.37	**-0.01**	137.82	20.40
S405	Ligger DIE34+strippen - I + 2 PLud	0	UGT-2/11	81.07	7.81	32.10	**0.01**	182.77	25.17
S405	Ligger DIE34+strippen - I + 2 PLud	3582	UGT-2/7	-2.78	0.27	-0.07	0.00	**-14.17**	25.20
S405	Ligger DIE34+strippen - I + 2 PLud	2582	UGT-1/5	71.40	2.25	37.09	0.00	**315.14**	35.38
S405	Ligger DIE34+strippen - I + 2 PLud	8440	UGT-1/3	6.59	-17.09	-29.06	0.00	73.60	**-12.10**
S405	Ligger DIE34+strippen - I + 2 PLud	2582	UGT-2/4	31.87	5.44	8.29	0.00	68.61	**45.54**

7.6. Staafkrachten ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S403
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S403	Ligger DIE34+UNP's - Grafische doorsnede	9579	UGT-1/1	**-97.28**	-16.50	-43.80	-0.03	190.84	35.77
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/12	**14.98**	17.94	35.26	0.00	65.55	1.15
S403	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/3	-97.17	**-23.12**	-28.72	-0.02	65.29	**-9.02**
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/4	13.71	**23.83**	18.02	-0.01	33.50	-0.19
S403	Ligger DIE34+UNP's - Grafische doorsnede	11700	UGT-1/13	-87.26	-21.26	**-47.35**	-0.04	104.22	-3.97
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/13	9.01	20.26	**51.89**	-0.04	97.48	7.78
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-1/6	7.35	20.65	51.79	**-0.04**	97.32	4.91
S403	Ligger DIE34+UNP's - Grafische doorsnede	0	UGT-2/7	7.94	13.75	-3.08	**0.01**	-6.72	-4.27
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-2/7	7.94	1.34	-0.11	0.01	**-15.61**	37.83
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-1/13	-24.13	2.48	18.57	-0.04	**257.30**	64.69
S403	Ligger DIE34+UNP's - Grafische doorsnede	5579	UGT-1/9	-17.54	3.87	6.94	-0.01	89.76	**71.26**

7.7. Staafkrachten ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S331
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S331	Ligger DIN28 - HEB280	0	UGT-2/42	**-12.11**	9.26	0.00	0.00	0.08	-22.50
S331	Ligger DIN28 - HEB280	16200	UGT-1/43	**-8.19**	-10.42	0.00	-0.01	0.11	-31.76
S331	Ligger DIN28 - HEB280	16200	UGT-1/3	-11.57	**-11.79**	0.00	-0.01	0.14	**-43.08**
S331	Ligger DIN28 - HEB280	0	UGT-2/25	-9.44	**9.67**	0.00	0.00	0.00	-25.32
S331	Ligger DIN28 - HEB280	16200	UGT-1/26	-11.18	-10.51	**-4.31**	-0.02	0.15	-32.61
S331	Ligger DIN28 - HEB280	16200	UGT-2/7	-9.41	-9.44	**4.31**	0.01	0.05	-23.40
S331	Ligger DIN28 - HEB280	0	UGT-1/6	-11.19	8.34	4.31	**-0.02**	0.21	-15.06
S331	Ligger DIN28 - HEB280	0	UGT-2/44	-8.93	8.77	-4.31	**0.01**	0.21	-18.42
S331	Ligger DIN28 - HEB280	8100	UGT-2/7	-9.41	-0.01	0.00	0.01	**-17.41**	14.86
S331	Ligger DIN28 - HEB280	8100	UGT-1/10	-11.17	-1.07	0.00	-0.02	**17.64**	14.32
S331	Ligger DIN28 - HEB280	5670	UGT-1/3	-11.57	0.47	0.00	-0.01	0.15	**16.52**

7.8. Staafkrachten koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S402	Plaat 2x14x200 - Rechthoek	0	UGT-1/16	**-32.76**	1.56	-39.65	0.09	5.84	-0.65
S392	Plaat 2x14x200 - Rechthoek	0	UGT-1/22	**127.40**	-0.93	-70.20	-0.17	9.34	-0.16
S390	Plaat 2x14x200 - Rechthoek	0	UGT-1/3	0.08	**-5.88**	-70.21	-0.07	5.83	0.89
S386	Plaat 2x14x200 - Rechthoek	0	UGT-1/34	1.57	**8.44**	-107.90	0.40	5.06	0.30
S353	Plaat 2x14x200 - Rechthoek	187	UGT-1/5	-0.78	0.12	**-251.97**	0.11	-23.49	0.01
S396	Plaat 2x14x200 - Rechthoek	0	UGT-2/7	0.93	0.06	**48.48**	0.01	-4.61	-0.04
S394	Plaat 2x14x200 - Rechthoek	0	UGT-1/5	-0.53	-1.12	-164.52	**-0.60**	11.79	0.20
S384	Plaat 2x14x200 - Rechthoek	0	UGT-1/5	-19.70	2.00	-127.44	**0.86**	6.50	0.16
S388	Plaat 2x14x200 - Rechthoek	232	UGT-1/5	1.84	1.47	-199.89	0.10	**-34.10**	0.91
S355	Plaat 2x14x200 - Rechthoek	0	UGT-1/13	-0.79	0.12	-217.20	0.10	**25.20**	-0.01
S400	Plaat 2x14x200 - Rechthoek	0	UGT-2/30	0.60	6.02	-34.62	0.05	4.81	**-0.93**
S386	Plaat 2x14x200 - Rechthoek	187	UGT-1/5	4.20	8.08	-188.01	0.53	-26.79	**1.95**

7.9. Staafkrachten diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S281	Diagionaal UPE14 - UPE140	0	UGT-1/22	**-220.68**	0.00	0.00	0.00	0.00	0.00
S270	Diagionaal UPE14 - UPE140	3142	UGT-2/45	**212.41**	0.00	0.00	0.00	0.00	0.00
S235	Diagionaal UPE14 - UPE140	0	UGT-1/46	-1.80	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.10. Staafkrachten bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S332
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S332	Bliksempiek-2 - Koker fl	0	UGT-1/47	**-4.71**	0.00	2.48	0.00	-5.76	0.00
S332	Bliksempiek-2 - Koker fl	4651	UGT-1/48	**0.49**	0.34	3.62	0.00	0.00	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/5	-2.65	**-3.41**	2.65	0.00	-12.33	**13.12**
S332	Bliksempiek-2 - Koker fl	0	UGT-2/49	-2.25	**2.77**	2.18	0.00	-10.14	**-10.14**
S332	Bliksempiek-2 - Koker fl	0	UGT-2/25	-2.71	0.00	**-2.47**	0.00	**5.75**	0.00
S332	Bliksempiek-2 - Koker fl	0	UGT-1/3	-2.28	1.01	**9.79**	0.00	**-39.80**	-4.71
S332	Bliksempiek-2 - Koker fl	0	UGT-2/50	-2.58	-1.69	0.81	**0.00**	-9.54	7.88

7.11. Staafkrachten betonopstort links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S246
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S246	Poer onder-IV - Rechthoek	1600	UGT-2/4	**-287.79**	15.17	-3.33	-0.19	4.42	175.59
S246	Poer onder-IV - Rechthoek	0	UGT-1/24	**-54.85**	0.01	1.02	0.00	1.64	0.05
S246	Poer onder-IV - Rechthoek	0	UGT-2/7	-55.43	**-17.52**	-1.47	**0.02**	-0.65	-144.24
S246	Poer onder-IV - Rechthoek	0	UGT-1/5	-59.05	**67.98**	1.09	-0.54	18.76	574.86
S246	Poer onder-IV - Rechthoek	0	UGT-2/23	-63.51	16.75	**-4.26**	-0.18	4.32	137.81
S246	Poer onder-IV - Rechthoek	0	UGT-1/16	-59.93	49.84	**4.01**	-0.52	25.36	422.36
S246	Poer onder-IV - Rechthoek	0	UGT-1/13	-60.74	67.78	1.33	**-0.54**	21.96	570.55
S246	Poer onder-IV - Rechthoek	2000	UGT-2/25	-278.81	-0.01	-3.81	0.00	**-11.17**	-0.06
S246	Poer onder-IV - Rechthoek	2000	UGT-1/16	-282.71	42.16	3.43	-0.52	**32.80**	514.39
S246	Poer onder-IV - Rechthoek	2000	UGT-2/7	-278.20	-14.88	-1.39	0.02	-3.51	**-176.65**
S246	Poer onder-IV - Rechthoek	2000	UGT-1/5	-281.82	57.53	0.74	-0.54	20.59	**700.40**

7.12. Staafkrachten betonopstort midden-links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S244
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S244	Poer onder-IV - Rechthoek	1440	UGT-2/25	**-289.27**	-0.16	-46.51	0.16	-36.64	0.45
S244	Poer onder-IV - Rechthoek	0	UGT-1/16	**1277.27**	46.35	**92.77**	4.85	285.38	361.39
S244	Poer onder-IV - Rechthoek	0	UGT-2/7	-59.10	**-20.74**	-35.67	-3.15	-12.21	-108.34
S244	Poer onder-IV - Rechthoek	0	UGT-1/26	755.49	**70.15**	42.49	**9.51**	168.43	432.34
S244	Poer onder-IV - Rechthoek	0	UGT-2/25	-156.09	-0.15	**-47.06**	0.11	-34.19	0.67
S244	Poer onder-IV - Rechthoek	1440	UGT-1/5	863.40	62.07	58.69	**-11.62**	31.47	581.72
S244	Poer onder-IV - Rechthoek	1080	UGT-2/25	-213.58	-0.16	-46.80	0.13	**-57.06**	0.51
S244	Poer onder-IV - Rechthoek	360	UGT-1/16	1259.68	46.35	92.77	4.85	**318.78**	378.07
S244	Poer onder-IV - Rechthoek	1800	UGT-2/7	-192.27	-19.94	-35.67	3.00	-40.46	**-145.00**
S244	Poer onder-IV - Rechthoek	1800	UGT-1/5	863.40	62.07	58.69	-11.62	52.60	**604.07**

7.13. Staafkrachten betonopstort midden-rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S250
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S250	Poer onder-IV - Rechthoek	1440	UGT-1/16	**-1536.94**	72.67	152.70	11.30	98.02	783.86
S250	Poer onder-IV - Rechthoek	0	UGT-2/25	**45.03**	0.15	**22.87**	-0.18	**-11.09**	3.30
S250	Poer onder-IV - Rechthoek	0	UGT-2/7	-52.26	**-7.75**	34.36	0.34	10.87	-95.76
S250	Poer onder-IV - Rechthoek	0	UGT-1/18	-1126.90	**91.02**	131.65	-13.19	248.62	812.71
S250	Poer onder-IV - Rechthoek	0	UGT-1/16	-1403.77	76.55	**159.75**	-11.33	310.79	675.53
S250	Poer onder-IV - Rechthoek	0	UGT-1/27	-950.19	87.47	115.92	**-13.47**	209.04	735.84
S250	Poer onder-IV - Rechthoek	1440	UGT-1/5	-1252.20	86.10	125.40	**13.69**	78.74	942.15
S250	Poer onder-IV - Rechthoek	360	UGT-1/16	-1421.36	76.55	159.75	-11.33	**368.30**	703.09
S250	Poer onder-IV - Rechthoek	1800	UGT-2/7	-185.44	-6.98	34.41	-1.92	38.85	**-109.05**
S250	Poer onder-IV - Rechthoek	1800	UGT-1/5	-1252.20	86.10	125.40	13.69	123.89	**973.15**

7.14. Staafkrachten betonopstort rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S322
Klasse : UGT

Staaf	css	dx [mm]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S322	Poer onder-IV - Rechthoek	1600	UGT-1/9	**-281.02**	11.37	8.10	0.63	31.49	136.84
S322	Poer onder-IV - Rechthoek	0	UGT-2/25	**-49.40**	0.00	**0.38**	**0.02**	**-1.26**	4.00
S322	Poer onder-IV - Rechthoek	0	UGT-2/7	-49.71	**-11.71**	2.78	0.02	1.28	-68.77
S322	Poer onder-IV - Rechthoek	0	UGT-1/5	-55.02	**72.72**	6.61	1.75	22.33	596.47
S322	Poer onder-IV - Rechthoek	0	UGT-1/28	-56.83	56.58	**9.79**	1.68	28.65	484.25
S322	Poer onder-IV - Rechthoek	0	UGT-1/29	-55.35	60.97	9.04	**1.75**	25.05	523.29
S322	Poer onder-IV - Rechthoek	2000	UGT-1/16	-279.58	47.70	8.89	1.68	**47.52**	587.07
S322	Poer onder-IV - Rechthoek	2000	UGT-2/7	-272.48	-10.33	2.64	0.02	6.70	**-90.82**
S322	Poer onder-IV - Rechthoek	2000	UGT-1/5	-277.79	61.80	5.97	1.75	34.92	**731.04**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP45; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S2..S4, S248, S251..S266, S275, S276, S282, S283, S292..S297
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S251	1895	UGT-1/13	**-205.0**		1.5	205.0	0.0
S2	0	UGT-1/5		71.0	16.1	76.3	**0.0**
S248	0	UGT-1/5	-144.6		1.2	144.6	0.0
S266	80	UGT-1/21		**242.0**	14.9	243.4	0.0
S4	637	UGT-1/51		157.8	**0.6**	157.8	0.0
S2	2532	UGT-1/5		40.9	**30.9**	67.4	0.0
S297	283	UGT-1/5		17.4	8.5	**22.7**	0.0
S266	80	UGT-1/21		242.0	14.9	**243.4**	0.0

8.2. Von Mises spanningen kolom INP45 versterkt; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S272, S273, S284, S285, S298..S303
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S272	2532	UGT-1/5	**-129.9**	5.7	**130.3**	0.0
S303	565	UGT-1/5	**-7.9**	13.1	24.0	0.0
S272	0	UGT-1/5	-83.2	3.3	83.3	**0.0**
S272	2757	UGT-1/5	-112.6	**0.3**	112.6	0.0
S284	1462	UGT-1/5	-14.0	**24.8**	45.2	0.0
S303	565	UGT-1/5	-7.9	13.1	**24.0**	0.0

8.3. Von Mises spanningen kolom DIE36; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S329, S330
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S330	0	UGT-2/30	**-112.1**	2.3	**112.2**	0.0
S329	2325	UGT-1/51	**-15.4**	2.5	16.0	0.0
S329	0	UGT-2/53	-65.5	1.3	65.5	**0.0**
S329	3720	UGT-2/25	-31.7	**0.0**	31.7	0.0
S329	1860	UGT-1/13	-24.0	**2.5**	24.3	0.0
S329	2325	UGT-1/51	-15.4	2.5	**16.0**	0.0

8.4. Von Mises spanningen ligger DIE34; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S33, S40, S404, S406
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S404	2625	UGT-1/3	**-162.1**		0.2	162.1	0.0
S33	0	UGT-2/14		96.3	0.1	96.3	**0.0**
S404	0	UGT-1/16	-77.8		0.3	77.8	0.0
S406	2560	UGT-1/3		**121.5**	0.0	121.5	0.0
S406	0	UGT-1/20	-104.7		**0.0**	104.7	0.0
S40	720	UGT-1/18		28.4	**28.1**	56.3	0.0
S40	720	UGT-1/18		28.4	28.1	**56.3**	0.0
S404	2625	UGT-1/3	-162.1		0.2	**162.1**	0.0

8.5. Von Mises spanningen ligger DIE34+strippen; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S405, S407
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S405	6582	UGT-1/5	**-115.9**		0.0	115.9	0.0
S405	0	UGT-1/21		107.0	0.0	107.0	**0.0**
S405	6582	UGT-1/5	-115.9		0.0	115.9	0.0
S405	2582	UGT-1/18		**155.0**	0.0	155.0	0.0
S405	861	UGT-1/18		124.7	**0.0**	124.7	0.0
S407	0	UGT-1/18		31.3	**27.4**	**56.8**	0.0
S405	2582	UGT-1/18		155.0	0.0	**155.0**	0.0

8.6. Von Mises spanningen ligger DIE34+UNP's; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S403
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S403	5579	UGT-1/13	**-138.2**		0.0	138.2	0.0
S403	0	UGT-1/22		41.3	0.0	**41.3**	**0.0**
S403	1579	UGT-1/13	-90.3		0.0	90.3	0.0
S403	1579	UGT-1/13		**89.7**	0.0	89.7	0.0
S403	11700	UGT-1/22	-44.5		**0.0**	44.5	0.0
S403	7579	UGT-1/10	-122.5		**0.0**	122.5	0.0
S403	5579	UGT-1/13	-138.2		0.0	**138.2**	0.0

8.7. Von Mises spanningen ligger DIN28; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S331
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S331	16200	UGT-1/3	**-92.4**	0.1	92.4	0.0
S331	12150	UGT-1/54	**-21.4**	0.1	21.4	0.0
S331	0	UGT-2/25	-54.5	**0.0**	54.5	**0.0**
S331	2430	UGT-1/55	-23.2	**0.2**	23.2	0.0
S331	12150	UGT-1/54	-21.4	0.1	**21.4**	0.0
S331	16200	UGT-1/3	-92.4	0.1	**92.4**	0.0

8.8. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S390	277	UGT-1/21	**-176.9**		0.0	176.9	0.0
S360	0	UGT-1/13		47.0	0.0	47.0	0.0
S351	0	UGT-1/5	-0.2		50.4	87.4	**0.0**
S386	187	UGT-1/5		**218.7**	0.0	**218.7**	0.0
S398	0	UGT-1/10	-134.8		**0.0**	134.8	0.0
S353	93	UGT-1/5	-0.1		**69.9**	121.0	0.0
S360	161	UGT-1/13		0.2	15.7	**27.3**	0.0

8.9. Von Mises spanningen diagonaal; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S235, S267..S271, S274, S277..S281
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S281	0	UGT-1/22	**-119.9**		0.0	**119.9**	0.0
S235	0	UGT-1/16		75.8	**0.0**	75.8	**0.0**
S267	0	UGT-2/52	-74.8		0.0	74.8	0.0
S270	3142	UGT-2/45		**115.4**	0.0	115.4	0.0
S271	3142	UGT-2/30	-38.5		0.0	**38.5**	0.0

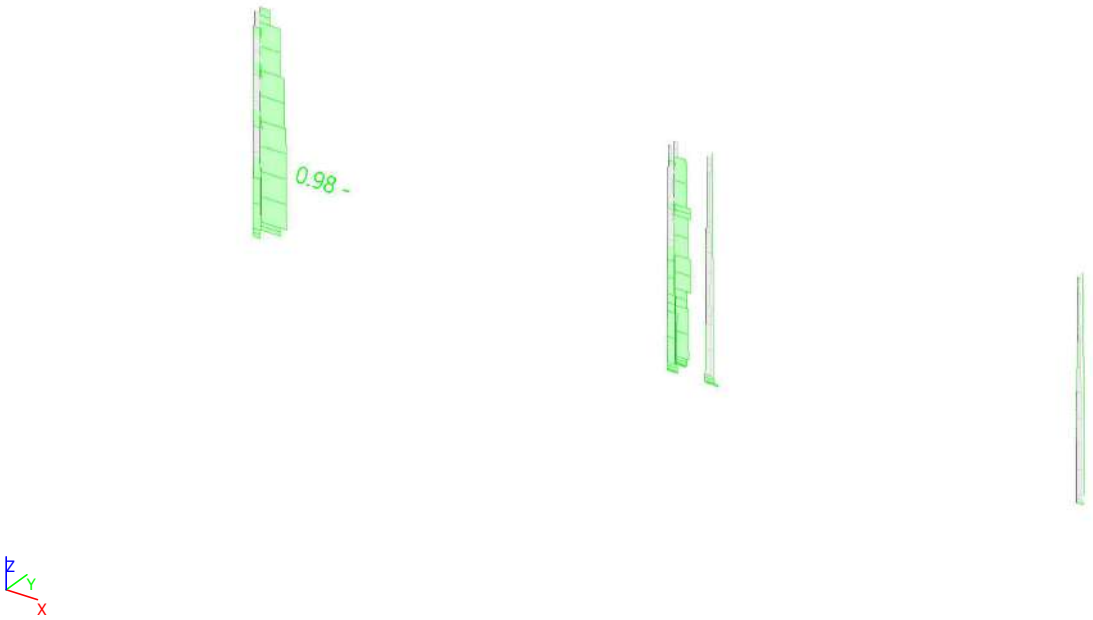
8.10. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S332
Klasse : UGT
Waardes : Von Mises

Staaf	dx [mm]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S332	0	UGT-1/3	**-116.2**		0.0	**116.2**	**0.0**
S332	4186	UGT-1/3		**15.4**	0.0	15.4	0.0
S332	2791	UGT-1/3	-51.4		**0.0**	51.4	0.0
S332	4651	UGT-1/55		0.1	**3.1**	5.3	0.0
S332	4651	UGT-1/55		0.1	3.1	**5.3**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP45; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP45; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S2..S4, S248, S251..S266, S275, S276, S282, S283, S292..S297

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S253	1.895 / 1.895 m	INP450	S 235	UGT	0.98 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.895 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-866.15	kN
$V_{y,Ed}$	22.66	kN
$V_{z,Ed}$	0.15	kN
T_{Ed}	-0.18	kNm
$M_{y,Ed}$	8.42	kNm
$M_{z,Ed}$	25.67	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	2.290e+04	-5.472e+04	-2.39	23.80	0.30	2.50	56.16	62.40	102.45	1
3	SO	61	24	8.505e+04	1.627e+05	0.52	0.48	1.00	2.50	9.00	10.00	14.54	1
4	I	369	16	5.448e+04	6.108e+04	0.89		1.00	22.78	28.00	34.00	39.48	1
5	SO	61	24	9.266e+04	1.703e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.50	1
7	SO	61	24	3.051e+04	-4.711e+04	-1.54	23.80	0.39	2.50	36.52	40.58	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m²
$N_{c,Rd}$	3454.50	kN
Eenheidscontrole	0.25	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m³
$M_{pl,y,Rd}$	564.00	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m³
$M_{pl,z,Rd}$	81.08	kNm
Eenheidscontrole	0.32	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m²
$V_{pl,y,Rd}$	1192.18	kN
Eenheidscontrole	0.02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m²
$V_{pl,z,Rd}$	1058.72	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	1.7	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	541.07	kNm
α	2.00	
$M_{pl,z,Rd}$	81.08	kNm
β	1.25	

Eenheidscontrole (6.41) = 0.00 + 0.24 = 0.24 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 1.895 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	2.290e+04	-5.472e+04	-2.39	23.80	0.30	2.50	56.16	62.40	102.45	1
3	SO	61	24	8.505e+04	1.627e+05	0.52	0.48	1.00	2.50	9.00	10.00	14.54	1
4	I	369	16	5.448e+04	6.108e+04	0.89		1.00	22.78	28.00	34.00	39.48	1
5	SO	61	24	9.266e+04	1.703e+05	0.54	0.48	1.00	2.50	9.00	10.00	14.50	1
7	SO	61	24	3.051e+04	-4.711e+04	-1.54	23.80	0.39	2.50	36.52	40.58	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings flexibel	
Systeemlengte L	8.350	1.895	m
Knikfactor k	2.38	1.94	
Kniklengte L_{cr}	19.873	3.684	m
Kritische Euler last N_{cr}	2406.20	2642.54	kN
Slankheid λ	112.53	107.38	
Relatieve slankheid λ_{rel}	1.20	1.14	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	0.53	0.51	
Knikweerstand $N_{b,Rd}$	1834.82	1761.09	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Knikweerstand $N_{b,Rd}$	1761.09	kN
Eenheidscontrole	0.49	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Elastisch kritisch moment M_{cr}	2732.77	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.45	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.02	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	

Mcr parameters		
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	866.15	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	8.63	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	25.67	kNm
Karakteristieke drukweerstand N_{Rk}	3454.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	564.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	81.08	kNm
Reductie factor χ_y	0.53	
Reductie factor χ_z	0.51	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.24	
Interactiefactor k_{yz}	0.91	
Interactiefactor k_{zy}	0.74	
Interactiefactor k_{zz}	1.52	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S248 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S253 positie 1.895 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.1
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Zijdelings flexibel type z	Zijdelings flexibel
Equivalente moment factor C_{mz}	0.90
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	0.97
Equivalente moment factor C_{mLT}	0.99

Eenheidscontrole (6.61) = 0.47 + 0.02 + 0.29 = 0.78 -
Eenheidscontrole (6.62) = 0.49 + 0.01 + 0.48 = 0.98 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

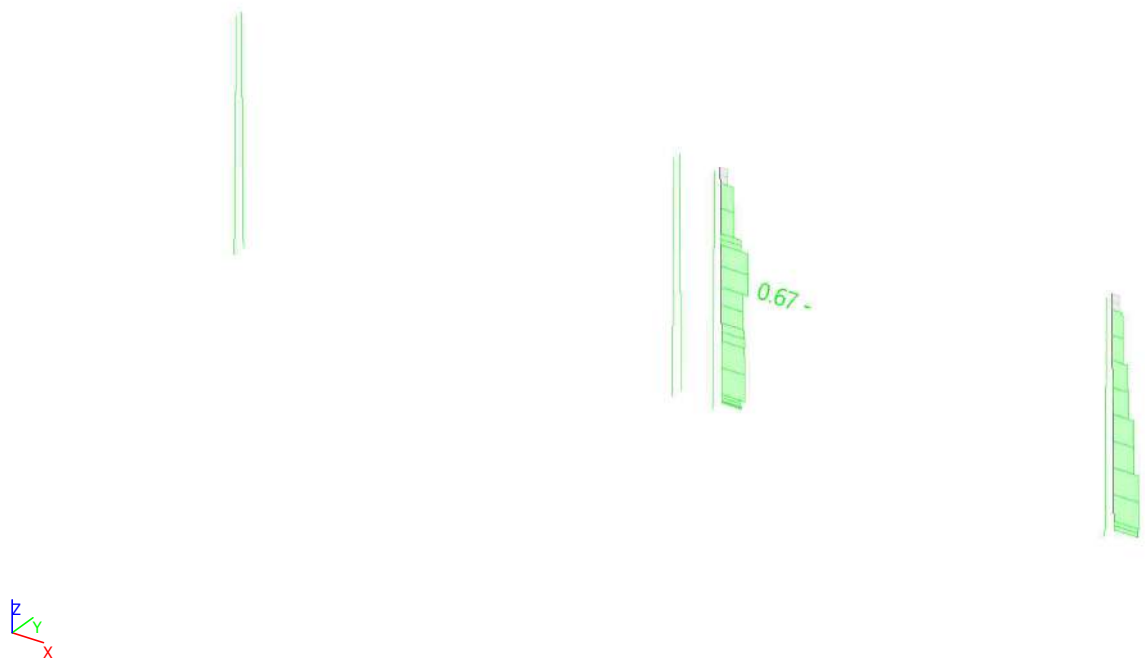
Plooiparameters		
Knik veldlengte a	1.895	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.3. Staalcontrole kolom INP45 versterkt; UGT, grafisch overzicht



9.4. Staalcontrole kolom INP45 versterkt; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S272, S273, S284, S285, S298..S303

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S285	1.499 / 2.757 m	I + Ir (INP450, HEB300)	S 235	UGT	0.67 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1050

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.499 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-886.99	kN
$V_{y,Ed}$	61.81	kN
$V_{z,Ed}$	5.91	kN
T_{Ed}	-2.37	kNm
$M_{y,Ed}$	-23.75	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	78.99	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	85	24	4.022e+04	2.533e+04	0.63	0.47	1.00	3.50	9.00	10.00	14.33	1
2	UO	85	24	2.231e+04	7.426e+03	0.33	0.51	1.00	3.50	9.00	10.00	14.97	1
3	UO	85	24	-7.462e+03	7.426e+03	-1.00	23.80	0.50	3.50	25.55	28.39	102.45	1
4	UO	85	24	1.045e+04	2.533e+04	0.41	0.77	1.00	3.50	9.00	10.00	18.41	1
5	I	12	16	2.533e+04	2.482e+04	0.98		1.00	0.75	28.00	34.00	38.27	1
6	I	51	16	2.482e+04	2.269e+04	0.91		1.00	3.13	28.00	34.00	39.17	1
7	I	12	16	7.937e+03	7.426e+03	0.94		1.00	0.75	28.00	34.00	38.87	1
8	UO	150	19	6.237e+04	6.868e+04	0.91	0.46	1.00	7.89	9.00	10.00	14.29	1
9	I	150	35	1.804e+04	1.173e+04	0.65		1.00	4.26	28.00	34.00	43.25	1
10	I	150	35	2.435e+04	1.804e+04	0.74		1.00	4.26	28.00	34.00	41.75	1
11	UO	150	19	7.499e+04	6.868e+04	0.92	0.44	1.00	7.89	9.00	10.00	13.87	1
12	I	9	11	6.868e+04	6.702e+04	0.98		1.00	0.86	28.00	34.00	38.32	1
13	I	262	11	6.702e+04	2.113e+04	0.32		1.00	23.82	28.00	34.00	49.84	1
14	I	10	11	2.113e+04	1.946e+04	0.92		1.00	0.86	28.00	34.00	39.07	1
15	I	51	16	1.007e+04	7.937e+03	0.79		1.00	3.13	28.00	34.00	41.01	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2.9616e-02	m^2
$N_{c,Rd}$	6959.73	kN
Eenheidscontrole	0.13	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3.2645e-03	m^3
$M_{pl,y,Rd}$	767.16	kNm
Eenheidscontrole	0.03	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	2.5730e-03	m^3
$M_{pl,z,Rd}$	604.65	kNm
Eenheidscontrole	0.13	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.1391e-03	m^2
$V_{pl,y,Rd}$	697.25	kN
Eenheidscontrole	0.09	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.9650e-02	m^2
$V_{pl,z,Rd}$	2666.12	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	48	
τ_{Ed}	11.9	MPa
τ_{Rd}	135.7	MPa

Eenheidscontrole	0.09	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1(5) en formule (6.1)

Elastische toetsing		
Vezel	33	
$\sigma_{N,Ed}$	29.9	MPa
$\sigma_{My,Ed}$	6.6	MPa
$\sigma_{Mz,Ed}$	39.7	MPa
$\sigma_{tot,Ed}$	76.2	MPa
$\tau_{Vy,Ed}$	0.0	MPa
$\tau_{Vz,Ed}$	0.0	MPa
$\tau_{t,Ed}$	6.4	MPa
$\tau_{tot,Ed}$	6.4	MPa
$\sigma_{von\ Mises,Ed}$	77.1	MPa
Eenheidscontrole	0.33	-

Opmerking: Voor deze doorsnede is in artikel 6.2.7(9) geen formule gegeven voor de plastische dwarskrachtweerstand gereduceerd met torsie. Daarom wordt het criterium elastisch vloeien volgens EN 1993-1-1 artikel 6.2.1(5) getoetst.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2.757 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	85	24	4.497e+04	2.903e+04	0.65	0.46	1.00	3.50	9.00	10.00	14.30	1
2	UO	85	24	3.142e+04	1.548e+04	0.49	0.48	1.00	3.50	9.00	10.00	14.60	1
3	UO	85	24	-4.608e+02	1.548e+04	-0.03	1.86	0.97	3.50	9.40	10.45	28.67	1
4	UO	85	24	1.309e+04	2.903e+04	0.45	0.73	1.00	3.50	9.00	10.00	17.95	1
5	I	12	16	2.903e+04	2.864e+04	0.99		1.00	0.75	28.00	34.00	38.18	1
6	I	51	16	2.864e+04	2.703e+04	0.94		1.00	3.13	28.00	34.00	38.76	1
7	I	12	16	1.587e+04	1.548e+04	0.98		1.00	0.75	28.00	34.00	38.32	1
8	UO	150	19	7.348e+04	7.826e+04	0.94	0.45	1.00	7.89	9.00	10.00	14.12	1
9	I	150	35	2.404e+04	1.926e+04	0.80		1.00	4.26	28.00	34.00	40.81	1
10	I	150	35	2.881e+04	2.404e+04	0.83		1.00	4.26	28.00	34.00	40.32	1
11	UO	150	19	8.303e+04	7.826e+04	0.94	0.43	1.00	7.89	9.00	10.00	13.84	1
12	I	9	11	7.826e+04	7.648e+04	0.98		1.00	0.86	28.00	34.00	38.30	1
13	I	262	11	7.648e+04	2.734e+04	0.36		1.00	23.82	28.00	34.00	48.90	1
14	I	10	11	2.734e+04	2.556e+04	0.93		1.00	0.86	28.00	34.00	38.88	1
15	I	51	16	1.748e+04	1.587e+04	0.91		1.00	3.13	28.00	34.00	39.26	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings flexibel	
Systeemlengte L	2.757	1.895	m
Knikfactor k	0.95	9.66	
Kniklengte L_{cr}	2.631	18.311	m
Kritische Euler last N_{cr}	162720.18	2807.04	kN
Slankheid λ	19.42	147.88	
Relatieve slankheid λ_{rel}	0.21	1.57	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	1.00	0.29	
Knikweerstand $N_{b,Rd}$	6935.55	2029.01	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Knikweerstand $N_{b,Rd}$	2029.01	kN
Eenheidscontrole	0.44	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	1.895	m
Elastische kritische last $N_{cr,T}$	82933.03	kN
Elastische kritische last $N_{cr,TF}$	2807.04	kN
Relatieve slankheid $\lambda_{rel,T}$	1.57	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.29	
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Knikweerstand $N_{b,Rd}$	2029.01	kN
Eenheidscontrole	0.44	-

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3.2645e-03	m^3
Elastisch kritisch moment M_{cr}	28877.31	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.16	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.04	
Kip moment factor C_2	0.13	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2.9616e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	3.2645e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	2.5730e-03	m^3
Ontwerpdrukkracht N_{Ed}	886.99	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	-32.60	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	78.99	kNm
Karakteristieke drukweerstand N_{Rk}	6959.73	kN
Karakteristieke momentweerstand $M_{y,Rk}$	767.16	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	604.65	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	0.29	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.78	
Interactiefactor k_{yz}	0.87	
Interactiefactor k_{zy}	0.94	
Interactiefactor k_{zz}	1.45	

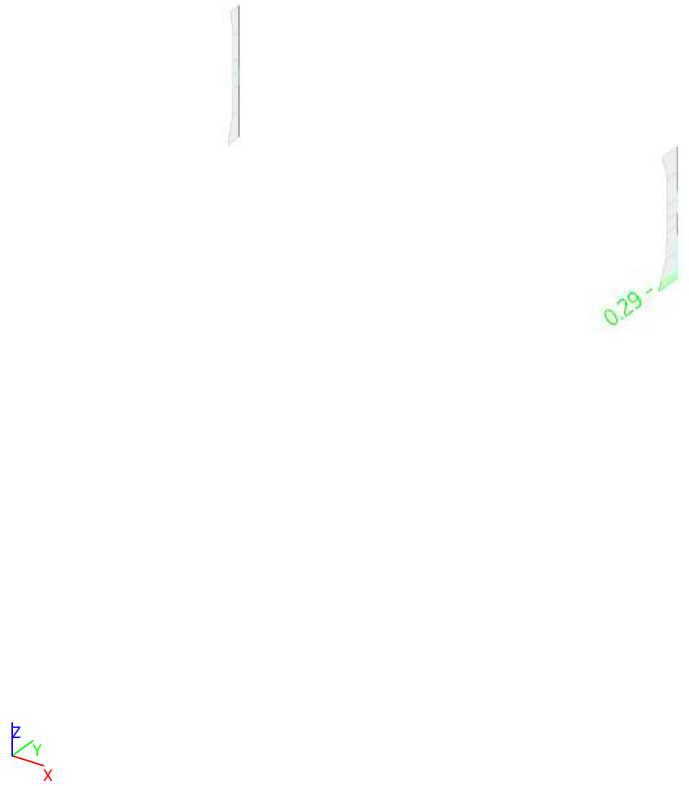
Maximum moment $M_{y,Ed}$ is afgeleid van balk S285 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S285 positie 1.499 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	puntlast F	
Uiteinde moment $M_{h,y}$	-32.60	kNm
Veldmoment $M_{s,y}$	-23.70	kNm
Factor $\alpha_{s,y}$	0.73	
Ratio van uiteinde momenten ψ_y	0.55	
Equivalente moment factor C_{my}	0.78	
Zijdelings flexibel type z	Zijdelings flexibel	
Equivalente moment factor C_{mz}	0.90	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-23.75	kNm
Veldmoment $M_{s,LT}$	-32.60	kNm
Factor $\alpha_{h,LT}$	0.73	
Ratio van uiteinde momenten ψ_{LT}	0.93	
Equivalente moment factor C_{mLT}	0.99	

Eenheidscontrole (6.61) = 0.13 + 0.03 + 0.11 = 0.27 -
Eenheidscontrole (6.62) = 0.44 + 0.04 + 0.19 = 0.67 -

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole kolom DIE36; UGT, grafisch overzicht



9.6. Staalcontrole kolom DIE36; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S329, S330

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S330	0.000 / 4.651 m	HEA360	S 235	UGT	0.29 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-17.64	kN
$V_{y,Ed}$	22.29	kN
$V_{z,Ed}$	-1.32	kN
T_{Ed}	-0.14	kNm
$M_{y,Ed}$	6.13	kNm
$M_{z,Ed}$	-53.95	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	2.005e+04	1.008e+05	0.20	0.53	1.00	6.74	9.00	10.00	15.30	1
3	SO	118	18	-2.373e+04	-1.045e+05								
4	I	261	10	-1.182e+03	3.652e+03	-0.32		0.51	26.10	68.89	79.70	70.28	1
5	SO	118	18	-1.758e+04	-9.829e+04								
7	SO	118	18	2.620e+04	1.069e+05	0.25	0.52	1.00	6.74	9.00	10.00	15.18	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4300e-02	m^2
$N_{c,Rd}$	3360.50	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.0875e-03	m^3
$M_{pl,y,Rd}$	490.56	kNm
Eenheidscontrole	0.01	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	8.0417e-04	m^3
$M_{pl,z,Rd}$	188.98	kNm
Eenheidscontrole	0.29	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0870e-02	m^2
$V_{pl,y,Rd}$	1474.81	kN
Eenheidscontrole	0.02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.9200e-03	m^2
$V_{pl,z,Rd}$	667.53	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	1.6	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.01	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	490.56	kNm
α	2.00	
$M_{pl,z,Rd}$	188.98	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.29 = 0.29 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	18	2.005e+04	1.008e+05	0.20	0.53	1.00	6.74	9.00	10.00	15.30	1
3	SO	118	18	-2.373e+04	-1.045e+05								
4	I	261	10	-1.182e+03	3.652e+03	-0.32		0.51	26.10	68.89	79.70	70.28	1
5	SO	118	18	-1.758e+04	-9.829e+04								
7	SO	118	18	2.620e+04	1.069e+05	0.25	0.52	1.00	6.74	9.00	10.00	15.18	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	4.63	0.75	
Kniklengte L_{cr}	21.537	3.496	m
Kritische Euler last N_{cr}	1479.08	13376.43	kN
Slankheid λ	141.56	47.07	
Relatieve slankheid λ_{rel}	1.51	0.50	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Elastisch kritisch moment M_{cr}	2761.50	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.42	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Vorklengte L_g	4.651	m
Invloed van lastpositie	geen invloed	
Factor α	943.75	
Reductie factor k_{red}	1.00	
Coëfficiënt C	9.10	
Factor S	1949	mm
Kip moment factor C_1	1.75	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4300e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.0875e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	8.0417e-04	m^3
Ontwerpdrukkracht N_{Ed}	17.64	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	6.13	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-53.95	kNm
Karakteristieke drukweerstand N_{Rk}	3360.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	490.56	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	188.98	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.24	
Interactiefactor k_{zy}	0.54	
Interactiefactor k_{zz}	0.40	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S330 positie 0.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S330 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-53.95	kNm
Veldmoment $M_{s,z}$	-3.77	kNm
Factor $\alpha_{s,z}$	0.07	
Ratio van uiteinde momenten ψ_z	-0.80	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lineair moment M	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.60	

Eenheidscontrole (6.61) = 0.01 + 0.01 + 0.07 = 0.09 -
Eenheidscontrole (6.62) = 0.01 + 0.01 + 0.11 = 0.13 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

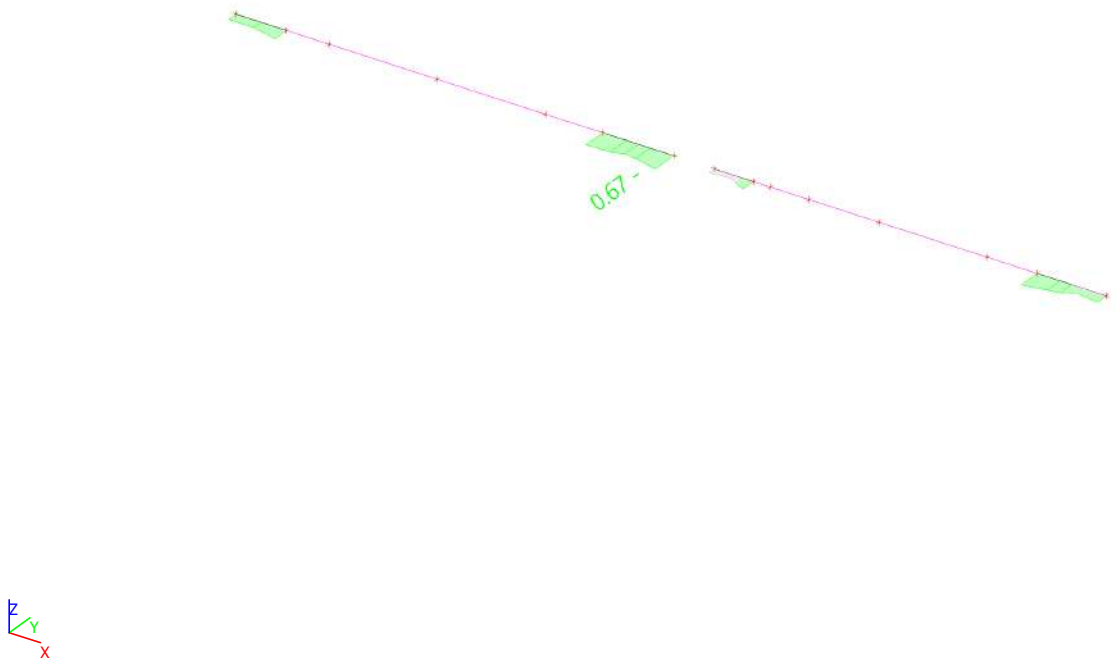
Plooiparameters		
Knik veldlengte a	4.651	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	315	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.50
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole ligger DIE34; UGT, grafisch overzicht



9.8. Staalcontrole ligger DIE34; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S33, S40, S404, S406

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S404	2,625 / 2,625 m	HE340A	S 235	UGT	0,67 -

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG3 + 1,15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,625 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-97,17	kN
$V_{y,Ed}$	-26,22	kN
$V_{z,Ed}$	-28,72	kN
T_{Ed}	-0,02	kNm
$M_{y,Ed}$	-10,10	kNm
$M_{z,Ed}$	-73,78	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	4,450e+04	1,618e+05	0,27	0,52	1,00	7,17	9,00	10,00	15,11	1
3	SO	118	17	-1,851e+04	-1,358e+05								
4	I	243	10	1,171e+04	2,850e+03	0,24		1,00	25,58	28,00	34,00	51,53	1
5	SO	118	17	-2,994e+04	-1,473e+05								
7	SO	118	17	3,307e+04	1,504e+05	0,22	0,53	1,00	7,17	9,00	10,00	15,25	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1,3350e-02	m^2
$N_{c,Rd}$	3137,25	kN
Eenheidscontrole	0,03	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1,8500e-03	m^3
$M_{pl,y,Rd}$	434,75	kNm
Eenheidscontrole	0,02	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7,5590e-04	m^3
$M_{pl,z,Rd}$	177,64	kNm
Eenheidscontrole	0,42	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,0247e-02	m^2
$V_{pl,y,Rd}$	1390,25	kN
Eenheidscontrole	0,02	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,4978e-03	m^2
$V_{pl,z,Rd}$	610,24	kN
Eenheidscontrole	0,05	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,2	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	434,75	kNm
α	2,00	
$M_{pl,z,Rd}$	177,64	kNm
β	1,00	

Eenheidscontrole (6.41) = 0,00 + 0,42 = 0,42 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,625 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	4,450e+04	1,618e+05	0,27	0,52	1,00	7,17	9,00	10,00	15,11	1
3	SO	118	17	-1,851e+04	-1,358e+05								
4	I	243	10	1,171e+04	2,850e+03	0,24		1,00	25,58	28,00	34,00	51,53	1
5	SO	118	17	-2,994e+04	-1,473e+05								
7	SO	118	17	3,307e+04	1,504e+05	0,22	0,53	1,00	7,17	9,00	10,00	15,25	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	2186,81	587,26	kN
Slankheid λ	112,48	217,06	
Relatieve slankheid λ_{rel}	1,20	2,31	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	
Knikcurve	b	c	
Imperfectie α	0,34	0,49	
Reductie factor χ	0,48	0,15	
Knikweerstand $N_{b,Rd}$	1503,83	478,04	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1,3350e-02	m^2
Knikweerstand $N_{b,Rd}$	478,04	kN
Eenheidscontrole	0,20	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Elastisch kritisch moment M_{cr}	297,43	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1,21	
Limietslankheid $\lambda_{rel,LT,0}$	0,40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	16,200	m
Vorklengte L_g	16,200	m
Invloed van lastpositie	geen invloed	
Factor α	575,00	
Reductie factor k_{red}	1,00	

Mcr parameters		
Coëfficiënt C	3,80	
Factor S	1931	mm
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1,3350e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1,8500e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7,5590e-04	m^3
Ontwerpdrukkracht N_{Ed}	97,17	kN
Ontwerp buigende momenten $M_{y,Ed}$	-10,10	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-73,78	kNm
Karakteristieke drukweerstand N_{Rk}	3137,25	kN
Karakteristieke momentweerstand $M_{y,Rk}$	434,75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	177,64	kNm
Reductie factor χ_y	0,48	
Reductie factor χ_z	0,15	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1,00	
Interactiefactor k_{yy}	1,00	
Interactiefactor k_{yz}	0,65	
Interactiefactor k_{zy}	0,60	
Interactiefactor k_{zz}	1,08	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-10,10	kNm
Veldmoment $M_{s,y}$	157,94	kNm
Factor $\alpha_{h,y}$	-0,06	
Ratio van uiteinde momenten ψ_y	0,05	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-73,78	kNm
Veldmoment $M_{s,z}$	68,67	kNm
Factor $\alpha_{s,z}$	-0,93	
Ratio van uiteinde momenten ψ_z	0,36	
Equivalente moment factor C_{mz}	0,84	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-10,10	kNm
Veldmoment $M_{s,LT}$	157,94	kNm
Factor $\alpha_{h,LT}$	-0,06	
Ratio van uiteinde momenten ψ_{LT}	0,05	
Equivalente moment factor C_{mLT}	0,95	

Eenheidscontrole (6.61) = 0,06 + 0,02 + 0,27 = 0,36 -
Eenheidscontrole (6.62) = 0,20 + 0,01 + 0,45 = 0,67 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

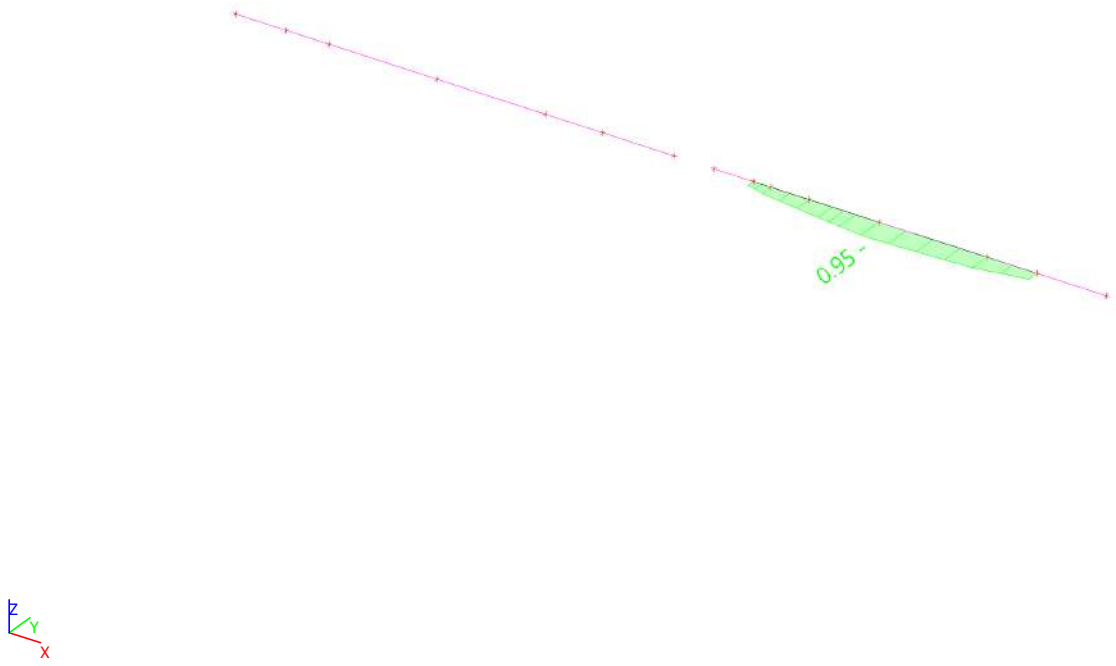
Plooiparameters		
Knik veldlengte a	2,625	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	1,00	
Correctiefactor voor dwarskracht η	1,20	

Plooiverificatie	
Lijf slankheid h_w/t	31,26
Lijfslankheid limiet	60,00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.9. Staalcontrole ligger DIE34+strippen; UGT, grafisch overzicht



9.10. Staalcontrole ligger DIE34+strippen; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S405, S407

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S405	**2,582 / 8,440 m**	**I + 2 PLud (HEA340; 320; 320; 12; 12)**	**S 235**	**UGT**	**0,95 -**

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 2,582 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	33,37	kN
$V_{y,Ed}$	-0,62	kN
$V_{z,Ed}$	-10,26	kN
T_{Ed}	0,00	kNm
$M_{y,Ed}$	315,14	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	35,38	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-6,779e+04	-1,057e+05								
2	I	150	29	1,404e+05	1,025e+05	0,73		1,00	5,26	28,00	34,00	41,93	1
3	I	150	29	6,455e+04	1,025e+05	0,63		1,00	5,26	28,00	34,00	43,60	1
4	I	150	29	-1,437e+05	-1,057e+05								
5	I	8	10	-1,019e+05	-9,662e+04								
6	I	297	10	-9,662e+04	9,337e+04	-1,03		0,49	31,26	73,25	84,44	128,33	1
7	I	8	10	9,337e+04	9,865e+04	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,482e+05	1,457e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,054e+04	-7,307e+04								
10	UO	10	12	-1,490e+05	-1,515e+05								
13	UO	10	12	6,982e+04	6,729e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	2,1039e-02	m^2
$N_{pl,Rd}$	4944,14	kN
$N_{u,Rd}$	5453,28	kN
$N_{t,Rd}$	4944,14	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	3,1654e-03	m^3
$M_{pl,y,Rd}$	743,86	kNm
Eenheidscontrole	0,42	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	1,3705e-03	m^3
$M_{pl,z,Rd}$	322,07	kNm
Eenheidscontrole	0,11	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6468e-02	m^2
$V_{pl,y,Rd}$	2234,36	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	3,6506e-03	m^2
$V_{pl,z,Rd}$	495,31	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0,0	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1 en formule (6.2)

$N_{pl,Rd}$	4944,14	kN
$M_{pl,y,Rd}$	743,86	kNm
$M_{pl,z,Rd}$	322,07	kNm

Eenheidscontrole (6.2) = 0,01 + 0,42 + 0,11 = 0,54 -

Opmerking: Er is geen specifieke interactieformule volgens EN 1993-1-1 artikel 6.2.9.1 van toepassing.
Daarom wordt de plastisch lineaire som volgens EN 1993-1-1 artikel 6.2.1(7) getoetst.
Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 2,582 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	I	150	29	-6,779e+04	-1,057e+05								
2	I	150	29	1,404e+05	1,025e+05	0,73		1,00	5,26	28,00	34,00	41,93	1
3	I	150	29	6,455e+04	1,025e+05	0,63		1,00	5,26	28,00	34,00	43,60	1
4	I	150	29	-1,437e+05	-1,057e+05								
5	I	8	10	-1,019e+05	-9,662e+04								
6	I	297	10	-9,662e+04	9,337e+04	-1,03		0,49	31,26	73,25	84,44	128,33	1
7	I	8	10	9,337e+04	9,865e+04	0,95		1,00	0,87	28,00	34,00	38,72	1
8	UO	10	12	1,482e+05	1,457e+05	0,98	0,43	1,00	0,83	9,00	10,00	13,79	1
9	UO	10	12	-7,054e+04	-7,307e+04								
10	UO	10	12	-1,490e+05	-1,515e+05								
13	UO	10	12	6,982e+04	6,729e+04	0,96	0,44	1,00	0,83	9,00	10,00	13,98	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	3,1654e-03	m^3
Elastisch kritisch moment M_{cr}	856,97	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,93	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,50	
Rekenwaarde knikweerstand $M_{b,Rd}$	374,31	kNm
Eenheidscontrole	0,84	-

Mcr parameters		
LTB lengte L	14,500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

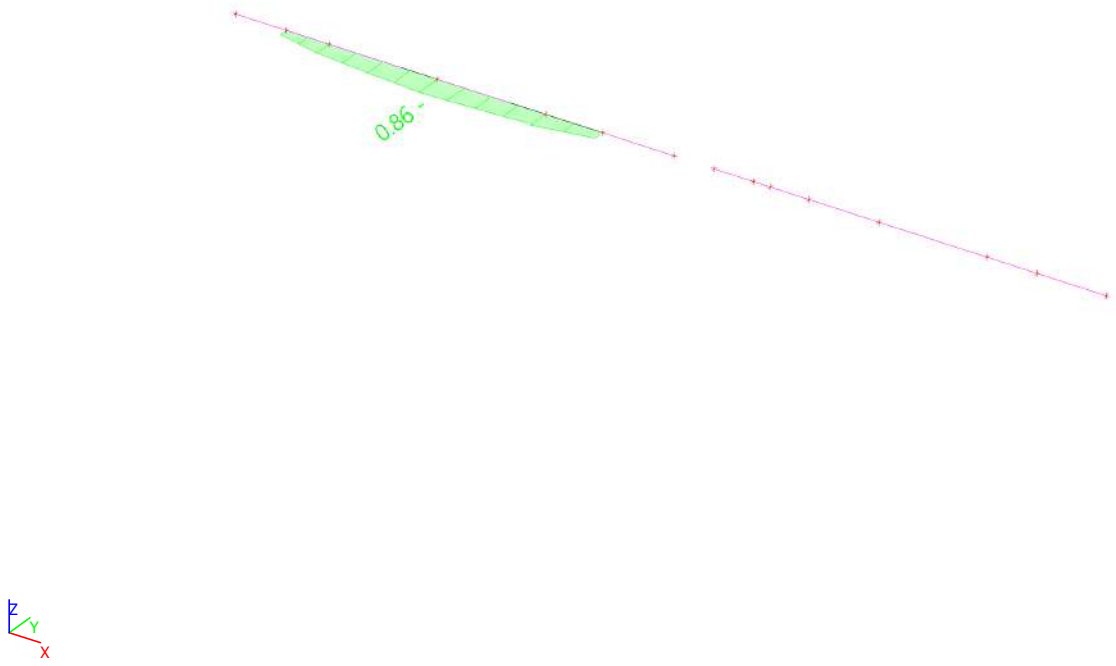
Buig- en axiale trekcontrole
Volgens EN 1993-1-3 artikel 6.3

Ontwerptrekkracht N_{Ed}	33,37	kN
Ontwerp buigende momenten $M_{y,Ed}$	315,14	kNm
Ontwerp buigende momenten $M_{z,Ed}$	35,38	kNm
Trekweerstand $N_{t,Rd}$	4944,14	kN
Buigweerstand $M_{b,y,Rd}$	374,31	kNm
Buigweerstand $M_{c,z,Rd,com}$	322,07	kNm

Eenheidscontrole = 0,84 + 0,11 - 0,01 = 0,95 -

De staaf voldoet aan de stabiliteitscontrole.

9.11. Staalcontrole ligger DIE34+UNP's; UGT, grafisch overzicht



9.12. Staalcontrole ligger DIE34+UNP's; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S403

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S403	5,579 / 11,700 m	Grafische doorsnede	S 235	UGT	0,86 -

Combinatiesleutel
UGT / 1,15*BG1 + 1,40*BG4 + 1,15*BG2 + LC1022

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1,00
γ_{M1} voor weerstand tegen instabiliteit	1,00
γ_{M2} voor weerstand van netto-doorsneden	1,25

Materiaal		
Vloeisterkte f_y	235,0	MPa
Uiterste sterkte f_u	360,0	MPa
Bouwwijze	Algemeen	

Waarschuwing: Sterktereductie gerelateerd aan de dikte wordt niet ondersteund voor dit type doorsnede.

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 5,579 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-56,29	kN
$V_{y,Ed}$	-2,69	kN
$V_{z,Ed}$	-12,40	kN

Interne krachten	Berekende	Eenheid
T_{Ed}	-0,04	kNm
$M_{y,Ed}$	257,30	kNm
$M_{z,Ed}$	64,69	kNm

Classificatie voor doorsnede-ontwerp
Waarschuwing: Classificatie wordt niet ondersteund voor dit type doorsnede.
De doorsnede wordt gecontroleerd als elastisch, klasse 3.

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	2,5114e-02	m^2
$N_{c,Rd}$	5901,89	kN
Eenheidscontrole	0,01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,y,min}$	2,7183e-03	m^3
$M_{el,y,Rd}$	638,80	kNm
Eenheidscontrole	0,40	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.14)

$W_{el,z,min}$	1,5664e-03	m^3
$M_{el,z,Rd}$	368,11	kNm
Eenheidscontrole	0,18	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	1,6554e-02	m^2
$V_{pl,y,Rd}$	2246,03	kN
Eenheidscontrole	0,00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1,20	
A_v	4,3472e-03	m^2
$V_{pl,z,Rd}$	589,81	kN
Eenheidscontrole	0,02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	38	
τ_{Ed}	0,2	MPa
τ_{Rd}	135,7	MPa
Eenheidscontrole	0,00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0,05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.2 en formule (6.42)

Normaalspanningen		
Vezel	31	
$\sigma_{N,Ed}$	2,2	MPa
$\sigma_{My,Ed}$	94,7	MPa
$\sigma_{Mz,Ed}$	41,3	MPa
$\sigma_{tot,Ed}$	138,2	MPa
Eenheidscontrole	0,59	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	16,200	16,200	m
Knikfactor k	1,00	1,00	
Kniklengte L_{cr}	16,200	16,200	m
Kritische Euler last N_{cr}	5688,94	1855,63	kN
Slankheid λ	95,65	167,48	
Relatieve slankheid λ_{rel}	1,02	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	0,20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	16,200	m
Elastische kritische last $N_{cr,T}$	11328,76	kN
Elastische kritische last $N_{cr,TF}$	1855,63	kN
Relatieve slankheid $\lambda_{rel,T}$	1,78	
Limietslankheid $\lambda_{rel,0}$	0,20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastisch kritisch moment M_{cr}	1007,79	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0,80	
Limietslankheid $\lambda_{rel,LT,0}$	0,20	
Kipcurve	d	
Imperfectie α_{LT}	0,76	
Reductie factor χ_{LT}	0,58	
Rekenwaarde knikweerstand $M_{b,Rd}$	371,83	kNm
Eenheidscontrole	0,69	-

Mcr parameters		
LTB lengte L	16,200	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1,00	
Correctiefactor k_w	1,00	
Kip moment factor C_1	1,13	
Kip moment factor C_2	0,45	
Kip moment factor C_3	0,53	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	2,5114e-02	m^2
Elastische doorsnedemodulus $W_{el,y}$	2,7183e-03	m^3
Elastische doorsnedemodulus $W_{el,z}$	1,5664e-03	m^3
Ontwerpdrukkracht N_{Ed}	56,29	kN
Ontwerp buigende momenten $M_{y,Ed}$	257,30	kNm
Ontwerp buigende momenten $M_{z,Ed}$	64,69	kNm
Karakteristieke drukweerstand N_{Rk}	5901,89	kN
Karakteristieke momentweerstand $M_{y,Rk}$	638,80	kNm

Buig- en axiale drukcontrole paramaters		
Karakteristieke momentweerstand $M_{z,Rk}$	368,11	kNm
Reductie factor χ_y	1,00	
Reductie factor χ_z	1,00	
Reductie factor χ_{LT}	0,58	
Interactiefactor k_{yy}	0,95	
Interactiefactor k_{yz}	0,91	
Interactiefactor k_{zy}	1,00	
Interactiefactor k_{zz}	0,91	

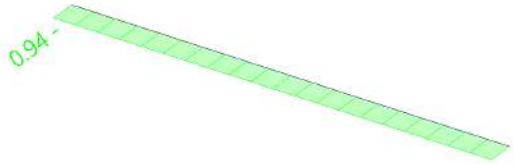
Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	-21,89	kNm
Veldmoment $M_{s,y}$	257,30	kNm
Factor $\alpha_{h,y}$	-0,09	
Ratio van uiteinde momenten ψ_y	0,03	
Equivalente moment factor C_{my}	0,95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-63,86	kNm
Veldmoment $M_{s,z}$	64,69	kNm
Factor $\alpha_{h,z}$	-0,99	
Ratio van uiteinde momenten ψ_z	0,51	
Equivalente moment factor C_{mz}	0,90	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-21,89	kNm
Veldmoment $M_{s,LT}$	257,30	kNm
Factor $\alpha_{h,LT}$	-0,09	
Ratio van uiteinde momenten ψ_{LT}	0,03	
Equivalente moment factor C_{mLT}	0,90	

Eenheidscontrole (6.61) = 0,01 + 0,66 + 0,16 = 0,83 -
Eenheidscontrole (6.62) = 0,01 + 0,69 + 0,16 = 0,86 -

De staaf voldoet aan de stabiliteitscontrole.

9.13. Staalcontrole ligger DIN28; UGT, grafisch overzicht





9.14. Staalcontrole ligger DIN28; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S331

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S331	0.000 / 16.200 m	HEB280	S 235	UGT	0.94 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1065

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-12.08	kN
$V_{y,Ed}$	9.01	kN
$V_{z,Ed}$	4.31	kN
T_{Ed}	-0.01	kNm
$M_{y,Ed}$	0.04	kNm
$M_{z,Ed}$	-20.47	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	9.970e+03	4.434e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1
3	SO	111	18	-8.185e+03	-4.256e+04								
4	I	196	11	8.994e+02	9.393e+02	0.96		1.00	18.67	28.00	34.00	38.57	1
5	SO	111	18	-8.132e+03	-4.250e+04								
7	SO	111	18	1.002e+04	4.440e+04	0.23	0.53	1.00	6.15	9.00	10.00	15.23	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3140e-02	m^2
$N_{c,Rd}$	3087.90	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.5340e-03	m^3
$M_{pl,y,Rd}$	360.49	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.1760e-04	m^3
$M_{pl,z,Rd}$	168.64	kNm
Eenheidscontrole	0.12	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0442e-02	m^2
$V_{pl,y,Rd}$	1416.78	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.1130e-03	m^2
$V_{pl,z,Rd}$	558.04	kN
Eenheidscontrole	0.01	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.1	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	360.49	kNm
α	2.00	
$M_{pl,z,Rd}$	168.64	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.12 = 0.12 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 16.200 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	111	18	1.297e+04	5.865e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1
3	SO	111	18	-1.115e+04	-5.682e+04								
4	I	196	11	9.140e+02	9.246e+02	0.99		1.00	18.67	28.00	34.00	38.15	1
5	SO	111	18	-1.114e+04	-5.681e+04								
7	SO	111	18	1.299e+04	5.866e+04	0.22	0.53	1.00	6.15	9.00	10.00	15.24	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	16.200	16.200	m
Knikfactor k	10.00	0.62	
Kniklengte L_{cr}	162.000	10.081	m
Kritische Euler last N_{cr}	15.22	1344.93	kN
Slankheid λ	1337.74	142.30	
Relatieve slankheid λ_{rel}	14.24	1.52	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	b	c	
Imperfectie α	0.34	0.49	
Reductie factor χ	0.00	0.31	
Knikweerstand $N_{b,Rd}$	14.87	956.16	kN

Waarschuwing: Slankheid 1337.74 is groter dan de limietwaarde van 1000.00.

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Knikweerstand $N_{b,Rd}$	14.87	kN
Eenheidscontrole	0.81	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Elastisch kritisch moment M_{cr}	288.20	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.12	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	16.200	m
Vorklengte L_g	16.200	m
Invloed van lastpositie	geen invloed	

Mcr parameters		
Factor α	575.00	
Reductie factor k_{red}	1.00	
Coëfficiënt C	3.68	
Factor S	1430	mm
Kip moment factor C_1	1.13	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3140e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.5340e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.1760e-04	m^3
Ontwerpdrukkracht N_{Ed}	12.08	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	17.48	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-27.20	kNm
Karakteristieke drukweerstand N_{Rk}	3087.90	kN
Karakteristieke momentweerstand $M_{y,Rk}$	360.49	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	168.64	kNm
Reductie factor χ_y	0.00	
Reductie factor χ_z	0.31	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.48	
Interactiefactor k_{yz}	0.32	
Interactiefactor k_{zy}	0.89	
Interactiefactor k_{zz}	0.53	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S331 positie 8.100 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S331 positie 16.200 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-27.20	kNm
Veldmoment $M_{s,z}$	14.34	kNm
Factor $\alpha_{s,z}$	-0.53	
Ratio van uiteinde momenten ψ_z	0.75	
Equivalente moment factor C_{mz}	0.52	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	0.04	kNm
Veldmoment $M_{s,LT}$	17.48	kNm
Factor $\alpha_{h,LT}$	0.00	
Ratio van uiteinde momenten ψ_{LT}	0.27	
Equivalente moment factor C_{mLT}	0.95	

Eenheidscontrole (6.61) = 0.81 + 0.07 + 0.05 = 0.94 -
Eenheidscontrole (6.62) = 0.01 + 0.04 + 0.09 = 0.14 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

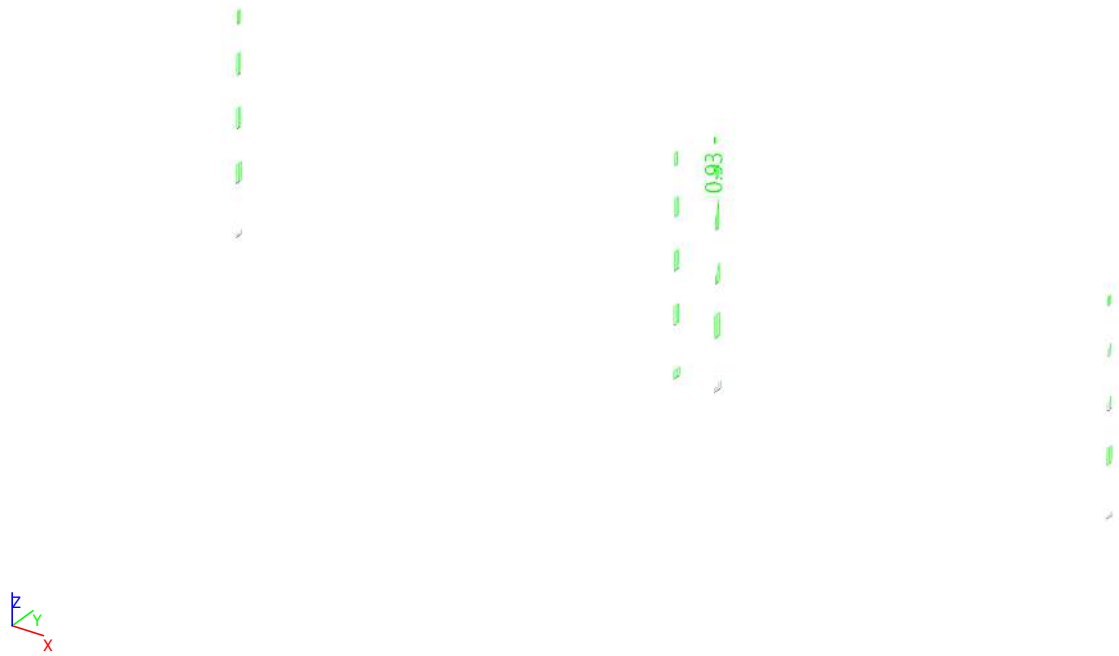
Plooiparameters		
Knik veldlengte a	16.200	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	244	mm
Lijfdikte t	11	mm
Materiaal coefficiënt ε	1.00	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	23.24
Lijfslankheid limiet	60.00

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.15. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.16. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S351, S353, S355, S358, S360, S361, S364, S366, S368, S370, S384, S386, S388, S390, S392, S394, S396, S398, S400, S402

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S386	0.187 / 0.187 m	Rechthoek (200; 28)	S 235	UGT	0.93 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1054

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.187 m

Interne krachten	Berekende	Eenheid
N_{Ed}	4.20	kN
$V_{y,Ed}$	8.08	kN
$V_{z,Ed}$	-188.01	kN
T_{Ed}	0.53	kNm
$M_{y,Ed}$	-26.79	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	1.95	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.428e+05	-1.443e+05	-1.01	23.80	0.50	7.14	25.66	28.51	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	5.6000e-03	m²
$N_{pl,Rd}$	1316.00	kN
$N_{u,Rd}$	1451.52	kN
$N_{t,Rd}$	1316.00	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m³
$M_{pl,y,Rd}$	65.80	kNm
Eenheidscontrole	0.41	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m³
$M_{pl,z,Rd}$	9.21	kNm
Eenheidscontrole	0.21	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,y,Rd}$	759.79	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m²
$V_{pl,z,Rd}$	759.79	kN
Eenheidscontrole	0.25	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	11.2	MPa
τ_{Rd}	135.7	MPa
Eenheidscontrole	0.08	-

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.1(5) en formule (6.1)

Elastische toetsing		
Vezel	5	
$\sigma_{N,Ed}$	-0.7	MPa
$\sigma_{My,Ed}$	-143.5	MPa
$\sigma_{Mz,Ed}$	-74.4	MPa
$\sigma_{tot,Ed}$	-218.7	MPa
$\tau_{Vy,Ed}$	0.0	MPa
$\tau_{Vz,Ed}$	0.0	MPa
$\tau_{t,Ed}$	0.0	MPa
$\tau_{tot,Ed}$	0.0	MPa

Elastische toetsing		
$\sigma_{von\ Mises,Ed}$	218.7	MPa
Eenheidscontrole	0.93	-

Opmerking: Voor deze doorsnede is in artikel 6.2.7(9) geen formule gegeven voor de plastische dwarskrachtweerstand gereduceerd met torsie. Daarom wordt het criterium elastisch vloeien volgens EN 1993-1-1 artikel 6.2.1(5) getoetst.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.187 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	1.428e+05	-1.443e+05	-1.01	23.80	0.50	7.14	25.66	28.51	102.45	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	2112.72	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.18	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

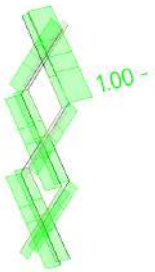
Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.357	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.45	
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

De staaf voldoet aan de stabiliteitscontrole.

9.17. Staalcontrole diagonaal; UGT, grafisch overzicht





9.18. Staalcontrole diagonaal; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S235, S267..S271, S274, S277..S281

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S281	0.000 / 3.142 m	UPE140	S 235	UGT	1.00 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG4 + 1.15*BG2 + LC1002

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-220.68	kN
$V_{y,Ed}$	0.00	kN
$V_{z,Ed}$	0.00	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.00	kNm
$M_{z,Ed}$	0.00	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	1.198e+05	1.198e+05	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	1.198e+05	1.198e+05	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	1.198e+05	1.198e+05	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.8400e-03	m²
$N_{c,Rd}$	432.40	kN
Eenheidscontrole	0.51	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	48	9	1.198e+05	1.198e+05	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1
3	I	98	5	1.198e+05	1.198e+05	1.00		1.00	19.60	28.00	34.00	38.00	1
5	UO	48	9	1.198e+05	1.198e+05	1.00	0.43	1.00	5.33	9.00	10.00	14.00	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	3.142	3.142	m
Knikfactor k	0.65	0.65	
Kniklengte L_{cr}	2.042	2.042	m
Kritische Euler last N_{cr}	2977.28	391.17	kN
Slankheid λ	35.79	98.74	
Relatieve slankheid λ_{rel}	0.38	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	c	c	
Imperfectie α	0.49	0.49	
Reductie factor χ	0.91	0.51	
Knikweerstand $N_{b,Rd}$	392.31	220.83	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.8400e-03	m²
Knikweerstand $N_{b,Rd}$	220.83	kN
Eenheidscontrole	1.00	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	3.142	m
Elastische kritische last $N_{cr,T}$	649.52	kN
Elastische kritische last $N_{cr,TF}$	391.17	kN
Relatieve slankheid $\lambda_{rel,T}$	1.05	
Limietslankheid $\lambda_{rel,0}$	0.20	
Knikcurve	c	
Imperfectie α	0.49	
Reductie factor χ	0.51	
Oppervlakte van de doorsnede A	1.8400e-03	m²

Knikweerstand $N_{b,Rd}$	220.83	kN
Eenheidscontrole	1.00	-

De staaf voldoet aan de stabiliteitscontrole.

9.19. Staalcontrole bliksempiek; UGT, grafisch overzicht





9.20. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S332

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S332	0.000 / 4.651 m	Koker fl (374; 7; 126; 10; 354)	S 235	UGT	0.53 -

Combinatiesleutel
UGT / 1.15*BG1 + 1.40*BG3 + 1.15*BG2 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	235.0	MPa
Uiterste sterkte f_u	360.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-2.28	kN
$V_{y,Ed}$	1.01	kN
$V_{z,Ed}$	9.79	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	-39.80	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	-4.71	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	-1.033e+05	-1.031e+05								
2	I	126	10	-8.649e+04	9.856e+04	-0.88		0.53	12.60	65.30	75.87	109.03	1
3	I	126	10	-9.798e+04	8.707e+04	-1.13		0.47	12.60	76.51	88.20	139.80	1
4	UO	5	7	9.205e+04	9.221e+04	1.00	0.43	1.00	0.71	9.00	10.00	13.80	1
5	UO	5	7	-9.163e+04	-9.147e+04								
6	I	4	10	-8.649e+04	-9.163e+04								
7	UO	5	7	1.037e+05	1.039e+05	1.00	0.43	1.00	0.71	9.00	10.00	13.77	1
8	I	4	10	9.856e+04	1.037e+05	0.95		1.00	0.35	28.00	34.00	38.67	1
9	I	364	7	-1.031e+05	-9.163e+04								
10	I	4	10	-9.798e+04	-1.031e+05								
11	I	364	7	9.221e+04	1.037e+05	0.89		1.00	52.00	28.00	34.00	39.52	4
12	I	4	10	8.707e+04	9.221e+04	0.94		1.00	0.35	28.00	34.00	38.75	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
2	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	2.350e+05	2.350e+05	1.00	4.00	0.22	1.00	126	63	63
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
6	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
10	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.350e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.350e+05	-2.350e+05							
2	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
3	I	126	2.226e+05	-2.226e+05	-1.00	23.90	0.09	1.00	63	25	38
4	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
5	UO	5	-2.350e+05	-2.350e+05							
6	I	4	-2.226e+05	-2.350e+05							
7	UO	5	2.350e+05	2.350e+05	1.00	0.43	0.04	1.00	5		
8	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2
9	I	364	-2.350e+05	-2.350e+05							
10	I	4	-2.226e+05	-2.350e+05							

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	2.350e+05	2.350e+05	1.00	4.00	0.92	0.83	302	151	151
12	I	4	2.350e+05	2.226e+05	0.95	4.11	0.01	1.00	4	2	2

Effectieve doorsnede Mz-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	-2.287e+05	-2.350e+05							
2	I	126	2.287e+05	2.287e+05	1.00	4.00	0.22	1.00	126	63	63
3	I	126	-2.287e+05	-2.287e+05							
4	UO	5	-2.287e+05	-2.350e+05							
5	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
6	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	2.350e+05	2.287e+05	0.97	0.43	0.04	1.00	5		
8	I	4	2.287e+05	2.287e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
10	I	4	-2.287e+05	-2.287e+05							
11	I	364	2.287e+05	-2.287e+05	-1.00	23.90	0.37	1.00	182	73	109
12	I	4	-2.287e+05	-2.287e+05							

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	7.0288e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.5067e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.3936e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	7.0288e-03	m^2
$N_{c,Rd}$	1651.76	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.3936e-04	m^3
$M_{c,y,Rd}$	79.75	kNm
Eenheidscontrole	0.50	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	187.45	kNm
Eenheidscontrole	0.03	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	685.11	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	374.41	kN
Eenheidscontrole	0.03	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	7.0288e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.3936e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.3	MPa
$\sigma_{My,Ed}$	117.3	MPa
$\sigma_{Mz,Ed}$	5.9	MPa
$\sigma_{tot,Ed}$	123.5	MPa
Eenheidscontrole	0.53	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.651	4.651	m
Knikfactor k	2.20	0.89	
Kniklengte L_{cr}	10.243	4.138	m
Kritische Euler last N_{cr}	523.72	17494.75	kN
Slankheid λ	175.20	30.31	
Relatieve slankheid λ_{rel}	1.78	0.31	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.651	m
Elastische kritische last $N_{cr,T}$	264162.55	kN
Elastische kritische last $N_{cr,TF}$	523.72	kN
Relatieve slankheid $\lambda_{rel,T}$	1.78	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Elastisch kritisch moment M_{cr}	16750.38	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.07	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.651	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.87	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	7.0288e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.3936e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	2.28	kN
Ontwerp buigende momenten $M_{y,Ed}$	-39.80	kNm
Ontwerp buigende momenten $M_{z,Ed}$	-4.71	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	1651.76	kN
Karakteristieke momentweerstand $M_{y,Rk}$	79.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	187.45	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.60	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.60	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lineair moment M	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.60	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	-39.80	kNm
Veldmoment $M_{s,LT}$	-18.46	kNm
Factor $\alpha_{s,LT}$	0.46	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.57	

Eenheidscontrole (6.61) = 0.00 + 0.45 + 0.02 = 0.47 -
Eenheidscontrole (6.62) = 0.00 + 0.50 + 0.02 = 0.52 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE H

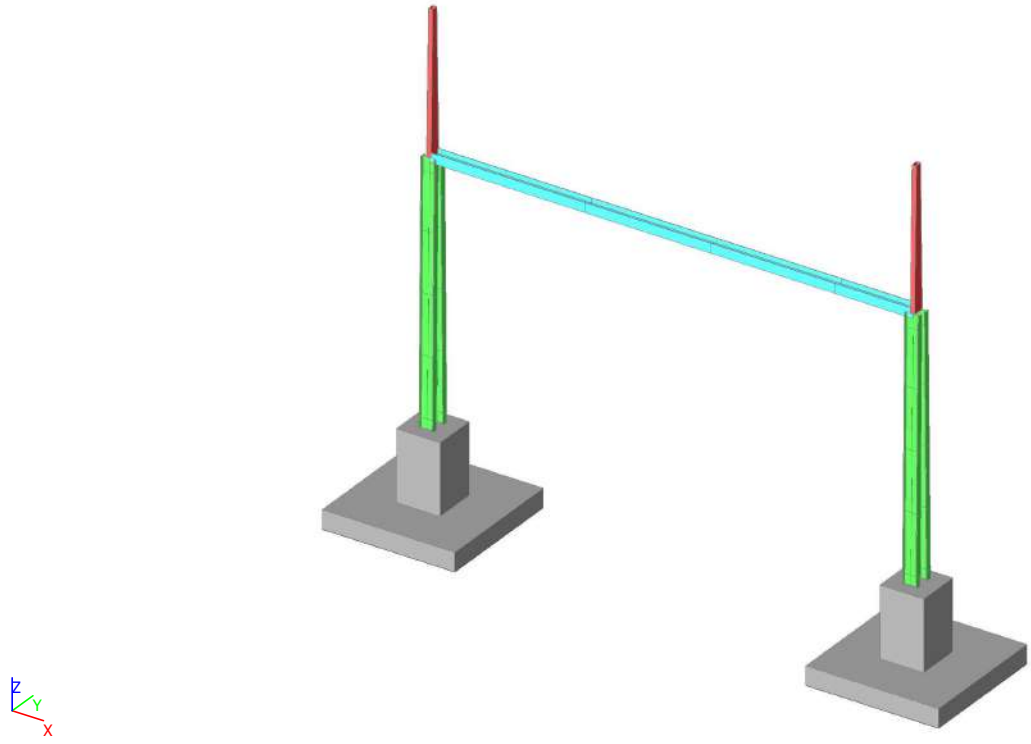
In- en uitvoergegevens 3D raamwerkprogramma juk 64b

1. Inhoudsopgave

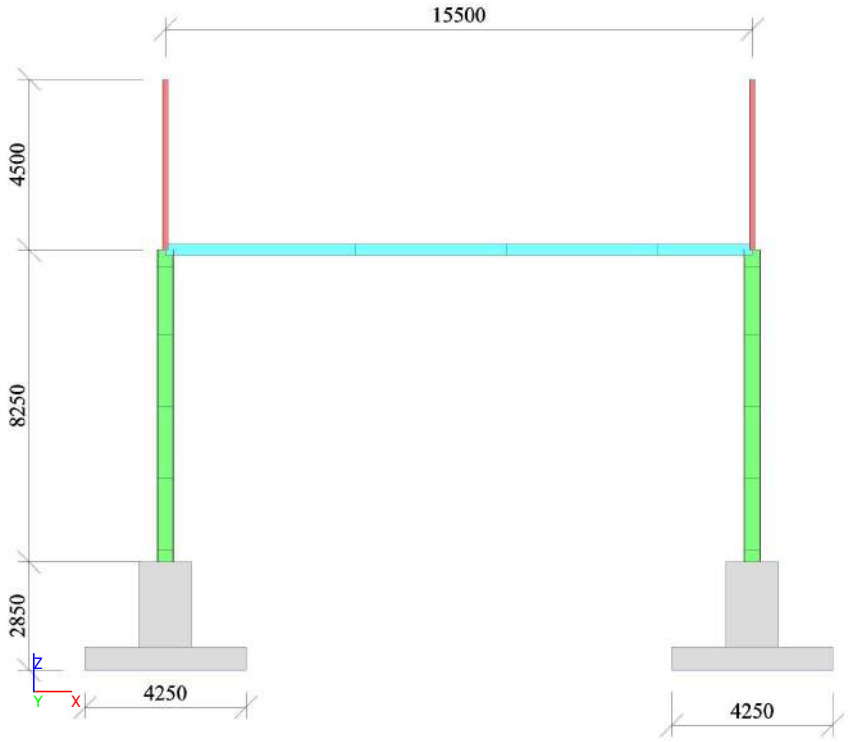
1. Inhoudsopgave **1**
2. Geometrie **2**
2.1. Perspectief constructie 2
2.2. Maatvoering 2
2.3. Materialen 3
2.4. Doorsneden 3
3. Belastingen **9**
3.1. Belastingsgevallen 9
3.2. BG1: e.g. constrcutie 14
3.3. BG2: grond op poer 14
3.4. BG3: wind op constructie; X-richting 15
3.5. BG4: wind op constructie; Y-richting 15
3.6. LC1001 / Totale waarde 16
3.7. LC1056 / Totale waarde 16
3.8. LC1111 / Totale waarde 17
3.9. LC1167 / Totale waarde 17
3.10. Combinaties 18
3.11. Resultaatklasses 23
4. Berekeningsverslag **24**
5. Reacties **40**
5.1. Oplegreacties kolom links; UGT, globale extremen 40
5.2. Oplegreacties kolom rechts; UGT, globale extremen 40
6. Grondspanningen **41**
6.1. Grondspanningen onder betonpoeren; UGT 41
7. Staafkrachten **42**
7.1. Staafkrachten kolom INP450; UGT, globale extremen 42
7.2. Staafkrachten ligger HEA340; UGT, globale extremen 42
7.3. Staafkrachten koppelplaat; UGT, globale extremen 42
7.4. Staafkrachten bliksempiek; UGT, globale extremen 43
7.5. Staafkrachten betonopstort; UGT, globale extremen 43
8. Staafspanningen **44**
8.1. Von Mises spanningen kolom INP450; UGT, globale extremen 44
8.2. Von Mises spanningen ligger HEA340; UGT, globale extremen 44
8.3. Von Mises spanningen koppelplaat; UGT, globale extremen 44
8.4. Von Mises spanningen bliksempiek; UGT, globale extremen 44
9. Normcontrole staal **45**
9.1. Staalcontrole kolom INP450; UGT, grafisch overzicht 45
9.2. Staalcontrole kolom INP450; UGT, maatgevende doorsnede, uitgebreid 45
9.3. Staalcontrole ligger HEA340; UGT, grafisch overzicht 49
9.4. Staalcontrole ligger HEA340; UGT, maatgevende doorsnede, uitgebreid 49
9.5. Staalcontrole koppelplaat; UGT, grafisch overzicht 54
9.6. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid 54
9.7. Staalcontrole bliksempiek; UGT, grafisch overzicht 57
9.8. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid 57

2. Geometrie

2.1. Perspectief constructie



2.2. Maatvoering



2.3. Materialen

Staal EC3

Naam	ρ [kg/m³]	E_{mod} [MPa] G_{mod} [MPa]	μ α [m/mK]	Onderlimiet [mm]	Bovenlimiet [mm]	F_y [MPa]	F_u [MPa]	Kleur
S 355	7850.0	2.1000e+05 8.0769e+04	0.3 0.00	0 40	40 80	355.0 335.0	490.0 470.0	
Dummy-S	0.0	2.1000e+07 8.0769e+06	0.3 0.00	0 40	40 80	355.0 335.0	490.0 470.0	

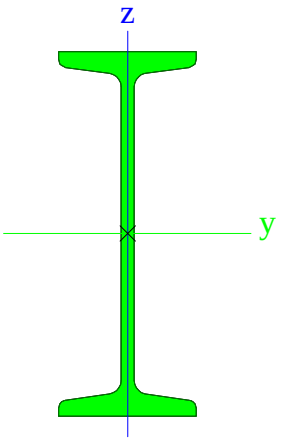
Naam	Type	ρ [kg/m³]	Dichtheid in natte toestand [kg/m³]	E_{mod} [MPa]	μ	α [m/mK]	$f_{c.k.28}$ [MPa]	Kleur
C35/45	Beton	2500.0	2600.0	3.4100e+04	0.2	0.00	35.00	

Verklaring van symbolen	
Dichtheid in natte toestand	De waarde van de dichtheid van het kenmerk nieuwe toestand wordt alleen gebruikt als een samengesteld dek wordt ingevoerd en rekening wordt gehouden met de belasting van het eigengewicht.

2.4. Doorsneden

Kolom		
Type	INP450	
Onderdeelmateriaal	S 355	
Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	b
A [m²]	1.4700e-02	
A_y [m²], A_z [m²]	8.9443e-03	7.2687e-03
I_y [m⁴], I_z [m⁴]	4.5850e-04	1.7300e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.0400e-03	2.0300e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.4000e-03	3.4500e-04
I_w [m⁶], I_t [m⁴]	9.0147e-07	2.5100e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	85	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	8.50e+05	8.50e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.22e+05	1.22e+05
A_L [m²/m], A_D [m²/m]	1.4800e+00	1.4754e+00

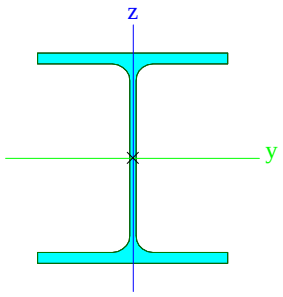
Picture



Ligger		
Type	HEA340	
Onderdeelmateriaal	S 355	
Bouwwijze	gewalst	

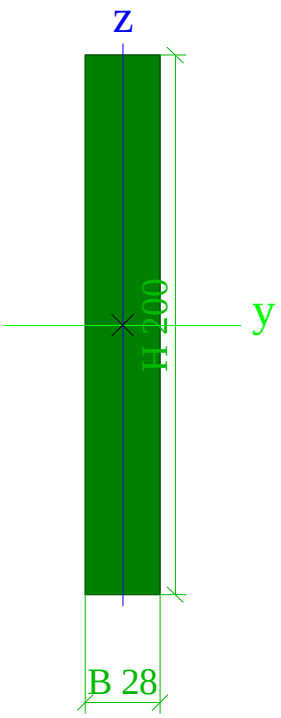
Knik y-y, Knik z-z	b	c
A [m^2]	1.3400e-02	
A_y [m^2], A_z [m^2]	9.5495e-03	3.3201e-03
I_y [m^4], I_z [m^4]	2.7700e-04	7.4400e-05
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	1.6800e-03	4.9600e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	1.8500e-03	7.5417e-04
I_w [m^6], I_t [m^4]	1.8244e-06	1.2700e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	150	165
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6.57e+05	6.57e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.68e+05	2.68e+05
A_L [m^2/m], A_D [m^2/m]	1.8000e+00	1.7944e+00

Picture



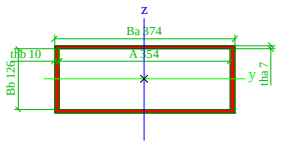
Plaat		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 355	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m^2]	5.6000e-03	
A_y [m^2], A_z [m^2]	4.6667e-03	4.6667e-03
I_y [m^4], I_z [m^4]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	2.8000e-04	3.9200e-05
I_w [m^6], I_t [m^4]	1.0882e-09	1.3284e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.94e+04	9.94e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.39e+04	1.39e+04
A_L [m^2/m], A_D [m^2/m]	4.5600e-01	4.5600e-01

Picture



Bliksempiek 1		
Type	Koker fl	
Uitgebreid	374; 7; 126; 10; 354	
Onderdeelmateriaal	S 355	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	7.7560e-03	
A_y [m²], A_z [m²]	5.0496e-03	2.7596e-03
I_y [m⁴], I_z [m⁴]	2.6510e-05	1.4453e-04
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3.7872e-04	7.7287e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4.2757e-04	9.4821e-04
I_w [m⁶], I_t [m⁴]	1.3989e-07	7.1957e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	187	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1.52e+05	1.52e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3.37e+05	3.37e+05
A_L [m²/m], A_D [m²/m]	1.0280e+00	1.9880e+00

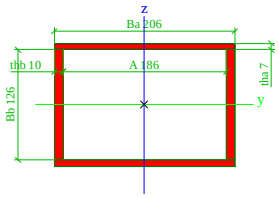
Picture



Bliksempiek 2		
Type	Koker fl	
Uitgebreid	206; 7; 126; 10; 186	
Onderdeelmateriaal	S 355	
Bouwwijze	gelast	
Knik y-y, Knik z-z	b	b
A [m²]	5.4040e-03	
A_y [m²], A_z [m²]	2.8012e-03	2.7167e-03
I_y [m⁴], I_z [m⁴]	1.6100e-05	3.4422e-05
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	2.2999e-04	3.3419e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.7117e-04	3.9549e-04

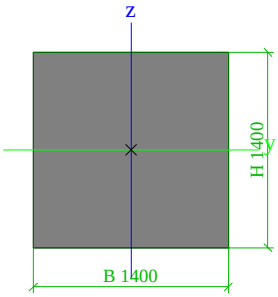
I_w [m⁶], I_t [m⁴]	1.0343e-08	3.3043e-05
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	103	70
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.63e+04	9.63e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.40e+05	1.40e+05
A_L [m²/m], A_D [m²/m]	6.9200e-01	1.3160e+00

Picture



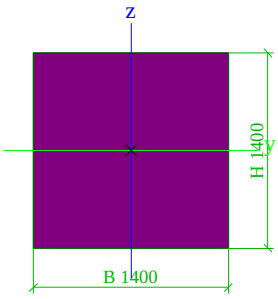
Poer		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C35/45	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Picture



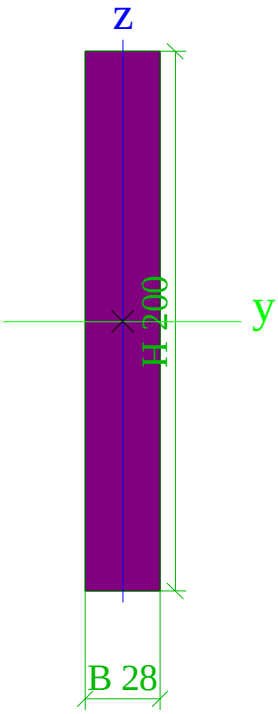
Dummy-B		
Type	Rechthoek	
Uitgebreid	1400; 1400	
Onderdeelmateriaal	C35/45	
Bouwwijze	beton	
A [m²]	1.9600e+00	
A_y [m²], A_z [m²]	1.6333e+00	1.6333e+00
I_y [m⁴], I_z [m⁴]	3.2013e-01	3.2013e-01
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	4.5733e-01	4.5733e-01
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	9.4968e-04	5.3929e-01
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	700	700
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	0.00e+00	0.00e+00
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	0.00e+00	0.00e+00
A_L [m²/m], A_D [m²/m]	5.6000e+00	5.6000e+00

Picture



Dummy-S1		
Type	Rechthoek	
Uitgebreid	200; 28	
Onderdeelmateriaal	S 355	
Bouwwijze	Algemeen	
Knik y-y, Knik z-z	d	d
A [m²]	5.6000e-03	
A_y [m²], A_z [m²]	4.6667e-03	4.6667e-03
I_y [m⁴], I_z [m⁴]	1.8667e-05	3.6587e-07
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1.8667e-04	2.6133e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	2.8000e-04	3.9200e-05
I_w [m⁶], I_t [m⁴]	1.0882e-09	1.3284e-06
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	14	100
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	9.94e+04	9.94e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1.39e+04	1.39e+04
A_L [m²/m], A_D [m²/m]	4.5600e-01	4.5600e-01

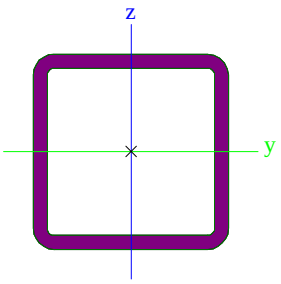
Picture



Dummy-S2		
Type	SHS450/450/32.0	
Onderdeelmateriaal	Dummy-S	

Bouwwijze	gewalst	
Knik y-y, Knik z-z	a	a
A [m^2]	5.0900e-02	
A_y [m^2], A_z [m^2]	2.5857e-02	2.5857e-02
I_y [m^4], I_z [m^4]	1.4410e-03	1.4410e-03
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	6.4040e-03	6.4040e-03
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	8.0210e-03	8.0210e-03
I_w [m^6], I_t [m^4]	4.9208e-05	2.4200e-03
d_y [mm], d_z [mm]	0	0
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	225	225
α [deg]	0.00	
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	2.85e+06	2.85e+06
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	2.85e+06	2.85e+06
A_L [m^2/m], A_D [m^2/m]	1.6900e+00	3.2336e+00

Picture



3. Belastingen

3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	e.g. constructie	Permanent Eigen gewicht	LG1	-Z		
BG2	grond op poer	Permanent Standaard	LG1			
BG3	wind op constructie X-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
BG4	wind op constructie Y-richting Standaard	Variabel Statisch	wind constructie		Kort	Geen
LC1001	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1002	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1003	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1004	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1005	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1006	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1007	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1008	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1009	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1010	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1011	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1012	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1013	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1014	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1015	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1016	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1017	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1018	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1019	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1020	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1021	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1022	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1023	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1024	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1025	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1026	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1027	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1028	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1029	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1030	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1031	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1032	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1033	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1034	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1035	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1036	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1037	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1038	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1039	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1040	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1041	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1042	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1043	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1044	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1045	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1046	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1047	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1048	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1049	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1050	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1051	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1052	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1053	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1054	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1055	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1056	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1057	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1058	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1059	BC0	Variabel	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1060	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1061	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1062	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1063	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1064	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1065	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1066	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1067	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1068	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1069	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1070	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1071	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1072	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1073	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1074	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1075	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1076	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1077	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1078	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1079	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1080	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1081	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1082	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1083	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1084	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1085	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1086	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1087	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1088	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1089	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1090	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1091	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1092	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1093	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1094	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1095	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1096	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1097	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1098	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1099	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1100	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1101	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1102	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1103	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1104	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1105	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1106	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1107	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1108	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1109	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1110	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1111	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1112	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1113	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1114	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1115	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1116	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1117	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1118	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1119	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1120	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1121	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1122	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1123	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1124	BC0	Variabel	EXCL MAST		Kort	Geen

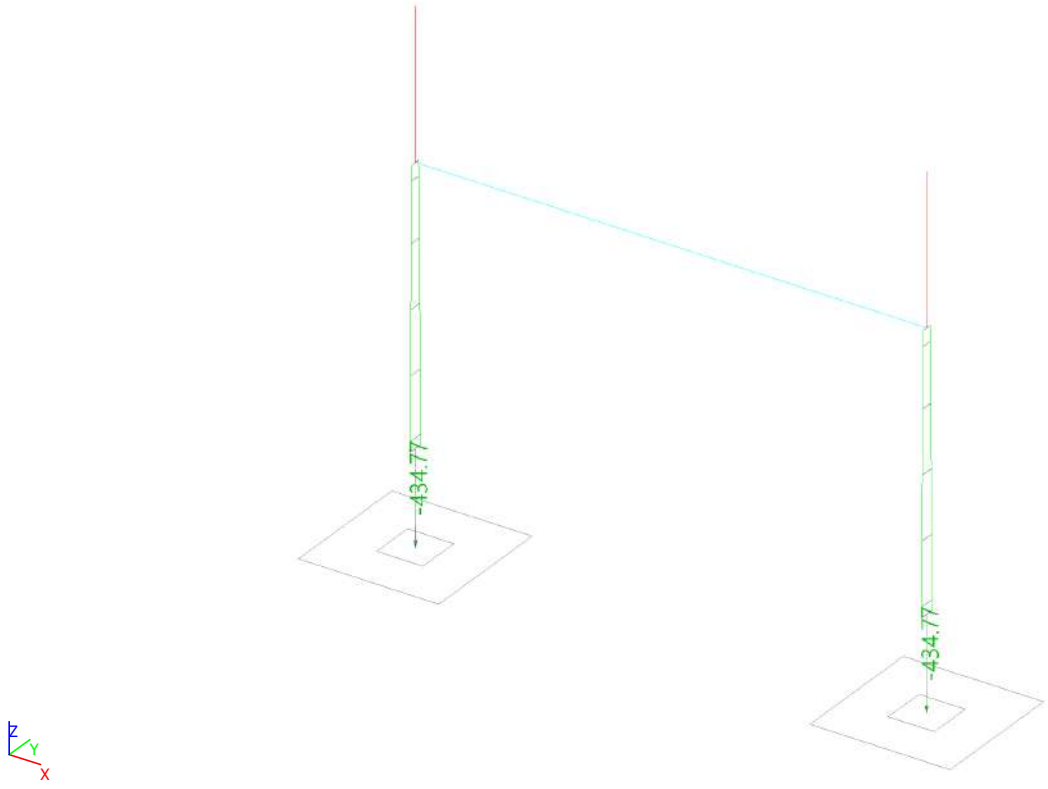
Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
	Standaard	Statisch				
LC1125	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1126	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1127	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1128	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1129	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1130	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1131	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1132	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1133	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1134	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1135	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1136	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1137	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1138	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1139	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1140	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1141	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1142	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1143	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1144	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1145	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1146	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1147	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1148	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1149	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1150	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1151	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1152	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1153	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1154	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1155	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1156	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
LC1157	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1158	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1159	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1160	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1161	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1162	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1163	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1164	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1165	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1166	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen
LC1167	BC0 Standaard	Variabel Statisch	EXCL MAST		Kort	Geen

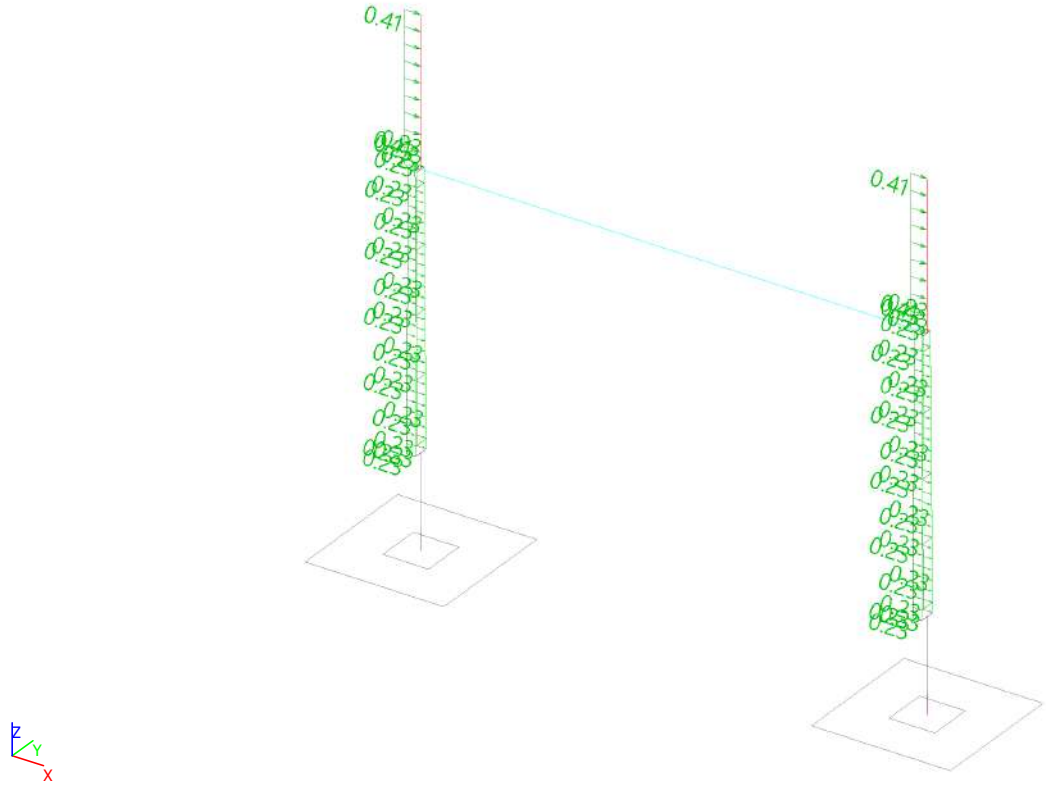
3.2. BG1: e.g. constrcutie

Het eigen gewicht van de constructie wordt door SCIA Engineer berekend op basis van de opgegeven afmetingen en het bijbehorend volumegewicht.

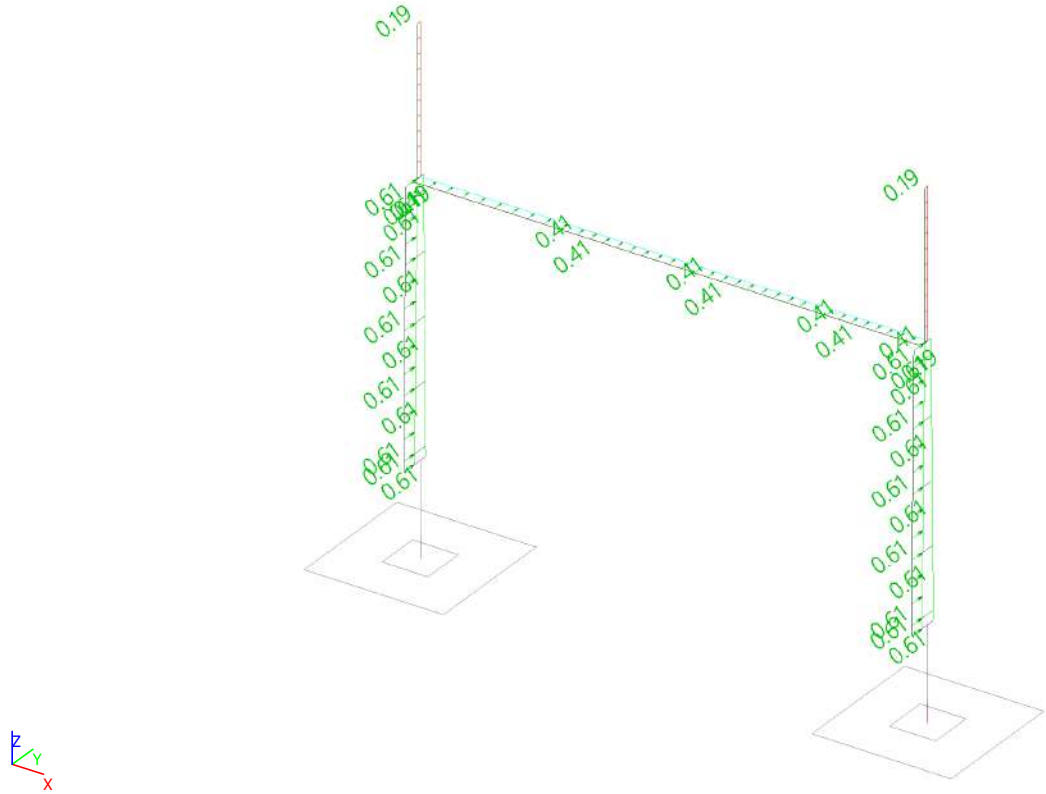
3.3. BG2: grond op poer



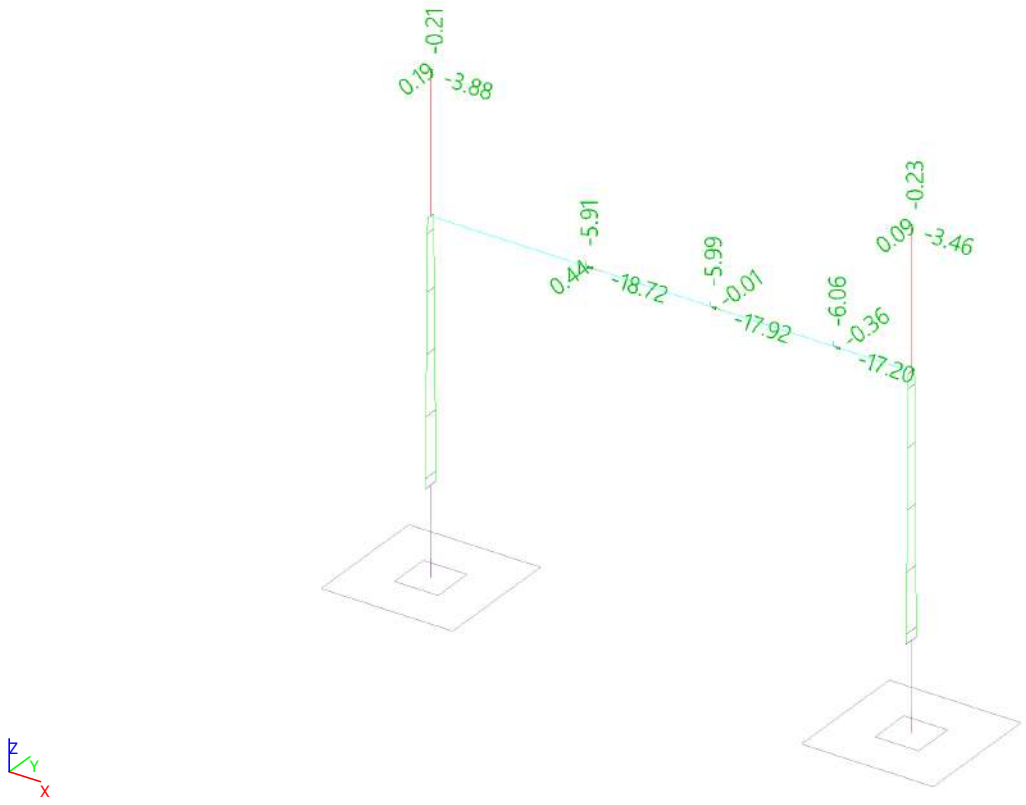
3.4. BG3: wind op constructie; X-richting



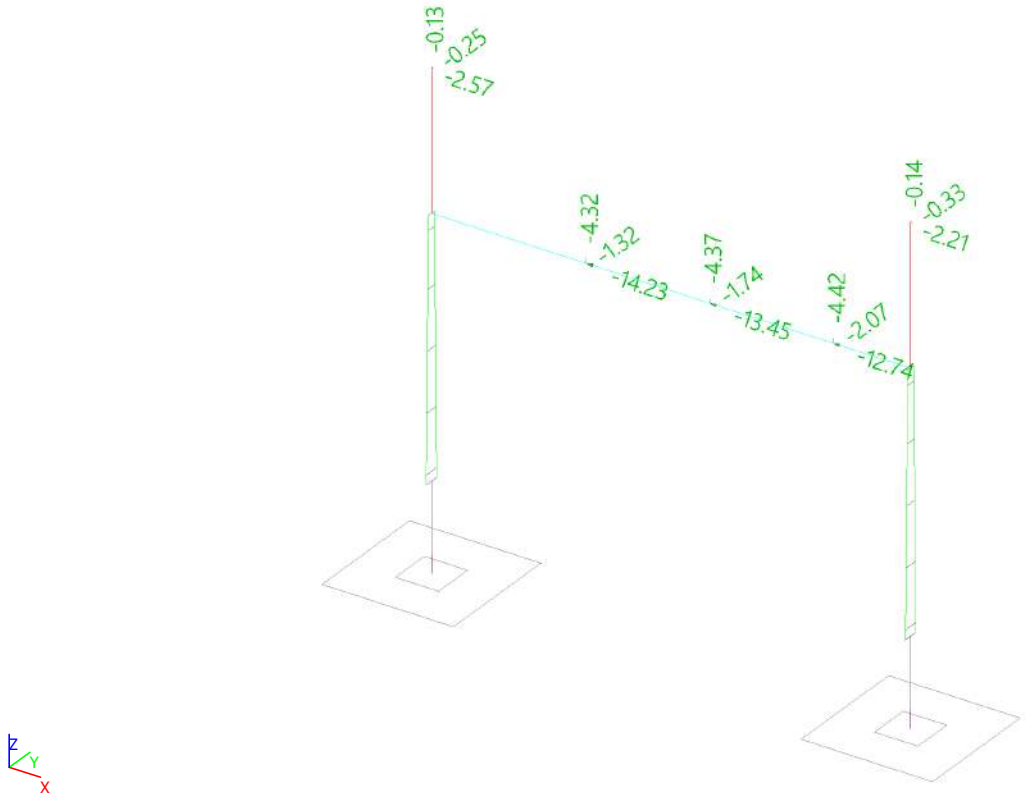
3.5. BG4: wind op constructie; Y-richting



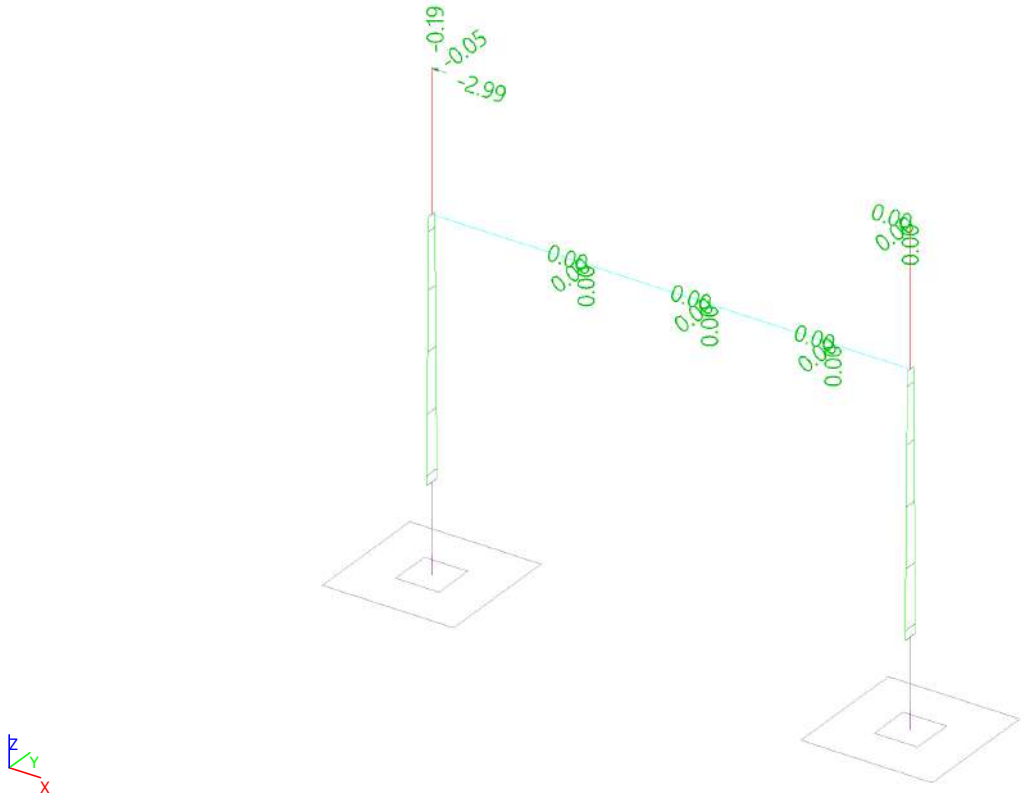
3.6. LC1001 / Totale waarde



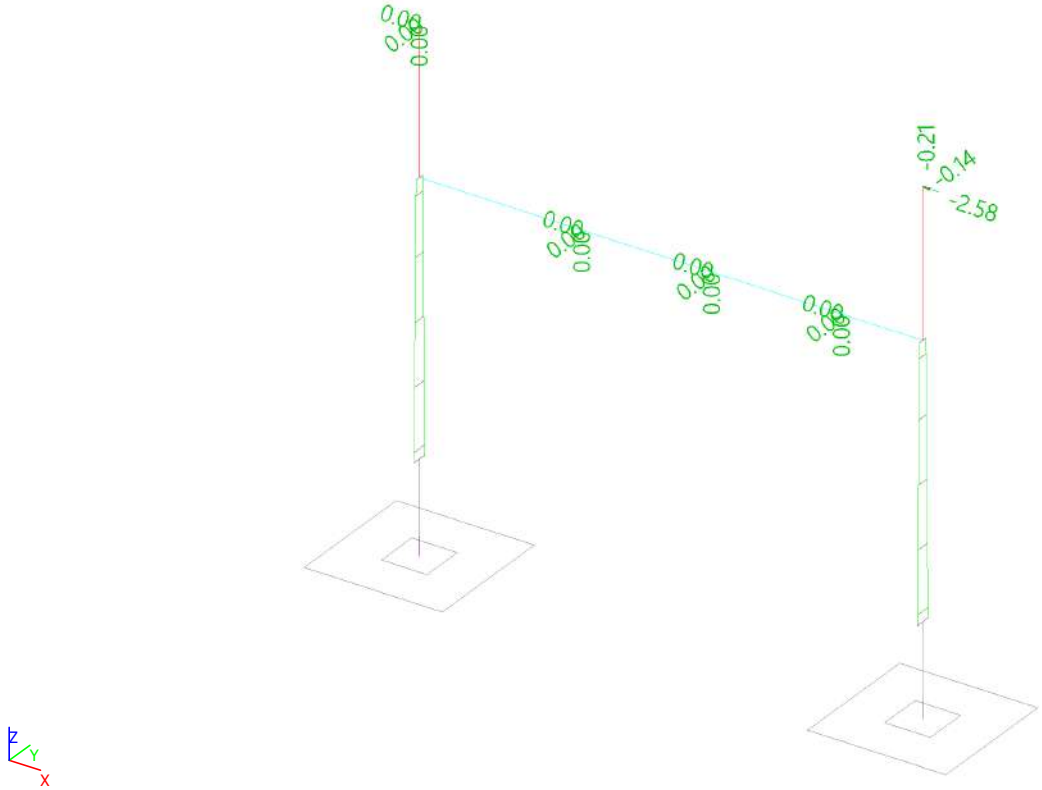
3.7. LC1056 / Totale waarde



3.8. LC1111 / Totale waarde



3.9. LC1167 / Totale waarde



3.10. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
Combi1	UGT-1-Omhullend 1	Omhullende - uiterst	BG1 - e.g. constructie	1.20
			BG2 - grond op poer	1.20
			BG3 - wind op constructie X-richting	1.50
			BG4 - wind op constructie Y-richting	1.50
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00
Combi2	UGT-2-Omhullend 2	Omhullende - uiterst	BG1 - e.g. constructie	1.20
			BG2 - grond op poer	1.20
			BG3 - wind op constructie X-richting	-1.50
			BG4 - wind op constructie Y-richting	-1.50
			LC1001 - BC0	1.00
			LC1002 - BC0	1.00
			LC1003 - BC0	1.00
			LC1004 - BC0	1.00
			LC1005 - BC0	1.00
			LC1006 - BC0	1.00
			LC1007 - BC0	1.00
			LC1008 - BC0	1.00
			LC1009 - BC0	1.00
			LC1010 - BC0	1.00
			LC1011 - BC0	1.00
			LC1012 - BC0	1.00
			LC1013 - BC0	1.00
			LC1014 - BC0	1.00
			LC1015 - BC0	1.00
			LC1016 - BC0	1.00
			LC1017 - BC0	1.00
			LC1018 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1019 - BC0	1.00
			LC1020 - BC0	1.00
			LC1021 - BC0	1.00
			LC1022 - BC0	1.00
			LC1023 - BC0	1.00
			LC1024 - BC0	1.00
			LC1025 - BC0	1.00
			LC1026 - BC0	1.00
			LC1027 - BC0	1.00
			LC1028 - BC0	1.00
			LC1029 - BC0	1.00
			LC1030 - BC0	1.00
			LC1031 - BC0	1.00
			LC1032 - BC0	1.00
			LC1033 - BC0	1.00
			LC1034 - BC0	1.00
			LC1035 - BC0	1.00
			LC1036 - BC0	1.00
			LC1037 - BC0	1.00
			LC1038 - BC0	1.00
			LC1039 - BC0	1.00
			LC1040 - BC0	1.00
			LC1041 - BC0	1.00
			LC1042 - BC0	1.00
			LC1043 - BC0	1.00
			LC1044 - BC0	1.00
			LC1045 - BC0	1.00
			LC1046 - BC0	1.00
			LC1047 - BC0	1.00
			LC1048 - BC0	1.00
			LC1049 - BC0	1.00
			LC1050 - BC0	1.00
			LC1051 - BC0	1.00
			LC1052 - BC0	1.00
			LC1053 - BC0	1.00
			LC1054 - BC0	1.00
			LC1055 - BC0	1.00
			LC1056 - BC0	1.00
			LC1057 - BC0	1.00
			LC1058 - BC0	1.00
			LC1059 - BC0	1.00
			LC1060 - BC0	1.00
			LC1061 - BC0	1.00
			LC1062 - BC0	1.00
			LC1063 - BC0	1.00
			LC1064 - BC0	1.00
			LC1065 - BC0	1.00
			LC1066 - BC0	1.00
			LC1067 - BC0	1.00
			LC1068 - BC0	1.00
			LC1069 - BC0	1.00
			LC1070 - BC0	1.00
			LC1071 - BC0	1.00
			LC1072 - BC0	1.00
			LC1073 - BC0	1.00
			LC1074 - BC0	1.00
			LC1075 - BC0	1.00
			LC1076 - BC0	1.00
			LC1077 - BC0	1.00
			LC1078 - BC0	1.00
			LC1079 - BC0	1.00
			LC1080 - BC0	1.00
			LC1081 - BC0	1.00
			LC1082 - BC0	1.00
			LC1083 - BC0	1.00
			LC1084 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1085 - BC0	1.00
			LC1086 - BC0	1.00
			LC1087 - BC0	1.00
			LC1088 - BC0	1.00
			LC1089 - BC0	1.00
			LC1090 - BC0	1.00
			LC1091 - BC0	1.00
			LC1092 - BC0	1.00
			LC1093 - BC0	1.00
			LC1094 - BC0	1.00
			LC1095 - BC0	1.00
			LC1096 - BC0	1.00
			LC1097 - BC0	1.00
			LC1098 - BC0	1.00
			LC1099 - BC0	1.00
			LC1100 - BC0	1.00
			LC1101 - BC0	1.00
			LC1102 - BC0	1.00
			LC1103 - BC0	1.00
			LC1104 - BC0	1.00
			LC1105 - BC0	1.00
			LC1106 - BC0	1.00
			LC1107 - BC0	1.00
			LC1108 - BC0	1.00
			LC1109 - BC0	1.00
			LC1110 - BC0	1.00
			LC1111 - BC0	1.00
			LC1112 - BC0	1.00
			LC1113 - BC0	1.00
			LC1114 - BC0	1.00
			LC1115 - BC0	1.00
			LC1116 - BC0	1.00
			LC1117 - BC0	1.00
			LC1118 - BC0	1.00
			LC1119 - BC0	1.00
			LC1120 - BC0	1.00
			LC1121 - BC0	1.00
			LC1122 - BC0	1.00
			LC1123 - BC0	1.00
			LC1124 - BC0	1.00
			LC1125 - BC0	1.00
			LC1126 - BC0	1.00
			LC1127 - BC0	1.00
			LC1128 - BC0	1.00
			LC1129 - BC0	1.00
			LC1130 - BC0	1.00
			LC1131 - BC0	1.00
			LC1132 - BC0	1.00
			LC1133 - BC0	1.00
			LC1134 - BC0	1.00
			LC1135 - BC0	1.00
			LC1136 - BC0	1.00
			LC1137 - BC0	1.00
			LC1138 - BC0	1.00
			LC1139 - BC0	1.00
			LC1140 - BC0	1.00
			LC1141 - BC0	1.00
			LC1142 - BC0	1.00
			LC1143 - BC0	1.00
			LC1144 - BC0	1.00
			LC1145 - BC0	1.00
			LC1146 - BC0	1.00
			LC1147 - BC0	1.00
			LC1148 - BC0	1.00
			LC1149 - BC0	1.00
			LC1150 - BC0	1.00

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			LC1151 - BC0	1.00
			LC1152 - BC0	1.00
			LC1153 - BC0	1.00
			LC1154 - BC0	1.00
			LC1155 - BC0	1.00
			LC1156 - BC0	1.00
			LC1157 - BC0	1.00
			LC1158 - BC0	1.00
			LC1159 - BC0	1.00
			LC1160 - BC0	1.00
			LC1161 - BC0	1.00
			LC1162 - BC0	1.00
			LC1163 - BC0	1.00
			LC1164 - BC0	1.00
			LC1165 - BC0	1.00
			LC1166 - BC0	1.00
			LC1167 - BC0	1.00

3.11. Resultaatklasses

Naam	Lijst
Alle UGT	Combi1 - Omhullende - uiterst Combi2 - Omhullende - uiterst

4. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**888**
Aantal 1D elementen	**84**
Aantal netknopen	**1041**
Aantal vergelijkingen	**6246**
Belastinggevallen	BG1
	BG2
	BG3
	BG4
	LC1001
	LC1002
	LC1003
	LC1004
	LC1005
	LC1006
	LC1007
	LC1008
	LC1009
	LC1010
	LC1011
	LC1012
	LC1013
	LC1014
	LC1015
	LC1016
	LC1017
	LC1018
	LC1019
	LC1020
	LC1021
	LC1022
	LC1023
	LC1024
	LC1025
	LC1026
	LC1027
	LC1028
	LC1029
	LC1030
	LC1031
	LC1032
	LC1033
	LC1034
	LC1035
	LC1036
	LC1037
	LC1038
	LC1039
	LC1040
	LC1041
	LC1042
	LC1043
	LC1044
	LC1045
	LC1046
	LC1047
	LC1048
	LC1049
	LC1050
	LC1051
	LC1052
	LC1053
	LC1054
	LC1055
	LC1056
	LC1057

Aantal 2D elementen	**888**
Aantal 1D elementen	**84**
Aantal netknopen	**1041**
Aantal vergelijkingen	**6246**
	LC1058
	LC1059
	LC1060
	LC1061
	LC1062
	LC1063
	LC1064
	LC1065
	LC1066
	LC1067
	LC1068
	LC1069
	LC1070
	LC1071
	LC1072
	LC1073
	LC1074
	LC1075
	LC1076
	LC1077
	LC1078
	LC1079
	LC1080
	LC1081
	LC1082
	LC1083
	LC1084
	LC1085
	LC1086
	LC1087
	LC1088
	LC1089
	LC1090
	LC1091
	LC1092
	LC1093
	LC1094
	LC1095
	LC1096
	LC1097
	LC1098
	LC1099
	LC1100
	LC1101
	LC1102
	LC1103
	LC1104
	LC1105
	LC1106
	LC1107
	LC1108
	LC1109
	LC1110
	LC1111
	LC1112
	LC1113
	LC1114
	LC1115
	LC1116
	LC1117
	LC1118
	LC1119
	LC1120
	LC1121

Aantal 2D elementen	**888**
Aantal 1D elementen	**84**
Aantal netknopen	**1041**
Aantal vergelijkingen	**6246**
	LC1122
	LC1123
	LC1124
	LC1125
	LC1126
	LC1127
	LC1128
	LC1129
	LC1130
	LC1131
	LC1132
	LC1133
	LC1134
	LC1135
	LC1136
	LC1137
	LC1138
	LC1139
	LC1140
	LC1141
	LC1142
	LC1143
	LC1144
	LC1145
	LC1146
	LC1147
	LC1148
	LC1149
	LC1150
	LC1151
	LC1152
	LC1153
	LC1154
	LC1155
	LC1156
	LC1157
	LC1158
	LC1159
	LC1160
	LC1161
	LC1162
	LC1163
	LC1164
	LC1165
	LC1166
	LC1167
Buigtheorie	Mindlin
Start berekening	24.12.2019 10:15
Einde berekening	24.12.2019 10:15

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	0.0	-865.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	20.5
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	844.7
BG BG2	last	0.0	0.0	-869.5
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	21.8
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	847.8
BG BG3	last	11.3	0.0	0.0
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	-11.3	0.0	0.0
BG BG4	last	0.0	18.1	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-4.5	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	-13.6	0.0
BG LC1001	last	-61.2	0.3	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	61.2	-0.2	17.9
BG LC1002	last	-134.9	-13.2	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.9	9.1	17.5
BG LC1003	last	-101.9	-3.6	-21.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	101.9	2.6	20.4
BG LC1004	last	-57.3	-2.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	57.3	1.9	17.9
BG LC1005	last	-49.2	0.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	49.2	-0.5	17.9
BG LC1006	last	-132.4	-13.1	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	132.4	9.0	17.5
BG LC1007	last	-96.5	-3.2	-21.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	96.5	2.4	20.4
BG LC1008	last	-54.9	-2.7	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	54.9	1.8	17.9
BG LC1009	last	-52.7	3.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-1.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	52.7	-2.3	17.9
BG LC1010	last	-134.0	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.0	9.3	17.5
BG LC1011	last	-99.1	-3.3	-21.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	99.1	2.4	20.4
BG LC1012	last	-56.4	-2.7	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	56.4	1.9	17.9
BG LC1013	last	-47.1	4.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-1.6	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	47.1	-3.2	17.9
BG LC1014	last	-132.9	-13.2	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	132.9	9.1	17.5
BG LC1015	last	-96.7	-2.3	-21.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.5	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	96.7	1.8	20.4
BG LC1016	last	-55.3	-2.5	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	55.3	1.7	17.9
BG LC1017	last	-55.2	-5.4	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	55.2	3.6	17.9
BG LC1018	last	-134.5	-13.3	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.5	9.1	17.5
BG LC1019	last	-99.9	-4.9	-20.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.5	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	99.9	3.4	20.4
BG LC1020	last	-56.9	-3.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.9	2.0	17.9
BG LC1021	last	-45.4	-6.2	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	45.4	4.1	17.9
BG LC1022	last	-132.5	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	132.5	9.2	17.5
BG LC1023	last	-96.0	-5.4	-20.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.7	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	96.0	3.8	20.4
BG LC1024	last	-54.9	-3.1	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	54.9	2.1	17.9
BG LC1025	last	-46.3	-3.3	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	46.3	2.2	17.9
BG LC1026	last	-133.1	-13.5	-17.9

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.1	9.3	17.5
BG LC1027	last	-96.6	-4.7	-20.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.4	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	96.6	3.3	20.4
BG LC1028	last	-55.5	-3.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	2.1	17.9
BG LC1029	last	-49.7	-2.5	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	49.7	1.6	17.9
BG LC1030	last	-133.8	-13.3	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.8	9.1	17.5
BG LC1031	last	-98.0	-4.1	-20.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	98.0	2.9	20.4
BG LC1032	last	-56.2	-2.9	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.2	2.0	17.9
BG LC1033	last	-54.5	-0.5	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	54.5	0.4	13.1
BG LC1034	last	-132.3	-14.6	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	132.3	10.0	12.6
BG LC1035	last	-95.5	-5.4	-16.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.6	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	95.5	3.8	15.6
BG LC1036	last	-47.9	-5.0	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	47.9	3.4	13.0
BG LC1037	last	-42.5	0.0	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	42.5	0.0	13.1
BG LC1038	last	-129.9	-14.5	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	129.9	10.0	12.6
BG LC1039	last	-90.1	-5.0	-16.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.4	0.4

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	90.1	3.6	15.6
BG LC1040	last	-45.5	-4.9	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.5	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	45.5	3.4	13.0
BG LC1041	last	-43.8	4.6	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-1.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	43.8	-3.0	13.1
BG LC1042	last	-131.6	-14.7	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	131.6	10.1	12.6
BG LC1043	last	-92.5	-4.9	-16.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.4	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	92.5	3.5	15.6
BG LC1044	last	-46.8	-5.1	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	46.8	3.5	13.0
BG LC1045	last	-38.2	5.9	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-2.0	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	38.2	-3.9	13.1
BG LC1046	last	-130.5	-14.5	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.5	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	130.5	9.9	12.6
BG LC1047	last	-90.0	-3.9	-16.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.0	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	90.0	2.9	15.6
BG LC1048	last	-45.7	-4.8	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.5	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	45.7	3.3	13.0
BG LC1049	last	-46.2	-9.3	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	3.1	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	46.2	6.2	13.1
BG LC1050	last	-132.0	-14.6	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	132.0	10.0	12.5
BG LC1051	last	-93.3	-6.9	-15.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.1	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	93.3	4.8	15.5
BG LC1052	last	-47.2	-5.6	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	47.2	3.8	13.0

	[kN]	X	Y	Z
BG LC1053	last	-36.4	-10.0	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	3.3	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	36.4	6.7	13.1
BG LC1054	last	-130.1	-14.7	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	130.1	10.1	12.5
BG LC1055	last	-89.4	-7.5	-15.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.3	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	89.4	5.2	15.5
BG LC1056	last	-45.2	-5.7	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	45.2	3.9	13.0
BG LC1057	last	-36.4	-6.2	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	36.4	4.1	13.1
BG LC1058	last	-130.7	-14.7	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	130.7	10.1	12.5
BG LC1059	last	-89.9	-6.8	-15.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	89.9	4.7	15.5
BG LC1060	last	-45.7	-5.5	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.7	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	45.7	3.7	13.0
BG LC1061	last	-39.9	-5.4	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	39.9	3.6	13.1
BG LC1062	last	-131.4	-14.5	-12.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.6	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	131.4	10.0	12.5
BG LC1063	last	-91.4	-6.2	-15.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.8	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	91.4	4.3	15.5
BG LC1064	last	-46.4	-5.3	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	1.7	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	46.4	3.6	13.0
BG LC1065	last	-39.4	-1.1	-16.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.3	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	39.4	0.8	16.4
BG LC1066	last	-39.7	-1.0	-16.8
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	0.0	0.3	0.4
	contact 1D	0.0	0.0	0.0
	contact 2D	39.7	0.7	16.4
BG LC1067	last	-28.6	-1.1	-12.1
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.3	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	28.6	0.8	11.8
BG LC1068	last	-29.3	-0.8	-12.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	29.3	0.5	11.7
BG LC1069	last	-29.9	-0.5	-12.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	29.9	0.3	11.7
BG LC1070	last	-49.7	-0.2	-20.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	49.7	0.1	19.7
BG LC1071	last	-39.3	-1.6	-13.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.5	0.3
	contact 1D	0.0	0.0	0.0
	contact 2D	39.3	1.1	13.1
BG LC1072	last	-52.4	-0.3	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	52.4	0.2	17.9
BG LC1073	last	-134.5	-13.4	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.5	9.2	17.5
BG LC1074	last	-88.2	-6.8	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.1	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	88.2	4.7	18.4
BG LC1075	last	-57.0	-2.9	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	57.0	2.0	17.9
BG LC1076	last	-46.1	-0.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	46.1	0.0	17.9
BG LC1077	last	-132.5	-13.3	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	132.5	9.2	17.5
BG LC1078	last	-84.8	-6.6	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	84.8	4.6	18.4
BG LC1079	last	-55.0	-2.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	55.0	1.9	17.9
BG LC1080	last	-48.9	0.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	48.9	-0.3	17.9
BG LC1081	last	-133.9	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.9	9.2	17.5
BG LC1082	last	-86.6	-6.6	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	86.6	4.6	18.4
BG LC1083	last	-56.3	-2.7	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.3	1.9	17.9
BG LC1084	last	-48.9	0.6	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	48.9	-0.3	17.9
BG LC1085	last	-133.9	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.9	9.2	17.5
BG LC1086	last	-86.6	-6.6	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.0	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	86.6	4.6	18.4
BG LC1087	last	-56.3	-2.7	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.8	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.3	1.9	17.9
BG LC1088	last	-50.1	-2.1	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.7	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	50.1	1.4	17.9
BG LC1089	last	-134.3	-13.3	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.3	9.2	17.5
BG LC1090	last	-87.2	-7.5	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	87.2	5.1	18.4
BG LC1091	last	-56.7	-3.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.7	2.0	17.9
BG LC1092	last	-50.1	-2.1	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.7	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	50.1	1.4	17.9
BG LC1093	last	-134.3	-13.3	-17.9

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	134.3	9.2	17.5
BG LC1094	last	-87.2	-7.5	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	87.2	5.1	18.4
BG LC1095	last	-56.7	-3.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.7	2.0	17.9
BG LC1096	last	-46.0	-1.4	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.5	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	46.0	1.0	17.9
BG LC1097	last	-133.2	-13.5	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.2	9.2	17.5
BG LC1098	last	-85.0	-7.5	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	85.0	5.2	18.4
BG LC1099	last	-55.5	-2.9	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	55.5	2.0	17.9
BG LC1100	last	-47.8	-1.0	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.3	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	47.8	0.7	17.9
BG LC1101	last	-133.7	-13.4	-17.9
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	4.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	133.7	9.2	17.5
BG LC1102	last	-86.0	-7.2	-18.8
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	2.2	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	86.0	5.0	18.4
BG LC1103	last	-56.1	-2.8	-18.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.9	0.5
	contact 1D	0.0	0.0	0.0
	contact 2D	56.1	1.9	17.9
BG LC1104	last	-3.1	0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.1	-0.1	0.2
BG LC1105	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1106	last	-5.1	0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0

	[kN]	X	Y	Z
	contact 1D	0.0	0.0	0.0
	contact 2D	5.1	-0.0	0.3
BG LC1107	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1108	last	-2.9	0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.9	-0.1	0.2
BG LC1109	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1110	last	-4.9	0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.9	-0.0	0.3
BG LC1111	last	-3.0	-0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1112	last	-2.7	0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.7	-0.1	0.2
BG LC1113	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1114	last	-4.9	0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.9	-0.1	0.3
BG LC1115	last	-3.0	-0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1116	last	-2.7	0.3	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.7	-0.2	0.2
BG LC1117	last	-6.1	-0.3	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1118	last	-4.8	0.2	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.8	-0.1	0.3
BG LC1119	last	-3.0	-0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2

	[kN]	X	Y	Z
BG LC1120	last	-2.8	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.8	0.1	0.2
BG LC1121	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1122	last	-4.9	-0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.9	0.1	0.3
BG LC1123	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1124	last	-2.7	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.7	0.1	0.2
BG LC1125	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1126	last	-4.8	-0.2	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.8	0.1	0.3
BG LC1127	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.1	0.2
BG LC1128	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1129	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1130	last	-4.8	-0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.8	0.1	0.3
BG LC1131	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1132	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.0	0.2
BG LC1133	last	-6.1	-0.4	-0.2
	knoopreacties	0.0	0.0	0.0

	[kN]	X	Y	Z
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	6.1	0.2	0.2
BG LC1134	last	-4.8	-0.1	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.8	0.0	0.3
BG LC1135	last	-3.0	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	3.0	0.0	0.2
BG LC1136	last	-2.7	0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.7	-0.0	0.2
BG LC1137	last	-5.3	-0.5	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1138	last	-4.5	-0.1	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.5	0.0	0.4
BG LC1139	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1140	last	-2.5	0.0	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.5	-0.0	0.2
BG LC1141	last	-5.2	-0.5	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.2	0.3	0.2
BG LC1142	last	-4.2	-0.0	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.2	0.0	0.4
BG LC1143	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1144	last	-2.4	0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.4	-0.1	0.2
BG LC1145	last	-5.3	-0.6	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1146	last	-4.3	-0.0	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0

	[kN]	X	Y	Z
	contact 2D	4.3	0.0	0.4
BG LC1147	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1148	last	-2.3	0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.3	-0.1	0.2
BG LC1149	last	-5.3	-0.5	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1150	last	-4.2	0.0	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	-0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.2	-0.0	0.4
BG LC1151	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1152	last	-2.4	-0.3	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.4	0.2	0.2
BG LC1153	last	-5.3	-0.5	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1154	last	-4.3	-0.3	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.3	0.1	0.4
BG LC1155	last	-2.6	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1156	last	-2.3	-0.3	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.3	0.2	0.2
BG LC1157	last	-5.3	-0.6	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1158	last	-4.2	-0.3	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.2	0.2	0.4
BG LC1159	last	-2.6	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1160	last	-2.2	-0.1	-0.2

	[kN]	X	Y	Z
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.2	0.1	0.2
BG LC1161	last	-5.3	-0.6	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1162	last	-4.1	-0.2	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.1	0.1	0.4
BG LC1163	last	-2.6	-0.2	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2
BG LC1164	last	-2.3	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.3	0.1	0.2
BG LC1165	last	-5.3	-0.6	-0.3
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.2	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	5.3	0.3	0.2
BG LC1166	last	-4.2	-0.2	-0.4
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	4.2	0.1	0.4
BG LC1167	last	-2.6	-0.1	-0.2
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.1	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	2.6	0.1	0.2

5. Reacties

5.1. Oplegreacties kolom links; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC1
Klasse : Alle UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC1	K1	S7	**-4.68**	0.00	**34.98**	0.00	**-39.26**	0.00
Combi2/11	FC1	K1	S7	**83.46**	4.97	**53.23**	-42.60	**571.63**	0.23
Combi1/19	FC1	K1	S7	25.83	**-16.38**	43.99	**110.79**	161.20	**-0.23**
Combi2/20	FC1	K1	S7	71.44	**19.21**	50.06	**-132.31**	504.54	0.40
Combi2/14	FC1	K1	S7	72.22	19.21	50.16	-132.22	510.26	**0.40**

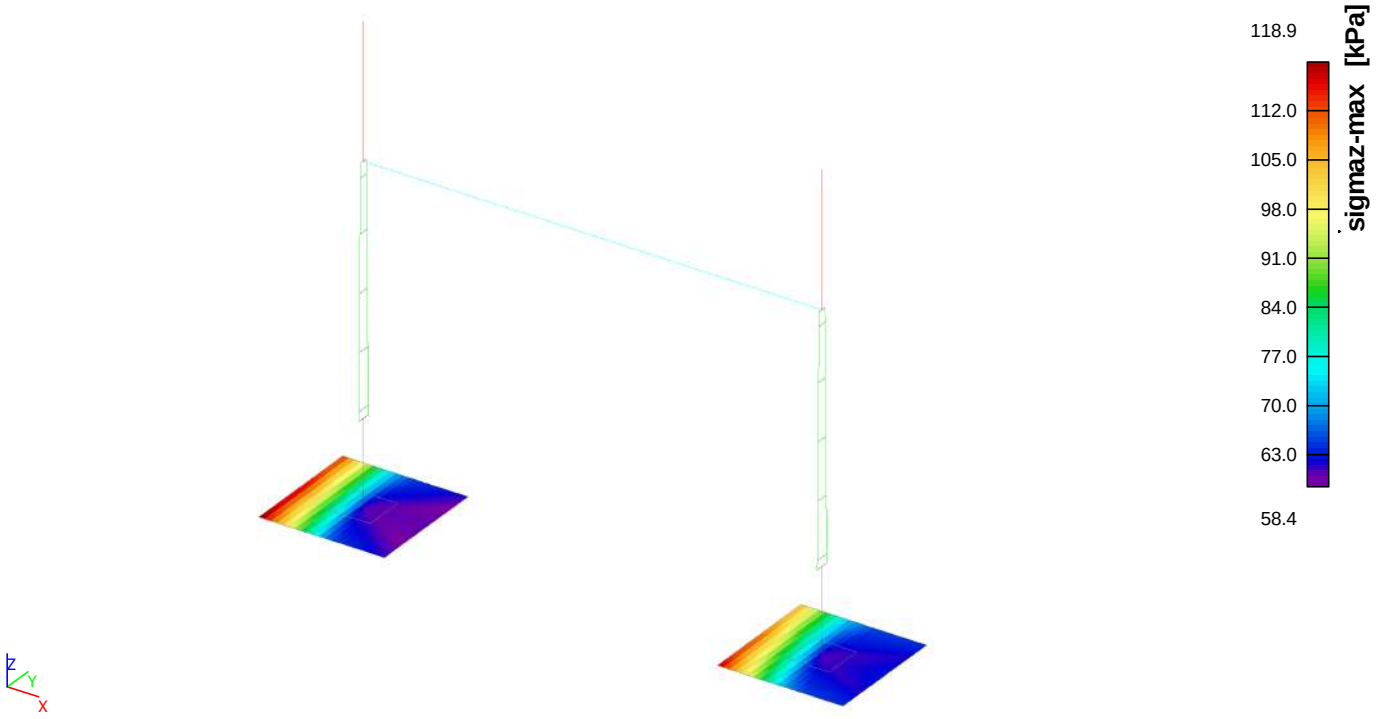
5.2. Oplegreacties kolom rechts; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : FC2
Klasse : Alle UGT

BG	Verbinding	Knoop	Liggers	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Combi1/18	FC2	K3	S8	**-12.24**	0.00	36.60	0.00	**-53.33**	0.00
Combi2/11	FC2	K3	S8	**68.32**	8.25	36.27	-70.48	**543.67**	-0.21
Combi1/19	FC2	K3	S8	12.40	**-16.69**	41.01	**112.98**	136.26	**0.23**
Combi2/14	FC2	K3	S8	59.38	**22.70**	34.30	**-161.78**	486.58	**-0.38**
Combi2/12	FC2	K3	S8	68.18	9.04	**33.44**	-77.33	535.50	-0.23
Combi1/13	FC2	K3	S8	8.08	0.32	**45.11**	-2.72	129.60	0.00

6. Grondspanningen

6.1. Grondspanningen onder betonpoeren; UGT



7. Staafkrachten

7.1. Staafkrachten kolom INP450; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S17..S40
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S29	Kolom - INP450	0.305	Combi2/20	**-321.08**	7.54	28.48	-0.01	237.75	4.94
S35	Kolom - INP450	0.000	Combi2/14	**287.16**	-7.86	-30.52	-0.02	-236.71	-2.55
S35	Kolom - INP450	0.305	Combi2/14	286.74	**-7.87**	-30.52	-0.02	-246.02	-4.95
S30	Kolom - INP450	1.895	Combi2/14	-295.32	**8.28**	28.91	-0.02	231.79	**8.93**
S23	Kolom - INP450	0.305	Combi2/11	54.20	-1.51	**-41.22**	0.00	**-284.18**	-1.11
S17	Kolom - INP450	0.305	Combi2/11	-107.43	1.53	**42.24**	0.01	**287.48**	1.10
S38	Kolom - INP450	0.000	Combi2/14	143.80	-7.20	-30.33	**-0.06**	-64.02	6.16
S20	Kolom - INP450	0.000	Combi2/14	-138.23	4.99	36.79	**0.06**	37.31	-4.76
S36	Kolom - INP450	1.895	Combi2/14	262.10	-7.46	-30.47	-0.03	-236.71	**-8.70**

7.2. Staafkrachten ligger HEA340; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S4..S6, S11
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S11	Ligger - HEA340	0.000	Combi1/21	**-68.86**	25.98	0.16	0.00	0.08	-121.04
S6	Ligger - HEA340	0.000	Combi1/22	**54.52**	-8.33	7.71	0.00	-19.06	38.88
S6	Ligger - HEA340	2.500	Combi1/13	14.20	**-18.72**	0.30	0.00	0.00	-35.19
S11	Ligger - HEA340	0.000	Combi2/11	-68.86	**26.78**	-4.61	0.00	0.23	**-127.29**
S11	Ligger - HEA340	0.000	Combi2/14	-66.24	23.77	**-9.94**	0.00	0.40	-112.44
S6	Ligger - HEA340	2.500	Combi2/14	54.20	-7.91	**13.24**	0.00	0.38	26.58
S4	Ligger - HEA340	0.000	Combi1/23	-23.93	13.48	-1.73	**0.00**	-25.60	-9.07
S4	Ligger - HEA340	0.000	Combi1/24	1.34	4.18	1.69	**0.00**	16.00	5.87
S4	Ligger - HEA340	4.000	Combi2/14	-23.93	8.53	-0.97	0.00	**-50.38**	34.94
S4	Ligger - HEA340	3.200	Combi1/19	-11.46	3.17	-0.05	0.00	**28.41**	25.40
S5	Ligger - HEA340	3.200	Combi2/11	15.52	0.16	2.56	0.00	-21.11	**47.62**

7.3. Staafkrachten koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S41..S50
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S44	Plaat - Rechthoek	0.000	Combi1/21	**-0.92**	-0.02	-21.21	0.00	2.95	0.00
S49	Plaat - Rechthoek	0.000	Combi2/2	**0.85**	0.10	59.45	0.02	-8.22	-0.02
S46	Plaat - Rechthoek	0.000	Combi2/14	0.61	**-0.15**	42.88	0.01	-3.02	0.01
S41	Plaat - Rechthoek	0.000	Combi2/14	0.61	**0.16**	33.53	-0.01	-2.35	-0.01
S47	Plaat - Rechthoek	0.187	Combi1/19	-0.89	0.06	**-45.73**	-0.02	-4.26	0.01
S47	Plaat - Rechthoek	0.000	Combi2/14	0.83	-0.10	**70.93**	0.03	-6.60	0.01
S43	Plaat - Rechthoek	0.000	Combi2/14	0.83	-0.04	54.80	**-0.03**	-6.35	0.00
S48	Plaat - Rechthoek	0.000	Combi2/14	0.83	0.04	66.78	**0.03**	-7.73	-0.01
S49	Plaat - Rechthoek	0.000	Combi2/14	0.85	0.10	59.59	0.02	**-8.24**	-0.02
S49	Plaat - Rechthoek	0.277	Combi2/14	0.85	0.10	59.44	0.02	**8.26**	0.01
S44	Plaat - Rechthoek	0.277	Combi2/14	0.85	-0.11	49.91	-0.02	6.94	**-0.02**
S44	Plaat - Rechthoek	0.000	Combi2/14	0.85	-0.11	50.05	-0.02	-6.92	**0.01**

7.4. Staafkrachten bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S51, S52
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S51	Bliksempiek 1 - Koker fl	0.000	Combi1/25	**-4.74**	-1.28	0.00	0.00	0.00	2.89
S51	Bliksempiek 1 - Koker fl	4.500	Combi1/26	**0.00**	0.00	0.00	0.00	0.00	0.00
S51	Bliksempiek 1 - Koker fl	0.000	Combi1/19	-2.90	**-2.16**	-2.65	0.00	11.91	**6.82**
S52	Bliksempiek 1 - Koker fl	0.000	Combi2/5	-2.87	**2.30**	-2.29	0.00	10.30	**-7.46**
S51	Bliksempiek 1 - Koker fl	0.000	Combi2/15	-3.49	-0.49	**-10.60**	0.00	**41.48**	2.23
S51	Bliksempiek 1 - Koker fl	0.000	Combi1/27	-4.74	0.00	**2.77**	0.00	**-6.23**	0.00
S51	Bliksempiek 1 - Koker fl	0.000	Combi1/28	-2.95	-1.92	-3.09	**0.00**	13.92	5.77

7.5. Staafkrachten betonopstort; UGT, globale extremen

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : S7, S8
Klasse : Alle UGT

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S7	Poer - Rechthoek	0.000	Combi2/11	**-139.33**	3.51	**-83.46**	0.23	**759.41**	-51.98
S8	Poer - Rechthoek	2.250	Combi2/12	**-33.44**	9.04	-68.18	-0.23	535.50	-77.33
S8	Poer - Rechthoek	1.688	Combi1/19	-73.45	**-16.69**	-12.40	0.23	143.23	122.37
S8	Poer - Rechthoek	1.688	Combi2/14	-66.74	**22.70**	-59.38	-0.38	519.98	-174.55
S8	Poer - Rechthoek	0.000	Combi1/18	-123.01	0.00	**12.24**	0.00	**-80.87**	0.00
S8	Poer - Rechthoek	0.000	Combi2/14	-120.76	16.90	-59.38	**-0.38**	620.18	**-205.68**
S7	Poer - Rechthoek	0.000	Combi2/14	-136.32	14.42	-72.22	**0.40**	672.75	-169.52
S8	Poer - Rechthoek	0.000	Combi1/19	-127.34	-12.58	-12.40	0.23	164.15	**145.46**

8. Staafspanningen

8.1. Von Mises spanningen kolom INP450; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S17..S40
Klasse : Alle UGT
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S30	1.895	Combi2/2	**-178.2**		0.2	178.2	0.0
S23	0.000	Combi2/1		146.4	0.1	146.4	0.0
S17	0.000	Combi2/1	-152.9		0.2	152.9	**0.0**
S36	1.895	Combi2/2		**177.2**	0.3	177.2	0.0
S29	0.000	Combi2/1	-150.0		**0.1**	150.0	0.0
S21	1.026	Combi2/2	-9.7		**5.8**	14.0	0.0
S27	0.897	Combi2/2		7.0	5.6	**12.0**	0.0
S30	1.895	Combi2/2	-178.2		0.2	**178.2**	0.0

8.2. Von Mises spanningen ligger HEA340; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S4..S6, S11
Klasse : Alle UGT
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S11	0.000	Combi2/11	**-261.9**		0.0	**261.9**	0.0
S5	0.000	Combi2/3		109.6	0.0	109.6	0.0
S4	0.000	Combi2/2	-45.1		**0.0**	45.1	**0.0**
S5	1.600	Combi2/6		**113.3**	0.0	113.3	0.0
S6	2.500	Combi1/13		72.0	**0.0**	72.0	0.0
S4	0.267	Combi2/5	-42.6		0.0	**42.6**	0.0

8.3. Von Mises spanningen koppelplaat; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S41..S50
Klasse : Alle UGT
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S41	0.000	Combi2/14	0.6	9.2	15.9	**0.0**
S46	0.072	Combi2/14	**0.1**	11.7	20.2	0.0
S49	0.277	Combi2/14	**44.9**	0.0	**44.9**	0.0
S50	0.000	Combi2/14	22.4	**0.0**	22.4	0.0
S47	0.093	Combi2/14	0.2	**19.6**	33.9	0.0
S45	0.161	Combi2/14	0.1	5.8	**10.1**	0.0

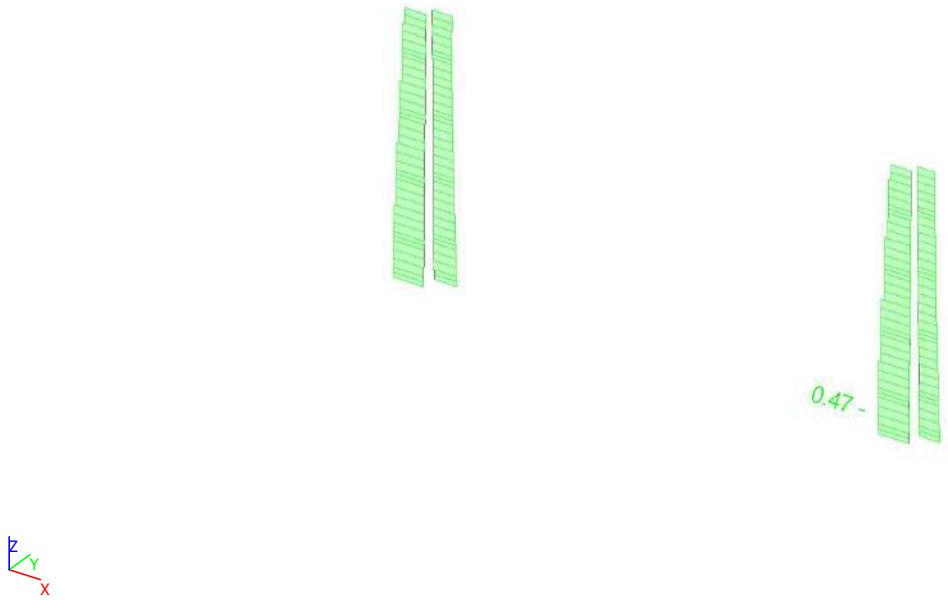
8.4. Von Mises spanningen bliksempiek; UGT, globale extremen

Lineaire berekening, Extreem : Globaal
Selectie : S51, S52
Klasse : Alle UGT
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal - [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S51	0.000	Combi2/15	**-117.5**	0.0	**117.5**	**0.0**
S51	4.500	Combi1/16	**-0.1**	3.3	5.7	0.0
S52	3.600	Combi2/15	-24.5	**0.0**	24.5	0.0
S51	4.500	Combi1/16	-0.1	**3.3**	5.7	0.0
S52	4.500	Combi1/17	-0.2	2.9	**5.0**	0.0

9. Normcontrole staal

9.1. Staalcontrole kolom INP450; UGT, grafisch overzicht



9.2. Staalcontrole kolom INP450; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: Alle UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S17..S40

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S30	1.895 / 1.895 m	INP450	S 355	Alle UGT	0.47 -

Combinatiesleutel
Alle UGT / 1.20*BG1 + 1.20*BG2 - 1.50*BG4 + LC1034

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	355.0	MPa
Uiterste sterkte f_u	490.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 1.895 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-294.36	kN
$V_{y,Ed}$	8.26	kN
$V_{z,Ed}$	29.08	kN
T_{Ed}	-0.02	kNm
$M_{y,Ed}$	233.07	kNm
$M_{z,Ed}$	8.91	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	-9.652e+04	-1.235e+05								
3	SO	61	24	-7.494e+04	-4.798e+04								
4	I	369	16	-7.170e+04	1.110e+05	-0.65		0.57	22.78	48.10	56.28	72.10	1
5	SO	61	24	1.358e+05	1.627e+05	0.83	0.44	1.00	2.50	7.32	8.14	11.38	1
7	SO	61	24	1.142e+05	8.725e+04	0.76	0.52	1.00	2.50	7.32	8.14	12.36	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.4700e-02	m^2
$N_{c,Rd}$	5218.50	kN
Eenheidscontrole	0.06	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.4000e-03	m^3
$M_{pl,y,Rd}$	852.00	kNm
Eenheidscontrole	0.27	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.4500e-04	m^3
$M_{pl,z,Rd}$	122.48	kNm
Eenheidscontrole	0.07	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	8.7869e-03	m^2
$V_{pl,y,Rd}$	1800.95	kN
Eenheidscontrole	0.00	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	7.8032e-03	m^2
$V_{pl,z,Rd}$	1599.34	kN
Eenheidscontrole	0.02	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.2	MPa
τ_{Rd}	205.0	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	852.00	kNm
α	2.00	
$M_{pl,z,Rd}$	122.48	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.07 + 0.07 = 0.15 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 1.895 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	61	24	-9.652e+04	-1.235e+05								
3	SO	61	24	-7.494e+04	-4.798e+04								
4	I	369	16	-7.170e+04	1.110e+05	-0.65		0.57	22.78	48.10	56.28	72.10	1
5	SO	61	24	1.358e+05	1.627e+05	0.83	0.44	1.00	2.50	7.32	8.14	11.38	1
7	SO	61	24	1.142e+05	8.725e+04	0.76	0.52	1.00	2.50	7.32	8.14	12.36	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings flexibel	
Systeemlengte L	8.251	1.895	m
Knikfactor k	2.38	1.61	
Kniklengte L_{cr}	19.636	3.044	m
Kritische Euler last N_{cr}	2464.53	3870.64	kN
Slankheid λ	111.19	88.72	
Relatieve slankheid λ_{rel}	1.46	1.16	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	a	b	
Imperfectie α	0.21	0.34	
Reductie factor χ	0.39	0.50	
Knikweerstand $N_{b,Rd}$	2045.69	2607.48	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Knikweerstand $N_{b,Rd}$	2045.69	kN
Eenheidscontrole	0.14	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Elastisch kritisch moment M_{cr}	3045.15	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.53	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	1.895	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.13	

Mcr parameters		
Kip moment factor C_2	0.00	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.4700e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	2.4000e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	3.4500e-04	m^3
Ontwerpdrukkracht N_{Ed}	294.36	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	241.92	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	8.91	kNm
Karakteristieke drukweerstand N_{Rk}	5218.50	kN
Karakteristieke momentweerstand $M_{y,Rk}$	852.00	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	122.48	kNm
Reductie factor χ_y	0.39	
Reductie factor χ_z	0.50	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	1.00	
Interactiefactor k_{yz}	0.63	
Interactiefactor k_{zy}	0.60	
Interactiefactor k_{zz}	1.04	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S29 positie 0.305 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S30 positie 1.895 m.

Interactie methode 2 parameters	
Methode voor interactiefactoren	Tabel B.1
Zijdelings flexibel type y	Zijdelings flexibel
Equivalente moment factor C_{my}	0.90
Zijdelings flexibel type z	Zijdelings flexibel
Equivalente moment factor C_{mz}	0.90
Resulterend belastingtype LT	lineair moment M
Ratio van uiteinde momenten ψ_{LT}	0.76
Equivalente moment factor C_{mLT}	0.91

Eenheidscontrole (6.61) = 0.14 + 0.28 + 0.05 = 0.47 -
Eenheidscontrole (6.62) = 0.11 + 0.17 + 0.08 = 0.36 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

Plooiparameters		
Knik veldlengte a	1.895	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	401	mm
Lijfdikte t	16	mm
Materiaal coefficiënt ε	0.81	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	24.78
Lijfslankheid limiet	48.82

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.3. Staalcontrole ligger HEA340; UGT, grafisch overzicht





9.4. Staalcontrole ligger HEA340; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: Alle UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S4..S6, S11

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S11	0.000 / 5.000 m	HEA340	S 355	Alle UGT	0.48 -

Combinatiesleutel
Alle UGT / 1.20*BG1 + 1.20*BG2 - 1.50*BG3 + LC1002

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	355.0	MPa
Uiterste sterkte f_u	490.0	MPa
Bouwwijze	Gewalst	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	Berekende	Eenheid
N_{Ed}	-68.86	kN
$V_{y,Ed}$	26.78	kN
$V_{z,Ed}$	-4.61	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	0.23	kNm
$M_{z,Ed}$	-127.29	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	5.938e+04	2.618e+05	0.23	0.53	1.00	7.17	7.32	8.14	12.39	1
3	SO	118	17	-4.932e+04	-2.517e+05								
4	I	243	10	5.056e+03	5.259e+03	0.96		1.00	25.58	22.78	27.66	31.34	2
5	SO	118	17	-4.906e+04	-2.515e+05								
7	SO	118	17	5.964e+04	2.621e+05	0.23	0.53	1.00	7.17	7.32	8.14	12.39	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 2

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A	1.3400e-02	m^2
$N_{c,Rd}$	4757.00	kN
Eenheidscontrole	0.01	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	1.8500e-03	m^3
$M_{pl,y,Rd}$	656.75	kNm
Eenheidscontrole	0.00	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	7.5417e-04	m^3
$M_{pl,z,Rd}$	267.73	kNm
Eenheidscontrole	0.48	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	1.0247e-02	m^2
$V_{pl,y,Rd}$	2100.17	kN
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	4.5477e-03	m^2
$V_{pl,z,Rd}$	932.10	kN
Eenheidscontrole	0.00	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	2	
τ_{Ed}	0.0	MPa
τ_{Rd}	205.0	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{pl,y,Rd}$	656.75	kNm
α	2.00	
$M_{pl,z,Rd}$	267.73	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.00 + 0.48 = 0.48 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden

genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan beide criteria (6.33) en (6.34) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand bij de y-y-as genegeerd.
Opmerking: Aangezien de axiale kracht voldoet aan het criterium (6.35) van EN 1993-1-1 artikel 6.2.9.1(4) wordt het effect ervan op de momentweerstand
bij de z-z-as genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.000 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	SO	118	17	5.938e+04	2.618e+05	0.23	0.53	1.00	7.17	7.32	8.14	12.39	1
3	SO	118	17	-4.932e+04	-2.517e+05								
4	I	243	10	5.056e+03	5.259e+03	0.96		1.00	25.58	22.78	27.66	31.34	2
5	SO	118	17	-4.906e+04	-2.515e+05								
7	SO	118	17	5.964e+04	2.621e+05	0.23	0.53	1.00	7.17	7.32	8.14	12.39	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 2

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings stijf	Zijdelings stijf	
Systeemlengte L	15.500	15.500	m
Knikfactor k	1.00	1.00	
Kniklengte L_{cr}	15.500	15.500	m
Kritische Euler last N_{cr}	2389.66	641.84	kN
Slankheid λ	107.81	208.02	
Relatieve slankheid λ_{rel}	1.41	2.72	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	
Knikcurve	b	c	
Imperfectie α	0.34	0.49	
Reductie factor χ	0.38	0.11	
Knikweerstand $N_{b,Rd}$	1793.98	540.21	kN

Buigingsknikverificatie		
Oppervlakte van de doorsnede A	1.3400e-02	m^2
Knikweerstand $N_{b,Rd}$	540.21	kN
Eenheidscontrole	0.13	-

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)
Opmerking: Voor deze I-sectie de Torsieknikweerstand is hoger dan de weerstand van Buigknik. Om deze reden is de Torsieknik niet afgedrukt in de uitvoer.

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.3 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Alternatief geval	
Plastische doorsnedemodulus $W_{pl,y}$	1.8500e-03	m^3
Elastisch kritisch moment M_{cr}	311.60	kNm
Relatieve slankheid $\lambda_{rel,LT}$	1.45	
Limietslankheid $\lambda_{rel,LT,0}$	0.40	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	15.500	m
Vorklengte L_g	15.500	m
Invloed van lastpositie	geen invloed	
Factor α	575.00	
Reductie factor k_{red}	1.00	

Mcr parameters		
Coëfficiënt C	3.82	
Factor S	1933	mm
Kip moment factor C_1	1.13	
Kip moment factor C_2	0.00	

Opmerking: M_{cr} is berekend volgens de Nederlandse NEN-EN NA.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Oppervlakte van de doorsnede A	1.3400e-02	m^2
Plastische doorsnedemodulus $W_{pl,y}$	1.8500e-03	m^3
Plastische doorsnedemodulus $W_{pl,z}$	7.5417e-04	m^3
Ontwerpdrukkracht N_{Ed}	68.86	kN
Ontwerp buigend moment (maximum) $M_{y,Ed}$	-29.31	kNm
Ontwerp buigend moment (maximum) $M_{z,Ed}$	-127.29	kNm
Karakteristieke drukweerstand N_{Rk}	4757.00	kN
Karakteristieke momentweerstand $M_{y,Rk}$	656.75	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	267.73	kNm
Reductie factor χ_y	0.38	
Reductie factor χ_z	0.11	
Gewijzigde reductiefactor $\chi_{LT,mod}$	1.00	
Interactiefactor k_{yy}	0.98	
Interactiefactor k_{yz}	0.28	
Interactiefactor k_{zy}	0.59	
Interactiefactor k_{zz}	0.47	

Maximum moment $M_{y,Ed}$ is afgeleid van balk S4 positie 4.000 m.
Maximum moment $M_{z,Ed}$ is afgeleid van balk S11 positie 0.000 m.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.1	
Resulterend belastingtype y	lijnlast q	
Uiteinde moment $M_{h,y}$	0.23	kNm
Veldmoment $M_{s,y}$	-29.31	kNm
Factor $\alpha_{h,y}$	-0.01	
Ratio van uiteinde momenten ψ_y	0.90	
Equivalente moment factor C_{my}	0.95	
Resulterend belastingtype z	lijnlast q	
Uiteinde moment $M_{h,z}$	-127.29	kNm
Veldmoment $M_{s,z}$	40.76	kNm
Factor $\alpha_{s,z}$	-0.32	
Ratio van uiteinde momenten ψ_z	-0.21	
Equivalente moment factor C_{mz}	0.40	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	0.23	kNm
Veldmoment $M_{s,LT}$	-29.31	kNm
Factor $\alpha_{h,LT}$	-0.01	
Ratio van uiteinde momenten ψ_{LT}	0.90	
Equivalente moment factor C_{mLT}	0.95	

Eenheidscontrole (6.61) = 0.04 + 0.04 + 0.13 = 0.22 -
Eenheidscontrole (6.62) = 0.13 + 0.03 + 0.22 = 0.38 -

Plooicontrole
Volgens EN 1993-1-5 artikel 5 & 7.1 en formule (5.10) & (7.1)

Plooiparameters		
Knik veldlengte a	5.000	m
Lijf	niet-verstijfd	
Lijfhoogte h_w	297	mm
Lijfdikte t	10	mm
Materiaal coefficiënt ε	0.81	
Correctiefactor voor dwarskracht η	1.20	

Plooiverificatie	
Lijf slankheid h_w/t	31.26
Lijfslankheid limiet	48.82

Opmerking: De slankheid van het lijf is zo dat de Plooi effecten kunnen worden genegeerd volgens EN 1993-1-5 artikel 5.1(2).

De staaf voldoet aan de stabiliteitscontrole.

9.5. Staalcontrole koppelplaat; UGT, grafisch overzicht



9.6. Staalcontrole koppelplaat; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: Alle UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S41..S50

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S49	**0.277 / 0.277 m**	**Rechthoek (200; 28)**	**S 355**	**Alle UGT**	**0.08 -**

Combinatiesleutel
Alle UGT / 1.20*BG1 + 1.20*BG2 - 1.50*BG4 + LC1042

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	355.0	MPa
Uiterste sterkte f_u	490.0	MPa
Bouwwijze	Algemeen	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.277 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	0.85	kN
$V_{y,Ed}$	0.10	kN
$V_{z,Ed}$	59.44	kN
T_{Ed}	0.02	kNm
$M_{y,Ed}$	8.26	kNm
$M_{z,Ed}$	0.01	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-4.441e+04	4.410e+04	-1.01	0.85	0.50	7.14	14.70	16.33	15.77	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Trekcontrole
Volgens EN 1993-1-1 artikel 6.2.3 en formule (6.5)

A	5.6000e-03	m^2
$N_{pl,Rd}$	1988.00	kN
$N_{u,Rd}$	1975.68	kN
$N_{t,Rd}$	1975.68	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,y}$	2.8000e-04	m^3
$M_{pl,y,Rd}$	99.40	kNm
Eenheidscontrole	0.08	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.13)

$W_{pl,z}$	3.9200e-05	m^3
$M_{pl,z,Rd}$	13.92	kNm
Eenheidscontrole	0.00	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m^2
$V_{pl,y,Rd}$	1147.77	kN
Eenheidscontrole	0.00	-

Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.6000e-03	m^2
$V_{pl,z,Rd}$	1147.77	kN
Eenheidscontrole	0.05	-

Torsiecontrole
Volgens EN 1993-1-1 artikel 6.2.7 en formule (6.23)

Vezel	6	
τ_{Ed}	0.5	MPa
τ_{Rd}	205.0	MPa
Eenheidscontrole	0.00	-

Opmerking: De eenheidscontrole voor torsie is lager dan de grenswaarde van 0.05. Hierdoor wordt torsie beschouwd als niet-significant en wordt deze genegeerd in de gecombineerde controles.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.1 en formule (6.41)

$M_{N,y,Rd}$	99.40	kNm
α	1.00	
$M_{N,z,Rd}$	13.92	kNm
β	1.00	

Eenheidscontrole (6.41) = 0.08 + 0.00 = 0.08 -

Opmerking: Aangezien de dwarskrachten minder dan de helft van de plastische dwarskrachtweerstanden bedragen, wordt het effect ervan op de momentweerstanden
genegeerd.

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Beslissende positie voor stabiliteitsclassificatie: 0.277 m
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m^2]	σ_2 [kN/m^2]	Ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	200	28	-4.441e+04	4.410e+04	-1.01	0.85	0.50	7.14	14.70	16.33	15.77	1

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 1

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Plastische doorsnedemodulus $W_{pl,y}$	2.8000e-04	m^3
Elastisch kritisch moment M_{cr}	1742.87	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.24	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

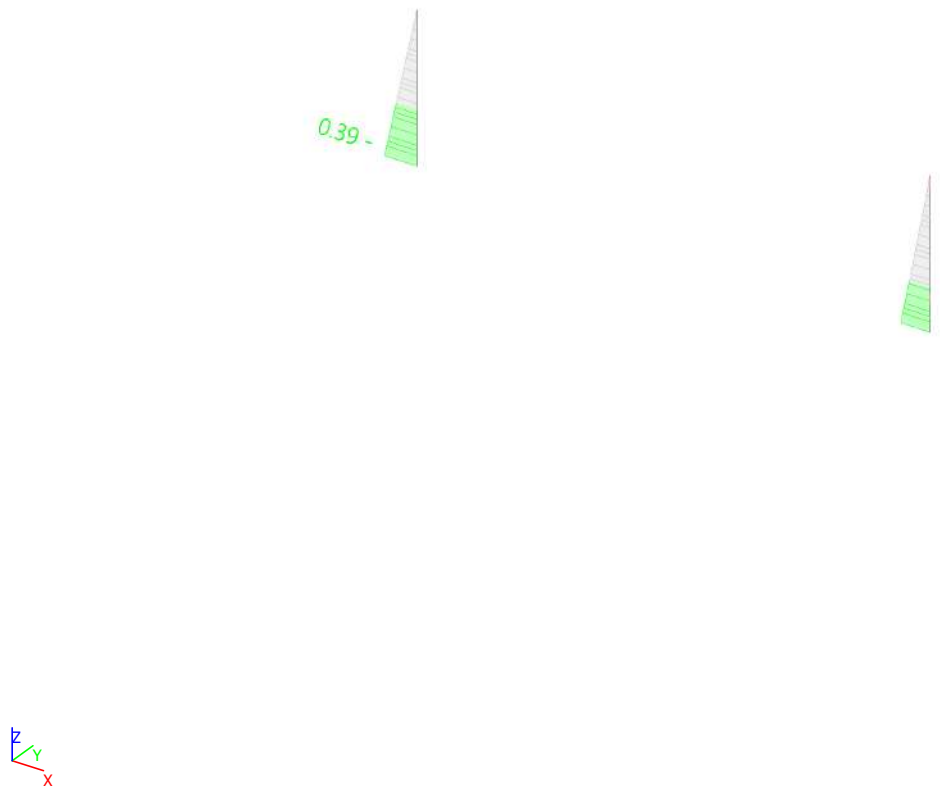
Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	0.447	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	2.60	
Kip moment factor C_2	0.00	
Kip moment factor C_3	0.00	
Afschuif middenafstand d_z	0	mm
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

De staaf voldoet aan de stabiliteitscontrole.

9.7. Staalcontrole bliksempiek; UGT, grafisch overzicht



9.8. Staalcontrole bliksempiek; UGT, maatgevende doorsnede, uitgebreid

Lineaire berekening
Klasse: Alle UGT
Assenstelsel: Hoofd
Extreme 1D: Globaal
Selectie: S51, S52

EN 1993-1-1 Normcontrole
Nationale bijlage: Nederlandse NEN-EN NA

Staaf S51	**0.000 / 4.500 m**	**Koker fl (374; 7; 126; 10; 354)**	**S 355**	**Alle UGT**	**0.39 -**

Combinatiesleutel
Alle UGT / 1.20*BG1 + 1.20*BG2 - 1.50*BG3 + LC1003

Partiële veiligheidsfactoren	
γ_{M0} voor weerstand van doorsneden	1.00
γ_{M1} voor weerstand tegen instabiliteit	1.00
γ_{M2} voor weerstand van netto-doorsneden	1.25

Materiaal		
Vloeisterkte f_y	355.0	MPa
Uiterste sterkte f_u	490.0	MPa
Bouwwijze	Gelast	

...::DOORSNEDECONTROLE::...

De kritische controle is op positie 0.000 m

Interne krachten	**Berekende**	**Eenheid**
N_{Ed}	-3.49	kN
$V_{y,Ed}$	-0.49	kN
$V_{z,Ed}$	-10.60	kN
T_{Ed}	0.00	kNm
$M_{y,Ed}$	41.48	kNm

Interne krachten	Berekende	Eenheid
$M_{z,Ed}$	2.23	kNm

Classificatie voor doorsnede-ontwerp
Classificatie volgens EN 1993-1-1 Artikel 5.5.2
Classificatie van interne en uitkragende onderdelen volgens EN 1993-1-1 tabel 5.2 blad 1 en 2

Id	Type	c [mm]	t [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	α [-]	c/t [-]	Limiet klasse 1 [-]	Limiet klasse 2 [-]	Limiet klasse 3 [-]	Klasse
1	UO	5	7	1.050e+05	1.049e+05	1.00	0.43	1.00	0.71	7.32	8.14	11.20	1
2	I	126	10	9.415e+04	-9.870e+04	-1.05		0.49	12.60	60.00	69.16	105.79	1
3	I	126	10	9.959e+04	-9.327e+04	-0.94		0.52	12.60	55.71	64.49	94.25	1
4	UO	5	7	-9.855e+04	-9.863e+04								
5	UO	5	7	9.951e+04	9.944e+04	1.00	0.43	1.00	0.71	7.32	8.14	11.22	1
6	I	4	10	9.415e+04	9.951e+04	0.95		1.00	0.35	22.78	27.66	31.51	1
7	UO	5	7	-1.041e+05	-1.041e+05								
8	I	4	10	-9.870e+04	-1.041e+05								
9	I	364	7	1.049e+05	9.951e+04	0.95		1.00	52.00	22.78	27.66	31.48	4
10	I	4	10	9.959e+04	1.049e+05	0.95		1.00	0.35	22.78	27.66	31.47	1
11	I	364	7	-9.863e+04	-1.041e+05								
12	I	4	10	-9.327e+04	-9.863e+04								

Opmerking: De classificatielimieten zijn ingesteld volgens Semi-Comp+.
De doorsnede is geclassificeerd als klasse 4

Doorsnede-eigenschappen			
A	7.7560e-03 m²		
A_y/A	0.65	A_z/A	0.36
I_y	2.6510e-05 m⁴	I_z	1.4453e-04 m⁴
I_{yz}	5.4210e-20 m⁴	I_t	7.1957e-05 m⁴
I_w	1.3989e-07 m⁶		
$W_{el,y}$	3.7872e-04 m³	$W_{el,z}$	7.7287e-04 m³
$W_{pl,y}$	4.2757e-04 m³	$W_{pl,z}$	9.4821e-04 m³
c_y	187 mm	c_z	70 mm
d_y	0 mm	d_z	0 mm

Effectieve doorsnede N-
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
2	I	126	3.550e+05	3.550e+05	1.00	4.00	0.27	1.00	126	63	63
3	I	126	3.550e+05	3.550e+05	1.00	4.00	0.27	1.00	126	63	63
4	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
5	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
6	I	4	3.550e+05	3.550e+05	1.00	4.00	0.01	1.00	4	2	2
7	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
8	I	4	3.550e+05	3.550e+05	1.00	4.00	0.01	1.00	4	2	2
9	I	364	3.550e+05	3.550e+05	1.00	4.00	1.13	0.71	260	130	130
10	I	4	3.550e+05	3.550e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	3.550e+05	3.550e+05	1.00	4.00	1.13	0.71	260	130	130
12	I	4	3.550e+05	3.550e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve doorsnede My+
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
2	I	126	3.363e+05	-3.363e+05	-1.00	23.90	0.11	1.00	63	25	38
3	I	126	3.363e+05	-3.363e+05	-1.00	23.90	0.11	1.00	63	25	38
4	UO	5	-3.550e+05	-3.550e+05							
5	UO	5	3.550e+05	3.550e+05	1.00	0.43	0.05	1.00	5		
6	I	4	3.550e+05	3.363e+05	0.95	4.11	0.01	1.00	4	2	2
7	UO	5	-3.550e+05	-3.550e+05							
8	I	4	-3.363e+05	-3.550e+05							
9	I	364	3.550e+05	3.550e+05	1.00	4.00	1.13	0.71	260	130	130
10	I	4	3.550e+05	3.363e+05	0.95	4.11	0.01	1.00	4	2	2

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
11	I	364	-3.550e+05	-3.550e+05							
12	I	4	-3.363e+05	-3.550e+05							

Effectieve doorsnede Mz+
Berekening effectieve breedte
Volgens EN 1993-1-5 artikel 4.4

Id	Type	b_p [mm]	σ_1 [kN/m²]	σ_2 [kN/m²]	ψ [-]	k_σ [-]	λ_p [-]	ρ [-]	b_e [mm]	b_{e1} [mm]	b_{e2} [mm]
1	UO	5	3.550e+05	3.455e+05	0.97	0.43	0.05	1.00	5		
2	I	126	-3.455e+05	-3.455e+05							
3	I	126	3.455e+05	3.455e+05	1.00	4.00	0.27	1.00	126	63	63
4	UO	5	3.550e+05	3.455e+05	0.97	0.43	0.05	1.00	5		
5	UO	5	-3.455e+05	-3.550e+05							
6	I	4	-3.455e+05	-3.455e+05							
7	UO	5	-3.455e+05	-3.550e+05							
8	I	4	-3.455e+05	-3.455e+05							
9	I	364	3.455e+05	-3.455e+05	-1.00	23.90	0.46	1.00	182	73	109
10	I	4	3.455e+05	3.455e+05	1.00	4.00	0.01	1.00	4	2	2
11	I	364	3.455e+05	-3.455e+05	-1.00	23.90	0.46	1.00	182	73	109
12	I	4	3.455e+05	3.455e+05	1.00	4.00	0.01	1.00	4	2	2

Effectieve eigenschappen						
Effectieve oppervlakte	A_{eff}	6.4434e-03	m^2			
Effectieve traagheidsmoment	$I_{eff,y}$	2.3557e-05	m^4	$I_{eff,z}$	1.4916e-04	m^4
Effectieve doorsnedemodulus	$W_{eff,y}$	3.0699e-04	m^3	$W_{eff,z}$	7.9767e-04	m^3
Verschuiving van het zwaartepunt	$e_{N,y}$	0	mm	$e_{N,z}$	0	mm

Drukcontrole
Volgens EN 1993-1-1 artikel 6.2.4 en formule (6.9)

A_{eff}	6.4434e-03	m^2
$N_{c,Rd}$	2287.42	kN
Eenheidscontrole	0.00	-

Controle buigend moment voor M_y
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,y,min}$	3.0699e-04	m^3
$M_{c,y,Rd}$	108.98	kNm
Eenheidscontrole	0.38	-

Controle buigend moment voor M_z
Volgens EN 1993-1-1 artikel 6.2.5 en formule (6.12),(6.15)

$W_{eff,z,min}$	7.9767e-04	m^3
$M_{c,z,Rd}$	283.17	kNm
Eenheidscontrole	0.01	-

Dwarskrachtcontrole voor V_y
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	5.0496e-03	m^2
$V_{pl,y,Rd}$	1034.95	kN
Eenheidscontrole	0.00	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.
Dwarskrachtcontrole voor V_z
Volgens EN 1993-1-1 artikel 6.2.6 en formule (6.17)

η	1.20	
A_v	2.7596e-03	m^2
$V_{pl,z,Rd}$	565.60	kN
Eenheidscontrole	0.02	-

Opmerking: Het dwarskrachtoppervlak is afkomstig van de doorsnede-eigenschappen.

Controle voor gecombineerde buiging, axiale kracht en Dwarskracht
Volgens EN 1993-1-1 artikel 6.2.9.3 en formule (6.43)

Effectieve eigenschappen		
A_{eff}	6.4434e-03	m^2
$e_{N,y}$	0	mm
$e_{N,z}$	0	mm
$W_{eff,y}$	3.0699e-04	m^3
$W_{eff,z}$	7.9767e-04	m^3

Normaalspanningen		
$\sigma_{N,Ed}$	0.5	MPa
$\sigma_{My,Ed}$	135.1	MPa
$\sigma_{Mz,Ed}$	2.8	MPa
$\sigma_{tot,Ed}$	138.4	MPa
Eenheidscontrole	0.39	-

De staaf voldoet aan de doorsnedecontrole.

...::STABILITEITSCONTROLE::...

Classificatie voor staafknikontwerp
Opmerking: Voor deze doorsnede wordt de classificatie voor doorsnede-ontwerp tevens gebruikt voor staafknikontwerp.
=> Doorsnede geclassificeerd als klasse 4 voor staafknikontwerp

Buigingsknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Knikparameters	yy	zz	
Zijd. flex. type	Zijdelings flexibel	Zijdelings stijf	
Systeemlengte L	4.500	4.500	m
Knikfactor k	2.55	0.92	
Kniklengte L_{cr}	11.454	4.121	m
Kritische Euler last N_{cr}	418.85	17637.01	kN
Slankheid λ	195.91	30.19	
Relatieve slankheid λ_{rel}	2.34	0.36	
Limietslankheid $\lambda_{rel,0}$	0.20	0.20	

Opmerking: De slankheid of compressie kracht is zodanig dat Buigknik effecten kunnen worden genegeerd volgens EN 1993-1-1 artikel 6.3.1.2(4).

Torsieknikcontrole
Volgens EN 1993-1-1 artikel 6.3.1.1 en formule (6.46)

Torsieknik lengte L_{cr}	4.500	m
Elastische kritische last $N_{cr,T}$	264204.07	kN
Elastische kritische last $N_{cr,TF}$	418.85	kN
Relatieve slankheid $\lambda_{rel,T}$	2.34	
Limietslankheid $\lambda_{rel,0}$	0.20	

Opmerking: De slankheid of de drukkracht is zo dat de buigknikeffecten kunnen worden genegeerd volgens de EN 1993-1-1 artikel 6.3.1.2(4).

Kipcontrole
Volgens EN 1993-1-1 artikel 6.3.2.1 & 6.3.2.2 en formule (6.54)

Kip parameters		
Methode voor Kipcurve	Algemeen geval	
Effectieve doorsnedemodulus $W_{eff,y}$	3.0699e-04	m^3
Elastisch kritisch moment M_{cr}	17348.33	kNm
Relatieve slankheid $\lambda_{rel,LT}$	0.08	
Limietslankheid $\lambda_{rel,LT,0}$	0.20	

Opmerking: De slankheid of het buigend moment is zo dat de kipeffecten genegeerd kunnen worden volgens EN 1993-1-1 artikel 6.3.2.2(4).

Mcr parameters		
LTB lengte L	4.500	m
Invloed van lastpositie	geen invloed	
Correctiefactor k	1.00	
Correctiefactor k_w	1.00	
Kip moment factor C_1	1.87	
Kip moment factor C_2	0.03	
Kip moment factor C_3	1.00	
Afschuif middenafstand d_z	0	mm

Mcr parameters		
Afstand tot lastoepassing z_g	0	mm
Mono-symmetrische constante β_y	0	mm
Mono-symmetrische constante z_j	0	mm

Waarschuwing: Er wordt niet voldaan aan alle voorwaarden van de Nederlandse NEN-EN NA en daarom wordt de standaard EC-EN-benadering gebruikt.
Opmerking: C parameters zijn bepaald volgens de ECCS 119 2006 / Galea 2002.

Gecombineerde buig- en axiale drukcontrole
Volgens EN 1993-1-1 artikel 6.3.3 en formule (6.61),(6.62)

Buig- en axiale drukcontrole paramaters		
Interactie methode	alternatieve methode 2	
Effectieve oppervlakte van de doorsnede A_{eff}	6.4434e-03	m^2
Effectieve doorsnedemodulus $W_{eff,y}$	3.0699e-04	m^3
Effectieve doorsnedemodulus $W_{eff,z}$	7.9767e-04	m^3
Ontwerpdrukkracht N_{Ed}	3.49	kN
Ontwerp buigende momenten $M_{y,Ed}$	41.48	kNm
Ontwerp buigende momenten $M_{z,Ed}$	2.23	kNm
Additioneel moment $\Delta M_{y,Ed}$	0.00	kNm
Additioneel moment $\Delta M_{z,Ed}$	0.00	kNm
Karakteristieke drukweerstand N_{Rk}	2287.42	kN
Karakteristieke momentweerstand $M_{y,Rk}$	108.98	kNm
Karakteristieke momentweerstand $M_{z,Rk}$	283.17	kNm
Reductie factor χ_y	1.00	
Reductie factor χ_z	1.00	
Reductie factor χ_{LT}	1.00	
Interactiefactor k_{yy}	0.90	
Interactiefactor k_{yz}	0.60	
Interactiefactor k_{zy}	1.00	
Interactiefactor k_{zz}	0.60	

Opmerking: Omdat de staaf niet-prismatisch is, zijn de daadwerkelijke momenten in de doorsnede toegepast in plaats van de de maximale momenten.

Interactie methode 2 parameters		
Methode voor interactiefactoren	Tabel B.2	
Zijdelings flexibel type y	Zijdelings flexibel	
Equivalente moment factor C_{my}	0.90	
Resulterend belastingtype z	lineair moment M	
Ratio van uiteinde momenten ψ_z	0.00	
Equivalente moment factor C_{mz}	0.60	
Resulterend belastingtype LT	lijnlast q	
Uiteinde moment $M_{h,LT}$	41.48	kNm
Veldmoment $M_{s,LT}$	19.18	kNm
Factor $\alpha_{s,LT}$	0.46	
Ratio van uiteinde momenten ψ_{LT}	0.00	
Equivalente moment factor C_{mLT}	0.57	

Eenheidscontrole (6.61) = 0.00 + 0.34 + 0.00 = 0.35 -
Eenheidscontrole (6.62) = 0.00 + 0.38 + 0.00 = 0.39 -

De staaf voldoet aan de stabiliteitscontrole.

BIJLAGE I

Kantelveiligheid juk 64, versterkt

Kantelveiligheid juk 65, versterkt

Kantelveiligheid juk 64b

Bijlage I-1

Technosoft Construct release 6.07a 19 dec 2019

Project : TenneT 150kV Station Waalwijk
Onderdeel : Kantelveiligheid fundering juk 64 en 65 links en rechts
Datum : 19/12/2019
Eenheden : kN/m/rad

Toegepaste normen volgens Eurocode met Nederlandse NB

Belastingen	NEN-EN 1990:2002	C2:2010	NB:2011(nl)
	NEN-EN 1991-1-1:2002	C1:2009	NB:2011(nl)
Geotechniek	EN 1997-1:2004	AC:2009	
	NEN-EN 1997-1:2005	C1+A1:2013	NB:2016
	NEN 9997-1:2016	C2:2017	

Funderingsplaat. (A)

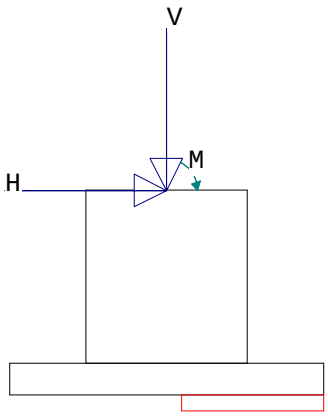
Plaatafmeting B*L*D	[mm]	: 4000	* 4400	* 400
Kolomafmeting B*H	[mm]	: 2050	* 2050	
Aanlegdiepte	[m]	: 1.90		
Bovenkant kolom tov. maaiveld	[m]	: 0.70		
Excentriciteit kolom	[mm]	: 0.00		
Soortelijk gewicht grond	[kN/m3]	: 18.00		
Soortelijk gewicht beton	[kN/m3]	: 24.00		
Moment	[kNm]	: 695.34		
Verticale kracht	[kN]	: 73.76		
Horizontale kracht	[kN]	: 81.47		
Belastingfactor		: 1.00		

Tussenresultaten

E.g. grond	[kN] : 361.73		Red. e.g. grond	[kN/m] :	118.80
E.g. kolom	[kN] : 221.89				
E.g. plaat	[kN] : 168.96		Red. e.g. plaat	[kN/m] :	42.24
Totale vert. kracht	[kN] : 826.34		Exc. drukfg.- zw.plt.	[m] :	1.10

Resultaten

Gronddruk	[kN/m2] : 104.08				
Kantelmoment	[kNm] : 907.16		Stab.moment	[kNm] :	1652.69
Kantelveiligheid	: **1.82**		Bef rechts	[m] :	1.80
Moment links	[kNm] : 80.52		Moment rechts	[kNm] :	-148.46



Technosoft Construct release 6.07a 19 dec 2019

Project : TenneT 150kV Station Waalwijk
Onderdeel : Kantelveiligheid fundering juk 64 en 65 midden (1)
Datum : 19/12/2019
Eenheden : kN/m/rad

Toegepaste normen volgens Eurocode met Nederlandse NB

Belastingen	NEN-EN 1990:2002	C2:2010	NB:2011(nl)
	NEN-EN 1991-1-1:2002	C1:2009	NB:2011(nl)
Geotechniek	EN 1997-1:2004	AC:2009	
	NEN-EN 1997-1:2005	C1+A1:2013	NB:2016
	NEN 9997-1:2016	C2:2017	

Funderingsplaat. (A)

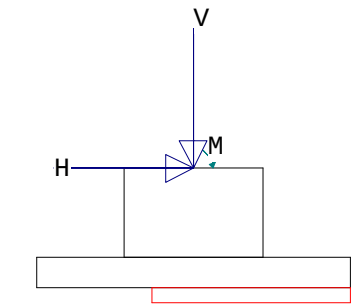
Plaatafmeting B*L*D	[mm]	: 6200 * 6200 * 600	
Kolomafmeting B*H	[mm]	: 2750 * 2050	
Aanlegdiepte	[m]	: 1.70	
Bovenkant kolom tov. maaiveld	[m]	: 0.65	
Excentriciteit kolom	[mm]	: 0.00	
Soortelijk gewicht grond	[kN/m3]	: 18.00	
Soortelijk gewicht beton	[kN/m3]	: 24.00	
Moment	[kNm]	: 1386.98	
Verticale kracht	[kN]	: 119.96	
Horizontale kracht	[kN]	: 165.26	
Belastingfactor		: 1.00	

Tussenresultaten

E.g. grond	[kN] : 649.49		Red. e.g. grond	[kN/m] :	122.76
E.g. kolom	[kN] : 236.77				
E.g. plaat	[kN] : 553.54		Red. e.g. plaat	[kN/m] :	89.28
Totale vert. kracht	[kN] : 1559.76		Exc. drukfg.- zw.plt.	[m] :	1.14

Resultaten

Gronddruk	[kN/m2] : 64.12				
Kantelmoment	[kNm] : 1775.34		Stab.moment	[kNm] :	4835.26
Kantelveiligheid	: **2.72**		Bef rechts	[m] :	3.92
Moment links	[kNm] : 324.69		Moment rechts	[kNm] :	-284.04



Technosoft Construct release 6.07a 19 dec 2019

Project : TenneT 150kV Station Waalwijk
Onderdeel : Kantelveiligheid fundering juk 64 en 65 midden (2)
Datum : 19/12/2019
Eenheden : kN/m/rad

Toegepaste normen volgens Eurocode met Nederlandse NB

Belastingen	NEN-EN 1990:2002	C2:2010	NB:2011(nl)
	NEN-EN 1991-1-1:2002	C1:2009	NB:2011(nl)
Geotechniek	EN 1997-1:2004	AC:2009	
	NEN-EN 1997-1:2005	C1+A1:2013	NB:2016
	NEN 9997-1:2016	C2:2017	

Funderingsplaat. (A)

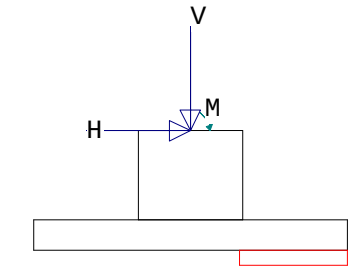
Plaatafmeting B*L*D	[mm]	: 6200	* 6200	* 600
Kolomafmeting B*H	[mm]	: 2050	* 2750	
Aanlegdiepte	[m]	: 1.70		
Bovenkant kolom tov. maaiveld	[m]	: 0.65		
Excentriciteit kolom	[mm]	: 0.00		
Soortelijk gewicht grond	[kN/m3]	: 18.00		
Soortelijk gewicht beton	[kN/m3]	: 24.00		
Moment	[kNm]	: 2596.90		
Verticale kracht	[kN]	: 130.82		
Horizontale kracht	[kN]	: 251.67		
Belastingfactor		: 1.00		

Tussenresultaten

E.g. grond	[kN] : 649.49		Red. e.g. grond	[kN/m] :	122.76
E.g. kolom	[kN] : 236.77				
E.g. plaat	[kN] : 553.54		Red. e.g. plaat	[kN/m] :	89.28
Totale vert. kracht	[kN] : 1570.62		Exc. drukfg.- zw.plt.	[m] :	2.03

Resultaten

Gronddruk	[kN/m2] : 118.37				
Kantelmoment	[kNm] : 3188.32		Stab.moment	[kNm] :	4868.92
Kantelveiligheid	: **1.53**		Bef rechts	[m] :	2.14
Moment links	[kNm] : 467.55		Moment rechts	[kNm] :	-1150.74



Technosoft Construct release 6.07a 19 dec 2019

Project : TenneT 150kV Station Waalwijk
Onderdeel : Kantelveiligheid fundering juk 64b
Datum : 19/12/2019
Eenheden : kN/m/rad

Toegepaste normen volgens Eurocode met Nederlandse NB

Belastingen	NEN-EN 1990:2002	C2:2010	NB:2011(nl)
	NEN-EN 1991-1-1:2002	C1:2009	NB:2011(nl)
Geotechniek	EN 1997-1:2004	AC:2009	
	NEN-EN 1997-1:2005	C1+A1:2013	NB:2016
	NEN 9997-1:2016	C2:2017	

Funderingsplaat. (A)

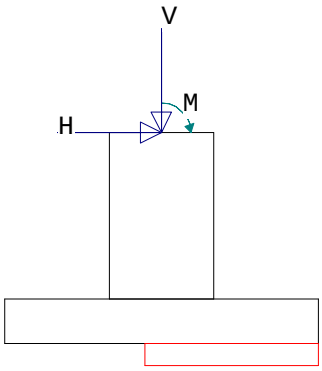
Plaatafmeting B*L*D	[mm]	: 4250 * 4250 * 600	
Kolomafmeting B*H	[mm]	: 1400 * 1400	
Aanlegdiepte	[m]	: 2.10	
Bovenkant kolom tov. maaiveld	[m]	: 0.75	
Excentriciteit kolom	[mm]	: 0.00	
Soortelijk gewicht grond	[kN/m3]	: 18.00	
Soortelijk gewicht beton	[kN/m3]	: 24.00	
Moment	[kNm]	: 571.63	
Verticale kracht	[kN]	: 53.23	
Horizontale kracht	[kN]	: 83.46	
Belastingfactor		: 1.00	

Tussenresultaten

E.g. grond	[kN] : 434.77		Red. e.g. grond	[kN/m] :	114.75
E.g. kolom	[kN] : 105.84				
E.g. plaat	[kN] : 260.10		Red. e.g. plaat	[kN/m] :	61.20
Totale vert. kracht	[kN] : 853.94		Exc. drukfg.- zw.plt.	[m] :	0.95

Resultaten

Gronddruk	[kN/m2] : 85.35				
Kantelmoment	[kNm] : 809.49		Stab.moment	[kNm] :	1814.62
Kantelveiligheid	: **2.24**		Bef rechts	[m] :	2.35
Moment links	[kNm] : 184.97		Moment rechts	[kNm] :	-196.37



BIJLAGE J

Boutkrachtentabel

Projectnaam:	TenneT 150 kV Station Waalwijk
Onderdeel:	Boutkracht tabellen
Documentnummer:	---
Revisie:	A
Bijlage:	J

Boutgegevens

sterkteklasse	4.6	8.8	10.9	
treksterkte f_{ub}	400	800	1000	MPa

gerolde draad	β	1.00

k_2	0.90	α_d	0.50
$\alpha_{v;1}$	0.60	k_1	2.50
$\alpha_{v;2}$	0.50	$f_{u;S235}$	360
γ_{M2}	1.25	$f_{u;S355}$	490

boutdiameter	12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
spanningsdoorsnede	84	157	245	353	459	561	694	817	976	1121	1306	1473	1758	2030	2362	2676	mm^2

Trekweerstand GEROLDE DRAAD:

$F_{t;Rd} = k_2 * f_{ub} * A_s / \gamma_{M2}$

boutdiameter	12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
4.6	24.19	45.22	70.56	101.66	132.19	161.57	199.87	235.30	281.09	322.85	376.13	424.22	506.30	584.64	680.26	770.69	kN
8.8	48.38	90.43	141.12	203.33	264.38	323.14	399.74	470.59	562.18	645.70	752.26	848.45	1012.61	1169.28	1360.51	1541.38	kN
10.9	60.48	113.04	176.40	254.16	330.48	403.92	499.68	588.24	702.72	807.12	940.32	1060.56	1265.76	1461.60	1700.64	1926.72	kN

Afschuifweerstand GEROLDE DRAAD:

$F_{v;Rd} = \alpha_v * f_{ub} * A_s / \gamma_{M2}$

boutdiameter	12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
4.6	16.13	30.14	47.04	67.78	88.13	107.71	133.25	156.86	187.39	215.23	250.75	282.82	337.54	389.76	453.50	513.79	kN
8.8	32.26	60.29	94.08	135.55	176.26	215.42	266.50	313.73	374.78	430.46	501.50	565.63	675.07	779.52	907.01	1027.58	kN
10.9	33.60	62.80	98.00	141.20	183.60	224.40	277.60	326.80	390.40	448.40	522.40	589.20	703.20	812.00	944.80	1070.40	kN

Stuik niet maatgevend vanaf plaatdikte:

$F_{b;Rd} = k_1 * \alpha_b * f_u * d * t / \gamma_{M2}$ randafstand $\geq 1.5 * d_0$ steek $\geq 3.0 * d_0$

boutdiameter		12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
	d_0	13	18	22	26	30	33	36	39	42	45	58	51	55	59	63	67	mm
S235	4.6	3.7	5.2	6.5	7.8	9.1	10.0	11.2	12.1	13.3	14.2	15.5	16.4	18.0	19.3	21.0	22.3	mm
	8.8	7.5	10.5	13.1	15.7	18.1	19.9	22.4	24.2	26.7	28.5	31.0	32.7	36.1	38.7	42.0	44.6	mm
	10.9	7.8	10.9	13.6	16.3	18.9	20.8	23.4	25.2	27.8	29.7	32.2	34.1	37.6	40.3	43.7	46.5	mm
S355	4.6	2.7	3.8	4.8	5.8	6.7	7.3	8.2	8.9	9.8	10.5	11.4	12.0	13.2	14.2	15.4	16.4	mm
	8.8	5.5	7.7	9.6	11.5	13.3	14.7	16.5	17.8	19.6	20.9	22.7	24.0	26.5	28.4	30.9	32.8	mm
	10.9	5.7	8.0	10.0	12.0	13.9	15.3	17.2	18.5	20.4	21.8	23.7	25.1	27.6	29.6	32.1	34.1	mm

COLOFON

TENNET STATION WAALWIJK
VERIFICATIEBEREKENING CONSTRUCTIE JUKKEN 64 EN 65
ONTWERPBEREKENING CONSTRUCTIE JUK 64B

AUTEUR
Harry Beertsen

ONZE REFERENTIE

DATUM
24 juni 2020

Arcadis Nederland B.V.

Postbus 220
3800 AE Amersfoort
Nederland
+31 (0)88 4261261

www.arcadis.com

ARCADIS Design & Consultancy for natural and built assets

BLIKSEMPIEKEN WW150

Berekening Bliksempieken- 16,0 meter

TenneT TSO B.V.

4 DECEMBER 2019

Contactpersoon

IR. URIAH WINTER
Adviseur Assetmanagement

T +31 (0)88 4261308
M +31 (0)0611809368
E uriah.winter@arcadis.com

Arcadis Nederland B.V.
Postbus 4205
3006 AE Rotterdam
Nederland

ARCADIS Design & Consultancy for natural and built assets

INHOUDSOPGAVE

1 INLEIDING 5

1.1 Aanleiding 5

2 ONTWERP 6

2.1 Bovenbouw 6

2.2 Verbinding bovenbouw en fundering 7

2.3 Fundering 9

3 UITGANGSPUNTEN EN RANDVOORWAARDEN 10

3.1 Normen en richtlijnen 10

3.2 Materiaalgegevens 10

3.3 Windgebied 11

3.4 Toelaatbare vervorming 11

3.5 Overige randvoorwaarden 11

3.6 Rekensoftware 12

4 BELASTINGEN EN BELASTINGSCOMBINATIES 13

4.1 Belastingen 13

4.1.1 Eigen gewicht 13

4.1.2 Dynamische Windbelasting 13

4.1.3 Quasi-statische Windbelasting 15

4.2 Belastingcombinaties 15

4.2.1 Uiterste grenstoestand 15

4.2.2 Bruikbaarheidsgrenstoestand 15

5 CONSTRUCTIEVE ANALYSE 16

5.1 UGT krachtsverdeling buizen en verbindingen 16

5.2 UGT Von mises spanning ten gevolge van Quasi-statische windbelasting 17

5.3 UGT Von mises spanning ten gevolge van dynamisch wervel windbelasting (Vortex shedding) 18

5.4 BGT Optredende vervorming 20

6 TOETSINGEN 22

6.1 Uiterste grenstoestand sterkte 22

6.2 Uiterste grenstoestand vermoeiing 23

6.3 Bruikbaarheidgrenstoestand 23

BIJLAGEN

BIJLAGE A - ONTWERPGEGEVENS 24

BIJLAGE B – SCIA RAPPORTEN 25

BIJLAGE C – QUASI-STATISCH WINDBELASTING 26

BIJLAGE D – WERVEL WINDBELASTING 27

BIJLAGE E – BOUWWERKFACTOR CSCD 28

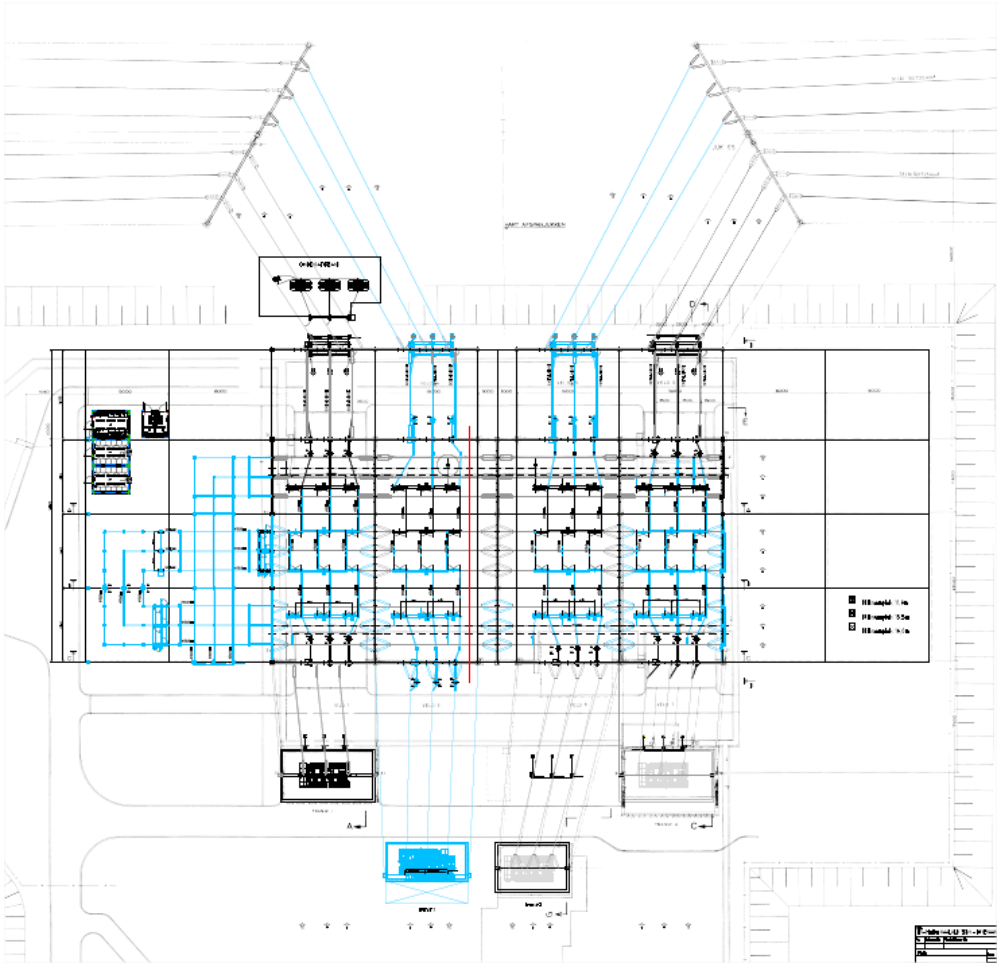
BIJLAGE F CAPACITEITEN DETAILCATEGORIEN EN ANKERS 29

COLOFON 30

1 INLEIDING

1.1 Aanleiding

Het station Waalwijk is met twee circuits aangesloten op het 150 kV net en de belasting bedraagt meer dan 100 MW. Hierdoor voldoet Waalwijk niet aan het 100 MW/6h criterium zoals is gesteld in de Elektriciteitswet. In het Kwaliteits- en Capaciteits Document jaar 2016 is dit als nieuw risico aangemerkt. Waalwijk 150 zal daarom worden uitgebreid met een tweede hoofdrail (U-I), koppelveld, omloop, twee lijnvelden en een transformator veld. Het bestaande station wordt uitgebreid met onder andere nieuwe stalen constructies voor de primaire componenten en bliksempieken.

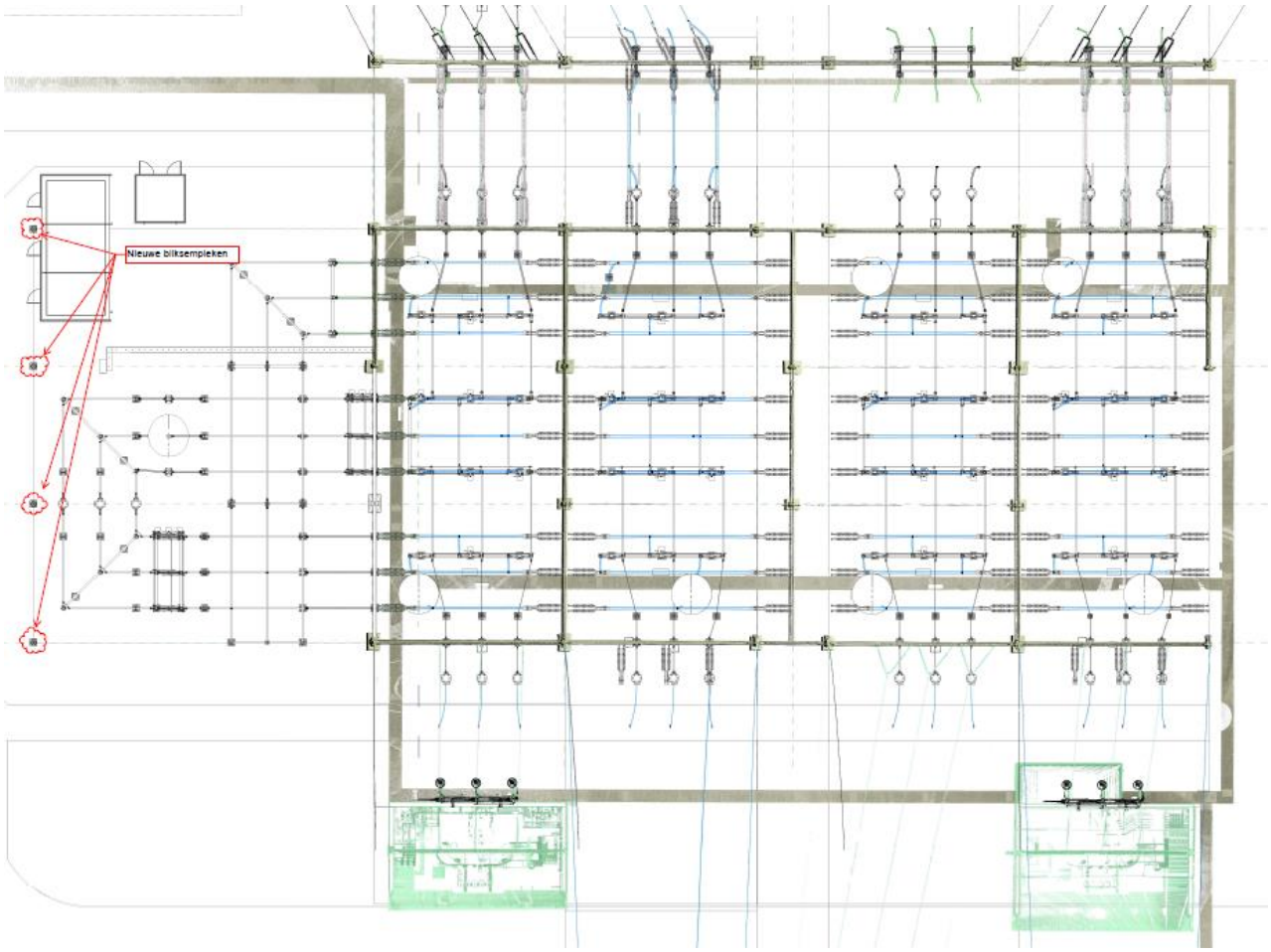


Figuur 1: Overzicht constructie en geleiders in de nieuwe situatie.

Door de slanke vorm zijn de bliksempieken gevoelig voor dynamische aspecten van de windbelasting genaamd Vortex Shedding of wind wervels. Door de wind ontstaan er wervels aan de lijzijde van de bliksempiek die een wisselende beweging veroorzaken. Deze wisselende bewegingen veroorzaken fluctuerende krachten en spanningen in de bliksempieken die kunnen lijden tot vermoeiingschade. In de uitbreiding zijn 4 nieuwe bliksempieken aanwezig. In dit rapport is het ontwerp van de bliksempieken weergegeven.

2 ONTWERP

De constructie van de bliksempieken bestaat uit een uit stalen buisprofielen opgebouwde bovenbouw en een betonnen fundering op palen. In dit hoofdstuk wordt het ontwerp van de constructieonderdelen van de bliksempieken nader toegelicht en wordt er aandacht besteed aan de vermoeiingsgevoelige onderdelen.
De locatie van de nieuw te plaatsen bliksempieken is aangegeven in de onderstaande figuur (linkerzijde rood omwolkt).



Figuur 2: bovenaanzicht met daarin de nieuw te plaatsen bliksempieken.

2.1 Bovenbouw

De bliksempieken dienen dezelfde hoogte te hebben als de bestaande bliksempieken. Deze hebben een hoogte van 16,0 meter. De nieuwe bliksempieken bestaan uit vier buisvormige segmenten. Tussen de segmenten is een conisch verloopstuk aanwezig met een plaatdikte gelijk aan de buisdikte. De lengte en doorsnede van de vier segmenten zijn weergegeven in Tabel 1.

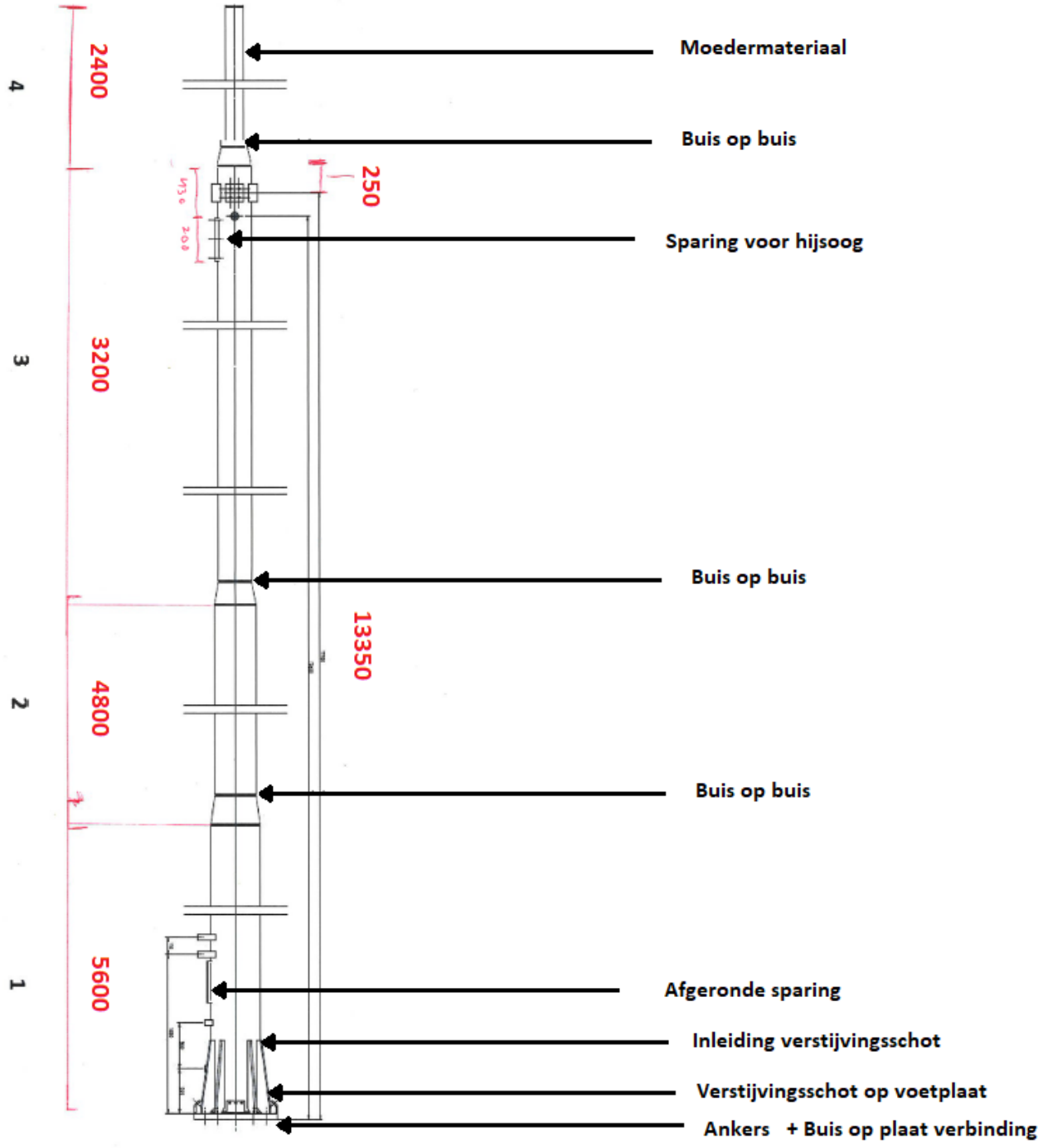
Segment	Doorsnede	Lengte	Massa/m
Onder-segment 1	CHS 273,0 x 6,3	5,600 m	41,5
Segment 2	CHS 219,1 x 6,3	4,800 m	33,1
Segment 3	CHS 168,3 x 6,3	3,200 m	25,7
Top-segment 4	CHS 88,9 x 6,3	2,400 m	12,8

Tabel 1: Segmenten nieuwe bliksempiek

De bliksempiek heeft een bevestigingsmogelijkheid voor armaturen op een hoogte van 13,35 m op segment 3. Verder zijn er twee sparingen aanwezig in de bliksempieken, namelijk een hijsoog ter plaatse van segment 3 en een sparing ten behoeve van installatie doorvoeren in segment 1. De potentieel vermoeiingsgevoelige onderdelen van de stalen constructie zijn weergegeven in Figuur 3. De bijbehorende detailcategorieën voor de vermoeiingstoetsen zijn weergegeven in Bijlage A.

2.2 Verbinding bovenbouw en fundering

Het onder-segment is door middel van 8 verstijvingsschotten (d=25 mm) verbonden aan een 40 mm dikke voetplaat 500 x 500 mm. De bovenbouw wordt in de betonnen fundering verankerd middels 4 draadstangen M42;8.8. De steekmaat van alle ankers in beide richtingen is 300 mm.



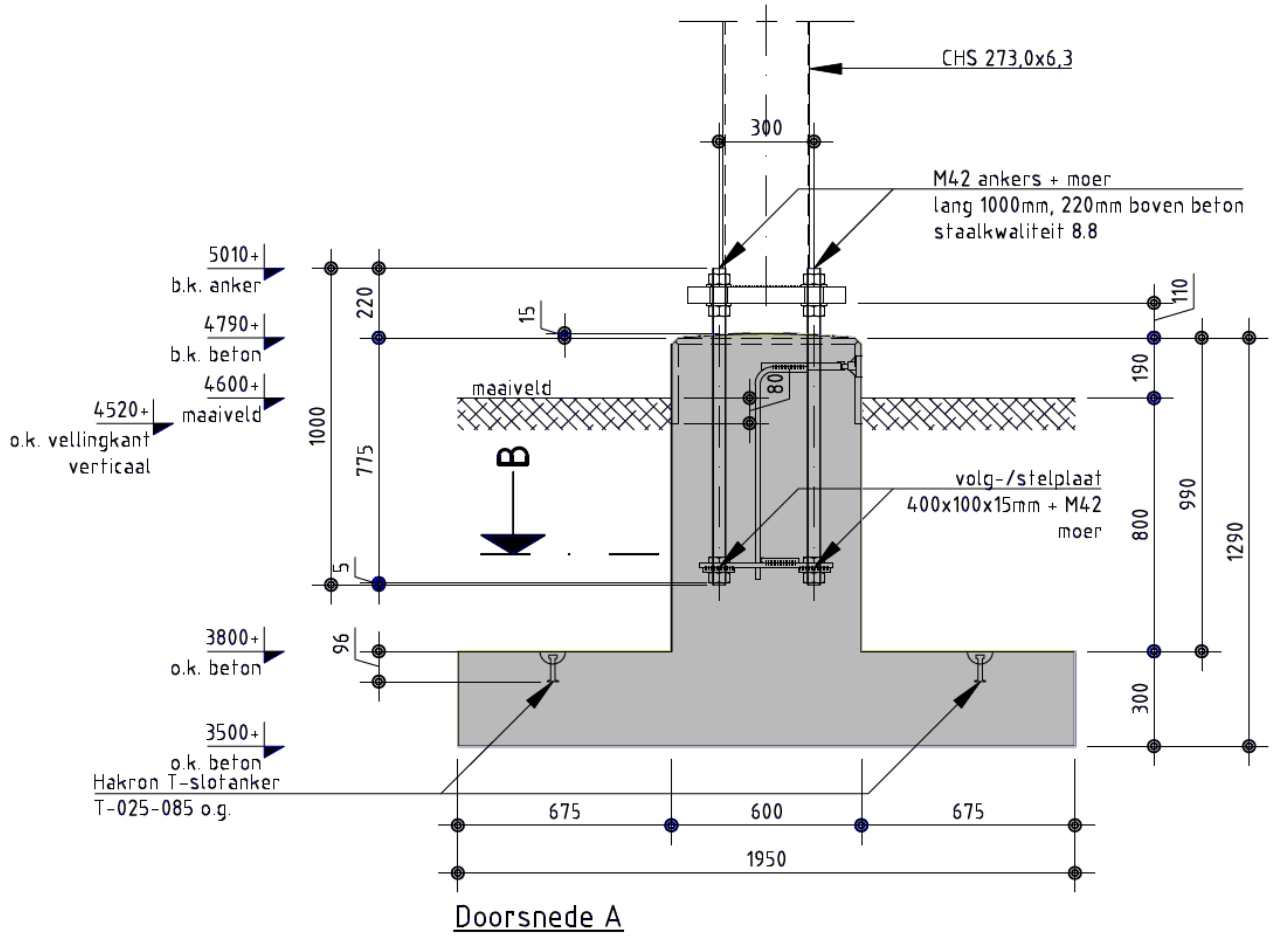
Figuur 3: Vermoeiingsgevoelige onderdelen

2.3 Fundering

De fundering van de bliksempiek bestaat uit een betonnen poer en is uitgewerkt in de volgende documenten:

Tabel 2: T = Tekening; D = Document

ID	Naam	Documentcode
[T1]	Fundatie vormtekening fundatie bliksempiek	00561-01-4010
[T2]	Fundatie wapeningtekening fundatie bliksempiek	00561-01-4015
[D1]	FUNDATIES PRIMAIRE COMPONENTEN uitbreiding WW150	MDR-00561-01-40505



Figuur 4: Fundatie t.b.v. bliksempiek [T1]

3 UITGANGSPUNTEN EN RANDVOORWAARDEN

In dit hoofdstuk zijn de uitgangspunten en randvoorwaarden voor het ontwerp van de bliksempiek weergegeven.

3.1 Normen en richtlijnen

Bij het opstellen van de berekeningen zijn de vigerende versies van de volgende normatieve (bindende) documenten gebruikt:

NEN-EN 1990 + NB	2011	Grondslagen van het constructief ontwerp
NEN-EN 1991-4 + NB	2011	Belastingen op constructies - Deel 1-4: Algemene belastingen - Windbelasting
NEN-EN 1993-1 + NB	2016	Ontwerp en berekening van staalconstructies - Deel 1-1: Algemene regels en regels voor gebouwen
NEN-EN 1993-1-8 + NB	2011	Ontwerp en berekening van staalconstructies - Deel 1-8: Ontwerp en berekening van verbindingen
NEN-EN 1993-1-9 +C2+ NB	2012	Ontwerp en berekening van staalconstructies - Deel 1-9: Vermoeiing
NEN 8700	2011	Beoordeling constructieve veiligheid van een bestaand bouwwerk bij verbouw en afkeuren – Grondslagen
NEN 8701	2011	Beoordeling constructieve veiligheid van een bestaand bouwwerk bij verbouw en afkeuren – Belastingen

Naast de normatieve documenten zijn de volgende richtlijnen (Tennet-specificaties) gebruikt:

SPE.01.100	Specificatie Staalwerk primaire ondersteuningen portalen en bliksempieken 1.2
SPE.04.004	Algemene specificaties constructie berekeningen 1.4
SPE.00.903	Conservering grote Buisconstructies 1.5
PVE.01.000	Primair 2.1
PVE.04.000	Bouwkunde 2.0
PVE.07.000	EMC en Aarding ()

3.2 Materiaalgegevens

De gebruikte staalsoorten voor de stalen onderdelen van de bliksempieken conform SPE.01.100 zijn weergeven in de onderstaande tabel.

Onderdeel	(Wand-)dikte	Staalsoort	f_y MPa	f_u MPa
Nieuwe gesloten profielen	t ≤ 16mm	S355J0H	355	490
Voetplaten	t > 16 mm	S355J2	355	490
Verstijvingschotten	t > 16 mm	S355J2	355	490
Ankers	---	kwal. 8.8	640	800

Tabel 3: Staalkwaliteit onderdelen bliksempieken

De volgende betonkwaliteit wordt aangehouden.

- Alle constructies: C30/37 (minimaal C28/35 conform PVE.004.000 Bouwkunde 1.2)

Sterkteklasse	f_{ck} [MPa]	f_{cd} [MPa]	f_{ctd} [MPa]	f_{ctm} [MPa]	E_{cm} [MPa]
C30/37	30	20	1.35	2.9	32800

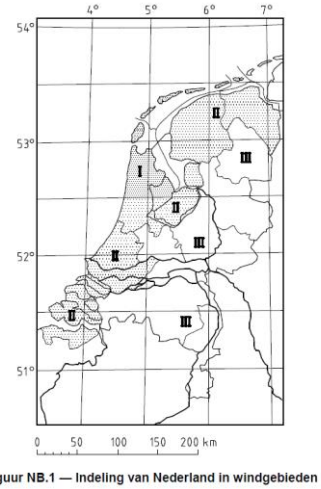
Tabel 4: Materiaaleigenschappen beton

Nadere uitgangspunten m.b.t. de betonnen fundatie zijn vastgelegd in [D1], zoals:

- Milieuklasse
- Dekking
- Scheurwijdte-eisen

3.3 Windgebied

Waalwijk valt conform figuur NB.1 van de NEN-EN 1991-1-4 in Windgebied III, Onbebouwd. De berekening van de optredende windbelasting is weergegeven in Bijlage C en Bijlage D.



Figuur NB.1 — Indeling van Nederland in windgebieden

Figuur 5:Windgebieden Nederland



Figuur 6: locatie Waalwijk

3.4 Toelaatbare vervorming

Conform de SPE.04.004 max de maximaal toelaatbare uitbuiging 1/50ste deel van de hoogte bedragen. Hierbij moet de fundering als ingeklemd beschouwd worden. De toelaatbare vervorming bedraagt:

- 16000/50 = 320 mm.

3.5 Overige randvoorwaarden

Conform SPE.01.100 is het volgende controleregime voor lassen van toepassing:

- Lassen aan voetplaten en flenslassen 100% magnetisch gekeurd.
- Pijplassen (lees: de lassen tussen de segmenten) 100% röntgen gekeurd.
- Overige lassen 10% magnetisch gekeurd.

Bij het vaststellen van de vermoeiingscategorie van de maatgevende lassen (de lassen tussen de buissegmenten) wordt tevens verondersteld dat:

- Lasoverdikte <10% van de lasbreedte, met vloeiende overgangen.
- Onderhands gelast, gecontroleerd en vrij bevonden van gebreken buiten de toleranties van EN 1090.

In verband met transport en installatie dient er een hijsoog op de bliksempiek aangebracht te worden.

Er dient een mogelijkheid om armaturen te installeren aangebracht te worden. Voor het eigen gewicht van de armaturen wordt uitgegaan van 20 kg per stuk. Er wordt in de berekening rekening gehouden met maximaal 4 armaturen.

3.6 Rekensoftware

De krachtsverdeling is bepaald met behulp van Scia Engineer 19.0.60. De resultaten zijn opgenomen in Bijlage B.

4 BELASTINGEN EN BELASTINGSCOMBINATIES

4.1 Belastingen

Op de bliksempieken werken de volgende belastingen:

- Het eigen gewicht van de constructie;
- De quasi-statisch windbelasting;
- De dynamische wervel windbelasting (Vortex shedding).

4.1.1 Eigen gewicht

Het eigen gewicht van de bliksempieken is bepaald met behulp van Scia Engineer.
Het eigen gewicht van de armaturen bedraagt 0,8 kN

4.1.2 Dynamische Windbelasting

Met het eindige elementen programma Scia Engineer zijn de eerste 13 eigenfrequenties van de bliksempiek bepaald met behulp van de methode van Lanczos. De eigenwaarde zijn weergegeven in de onderstaande tabel.

Eigenwaarden	n=1	n=2	n=3	n=4	n=5	n=6	n=7	n=8	n=9
Fe (Hz)	0,87	4,16	9,16	15,44	26,51	41,74	55,63	63,99	69,87
v_{crit}	0,43	2,05	4,52	7,63	13,09	20,61	27,48	31,60	34,51

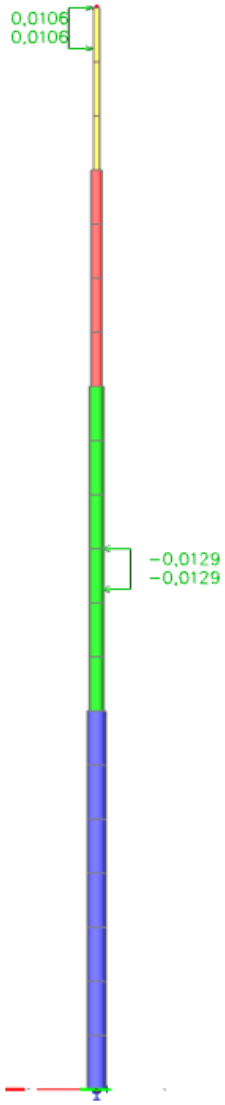
Tabel 5: Eigenfrequenties bliksempiek Graetheide

Bij de achtste eigenfrequentie hoort een torderende eigenvorm. Deze eigenwaarde is niet relevant voor deze studie. Voor de eigenfrequenties 8 tot en met 13 geldt bovendien vcrit > 1,25 $\mathbf{v_m}$. Deze eigenfrequenties hoeven daarom conform Bijlage E van de NEN 1991-1-4 niet op vortex shedding te worden getoetst.

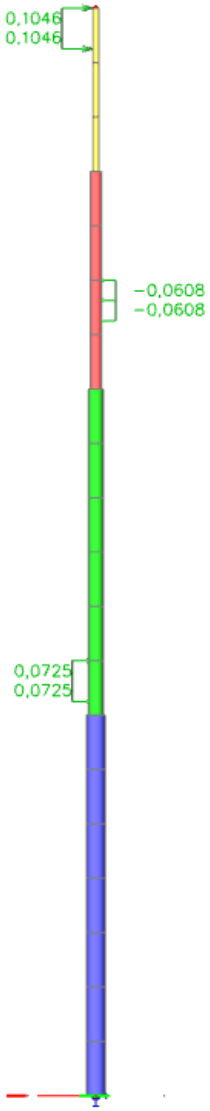
In bijlage D is met behulp van de eigenfrequenties en de bijbehorende verplaatsingen de dynamische windbelasting ten gevolge van vortex shedding bepaald conform Bijlage E en F van de NEN-EN 1991-1-4. De windbelasting voor de eigenfrequenties 1 tot en met 7 is weergegeven in Figuur 7 tot en met Figuur 13.



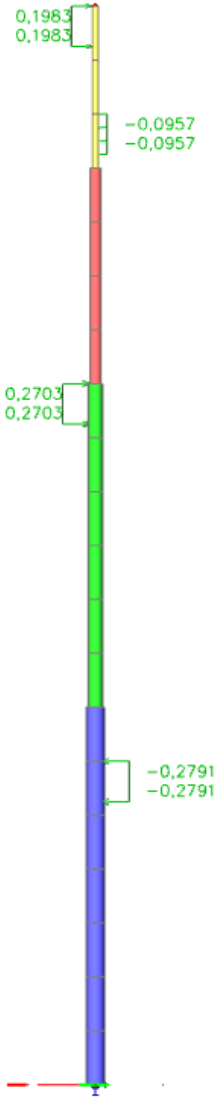
Figuur 7:Wervel windbelasting N=1



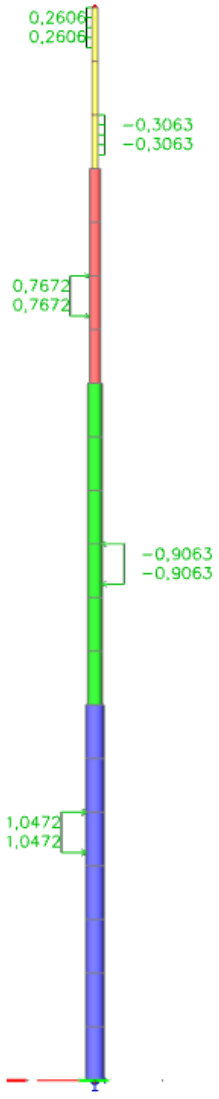
Figuur 8:Wervel windbelasting N=2



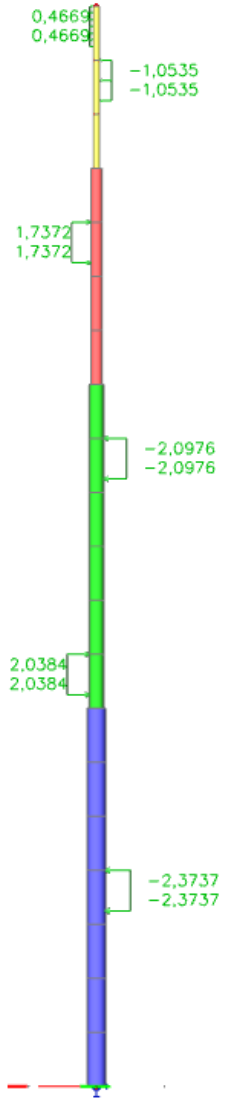
Figuur 9:Wervel windbelasting N=3



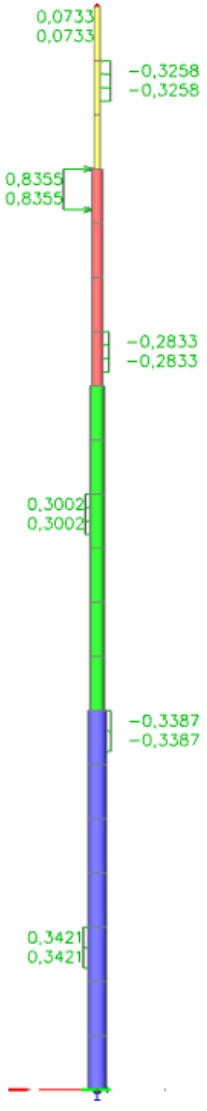
Figuur 10:Wervel windbelasting N=4



Figuur 11:Wervel windbelasting N=5



Figuur 12:Wervel windbelasting N=6



Figuur 13:Wervel windbelasting N=7

4.1.3 Quasi-statische Windbelasting

De quasi-statische windbelasting is bepaald conform de NEN-EN 1991-1-4, zie Bijlage C. Hierbij is het dynamisch effect van de windbelasting meegenomen in de vorm van de bouwwerkfactor CsCd. Deze is bepaald met behulp van de eerste eigenfrequentie in bijlage E en bedraagt CsCd = 1,41.

Segment	Doorsnede	Qwind,rep
Ondersegment 1	CHS 273,0 x 6,3	0,124 kN/m
Segment 2	CHS 219,1 x 6,3	0,126 kN/m
Segment 3	CHS 168,3 x 6,3	0,105 kN/m
Topsegment 4	CHS 88,9 x 6,3	0,097 kN/m

Tabel 6: Windbelasting segmenten nieuwe bliksempiek

De windbelasting op de armaturen is als volgt berekend:

- $F_{wind,armatuur,rep} = 1,8 \cdot 0,88 \cdot 0,0625 = 0,10$ kN.
  - aangeblazen oppervlak voor de armaturen van circa 0,25 x 0,25 = 0,0625 m^2
  - $C_f = 1,8$
  - $q_{wind} = 0,88$ kN/m^2 (conservatief H=20m)

4.2 Belastingcombinaties

In deze paragraaf zijn de belastingcombinaties voor de uiterste grenstoestand en de bruikbaarheidsgrenstoestand weergegeven. De belastingcombinatie bij ijsafzetting is niet beschouwd omdat deze niet maatgevend is. Deze veroorzaakt namelijk een kleine toename in windbelasting terwijl de windbelasting significant afneemt omdat deze wordt vermenigvuldigd met de partiele factor 0,3.

4.2.1 Uiterste grenstoestand

Combinatie	Naam	Partiele factoren
1	Permanent	1,50 * permanent
2	Max quasi-statisch wind	1,20 * permanent + 1,50 * Qwind,quasi-statisch
3	Max wervelwind	1,20 * permanent + 1,00 * Qwind,wervel

Tabel 7:Belastingscombinatie uiterste grenstoestand

4.2.2 Bruikbaarheidsgrenstoestand

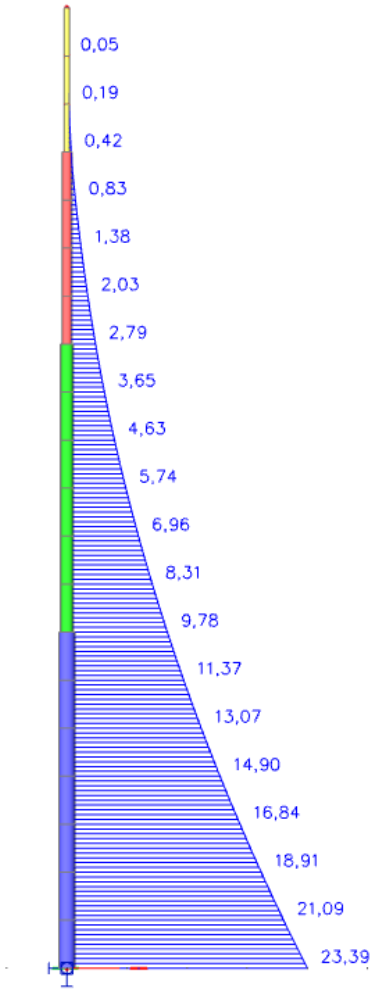
Combinatie	Naam	Partiele factoren
1	Max quasi-statisch wind	1,00 * permanent + 1,00 * Qwind,quasi-statisch
2	Max wervelwind	1,00 * permanent + 1,00 * Qwind,wervel

Tabel 8: Belastingscombinatie bruikbaarheidsgrenstoestand

5 CONSTRUCTIEVE ANALYSE

In dit hoofdstuk zijn de maatgevende verplaatsingen, spanningen en krachten werkend op de bliksempieken weergegeven.

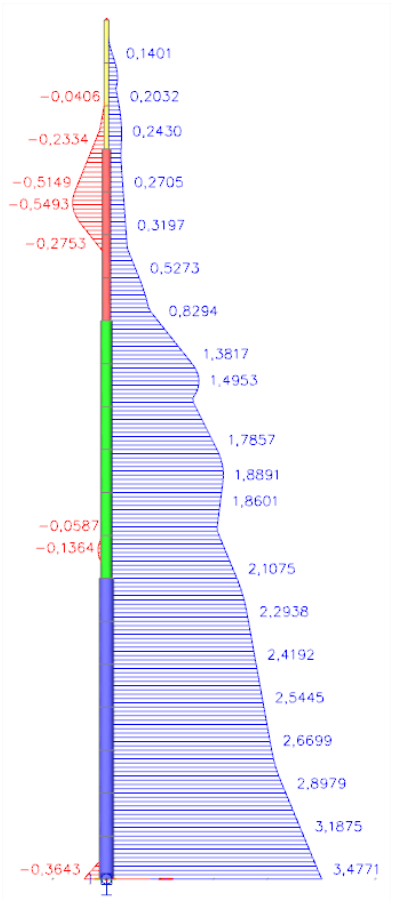
5.1 UGT krachtsverdeling buizen en verbindingen



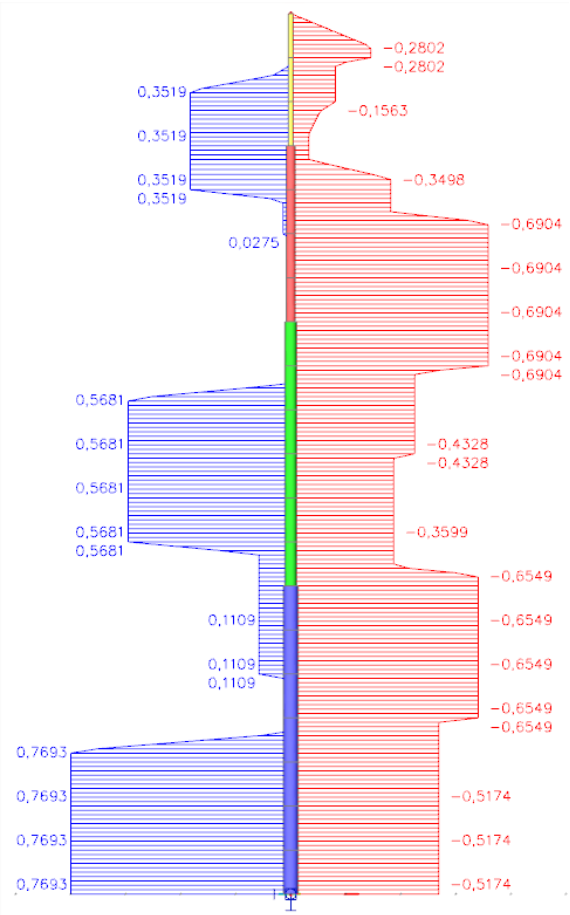
Figuur 14: UGT Moment Quasi-statische windbelasting [kNm]



Figuur 15: UGT dwarskracht Quasi-statische windbelasting [kN]



Figuur 16:UGT Moment Wervel-windbelasting [kNm]



Figuur 17:UGT Dwarskracht Wervel-windbelasting [kN]

De bliksempiek wordt geplaatst op een voetplaat met 4 ankers M42 (As = 1121 mm^2) 8.8. Deze hebben een onderlinge hartafstand van 300 mm. Conform SPE.04.004 moet rekening worden gehouden met uitval van 1 anker. De rekenwaarde van het windmoment bedraagt 23,4 kNm. Dit resulteert bij het kritische anker in een trekkracht van 23,4 / 0,3 = **78,0 kN**

De totale afschuifkracht bedraagt 2,95 kN. Bij drie functionele ankers en een niet ondersabelde voetplaat met 110 mm vrije ruimte onder de voet resulteert dit in 2,95 /3 = **0,98 kN**.

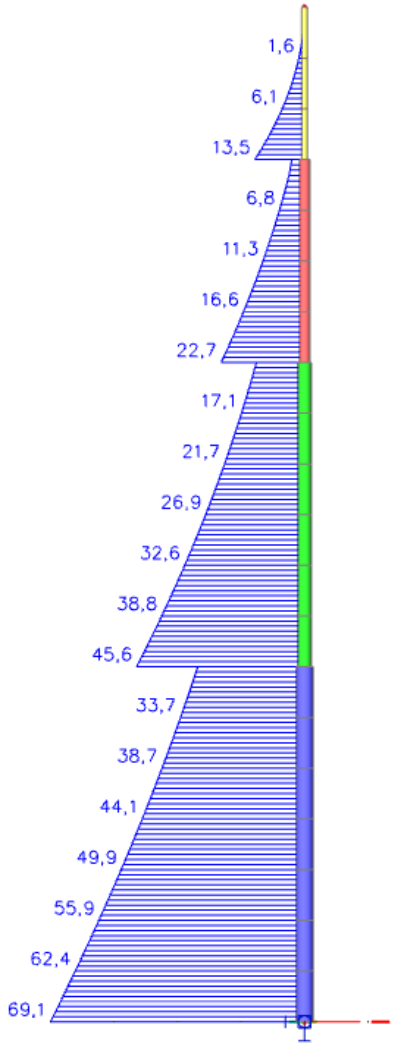
Er ontstaat een moment in de ankers omdat de afschuifkracht 130 mm boven de betonfundatie aangrijpt.

l = a3 + e1 = 0,5.d + e1 = (0,5 x 36) + 130 = 148 mm

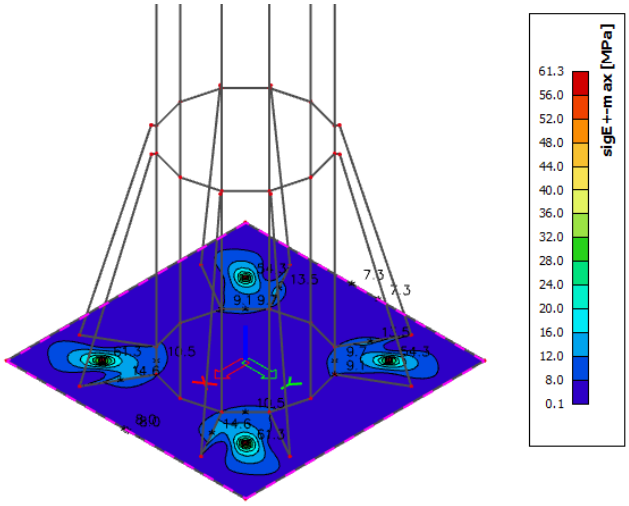
Lokale buiging in het anker ter grootte van 2,95 /3 · 0,148 =0,146 kNm. Het weerstandmoment tegen buigen van een M42 met een kerndiameter van 36,5 mm bedraagt π·36,5^3 / 32 = 4762 mm^3. De maximale buigspanning bedraagt dan 0,146·10^6 / 4762 = **30,7 [MPa]**.

5.2 UGT Von mises spanning ten gevolge van Quasi-statische windbelasting

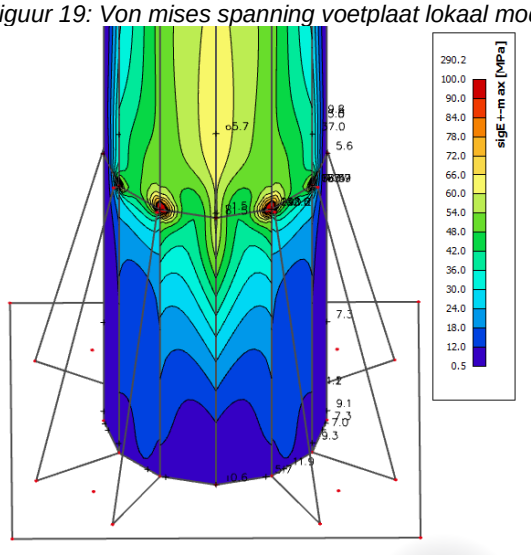
De von mises spanningen ten gevolge van de wervelwind belasting zijn weergegeven in de onderstaande figuren.



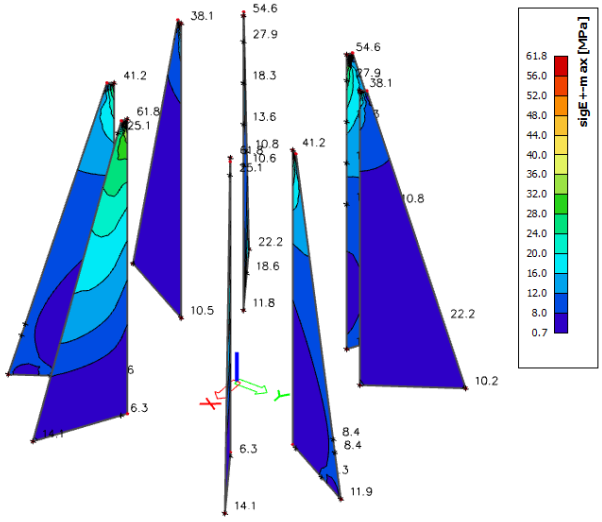
Figuur 18:Von mises spanning Bliksempiek UGT



Figuur 19: Von mises spanning voetplaat lokaal model UGT



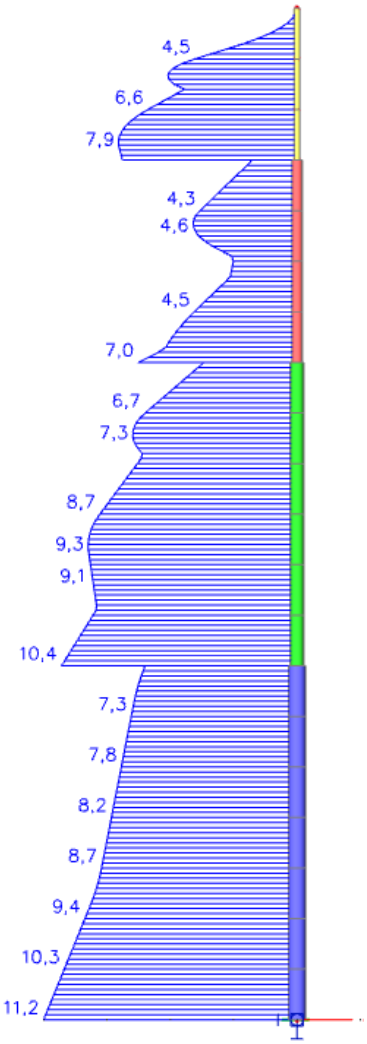
Figuur 20: Von mises spanning Buis lokaal model UGT



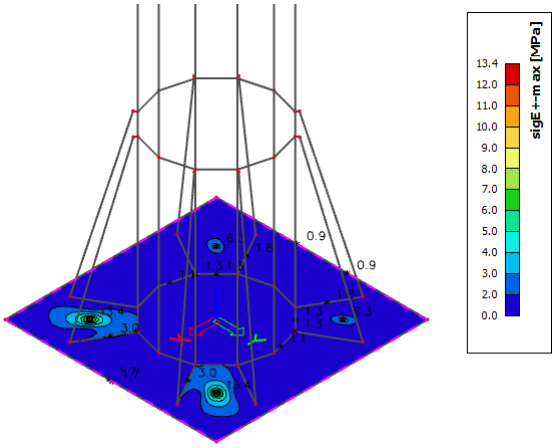
Figuur 21: Von mises spanning verstijvingsschotten lokaal model UGT

5.3 UGT Von mises spanning ten gevolge van dynamisch wervel windbelasting (Vortex shedding)

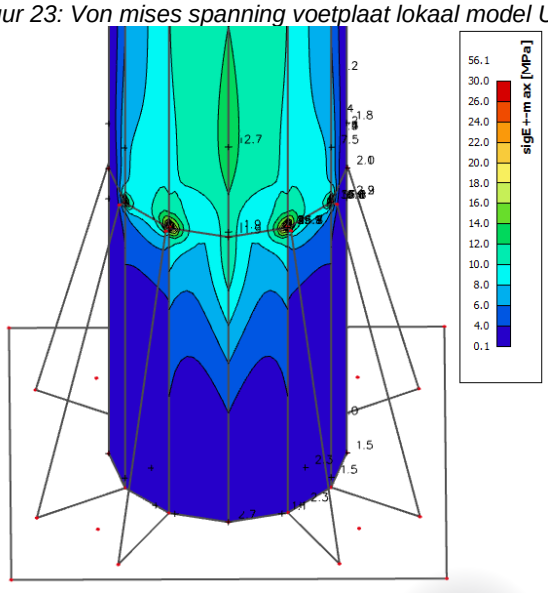
De von mises spanningen ten gevolge van de wervel windbelasting zijn weergegeven in de onderstaande figuren.



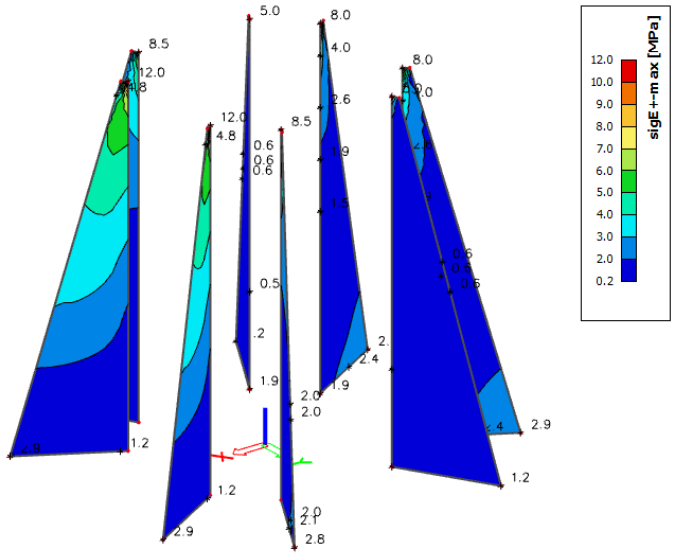
Figuur 22: Von mises spanning Bliksempiek UGT



Figuur 23: Von mises spanning voetplaat lokaal model UGT



Figuur 24: Von mises spanning Buis lokaal model UGT

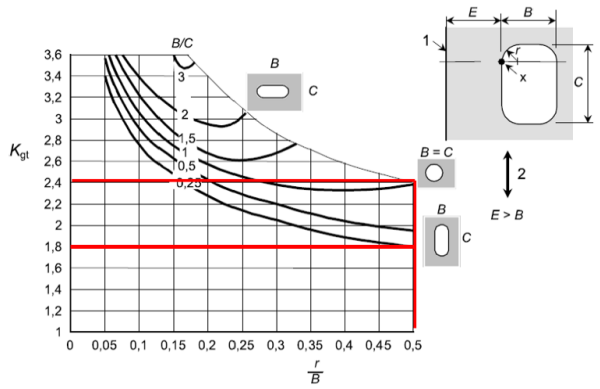


Figuur 25: Von mises spanning verstijvingsschotten lokaal model UGT

De mast is voorzien van een sparing voor het hijsoog. Als gevolg van de sparing zal er een spanningsconcentratie plaatsvinden rondom de sparing. Om de spanningsconcentratie te kwantificeren wordt er gebruik gemaakt van spanningsconcentratie-factoren (K_{gt}).

De sparing voor het hijsoog heeft de volgende afmetingen B=C=50 en R=25 hieruit volgt K_{gt} 2,4

De sparing voor de doorvoer voor kabels heeft de afmetingen B=50 C=200 en R=25 hieruit volgt K_{gt} 1,8



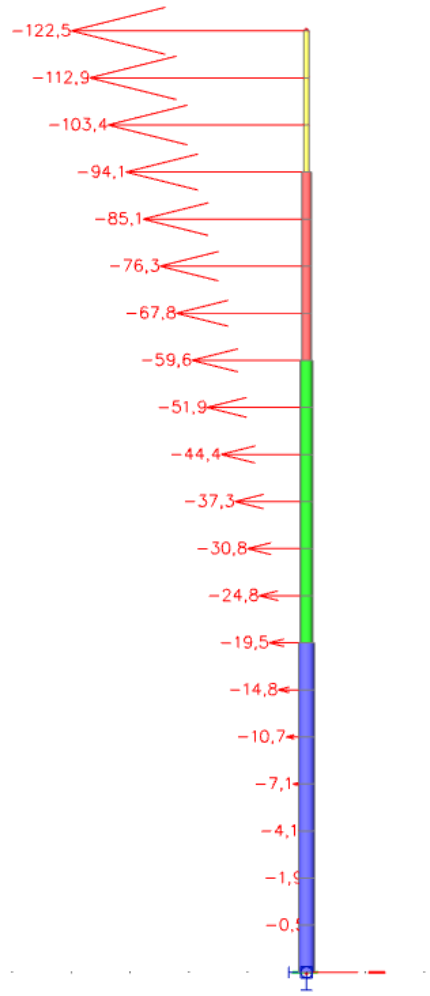
Figuur 26: Kgt voor de sparingen ten gevolge van doorvoer en hijsoog.

Het voetmoment ten gevolge van wervelbelasting is met 3,48 kNm veel kleiner. De trekkracht in het anker bedraagt dan 3,48/0,3/2 = 4,35 kN wat resulteert in een spanning van 5,8/645,7 · 800·0,8 = **5,7 N/mm²**. De afschuifkracht bedraagt 0,362 kN (0.0905 kN per anker), wat resulteert in een moment van 0,013 kNm. Het weerstandmoment tegen buigen van een M42 met een kerndiameter van 36,5 mm bedraagt π·36,5³ / 32 = 4762 mm³. De maximale buigspanning bedraagt dan 0,013 / 4762= **2.81 N/mm²**.

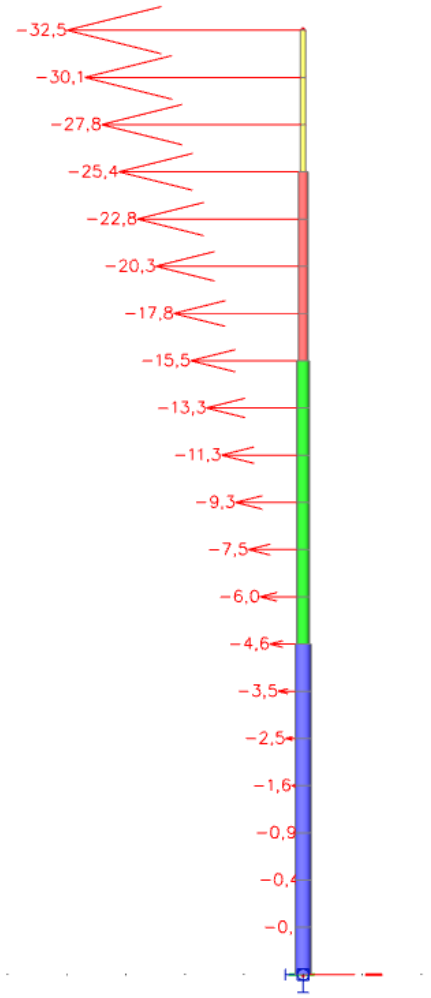
De totale spanningswisseling bedraagt 2· (5,7 + 2.81) = **17.03 N/mm²**.

5.4 BGT Optredende vervorming

De optredende vervorming ten gevolge van de windbelastingen in de Bruikbaarheidsgrenstoestand is weergegeven in de onderstaande figuren.



Figuur 27: Vervorming quasi-statische windbelasting



Figuur 28: Vervorming wervel windbelasting

6 TOETSINGEN

In dit hoofdstuk zijn alle toetsingen van de bliksempieken opgenomen. De optredende snedekrachten en spanningen zijn bepaald en beschreven in het vorige hoofdstuk. Deze snedekrachten en spanningen zijn getoetst op overschrijding van de maximale capaciteit. De capaciteit van de spanningen is weergegeven in paragraaf 0, de cut off limit voor het toetsen van de detail categorieën zijn bepaald in Bijlage F1 en de capaciteit van de ankers is bepaald in bijlage F2.

6.1 Uiterste grenstoestand sterkte

Onderdeel	Von mises spanning optredend [N/mm^2]	Von mises spanning toelaatbaar [N/mm^2]	UC [-]
Buis globaal	69,1	355	**0,19**
Buis lokaal	290,2	355	**0,82**
Voetplaat	61,3	355	**0,17**
Verstijvingschotten	61,8	355	**0,17**

Tabel 9: Toetsing Buizen, voetplaat en verstijvingsschotten

Onderdeel	$F_{t;Ed}$ [kN]	$F_{t;Rd}$ [kN]	UC [-]
Ankers	78,0	645,7	**0,12**

Tabel 10:Toetsing trekkracht ankers M42

Onderdeel	$F_{v;Ed}$ [kN]	$F_{v;Rd}$ [kN]	UC [-]
Ankers	0,98	430,5	**0,002**

Tabel 11: Toetsing schuifkracht ankers M42

Onderdeel	$\sigma_{b;Ed}$ [N/mm^2]	toelaatbaar [N/mm^2]	UC [-]
Ankers	30,7	640,0	**0,05**

Tabel 12: Toetsing buigspanning in anker M42

6.2 Uiterste grenstoestand vermoeiing

In de onderstaande tabel zijn de onderdelen van de bliksempieken getoetst op vermoeiing.

Onderdeel	Detailcategorie	Von mises spanning optredend [N/mm²]	K_{gt}	$\Delta\sigma_{fat}$ [N/mm²]	Cut off limit [N/mm²]	UC [-]
Moedermateriaal segment 1	160	7,9	-	15,8	56,3	0,28
Moedermateriaal segment 2	160	7	-	14	56,3	0,25
Moedermateriaal segment 3	160	10,4	-	20,8	56,3	0,37
Moedermateriaal segment 4	160	11,2	-	22,4	56,3	0,40
Buis op buis verbinding 1-2	71	7,9	-	15,8	25,0	0,63
Buis op buis verbinding 2-3	71	7	-	14	25,0	0,56
Buis op buis verbinding 3-4	71	10,4	-	20,8	25,0	0,83
Buis op plaat verbinding	71	11,2	-	22,4	25,0	0,90
Hijsoog sparing	125	2	2,4	9,6	44,0	0,22
Doorvoer sparing	125	10,3	1,8	37,1	44,0	0,84
Inleiding verstijvingsschot	71	12	-	24	25,0	0,96
Inleiding verstijvingsschot op voetplaat	80	2,9	-	5,8	28,1	0,21
Ankers	50	5,7+2.81	-	17.03	17,6	0,95

Tabel 13: Toetsing vermoeiing in de UGT

6.3 Bruikbaarheidgrenstoestand

Vervorming optredend [mm]	Vervorming toelaatbaar [mm]	UC [-]
122,5	320	0,38

Tabel 14: Toetsing vervorming in de bruikbaarheidsgrenstoestand

BIJLAGE A - ONTWERPGEGEVENS

A.1 Ontwerptekeningen

A.2 Detailcategorieën vermoeiing

BIJLAGE B – SCIA RAPPORTEN

B.1 Eigenfrequentie

B.2 Krachtsverdeling Globaal

B.3 Krachtsverdeling Lokaal

BIJLAGE C – QUASI-STATISCH WINDBELASTING

BIJLAGE D – WERVEL WINDBELASTING

BIJLAGE E – BOUWWERKFACTOR CSCD

BIJLAGE F CAPACITEITEN DETAILCATEGORIEN EN ANKERS

F.1 Cutoff limit detailcategorieën

F.2 Boutkrachten

COLOFON

BLIKSEMPIEKEN WW150
BEREKENING BLIKSEMPIEKEN- 16,0 METER

KLANT
TenneT TSO B.V.

AUTEUR
ir. Uriah Winter

ONZE REFERENTIE

DATUM
4 december 2019

Arcadis Nederland B.V.

Postbus 4205
3006 AE Rotterdam
Nederland
+31 (0)88 4261 261

www.arcadis.com

1. Inleiding

1.1. Inhoudsopgave

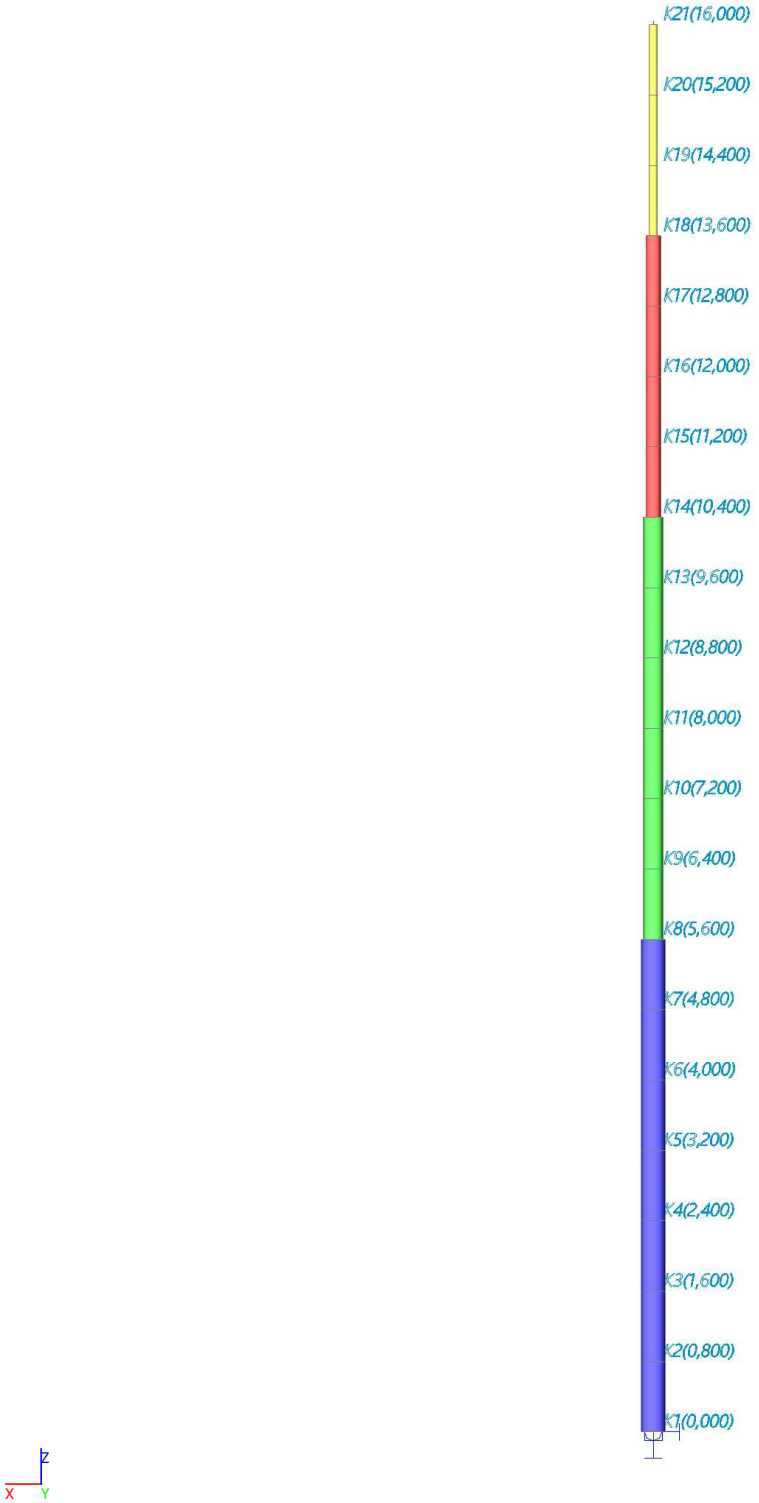
1. Inleiding **1**
1.1. Inhoudsopgave 1
1.2. Project 1
2. Model **2**
2.1. Rekenmodel 2
2.2. Rekenmodel 3
2.3. Knoopnummers 3
2.4. Knopen 4
2.5. Staafnummers 4
2.6. Staven 5
2.7. Knoopondersteuningen 5
2.8. Doorsneden 5
3. Dynamica **8**
3.1. Lijnmassa's 8
3.2. Lijnmassa op staaf 9
3.3. Puntmassa op staaf 10
4. Resultaten **10**
4.1. Eigenfrequenties 10
4.2. N=1 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 10
4.3. Verplaatsing van knopen 11
4.4. N=2 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 11
4.5. Verplaatsing van knopen 11
4.6. N=3 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 12
4.7. Verplaatsing van knopen 12
4.8. N=4 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 13
4.9. Verplaatsing van knopen 13
4.10. N=5 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 14
4.11. Verplaatsing van knopen 14
4.12. N=6 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 15
4.13. Verplaatsing van knopen 15
4.14. N=7 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 16
4.15. Verplaatsing van knopen 16
4.16. N=8 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 17
4.17. Verplaatsing van knopen 17
4.18. N=9 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 18
4.19. Verplaatsing van knopen 18
4.20. N=10 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 19
4.21. Verplaatsing van knopen 19
4.22. N=11 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 20
4.23. Verplaatsing van knopen 20
4.24. N=12 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 21
4.25. Verplaatsing van knopen 21
4.26. N=13 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net 22
4.27. Verplaatsing van knopen 22

1.2. Project

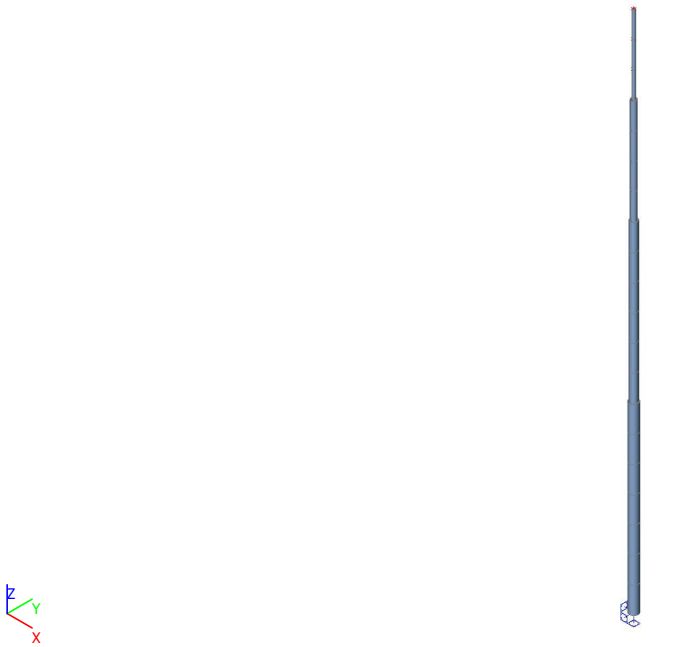
Licentienaam	Arcadis
Project	Bliksempiek GRTH
Onderdeel	Type B
Omschrijving	-
Datum	27. 08. 2019
Constructie	Algemeen XYZ
Aantal knopen :	21
Aantal staven :	20
Aantal platen :	0
Aantal vaste lichamen :	0
Aantal gebruikte doorsneden :	4
Aantal belastingsgevallen :	3
Aantal gebruikte materialen :	1
Gravitatieversnelling [m/s^2]	9,810
Nationale norm	EC - EN

2. Model

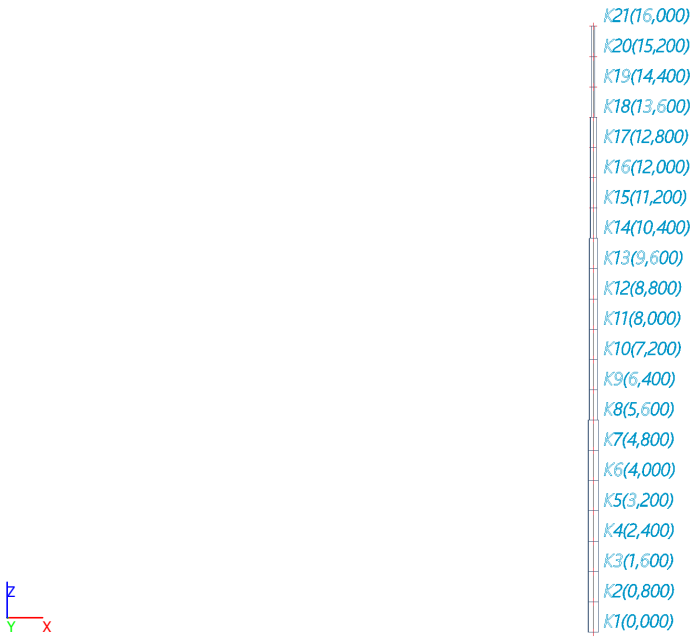
2.1. Rekenmodel



2.2. Rekenmodel



2.3. Knoopnummers

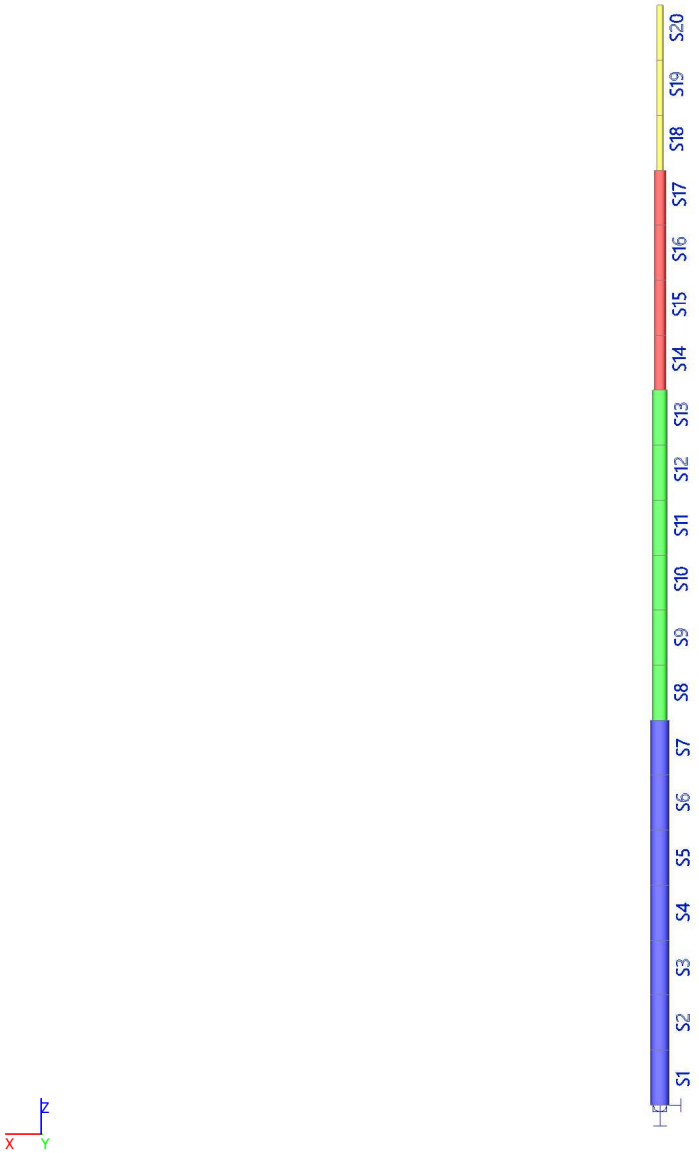


2.4. Knopen

Naam	Coördinaat X [m]	Coördinaat Y [m]	Coördinaat Z [m]
K1	0,000	0,000	0,000
K2	0,000	0,000	0,800
K3	0,000	0,000	1,600
K4	0,000	0,000	2,400
K5	0,000	0,000	3,200
K6	0,000	0,000	4,000
K7	0,000	0,000	4,800
K8	0,000	0,000	5,600
K9	0,000	0,000	6,400
K10	0,000	0,000	7,200
K11	0,000	0,000	8,000

Naam	Coördinaat X [m]	Coördinaat Y [m]	Coördinaat Z [m]
K12	0,000	0,000	8,800
K13	0,000	0,000	9,600
K14	0,000	0,000	10,400
K15	0,000	0,000	11,200
K16	0,000	0,000	12,000
K17	0,000	0,000	12,800
K18	0,000	0,000	13,600
K19	0,000	0,000	14,400
K20	0,000	0,000	15,200
K21	0,000	0,000	16,000

2.5. Staafnummers



2.6. Staven

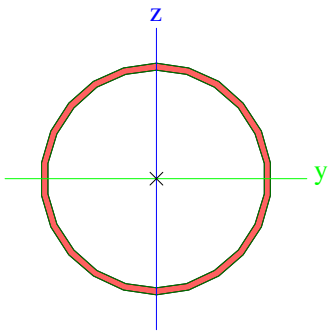
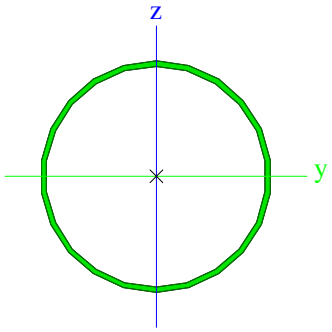
Naam	Doorsnede	Materiaal	Lengte [m]	Beginknoop	Eindknoop	Type
S1	CS6 - CHS273.0/6.3	S 235	0,800	K1	K2	Algemeen (0)
S2	CS6 - CHS273.0/6.3	S 235	0,800	K2	K3	Algemeen (0)
S3	CS6 - CHS273.0/6.3	S 235	0,800	K3	K4	Algemeen (0)
S4	CS6 - CHS273.0/6.3	S 235	0,800	K4	K5	Algemeen (0)
S5	CS6 - CHS273.0/6.3	S 235	0,800	K5	K6	Algemeen (0)
S6	CS6 - CHS273.0/6.3	S 235	0,800	K6	K7	Algemeen (0)
S7	CS6 - CHS273.0/6.3	S 235	0,800	K7	K8	Algemeen (0)
S8	CS3 - CHS219.1/6.3	S 235	0,800	K8	K9	Algemeen (0)
S9	CS3 - CHS219.1/6.3	S 235	0,800	K9	K10	Algemeen (0)
S10	CS3 - CHS219.1/6.3	S 235	0,800	K10	K11	Algemeen (0)
S11	CS3 - CHS219.1/6.3	S 235	0,800	K11	K12	Algemeen (0)
S12	CS3 - CHS219.1/6.3	S 235	0,800	K12	K13	Algemeen (0)
S13	CS3 - CHS219.1/6.3	S 235	0,800	K13	K14	Algemeen (0)
S14	CS7 - CHS168.3/6.3	S 235	0,800	K14	K15	Algemeen (0)
S15	CS7 - CHS168.3/6.3	S 235	0,800	K15	K16	Algemeen (0)
S16	CS7 - CHS168.3/6.3	S 235	0,800	K16	K17	Algemeen (0)
S17	CS7 - CHS168.3/6.3	S 235	0,800	K17	K18	Algemeen (0)
S18	CS8 - CHS88.9/6.3	S 235	0,800	K18	K19	Algemeen (0)
S19	CS8 - CHS88.9/6.3	S 235	0,800	K19	K20	Algemeen (0)
S20	CS8 - CHS88.9/6.3	S 235	0,800	K20	K21	Algemeen (0)

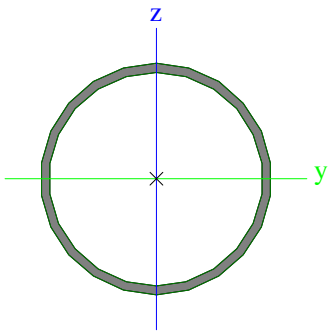
2.7. Knoopondersteuningen

Naam	Knoop	Systeem	Type	X	Y	Z	Rx	Ry	Rz
Sn1	K1	GCS	Standaard	Vast	Vast	Vast	Vast	Vast	Vast

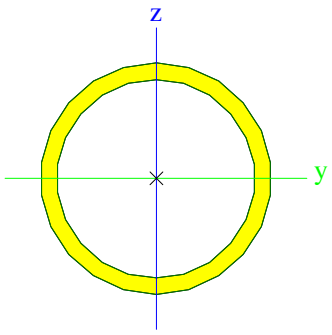
2.8. Doorsneden

CS3		
Type	CHS219.1/6.3	
Vormnorm	3 - Cirkelvormige holle doorsnede	
Vorm type	Dunwandig	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Kleur		
Knik y-y, Knik z-z	a	a
A [m^2]	4,2100e-03	
A_y [m^2], A_z [m^2]	2,6813e-03	2,6813e-03
A_L [m^2/m], A_D [m^2/m]	6,8800e-01	1,3370e+00
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	110	110
α [deg]	0,00	
I_y [m^4], I_z [m^4]	2,3860e-05	2,3860e-05
i_y [mm], i_z [mm]	75	75
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	2,1800e-04	2,1800e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	2,8087e-04	2,8087e-04
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6,70e+04	6,70e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	6,70e+04	6,70e+04
d_y [mm], d_z [mm]	0	0
I_t [m^4], I_w [m^6]	4,7720e-05	8,1854e-40
β_y [mm], β_z [mm]	0	0

Afbeelding		
CS6		
Type	CHS273.0/6.3	
Vormnorm	3 - Cirkelvormige holle doorsnede	
Vorm type	Dunwandig	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Kleur		
Knik y-y, Knik z-z	a	a
A [m²]	5,2800e-03	
A_y [m²], A_z [m²]	3,3604e-03	3,3604e-03
A_L [m²/m], A_D [m²/m]	8,5800e-01	1,6756e+00
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	137	136
α [deg]	0,00	
I_y [m⁴], I_z [m⁴]	4,6960e-05	4,6960e-05
i_y [mm], i_z [mm]	94	94
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3,4400e-04	3,4400e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4,4113e-04	4,4113e-04
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1,05e+05	1,05e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1,05e+05	1,05e+05
d_y [mm], d_z [mm]	0	0
I_t [m⁴], I_w [m⁶]	9,3920e-05	9,7750e-40
β_y [mm], β_z [mm]	0	0
Afbeelding		
CS7		
Type	CHS168.3/6.3	
Vormnorm	3 - Cirkelvormige holle doorsnede	
Vorm type	Dunwandig	
Onderdeelmateriaal	S 235	
Bouwwijze	koudgevormd	
Kleur		
Knik y-y, Knik z-z	c	c
A [m²]	3,2100e-03	
A_y [m²], A_z [m²]	2,0412e-03	2,0412e-03
A_L [m²/m], A_D [m²/m]	5,2900e-01	1,0178e+00
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	84	84
α [deg]	0,00	
I_y [m⁴], I_z [m⁴]	1,0530e-05	1,0530e-05
i_y [mm], i_z [mm]	57	57

$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1,2500e-04	1,2500e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1,6281e-04	1,6281e-04
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3,89e+04	3,89e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3,89e+04	3,89e+04
d_y [mm], d_z [mm]	0	0
I_t [m⁴], I_w [m⁶]	2,1070e-05	1,0471e-40
β_y [mm], β_z [mm]	0	0
Afbeelding		

CS8

Type	CHS88.9/6.3	
Vormnorm	3 - Cirkelvormige holle doorsnede	
Vorm type	Dunwandig	
Onderdeelmateriaal	S 235	
Bouwwijze	koudgevormd	
Kleur		
Knik y-y, Knik z-z	c	c
A [m²]	1,6300e-03	
A_y [m²], A_z [m²]	1,0408e-03	1,0408e-03
A_L [m²/m], A_D [m²/m]	2,7900e-01	5,1896e-01
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	44	44
α [deg]	0,00	
I_y [m⁴], I_z [m⁴]	1,4000e-06	1,4000e-06
i_y [mm], i_z [mm]	29	29
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3,1500e-05	3,1500e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4,3067e-05	4,3067e-05
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1,01e+04	1,01e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1,01e+04	1,01e+04
d_y [mm], d_z [mm]	0	0
I_t [m⁴], I_w [m⁶]	2,8000e-06	2,8709e-42
β_y [mm], β_z [mm]	0	0
Afbeelding		

Verklaring van symbolen	
Vormnorm	d - Diameter w - Dikte
A	Gebied
A_y	Afschuifoppervlak in hoofd y-richting
A_z	Afschuifoppervlak in hoofd z-richting

Verklaring van symbolen	
A_L	Omtrek per eenheidslengte
A_D	Uithardingsoppervlakte per eenheidslengte
$c_{Y.UCS}$	Zwaartepunt coordinaten in Y-richting van het invoer assen systeem
$c_{Z.UCS}$	Zwaartepunt coordinaten in

Verklaring van symbolen	
	Z-richting van het invoer assen systeem
$I_{Y.LCS}$	Tweede moment van het gebied rond de YLCS as
$I_{Z.LCS}$	Tweede moment van het gebied rond de ZLCS as
$I_{YZ.LCS}$	Product moment van het gebied in het LCS systeem
α	Rotatiehoek van het hoofd assen systeem
I_y	Tweede moment van het gebied rond de hoofd y-as
I_z	Tweede moment van het gebied rond de hoofd z-as
i_y	Traagheidsstraal rond de hoofd y-as
i_z	Traagheidsstraal rond de hoofd z-as
$W_{el.y}$	Elastische doorsnede modulus rond de hoofd y-as
$W_{el.z}$	Elastische doorsnede modulus rond de hoofd z-as

Verklaring van symbolen	
$W_{pl.y}$	Plastische doorsnede modulus rond de hoofd y-as
$W_{pl.z}$	Plastische doorsnede modulus rond de hoofd z-as
$M_{pl.y.+}$	Plastisch moment rond de hoofd y-as voor een positief My moment
$M_{pl.y.-}$	Plastisch moment rond de hoofd y-as voor een negatief My moment
$M_{pl.z.+}$	Plastisch moment rond de hoofd z-as voor een positief Mz moment
$M_{pl.z.-}$	Plastisch moment rond de hoofd z-as voor een negatief Mz moment
d_y	Afschuif middencoordinaat in hoofd y-richting gemeten vanaf het zwaartepunt
d_z	Afschuif middencoordinaat in hoofd z-richting gemeten vanaf het zwaartepunt
I_t	Torsie constante
I_w	Welvings constante
β_y	Mono-symmetrische constante rond de hoofd y-as
β_z	Mono-symmetrische constante rond de hoofd z-as

3. Dynamica

3.1. Lijnmassa's



3.2. Lijnmassa op staaf

Naam	Staaf	Massagroep	Verdeling	Beg M [kg/m] Eind M [kg/m]	Coeff mx Coeff my Coeff mz	Coör Reikwijdte Oors	Pos x_1 Pos x_2
LMB1	S1	MG1 - Eigen gewicht staal	Gelijkmatig	41,5	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB2	S2	MG1 - Eigen gewicht staal	Gelijkmatig	41,5	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB3	S3	MG1 - Eigen gewicht staal	Gelijkmatig	41,5	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB4	S4	MG1 - Eigen gewicht staal	Gelijkmatig	41,5	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB5	S5	MG1 - Eigen gewicht staal	Gelijkmatig	41,5	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB6	S6	MG1 - Eigen gewicht staal	Gelijkmatig	41,5	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB7	S7	MG1 - Eigen gewicht staal	Gelijkmatig	41,5	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB8	S8	MG1 - Eigen gewicht staal	Gelijkmatig	33,1	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB9	S9	MG1 - Eigen gewicht staal	Gelijkmatig	33,1	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB10	S10	MG1 - Eigen gewicht staal	Gelijkmatig	33,1	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB11	S11	MG1 - Eigen gewicht staal	Gelijkmatig	33,1	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB12	S12	MG1 - Eigen gewicht staal	Gelijkmatig	33,1	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB13	S13	MG1 - Eigen gewicht staal	Gelijkmatig	33,1	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB14	S14	MG1 - Eigen gewicht staal	Gelijkmatig	25,7	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB15	S15	MG1 - Eigen gewicht staal	Gelijkmatig	25,7	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB16	S16	MG1 - Eigen gewicht staal	Gelijkmatig	25,7	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB17	S17	MG1 - Eigen gewicht staal	Gelijkmatig	25,7	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB18	S18	MG1 - Eigen gewicht staal	Gelijkmatig	12,8	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB19	S19	MG1 - Eigen gewicht staal	Gelijkmatig	12,8	1 1 1	Rela vol Vanaf begin	0.000 1.000
LMB20	S20	MG1 - Eigen gewicht staal	Gelijkmatig	12,8	1 1 1	Rela vol Vanaf begin	0.000 1.000

3.3. Puntmassa op staaf

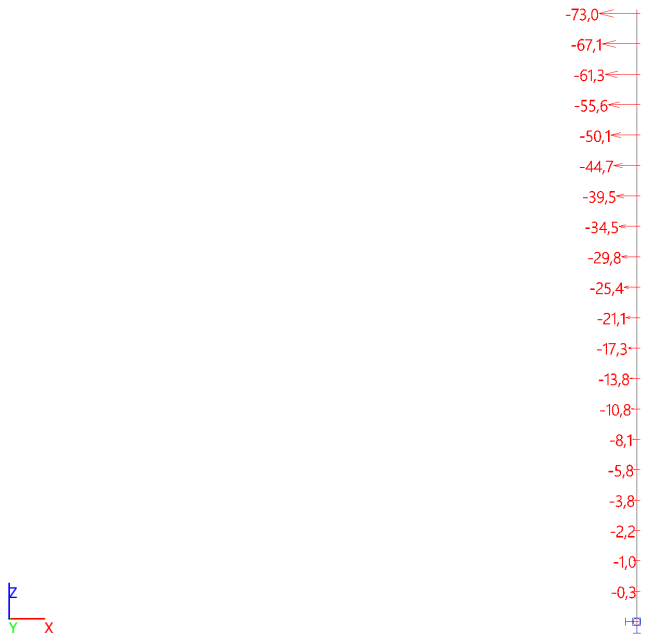
Naam	Staaf	Massagroep	M [kg]	Coeff mx Coeff my Coeff mz	Reikwijdte Systeem UCS	Coör Oors Pos x [m]	Herh (n) Regelmatig dx [m]
PMB1	S17	MG1 - Eigen gewicht staal	80,0	1 1 1	vol	Abso Vanaf einde 0,250	1

4. Resultaten

4.1. Eigenfrequenties

N	f [Hz]	ω [1/s]	ω² [1/s²]	T [s]
Massacombinatie : CM1				
1	0,87	5,47	29,96	1,15
2	4,16	26,15	683,99	0,24
3	9,16	57,52	3308,86	0,11
4	15,44	97,01	9410,57	0,06
5	26,51	166,54	27736,07	0,04
6	41,74	262,28	68791,39	0,02
7	55,63	349,55	122185,96	0,02
8	63,99	402,03	161628,20	0,02
9	69,87	439,02	192740,83	0,01
10	89,54	562,60	316519,22	0,01
11	116,27	730,54	533691,41	0,01
12	137,63	864,75	747795,67	0,01
13	153,82	966,45	934027,31	0,01

4.2. N=1 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

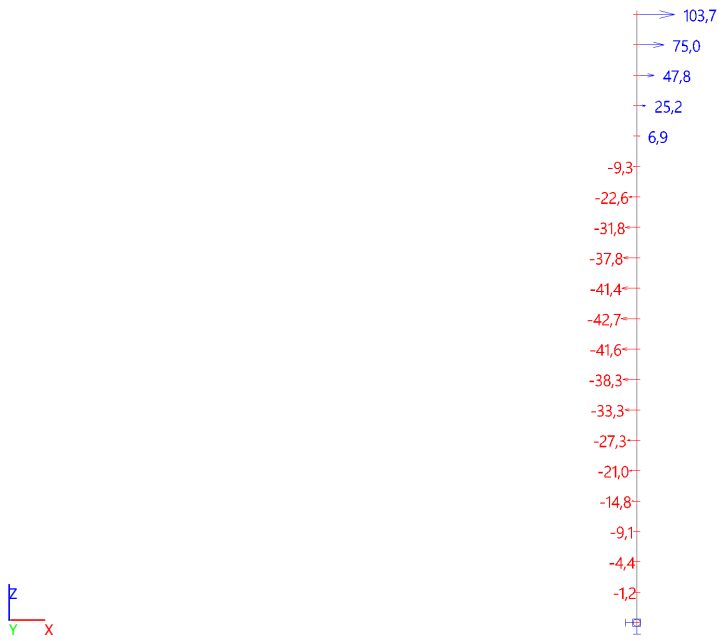


4.3. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/1 - 0,87
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/1 - 0,87	0,0	0,0	0,0
K2	CM1/1 - 0,87	-0,3	0,0	0,0
K3	CM1/1 - 0,87	-1,0	0,0	0,0
K4	CM1/1 - 0,87	-2,2	0,0	0,0
K5	CM1/1 - 0,87	-3,8	0,0	0,0
K6	CM1/1 - 0,87	-5,8	0,0	0,0
K7	CM1/1 - 0,87	-8,1	0,0	0,0
K8	CM1/1 - 0,87	-10,8	0,0	0,0
K9	CM1/1 - 0,87	-13,8	0,0	0,0
K10	CM1/1 - 0,87	-17,3	0,0	0,0
K11	CM1/1 - 0,87	-21,1	0,0	0,0
K12	CM1/1 - 0,87	-25,4	0,0	0,0
K13	CM1/1 - 0,87	-29,8	0,0	0,0
K14	CM1/1 - 0,87	-34,5	0,0	0,0
K15	CM1/1 - 0,87	-39,5	0,0	0,0
K16	CM1/1 - 0,87	-44,7	0,0	0,0
K17	CM1/1 - 0,87	-50,1	0,0	0,0
K18	CM1/1 - 0,87	-55,6	0,0	0,0
K19	CM1/1 - 0,87	-61,3	0,0	0,0
K20	CM1/1 - 0,87	-67,1	0,0	0,0
K21	CM1/1 - 0,87	-73,0	0,0	0,0

4.4. N=2 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

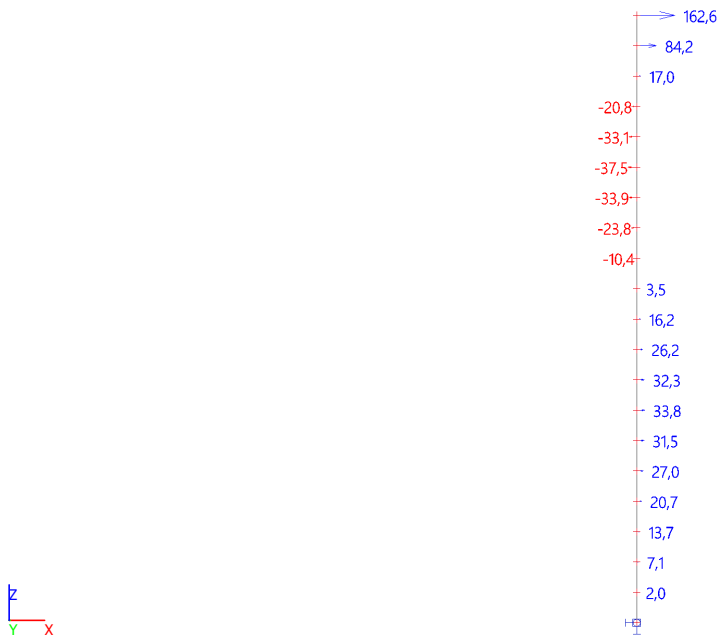


4.5. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/2 - 4,16
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/2 - 4,16	0,0	0,0	0,0
K2	CM1/2 - 4,16	-1,2	0,0	0,0
K3	CM1/2 - 4,16	-4,4	0,0	0,0
K4	CM1/2 - 4,16	-9,1	0,0	0,0
K5	CM1/2 - 4,16	-14,8	0,0	0,0
K6	CM1/2 - 4,16	-21,0	0,0	0,0
K7	CM1/2 - 4,16	-27,3	0,0	0,0
K8	CM1/2 - 4,16	-33,3	0,0	0,0
K9	CM1/2 - 4,16	-38,3	0,0	0,0
K10	CM1/2 - 4,16	-41,6	0,0	0,0
K11	CM1/2 - 4,16	-42,7	0,0	0,0
K12	CM1/2 - 4,16	-41,4	0,0	0,0
K13	CM1/2 - 4,16	-37,8	0,0	0,0
K14	CM1/2 - 4,16	-31,8	0,0	0,0
K15	CM1/2 - 4,16	-22,6	0,0	0,0
K16	CM1/2 - 4,16	-9,3	0,0	0,0
K17	CM1/2 - 4,16	6,9	0,0	0,0
K18	CM1/2 - 4,16	25,2	0,0	0,0
K19	CM1/2 - 4,16	47,8	0,0	0,0
K20	CM1/2 - 4,16	75,0	0,0	0,0
K21	CM1/2 - 4,16	103,7	0,0	0,0

4.6. N=3 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net



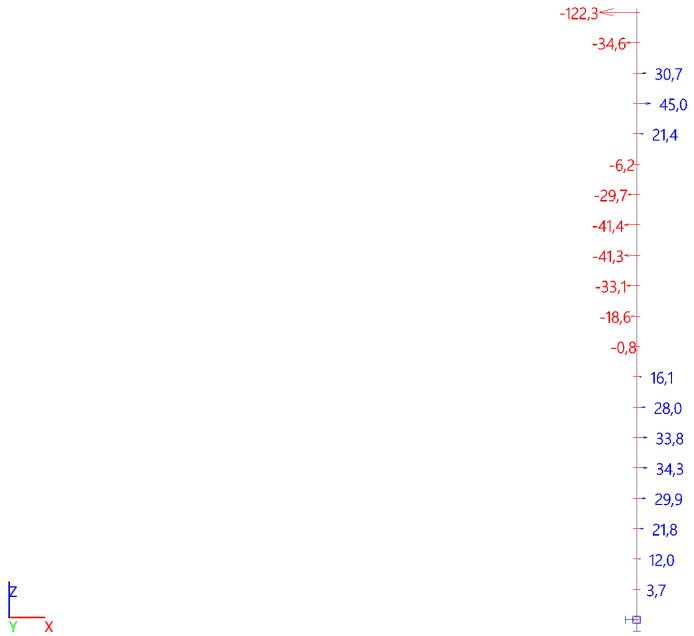
4.7. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/3 - 9,16

Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/3 - 9,16	0,0	0,0	0,0
K2	CM1/3 - 9,16	2,0	0,0	0,0
K3	CM1/3 - 9,16	7,1	0,0	0,0
K4	CM1/3 - 9,16	13,7	0,0	0,0
K5	CM1/3 - 9,16	20,7	0,0	0,0
K6	CM1/3 - 9,16	27,0	0,0	0,0
K7	CM1/3 - 9,16	31,5	0,0	0,0
K8	CM1/3 - 9,16	33,8	0,0	0,0
K9	CM1/3 - 9,16	32,3	0,0	0,0
K10	CM1/3 - 9,16	26,2	0,0	0,0
K11	CM1/3 - 9,16	16,2	0,0	0,0
K12	CM1/3 - 9,16	3,5	0,0	0,0
K13	CM1/3 - 9,16	-10,4	0,0	0,0
K14	CM1/3 - 9,16	-23,8	0,0	0,0
K15	CM1/3 - 9,16	-33,9	0,0	0,0
K16	CM1/3 - 9,16	-37,5	0,0	0,0
K17	CM1/3 - 9,16	-33,1	0,0	0,0
K18	CM1/3 - 9,16	-20,8	0,0	0,0
K19	CM1/3 - 9,16	17,0	0,0	0,0
K20	CM1/3 - 9,16	84,2	0,0	0,0
K21	CM1/3 - 9,16	162,6	0,0	0,0

4.8. N=4 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

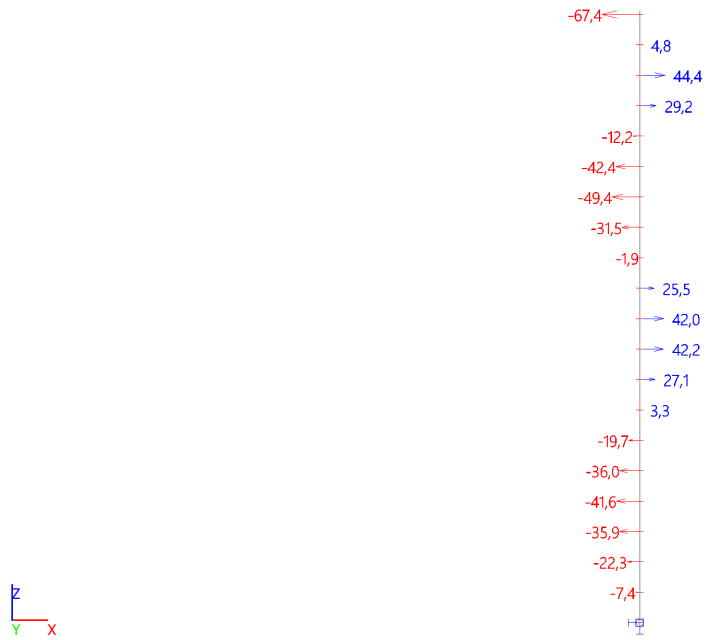


4.9. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/4 - 15,44
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/4 - 15,44	0,0	0,0	0,0
K2	CM1/4 - 15,44	3,7	0,0	0,0
K3	CM1/4 - 15,44	12,0	0,0	0,0
K4	CM1/4 - 15,44	21,8	0,0	0,0
K5	CM1/4 - 15,44	29,9	0,0	0,0
K6	CM1/4 - 15,44	34,3	0,0	0,0
K7	CM1/4 - 15,44	33,8	0,0	0,0
K8	CM1/4 - 15,44	28,0	0,0	0,0
K9	CM1/4 - 15,44	16,1	0,0	0,0
K10	CM1/4 - 15,44	-0,8	0,0	0,0
K11	CM1/4 - 15,44	-18,6	0,0	0,0
K12	CM1/4 - 15,44	-33,1	0,0	0,0
K13	CM1/4 - 15,44	-41,3	0,0	0,0
K14	CM1/4 - 15,44	-41,4	0,0	0,0
K15	CM1/4 - 15,44	-29,7	0,0	0,0
K16	CM1/4 - 15,44	-6,2	0,0	0,0
K17	CM1/4 - 15,44	21,4	0,0	0,0
K18	CM1/4 - 15,44	45,0	0,0	0,0
K19	CM1/4 - 15,44	30,7	0,0	0,0
K20	CM1/4 - 15,44	-34,6	0,0	0,0
K21	CM1/4 - 15,44	-122,3	0,0	0,0

4.10. N=5 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

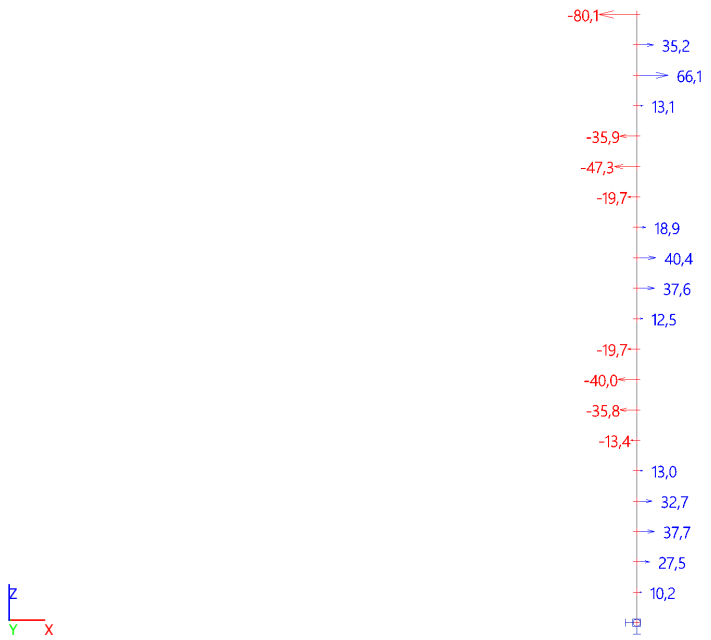


4.11. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/5 - 26,51
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/5 - 26,51	0,0	0,0	0,0
K2	CM1/5 - 26,51	-7,4	0,0	0,0
K3	CM1/5 - 26,51	-22,3	0,0	0,0
K4	CM1/5 - 26,51	-35,9	0,0	0,0
K5	CM1/5 - 26,51	-41,6	0,0	0,0
K6	CM1/5 - 26,51	-36,0	0,0	0,0
K7	CM1/5 - 26,51	-19,7	0,0	0,0
K8	CM1/5 - 26,51	3,3	0,0	0,0
K9	CM1/5 - 26,51	27,1	0,0	0,0
K10	CM1/5 - 26,51	42,2	0,0	0,0
K11	CM1/5 - 26,51	42,0	0,0	0,0
K12	CM1/5 - 26,51	25,5	0,0	0,0
K13	CM1/5 - 26,51	-1,9	0,0	0,0
K14	CM1/5 - 26,51	-31,5	0,0	0,0
K15	CM1/5 - 26,51	-49,4	0,0	0,0
K16	CM1/5 - 26,51	-42,4	0,0	0,0
K17	CM1/5 - 26,51	-12,2	0,0	0,0
K18	CM1/5 - 26,51	29,2	0,0	0,0
K19	CM1/5 - 26,51	44,4	0,0	0,0
K20	CM1/5 - 26,51	4,8	0,0	0,0
K21	CM1/5 - 26,51	-67,4	0,0	0,0

4.12. N=6 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

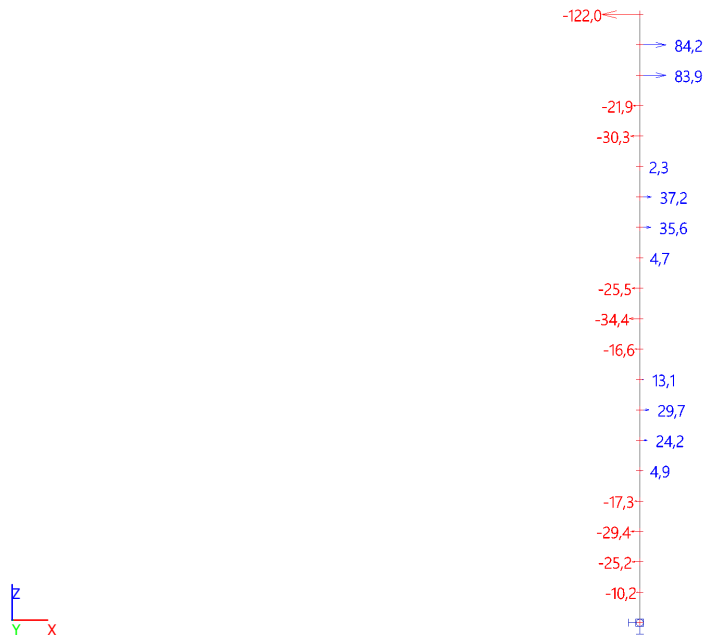


4.13. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/6 - 41,74
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/6 - 41,74	0,0	0,0	0,0
K2	CM1/6 - 41,74	10,2	0,0	0,0
K3	CM1/6 - 41,74	27,5	0,0	0,0
K4	CM1/6 - 41,74	37,7	0,0	0,0
K5	CM1/6 - 41,74	32,7	0,0	0,0
K6	CM1/6 - 41,74	13,0	0,0	0,0
K7	CM1/6 - 41,74	-13,4	0,0	0,0
K8	CM1/6 - 41,74	-35,8	0,0	0,0
K9	CM1/6 - 41,74	-40,0	0,0	0,0
K10	CM1/6 - 41,74	-19,7	0,0	0,0
K11	CM1/6 - 41,74	12,5	0,0	0,0
K12	CM1/6 - 41,74	37,6	0,0	0,0
K13	CM1/6 - 41,74	40,4	0,0	0,0
K14	CM1/6 - 41,74	18,9	0,0	0,0
K15	CM1/6 - 41,74	-19,7	0,0	0,0
K16	CM1/6 - 41,74	-47,3	0,0	0,0
K17	CM1/6 - 41,74	-35,9	0,0	0,0
K18	CM1/6 - 41,74	13,1	0,0	0,0
K19	CM1/6 - 41,74	66,1	0,0	0,0
K20	CM1/6 - 41,74	35,2	0,0	0,0
K21	CM1/6 - 41,74	-80,1	0,0	0,0

4.14. N=7 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

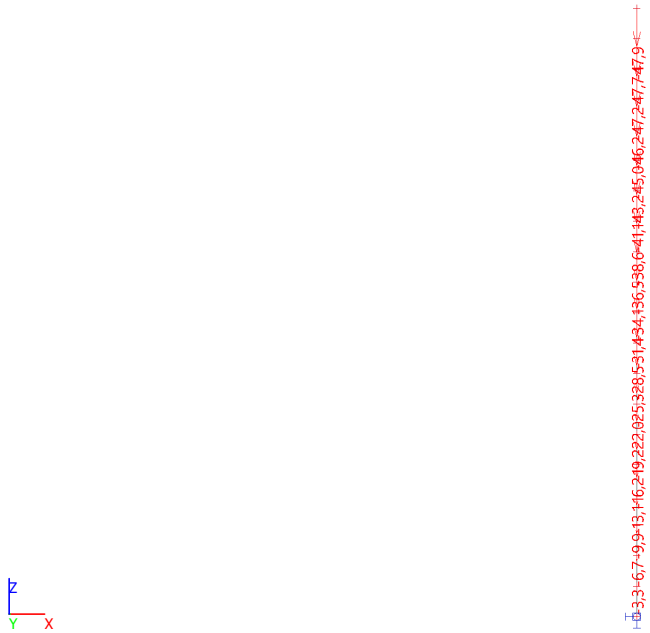


4.15. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/7 - 55,63
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/7 - 55,63	0,0	0,0	0,0
K2	CM1/7 - 55,63	-10,2	0,0	0,0
K3	CM1/7 - 55,63	-25,2	0,0	0,0
K4	CM1/7 - 55,63	-29,4	0,0	0,0
K5	CM1/7 - 55,63	-17,3	0,0	0,0
K6	CM1/7 - 55,63	4,9	0,0	0,0
K7	CM1/7 - 55,63	24,2	0,0	0,0
K8	CM1/7 - 55,63	29,7	0,0	0,0
K9	CM1/7 - 55,63	13,1	0,0	0,0
K10	CM1/7 - 55,63	-16,6	0,0	0,0
K11	CM1/7 - 55,63	-34,4	0,0	0,0
K12	CM1/7 - 55,63	-25,5	0,0	0,0
K13	CM1/7 - 55,63	4,7	0,0	0,0
K14	CM1/7 - 55,63	35,6	0,0	0,0
K15	CM1/7 - 55,63	37,2	0,0	0,0
K16	CM1/7 - 55,63	2,3	0,0	0,0
K17	CM1/7 - 55,63	-30,3	0,0	0,0
K18	CM1/7 - 55,63	-21,9	0,0	0,0
K19	CM1/7 - 55,63	83,9	0,0	0,0
K20	CM1/7 - 55,63	84,2	0,0	0,0
K21	CM1/7 - 55,63	-122,0	0,0	0,0

4.16. N=8 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

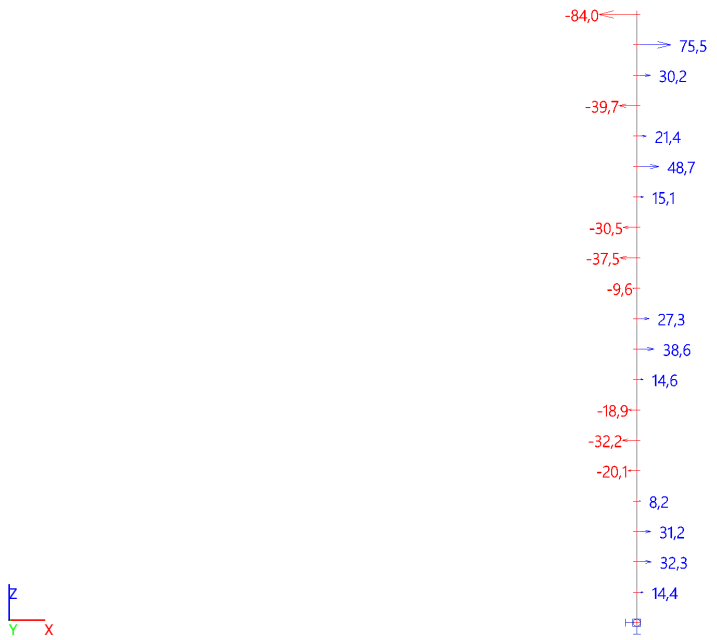


4.17. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/8 - 63,99
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/8 - 63,99	0,0	0,0	0,0
K2	CM1/8 - 63,99	0,0	0,0	-3,3
K3	CM1/8 - 63,99	0,0	0,0	-6,7
K4	CM1/8 - 63,99	0,0	0,0	-9,9
K5	CM1/8 - 63,99	0,0	0,0	-13,1
K6	CM1/8 - 63,99	0,0	0,0	-16,2
K7	CM1/8 - 63,99	0,0	0,0	-19,2
K8	CM1/8 - 63,99	0,0	0,0	-22,0
K9	CM1/8 - 63,99	0,0	0,0	-25,3
K10	CM1/8 - 63,99	0,0	0,0	-28,5
K11	CM1/8 - 63,99	0,0	0,0	-31,4
K12	CM1/8 - 63,99	0,0	0,0	-34,1
K13	CM1/8 - 63,99	0,0	0,0	-36,5
K14	CM1/8 - 63,99	0,0	0,0	-38,6
K15	CM1/8 - 63,99	0,0	0,0	-41,1
K16	CM1/8 - 63,99	0,0	0,0	-43,2
K17	CM1/8 - 63,99	0,0	0,0	-45,0
K18	CM1/8 - 63,99	0,0	0,0	-46,2
K19	CM1/8 - 63,99	0,0	0,0	-47,2
K20	CM1/8 - 63,99	0,0	0,0	-47,7
K21	CM1/8 - 63,99	0,0	0,0	-47,9

4.18. N=9 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

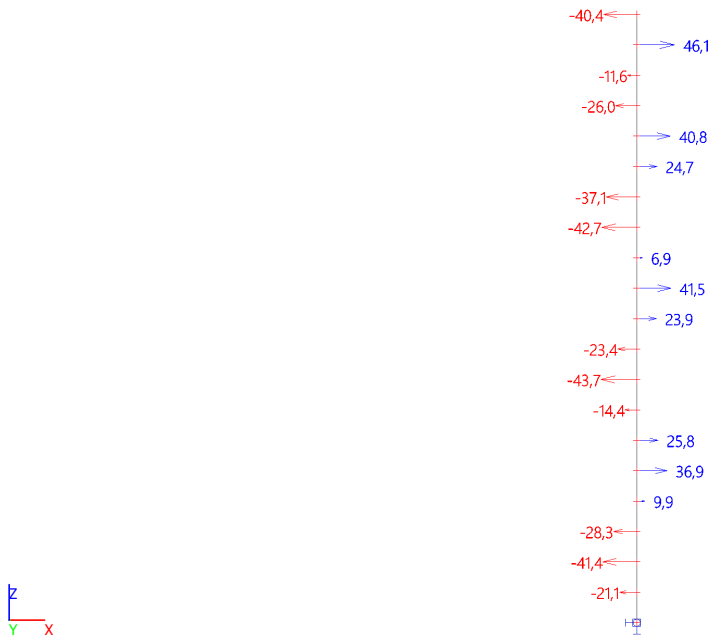


4.19. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/9 - 69,87
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/9 - 69,87	0,0	0,0	0,0
K2	CM1/9 - 69,87	14,4	0,0	0,0
K3	CM1/9 - 69,87	32,3	0,0	0,0
K4	CM1/9 - 69,87	31,2	0,0	0,0
K5	CM1/9 - 69,87	8,2	0,0	0,0
K6	CM1/9 - 69,87	-20,1	0,0	0,0
K7	CM1/9 - 69,87	-32,2	0,0	0,0
K8	CM1/9 - 69,87	-18,9	0,0	0,0
K9	CM1/9 - 69,87	14,6	0,0	0,0
K10	CM1/9 - 69,87	38,6	0,0	0,0
K11	CM1/9 - 69,87	27,3	0,0	0,0
K12	CM1/9 - 69,87	-9,6	0,0	0,0
K13	CM1/9 - 69,87	-37,5	0,0	0,0
K14	CM1/9 - 69,87	-30,5	0,0	0,0
K15	CM1/9 - 69,87	15,1	0,0	0,0
K16	CM1/9 - 69,87	48,7	0,0	0,0
K17	CM1/9 - 69,87	21,4	0,0	0,0
K18	CM1/9 - 69,87	-39,7	0,0	0,0
K19	CM1/9 - 69,87	30,2	0,0	0,0
K20	CM1/9 - 69,87	75,5	0,0	0,0
K21	CM1/9 - 69,87	-84,0	0,0	0,0

4.20. N=10 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

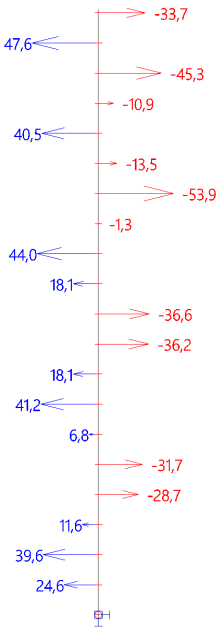


4.21. Verplaatsing van knopen

Eigenoplossing, Extreem : Nee
Selectie : Alle
Massacombinaties : CM1/10 - 89,54
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/10 - 89,54	0,0	0,0	0,0
K2	CM1/10 - 89,54	-21,1	0,0	0,0
K3	CM1/10 - 89,54	-41,4	0,0	0,0
K4	CM1/10 - 89,54	-28,3	0,0	0,0
K5	CM1/10 - 89,54	9,9	0,0	0,0
K6	CM1/10 - 89,54	36,9	0,0	0,0
K7	CM1/10 - 89,54	25,8	0,0	0,0
K8	CM1/10 - 89,54	-14,4	0,0	0,0
K9	CM1/10 - 89,54	-43,7	0,0	0,0
K10	CM1/10 - 89,54	-23,4	0,0	0,0
K11	CM1/10 - 89,54	23,9	0,0	0,0
K12	CM1/10 - 89,54	41,5	0,0	0,0
K13	CM1/10 - 89,54	6,9	0,0	0,0
K14	CM1/10 - 89,54	-42,7	0,0	0,0
K15	CM1/10 - 89,54	-37,1	0,0	0,0
K16	CM1/10 - 89,54	24,7	0,0	0,0
K17	CM1/10 - 89,54	40,8	0,0	0,0
K18	CM1/10 - 89,54	-26,0	0,0	0,0
K19	CM1/10 - 89,54	-11,6	0,0	0,0
K20	CM1/10 - 89,54	46,1	0,0	0,0
K21	CM1/10 - 89,54	-40,4	0,0	0,0

4.22. N=11 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

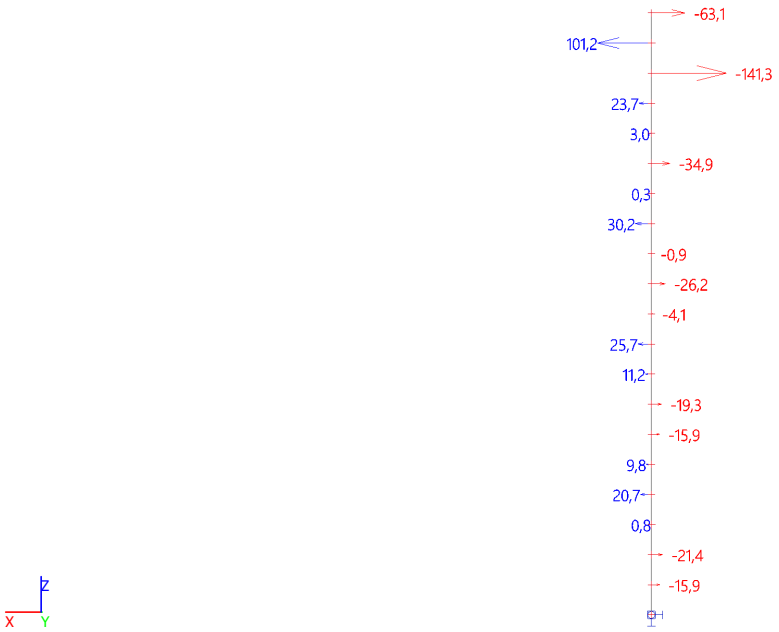


4.23. Verplaatsing van knopen

Eigenoplossing, Extreem : Knoop
Selectie : Alle
Massacombinaties : CM1/11 - 116,27
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/11 - 116,27	**0,0**	**0,0**	**0,0**
K2	CM1/11 - 116,27	**24,6**	**0,0**	**0,0**
K3	CM1/11 - 116,27	**39,6**	**0,0**	**0,0**
K4	CM1/11 - 116,27	**11,6**	**0,0**	**0,0**
K5	CM1/11 - 116,27	**-28,7**	**0,0**	**0,0**
K6	CM1/11 - 116,27	**-31,7**	**0,0**	**0,0**
K7	CM1/11 - 116,27	**6,8**	**0,0**	**0,0**
K8	CM1/11 - 116,27	**41,2**	**0,0**	**0,0**
K9	CM1/11 - 116,27	**18,1**	**0,0**	**0,0**
K10	CM1/11 - 116,27	**-36,2**	**0,0**	**0,0**
K11	CM1/11 - 116,27	**-36,6**	**0,0**	**0,0**
K12	CM1/11 - 116,27	**18,1**	**0,0**	**0,0**
K13	CM1/11 - 116,27	**44,0**	**0,0**	**0,0**
K14	CM1/11 - 116,27	**-1,3**	**0,0**	**0,0**
K15	CM1/11 - 116,27	**-53,9**	**0,0**	**0,0**
K16	CM1/11 - 116,27	**-13,5**	**0,0**	**0,0**
K17	CM1/11 - 116,27	**40,5**	**0,0**	**0,0**
K18	CM1/11 - 116,27	**-10,9**	**0,0**	**0,0**
K19	CM1/11 - 116,27	**-45,3**	**0,0**	**0,0**
K20	CM1/11 - 116,27	**47,6**	**0,0**	**0,0**
K21	CM1/11 - 116,27	**-33,7**	**0,0**	**0,0**

4.24. N=12 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net

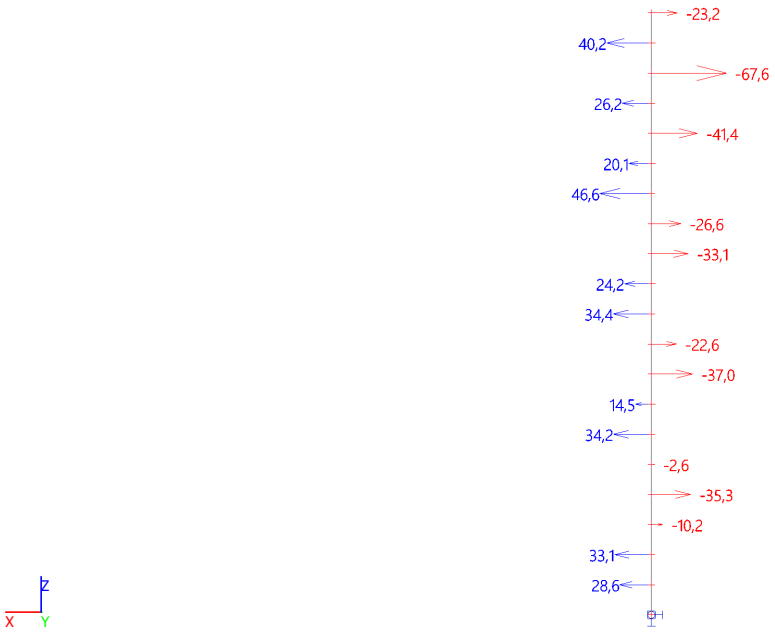


4.25. Verplaatsing van knopen

Eigenoplossing, Extreem : Knoop
Selectie : Alle
Massacombinaties : CM1/12 - 137,63
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/12 - 137,63	**0,0**	**0,0**	**0,0**
K2	CM1/12 - 137,63	**-15,9**	**0,0**	**0,0**
K3	CM1/12 - 137,63	**-21,4**	**0,0**	**0,0**
K4	CM1/12 - 137,63	**0,8**	**0,0**	**0,0**
K5	CM1/12 - 137,63	**20,7**	**0,0**	**0,0**
K6	CM1/12 - 137,63	**9,8**	**0,0**	**0,0**
K7	CM1/12 - 137,63	**-15,9**	**0,0**	**0,0**
K8	CM1/12 - 137,63	**-19,3**	**0,0**	**0,0**
K9	CM1/12 - 137,63	**11,2**	**0,0**	**0,0**
K10	CM1/12 - 137,63	**25,7**	**0,0**	**0,0**
K11	CM1/12 - 137,63	**-4,1**	**0,0**	**0,0**
K12	CM1/12 - 137,63	**-26,2**	**0,0**	**0,0**
K13	CM1/12 - 137,63	**-0,9**	**0,0**	**0,0**
K14	CM1/12 - 137,63	**30,2**	**0,0**	**0,0**
K15	CM1/12 - 137,63	**0,3**	**0,0**	**0,0**
K16	CM1/12 - 137,63	**-34,9**	**0,0**	**0,0**
K17	CM1/12 - 137,63	**3,0**	**0,0**	**0,0**
K18	CM1/12 - 137,63	**23,7**	**0,0**	**0,0**
K19	CM1/12 - 137,63	**-141,3**	**0,0**	**0,0**
K20	CM1/12 - 137,63	**101,2**	**0,0**	**0,0**
K21	CM1/12 - 137,63	**-63,1**	**0,0**	**0,0**

4.26. N=13 Displacement of nodes; Ux, Uy, Uz, Vervormde constructie, Vervormd net



4.27. Verplaatsing van knopen

Eigenoplossing, Extreem : Knoop
Selectie : Alle
Massacombinaties : CM1/13 - 153,82
Modale vormen zijn genormaliseerd zodat de gegeneraliseerde modale massa van elke modus gelijk is aan 1 kg.

Knoop	BG	Ux [mm]	Uy [mm]	Uz [mm]
K1	CM1/13 - 153,82	**0,0**	**0,0**	**0,0**
K2	CM1/13 - 153,82	**28,6**	**0,0**	**0,0**
K3	CM1/13 - 153,82	**33,1**	**0,0**	**0,0**
K4	CM1/13 - 153,82	**-10,2**	**0,0**	**0,0**
K5	CM1/13 - 153,82	**-35,3**	**0,0**	**0,0**
K6	CM1/13 - 153,82	**-2,6**	**0,0**	**0,0**
K7	CM1/13 - 153,82	**34,2**	**0,0**	**0,0**
K8	CM1/13 - 153,82	**14,5**	**0,0**	**0,0**
K9	CM1/13 - 153,82	**-37,0**	**0,0**	**0,0**
K10	CM1/13 - 153,82	**-22,6**	**0,0**	**0,0**
K11	CM1/13 - 153,82	**34,4**	**0,0**	**0,0**
K12	CM1/13 - 153,82	**24,2**	**0,0**	**0,0**
K13	CM1/13 - 153,82	**-33,1**	**0,0**	**0,0**
K14	CM1/13 - 153,82	**-26,6**	**0,0**	**0,0**
K15	CM1/13 - 153,82	**46,6**	**0,0**	**0,0**
K16	CM1/13 - 153,82	**20,1**	**0,0**	**0,0**
K17	CM1/13 - 153,82	**-41,4**	**0,0**	**0,0**
K18	CM1/13 - 153,82	**26,2**	**0,0**	**0,0**
K19	CM1/13 - 153,82	**-67,6**	**0,0**	**0,0**
K20	CM1/13 - 153,82	**40,2**	**0,0**	**0,0**
K21	CM1/13 - 153,82	**-23,2**	**0,0**	**0,0**

1. Inleiding

1.1. Project

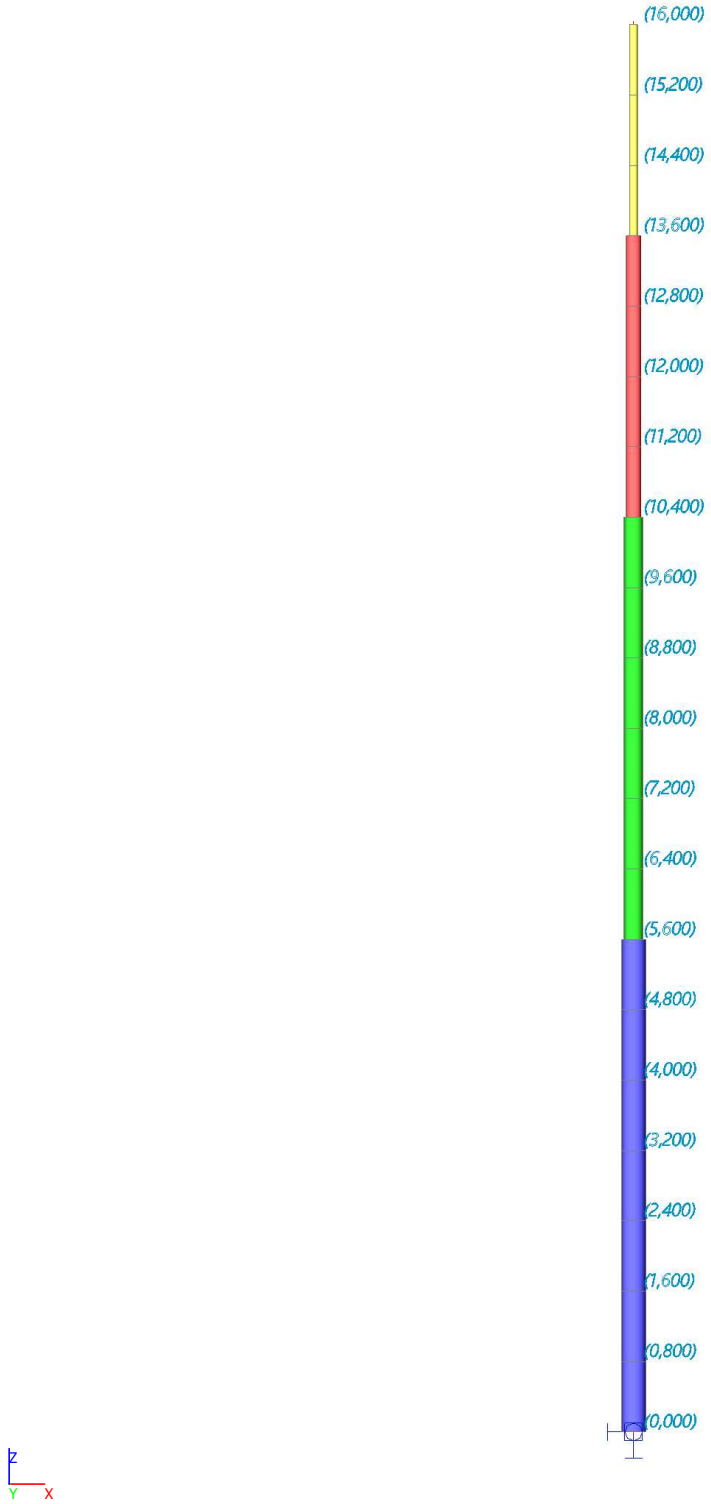
Licentienaam	Arcadis
Project	Bliksempiek WW150
Omschrijving	-
Datum	27. 08. 2019
Constructie	Algemeen XYZ
Aantal knopen :	21
Aantal staven :	20
Aantal platen :	0
Aantal vaste lichamen :	0
Aantal gebruikte doorsneden :	4
Aantal belastingsgevallen :	9
Aantal gebruikte materialen :	1
Gravitatieversnelling [m/s²]	9,810
Nationale norm	EC - EN

1.2. Inhoudsopgave

1. Inleiding **1**
1.1. Project 1
1.2. Inhoudsopgave 1
2. Model **2**
2.1. Rekenmodel 2
2.2. Rekenmodel 3
2.3. Knoopnummers 3
2.4. Knopen 4
2.5. Staafnummers 4
2.6. Staven 5
2.7. Knoopondersteuningen 5
2.8. Doorsneden 5
3. Belastingen en Belastingcombinaties **8**
3.1. Belastingsgevallen 8
3.2. BG2 Quasi-statische windbelasting 9
3.3. BG3-1 wervel windbelasting n=1 9
3.4. BG3-2 wervel windbelasting n=2 10
3.5. BG3-3 wervel windbelasting n=3 10
3.6. BG3-4 wervel windbelasting n=4 11
3.7. BG3-5 wervel windbelasting n=5 11
3.8. BG3-6 wervel windbelasting n=6 12
3.9. BG3-7 wervel windbelasting n=7 12
3.10. Belastinggroepen 13
3.11. Lijnlast 13
3.12. Combinaties 14
4. Resultaten **16**
4.1. UGT Quasi-statisch windbelasting; My 16
4.2. UGT Quasi-statisch windbelasting; Vz 16
4.3. Interne krachten in staaf 17
4.4. UGT wervel windbelasting; My 17
4.5. UGT wervel windbelasting; Vz 18
4.6. Interne krachten in staaf 18
4.7. UGT Quasi-statische windbelasting Spanning; von Mises 19
4.8. Spanning 19
4.9. UGT Wervel windbelasting; von Mises 20
4.10. Spanning 21
4.11. BGT Quasi-statische windbelasting Verplaatsing van knopen; Ux, Uy, Uz, Vervormde constructie, Vervormd net 22
4.12. Vervormingen van staaf 22
4.13. BGT Wervel windbelasting Verplaatsing van knopen; Ux, Uy, Uz, Vervormde constructie, Vervormd net 23
4.14. Vervormingen van staaf 23
4.15. BG3-7; My 24
4.16. BG3-7; Vz 24
4.17. Berekeningsverslag 25

2. Model

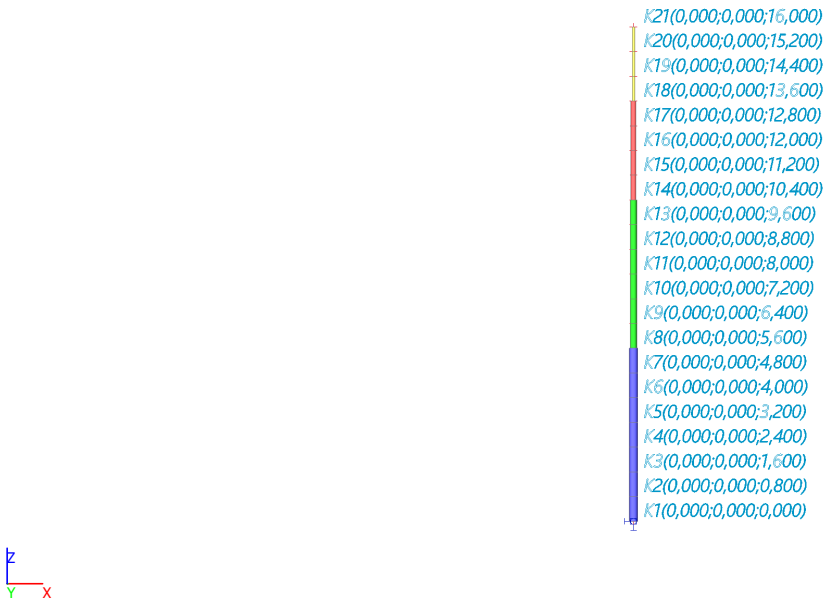
2.1. Rekenmodel



2.2. Rekenmodel



2.3. Knoopnummers

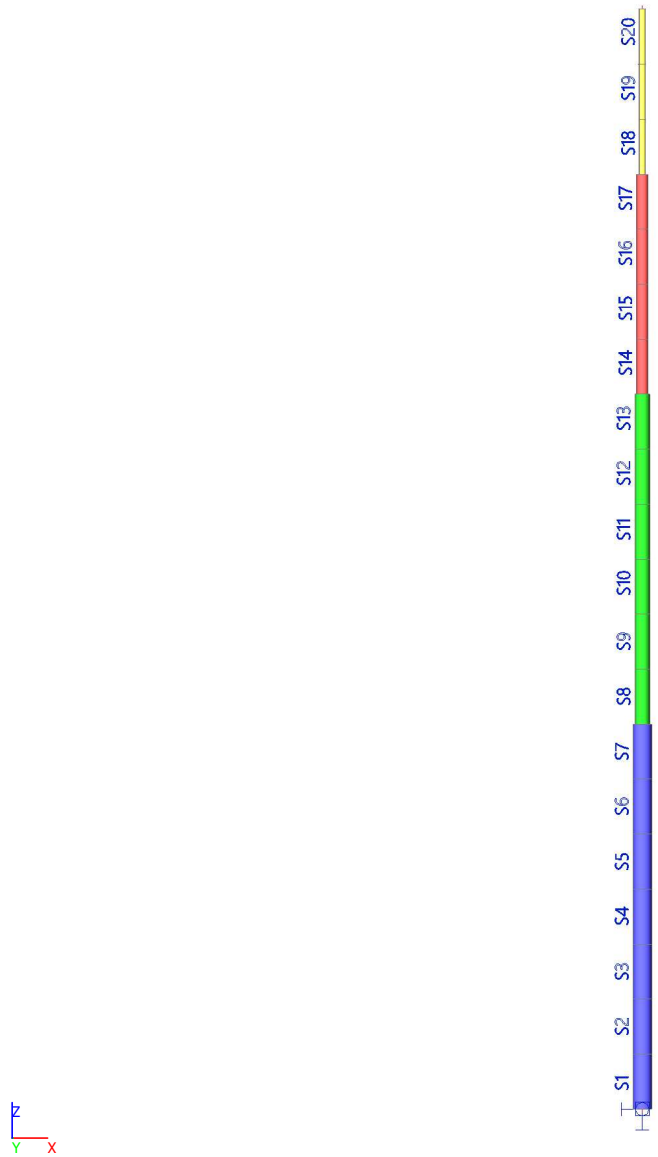


2.4. Knopen

Naam	Coördinaat X [m]	Coördinaat Y [m]	Coördinaat Z [m]
K1	0,000	0,000	0,000
K2	0,000	0,000	0,800
K3	0,000	0,000	1,600
K4	0,000	0,000	2,400
K5	0,000	0,000	3,200
K6	0,000	0,000	4,000
K7	0,000	0,000	4,800
K8	0,000	0,000	5,600
K9	0,000	0,000	6,400
K10	0,000	0,000	7,200
K11	0,000	0,000	8,000

Naam	Coördinaat X [m]	Coördinaat Y [m]	Coördinaat Z [m]
K12	0,000	0,000	8,800
K13	0,000	0,000	9,600
K14	0,000	0,000	10,400
K15	0,000	0,000	11,200
K16	0,000	0,000	12,000
K17	0,000	0,000	12,800
K18	0,000	0,000	13,600
K19	0,000	0,000	14,400
K20	0,000	0,000	15,200
K21	0,000	0,000	16,000

2.5. Staafnummers



2.6. Staven

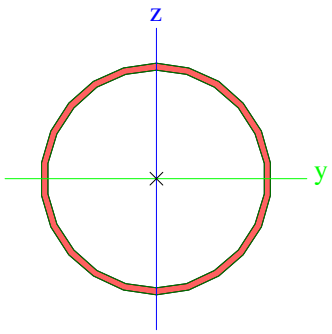
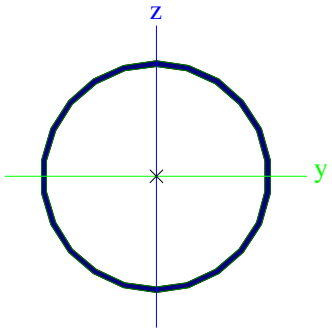
Naam	Doorsnede	Materiaal	Lengte [m]	Beginknoop	Eindknoop	Type
S1	CS6 - CHS273.0/6.3	S 235	0,800	K1	K2	Algemeen (0)
S2	CS6 - CHS273.0/6.3	S 235	0,800	K2	K3	Algemeen (0)
S3	CS6 - CHS273.0/6.3	S 235	0,800	K3	K4	Algemeen (0)
S4	CS6 - CHS273.0/6.3	S 235	0,800	K4	K5	Algemeen (0)
S5	CS6 - CHS273.0/6.3	S 235	0,800	K5	K6	Algemeen (0)
S6	CS6 - CHS273.0/6.3	S 235	0,800	K6	K7	Algemeen (0)
S7	CS6 - CHS273.0/6.3	S 235	0,800	K7	K8	Algemeen (0)
S8	CS3 - CHS219.1/6.3	S 235	0,800	K8	K9	Algemeen (0)
S9	CS3 - CHS219.1/6.3	S 235	0,800	K9	K10	Algemeen (0)
S10	CS3 - CHS219.1/6.3	S 235	0,800	K10	K11	Algemeen (0)
S11	CS3 - CHS219.1/6.3	S 235	0,800	K11	K12	Algemeen (0)
S12	CS3 - CHS219.1/6.3	S 235	0,800	K12	K13	Algemeen (0)
S13	CS3 - CHS219.1/6.3	S 235	0,800	K13	K14	Algemeen (0)
S14	CS7 - CHS168.3/6.3	S 235	0,800	K14	K15	Algemeen (0)
S15	CS7 - CHS168.3/6.3	S 235	0,800	K15	K16	Algemeen (0)
S16	CS7 - CHS168.3/6.3	S 235	0,800	K16	K17	Algemeen (0)
S17	CS7 - CHS168.3/6.3	S 235	0,800	K17	K18	Algemeen (0)
S18	CS8 - CHS88.9/6.3	S 235	0,800	K18	K19	Algemeen (0)
S19	CS8 - CHS88.9/6.3	S 235	0,800	K19	K20	Algemeen (0)
S20	CS8 - CHS88.9/6.3	S 235	0,800	K20	K21	Algemeen (0)

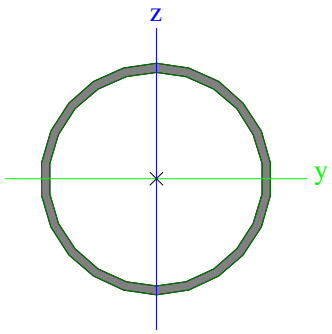
2.7. Knoopondersteuningen

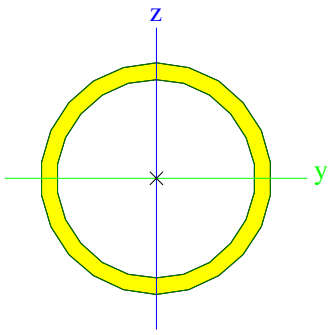
Naam	Knoop	Systeem	Type	X	Y	Z	Rx	Ry	Rz
Sn1	K1	GCS	Standaard	Vast	Vast	Vast	Vast	Vast	Vast

2.8. Doorsneden

CS3		
Type	CHS219.1/6.3	
Vormnorm	3 - Cirkelvormige holle doorsnede	
Vorm type	Dunwandig	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Kleur		
Knik y-y, Knik z-z	a	a
A [m^2]	4,2100e-03	
A_y [m^2], A_z [m^2]	2,6813e-03	2,6813e-03
A_L [m^2/m], A_D [m^2/m]	6,8800e-01	1,3370e+00
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	110	110
α [deg]	0,00	
I_y [m^4], I_z [m^4]	2,3860e-05	2,3860e-05
i_y [mm], i_z [mm]	75	75
$W_{el.y}$ [m^3], $W_{el.z}$ [m^3]	2,1800e-04	2,1800e-04
$W_{pl.y}$ [m^3], $W_{pl.z}$ [m^3]	2,8087e-04	2,8087e-04
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	6,70e+04	6,70e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	6,70e+04	6,70e+04
d_y [mm], d_z [mm]	0	0
I_t [m^4], I_w [m^6]	4,7720e-05	8,1854e-40
β_y [mm], β_z [mm]	0	0

Afbeelding		
CS6		
Type	CHS273.0/6.3	
Vormnorm	3 - Cirkelvormige holle doorsnede	
Vorm type	Dunwandig	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Kleur	■	
Knik y-y, Knik z-z	a	a
A [m²]	5,2800e-03	
A_y [m²], A_z [m²]	3,3604e-03	3,3604e-03
A_L [m²/m], A_D [m²/m]	8,5800e-01	1,6756e+00
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	137	136
α [deg]	0,00	
I_y [m⁴], I_z [m⁴]	4,6960e-05	4,6960e-05
i_y [mm], i_z [mm]	94	94
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3,4400e-04	3,4400e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4,4113e-04	4,4113e-04
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1,05e+05	1,05e+05
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1,05e+05	1,05e+05
d_y [mm], d_z [mm]	0	0
I_t [m⁴], I_w [m⁶]	9,3920e-05	9,7750e-40
β_y [mm], β_z [mm]	0	0
Afbeelding		
CS7		
Type	CHS168.3/6.3	
Vormnorm	3 - Cirkelvormige holle doorsnede	
Vorm type	Dunwandig	
Onderdeelmateriaal	S 235	
Bouwwijze	gewalst	
Kleur	■	
Knik y-y, Knik z-z	a	a
A [m²]	3,2100e-03	
A_y [m²], A_z [m²]	2,0412e-03	2,0412e-03
A_L [m²/m], A_D [m²/m]	5,2900e-01	1,0178e+00
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	84	84
α [deg]	0,00	
I_y [m⁴], I_z [m⁴]	1,0530e-05	1,0530e-05
i_y [mm], i_z [mm]	57	57

$W_{el.y}$ [m³], $W_{el.z}$ [m³]	1,2500e-04	1,2500e-04
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	1,6281e-04	1,6281e-04
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	3,89e+04	3,89e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	3,89e+04	3,89e+04
d_y [mm], d_z [mm]	0	0
I_t [m⁴], I_w [m⁶]	2,1070e-05	1,0471e-40
β_y [mm], β_z [mm]	0	0
Afbeelding		

CS8		
Type	CHS88.9/6.3	
Vormnorm	3 - Cirkelvormige holle doorsnede	
Vorm type	Dunwandig	
Onderdeelmateriaal	S 235	
Bouwwijze	koudgevormd	
Kleur		
Knik y-y, Knik z-z	c	c
A [m²]	1,6300e-03	
A_y [m²], A_z [m²]	1,0408e-03	1,0408e-03
A_L [m²/m], A_D [m²/m]	2,7900e-01	5,1896e-01
$c_{Y.UCS}$ [mm], $c_{Z.UCS}$ [mm]	44	44
α [deg]	0,00	
I_y [m⁴], I_z [m⁴]	1,4000e-06	1,4000e-06
i_y [mm], i_z [mm]	29	29
$W_{el.y}$ [m³], $W_{el.z}$ [m³]	3,1500e-05	3,1500e-05
$W_{pl.y}$ [m³], $W_{pl.z}$ [m³]	4,3067e-05	4,3067e-05
$M_{pl.y.+}$ [Nm], $M_{pl.y.-}$ [Nm]	1,01e+04	1,01e+04
$M_{pl.z.+}$ [Nm], $M_{pl.z.-}$ [Nm]	1,01e+04	1,01e+04
d_y [mm], d_z [mm]	0	0
I_t [m⁴], I_w [m⁶]	2,8000e-06	2,8709e-42
β_y [mm], β_z [mm]	0	0
Afbeelding		

Verklaring van symbolen	
Vormnorm	d - Diameter w - Dikte
A	Gebied
A_y	Afschuifoppervlak in hoofd y-richting
A_z	Afschuifoppervlak in hoofd z-richting

Verklaring van symbolen	
A_L	Omtrek per eenheidslengte
A_D	Uithardingsoppervlakte per eenheidslengte
$c_{Y.UCS}$	Zwaartepunt coordinaten in Y-richting van het invoer assen systeem
$c_{Z.UCS}$	Zwaartepunt coordinaten in

Verklaring van symbolen	
	Z-richting van het invoer assen systeem
$I_{Y.LCS}$	Tweede moment van het gebied rond de YLCS as
$I_{Z.LCS}$	Tweede moment van het gebied rond de ZLCS as
$I_{YZ.LCS}$	Product moment van het gebied in het LCS systeem
α	Rotatiehoek van het hoofd assen systeem
I_y	Tweede moment van het gebied rond de hoofd y-as
I_z	Tweede moment van het gebied rond de hoofd z-as
i_y	Traagheidsstraal rond de hoofd y-as
i_z	Traagheidsstraal rond de hoofd z-as
$W_{el.y}$	Elastische doorsnede modulus rond de hoofd y-as
$W_{el.z}$	Elastische doorsnede modulus rond de hoofd z-as

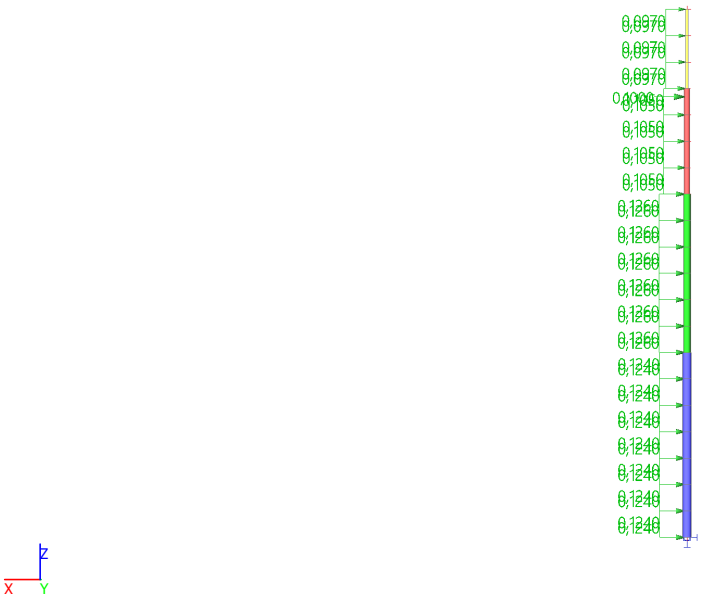
Verklaring van symbolen	
$W_{pl.y}$	Plastische doorsnede modulus rond de hoofd y-as
$W_{pl.z}$	Plastische doorsnede modulus rond de hoofd z-as
$M_{pl.y.+}$	Plastisch moment rond de hoofd y-as voor een positief My moment
$M_{pl.y.-}$	Plastisch moment rond de hoofd y-as voor een negatief My moment
$M_{pl.z.+}$	Plastisch moment rond de hoofd z-as voor een positief Mz moment
$M_{pl.z.-}$	Plastisch moment rond de hoofd z-as voor een negatief Mz moment
d_y	Afschuif middencoordinaat in hoofd y-richting gemeten vanaf het zwaartepunt
d_z	Afschuif middencoordinaat in hoofd z-richting gemeten vanaf het zwaartepunt
I_t	Torsie constante
I_w	Welvings constante
β_y	Mono-symmetrische constante rond de hoofd y-as
β_z	Mono-symmetrische constante rond de hoofd z-as

3. Belastingen en Belastingcombinaties

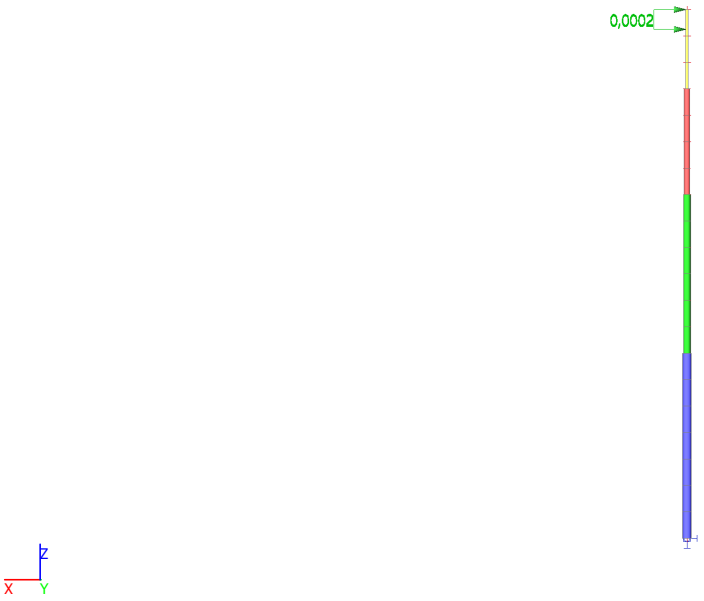
3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	Eigen gewicht	Permanent Eigen gewicht	LG1	-Z		
BG2	Quasi-statisch windbelasting Standaard	Variabel Statisch	LG2		Kort	Geen
BG3-1	wervel windbelasting n=1 Standaard	Variabel Statisch	LG3		Kort	Geen
BG3-2	wervel windbelasting n=2 Standaard	Variabel Statisch	LG3		Kort	Geen
BG3-3	wervel windbelasting n=3 Standaard	Variabel Statisch	LG3		Kort	Geen
BG3-4	wervel windbelasting n=4 Standaard	Variabel Statisch	LG3		Kort	Geen
BG3-5	wervel windbelasting n=5 Standaard	Variabel Statisch	LG3		Kort	Geen
BG3-6	wervel windbelasting n=6 Standaard	Variabel Statisch	LG3		Kort	Geen
BG3-7	wervel windbelasting n=7 Standaard	Variabel Statisch	LG3		Kort	Geen

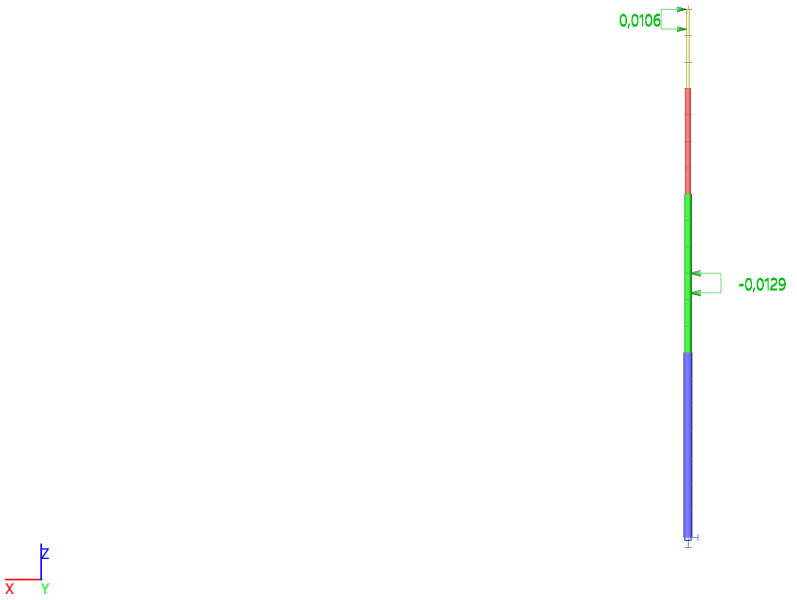
3.2. BG2 Quasi-statische windbelasting



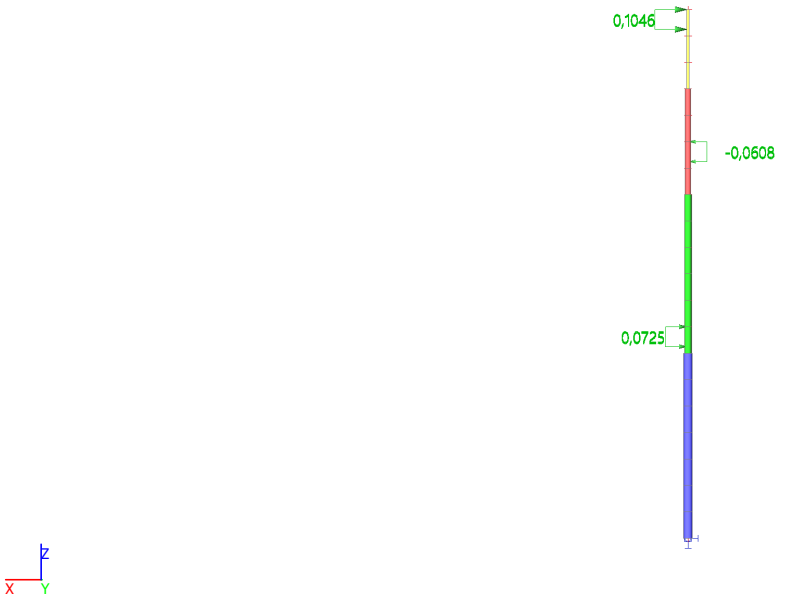
3.3. BG3-1 wervel windbelasting n=1



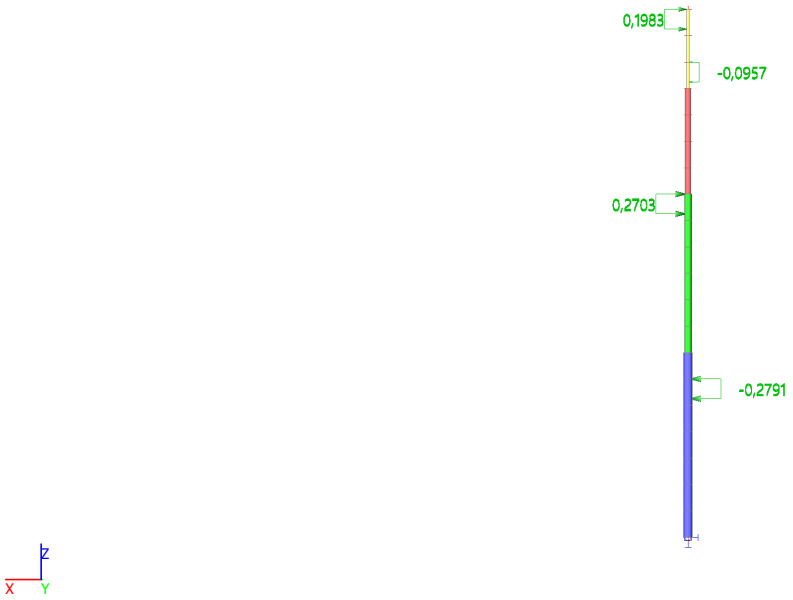
3.4. BG3-2 wervel windbelasting n=2



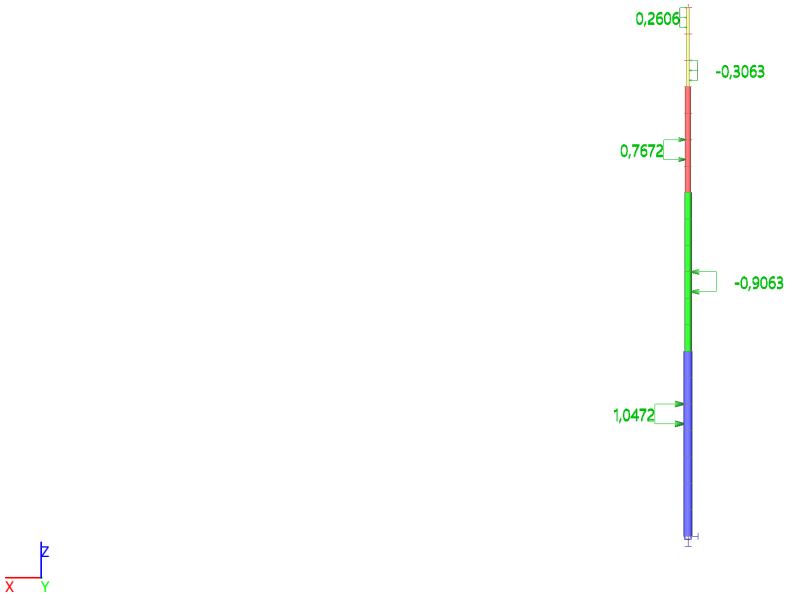
3.5. BG3-3 wervel windbelasting n=3



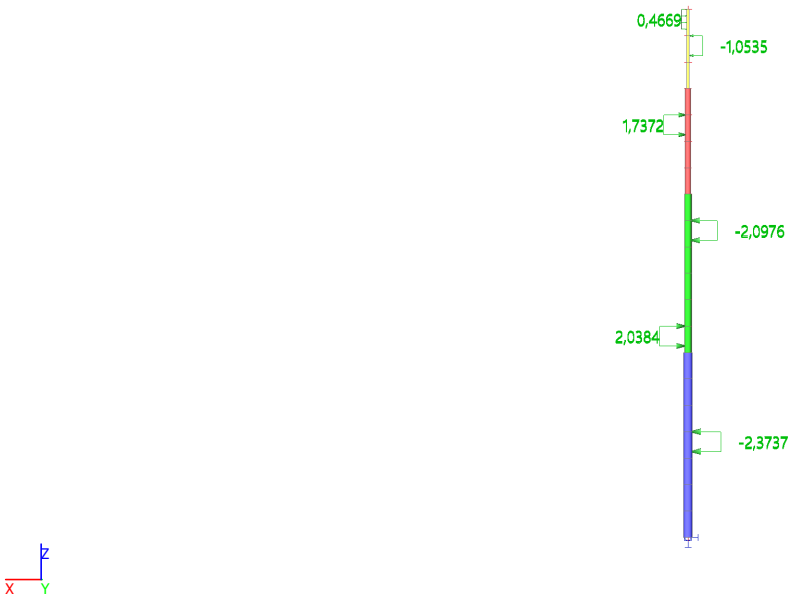
3.6. BG3-4 wervel windbelasting n=4



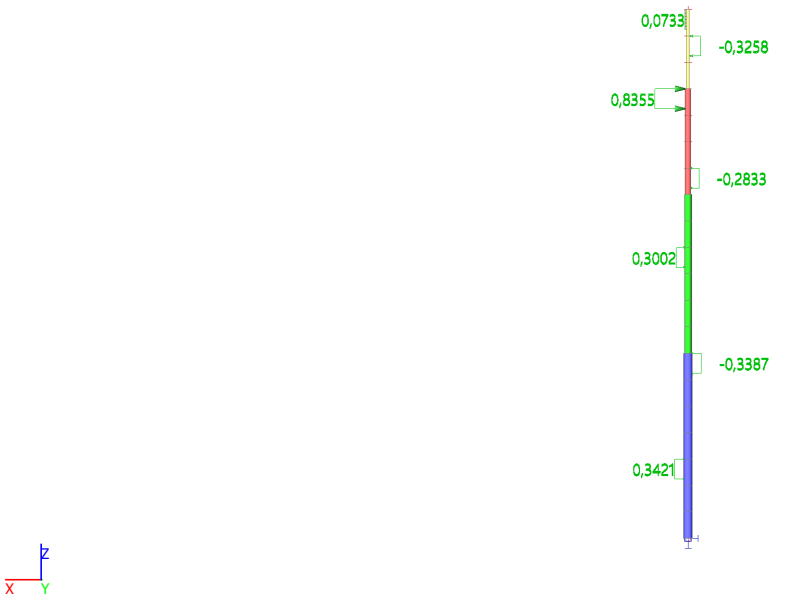
3.7. BG3-5 wervel windbelasting n=5



3.8. BG3-6 wervel windbelasting n=6



3.9. BG3-7 wervel windbelasting n=7



3.10. Belastinggroepen

Naam	Last	Relatie	Type
LG1	Permanent		
LG2	Variabel	Standaard	Wind
LG3	Variabel	Exclusief	Wind

3.11. Lijnlast

Naam	Staaf Belastingsgeval	Type Systeem	Rich Verdeling	Waarde - P_1 [kN/m] Waarde - P_2 [kN/m]	Pos x_1 Pos x_2	Coör Loc	Oors	Exc ey [m] Exc ez [m]
LF1	S1 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1240	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF2	S2 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1240	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF3	S3 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1240	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF4	S4 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1240	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF5	S5 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1240	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF6	S6 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1240	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF7	S7 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1240	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF8	S8 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1260	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF9	S9 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1260	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF10	S10 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1260	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF11	S12 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1260	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF12	S13 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1260	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF13	S14 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1050	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF14	S15 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1050	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF15	S11 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1260	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF16	S16 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1050	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF17	S17 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,1050	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF18	S18 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,0970	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF19	S19 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,0970	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF20	S20 BG2 - Quasi-statisch windbelasting	Kracht LCS	Z Gelijkmatig	0,0970	0.000 1.000	Rela Lengte	Vanaf begin	0,000 0,000
LF51	S19 BG3-6 - wervel windbelasting n=6	Kracht LCS	Z Gelijkmatig	-1,0535	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF62	S18 BG3-5 - wervel windbelasting n=5	Kracht LCS	Z Gelijkmatig	-0,3063	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF69	S20 BG3-1 - wervel windbelasting n=1	Kracht LCS	Z Gelijkmatig	0,0002	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF70	S20 BG3-2 - wervel windbelasting n=2	Kracht LCS	Z Gelijkmatig	0,0106	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF71	S10 BG3-2 - wervel windbelasting n=2	Kracht LCS	Z Gelijkmatig	-0,0129	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF72	S20 BG3-3 - wervel windbelasting n=3	Kracht LCS	Z Gelijkmatig	0,1046	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF73	S15 BG3-3 - wervel windbelasting n=3	Kracht LCS	Z Gelijkmatig	-0,0608	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF74	S8 BG3-3 - wervel windbelasting n=3	Kracht LCS	Z Gelijkmatig	0,0725	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000

Naam	Staaf Belastingsgeval	Type Systeem	Rich Verdeling	Waarde - P_1 [kN/m] Waarde - P_2 [kN/m]	Pos x_1 Pos x_2	Coör Loc	Oors	Exc ey [m] Exc ez [m]
LF75	S20 BG3-4 - wervel windbelasting n=4	Kracht LCS	Z Gelijkmatig	0,1983	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF76	S18 BG3-4 - wervel windbelasting n=4	Kracht LCS	Z Gelijkmatig	-0,0957	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF77	S13 BG3-4 - wervel windbelasting n=4	Kracht LCS	Z Gelijkmatig	0,2703	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF78	S6 BG3-4 - wervel windbelasting n=4	Kracht LCS	Z Gelijkmatig	-0,2791	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF79	S20 BG3-5 - wervel windbelasting n=5	Kracht LCS	Z Gelijkmatig	0,2606	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF80	S15 BG3-5 - wervel windbelasting n=5	Kracht LCS	Z Gelijkmatig	0,7672	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF81	S10 BG3-5 - wervel windbelasting n=5	Kracht LCS	Z Gelijkmatig	-0,9063	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF82	S5 BG3-5 - wervel windbelasting n=5	Kracht LCS	Z Gelijkmatig	1,0472	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF83	S20 BG3-6 - wervel windbelasting n=6	Kracht LCS	Z Gelijkmatig	0,4669	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF84	S16 BG3-6 - wervel windbelasting n=6	Kracht LCS	Z Gelijkmatig	1,7372	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF85	S12 BG3-6 - wervel windbelasting n=6	Kracht LCS	Z Gelijkmatig	-2,0976	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF86	S8 BG3-6 - wervel windbelasting n=6	Kracht LCS	Z Gelijkmatig	2,0384	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF87	S4 BG3-6 - wervel windbelasting n=6	Kracht LCS	Z Gelijkmatig	-2,3737	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF88	S20 BG3-7 - wervel windbelasting n=7	Kracht LCS	Z Gelijkmatig	0,0733	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF89	S19 BG3-7 - wervel windbelasting n=7	Kracht LCS	Z Gelijkmatig	-0,3258	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF90	S17 BG3-7 - wervel windbelasting n=7	Kracht LCS	Z Gelijkmatig	0,8355	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF91	S14 BG3-7 - wervel windbelasting n=7	Kracht LCS	Z Gelijkmatig	-0,2833	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF92	S11 BG3-7 - wervel windbelasting n=7	Kracht LCS	Z Gelijkmatig	0,3002	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF93	S7 BG3-7 - wervel windbelasting n=7	Kracht LCS	Z Gelijkmatig	-0,3387	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000
LF94	S3 BG3-7 - wervel windbelasting n=7	Kracht LCS	Z Gelijkmatig	0,3421	0.200 0.800	Abso Lengte	Vanaf begin	0,000 0,000

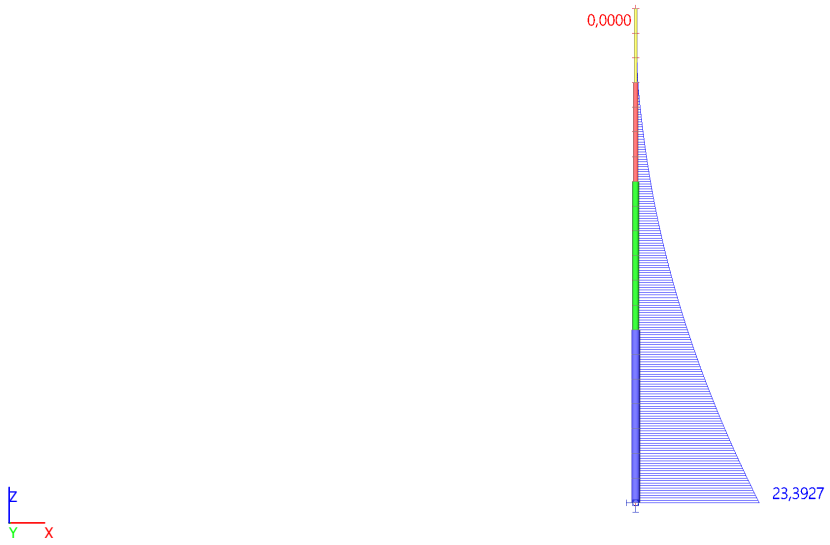
3.12. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-Set B (automatisch)		EN-UGT (STR/GEO) Set B	BG1 - Eigen gewicht BG2 - Quasi-statisch windbelasting BG3-1 - wervel windbelasting n=1 BG3-2 - wervel windbelasting n=2 BG3-3 - wervel windbelasting n=3 BG3-4 - wervel windbelasting n=4 BG3-5 - wervel windbelasting n=5 BG3-6 - wervel windbelasting n=6 BG3-7 - wervel windbelasting n=7	1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00
BGT-kar (automatisch)		EN - BGT Karakteristiek	BG1 - Eigen gewicht BG2 - Quasi-statisch	1,00 1,00

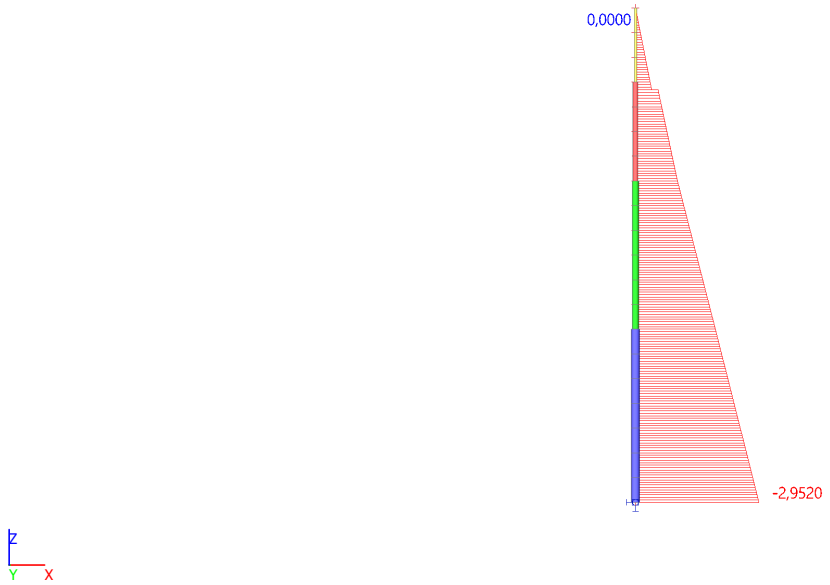
Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
			windbelasting	
			BG3-1 - wervel windbelasting n=1	1,00
			BG3-2 - wervel windbelasting n=2	1,00
			BG3-3 - wervel windbelasting n=3	1,00
			BG3-4 - wervel windbelasting n=4	1,00
			BG3-5 - wervel windbelasting n=5	1,00
			BG3-6 - wervel windbelasting n=6	1,00
			BG3-7 - wervel windbelasting n=7	1,00
UGT Quasi-statische windbelasting		Omhullende - uiterst	BG1 - Eigen gewicht	1,20
			BG2 - Quasi-statisch windbelasting	1,50
UGT Wervel windbelasting		Omhullende - uiterst	BG1 - Eigen gewicht	1,20
			BG3-1 - wervel windbelasting n=1	1,00
			BG3-2 - wervel windbelasting n=2	1,00
			BG3-3 - wervel windbelasting n=3	1,00
			BG3-4 - wervel windbelasting n=4	1,00
			BG3-5 - wervel windbelasting n=5	1,00
			BG3-6 - wervel windbelasting n=6	1,00
			BG3-7 - wervel windbelasting n=7	1,00
BGT Quasi-statische windbelasting		Omhullende - uiterst	BG1 - Eigen gewicht	1,00
			BG2 - Quasi-statisch windbelasting	1,00
BGT Wervel windbelasting		Omhullende - uiterst	BG1 - Eigen gewicht	1,00
			BG3-1 - wervel windbelasting n=1	1,00
			BG3-2 - wervel windbelasting n=2	1,00
			BG3-3 - wervel windbelasting n=3	1,00
			BG3-4 - wervel windbelasting n=4	1,00
			BG3-5 - wervel windbelasting n=5	1,00
			BG3-6 - wervel windbelasting n=6	1,00
			BG3-7 - wervel windbelasting n=7	1,00

4. Resultaten

4.1. UGT Quasi-statisch windbelasting; My



4.2. UGT Quasi-statisch windbelasting; Vz

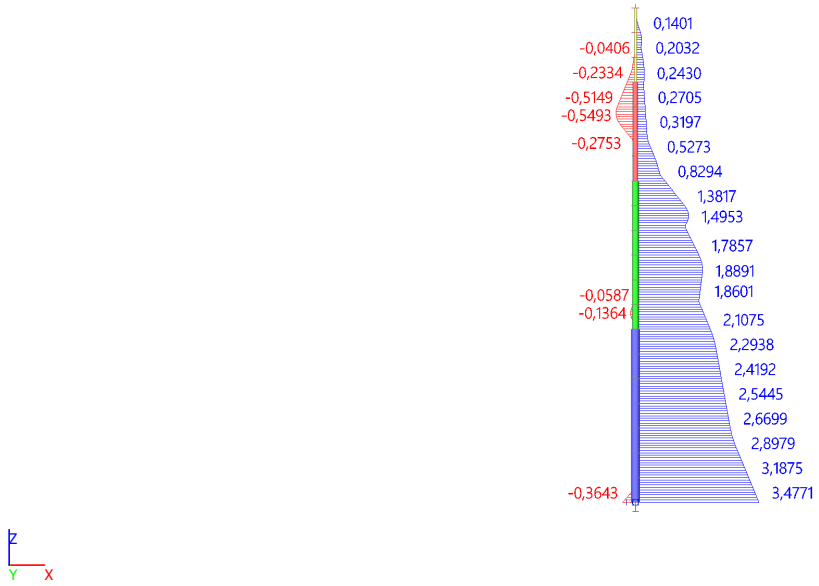


4.3. Interne krachten in staaf

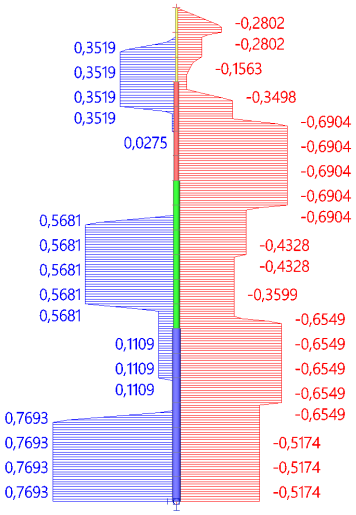
Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : Alle
Combinaties : UGT Quasi-statische windbelasting

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S1	CS6 - CHS273.0/6.3	0,000	UGT Quasi-statische windbelasting/6	**-5,9106**	**0,0000**	0,0000	**0,0000**	**0,0000**	**0,0000**
S20	CS8 - CHS(Ce)88.9/6.3	0,800	UGT Quasi-statische windbelasting/6	**0,0000**	0,0000	0,0000	0,0000	0,0000	0,0000
S1	CS6 - CHS273.0/6.3	0,000	UGT Quasi-statische windbelasting/1	-5,9106	0,0000	**-2,9520**	0,0000	**23,3927**	0,0000
S20	CS8 - CHS(Ce)88.9/6.3	0,800	UGT Quasi-statische windbelasting/1	0,0000	0,0000	**0,0000**	0,0000	0,0000	0,0000

4.4. UGT wervel windbelasting; My



4.5. UGT wervel windbelasting; Vz

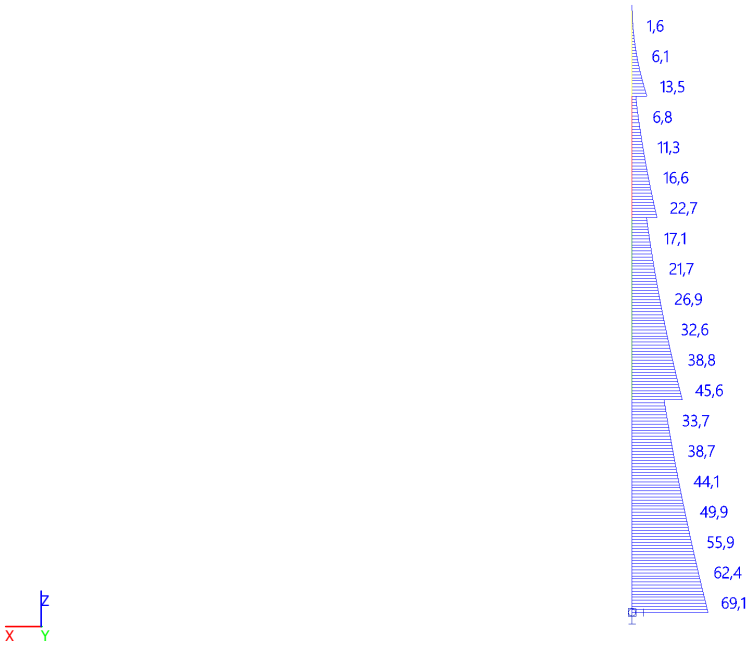


4.6. Interne krachten in staaf

Lineaire berekening, Extreem : Globaal, Systeem : Hoofd
Selectie : Alle
Combinaties : UGT Wervel windbelasting

Staaf	css	dx [m]	BG	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
S1	CS6 - CHS273.0/6.3	0,000	UGT Wervel windbelasting/6	**-5,9106**	**0,0000**	0,0000	**0,0000**	0,0000	**0,0000**
S20	CS8 - CHS(Ce)88.9/6.3	0,800	UGT Wervel windbelasting/6	**0,0000**	0,0000	0,0000	0,0000	0,0000	0,0000
S12	CS3 - CHS219.1/6.3	0,800	UGT Wervel windbelasting/4	-1,6220	0,0000	**-0,6904**	0,0000	1,3817	0,0000
S1	CS6 - CHS273.0/6.3	0,000	UGT Wervel windbelasting/4	-5,9106	0,0000	**0,7693**	0,0000	-0,3643	0,0000
S16	CS7 - CHS168.3/6.3	0,560	UGT Wervel windbelasting/4	-0,6700	0,0000	-0,0650	0,0000	**-0,5493**	0,0000
S1	CS6 - CHS273.0/6.3	0,000	UGT Wervel windbelasting/2	-5,9106	0,0000	-0,3620	0,0000	**3,4771**	0,0000

4.7. UGT Quasi-statische windbelasting Spanning; von Mises



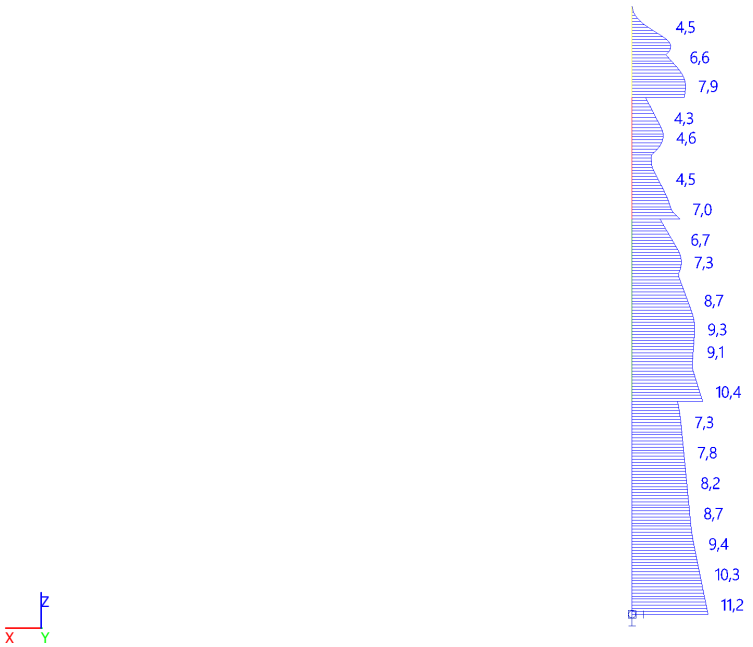
4.8. Spanning

Lineaire berekening, Extreem : Staaf
Selectie : Alle
Combinaties : UGT Quasi-statische windbelasting
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S1	0,000	UGT Quasi-statische windbelasting/1	**-69,1**		**0,0**	**69,1**	**0,0**
S1	0,800	UGT Quasi-statische windbelasting/1	**-62,4**		0,0	**62,4**	0,0
S1	0,720	UGT Quasi-statische windbelasting/1	-63,0		**0,0**	63,0	0,0
S2	0,000	UGT Quasi-statische windbelasting/1	**-62,4**		**0,0**	**62,4**	**0,0**
S2	0,800	UGT Quasi-statische windbelasting/1	**-55,9**		0,0	**55,9**	0,0
S2	0,720	UGT Quasi-statische windbelasting/1	-56,6		**0,0**	56,6	0,0
S3	0,000	UGT Quasi-statische windbelasting/1	**-55,9**		**0,0**	**55,9**	**0,0**
S3	0,800	UGT Quasi-statische windbelasting/1	**-49,9**		0,0	**49,9**	0,0
S3	0,720	UGT Quasi-statische windbelasting/1	-50,4		**0,0**	50,4	0,0
S4	0,000	UGT Quasi-statische windbelasting/1	**-49,9**		**0,0**	**49,9**	**0,0**
S4	0,800	UGT Quasi-statische windbelasting/1	**-44,1**		0,0	**44,1**	0,0
S4	0,720	UGT Quasi-statische windbelasting/1	-44,7		**0,0**	44,7	0,0
S5	0,000	UGT Quasi-statische windbelasting/1	**-44,1**		**0,0**	**44,1**	**0,0**
S5	0,800	UGT Quasi-statische windbelasting/1	**-38,7**		0,0	**38,7**	0,0
S5	0,720	UGT Quasi-statische windbelasting/1	-39,3		**0,0**	39,3	0,0
S6	0,000	UGT Quasi-statische windbelasting/1	**-38,7**		**0,0**	**38,7**	**0,0**
S6	0,800	UGT Quasi-statische windbelasting/1	**-33,7**		0,0	**33,7**	0,0
S6	0,720	UGT Quasi-statische windbelasting/1	-34,2		**0,0**	34,2	0,0
S7	0,000	UGT Quasi-statische windbelasting/1	**-33,7**		**0,0**	**33,7**	**0,0**
S7	0,800	UGT Quasi-statische windbelasting/1	**-29,0**		0,0	**29,0**	0,0
S7	0,720	UGT Quasi-statische windbelasting/1	-29,5		**0,0**	29,5	0,0
S8	0,000	UGT Quasi-statische windbelasting/1	**-45,6**		**0,0**	**45,6**	**0,0**
S8	0,800	UGT Quasi-statische windbelasting/1	**-38,8**		0,0	**38,8**	0,0
S8	0,560	UGT Quasi-statische windbelasting/1	-40,8		**0,0**	40,8	0,0
S9	0,000	UGT Quasi-statische windbelasting/1	**-38,8**		**0,0**	**38,8**	**0,0**

Staaf	dx [m]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S9	0,800	UGT Quasi-statische windbelasting/1	**-32,6**		0,0	**32,6**	0,0
S9	0,560	UGT Quasi-statische windbelasting/1	-34,4		**0,0**	34,4	0,0
S10	0,000	UGT Quasi-statische windbelasting/1	**-32,6**		**0,0**	**32,6**	**0,0**
S10	0,800	UGT Quasi-statische windbelasting/1	**-26,9**		0,0	**26,9**	0,0
S10	0,560	UGT Quasi-statische windbelasting/1	-28,5		**0,0**	28,5	0,0
S11	0,000	UGT Quasi-statische windbelasting/1	**-26,9**		**0,0**	**26,9**	**0,0**
S11	0,800	UGT Quasi-statische windbelasting/1	**-21,7**		0,0	**21,7**	0,0
S11	0,560	UGT Quasi-statische windbelasting/1	-23,2		**0,0**	23,2	0,0
S12	0,000	UGT Quasi-statische windbelasting/1	**-21,7**		**0,0**	**21,7**	**0,0**
S12	0,800	UGT Quasi-statische windbelasting/1	**-17,1**		0,0	**17,1**	0,0
S12	0,560	UGT Quasi-statische windbelasting/1	-18,5		**0,0**	18,5	0,0
S13	0,000	UGT Quasi-statische windbelasting/1	**-17,1**		**0,0**	**17,1**	**0,0**
S13	0,800	UGT Quasi-statische windbelasting/1	**-13,1**		0,0	**13,1**	0,0
S13	0,560	UGT Quasi-statische windbelasting/1	-14,3		**0,0**	14,3	0,0
S14	0,000	UGT Quasi-statische windbelasting/1	**-22,7**		**0,0**	**22,7**	**0,0**
S14	0,800	UGT Quasi-statische windbelasting/1	**-16,6**		0,0	**16,6**	0,0
S15	0,000	UGT Quasi-statische windbelasting/1	**-16,6**		**0,0**	**16,6**	**0,0**
S15	0,800	UGT Quasi-statische windbelasting/1	**-11,3**		0,0	**11,3**	0,0
S16	0,000	UGT Quasi-statische windbelasting/1	**-11,3**		**0,0**	**11,3**	**0,0**
S16	0,800	UGT Quasi-statische windbelasting/1	**-6,8**		0,0	**6,8**	0,0
S17	0,000	UGT Quasi-statische windbelasting/1	**-6,8**		**0,0**	**6,8**	**0,0**
S17	0,800	UGT Quasi-statische windbelasting/1	**-3,5**		0,0	**3,5**	0,0
S18	0,000	UGT Quasi-statische windbelasting/1	**-13,5**		**0,0**	**13,5**	**0,0**
S18	0,800	UGT Quasi-statische windbelasting/1	**-6,1**		0,0	**6,1**	0,0
S19	0,000	UGT Quasi-statische windbelasting/1	**-6,1**		**0,0**	**6,1**	**0,0**
S19	0,800	UGT Quasi-statische windbelasting/1	**-1,6**		0,0	**1,6**	0,0
S20	0,000	UGT Quasi-statische windbelasting/1	**-1,6**		**0,0**	**1,6**	**0,0**
S20	0,800	UGT Quasi-statische windbelasting/1		**0,0**	0,0	**0,0**	0,0
S20	0,720	UGT Quasi-statische windbelasting/1	0,0		**0,0**	0,0	0,0

4.9. UGT Wervel windbelasting; von Mises



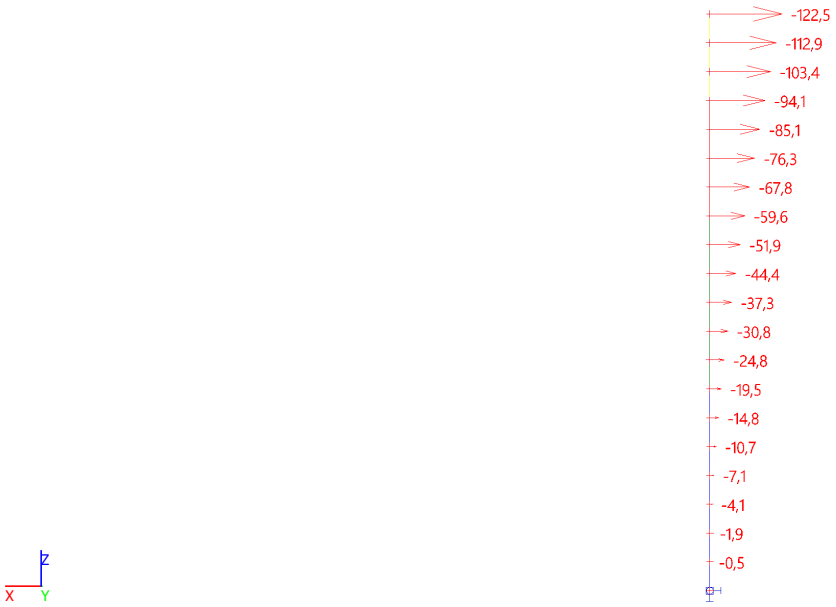
4.10. Spanning

Lineaire berekening, Extreem : Staaf
Selectie : Alle
Combinaties : UGT Wervel windbelasting
Waardes : Von Mises

Staaf	dx [m]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S1	0,000	UGT Wervel windbelasting/2	**-11,2**		**0,0**	**11,2**	**0,0**
S1	0,800	UGT Wervel windbelasting/2	**-10,3**		0,0	**10,3**	0,0
S2	0,000	UGT Wervel windbelasting/2	**-10,3**		**0,0**	**10,3**	**0,0**
S2	0,800	UGT Wervel windbelasting/2	**-9,4**		0,0	**9,4**	0,0
S3	0,000	UGT Wervel windbelasting/2	**-9,4**		**0,0**	**9,4**	**0,0**
S3	0,800	UGT Wervel windbelasting/2	**-8,7**		**0,0**	**8,7**	0,0
S4	0,000	UGT Wervel windbelasting/2	**-8,7**		**0,0**	**8,7**	**0,0**
S4	0,800	UGT Wervel windbelasting/2	**-8,2**		0,0	**8,2**	0,0
S5	0,000	UGT Wervel windbelasting/2	**-8,2**		**0,0**	**8,2**	**0,0**
S5	0,800	UGT Wervel windbelasting/2	**-7,8**		0,0	**7,8**	0,0
S6	0,000	UGT Wervel windbelasting/2	**-7,8**		**0,0**	**7,8**	**0,0**
S6	0,800	UGT Wervel windbelasting/2	**-7,3**		0,0	**7,3**	0,0
S7	0,000	UGT Wervel windbelasting/2	**-7,3**		**0,0**	**7,3**	**0,0**
S7	0,800	UGT Wervel windbelasting/2	**-6,7**		**0,0**	**6,7**	0,0
S8	0,000	UGT Wervel windbelasting/2	**-10,4**		**0,0**	**10,4**	**0,0**
S8	0,800	UGT Wervel windbelasting/2	**-9,0**		0,0	**9,0**	0,0
S9	0,800	UGT Wervel windbelasting/3	**-9,1**		0,0	9,1	0,0
S9	0,160	UGT Wervel windbelasting/3	**-8,9**		0,0	8,9	0,0
S9	0,000	UGT Wervel windbelasting/2	-9,0		**0,0**	9,0	**0,0**
S9	0,160	UGT Wervel windbelasting/3	-8,9		**0,0**	8,9	0,0
S9	0,160	UGT Wervel windbelasting/3	-8,9		0,0	**8,9**	0,0
S9	0,800	UGT Wervel windbelasting/3	-9,1		0,0	**9,1**	0,0
S10	0,320	UGT Wervel windbelasting/3	**-9,3**		**0,0**	**9,3**	0,0
S10	0,800	UGT Wervel windbelasting/3	**-8,7**		0,0	**8,7**	0,0
S10	0,000	UGT Wervel windbelasting/3	-9,1		0,0	9,1	**0,0**
S10	0,720	UGT Wervel windbelasting/3	-8,9		**0,0**	8,9	0,0
S11	0,000	UGT Wervel windbelasting/3	**-8,7**		**0,0**	**8,7**	**0,0**
S11	0,800	UGT Wervel windbelasting/3	**-7,1**		0,0	**7,1**	0,0
S12	0,480	UGT Wervel windbelasting/4	**-7,3**		0,0	7,3	0,0
S12	0,800	UGT Wervel windbelasting/4	**-6,7**		0,0	6,7	0,0
S12	0,000	UGT Wervel windbelasting/3	-7,1		0,0	7,1	**0,0**
S12	0,480	UGT Wervel windbelasting/4	-7,3		**0,0**	7,3	0,0
S12	0,800	UGT Wervel windbelasting/4	-6,7		**0,0**	6,7	0,0
S12	0,800	UGT Wervel windbelasting/4	-6,7		0,0	**6,7**	0,0
S12	0,480	UGT Wervel windbelasting/4	-7,3		0,0	**7,3**	0,0
S13	0,000	UGT Wervel windbelasting/4	**-6,7**		**0,0**	**6,7**	**0,0**
S13	0,800	UGT Wervel windbelasting/4	**-4,1**		0,0	**4,1**	0,0
S14	0,000	UGT Wervel windbelasting/4	**-7,0**		**0,0**	**7,0**	**0,0**
S14	0,800	UGT Wervel windbelasting/2	**-4,5**		0,0	4,5	0,0
S14	0,240	UGT Wervel windbelasting/2	-5,8		**0,0**	5,8	0,0
S14	0,800	UGT Wervel windbelasting/2	-4,5		0,0	**4,5**	0,0
S15	0,000	UGT Wervel windbelasting/2	**-4,5**		**0,0**	**4,5**	**0,0**
S15	0,800	UGT Wervel windbelasting/5	**-2,8**		0,0	2,8	0,0
S15	0,800	UGT Wervel windbelasting/5	-2,8		0,0	**2,8**	0,0
S16	0,560	UGT Wervel windbelasting/4	**-4,6**		0,0	4,6	0,0
S16	0,000	UGT Wervel windbelasting/5	**-2,8**		**0,0**	**2,8**	**0,0**
S16	0,080	UGT Wervel windbelasting/4	-2,9		**0,0**	2,9	0,0
S16	0,560	UGT Wervel windbelasting/4	-4,6		0,0	**4,6**	0,0
S17	0,000	UGT Wervel windbelasting/4	**-4,3**		**0,0**	**4,3**	**0,0**
S17	0,800	UGT Wervel windbelasting/3	**-2,0**		0,0	2,0	0,0
S17	0,800	UGT Wervel windbelasting/3	-2,0		**0,0**	2,0	0,0
S17	0,800	UGT Wervel windbelasting/3	-2,0		0,0	**2,0**	0,0
S18	0,320	UGT Wervel windbelasting/3	**-7,9**		0,0	**7,9**	0,0
S18	0,800	UGT Wervel windbelasting/3	**-6,6**		0,0	**6,6**	0,0
S18	0,000	UGT Wervel windbelasting/3	-7,7		**0,0**	7,7	**0,0**
S19	0,000	UGT Wervel windbelasting/3	**-6,6**		**0,0**	**6,6**	**0,0**
S19	0,800	UGT Wervel windbelasting/4	**-4,5**		0,0	4,5	0,0
S19	0,800	UGT Wervel windbelasting/4	-4,5		0,0	**4,5**	0,0
S20	0,000	UGT Wervel windbelasting/4	**-4,5**		0,0	**4,5**	**0,0**
S20	0,800	UGT Wervel windbelasting/3		0,0	0,0	0,0	0,0

Staaf	dx [m]	BG	Normaal - [MPa]	Normaal + [MPa]	Afschuiving [MPa]	Von Mises [MPa]	Sigma Y [MPa]
S20	0,800	UGT Wervel windbelasting/3		**0,0**	0,0	0,0	0,0
S20	0,800	UGT Wervel windbelasting/3		0,0	**0,0**	0,0	0,0
S20	0,720	UGT Wervel windbelasting/4	0,0		**0,0**	0,1	0,0
S20	0,800	UGT Wervel windbelasting/3		0,0	0,0	**0,0**	0,0

4.11. BGT Quasi-statische windbelasting Verplaatsing van knopen; Ux, Uy, Uz, Vervormde constructie, Vervormd net

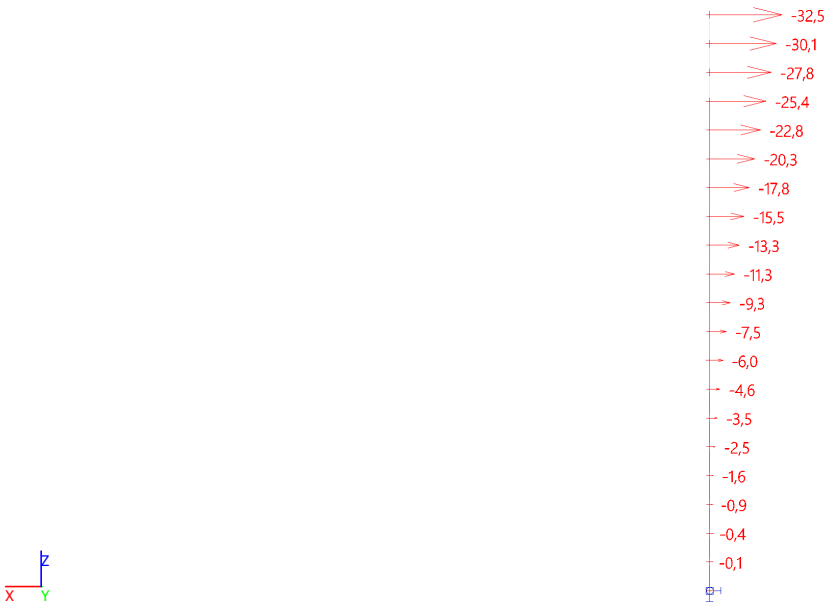


4.12. Vervormingen van staaf

Lineaire berekening, Extreem : Globaal
Selectie : Alle
Combinaties : BGT Quasi-statische windbelasting

Staaf	dx [m]	BG	ux [mm]	uy [mm]	uz [mm]	fix [mrad]	fiy [mrad]	fiz [mrad]	Resultante [mm]
S20	0,800	BGT Quasi-statische windbelasting/7	**0,0**	0,0	0,0	0,0	0,0	0,0	0,0
S1	0,000	BGT Quasi-statische windbelasting/7	**0,0**	**0,0**	0,0	**0,0**	**0,0**	**0,0**	0,0
S1	0,000	BGT Quasi-statische windbelasting/8	0,0	0,0	**0,0**	0,0	0,0	0,0	0,0
S20	0,800	BGT Quasi-statische windbelasting/8	0,0	0,0	**122,5**	0,0	**-12,0**	0,0	122,5

4.13. BGT Wervel windbelasting Verplaatsing van knopen; Ux, Uy, Uz, Vervormde constructie, Vervormd net

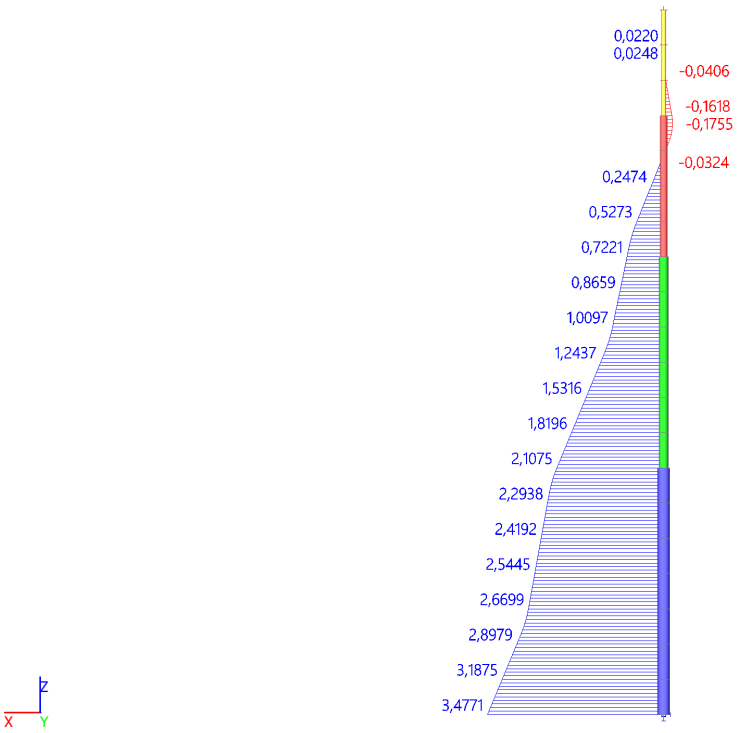


4.14. Vervormingen van staaf

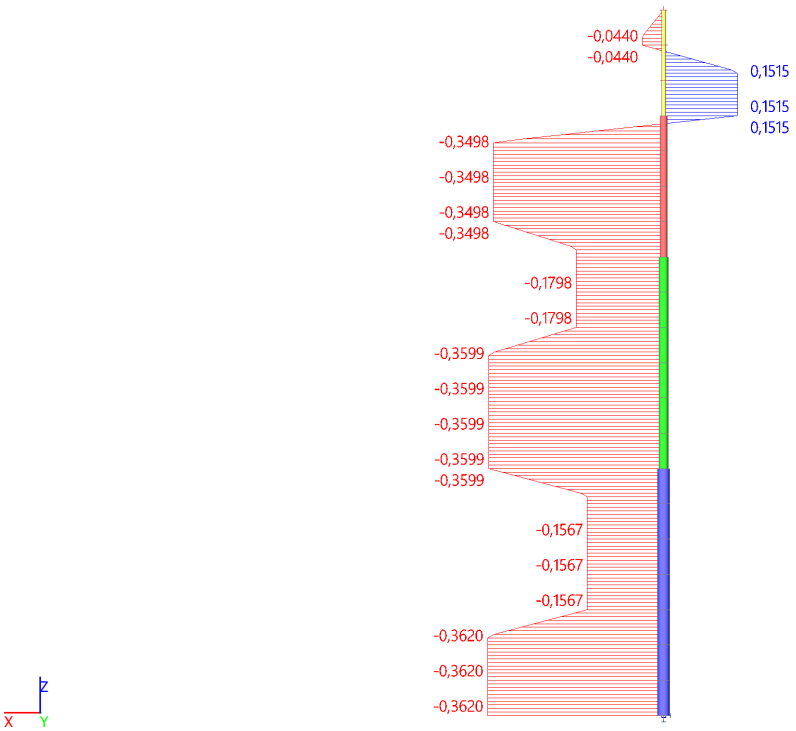
Lineaire berekening, Extreem : Globaal
Selectie : Alle
Combinaties : BGT Wervel windbelasting

Staaf	dx [m]	BG	ux [mm]	uy [mm]	uz [mm]	fix [mrad]	fiy [mrad]	fiz [mrad]	Resultante [mm]
S20	0,800	BGT Wervel windbelasting/7	**0,0**	0,0	0,0	0,0	0,0	0,0	0,0
S1	0,000	BGT Wervel windbelasting/7	**0,0**	**0,0**	0,0	**0,0**	0,0	**0,0**	0,0
S2	0,240	BGT Wervel windbelasting/9	0,0	0,0	**0,0**	0,0	0,0	0,0	0,0
S20	0,800	BGT Wervel windbelasting/10	0,0	0,0	**32,5**	0,0	**-4,2**	0,0	32,5
S1	0,480	BGT Wervel windbelasting/9	0,0	0,0	0,0	0,0	**0,0**	0,0	0,0

4.15. BG3-7; My



4.16. BG3-7; Vz



4.17. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**0**
Aantal 1D elementen	**21**
Aantal netknopen	**22**
Aantal vergelijkingen	**132**
Belastinggevallen	BG1
	BG2
	BG3-1
	BG3-2
	BG3-3
	BG3-4
	BG3-5
	BG3-6
	BG3-7
Buigtheorie	Mindlin
Start berekening	26.09.2019 11:29
Einde berekening	26.09.2019 11:29

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	0.0	-4.9
	knoopreacties	0.0	0.0	4.9
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG2	last	-2.0	0.0	0.0
	knoopreacties	2.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG3-1	last	-0.0	0.0	0.0
	knoopreacties	0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG3-2	last	0.0	0.0	0.0
	knoopreacties	-0.0	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG3-3	last	-0.1	0.0	0.0
	knoopreacties	0.1	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG3-4	last	-0.1	0.0	0.0
	knoopreacties	0.1	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG3-5	last	-0.5	0.0	0.0
	knoopreacties	0.5	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG3-6	last	0.8	0.0	0.0
	knoopreacties	-0.8	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG3-7	last	-0.4	0.0	0.0
	knoopreacties	0.4	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0

1. Inleiding

1.1. Project

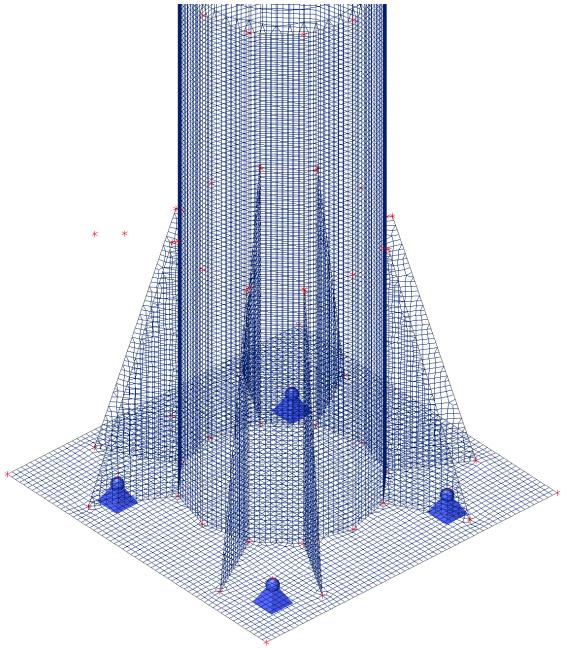
Licentienaam	Arcadis
Project	Lokaal model bliksempiek
Onderdeel	-
Omschrijving	-
Datum	16. 09. 2019
Constructie	Algemeen XYZ
Aantal knopen :	298
Aantal staven :	0
Aantal platen :	261
Aantal vaste lichamen :	0
Aantal gebruikte doorsneden :	0
Aantal belastingsgevallen :	4
Aantal gebruikte materialen :	1
Gravitatieversnelling [m/s^2]	9,810
Nationale norm	EC - EN

1.2. Inhoudsopgave

1. Inleiding **1**
1.1. Project 1
1.2. Inhoudsopgave 1
2. Rekenmodel **2**
2.1. Rekenmodel 2
2.2. Knopen 2
2.3. 2D-elementen 4
2.4. 2D-element interne randen 8
2.5. Knoopondersteuningen 9
3. Belastingen en Belastingscombinaties **10**
3.1. Belastingsgevallen 10
3.2. BG2 10
3.3. BG3-1 11
3.4. Belastinggroepen 11
3.5. Combinaties 11
3.6. Genereer vrije lasten 12
3.7. Vrije oppervlakte last 18
4. Resultaten **19**
4.1. UGT quasi-statisch Voetplaat - Spanningen; sigE+ 19
4.2. UGT wervelwind voetplaat - Spanningen; sigE+ 19
4.3. UGT quasi statisch Buizen - Spanningen; sigE+ 20
4.4. UGT wervelwind Buizen- Spanningen; sigE+ 20
4.5. UGT wervel windbelasting verstijvingschotten - Spanningen; sigE+ 21
4.6. UGT quasi-statische windbelasting verstijvingschotten - Spanningen; sigE+ 21
4.7. Berekeningsverslag 22

2. Rekenmodel

2.1. Rekenmodel



2.2. Knopen

Naam	Coördinaat X [m]	Coördinaat Y [m]	Coördinaat Z [m]
K2	-0,250	0,250	0,000
K3	-0,250	-0,250	0,000
K4	0,250	-0,250	0,000
K5	0,250	0,250	0,000
K10	0,000	0,137	0,000
K11	0,068	0,118	0,000
K12	0,118	0,068	0,000
K13	0,137	0,000	0,000
K14	-0,118	0,068	0,000
K15	-0,137	0,000	0,000
K16	-0,068	0,118	0,000
K17	0,000	-0,137	0,000
K18	0,068	-0,118	0,000
K19	0,118	-0,068	0,000
K20	-0,118	-0,068	0,000
K21	-0,068	-0,118	0,000
K22	0,000	0,137	0,400
K23	0,068	0,118	0,400
K24	0,118	0,068	0,400
K25	0,137	0,000	0,400
K26	-0,118	0,068	0,400
K27	-0,137	0,000	0,400
K28	-0,068	0,118	0,400
K29	0,000	-0,137	0,400
K30	0,068	-0,118	0,400
K31	0,118	-0,068	0,400
K32	-0,118	-0,068	0,400
K33	-0,068	-0,118	0,400
K34	0,000	0,137	0,800
K35	0,068	0,118	0,800
K36	0,118	0,068	0,800

Naam	Coördinaat X [m]	Coördinaat Y [m]	Coördinaat Z [m]
K37	0,137	0,000	0,800
K38	-0,118	0,068	0,800
K39	-0,137	0,000	0,800
K40	-0,068	0,118	0,800
K41	0,000	-0,137	0,800
K42	0,068	-0,118	0,800
K43	0,118	-0,068	0,800
K44	-0,118	-0,068	0,800
K45	-0,068	-0,118	0,800
K46	-0,220	-0,127	0,000
K47	-0,127	-0,220	0,000
K48	0,127	-0,220	0,000
K49	0,220	-0,127	0,000
K50	0,127	0,220	0,000
K51	0,220	0,127	0,000
K52	-0,127	0,220	0,000
K53	-0,220	0,127	0,000
K54	0,000	0,137	1,600
K55	0,068	0,118	1,600
K56	0,118	0,068	1,600
K57	0,137	0,000	1,600
K58	-0,118	0,068	1,600
K59	-0,137	0,000	1,600
K60	-0,068	0,118	1,600
K61	0,000	-0,137	1,600
K62	0,068	-0,118	1,600
K63	0,118	-0,068	1,600
K64	-0,118	-0,068	1,600
K65	-0,068	-0,118	1,600
K66	0,000	0,137	2,400
K67	0,068	0,118	2,400

Naam	Coördinaat X [m]	Coördinaat Y [m]	Coördinaat Z [m]
K68	0,118	0,068	2,400
K69	0,137	0,000	2,400
K70	-0,118	0,068	2,400
K71	-0,137	0,000	2,400
K72	-0,068	0,118	2,400
K73	0,000	-0,137	2,400
K74	0,068	-0,118	2,400
K75	0,118	-0,068	2,400
K76	-0,118	-0,068	2,400
K77	-0,068	-0,118	2,400
K78	0,000	0,137	3,200
K79	0,068	0,118	3,200
K80	0,118	0,068	3,200
K81	0,137	0,000	3,200
K82	-0,118	0,068	3,200
K83	-0,137	0,000	3,200
K84	-0,068	0,118	3,200
K85	0,000	-0,137	3,200
K86	0,068	-0,118	3,200
K87	0,118	-0,068	3,200
K88	-0,118	-0,068	3,200
K89	-0,068	-0,118	3,200
K90	0,000	0,137	4,000
K91	0,068	0,118	4,000
K92	0,118	0,068	4,000
K93	0,137	0,000	4,000
K94	-0,118	0,068	4,000
K95	-0,137	0,000	4,000
K96	-0,068	0,118	4,000
K97	0,000	-0,137	4,000
K98	0,068	-0,118	4,000
K99	0,118	-0,068	4,000
K100	-0,118	-0,068	4,000
K101	-0,068	-0,118	4,000
K102	0,000	0,137	4,800
K103	0,068	0,118	4,800
K104	0,118	0,068	4,800
K105	0,137	0,000	4,800
K106	-0,118	0,068	4,800
K107	-0,137	0,000	4,800
K108	-0,068	0,118	4,800
K109	0,000	-0,137	4,800
K110	0,068	-0,118	4,800
K111	0,118	-0,068	4,800
K112	-0,118	-0,068	4,800
K113	-0,068	-0,118	4,800
K114	0,000	0,137	5,600
K115	0,068	0,118	5,600
K116	0,118	0,068	5,600
K117	0,137	0,000	5,600
K118	-0,118	0,068	5,600
K119	-0,137	0,000	5,600
K120	-0,068	0,118	5,600
K121	0,000	-0,137	5,600
K122	0,068	-0,118	5,600
K123	0,118	-0,068	5,600
K124	-0,118	-0,068	5,600
K125	-0,068	-0,118	5,600
K126	0,000	0,137	6,400
K127	0,068	0,118	6,400
K128	0,118	0,068	6,400
K129	0,137	0,000	6,400
K130	-0,118	0,068	6,400
K131	-0,137	0,000	6,400
K132	-0,068	0,118	6,400
K133	0,000	-0,137	6,400
K134	0,068	-0,118	6,400
K135	0,118	-0,068	6,400
K136	-0,118	-0,068	6,400
K137	-0,068	-0,118	6,400
K138	0,000	0,137	7,200
K139	0,068	0,118	7,200
K140	0,118	0,068	7,200
K141	0,137	0,000	7,200
K142	-0,118	0,068	7,200
K143	-0,137	0,000	7,200
K144	-0,068	0,118	7,200
K145	0,000	-0,137	7,200
K146	0,068	-0,118	7,200
K147	0,118	-0,068	7,200
K148	-0,118	-0,068	7,200
K149	-0,068	-0,118	7,200
K150	0,000	0,137	8,000
K151	0,068	0,118	8,000
K152	0,118	0,068	8,000
K153	0,137	0,000	8,000
K154	-0,118	0,068	8,000
K155	-0,137	0,000	8,000
K156	-0,068	0,118	8,000
K157	0,000	-0,137	8,000
K158	0,068	-0,118	8,000
K159	0,118	-0,068	8,000
K160	-0,118	-0,068	8,000
K161	-0,068	-0,118	8,000
K162	0,000	0,137	8,800
K163	0,068	0,118	8,800
K164	0,118	0,068	8,800
K165	0,137	0,000	8,800
K166	-0,118	0,068	8,800
K167	-0,137	0,000	8,800
K168	-0,068	0,118	8,800
K169	0,000	-0,137	8,800
K170	0,068	-0,118	8,800
K171	0,118	-0,068	8,800
K172	-0,118	-0,068	8,800
K173	-0,068	-0,118	8,800
K174	0,000	0,137	9,600
K175	0,068	0,118	9,600
K176	0,118	0,068	9,600
K177	0,137	0,000	9,600
K178	-0,118	0,068	9,600
K179	-0,137	0,000	9,600
K180	-0,068	0,118	9,600
K181	0,000	-0,137	9,600
K182	0,068	-0,118	9,600
K183	0,118	-0,068	9,600
K184	-0,118	-0,068	9,600
K185	-0,068	-0,118	9,600
K186	0,000	0,137	10,400
K187	0,068	0,118	10,400
K188	0,118	0,068	10,400
K189	0,137	0,000	10,400
K190	-0,118	0,068	10,400
K191	-0,137	0,000	10,400
K192	-0,068	0,118	10,400
K193	0,000	-0,137	10,400
K194	0,068	-0,118	10,400
K195	0,118	-0,068	10,400
K196	-0,118	-0,068	10,400
K197	-0,068	-0,118	10,400
K198	0,000	0,137	11,200
K199	0,068	0,118	11,200

Naam	Coördinaat X [m]	Coördinaat Y [m]	Coördinaat Z [m]
K200	0,118	0,068	11,200
K201	0,137	0,000	11,200
K202	-0,118	0,068	11,200
K203	-0,137	0,000	11,200
K204	-0,068	0,118	11,200
K205	0,000	-0,137	11,200
K206	0,068	-0,118	11,200
K207	0,118	-0,068	11,200
K208	-0,118	-0,068	11,200
K209	-0,068	-0,118	11,200
K210	0,000	0,137	12,000
K211	0,068	0,118	12,000
K212	0,118	0,068	12,000
K213	0,137	0,000	12,000
K214	-0,118	0,068	12,000
K215	-0,137	0,000	12,000
K216	-0,068	0,118	12,000
K217	0,000	-0,137	12,000
K218	0,068	-0,118	12,000
K219	0,118	-0,068	12,000
K220	-0,118	-0,068	12,000
K221	-0,068	-0,118	12,000
K222	0,000	0,137	12,800
K223	0,068	0,118	12,800
K224	0,118	0,068	12,800
K225	0,137	0,000	12,800
K226	-0,118	0,068	12,800
K227	-0,137	0,000	12,800
K228	-0,068	0,118	12,800
K229	0,000	-0,137	12,800
K230	0,068	-0,118	12,800
K231	0,118	-0,068	12,800
K232	-0,118	-0,068	12,800
K233	-0,068	-0,118	12,800
K234	0,000	0,137	13,600
K235	0,068	0,118	13,600
K236	0,118	0,068	13,600
K237	0,137	0,000	13,600
K238	-0,118	0,068	13,600
K239	-0,137	0,000	13,600
K240	-0,068	0,118	13,600
K241	0,000	-0,137	13,600
K242	0,068	-0,118	13,600
K243	0,118	-0,068	13,600
K244	-0,118	-0,068	13,600
K245	-0,068	-0,118	13,600
K246	0,000	0,137	14,400
K247	0,068	0,118	14,400
K248	0,118	0,068	14,400
K249	0,137	0,000	14,400
K250	-0,118	0,068	14,400
K251	-0,137	0,000	14,400

Naam	Coördinaat X [m]	Coördinaat Y [m]	Coördinaat Z [m]
K252	-0,068	0,118	14,400
K253	0,000	-0,137	14,400
K254	0,068	-0,118	14,400
K255	0,118	-0,068	14,400
K256	-0,118	-0,068	14,400
K257	-0,068	-0,118	14,400
K258	0,000	0,137	15,200
K259	0,068	0,118	15,200
K260	0,118	0,068	15,200
K261	0,137	0,000	15,200
K262	-0,118	0,068	15,200
K263	-0,137	0,000	15,200
K264	-0,068	0,118	15,200
K265	0,000	-0,137	15,200
K266	0,068	-0,118	15,200
K267	0,118	-0,068	15,200
K268	-0,118	-0,068	15,200
K269	-0,068	-0,118	15,200
K270	0,000	0,137	16,000
K271	0,068	0,118	16,000
K272	0,118	0,068	16,000
K273	0,137	0,000	16,000
K274	-0,118	0,068	16,000
K275	-0,137	0,000	16,000
K276	-0,068	0,118	16,000
K277	0,000	-0,137	16,000
K278	0,068	-0,118	16,000
K279	0,118	-0,068	16,000
K280	-0,118	-0,068	16,000
K281	-0,068	-0,118	16,000
K318	-0,150	0,150	0,000
K319	-0,150	-0,150	0,000
K320	0,150	-0,150	0,000
K321	0,150	0,150	0,000
K322	-0,072	-0,125	0,400
K323	-0,072	-0,125	0,400
K324	-0,072	-0,125	0,400
K325	-0,072	-0,125	0,400
K326	-0,072	-0,125	0,400
K327	0,500	0,500	0,500
K328	0,100	0,100	0,100
K329	0,500	0,500	0,500
K330	0,000	0,271	0,520
K331	0,000	0,322	0,544
K332	-0,072	-0,125	0,400
K333	0,072	-0,125	0,400
K334	0,125	-0,072	0,400
K335	-0,125	-0,072	0,400
K336	-0,072	0,125	0,400
K337	0,072	0,125	0,400
K338	0,125	0,072	0,400
K339	-0,125	0,072	0,400

2.3. 2D-elementen

Naam	Laag	Type	Element type	Materiaal	Dikte type	D. [mm]
E1	Voetplaat	vloer (90)	Standaard	S 355	constant	40
E2	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E3	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E4	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E5	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E6	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E7	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E8	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E9	Buizen CHS	wand (80)	Standaard	S 355	constant	6

Naam	Laag	Type	Element type	Materiaal	Dikte type	D. [mm]
E10	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E11	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E12	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E13	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E14	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E15	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E16	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E17	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E18	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E19	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E20	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E21	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E22	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E23	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E24	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E25	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E34	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E35	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E36	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E37	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E38	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E39	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E40	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E41	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E42	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E43	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E44	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E45	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E46	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E47	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E48	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E49	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E50	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E51	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E52	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E53	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E54	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E55	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E56	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E57	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E58	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E59	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E60	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E61	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E62	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E63	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E64	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E65	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E66	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E67	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E68	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E69	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E70	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E71	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E72	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E73	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E74	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E75	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E76	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E77	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E78	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E79	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E80	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E81	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E82	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E83	Buizen CHS	wand (80)	Standaard	S 355	constant	6

Naam	Laag	Type	Element type	Materiaal	Dikte type	D. [mm]
E84	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E85	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E86	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E87	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E88	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E89	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E90	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E91	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E92	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E93	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E94	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E95	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E96	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E97	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E98	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E99	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E100	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E101	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E102	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E103	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E104	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E105	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E106	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E107	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E108	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E109	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E110	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E111	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E112	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E113	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E114	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E115	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E116	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E117	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E118	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E119	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E120	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E121	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E122	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E123	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E124	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E125	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E126	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E127	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E128	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E129	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E130	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E131	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E132	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E133	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E134	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E135	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E136	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E137	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E138	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E139	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E140	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E141	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E142	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E143	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E144	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E145	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E146	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E147	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E148	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E149	Buizen CHS	wand (80)	Standaard	S 355	constant	6

Naam	Laag	Type	Element type	Materiaal	Dikte type	D. [mm]
E150	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E151	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E152	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E153	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E154	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E155	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E156	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E157	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E158	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E159	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E160	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E161	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E162	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E163	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E164	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E165	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E166	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E167	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E168	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E169	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E170	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E171	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E172	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E173	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E174	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E175	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E176	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E177	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E178	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E179	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E180	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E181	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E182	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E183	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E184	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E185	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E186	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E187	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E188	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E189	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E190	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E191	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E192	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E193	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E194	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E195	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E196	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E197	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E198	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E199	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E200	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E201	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E202	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E203	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E204	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E205	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E206	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E207	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E208	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E209	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E210	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E211	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E212	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E213	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E214	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E215	Buizen CHS	wand (80)	Standaard	S 355	constant	6

Naam	Laag	Type	Element type	Materiaal	Dikte type	D. [mm]
E216	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E217	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E218	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E219	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E220	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E221	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E222	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E223	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E224	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E225	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E226	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E227	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E228	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E229	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E230	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E231	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E232	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E233	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E234	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E235	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E236	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E237	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E238	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E239	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E240	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E241	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E242	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E243	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E244	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E245	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E246	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E247	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E248	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E249	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E250	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E251	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E252	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E253	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E254	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E255	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E256	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E257	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E258	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E259	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E260	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E261	Buizen CHS	wand (80)	Standaard	S 355	constant	6
E26	Verstijvingsschotten	vloer (90)	Standaard	S 355	constant	25
E262	Verstijvingsschotten	vloer (90)	Standaard	S 355	constant	25
E263	Verstijvingsschotten	vloer (90)	Standaard	S 355	constant	25
E264	Verstijvingsschotten	vloer (90)	Standaard	S 355	constant	25
E265	Verstijvingsschotten	vloer (90)	Standaard	S 355	constant	25
E266	Verstijvingsschotten	vloer (90)	Standaard	S 355	constant	25
E267	Verstijvingsschotten	vloer (90)	Standaard	S 355	constant	25
E268	Verstijvingsschotten	vloer (90)	Standaard	S 355	constant	25

2.4. 2D-element interne randen

Naam	2D-element 1	2D-element 2	Intersectie	Lengte [m]	Vorm	Knoop	Rand
Rand1	E1	E2	Inter1	0,071	Polylijn	K17 K18	Lijnstrook
Rand2	E1	E3	Inter2	0,071	Polylijn	K18 K19	Lijnstrook
Rand3	E1	E4	Inter3	0,071	Polylijn	K19 K13	Lijnstrook
Rand4	E1	E8	Inter4	0,071	Polylijn	K17	Lijnstrook

Naam	2D-element 1	2D-element 2	Intersectie	Lengte [m]	Vorm	Knoop	Rand
						K21	
Rand5	E1	E9	Inter5	0,071	Polylijn	K21 K20	Lijnstrook
Rand6	E1	E10	Inter6	0,071	Polylijn	K20 K15	Lijnstrook
Rand7	E1	E14	Inter7	0,071	Polylijn	K10 K11	Lijnstrook
Rand8	E1	E15	Inter8	0,071	Polylijn	K11 K12	Lijnstrook
Rand9	E1	E16	Inter9	0,071	Polylijn	K12 K13	Lijnstrook
Rand10	E1	E17	Inter10	0,071	Polylijn	K10 K16	Lijnstrook
Rand11	E1	E18	Inter11	0,071	Polylijn	K16 K14	Lijnstrook
Rand12	E1	E19	Inter12	0,071	Polylijn	K14 K15	Lijnstrook
Rand13	E1			0,118	Polylijn	K47 K21	Lijnstrook
Rand14	E1			0,118	Polylijn	K46 K20	Lijnstrook
Rand15	E1			0,118	Polylijn	K48 K18	Lijnstrook
Rand16	E1			0,118	Polylijn	K49 K19	Lijnstrook
Rand17	E1			0,118	Polylijn	K50 K11	Lijnstrook
Rand18	E1			0,118	Polylijn	K51 K12	Lijnstrook
Rand19	E1			0,118	Polylijn	K52 K16	Lijnstrook
Rand20	E1			0,118	Polylijn	K53 K14	Lijnstrook
Rand21	E1	E26	Inter13	0,118	Polylijn	K48 K18	Lijnstrook
Rand22	E1	E262	Inter14	0,118	Polylijn	K49 K19	Lijnstrook
Rand23	E1	E263	Inter15	0,118	Polylijn	K46 K20	Lijnstrook
Rand24	E1	E264	Inter16	0,118	Polylijn	K47 K21	Lijnstrook
Rand25	E1	E265	Inter17	0,118	Polylijn	K51 K12	Lijnstrook
Rand26	E1	E266	Inter18	0,118	Polylijn	K50 K11	Lijnstrook
Rand27	E1	E267	Inter19	0,118	Polylijn	K52 K16	Lijnstrook
Rand28	E1	E268	Inter20	0,118	Polylijn	K53 K14	Lijnstrook

2.5. Knoopondersteuningen

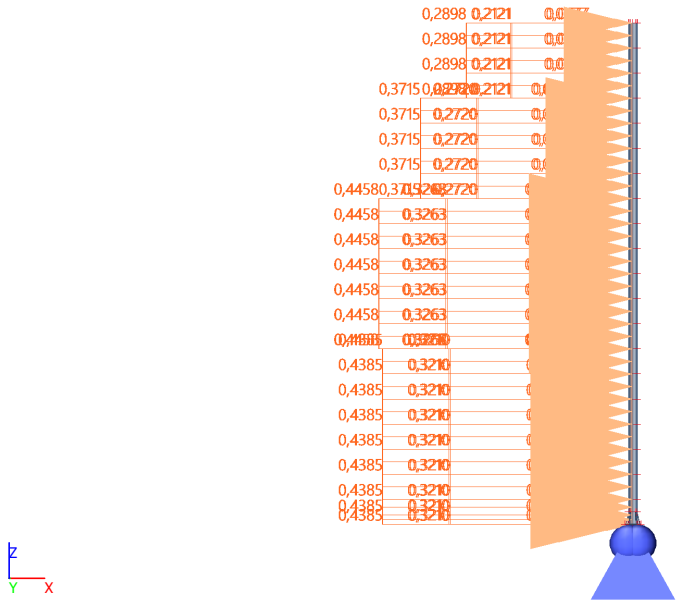
Naam	Knoop	Systeem	Type	X	Y	Z	Rx	Ry	Rz
Sn1	K319	GCS	Standaard	Vast	Vast	Vast	Vrij	Vrij	Vrij
Sn2	K320	GCS	Standaard	Vast	Vast	Vast	Vrij	Vrij	Vrij
Sn3	K321	GCS	Standaard	Vast	Vast	Vast	Vrij	Vrij	Vrij
Sn4	K318	GCS	Standaard	Vast	Vast	Vast	Vrij	Vrij	Vrij

3. Belastingen en Belastingscombinaties

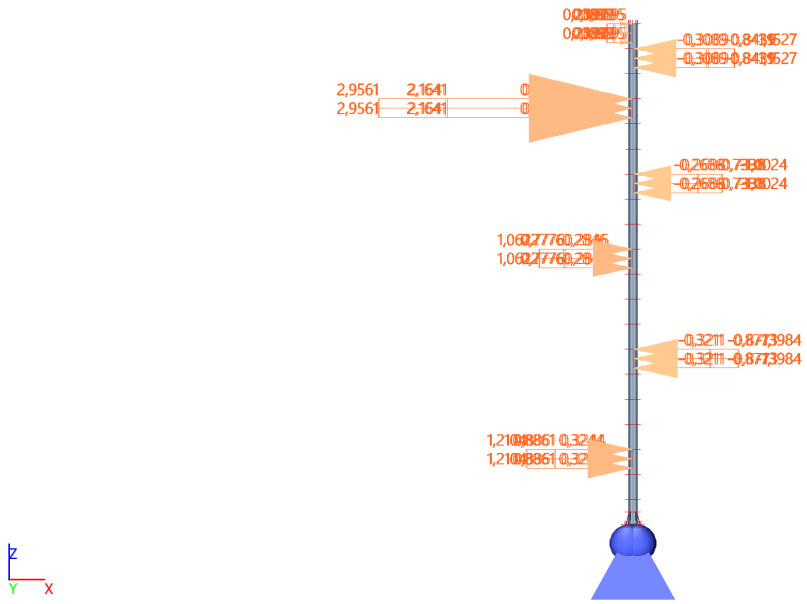
3.1. Belastingsgevallen

Naam	Omschrijving Spec	Actie type Belastingtype	Lastgroep	Richting	Duur	'Master' belastingsgeval
BG1	Eigen gewicht	Permanent Eigen gewicht	LG1	-Z		
BG2	Quasi-statisch windbelasting Standaard	Variabel Statisch	LG2		Kort	Geen
BG3-1	wervelwind belasting N=6 Standaard	Variabel Statisch	LG3		Kort	Geen
BG3-2	wervelwind belasting N=6 test Standaard	Variabel Statisch	LG3		Kort	Geen

3.2. BG2



3.3. BG3-1



3.4. Belastinggroepen

Naam	Last	Relatie	Type
LG1	Permanent		
LG2	Variabel	Standaard	Wind
LG3	Variabel	Standaard	Wind

3.5. Combinaties

Naam	Omschrijving	Type	Belastingsgevallen	Coëff. [-]
UGT-Set B (automatisch)		EN-UGT (STR/GEO) Set B	BG1 - Eigen gewicht BG2 - Quasi-statisch windbelasting BG3-1 - wervelwind belasting N=6 BG3-2 - wervelwind belasting N=6 test	1,00 1,00 1,00 1,00
BGT-kar (automatisch)		EN - BGT Karakteristiek	BG1 - Eigen gewicht BG2 - Quasi-statisch windbelasting BG3-1 - wervelwind belasting N=6 BG3-2 - wervelwind belasting N=6 test	1,00 1,00 1,00 1,00
UGT quasi-statisch windeblasting		Omhullende - uiterst	BG1 - Eigen gewicht BG2 - Quasi-statisch windbelasting	1,20 1,50
UGT wervel windbelasting		Omhullende - uiterst	BG1 - Eigen gewicht BG3-1 - wervelwind belasting N=6	1,20 1,00

3.6. Genereer vrije lasten

Naam	Belastingsgeval	2D-element	Rich Verdeling	Belastingstype Type	pronkelijke bela	q [kN/m²] Waarde - P [kN/m]	Systeem Locatie
GFF1	BG2 - Quasi-sta	E9	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF2	BG2 - Quasi-sta	E61	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF3	BG2 - Quasi-sta	E62	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF4	BG2 - Quasi-sta	E63	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF5	BG2 - Quasi-sta	E8	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF6	BG2 - Quasi-sta	E10	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF7	BG2 - Quasi-sta	E11	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF8	BG2 - Quasi-sta	E12	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF9	BG2 - Quasi-sta	E13	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF10	BG2 - Quasi-sta	E17	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF11	BG2 - Quasi-sta	E18	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF12	BG2 - Quasi-sta	E19	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF13	BG2 - Quasi-sta	E23	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF14	BG2 - Quasi-sta	E24	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF15	BG2 - Quasi-sta	E25	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF16	BG2 - Quasi-sta	E37	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF17	BG2 - Quasi-sta	E38	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF18	BG2 - Quasi-sta	E39	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF19	BG2 - Quasi-sta	E43	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF20	BG2 - Quasi-sta	E44	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF21	BG2 - Quasi-sta	E45	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF22	BG2 - Quasi-sta	E49	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF23	BG2 - Quasi-sta	E50	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF24	BG2 - Quasi-sta	E51	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF25	BG2 - Quasi-sta	E55	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF26	BG2 - Quasi-sta	E56	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF27	BG2 - Quasi-sta	E57	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF28	BG2 - Quasi-sta	E67	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF29	BG2 - Quasi-sta	E68	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF30	BG2 - Quasi-sta	E69	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF31	BG2 - Quasi-sta	E73	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF32	BG2 - Quasi-sta	E74	X	Oppervlak	FF1	0,4540	GCS

Naam	Belastingsgeval	2D-element	Rich Verdeling	Belastingstype Type	pronkelijke bela	q [kN/m²] Waarde - P [kN/m]	Systeem Locatie
			Gelijkmatig	Kracht			Projectie
GFF33	BG2 - Quasi-sta	E75	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF34	BG2 - Quasi-sta	E79	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF35	BG2 - Quasi-sta	E80	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF36	BG2 - Quasi-sta	E81	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF37	BG2 - Quasi-sta	E85	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF38	BG2 - Quasi-sta	E86	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF39	BG2 - Quasi-sta	E87	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF40	BG2 - Quasi-sta	E91	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF41	BG2 - Quasi-sta	E92	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF42	BG2 - Quasi-sta	E93	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF43	BG2 - Quasi-sta	E97	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF44	BG2 - Quasi-sta	E98	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF45	BG2 - Quasi-sta	E99	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF46	BG2 - Quasi-sta	E103	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF47	BG2 - Quasi-sta	E104	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF48	BG2 - Quasi-sta	E105	X Gelijkmatig	Oppervlak Kracht	FF1	0,4540	GCS Projectie
GFF55	BG2 - Quasi-sta	E109	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF56	BG2 - Quasi-sta	E110	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF57	BG2 - Quasi-sta	E111	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF58	BG2 - Quasi-sta	E115	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF59	BG2 - Quasi-sta	E116	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF60	BG2 - Quasi-sta	E117	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF61	BG2 - Quasi-sta	E121	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF62	BG2 - Quasi-sta	E122	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF63	BG2 - Quasi-sta	E123	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF64	BG2 - Quasi-sta	E127	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF65	BG2 - Quasi-sta	E128	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF66	BG2 - Quasi-sta	E129	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF67	BG2 - Quasi-sta	E133	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF68	BG2 - Quasi-sta	E134	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF69	BG2 - Quasi-sta	E135	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF70	BG2 - Quasi-sta	E139	X	Oppervlak	FF2	0,4615	GCS

Naam	Belastingsgeval	2D-element	Rich Verdeling	Belastingstype Type	pronkelijke bela	q [kN/m²] Waarde - P [kN/m]	Systeem Locatie
			Gelijkmatig	Kracht			Projectie
GFF71	BG2 - Quasi-sta	E140	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF72	BG2 - Quasi-sta	E141	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF73	BG2 - Quasi-sta	E145	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF74	BG2 - Quasi-sta	E146	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF75	BG2 - Quasi-sta	E147	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF76	BG2 - Quasi-sta	E151	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF77	BG2 - Quasi-sta	E152	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF78	BG2 - Quasi-sta	E153	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF79	BG2 - Quasi-sta	E157	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF80	BG2 - Quasi-sta	E158	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF81	BG2 - Quasi-sta	E159	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF82	BG2 - Quasi-sta	E163	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF83	BG2 - Quasi-sta	E164	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF84	BG2 - Quasi-sta	E165	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF85	BG2 - Quasi-sta	E169	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF86	BG2 - Quasi-sta	E170	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF87	BG2 - Quasi-sta	E171	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF88	BG2 - Quasi-sta	E175	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF89	BG2 - Quasi-sta	E176	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF90	BG2 - Quasi-sta	E177	X Gelijkmatig	Oppervlak Kracht	FF2	0,4615	GCS Projectie
GFF91	BG2 - Quasi-sta	E181	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF92	BG2 - Quasi-sta	E182	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF93	BG2 - Quasi-sta	E183	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF94	BG2 - Quasi-sta	E187	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF95	BG2 - Quasi-sta	E188	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF96	BG2 - Quasi-sta	E189	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF97	BG2 - Quasi-sta	E193	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF98	BG2 - Quasi-sta	E194	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF99	BG2 - Quasi-sta	E195	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF100	BG2 - Quasi-sta	E199	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF101	BG2 - Quasi-sta	E200	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF102	BG2 - Quasi-sta	E201	X	Oppervlak	FF3	0,3846	GCS

Naam	Belastingsgeval	2D-element	Rich Verdeling	Belastingstype Type	pronkelijke bela	q [kN/m²] Waarde - P [kN/m]	Systeem Locatie
			Gelijkmatig	Kracht			Projectie
GFF103	BG2 - Quasi-sta	E205	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF104	BG2 - Quasi-sta	E206	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF105	BG2 - Quasi-sta	E207	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF106	BG2 - Quasi-sta	E211	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF107	BG2 - Quasi-sta	E212	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF108	BG2 - Quasi-sta	E213	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF109	BG2 - Quasi-sta	E217	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF110	BG2 - Quasi-sta	E218	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF111	BG2 - Quasi-sta	E219	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF112	BG2 - Quasi-sta	E223	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF113	BG2 - Quasi-sta	E224	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF114	BG2 - Quasi-sta	E225	X Gelijkmatig	Oppervlak Kracht	FF3	0,3846	GCS Projectie
GFF115	BG2 - Quasi-sta	E253	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF116	BG2 - Quasi-sta	E261	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF117	BG2 - Quasi-sta	E229	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF118	BG2 - Quasi-sta	E255	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF119	BG2 - Quasi-sta	E230	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF120	BG2 - Quasi-sta	E231	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF121	BG2 - Quasi-sta	E249	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF122	BG2 - Quasi-sta	E259	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF123	BG2 - Quasi-sta	E235	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF124	BG2 - Quasi-sta	E236	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF125	BG2 - Quasi-sta	E237	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF126	BG2 - Quasi-sta	E241	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF127	BG2 - Quasi-sta	E242	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF128	BG2 - Quasi-sta	E243	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF129	BG2 - Quasi-sta	E247	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF130	BG2 - Quasi-sta	E248	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF131	BG2 - Quasi-sta	E254	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF132	BG2 - Quasi-sta	E260	X Gelijkmatig	Oppervlak Kracht	FF4	0,3000	GCS Projectie
GFF133	BG3-1 - wervelv	E238	X Gelijkmatig	Oppervlak Kracht	FF9	-1,1934	GCS Projectie
GFF134	BG3-1 - wervelv	E239	X	Oppervlak	FF9	-1,1934	GCS

Naam	Belastingsgeval	2D-element	Rich Verdeling	Belastingstype Type	pronkelijke bela	q [kN/m²] Waarde - P [kN/m]	Systeem Locatie
			Gelijkmatig	Kracht			Projectie
GFF135	BG3-1 - wervelv	E240	X Gelijkmatig	Oppervlak Kracht	FF9	-1,1934	GCS Projectie
GFF136	BG3-1 - wervelv	E244	X Gelijkmatig	Oppervlak Kracht	FF9	-1,1934	GCS Projectie
GFF137	BG3-1 - wervelv	E245	X Gelijkmatig	Oppervlak Kracht	FF9	-1,1934	GCS Projectie
GFF138	BG3-1 - wervelv	E246	X Gelijkmatig	Oppervlak Kracht	FF9	-1,1934	GCS Projectie
GFF139	BG3-1 - wervelv	E94	X Gelijkmatig	Oppervlak Kracht	FF5	-1,2407	GCS Projectie
GFF140	BG3-1 - wervelv	E95	X Gelijkmatig	Oppervlak Kracht	FF5	-1,2407	GCS Projectie
GFF141	BG3-1 - wervelv	E96	X Gelijkmatig	Oppervlak Kracht	FF5	-1,2407	GCS Projectie
GFF142	BG3-1 - wervelv	E100	X Gelijkmatig	Oppervlak Kracht	FF5	-1,2407	GCS Projectie
GFF143	BG3-1 - wervelv	E101	X Gelijkmatig	Oppervlak Kracht	FF5	-1,2407	GCS Projectie
GFF144	BG3-1 - wervelv	E102	X Gelijkmatig	Oppervlak Kracht	FF5	-1,2407	GCS Projectie
GFF145	BG3-1 - wervelv	E145	X Gelijkmatig	Oppervlak Kracht	FF6	1,0996	GCS Projectie
GFF146	BG3-1 - wervelv	E146	X Gelijkmatig	Oppervlak Kracht	FF6	1,0996	GCS Projectie
GFF147	BG3-1 - wervelv	E147	X Gelijkmatig	Oppervlak Kracht	FF6	1,0996	GCS Projectie
GFF148	BG3-1 - wervelv	E151	X Gelijkmatig	Oppervlak Kracht	FF6	1,0996	GCS Projectie
GFF149	BG3-1 - wervelv	E152	X Gelijkmatig	Oppervlak Kracht	FF6	1,0996	GCS Projectie
GFF150	BG3-1 - wervelv	E153	X Gelijkmatig	Oppervlak Kracht	FF6	1,0996	GCS Projectie
GFF151	BG3-1 - wervelv	E178	X Gelijkmatig	Oppervlak Kracht	FF7	-1,0377	GCS Projectie
GFF152	BG3-1 - wervelv	E179	X Gelijkmatig	Oppervlak Kracht	FF7	-1,0377	GCS Projectie
GFF153	BG3-1 - wervelv	E180	X Gelijkmatig	Oppervlak Kracht	FF7	-1,0377	GCS Projectie
GFF154	BG3-1 - wervelv	E184	X Gelijkmatig	Oppervlak Kracht	FF7	-1,0377	GCS Projectie
GFF155	BG3-1 - wervelv	E185	X Gelijkmatig	Oppervlak Kracht	FF7	-1,0377	GCS Projectie
GFF156	BG3-1 - wervelv	E186	X Gelijkmatig	Oppervlak Kracht	FF7	-1,0377	GCS Projectie
GFF157	BG3-1 - wervelv	E217	X Gelijkmatig	Oppervlak Kracht	FF8	3,0604	GCS Projectie
GFF158	BG3-1 - wervelv	E218	X Gelijkmatig	Oppervlak Kracht	FF8	3,0604	GCS Projectie
GFF159	BG3-1 - wervelv	E219	X Gelijkmatig	Oppervlak Kracht	FF8	3,0604	GCS Projectie
GFF160	BG3-1 - wervelv	E223	X Gelijkmatig	Oppervlak Kracht	FF8	3,0604	GCS Projectie
GFF161	BG3-1 - wervelv	E224	X Gelijkmatig	Oppervlak Kracht	FF8	3,0604	GCS Projectie
GFF162	BG3-1 - wervelv	E225	X Gelijkmatig	Oppervlak Kracht	FF8	3,0604	GCS Projectie
GFF163	BG3-1 - wervelv	E253	X Gelijkmatig	Oppervlak Kracht	FF10	0,2685	GCS Projectie
GFF164	BG3-1 - wervelv	E261	X Gelijkmatig	Oppervlak Kracht	FF10	0,2685	GCS Projectie
GFF165	BG3-1 - wervelv	E255	X Gelijkmatig	Oppervlak Kracht	FF10	0,2685	GCS Projectie
GFF166	BG3-1 - wervelv	E259	X	Oppervlak	FF10	0,2685	GCS

Naam	Belastingsgeval	2D-element	Rich Verdeling	Belastingstype Type	pronkelijke bela	q [kN/m²] Waarde - P [kN/m]	Systeem Locatie
			Gelijkmatig	Kracht			Projectie
GFF167	BG3-1 - wervelv	E254	X Gelijkmatig	Oppervlak Kracht	FF10	0,2685	GCS Projectie
GFF168	BG3-1 - wervelv	E260	X Gelijkmatig	Oppervlak Kracht	FF10	0,2685	GCS Projectie
GFF169	BG3-1 - wervelv	E49	X Gelijkmatig	Oppervlak Kracht	FF11	1,2531	GCS Projectie
GFF170	BG3-1 - wervelv	E50	X Gelijkmatig	Oppervlak Kracht	FF11	1,2531	GCS Projectie
GFF171	BG3-1 - wervelv	E51	X Gelijkmatig	Oppervlak Kracht	FF11	1,2531	GCS Projectie
GFF172	BG3-1 - wervelv	E55	X Gelijkmatig	Oppervlak Kracht	FF11	1,2531	GCS Projectie
GFF173	BG3-1 - wervelv	E56	X Gelijkmatig	Oppervlak Kracht	FF11	1,2531	GCS Projectie
GFF174	BG3-1 - wervelv	E57	X Gelijkmatig	Oppervlak Kracht	FF11	1,2531	GCS Projectie
GFF175	BG3-2 - wervelv	E94	X Gelijkmatig	Oppervlak Kracht	FF12	-1,2407	GCS Projectie
GFF176	BG3-2 - wervelv	E95	X Gelijkmatig	Oppervlak Kracht	FF12	-1,2407	GCS Projectie
GFF177	BG3-2 - wervelv	E96	X Gelijkmatig	Oppervlak Kracht	FF12	-1,2407	GCS Projectie
GFF178	BG3-2 - wervelv	E100	X Gelijkmatig	Oppervlak Kracht	FF12	-1,2407	GCS Projectie
GFF179	BG3-2 - wervelv	E101	X Gelijkmatig	Oppervlak Kracht	FF12	-1,2407	GCS Projectie
GFF180	BG3-2 - wervelv	E102	X Gelijkmatig	Oppervlak Kracht	FF12	-1,2407	GCS Projectie
GFF181	BG3-2 - wervelv	E145	X Gelijkmatig	Oppervlak Kracht	FF13	1,3702	GCS Projectie
GFF182	BG3-2 - wervelv	E146	X Gelijkmatig	Oppervlak Kracht	FF13	1,3702	GCS Projectie
GFF183	BG3-2 - wervelv	E147	X Gelijkmatig	Oppervlak Kracht	FF13	1,3702	GCS Projectie
GFF184	BG3-2 - wervelv	E151	X Gelijkmatig	Oppervlak Kracht	FF13	1,3702	GCS Projectie
GFF185	BG3-2 - wervelv	E152	X Gelijkmatig	Oppervlak Kracht	FF13	1,3702	GCS Projectie
GFF186	BG3-2 - wervelv	E153	X Gelijkmatig	Oppervlak Kracht	FF13	1,3702	GCS Projectie
GFF187	BG3-2 - wervelv	E178	X Gelijkmatig	Oppervlak Kracht	FF14	-1,6833	GCS Projectie
GFF188	BG3-2 - wervelv	E179	X Gelijkmatig	Oppervlak Kracht	FF14	-1,6833	GCS Projectie
GFF189	BG3-2 - wervelv	E180	X Gelijkmatig	Oppervlak Kracht	FF14	-1,6833	GCS Projectie
GFF190	BG3-2 - wervelv	E184	X Gelijkmatig	Oppervlak Kracht	FF14	-1,6833	GCS Projectie
GFF191	BG3-2 - wervelv	E185	X Gelijkmatig	Oppervlak Kracht	FF14	-1,6833	GCS Projectie
GFF192	BG3-2 - wervelv	E186	X Gelijkmatig	Oppervlak Kracht	FF14	-1,6833	GCS Projectie
GFF193	BG3-2 - wervelv	E217	X Gelijkmatig	Oppervlak Kracht	FF15	4,9434	GCS Projectie
GFF194	BG3-2 - wervelv	E218	X Gelijkmatig	Oppervlak Kracht	FF15	4,9434	GCS Projectie
GFF195	BG3-2 - wervelv	E219	X Gelijkmatig	Oppervlak Kracht	FF15	4,9434	GCS Projectie
GFF196	BG3-2 - wervelv	E223	X Gelijkmatig	Oppervlak Kracht	FF15	4,9434	GCS Projectie
GFF197	BG3-2 - wervelv	E224	X Gelijkmatig	Oppervlak Kracht	FF15	4,9434	GCS Projectie
GFF198	BG3-2 - wervelv	E225	X	Oppervlak	FF15	4,9434	GCS

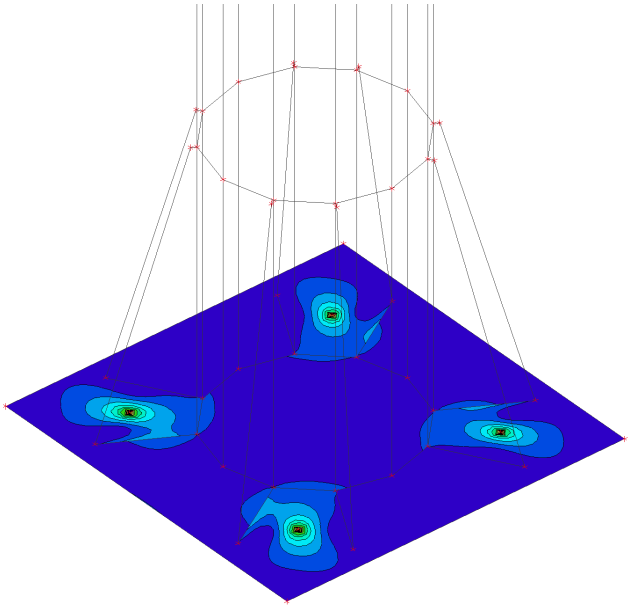
Naam	Belastingsgeval	2D-element	Rich Verdeling	Belastingstype Type	pronkelijke bela	q [kN/m²] Waarde - P [kN/m]	Systeem Locatie
			Gelijkmatig	Kracht			Projectie
GFF199	BG3-2 - wervelv	E238	X Gelijkmatig	Oppervlak Kracht	FF16	-3,6648	GCS Projectie
GFF200	BG3-2 - wervelv	E239	X Gelijkmatig	Oppervlak Kracht	FF16	-3,6648	GCS Projectie
GFF201	BG3-2 - wervelv	E240	X Gelijkmatig	Oppervlak Kracht	FF16	-3,6648	GCS Projectie
GFF202	BG3-2 - wervelv	E244	X Gelijkmatig	Oppervlak Kracht	FF16	-3,6648	GCS Projectie
GFF203	BG3-2 - wervelv	E245	X Gelijkmatig	Oppervlak Kracht	FF16	-3,6648	GCS Projectie
GFF204	BG3-2 - wervelv	E246	X Gelijkmatig	Oppervlak Kracht	FF16	-3,6648	GCS Projectie
GFF205	BG3-2 - wervelv	E253	X Gelijkmatig	Oppervlak Kracht	FF17	0,8245	GCS Projectie
GFF206	BG3-2 - wervelv	E261	X Gelijkmatig	Oppervlak Kracht	FF17	0,8245	GCS Projectie
GFF207	BG3-2 - wervelv	E255	X Gelijkmatig	Oppervlak Kracht	FF17	0,8245	GCS Projectie
GFF208	BG3-2 - wervelv	E259	X Gelijkmatig	Oppervlak Kracht	FF17	0,8245	GCS Projectie
GFF209	BG3-2 - wervelv	E254	X Gelijkmatig	Oppervlak Kracht	FF17	0,8245	GCS Projectie
GFF210	BG3-2 - wervelv	E260	X Gelijkmatig	Oppervlak Kracht	FF17	0,8245	GCS Projectie
GFF211	BG3-2 - wervelv	E49	X Gelijkmatig	Oppervlak Kracht	FF18	1,2531	GCS Projectie
GFF212	BG3-2 - wervelv	E50	X Gelijkmatig	Oppervlak Kracht	FF18	1,2531	GCS Projectie
GFF213	BG3-2 - wervelv	E51	X Gelijkmatig	Oppervlak Kracht	FF18	1,2531	GCS Projectie
GFF214	BG3-2 - wervelv	E55	X Gelijkmatig	Oppervlak Kracht	FF18	1,2531	GCS Projectie
GFF215	BG3-2 - wervelv	E56	X Gelijkmatig	Oppervlak Kracht	FF18	1,2531	GCS Projectie
GFF216	BG3-2 - wervelv	E57	X Gelijkmatig	Oppervlak Kracht	FF18	1,2531	GCS Projectie

3.7. Vrije oppervlakte last

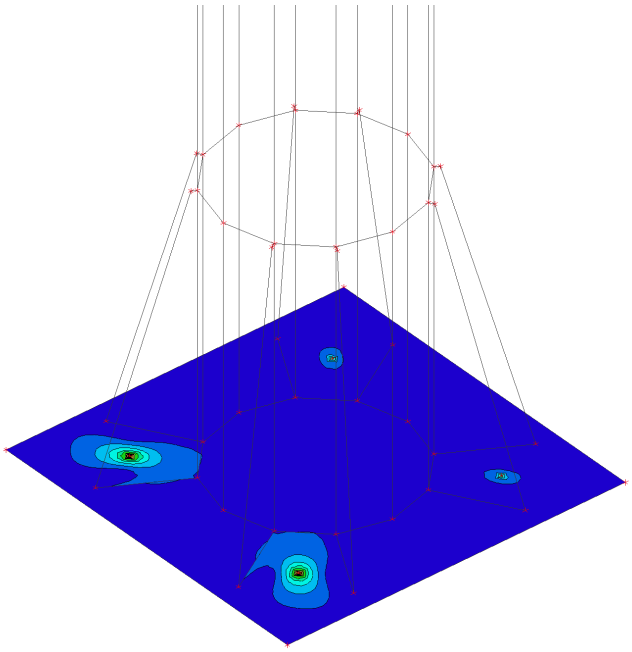
Naam	Belastingsgeval	Rich	Type	Verdeling	q [kN/m²]	Geldigheid	Selecteer	Systeem	Locatie
FF1	BG2 - Quasi-statisch windbelasting	X	Kracht	Gelijkmatig	0,4540	Alle	Selecteer	GCS	Projectie
FF2	BG2 - Quasi-statisch windbelasting	X	Kracht	Gelijkmatig	0,4615	Alle	Selecteer	GCS	Projectie
FF3	BG2 - Quasi-statisch windbelasting	X	Kracht	Gelijkmatig	0,3846	Alle	Selecteer	GCS	Projectie
FF4	BG2 - Quasi-statisch windbelasting	X	Kracht	Gelijkmatig	0,3000	Alle	Selecteer	GCS	Projectie
FF5	BG3-1 - wervelwind belasting N=6	X	Kracht	Gelijkmatig	-1,2407	Alle	Selecteer	GCS	Projectie
FF6	BG3-1 - wervelwind belasting N=6	X	Kracht	Gelijkmatig	1,0996	Alle	Selecteer	GCS	Projectie
FF7	BG3-1 - wervelwind belasting N=6	X	Kracht	Gelijkmatig	-1,0377	Alle	Selecteer	GCS	Projectie
FF8	BG3-1 - wervelwind belasting N=6	X	Kracht	Gelijkmatig	3,0604	Alle	Selecteer	GCS	Projectie
FF9	BG3-1 - wervelwind belasting N=6	X	Kracht	Gelijkmatig	-1,1934	Alle	Selecteer	GCS	Projectie
FF10	BG3-1 - wervelwind belasting N=6	X	Kracht	Gelijkmatig	0,2685	Alle	Selecteer	GCS	Projectie
FF11	BG3-1 - wervelwind belasting N=6	X	Kracht	Gelijkmatig	1,2531	Alle	Selecteer	GCS	Projectie
FF12	BG3-2 - wervelwind belasting N=6 test	X	Kracht	Gelijkmatig	-1,2407	Alle	Selecteer	GCS	Projectie
FF13	BG3-2 - wervelwind belasting N=6 test	X	Kracht	Gelijkmatig	1,3702	Alle	Selecteer	GCS	Projectie
FF14	BG3-2 - wervelwind belasting N=6 test	X	Kracht	Gelijkmatig	-1,6833	Alle	Selecteer	GCS	Projectie
FF15	BG3-2 - wervelwind belasting N=6 test	X	Kracht	Gelijkmatig	4,9434	Alle	Selecteer	GCS	Projectie
FF16	BG3-2 - wervelwind belasting N=6 test	X	Kracht	Gelijkmatig	-3,6648	Alle	Selecteer	GCS	Projectie
FF17	BG3-2 - wervelwind belasting N=6 test	X	Kracht	Gelijkmatig	0,8245	Alle	Selecteer	GCS	Projectie
FF18	BG3-2 - wervelwind belasting N=6 test	X	Kracht	Gelijkmatig	1,2531	Alle	Selecteer	GCS	Projectie

4. Resultaten

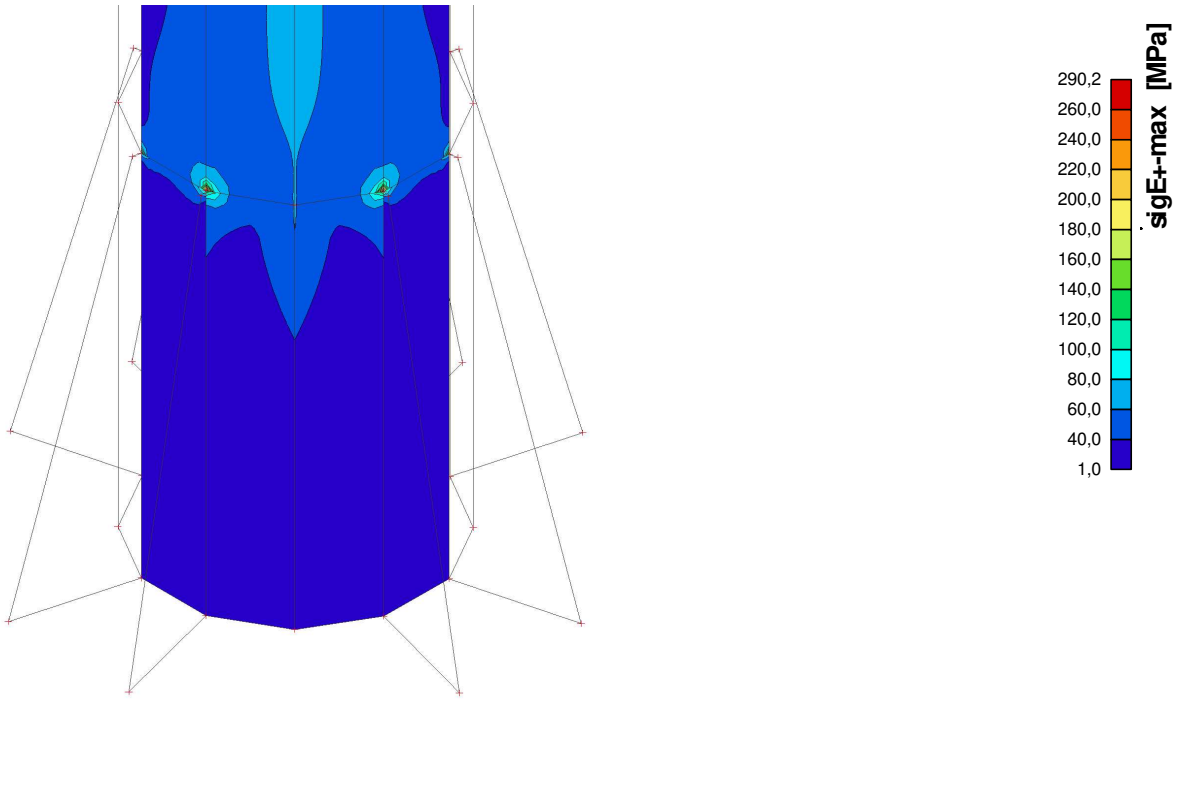
4.1. UGT quasi-statisch Voetplaat - Spanningen; sigE+



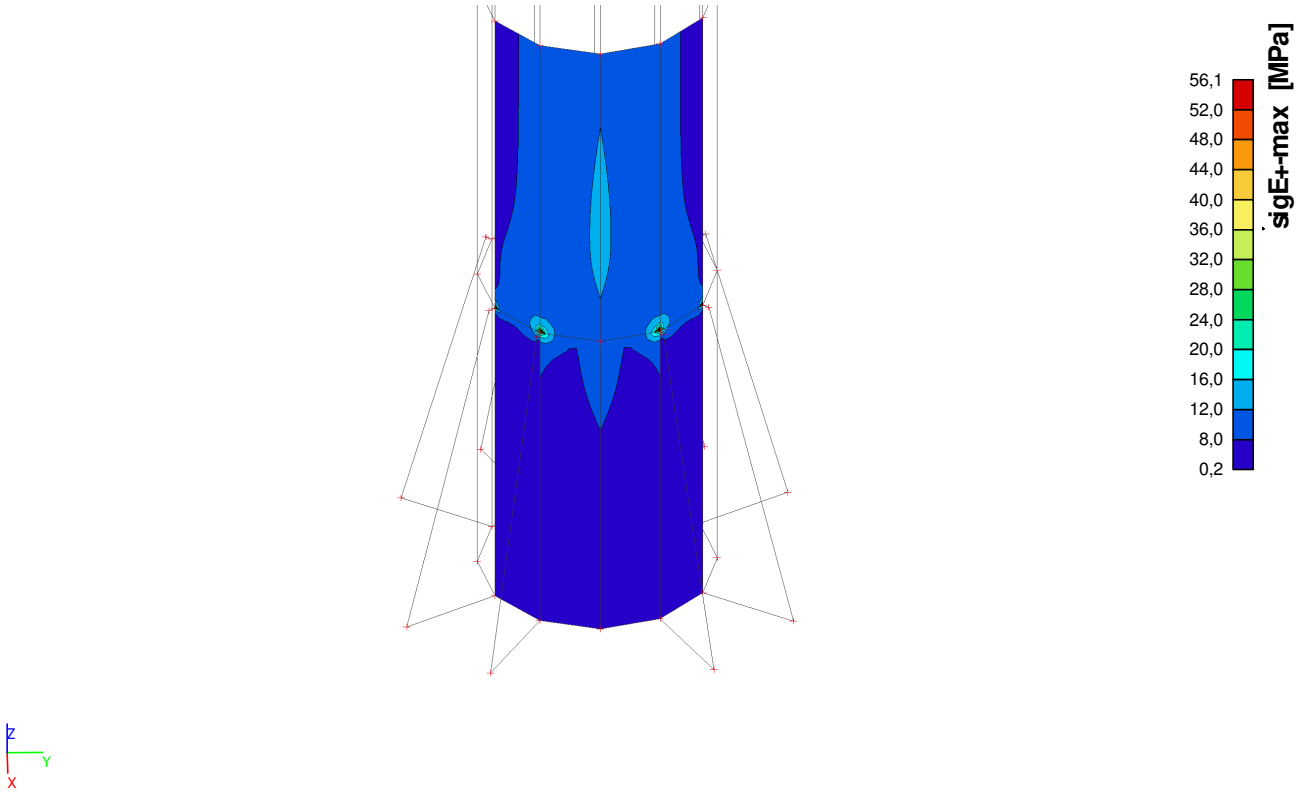
4.2. UGT wervelwind voetplaat - Spanningen; sigE+



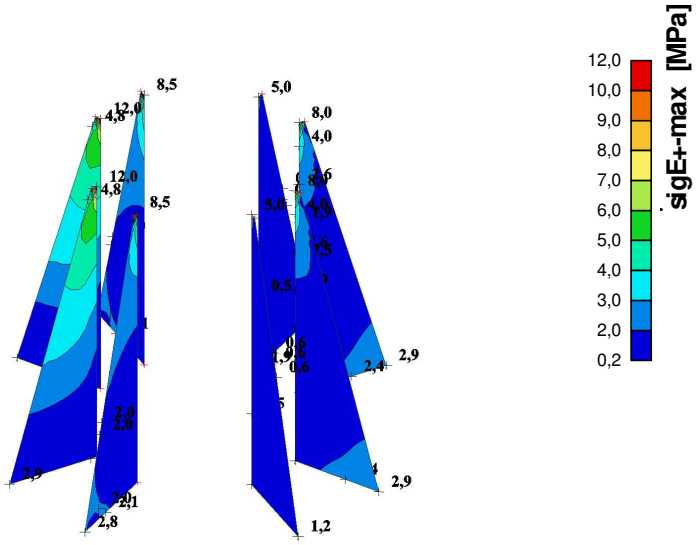
4.3. UGT quasi statisch Buizen - Spanningen; sigE+



4.4. UGT wervelwind Buizen- Spanningen; sigE+

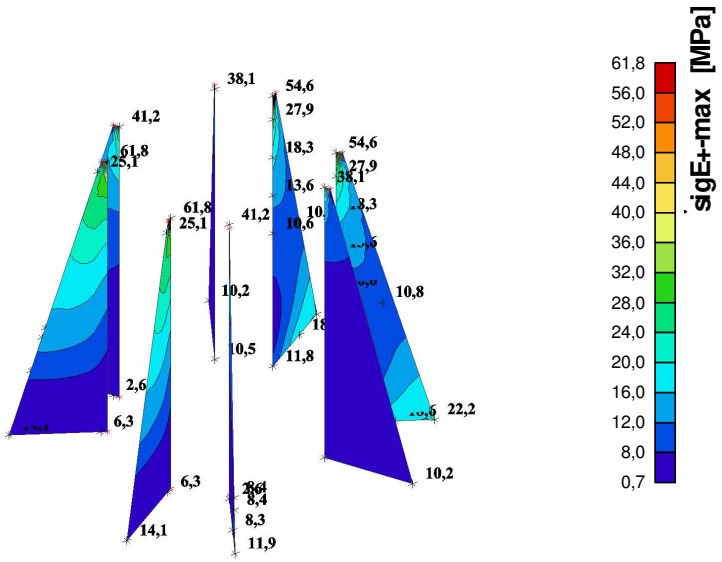


4.5. UGT wervel windbelasting verstijvingschotten - Spanningen; sigE+





4.6. UGT quasi-statische windbelasting verstijvingschotten - Spanningen; sigE+





4.7. Berekeningsverslag

Lineaire berekening

Aantal 2D elementen	**24188**
Aantal 1D elementen	**0**
Aantal netknopen	**23925**
Aantal vergelijkingen	**143550**
Belastinggevallen	BG1
	BG2
	BG3-1
	BG3-2
Buigtheorie	Mindlin
Start berekening	26.09.2019 11:01
Einde berekening	26.09.2019 11:01

Som van lasten en reacties.

	[kN]	X	Y	Z
BG BG1	last	0.0	0.0	-7.4
	knoopreacties	0.0	0.0	7.4
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG2	last	1.8	0.0	0.0
	knoopreacties	-1.8	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG3-1	last	0.4	0.0	0.0
	knoopreacties	-0.4	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0
BG BG3-2	last	0.3	0.0	0.0
	knoopreacties	-0.3	0.0	0.0
	lijnreactions	0.0	0.0	0.0
	contact 1D	0.0	0.0	0.0
	contact 2D	0.0	0.0	0.0

Statische Windbelasting Bliksempiek conform NEN-EN 1991-1-4, art. 7.9 Cirkelvormige cilinders

dichtheid lucht	ρ (kg/m3)	1,25	(NB artikel 4.5)
oppervlakte ruwheid	k (mm)	0,02	(tabel 7.13, gespoten verflaag)
kinematische viscositeit	v (m2/s)	1,50E-05	(formule 7.15)

Sectie:		**1**	**2**	**3**	**4**	
breedte	b (m)	0,273	0,2191	0,1683	0,0889	
lengte	l (m)	5,6	4,8	3,2	2,4	(totale hoogte : 16,0 m)
hoogte	z_e (m)	5,6	10,4	13,6	16	
piek stuwdruk	q_p (z_e) (kN/m2)	0,564	0,708	0,772	0,816	(tabel NB.5, windgebied III, onbebouwd)
piek windsnelheid	v (z_e) (m/s)	30,04	33,66	35,15	36,13	(opmerking 2, figuur 7.28)
Reynoldsgetal	Re	5,47E+05	4,92E+05	3,94E+05	2,14E+05	(formule 7.15)
	k/b	7,33E-05	9,13E-05	1,19E-04	2,25E-04	(figuur 7.28)
Krachtcoefficient	C_f	0,26	0,30	0,40	0,95	(grootste waarde maatgevend, figuur 7.28)
	C_f	0,57	0,58	0,57	0,55	
	Cf,maatgevend	0,57	0,58	0,57	0,95	
Statische windlast	**$Q_{wind,rep}$ (kN/m)**	**0,088**	**0,089**	**0,074**	**0,069**	($b \cdot q_p \cdot C_f$)
Dynamische factor	**$C_s C_d$**	1,41	1,41	1,41	1,41	
Windlast	**$Q_{wind,rep}$ (kN/m)**	**0,124**	**0,126**	**0,105**	**0,097**	

Wervelvorming conform NEN-EN 1991-1-4, bijlagen E en F

1. Algemene gegevens:

windgebied III:	$v_{b,0}$	24.5	m/s	(Tabel NB.1)	aangepast
	$v_b = v_{b,0}$	24.5	m/s		aangepast
terreincategorie II:	z_0	0.2	m	(Tabel NB.3, onbebouwd gebied)	aangepast
	z_{min}	4	m	(Tabel NB.3, onbebouwd gebied)	aangepast
	z_{max}	200	m	(NB art. 4.3.2)	aangepast
terreinfactor:	k_r	0.21		(NB formule 4.5)	
bouwwerkhoogte:	z	16	m		
ruwheidsfactor bij z=16:	c_r	0.92		(formule 4.4)	? 19 m
windsnelheid top piek = $v_m = c_r * v_b$ =		22.5	m/s	(formule 4.3)	
Strouhalgetal	St	0.18		(Tabel E.1, voor alle ronde doorsnede)	klopt
breedte op 16,0m	b	0.0889	m		
dempingsfactor		0.012		(Tabel F2, onbeklede gelaste stalen schoorsteen)	klopt
ρ lucht		1.25		(NB art. 4.5)	

		n=1	n=2	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10	n=11	n=12	n=13
eigenwaarden	**fe (Hz)**	0.87	4.16	9.16	15.44	26.51	41.74	55.63	63.99	69.87	89.54	116.27	137.63	153.82
krit windsnelheid	**vcrit**	0.43	2.05	4.52	7.63	13.09	20.61	27.48	31.60	34.51	44.22	57.42	67.97	75.97
									> 1,25 * vm					
ontwerplevensduur:	**Tj**	50	jaar						28.0962857					
	Ts	1.60.E+09	seconden											

Bouwwerkfactor CsCd conform NEN-EN 1991-1-4, bijlage C

eigenfrequentie	n_1	0,87	Hz	(volgt uit eigenwaarde berekening)
breedte top	btop	0,0889	m	
hoogte	h	16	m	
ruwheidslengte	z_0	0,2	m	(tabel NB.3 4.1, onbebouwd gebied)
	z_{min}	4	m	(tabel NB.3 4.1, onbebouwd gebied)
	z_{max}	200	m	(NB formule 4.5)
	α	0,59		(bijlage B.1)
	L_t	300	m	(gegeven waarde, bijlage B.1)
	L(z)	68		(bijlage B.1 indien z > z_{min}, 20 > 4)
	I_v	0,23		(formule 4.7)
achtergrondresponsfactor	B^2	0,74		(formule C.1)
constructieve demping	δ_s	0,012		(tabel F.2: gelaste stalen schoorsteen)
meewerkende massa	m_e	29,41	kg/m	(waarde ontleent aan eigenwaarde berekening)
krachtscoefficient wind	C_f	0,95		(waarde ontleent aan statische berekening)
dichtheid lucht	ρ	1,25	kg/m3	(NB artikel 4.5)
windsnelheid top	v_m	22,5	m/s	(waarde ontleent aan wervelberekening)
aerodynamische demping	δ_a	0,046		
demping totaal	δ	0,058		(formule F.15)
dimensieloze frequentie	f_L	2,6		(bijlage B, artikel B.1)
spectrale dichtheidsfunctie	S_L	0,070		(formule B.2)
vervalconstante	C_y	11,5		(gegeven waarde, bijlage C.2)
	C_z	11,5		(gegeven waarde, bijlage C.2)
	G_y	0,50		(tabel C.1)
	G_z	0,28		(tabel C.1)
	k_y	1		(tabel C.1)
	k_z	1,67		(tabel C.1)
	$Ø_y$	0,04		(formule C.3)
	$Ø_z$	7,11		(formule C.3)
afmetingsreductiefunctie	K_s	0,34		(formule C.3)
resonantierespons	R^2	1,99		(formule C.2)
verwachtingswaarde	v	0,74		(formule B.5)
middelingstijd	T	600	sec	(formule B.4)
piekfactor	k_p	3,52		(formule B.4 en niet kleiner dan 3)
Bouwwerkfactor	C_sC_d	**1,41**		(artikel 6.3.1)

Projectnaam:	TenneT 150 kV Station Graetheide
Onderdeel:	Boutkracht tabellen
Documentnummer:	---
Revisie:	A
Bijlage:	F

Boutgegevens

sterkteklasse	4.6	8.8	10.9	
treksterkte f_{ub}	400	800	1000	MPa

gerolde draad	β	1.00

k_2	0.90		α_d	0.50
$\alpha_{v;1}$	0.60		k_1	2.50
$\alpha_{v;2}$	0.50		$f_{u;S235}$	360
γ_{M2}	1.25		$f_{u;S355}$	490

boutdiameter	12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
spanningsdoorsnede	84	157	245	353	459	561	694	817	976	1121	1306	1473	1758	2030	2362	2676	mm^2

Trekweerstand GEROLDE DRAAD:

$F_{t;Rd} = k_2 * f_{ub} * A_s / \gamma_{M2}$

boutdiameter	12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
4.6	24.19	45.22	70.56	101.66	132.19	161.57	199.87	235.30	281.09	322.85	376.13	424.22	506.30	584.64	680.26	770.69	kN
8.8	48.38	90.43	141.12	203.33	264.38	323.14	399.74	470.59	562.18	645.70	752.26	848.45	1012.61	1169.28	1360.51	1541.38	kN
10.9	60.48	113.04	176.40	254.16	330.48	403.92	499.68	588.24	702.72	807.12	940.32	1060.56	1265.76	1461.60	1700.64	1926.72	kN

Afschuifweerstand GEROLDE DRAAD:

$F_{v;Rd} = \alpha_v * f_{ub} * A_s / \gamma_{M2}$

boutdiameter	12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
4.6	16.13	30.14	47.04	67.78	88.13	107.71	133.25	156.86	187.39	215.23	250.75	282.82	337.54	389.76	453.50	513.79	kN
8.8	32.26	60.29	94.08	135.55	176.26	215.42	266.50	313.73	374.78	430.46	501.50	565.63	675.07	779.52	907.01	1027.58	kN
10.9	33.60	62.80	98.00	141.20	183.60	224.40	277.60	326.80	390.40	448.40	522.40	589.20	703.20	812.00	944.80	1070.40	kN

Stuik niet maatgevend vanaf plaatdikte:

$F_{b;Rd} = k_1 * \alpha_b * f_u * d * t / \gamma_{M2}$ randafstand $\geq 1.5 * d_0$ steek $\geq 3.0 * d_0$

boutdiameter		12	16	20	24	27	30	33	36	39	42	45	48	52	56	60	64	mm
	d_0	13	18	22	26	30	33	36	39	42	45	58	51	55	59	63	67	mm
S235	4.6	3.7	5.2	6.5	7.8	9.1	10.0	11.2	12.1	13.3	14.2	15.5	16.4	18.0	19.3	21.0	22.3	mm
	8.8	7.5	10.5	13.1	15.7	18.1	19.9	22.4	24.2	26.7	28.5	31.0	32.7	36.1	38.7	42.0	44.6	mm
	10.9	7.8	10.9	13.6	16.3	18.9	20.8	23.4	25.2	27.8	29.7	32.2	34.1	37.6	40.3	43.7	46.5	mm
S355	4.6	2.7	3.8	4.8	5.8	6.7	7.3	8.2	8.9	9.8	10.5	11.4	12.0	13.2	14.2	15.4	16.4	mm
	8.8	5.5	7.7	9.6	11.5	13.3	14.7	16.5	17.8	19.6	20.9	22.7	24.0	26.5	28.4	30.9	32.8	mm
	10.9	5.7	8.0	10.0	12.0	13.9	15.3	17.2	18.5	20.4	21.8	23.7	25.1	27.6	29.6	32.1	34.1	mm

Geertruidenberg zwart

St/AL 30/52 mm²

Geertruidenberg wit

Pick h = 12570+
Afsp. h = 12500+

hart bovenste ligger 13650+

's-Hertogenbosch West zwart

St/AL 30/52 mm²

's-Hertogenbosch Noord wit

Afspanning aan bovenste ligger van het juk h=ong. 13800+

St/AL 30/52 mm²

St/AL 30/52 mm²

b.k. 50

Pick h= 13570+
Afsp. h= 13500+

10 kV GEBOUW 1

b.k. 50

Pick h= 13570+
Afsp. h= 13500+

Pick h= 11870+
Afsp. h= 11800+

Pick h= 16070+
Afsp. h= 16000+

Transformator 1

Transformator 4

Transformator 3

10 kV GEBOUW 2