VFZ

Windgebied onbebouwd
Omgeving : I
Construction Calculations

Rev. 1.2
Date 16-08-23
Auteur

Berekening opgesteld door
Dynamica ingenieursbureau Kwekerijweg 2-C 3709 JA Zeist

Datum	Auteur	Versie	Revisie referentie
15-06-22		1	
16-08-23		1.2	

Datum	Gecontroleerd	Paraaf
16-08-23		

Gemeente Texel .txl

Behoort bij besluit van
Burgemeester en Wethouders van Texel,
zaaknummer: 3587224
kenmerk document: bijlage 6/6
namens de burgemeester en wethouders van Texel,

de heer L. Graanoogst
teamleider Vergunningen, Toezicht & Handhaving a.i.

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Inhoud

Gebruikte normen

Eurocode 1 - Belastingen op constructies

EN 1991-1-1 Deel 1-1: Algemene belastingen - Volumieke gewichten, eigen gewicht, opgelegde belastingen voor gebouwen
EN 1991-1-4 Deel 1-4: Algemene belastingen – Windbelasting

Eurocode 3 - Ontwerp en berekening van staalconstructies

EN 1993-1-1 Deel 1-1: Algemene regels en regels voor gebouwen
EN 1993-1-2 Deel 1-2: Algemene regels - Ontwerp en berekening van constructies bij brand
EN 1993-1-3 Deel 1-3: Algemene regels - Aanvullende regels voor koudgevormde dunwandige profielen en platen
EN 1993-1-4 Deel 1-4: Algemene regels - Aanvullende regels voor roestvast staal
EN 1993-1-5 Deel 1-5: Algemene regels - Constructieve plaatvelden
EN 1993-1-6 Deel 1-6: Algemene regels - Sterkte en stabiliteit van schaalconstructies
EN 1993-1-7 Deel 1-7: Algemene regels - Sterkte en stabiliteit van haaks op het vlak belaste platen
EN 1993-1-8 Deel 1-8: Algemene regels - Ontwerp en berekening van verbindingen
EN 1993-1-9 Deel 1-9: Algemene regels – Vermoeiing
EN 1993-1-10 Deel 1-10: Algemene regels - Materiaaltaaiheid en eigenschappen in de dikterichting
EN 1993-1-11 Deel 1-11: Algemene regels - Ontwerp en berekening van op trek belaste componenten
EN 1993-1-12 Deel 1-12: Algemene regels - Aanvullende regels voor de uitbreiding van EN 1993 voor staalsoorten tot en met S 700
EN 1993-2 Deel 2: Bruggen
EN 1993-3-1 Deel 3-1: Torens, masten en schoorstenen - Torens en masten
EN 1993-3-2 Deel 3-2: Torens, masten en schoorstenen – Schoorstenen
EN 1993-4-1 Deel 4-1: Silo's
EN 1993-4-2 Deel 4-2: Opslagtanks
EN 1993-4-3 Deel 4-3: Buisleidingen
EN 1993-5 Deel 5: Palen en damwanden
EN 1993-6 Deel 6: Kraanbanen

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Conclusies

Controle hoekverdraaing en sterkte

Bij een ----> ψ_t = 0,56 (referentieperiode van 1 jaar) (conform de Eurocode)

toetsing hoekverdraaiing:
dit zijn de eisen van de telecomproviders.

hoekverdraaiing (t.p.v. 3x VF dish Ø600 H=+40m)=	0,00662 radiaal =	0,38 graden	< 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x VF antenna ASI4518R10v06 + 15*RRU H=37,0 m)=	0,00674 radiaal =	0,39 graden	< 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x VF antenna AIR6488 H=35,0 m)=	0,00667 radiaal =	0,38 graden	< 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x KPN dish Ø300 H=+34m)=	0,00650 radiaal =	0,37 graden	< 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x KPN antenna 80020892 +6*RRU H=31 m)=	0,00643 radiaal =	0,37 graden	< 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x KPN antenna 80020892 +6*RRU H=28 m)=	0,00613 radiaal =	0,35 graden	< 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x TM dish Ø600 H=+27m)=	0,00568 radiaal =	0,33 graden	< 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x TM antenna AAU5972 H=25 m)=	0,00547 radiaal =	0,31 graden	< 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x TM antenna AHP4518R5V06 +6xRRU H=22 m)=	0,00473 radiaal =	0,27 graden	< 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x OLO dish Ø600 H=+21m)=	0,00425 radiaal =	0,24 graden	< 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x OLO antenna ASI4518R10v06 + 6*RRU H=18 m)=	0,00401 radiaal =	0,23 graden	< 1,0 graden (ok)

Bij een ----> ψ_t = 0,87 (referentieperiode van 15 jaar) (conform de Eurocode)

toetsing vervorming Conform NEN-EN 50341-3:

maximale horizontale uitbuiging:	0,246m	H= 40,000m	***= 0,61%*** *< 8% (ok)*
max relatieve verplaatsing	0,123m	H= 40,000m	***= 0,31%*** *< 1% (ok)*

Bij een ----> ψ_t = 1,00 (max. stuwdruk, referentieperiode van 50 jaar)

toetsing vervorming Conform NEN-EN 50341-3:

maximale horizontale uitbuiging:	0,284m	H= 40,000m	***= 0,71%*** *< 8% (ok)*
max relatieve verplaatsing	0,142m	H= 40,000m	***= 0,36%*** *< 1% (ok)*

sterkte toetsing = De volledige constructie voldoet op sterkte bij een referentie periode van 50 jaar
Max UC = ***0,69*** < 1,0 (ok)

Controle staanders en diagonalen

	Randstaven	Diagonalen
Sectie 1	uc=0,67<1.0	uc=0,55<1.0
Sectie 2	uc=0,69<1.0	uc=0,52<1.0
Sectie 3	uc=0,58<1.0	uc=0,57<1.0
Sectie 4	uc=0,09<1.0	uc=0,27<1.0

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Controle verbindingen

			Controle lasverbindingen	
	Controle ankers	Controle flensplaat	Randstaven	Diagonalen
Sectie 1	uc=0,55<1.0	uc=0,75<1.0	uc=0,43<1.0	uc=0,86<1.0
Sectie 2	uc=0,76<1.0	uc=0,61<1.0	uc=0,42<1.0	uc=0,78<1.0
Sectie 3	uc=0,34<1.0	uc=0,51<1.0	uc=0,23<1.0	uc=0,57<1.0
Sectie 4	uc=0,08<1.0	uc=0,22<1.0	uc=0,04<1.0	uc=0,30<1.0

Reactiekrachten mast:

De mast is van het type VDL vkm VeHa 40m 1200-3000.

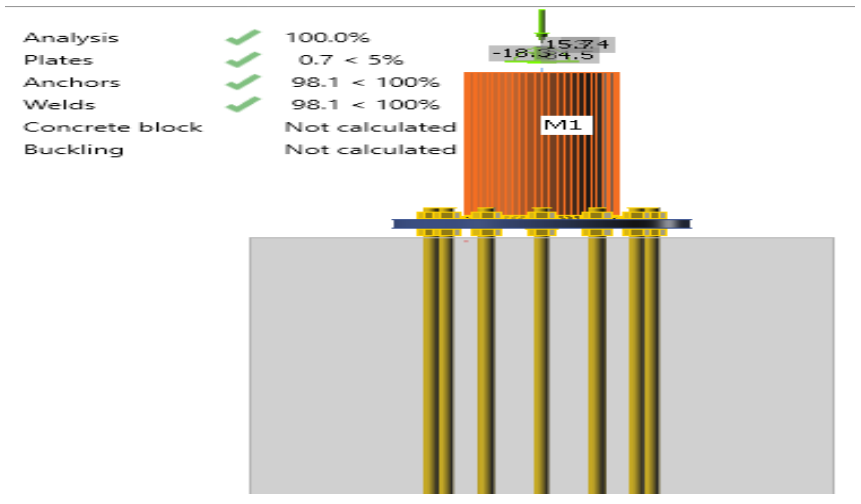
X-Richting

	Ka C 1		Fu.C.2		Fu.C.4	
	γg=1,0	γq=1,0	γg=1,2	γq=1,6	γg=0,9	γq=1,6
Voetmoment	1694	kNm	2710	kNm	**2710**	kNm
Dwarskracht	82	kN	132	kN	**132**	kN
Gewicht mast	72	kN	87	kN	65	kN
Max. gedrukte voet	676	kN	**1072**	kN	1065	kN
Max. getrokken voet	628	kN	1014	kN	**1021**	kN

Y-Richting

	Ka C 2		Fu.C.3		Fu.C.5	
	γg=1,0	γq=1,0	γg=1,2	γq=1,6	γg=0,9	γq=1,6
Voetmoment	2420	kNm	**3887**	kNm	3898	kNm
Dwarskracht	92	kN	**147**	kN	147	kN
Gewicht mast	72	kN	87	kN	65	kN
Max. gedrukte voet	771	kN	**1252**	kN	1267	kN
Max. getrokken voet	843	kN	**1339**	kN	1332	kN

Controle ankers t.p.v. steunpunten



12x M24 Bolts 8,8
Plates 25mm S355
Welds 9mm S355

UC Max **0,98** **< 1,0 (ok)**

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Beschrijving site

In dit rapport wordt een berekening opgesteld voor een nieuwe vakwerkmast met een nieuwe antennecondiguratie.
De windbelastingen ten gevolge van de aanwezige feeders is meegenomen in de berekening.
De mast is van het type VDL 40 m 3000-1200 en berekend op basis van maximale configuratie en ongunstige situatie
in Windgebied I onbebouwd.

Uitgangspunten berekening

De aangehouden veiligheidsfactoren is volgens de NEN-EN 1993-3-1 ontwerp en berekeningen van staal constructie deel 3-1 torens, masten en schoorstenen, annex A.
De aangehouden realiabitiy class is RC3 (=CC3). Dit wijkt af van de veiligheidsfactoren uit de basis Eurocode voor hooggebouwen,
De constructie is niet hoger dan 70m, in dit geval is er geen toezicht benodigd tijdens de bouw.

Gevolgklasse (= veiligheidsklasse)	CC 3	--
Betrouwbaarheidsklasse	RC 3	--
Referentieperiode	50	jaar
Maximaal toelaatbare hoekverdraaiing gebruikstoestand antennes	1,0	graden
Maximaal toelaatbare hoekverdraaiing gebruikstoestand mini links	0,7	graden

$\gamma_{SLS,g}$ =	1,0	--
$\gamma_{SLS,q}$ =	1,0	--
$\gamma_{ULS,g}$ =	0,9	-- (ongunstig)
$\gamma_{ULS,g}$ =	1,2	-- EN 1993-3-1
$\gamma_{ULS,q}$ =	1,6	-- EN 1993-3-1
$c_s c_d$ =	1,03	-- (vormfactor dimensie)
ψ_t =	0,87	-- (t = 15 jaar conform de Eurocode)
ψ_t =	0,74	-- (t = 5 jaar conform de Eurocode)
ψ_t =	0,56	-- (t = 1 jaar conform de Eurocode)

Kniklengte randstaven= Lcr = 1,5 * Lsys Kniklengte diagonalen= Lcr = 1,0 * Lsys *(zie invoer Matrix bijlage 2)*

Materialen

Staalsoort :	S355	
$f_{y;rep}$ =	355	N/mm^2
E_{rep} =	210000	N/mm^2
ρ_{staal} =	78,5	kN/m^3
Bouten:	8.8	
$f_{t;b;d}$ =	800	N/mm^2

Belastingen

Windgebied :	onbebouwd	
Omgeving :	I	
$h_{max.}$ =	40	m
p_w =	1,55	kN/m^2
z_0 =	*0,2*	m
z_{min} =	*4,0*	m
k_r =	0,21	--
c_r =	1,11	--
c_0 =	1	--
V_b =	29,5	m/s
V_m =	32,7	m/s
I_v =	0,19	--

Reductiefactor afhankelijk van referentieperiode:

t =	15		*jaar (referentieperiode)*
p =	0,064	--	*(art.4.2 Basiswaarden NEN-EN 1991-1-4)*
n =	0,5	--	*(Tabel NB.2 NEN-EN 1991-1-4:2005/NB:2007)*
K =	0,2	--	*(Tabel NB.2 NEN-EN 1991-1-4:2005/NB:2007)*
c_{prob} =	0,931	--	*(art.4.2 Basiswaarden NEN-EN 1991-1-4)*
$V_{b;t}$	27	m/s	*(afh. van referentieperiode van t jaren)*
$V_{m;t}$	30	m/s	*(afh. van referentieperiode van t jaren)*
$p_{w;t}$ =	1,35	*kN/m^2*	
$\psi_t = p_{w;t}/p_w$ =	***0,87***	--	$F_t = F_{t_0}\{1+\frac{1-\psi_1}{9}\ln(\frac{t}{t_0})\}$ *(A1.1 NEN-EN 1990)*

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Belastingen antennes

Eigengewicht: 3 x VF dish Ø600

$F_{rep,EG}$ = 0,240 kN/minilink
$F_{d,EG,minilink}$ = 0,288 kN/minilink
3x $F_{rep,EG}$ = 0,720 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,240kN**
3xRG214 kabel 0,003 kN/m h=40,00m=> 0,12kN — over de hele lengte mast been 1 en 2======> $q_{rep,SW,feeders}$= 0,002 kN/m

Eigengewicht: 3x VF antennes ASI4518R10v06 (afm. 2769 x 429 x 196 mm; 66,1 kg)

$F_{rep,EG,antenne}$ = 0,661 kN/antenne
$F_{d,EG,antenne}$ = 0,7932 kN/antenne
3x $F_{rep,EG,antenne}$ = 1,983 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,661kN**
Glas+DC cables 0,017 kN/m h=37,0m=> 0,63kN — over de hele lengte mast been 1 en 2======> $q_{rep,EG\ feeders}$= 0,009 kN/m

Eigengewicht: 15 xKPN RRU (afm.351x298x130mm; 14 kg)

$F_{rep,EG,RRU}$ = 0,14 kN/antenne
$F_{d,EG,RRU}$ = 0,168 kN/antenne
15x $F_{rep,EG,RRU}$ = 2,100 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,700kN**

Eigengewicht: 3x VF antennes AIR6488 (afm. 893 x 520 x 238 mm; 67,1 kg)

$F_{rep,EG,antenne}$ = 0,671 kN/antenne
$F_{d,EG,antenne}$ = 0,8052 kN/antenne
3x $F_{rep,EG,antenne}$ = 2,013 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,671kN**
Glas+DC cables 0,017 kN/m h=35,0m=> 0,60kN — over de hele lengte mast been 1 en 2======> $q_{rep,EG\ feeders}$= 0,009 kN/m

Eigengewicht: 3 x KPN dish Ø300

$F_{rep,EG}$ = 0,180 kN/minilink
$F_{d,EG,minilink}$ = 0,216 kN/minilink
3x $F_{rep,EG}$ = 0,540 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,180kN**
3xRG214 kabel 0,003 kN/m h=34,00m=> 0,10kN — over de hele lengte mast been 1 en 2======> $q_{rep,SW,feeders}$= 0,002 kN/m

Eigengewicht: 3x KPN antennes 80020892 (afm. 2693 x 377 x 169 mm; 49 kg)

$F_{rep,EG,antenne}$ = 0,49 kN/antenne
$F_{d,EG,antenne}$ = 0,588 kN/antenne
3x $F_{rep,EG,antenne}$ = 1,470 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,490kN**
Glas+DC cables 0,011 kN/m h=31,0m=> 0,35kN — over de hele lengte mast been 1 en 2======> $q_{rep,EG\ feeders}$= 0,006 kN/m

Eigengewicht: 6 x KPN RRU (afm.485x380x170mm; 25 kg)

$F_{rep,EG,RRU}$ = 0,25 kN/antenne
$F_{d,EG,RRU}$ = 0,3 kN/antenne
6x $F_{rep,EG,RRU}$ = 1,500 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,500kN**

Eigengewicht: 3x KPN antennes 80020892 (afm. 2693 x 377 x 169 mm; 49 kg)

$F_{rep,EG,antenne}$ = 0,49 kN/antenne
$F_{d,EG,antenne}$ = 0,588 kN/antenne
3x $F_{rep,EG,antenne}$ = 1,470 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,490kN**
Glas+DC cables 0,011 kN/m h=28,0m=> 0,32kN — over de hele lengte mast been 1 en 2======> $q_{rep,EG\ feeders}$= 0,006 kN/m

Eigengewicht: 6 x KPN RRU (afm.485x380x170mm; 25 kg)

$F_{rep,EG,RRU}$ = 0,25 kN/antenne
$F_{d,EG,RRU}$ = 0,3 kN/antenne
6x $F_{rep,EG,RRU}$ = 1,500 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,500kN**

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Eigengewicht: 3 x TM dish Ø600

$F_{rep,EG}$ = 0,240 kN/minilink
$F_{d,EG,minilink}$ = 0,288 kN/minilink
3x $F_{rep,EG}$ = 0,720 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,240kN**
3xRG214 kabel 0,003 kN/m h=27,00m=> 0,08kN — over de hele lengte mast been 1 en 2======> $q_{rep,SW,feeders}$= 0,002 kN/m

Eigengewicht: 3x TM antennes AAU5972 (afm,: 1500 mm x 370 mm x 258 mm; Weigt 51 kg)

$F_{rep,EG,antenne}$ = 0,51 kN/antenna
$F_{d,EG,antenne}$ = 0,612 kN/antenna
3x $F_{rep,EG,antenne}$ = 1,530 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,510kN**
Glas+DC cables 0,038 kN/m h=25,00m=> 14,45kN — full-length tower leg 1 en 2======> $q_{rep,SW,feeders}$= 0,289 kN/m

Eigengewicht: 3x TM antennes AHP4518R5V06 (afm,: 2769 x 469 x 206 mm, Weigt 51,2 kg)

$F_{rep,EG,antenne}$ = 0,512 kN/antenna
$F_{d,EG,antenne}$ = 0,6144 kN/antenna
3x $F_{rep,EG,antenne}$ = 1,536 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,512kN**
Glas+DC cables 0,038 kN/m h=22,0m=> 18,55kN — full-length tower leg 1 en 2======> $q_{rep,SW,feeders}$= 0,422 kN/m

Eigengewicht: 6 x TM RRU (afm.485x380x170mm; 25 kg)

$F_{rep,EG,RRU}$ = 0,25 kN/antenne
$F_{d,EG,RRU}$ = 0,3 kN/antenne
6x $F_{rep,EG,RRU}$ = 1,500 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,500kN**

Eigengewicht: 3 x OLO dish Ø600

$F_{rep,EG}$ = 0,240 kN/minilink
$F_{d,EG,minilink}$ = 0,288 kN/minilink
3x $F_{rep,EG}$ = 0,720 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,240kN**
3xRG214 kabel 0,003 kN/m h=21,00m=> 0,06kN — over de hele lengte mast been 1 en 2======> $q_{rep,SW,feeders}$= 0,002 kN/m

Eigengewicht: 3x OLO antennes ASI4518R10v06 (afm. 2769 x 429 x 196 mm; 66,1 kg)

$F_{rep,EG,antenne}$ = 0,661 kN/antenne
$F_{d,EG,antenne}$ = 0,7932 kN/antenne
3x $F_{rep,EG,antenne}$ = 1,983 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,661kN**
Glas+DC cables 0,017 kN/m h=18,0m=> 0,31kN — over de hele lengte mast been 1 en 2======> $q_{rep,EG\ feeders}$= 0,009 kN/m

Eigengewicht: 6 x OLO RRU (afm.485x380x170mm; 25 kg)

$F_{rep,EG,RRU}$ = 0,25 kN/antenne
$F_{d,EG,RRU}$ = 0,3 kN/antenne
6x $F_{rep,EG,RRU}$ = 1,500 kN — 1x invoer per mastbeen=====> $F_{rep,EG,antenne}$ = **0,500kN**

Belastingcombinaties

Bruikbaarheidsgrenstoestand (SLS; Doorbuiging) = $\gamma_{SLS,g}G + \gamma_{SLS,q}Q_W$
Uiterste grenstoestand (ULS; Sterkte) = $\gamma_{ULS,g}G + \gamma_{ULS,q}Q_W$

Windbelasting algemeen:

Windgebied : onbebouwd Omgeving : I

P	=	$P_w . c_f . c_s . c_d$	*kN/m² (Windbelasting, NEN-EN 1991-4-1)*
$c_s . c_d$	=	1,03	*-- (Bouwwerkfactor, Procedure 2 bijlage C NEN-EN 1991-4-1)*
Σc_f	=	$c_{f,S} + c_{f,A}$	*-- (Druk- en krachtcoëfficiënten totaal; B2.1.3 NEN-EN 1993-3-1)*
$c_{f,s}$	=	$K_\theta * c_{f,s,0} * As/\Sigma A$	*-- (Druk- en krachtcoëfficiënten Mast; B2.2 NEN-EN 1993-3-1 en correctieblad C1-2009)*
$c_{f,A}$	=	$K_A * c_{f,A,0} * \sin^2\psi * As/\Sigma A$	*-- (Druk- en krachtcoëfficiënten Kabels; B2.3 NEN-EN 1993-3-1 en correctieblad C1-2009)*
φ	=	A_s+A_A / A	-- (Volheidsgrad)

A_s De som van de geprojecteerde oppervlakte van de staven

A_A De som van de geprojecteerde oppervlakte van de kabels

A Het totale ingesloten oppervlakte van de vaktwerkmast element

Re = b * v(ze) / v *(Reynoldsgetal, art. 7.9.1 NEN-EN 1991-4-1)*

*voorwaarde Reynoldgetal: voor Re < 4*10⁵ is sub critical en voor Re > 4*10⁵ is supercritical*

v = 0,000015 m/s² *(De kinematische viscositeit van de lucht)*

v(ze) de piekwindsnelheid op hoogte ze vastgesteld *conform NEN-EN 1991-4-1*

b_{gem} = 1,9875 m *(Gemiddelde breedte van de mast)*

h_{max} = 40,0 m *(Totale hoogte van de mast incl. topbuis)*

$C_{tot} = c_f . c_s . c_d$ *(totale factor)*

h [m]	z_0 [m]	z_{min} [m]	k_r [-]	c_r [-]	c_0 [-]	V_b [m/s]	V_m [m/s]	I_v [-]
5,00	*0,2*	*4,0*	0,21	0,67	1	29,5	19,9	0,31
6,00	*0,2*	*4,0*	0,21	0,71	1	29,5	21,0	0,29
12,00	*0,2*	*4,0*	0,21	0,86	1	29,5	25,3	0,24
18,00	*0,2*	*4,0*	0,21	0,94	1	29,5	27,8	0,22
24,00	*0,2*	*4,0*	0,21	1,00	1	29,5	29,6	0,21
30,00	*0,2*	*4,0*	0,21	1,05	1	29,5	30,9	0,20
36,00	*0,2*	*4,0*	0,21	1,09	1	29,5	32,1	0,19
40,00	*0,2*	*4,0*	0,21	1,11	1	29,5	32,7	0,19

Element	**Sectielengte (mm)**	**Voetbreedte (mm)**	**Hoogte (m)**	**Stuwdruk P_w (kN/m²)**	**$P_{w;gem}$ (kN/m²)**	**$P_{w;gem}$ (kN/m²)**
			5,0	0,784		
1	6000	3000	6,0	0,843	(0,78 + 0,84) / 2	0,81
2	6000	2700	12,0	1,083	(0,84 + 1,08) / 2	0,96
3	6000	2400	18,0	1,234	(1,08 + 1,23) / 2	1,16
4	6000	2100	24,0	1,345	(1,23 + 1,35) / 2	1,29
5	6000	1800	30,0	1,435	(1,35 + 1,43) / 2	1,39
6	6000	1500	36,0	1,510	(1,43 + 1,51) / 2	1,47
7	4000	1200	40,0	1,594	(1,51 + 1,59) / 2	1,55
		1200				

Bepaling sub of supercritical

		Randstaven			***Diagonalen***		
element	**V(ze)**	**b_{rand} [mm]**	**Re**		**b_{dia} [mm]**	**Re**	
1	36,7 m/s	219,1	536573	< 4*10⁵ sub crit.	88,9	217715	< 4*10⁵ sub crit.
2	41,6 m/s	219,1	608015	< 4*10⁵ sub crit.	88,9	246702	< 4*10⁵ sub crit.
3	44,4 m/s	168,3	498488	< 4*10⁵ sub crit.	82,5	244357	< 4*10⁵ sub crit.
4	46,4 m/s	168,3	520568	< 4*10⁵ sub crit.	82,5	255180	< 4*10⁵ sub crit.
5	47,9 m/s	139,7	446225	< 4*10⁵ sub crit.	60,3	192608	< 4*10⁵ sub crit.
6	49,1 m/s	139,7	457706	< 4*10⁵ sub crit.	60,3	197564	< 4*10⁵ sub crit.
7	50,5 m/s	139,7	470289	< 4*10⁵ sub crit.	60,3	202995	< 4*10⁵ sub crit.

Profielgegevens

staander	Ø (mm)	t (mm)	A (mm^2)	I (mm^4)	W (mm^3)	m (kg/m)	i (mm)
1	219,1	10,0	6569	35984390	328475	51,57	74,01
2	219,1	10,0	6569	35984390	328475	51,57	74,01
3	168,3	8,0	4029	12972712	154162	31,63	56,75
4	168,3	8,0	4029	12972712	154162	31,63	56,75
5	139,7	5,0	2116	4805412	68796	16,61	47,66
6	139,7	5,0	2116	4805412	68796	16,61	47,66
7	114,3	5,0	1717	2569202	44955	13,48	38,68

Diagonalen	Ø (mm)	t (mm)	A (mm^2)	I (mm^4)	W (mm^3)	m (kg/m)	i (mm)
1	88,9	3,2	862	792059	17819	6,76	30,32
2	88,9	3,2	862	792059	17819	6,76	30,32
3	82,5	3,2	797	627677	15216	6,26	28,06
4	82,5	3,2	797	627677	15216	6,26	28,06
5	60,3	2,9	523	215924	7162	4,11	20,32
6	60,3	2,9	523	215924	7162	4,11	20,32
7	48,3	2,6	373	97765	4048	2,93	16,18

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Berekening van de windoppervlak mast

		Y- richting				
	A	As (y-as) $_{tot}$	As (y-as)	L $_{dia,tot}$	As (y-as)	L $_{rand,tot}$
element	[m^2]	[mm^2]	[mm^2]	[mm]	[mm^2]	[mm]
1	17100000	3774569	1145369	12884	2629200	12000
2	15300000	3681366	1052166	11835	2629200	12000
3	13500000	2912135	892535	10819	2019600	12000
4	11700000	2831667	812067	9843	2019600	12000
5	9900000	2291733	615333	10205	1676400	12000
6	8100000	2221272	544872	9036	1676400	12000
7	2400000	1216275	301875	6250	914400	8000
totaal	**78000000**					

		X- richting				
	A . cos(30^o)	As (x-as) $_{tot}$	As (x-as) . cos(30^o)	L $_{dia,tot}$	As (x-as)	L $_{rand,tot}$
element	[m^2]	[mm^2]	[mm^2]	[mm]	[mm^2]	[mm]
1	14809034	3621119	991919	12884	2629200	12000
2	13250189	3540403	911203	11835	2629200	12000
3	11691343	2792558	772958	10819	2019600	12000
4	10132497	2722871	703271	9843	2019600	12000
5	8573651	2209294	532894	10205	1676400	12000
6	7014806	2148273	471873	9036	1676400	12000
7	2078461	1175831	261431	6250	914400	8000
totaal	**67549981**					

Berekening van de windoppervlak kabels

Kabels&Ladder (feeders):

Y-richting						
element	Hoogte (m)	Hoogte t.o.v. mv. (m)	feeders (inch)	Kabels totaal Breedte(m)	A$_{ladder\ (m2/m')}$	A$_{kabels\ (m2/m')}$ incl ladder
1	6,00	6,00	12*RG214+63*GLS	0,240	0,100	0,340
2	6,00	12,00	12*RG214+63*GLS	0,240	0,100	0,340
3	6,00	18,00	12*RG214+63*GLS	0,240	0,100	0,340
4	6,00	24,00	12*RG214+63*GLS	0,240	0,100	0,340
5	6,00	30,00	9*RG214+36*GLS	0,180	0,100	0,280
6	6,00	36,00	6*RG214+36*GLS	0,169	0,100	0,269
7	4,00	40,00	3*RG214+18*GLS	0,096	0,100	0,196

X-richting						
element	Hoogte (m)	Hoogte t.o.v. mv. (m)	feeders (inch)	Kabels totaal Breedte(m)	A$_{ladder\ (m2/m')}$	A$_{kabels\ (m2/m')}$
1	6,00	6,00	12*RG214+63*GLS	0,107	0,050	0,157
2	6,00	12,00	12*RG214+63*GLS	0,107	0,050	0,157
3	6,00	18,00	12*RG214+63*GLS	0,107	0,050	0,157
4	6,00	24,00	12*RG214+63*GLS	0,107	0,050	0,157
5	6,00	30,00	9*RG214+36*GLS	0,107	0,050	0,157
6	6,00	36,00	6*RG214+36*GLS	0,107	0,050	0,157
7	4,00	40,00	3*RG214+18*GLS	0,096	0,050	0,146

Berekening Druk- en krachtcoëfficiënten

K_θ = 1 -- *(Voor de driekhoek mast formule B.3b art. B.2.2.1 NEN-EN 1993-3-1)*
C1 = 1,9 -- *(Voor de driekhoek mast B.2.2.2 NEN-EN 1993-3-1)*
C2 = 1,4 -- *(Voor de driekhoek mast B.2.2.2 NEN-EN 1993-3-1)*
$\sin(\psi)^2$= 1 -- *($\psi = 90^o$)*
K_A = 0,8 --*(Reductie factor Tabel B.2.2 NEN-EN 1993-3-1)*
$C_{f.A.0}$ = 1,2 --*(coefficient afhankelijk van mast type en Reynoldsgetal, Tabel B.2.1 NEN-EN 1993-3-1)*

Y-richting

element	$c_{f,0,f}$ [-]	$c_{f,0,c}$ [-]	$c_{f,0,c;,sup}$ [-]	A_f [mm2]	A_c [mm2]	$A_{c,sup}$ [mm2]	A_s [mm2]
1	2,14	1,32	1,10	0,00	3774569	0,00	3774569
2	2,06	1,29	1,11	0,00	3681366	0,00	3681366
3	2,08	1,30	1,10	0,00	2912135	0,00	2912135
4	1,97	1,27	1,12	0,00	2831667	0,00	2831667
5	2,00	1,28	1,11	0,00	2291733	0,00	2291733
6	1,88	1,26	1,14	0,00	2221272	0,00	2221272
7	1,76	1,61	1,40	0,00	1216275	0,00	1216275

element	$c_{f,s,0,c}$ [-]	A_A [mm2]	$c_{f,s}$ [-]	$\varphi = (A_S + A_A) / A$ [-]	$c_{f,A}$ [-]	$c_f = c_{f,s} + c_{f,A}$ [-]	$C_{tot} = c_f \cdot c_s \cdot c_d$ *[-]*
1	1,32	2040000	0,85	0,34	0,34	1,19	***1,22***
2	1,29	2040000	0,83	0,37	0,34	1,17	***1,21***
3	1,30	2040000	0,76	0,37	0,40	1,16	***1,19***
4	1,27	2040000	0,74	0,42	0,40	1,14	***1,17***
5	1,28	1680000	0,74	0,40	0,41	1,14	***1,18***
6	1,26	1614000	0,73	0,47	0,40	1,14	***1,17***
7	1,61	782000	0,98	0,83	0,38	1,36	***1,39***

X-richting

element	$c_{f,0,f}$ [-]	$c_{f,0,c}$ [-]	$c_{f,0,c;,sup}$ [-]	A_f [mm2]	A_c [mm2]	$A_{c,sup}$ [mm2]	A_s [mm2]
1	2,22	1,34	1,09	0,00	3621119	0,00	3621119
2	2,14	1,32	1,10	0,00	3540403	0,00	3540403
3	2,19	1,33	1,09	0,00	2792558	0,00	2792558
4	2,09	1,30	1,10	0,00	2722871	0,00	2722871
5	2,08	1,30	1,10	0,00	2209294	0,00	2209294
6	1,93	1,27	1,12	0,00	2148273	0,00	2148273
7	1,78	1,64	1,42	0,00	1175831	0,00	1175831

element	$c_{f,s,0,c}$ [-]	A_A [mm2]	$c_{f,s}$ [-]	$\varphi = (A_S + A_A) / A$ [-]	$c_{f,A}$ [-]	$c_f = c_{f,s} + c_{f,A}$ [-]	$C_{tot} = c_f \cdot c_s \cdot c_d$ *[-]*
1	1,34	939000	1,07	0,31	0,20	1,26	***1,30***
2	1,32	939000	1,04	0,34	0,20	1,24	***1,28***
3	1,33	939000	1,00	0,32	0,24	1,24	***1,27***
4	1,30	939000	0,97	0,36	0,25	1,21	***1,25***
5	1,30	939000	0,91	0,37	0,29	1,20	***1,23***
6	1,27	939000	0,88	0,44	0,29	1,17	***1,21***
7	1,64	582000	1,09	0,85	0,32	1,41	***1,45***

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Berekening Bouwwerkfactor

h=	40,0	m
Windgebied :	o	
Omgeving :	1	
z_0	*0,2*	
z_{min}	*4,0*	
k_r	0,21	
c_r	1,11	
c_0	1	
V_b	29,5	
V_m	32,72	
I_v	0,19	
P_w =	1,55	

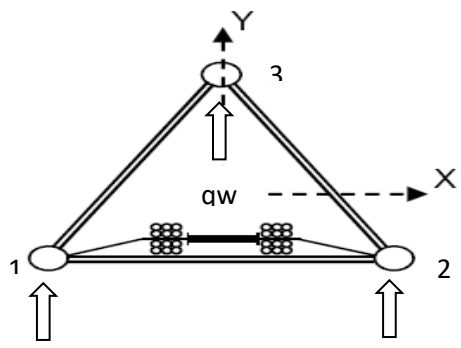
Bepaling van eigenfrequentie, meewerkende massa en Stijfheid van de mast

(zie Over spannend staal construeren B hfd. 6 Dynamica)

Eigengewicht mast incl. antennes Σ Fz=	73,3	kN	*(zie Matrix uitvoer bijlage 1)*
Eigengewicht feeders =	35,6	kN	
l=	40,0	m	
$q_{eg.mast}$=	2,721	KN/m	
$q_{eg.mast}$=	2721	N/m	
f_{max} =	0,082	m	*(verplaatsing t.g.v. EG vakwerk zie Matrix uitvoer bijlage 1)*
$EI = q_{eg,mast}*l^4/8*f_{max}$ =	1,0644E+10	N/m^2	
$k=8EI/l^3$ =	1330477	N/m	
fe =	2,388	hz	*(zie Matrix uitvoer bijlage 1)*
$me = k/(2\pi*f_e)^2$ =	5910	kg	

m_e =	147,7	kg/m	
h of z =	40,0	m	
b =	0,4070	*m (gemiddelde diameter randstaven en diagonalen)*	
$c_r(z)$=	1,11	--	
$c_r(z_s)$=	1,00	--	
$V_m(z)$ =	32,72	m/s	
$V_m(z_s)$ =	29,57	m/s	
$I_v(z)$ =	0,189	--	
$I_v(z_s)$ =	0,21	--	
z_s = h0 + 0,6 h =	24,00	m	*(Referentiehoogte of gemiddelde hoogte figuur 6.1)*
$\alpha = 0,67+0,05*\ln(z_0)$ =	0,59	--	
L_t =	300	m	*(Referentielengteschaal)*
zt =	200	m	*(Referentiehoogte)*
$L(z) = L_t * (z/z_t)^{\alpha} > z(min)$ =	116,16	m	
$L(z_s) = L_t * (z_s/z_t)^{\alpha} > z(min)$ =	85,96	m	
B^2 =	0,59	--	*(Achtergrondresponsfactor C.1 bijlage C NEN-EN1991-4-1)*
n =	2,388	Hz	
$f_L(z_s,n) = n*L(zs)/V_m(zs)$ =	6,94	--	
$c_{f,gem}$ =	1,46	--	*(gemiddelde cf, zie blad 5)*
δ_s =	0,02	--	*(NEN-EN 1991-1-4+A1+C2:2011 tabel F.2)*
δ_d =	0	--	
$\delta_a = c_f*\rho*b*V_m(z_s)/(2*n*m_e)$	0,031		
$\delta = \delta_s + \delta_a + \delta_d$ =	0,051		
$S_L(z,n) = 6,8*f_L(z,n)/(1+10,2*f_L(z,n))^{5/3}$ =	0,04	--	
G_y	0,50	--	*(Opgegeven in bijlage C.2 NEN-EN 1991-4-1)*
G_z	0,28	--	*(Opgegeven in bijlage C.2 NEN-EN 1991-4-1)*
C_y	11,50	--	*(Opgegeven in bijlage C.2 NEN-EN 1991-4-1)*
Cz	11,50	--	*(Opgegeven in bijlage C.2 NEN-EN 1991-4-1)*
Øy	0,38	--	
Øz	37,15	--	
K_s	0,09	--	*(Achtergrondresponsfactor C.3 bijlage C NEN-EN1991-4-1)*
R^2 =	0,32	--	*(Achtergrondresponsfactor C.2 bijlage C NEN-EN1991-4-1)*
$v = n*(R^2/(B^2 + R^2))^{0,5}$ =	1,42	Hz	
T =	600	sec	
$k_p = (2*\ln(v.T))^{0,5} + 0,6/(2*\ln(v.T))^{0,5}$ =	3,84	--	
$c_s c_d$ =	**1,03**	--	*(Conform Procedure 1 Bijlage C NEN-EN 1991-4-1)*

Berekening windbelasting vakwerkmast y-richting



	H (m)		Ø (mm)	t (mm)	Totale lengte (m)	Windbelasting $q_w = \Sigma A * C_{tot} * p_{w;gem} / h_{element}$ A (m^2)			
element 1:	6,00	staander	219,1	10	6,0				
h =	6,00	diagonaal	88,9	3,2	12,9				
			(mast)		$A_{s\ dia\ loodrecht}$	0,57	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,33	*$A_{s\ dia\ loodrecht}$ *TAN(30)*		
					$A_{s\ staander}$	1,31	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2$ =	1,02	*zie feeders A_A Y- richting*		
				Staander 1, 2	ΣA =	***3,24***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,98***	**-0,538 kN/m**	**-0,538 kN/m**	**-0,328 kN/m**
element 2:	6,00 - 12,00	staander	219,1	10	6,0				
h =	6,00	diagonaal	88,9	3,2	11,8				
			(mast)		$A_{s\ dia\ loodrecht}$	0,53	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,30	*$A_{s\ dia\ loodrecht}$ *TAN(30)*		
					$A_{s\ staander}$	1,31	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2$ =	1,02	*zie feeders A_A Y- richting*		
				Staander 1, 2	ΣA =	***3,16***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,92***	**-0,613 kN/m**	**-0,613 kN/m**	**-0,372 kN/m**
element 3:	12,00 - 18,00	staander	168,3	8	6,0				
h =	6,00	diagonaal	82,5	3,2	10,8				
			(mast)		$A_{s\ dia\ loodrecht}$	0,45	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,26	*$A_{s\ dia\ loodrecht}$ *TAN(30)*		
					$A_{s\ staander}$	1,01	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2$ =	1,02	*zie feeders A_A Y- richting*		
				Staander 1, 2	ΣA =	***2,73***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,53***	**-0,628 kN/m**	**-0,628 kN/m**	**-0,351 kN/m**
element 4:	18,00 - 24,00	staander	168,3	8	6,0				
h =	6,00	diagonaal	82,5	3,2	9,8				
			(mast)		$A_{s\ dia\ loodrecht}$	0,41	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,23	*$A_{s\ dia\ loodrecht}$ *TAN(30)*		
					$A_{s\ staander}$	1,01	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2$ =	1,02	*zie feeders A_A Y- richting*		
				Staander 1, 2	ΣA =	***2,67***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,48***	**-0,674 kN/m**	**-0,674 kN/m**	**-0,373 kN/m**
element 5:	24,00 - 30,00	staander	139,7	5	6,0				
h =	6,00	diagonaal	60,3	2,9	10,2				
			(mast)		$A_{s\ dia\ loodrecht}$	0,31	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,18	*$A_{s\ dia\ loodrecht}$ *TAN(30)*		
					$A_{s\ staander}$	0,84	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2$ =	0,84	*zie feeders A_A Y- richting*		
				Staander 1, 2	ΣA =	***2,16***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,19***	**-0,590 kN/m**	**-0,590 kN/m**	**-0,325 kN/m**
element 6:	30,00 - 36,00	staander	139,7	5	6,0				
h =	6,00	diagonaal	60,3	2,9	9,0				
			(mast)		$A_{s\ dia\ loodrecht}$	0,27	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,16	*$A_{s\ dia\ loodrecht}$ *TAN(30)*		
					$A_{s\ staander}$	0,84	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2$ =	0,81	*zie feeders A_A Y- richting*		
				Staander 1, 2	ΣA =	***2,07***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,15***	**-0,594 kN/m**	**-0,594 kN/m**	**-0,330 kN/m**

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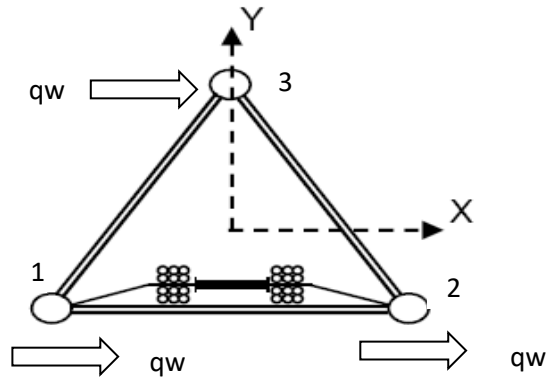
element 7:	36,00 - 40,00	staander	114,3	5	4,0					
h =	4,00	diagonaal	48,3	2,6	6,3					
			(mast)		$A_{s\ dia\ loodrecht}$	0,15	*Ø/1000 x Totale lengte dia /2*			
					$A_{s\ dia\ schuin}$	0,09	*$A_{s\ dia\ loodrecht}$ *TAN(30)*			
					$A_{s\ staander}$	0,46	*Ø/1000 x Totale lengte staander*			
			(kabels)		A_A / 2 =	0,39	*zie feeders A_A Y- richting*			
				Staander 1, 2	ΣA =	***1,09***		stander 1	stander 2	stander 3
				Staander 3	ΣA =	***0,63***		**-0,587 kN/m**	**-0,587 kN/m**	**-0,341 kN/m**

Berekening windbelasting vakwerkmast x-richting



	H (m)		Ø (mm)	t (mm)	Totale lengte (m)	Windbelasting $q_w = \Sigma A * C_{tot} * p_{w;gem} / h_{element}$ A (m^2)			
element 1:	6,00	staander	219,1	10	7,5				
h =	7,50	diagonaal	88,9	3,2	12,9				
			(mast)		$A_{s\ dia\ loodrecht}$	0,57	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,50	*$A_{s\ dia\ loodrecht}$ *COS(30)*		
					$A_{s\ staander}$	1,64	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2 =$	0,47	*zie feeders A_A X-richting*		
				Staander 1, 2	ΣA =	***2,61***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***2,64***	**0,368 kN/m**	**0,368 kN/m**	**0,372 kN/m**
element 2:	6,00 - 12,00	staander	219,1	10	6,0				
h =	6,00	diagonaal	88,9	3,2	11,8				
			(mast)		$A_{s\ dia\ loodrecht}$	0,53	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,46	*$A_{s\ dia\ loodrecht}$ *COS(30)*		
					$A_{s\ staander}$	1,31	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2 =$	0,47	*zie feeders A_A X-richting*		
				Staander 1, 2	ΣA =	***2,24***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***2,23***	**0,459 kN/m**	**0,459 kN/m**	**0,456 kN/m**
element 3:	12,00 - 18,00	staander	168,3	8	6,0				
h =	6,00	diagonaal	82,5	3,2	10,8				
			(mast)		$A_{s\ dia\ loodrecht}$	0,45	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,39	*$A_{s\ dia\ loodrecht}$ *COS(30)*		
					$A_{s\ staander}$	1,01	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2 =$	0,47	*zie feeders A_A X-richting*		
				Staander 1, 2	ΣA =	***1,87***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,78***	**0,459 kN/m**	**0,459 kN/m**	**0,438 kN/m**
element 4:	18,00 - 24,00	staander	168,3	8	6,0				
h =	6,00	diagonaal	82,5	3,2	9,8				
			(mast)		$A_{s\ dia\ loodrecht}$	0,41	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,35	*$A_{s\ dia\ loodrecht}$ *COS(30)*		
					$A_{s\ staander}$	1,01	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2 =$	0,47	*zie feeders A_A X-richting*		
				Staander 1, 2	ΣA =	***1,83***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,71***	**0,491 kN/m**	**0,491 kN/m**	**0,459 kN/m**
element 5:	24,00 - 30,00	staander	139,7	5	6,0				
h =	6,00	diagonaal	60,3	2,9	10,2				
			(mast)		$A_{s\ dia\ loodrecht}$	0,31	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,27	*$A_{s\ dia\ loodrecht}$ *COS(30)*		
					$A_{s\ staander}$	0,84	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2 =$	0,47	*zie feeders A_A X-richting*		
				Staander 1, 2	ΣA =	***1,57***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,37***	**0,449 kN/m**	**0,449 kN/m**	**0,391 kN/m**
element 6:	30,00 - 36,00	staander	139,7	5	6,0				
h =	6,00	diagonaal	60,3	2,9	9,0				
			(mast)		$A_{s\ dia\ loodrecht}$	0,27	*Ø/1000 x Totale lengte dia /2*		
					$A_{s\ dia\ schuin}$	0,24	*$A_{s\ dia\ loodrecht}$ *COS(30)*		
					$A_{s\ staander}$	0,84	*Ø/1000 x Totale lengte staander*		
			(kabels)		$A_A / 2 =$	0,47	*zie feeders A_A X-richting*		
				Staander 1, 2	ΣA =	***1,54***	stander 1	stander 2	stander 3
				Staander 3	ΣA =	***1,31***	**0,457 kN/m**	**0,457 kN/m**	**0,388 kN/m**

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element 7:	36,00 - 40,00	staander	114,3	5	4,0					
h =	4,00	diagonaal	48,3	2,6	6,3					
			(mast)		$A_{s\ dia\ loodrecht}$	0,15	*Ø/1000 x Totale lengte dia /2*			
					$A_{s\ dia\ schuin}$	0,13	*$A_{s\ dia\ loodrecht}$ *COS(30)*			
					$A_{s\ staander}$	0,46	*Ø/1000 x Totale lengte staander*			
			(kabels)		A_A / 2 =	0,29	*zie feeders A_A X-richting*			
				Staander 1, 2	ΣA =	***0,88***		stander 1	stander 2	stander 3
				Staander 3	ΣA =	***0,72***		**0,495 kN/m**	**0,495 kN/m**	**0,404 kN/m**

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Berekening windbelasting antennes e.d.:

A is incl oppervlakte uithouders ca. 10%

Omschrijving:	A (m^2)	A incl. staander (m^2)	A excl. staander (m^2)	h (m)	Iv	Vm	$P_{w;rep}$ (kN/m^2)
3x VF dish Ø600	0,150	0,165	0,165	40,0	0,19	32,7	1,55
3x VF antenna ASI4518R10v06 + 15*RRU	1,073	1,180	0,863	37,0	0,19	32,5	1,54
3x VF antenna AIR6488	0,388	0,427	0,303	35,0	0,21	29,4	1,34
3x KPN dish Ø300	0,100	0,110	0,110	34,0	0,19	31,7	1,49
3x KPN antenna 80020892 +6*RRU	0,877	0,964	0,588	31,0	0,20	31,4	1,47
3x KPN antenna 80020892 +6*RRU	0,877	0,964	0,588	28,0	0,20	30,8	1,43
3x TM dish Ø600	0,150	0,165	0,165	27,0	0,20	30,3	1,39
3x TM antenna AAU5972	0,536	0,590	0,418	25,0	0,21	30,0	1,37
3x TM antenna AHP4518R5V06 +6xRRU	1,124	1,236	0,920	22,0	0,21	29,4	1,34
3x OLO dish Ø600	0,150	0,165	0,165	21,0	0,21	28,7	1,29
3x OLO antenna ASI4518R10v06 + 6*RRU	1,110	1,221	0,755	18,0	0,22	28,2	1,26

staander	Ø (mm)	h [m]	Knooppunt			H hart antenne (m)	*Per mast deel excl staander* $F_{w;rep}$ (kN)	*Per mast deel incl staander* $F_{w;rep}$ (kN)
			91	92	93	40,0	0,51	0,51
1	219,1	6,00	88	89	90	38,4	1,33	1,81
2	219,1	6,00 - 12,00	79	80	81	35,4	0,40	0,57
3	168,3	12,00 - 18,00	73	74	75	34,0	0,33	0,33
4	168,3	18,00 - 24,00	70	71	72	32,3	0,86	1,41
5	139,7	24,00 - 30,00	64	65	66	29,3	0,84	1,37
6	139,7	30,00 - 36,00	58	59	60	27,0	0,46	0,46
7	114,3	36,00 - 40,00	55	56	57	25,8	0,57	0,81
			49	50	51	23,4	1,23	1,65
			43	44	45	21,0	0,43	0,43
			40	41	42	19,4	0,95	1,54

Antennetype: ***VF*** **ASI4518R10v06**
Windlasten antennes: Rearside: *1320* N
Lateral: *380* N
Frontal: *1320* N
Windsnelheid (v_w) *150* km/h
Stuwdruk (p_w)= 1/2 * 1,25 * (v_w/3,6)^2 = *1085* N/m^2 h= 2,769 m

Uit de gegeven windlast en de windsnelheid kan de effectieve antenne-oppervlakte bepaald worden.
1 antenens: $A_{w,UMTS}$ = Gem. windload / p_w = *0,928* m^2

incl. 5 x RRU 2217 (afm.351x298x115mm; 14 kg)

De RRU's worden achter de antennes geplaatst.

Rearside en Frontal: *extra windvang, 0,351x0,298=* 0,10460 m^2
Lateral: *extra windvang, 0,115*0,351 =* 0,04037 m^2

Antennetype: ***VF*** **AIR6488**
Windlasten antennes: Rearside: *692* N
Frontal: *151* N
Windsnelheid (v_w) *150* km/h
Stuwdruk (p_w)= 1/2 * 1,25 * (v_w/3,6)^2 = *1085* N/m^2 h= 0,893 m

Uit de gegeven windlast en de windsnelheid kan de effectieve antenne-oppervlakte bepaald worden.
1 antenens: $A_{w,UMTS}$ = Gem. windload / p_w = *0,388* m^2

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Antennetype: ***KPN***	**80020892**				
Windlasten antennes:	Rearside:	*930*	N		
	Lateral:	*400*	N		
	Frontal:	*930*	N		
Windsnelheid (v_w)		*150*	km/h		
Stuwdruk (p_w)= 1/2 * 1,25 * (v_w/3,6)^2 =		*1085*	N/m^2	h=	2,693 m

Uit de gegeven windlast en de windsnelheid kan de effectieve antenne-oppervlakte bepaald worden.

1 antenens: $A_{w,UMTS}$ = Gem. windload / p_w = *0,694* m^2

incl. 2 x RRU (afm.485x380x170mm; 25 kg)

De RRU's worden achter de antennes geplaatst.

Rearside en Frontal:	*extra windvang, 0,48x0,38=*	0,18240 m^2
Lateral:	*extra windvang, 0,17*0,485 =*	0,08245 m^2

Antennetype: ***TM***	**AAU5972**				
Windlasten antennes:	Rearside:	*820*	N		
	Lateral:	*335*	N		
	Frontal:	*590*	N		
Windsnelheid (v_w)		*150*	km/h		
Stuwdruk (p_w)= 1/2 * 1,25 * (v_w/3,6)^2 =		*1085*	N/m^2	h=	1,500 m

Uit de gegeven windlast en de windsnelheid kan de effectieve antenne-oppervlakte bepaald worden.

1 antenens: $A_{w,UMTS}$ = Gem. windload / p_w = *0,536* m^2

Antennetype: ***TM***	**AHP4518R5v06**				
Windlasten antennes:	Rearside:	*1305*	N		
	Lateral:	*390*	N		
	Frontal:	*1370*	N		
Windsnelheid (v_w)		*150*	km/h		
Stuwdruk (p_w)= 1/2 * 1,25 * (v_w/3,6)^2 =		*1085*	N/m^2	h=	2,769 m

Uit de gegeven windlast en de windsnelheid kan de effectieve antenne-oppervlakte bepaald worden.

1 antenens: $A_{w,UMTS}$ = Gem. windload / p_w = *0,942* m^2

incl. 2 x RRU (afm.485x380x170mm; 25 kg)

De RRU's worden achter de antennes geplaatst.

Rearside en Frontal:	*extra windvang, 0,48x0,38=*	0,18240 m^2
Lateral:	*extra windvang, 0,17*0,485 =*	0,08245 m^2

Antennetype: ***OLO***	**ASI4518R10v06**				
Windlasten antennes:	Rearside:	*1320*	N		
	Lateral:	*380*	N		
	Frontal:	*1320*	N		
Windsnelheid (v_w)		*150*	km/h		
Stuwdruk (p_w)= 1/2 * 1,25 * (v_w/3,6)^2 =		*1085*	N/m^2	h=	2,769 m

Uit de gegeven windlast en de windsnelheid kan de effectieve antenne-oppervlakte bepaald worden.

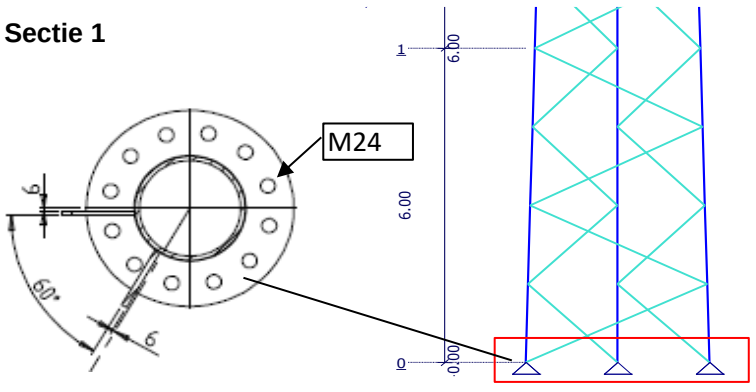
1 antenens: $A_{w,UMTS}$ = Gem. windload / p_w = *0,928* m^2

incl. 2 x RRU (afm.485x380x170mm; 25 kg)

De RRU's worden achter de antennes geplaatst.

Rearside en Frontal:	*extra windvang, 0,48x0,38=*	0,18240 m^2
Lateral:	*extra windvang, 0,17*0,485 =*	0,08245 m^2

Controle verbindingen staanders en diagonalen t.p.v. **Sectie 1**

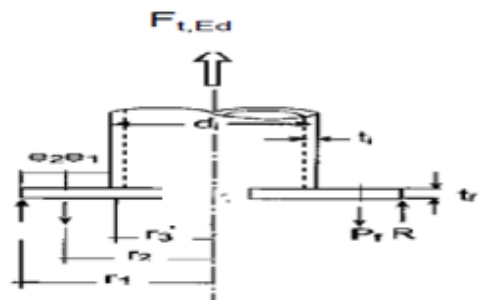


Controle ankers

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]		[--]	[N/mm^2]	[--]	[--]	[mm^2]	[mm^2]	[--]
1339,11		M24	8.8	800	12	draad	452	353	0,6

k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$			
[--]	[kN]	[kN]	Controle trek bout	u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ =	0,55 < 1,0 (ok)
0,9	1627	2440			

Controle flensplaat



Onder

$F_{t,Ed}$		d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3
[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
1339,11		219,1	10	30	159,55	104,6	0,42	2,42	5,28

t_{ben}	Staal	f_y	γ_m	e_1	e_2			
[mm]	[--]	[N/mm^2]	[--]	[mm]	[mm]			
22,4	S355	355	1,1	50	50	Controle plaat	u.c.= t_{ben} / t_{plaat}=	0,75 < 1,0 (ok)

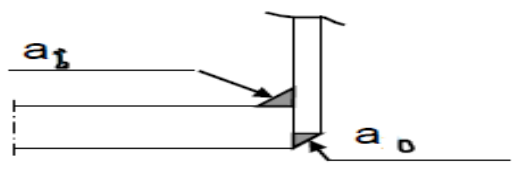
Boven

$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
1137,0	219,1	10	30	159,55	104,6	0,42	2,42	5,28	20,6

Staal	f_y	γ_m	e_1	e_2			
[--]	[N/mm^2]	[--]	[mm]	[mm]			
S355	355	1,1	50	50	Controle plaat	u.c.= t_{ben} / t_{plaat}=	0,69 < 1,0 (ok)

Controle lasverbindingen

$\tau_1 = \sigma_1 =$ $F_{Ed}/((a_1+a_2)*L_{las}*\sqrt{2})$
$L_{las} = \pi * d$
$\sigma_{Ed} = (\sigma_1^2 + 3*(\tau_1^2 + \tau_2^2))^{0,5}$



Randstaven	Onder								
$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]
1339		8	6	219,1	98	0	688	197	1,25

β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$			
[--]	[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]			
0,9	S355	510	453	367	Trek- of drukspanning las	u.c. = σ_{Ed} / $f_{u;s}$ =	0,43 < 1,0 (ok)
					Controle afschuiving las	u.c. = τ_1 / $f_{u;t}$ =	0,27 < 1,0 (ok)

Randstaven	Boven								
$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]
1137		8	6	219,1	83	0	688	167	1,25

β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$			
[--]	[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]			
0,9	S355	510	453	367	Trek- of drukspanning las	u.c. = σ_{Ed} / $f_{u;s}$ =	0,37 < 1,0 (ok)
					Controle afschuiving las	u.c. = τ_1 / $f_{u;t}$ =	0,23 < 1,0 (ok)

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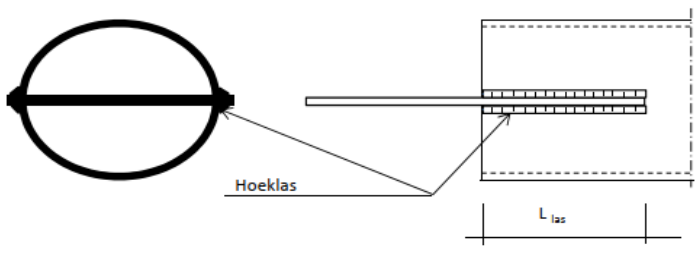
Las schetsplaten diagonalen sectie 1 t/m7, L_{las} maatgevend is 60 mm de maximale optredende belasting is 42,3 kN



Diagonalen

$F_{Ed,max}$	a_b	a_o	d_{dia}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}	β_w
[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]	[--]
66,5	4	0	88,9	196	0	60	392	1,25	0,9

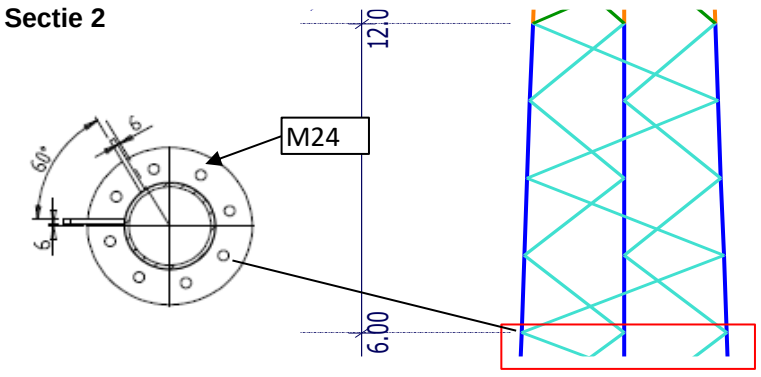
Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$
[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]
S355	510	453	367

Controle trek- of drukspanning las u.c. = σ_{Ed} / $f_{u;s}$ = 0,86 < 1,0 (ok)
Controle afschuiving las u.c. = τ_1 / $f_{u;t}$ = 0,53 < 1,0 (ok)

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[kN]		[--]	[N/mm^2]	[--]	[--]	[--]	[kN]
66,53		M24	8.8	800	1	draad	0,9	135,6

Controle trek bout u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ = 0,55 < 1,0 (ok)

Controle flensverbinding staanders en diagonalen t.p.v. **Sectie 2**

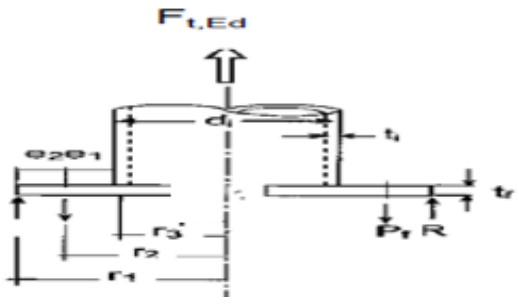


Controle ankers

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]		[--]	[N/mm^2]	[--]	[--]	[mm^2]	[mm^2]	[--]
724,5		M24	8.8	800	8	draad	452	353	0,6

k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$
[--]	[kN]	[kN]
0,9	1084	1627

Controle trek bout u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ = 0,45 < 1,0 (ok)



Controle flensplaat

Onder

$F_{t,Ed}$		d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3
[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
1087,6		219,1	10	30	159,55	104,6	0,42	2,42	5,28

t_{ben}	Staal	f_y	γ_m	e_1	e_2			
[mm]	[--]	[N/mm^2]	[--]	[mm]	[mm]			
20,2	S355	355	1,1	50	50	Controle plaat	u.c.= t_{ben} / t_{plaat}=	0,67 < 1,0 (ok)

Boven

$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
914,7	219,1	10	30	159,55	104,6	0,42	2,42	5,28	18,5

Staal	f_y	γ_m	e_1	e_2			
[--]	[N/mm^2]	[--]	[mm]	[mm]			
S355	355	1,1	50	50	Controle plaat	u.c.= t_{ben} / t_{plaat}=	0,62 < 1,0 (ok)

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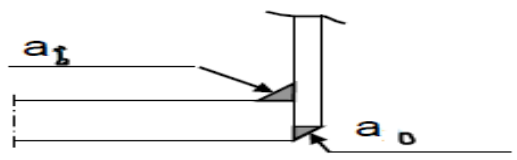
Controle lasverbindingen

$\tau_1 = \sigma_1 =$ $F_{Ed}/((a_1+a_2)*L_{las}*\sqrt{2})$
$L_{las} = \pi * d$
$\sigma_{Ed} = (\sigma_1^2 + 3*(\tau_1^2 + \tau_2^2))^{0,5}$



Randstaven	Onder								
$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm²]	[N/mm²]	[mm]	[N/mm²]	[--]
1087,6		8	6	219,1	80	0	688	160	1,25
β_w	**Staal**	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm²]	[N/mm²]	[N/mm²]					
0,9	S355	510	453	367					

Trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u;s}$ = 0,35 < 1,0 (ok)
Controle afschuiving las u.c. = $\tau_1 / f_{u;t}$ = 0,22 < 1,0 (ok)

Randstaven	Boven								
$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm²]	[N/mm²]	[mm]	[N/mm²]	[--]
914,7		8	6	219,1	67	0	688	134	1,25
β_w	**Staal**	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm²]	[N/mm²]	[N/mm²]					
0,9	S355	510	453	367					

Trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u;s}$ = 0,30 < 1,0 (ok)
Controle afschuiving las u.c. = $\tau_1 / f_{u;t}$ = 0,18 < 1,0 (ok)

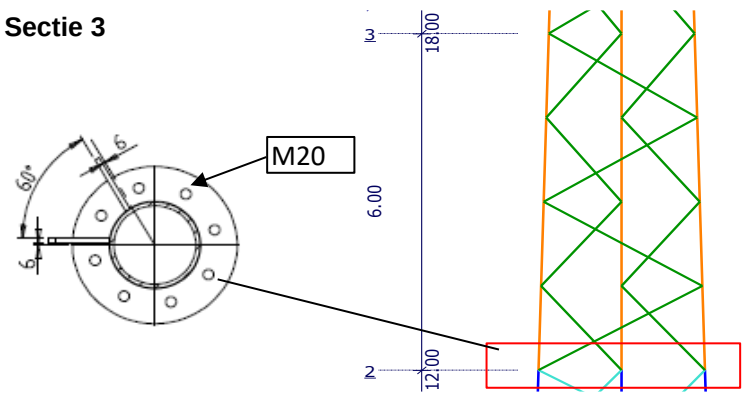
Diagonalen									
$F_{Ed,max}$	a_b	a_o	d_{dia}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}	β_w
[kN]	[mm]	[mm]	[mm]	[N/mm²]	[N/mm²]	[mm]	[N/mm²]	[--]	[--]
62,0	4	0	88,9	183	0	60	365	1,25	0,9
Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$						
[--]	[N/mm²]	[N/mm²]	[N/mm²]						
S355	510	453	367						

Controle trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u;s}$ = 0,81 < 1,0 (ok)
Controle afschuiving las u.c. = $\tau_1 / f_{u;t}$ = 0,50 < 1,0 (ok)

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[kN]		[--]	[N/mm²]	[--]	[--]	[--]	[kN]
61,97		M24	8.8	800	1	draad	0,9	135,6

Controle trek bout u.c.= $F_{t,Ed} / \Sigma F_{t,Rd}$ = 0,51 < 1,0 (ok)

Controle flensverbinding staanders en diagonalen t.p.v. **Sectie 3**

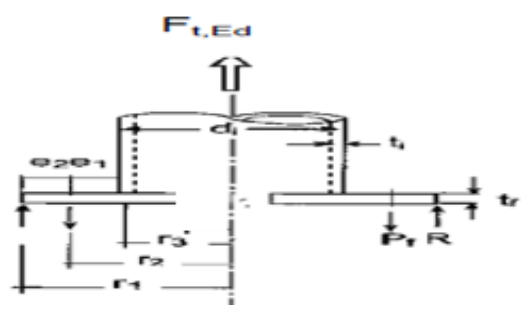


Controle ankers

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]		[--]	[N/mm²]	[--]	[--]	[mm²]	[mm²]	[--]
856,3		M20	8.8	800	8	draad	314	245	0,6
k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$							
[--]	[kN]	[kN]							
0,9	753	1129							

Controle trek bout u.c.= $F_{t,Ed} / \Sigma F_{t,Rd}$ = 0,76 < 1,0 (ok)

Controle flensplaat



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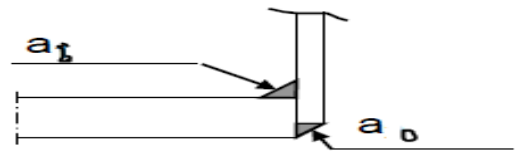
$F_{t,Ed}$		d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3
[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
856,3		168,3	8	30	124,15	80,2	0,44	2,44	5,12
t_{ben}	Staal	f_y	γ_m	e_1	e_2				
[mm]	[--]	[N/mm²]	[--]	[mm]	[mm]				
18,2	S355	355	1,1	40	40	Controle plaat	u.c.= t_{ben} / t_{plaat}=	0,61	< 1,0 (ok)

Boven

$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
673,8	168,3	8	30	124,15	80,2	0,44	2,44	5,12	16,1
Staal	f_y	γ_m	e_1	e_2					
[--]	[N/mm²]	[--]	[mm]	[mm]					
S355	355	1,1	40	40	Controle plaat	u.c.= t_{ben} / t_{plaat}=	0,54	< 1,0 (ok)	

Controle lasverbindingen

$\tau_1 = \sigma_1 =$ $F_{Ed}/((a_1+a_2)*L_{las}*\sqrt{2})$
$L_{las} = \pi * d$
$\sigma_{Ed} = (\sigma_1^2 + 3*(\tau_1^2 + \tau_2^2))^{0,5}$



Randstaven **Onder**

$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm²]	[N/mm²]	[mm]	[N/mm²]	[--]
856,3		6	6	168,3	95	0	529	191	1,25
β_w	**Staal**	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm²]	[N/mm²]	[N/mm²]					
0,9	S355	510	453	367	Trek- of drukspanning las	u.c. = σ_{Ed} / $f_{u;s}$ =	0,42	< 1,0 (ok)	
					Controle afschuiving las	u.c. = τ_1 / $f_{u;t}$ =	0,26	< 1,0 (ok)	

Randstaven **Boven**

$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm²]	[N/mm²]	[mm]	[N/mm²]	[--]
673,8		6	6	168,3	75	0	529	150	1,25
β_w	**Staal**	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm²]	[N/mm²]	[N/mm²]					
0,9	S355	510	453	367	Trek- of drukspanning las	u.c. = σ_{Ed} / $f_{u;s}$ =	0,33	< 1,0 (ok)	
					Controle afschuiving las	u.c. = τ_1 / $f_{u;t}$ =	0,20	< 1,0 (ok)	

Diagonalen

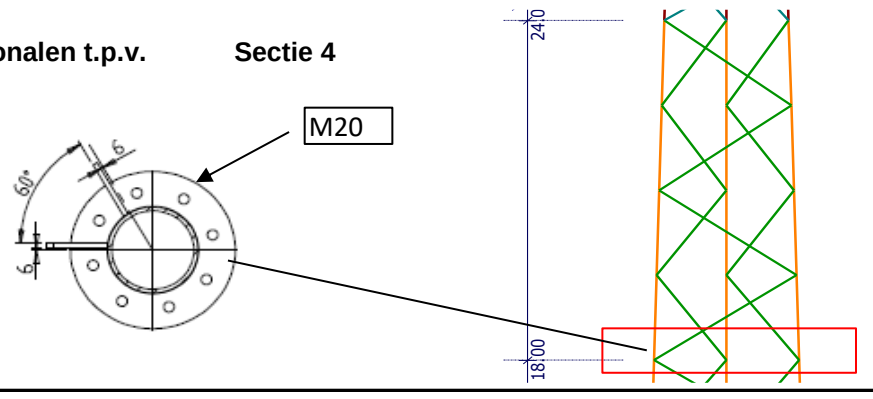
$F_{Ed,max}$	a_b	a_o	d_{dia}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}	β_w
[kN]	[mm]	[mm]	[mm]	[N/mm²]	[N/mm²]	[mm]	[N/mm²]	[--]	[--]
60,0	4	0	82,5	177	0	60	353	1,25	0,9
Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$						
[--]	[N/mm²]	[N/mm²]	[N/mm²]						
S355	510	453	367	Controle trek- of drukspanning las	u.c. = σ_{Ed} / $f_{u;s}$ =	0,78	< 1,0 (ok)		
				Controle afschuiving las	u.c. = τ_1 / $f_{u;t}$ =	0,48	< 1,0 (ok)		

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[kN]		[--]	[N/mm²]	[--]	[--]	[--]	[kN]
59,99		M20	8.8	800	1	draad	0,9	94,1

Controle trek bout u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ = 0,71 < 1,0 (ok)

Controle flensverbinding staanders en diagonalen t.p.v. Sectie 4

Controle ankers



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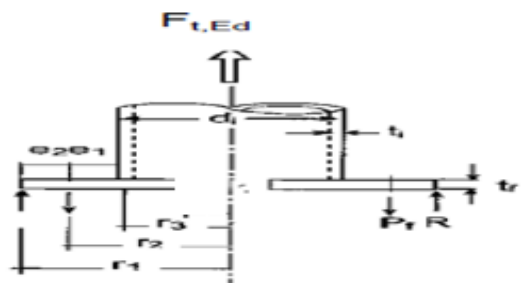
$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]		[--]	[N/mm^2]	[--]	[--]	[mm^2]	[mm^2]	[--]
611,4		M20	8.8	800	8	draad	314	245	0,6

k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$			
[--]	[kN]	[kN]	Controle trek bout	u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ =	0,54 < 1,0 (ok)
0,9	753	1129			

Controle flensplaat



Onder

$F_{t,Ed}$		d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3
[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
611,4		168,3	8	25	124,15	80,2	0,44	2,44	5,12

t_{ben}	Staal	f_y	γ_m	e_1	e_2			
[mm]	[--]	[N/mm^2]	[--]	[mm]	[mm]			
15,3	S355	355	1,1	40	40	Controle plaat	u.c.= t_{ben} / t_{plaat}=	0,61 < 1,0 (ok)

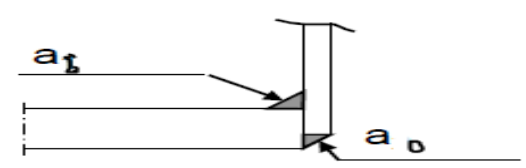
Boven

$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
431,5	168,3	8	25	124,15	80,2	0,44	2,44	5,12	12,9

Staal	f_y	γ_m	e_1	e_2			
[--]	[N/mm^2]	[--]	[mm]	[mm]			
S355	355	1,1	40	40	Controle plaat	u.c.= t_{ben} / t_{plaat}=	0,52 < 1,0 (ok)

Controle lasverbindingen

$\tau_1 = \sigma_1 =$ F_{Ed} /((a$_1$+a$_2$)*L$_{las}$*$\sqrt{2}$)
$L_{las} = \pi * d$
$\sigma_{Ed} = (\sigma_1^2 + 3*(\tau_1^2 + \tau_2^2))^{0,5}$



Randstaven Onder

$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]
611,4		6	6	168,3	68	0	529	136	1,25

β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$			
[--]	[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]			
0,9	S355	510	453	367	Trek- of drukspanning las	u.c. = σ_{Ed} / $f_{u;s}$ =	0,30 < 1,0 (ok)
					Controle afschuiving las	u.c. = τ_1 / $f_{u;t}$ =	0,19 < 1,0 (ok)

Randstaven Boven

$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]
431,5		6	6	168,3	48	0	529	96	1,25

β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$			
[--]	[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]			
0,9	S355	510	453	367	Trek- of drukspanning las	u.c. = σ_{Ed} / $f_{u;s}$ =	0,21 < 1,0 (ok)
					Controle afschuiving las	u.c. = τ_1 / $f_{u;t}$ =	0,13 < 1,0 (ok)

Diagonalen

$F_{Ed,max}$	a_b	a_o	d_{dia}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}	β_w
[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]	[--]
59,2	4	0	82,5	175	0	60	349	1,25	0,9

Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$			
[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]			
S355	510	453	367	Controle trek- of drukspanning las	u.c. = σ_{Ed} / $f_{u;s}$ =	0,77 < 1,0 (ok)
				Controle afschuiving las	u.c. = τ_1 / $f_{u;t}$ =	0,48 < 1,0 (ok)

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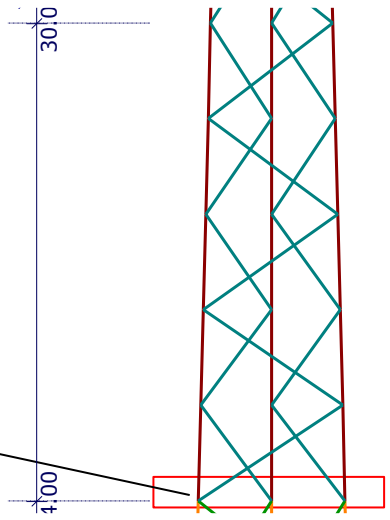
$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[kN]		[--]	[N/mm^2]	[--]	[--]	[--]	[kN]
59,23		M20	8.8	800	1	draad	0,9	94,1

Controle trek bout u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ = 0,70 < 1,0 (ok)

Controle flensverbinding staanders en diagonalen t.p.v. **Sectie 5**

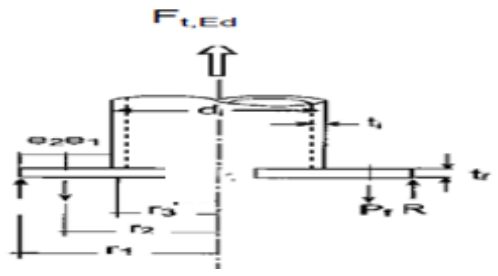


Controle ankers

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]		[--]	[N/mm^2]	[--]	[--]	[mm^2]	[mm^2]	[--]
380,7		M20	8.8	800	8	draad	314	245	0,6

k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$
[--]	[kN]	[kN]
0,9	753	1129

Controle trek bout u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ = 0,34 < 1,0 (ok)



Controle flensplaat

Onder

$F_{t,Ed}$		d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3
[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
380,7		139,7	5	25	109,85	67,4	0,49	2,49	4,65

t_{ben}	Staal	f_y	γ_m	e_1	e_2
[mm]	[--]	[N/mm^2]	[--]	[mm]	[mm]
12,7	S355	355	1,1	40	40

Controle plaat u.c.= t_{ben} / t_{plaat}= 0,51 < 1,0 (ok)

Boven

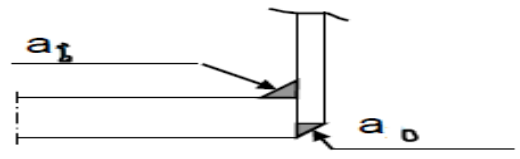
$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
219,5	139,7	5	25	109,85	67,4	0,49	2,49	4,65	9,7

Staal	f_y	γ_m	e_1	e_2
[--]	[N/mm^2]	[--]	[mm]	[mm]
S355	355	1,1	40	40

Controle plaat u.c.= t_{ben} / t_{plaat}= 0,39 < 1,0 (ok)

Controle lasverbindingen

$\tau_1 = \sigma_1 =$ F_{Ed} /((a$_1$+a$_2$)*L_{las}*√2)
$L_{las} = \pi$* d
σ_{Ed}= (σ_1^2 + 3*(τ_1^2 + τ_2^2))^{0,5}



Randstaven	Onder								
$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	4	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]
380,7		6	6	139,7	51	0	439	102	1,25

β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$
[--]	[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]
0,9	S355	510	453	367

Trek- of drukspanning las u.c. = σ_{Ed} / $f_{u;s}$ = 0,23 < 1,0 (ok)
Controle afschuiving las u.c. = τ_1 / $f_{u;t}$ = 0,14 < 1,0 (ok)

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Randstaven	Boven								
$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm²]	[N/mm²]	[mm]	[N/mm²]	[--]
219,5		6	6	139,7	29	0	439	59	1,25
β_w	**Staal**	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm²]	[N/mm²]	[N/mm²]					
0,9	S355	510	453	367					

Trek- of drukspanning las u.c. = σ_{Ed} / $f_{u;s}$ = 0,13 < 1,0 (ok)
Controle afschuiving las u.c. = τ_1 / $f_{u;t}$ = 0,08 < 1,0 (ok)

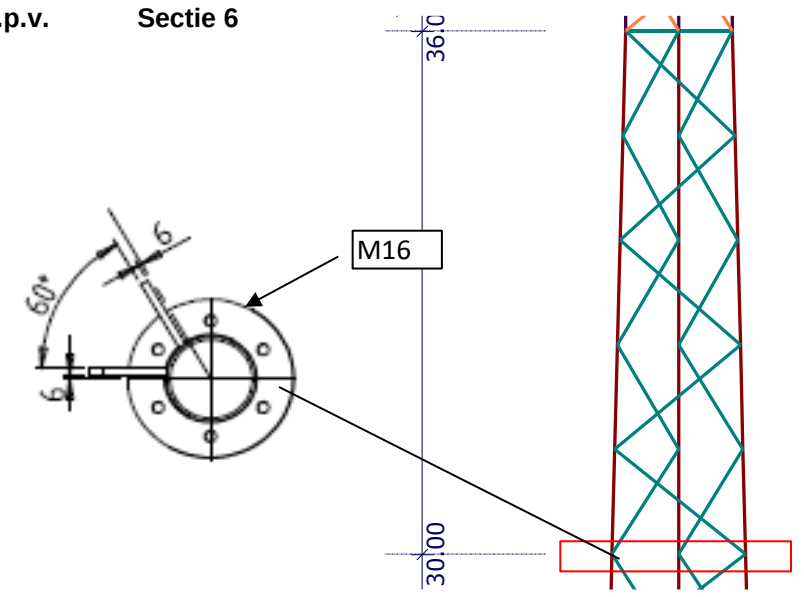
Diagonalen									
$F_{Ed,max}$	a_b	a_o	d_{dia}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}	β_w
[kN]	[mm]	[mm]	[mm]	[N/mm²]	[N/mm²]	[mm]	[N/mm²]	[--]	[--]
43,6	4	0	60,3	128	0	60	257	1,25	0,9
Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$						
[--]	[N/mm²]	[N/mm²]	[N/mm²]						
S355	510	453	367						

Controle trek- of drukspanning las u.c. = σ_{Ed} / $f_{u;s}$ = 0,57 < 1,0 (ok)
Controle afschuiving las u.c. = τ_1 / $f_{u;t}$ = 0,35 < 1,0 (ok)

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[kN]		[--]	[N/mm²]	[--]	[--]	[--]	[kN]
43,59		M20	8.8	800	1	draad	0,9	94,1

Controle trek bout u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ = 0,51 < 1,0 (ok)

Controle flensverbinding staanders en diagonalen t.p.v. **Sectie 6**

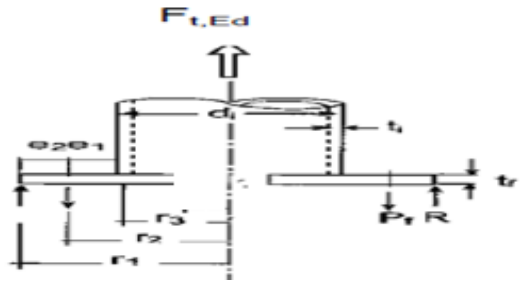


Controle ankers

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]		[--]	[N/mm²]	[--]	[--]	[mm²]	[mm²]	[--]
181,6		M16	8.8	800	6	draad	201	157	0,6
k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$							
[--]	[kN]	[kN]							
0,9	362	543							

Controle trek bout u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ = 0,33 < 1,0 (ok)

Controle flensplaat



Onder									
$F_{t,Ed}$		d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3
[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
181,6		139,7	5	20	109,85	67,4	0,49	2,49	4,65
t_{ben}	Staal	f_y	γ_m	e_1	e_2				
[mm]	[--]	[N/mm²]	[--]	[mm]	[mm]				
8,8	S355	355	1,1	40	40				

Controle plaat u.c.= t_{ben} / t_{plaat}= 0,44 < 1,0 (ok)

VFZ

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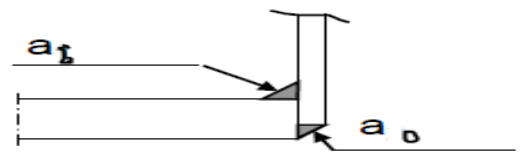
Boven									
$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
65,5	139,7	5	20	109,85	67,4	0,49	2,49	4,65	5,3
Staal	f_y	γ_m	e_1	e_2					
[--]	[N/mm^2]	[--]	[mm]	[mm]					
S355	355	1,1	40	40					

Controle plaat u.c.= t_{ben} / t_{plaat}= 0,26 < 1,0 (ok)

Controle lasverbindingen

$\tau_1 = \sigma_1 =$ $F_{Ed}/((a_1+a_2)*L_{las}*\sqrt{2})$
$L_{las} = \pi * d$
$\sigma_{Ed} = (\sigma_1^2 + 3*(\tau_1^2 + \tau_2^2))^{0,5}$



Randstaven	Onder								
$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]
181,6		5	4	139,7	33	0	439	65	1,25
β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]					
0,9	S355	510	453	367					

Trek- of drukspanning las u.c. = σ_{Ed} / $f_{u;s}$ = 0,14 < 1,0 (ok)
Controle afschuiving las u.c. = τ_1 / $f_{u;t}$ = 0,09 < 1,0 (ok)

Randstaven	Boven								
$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]
65,5		5	4	139,7	12	0	439	23	1,25
β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]					
0,9	S355	510	453	367					

Trek- of drukspanning las u.c. = σ_{Ed} / $f_{u;s}$ = 0,05 < 1,0 (ok)
Controle afschuiving las u.c. = τ_1 / $f_{u;t}$ = 0,03 < 1,0 (ok)

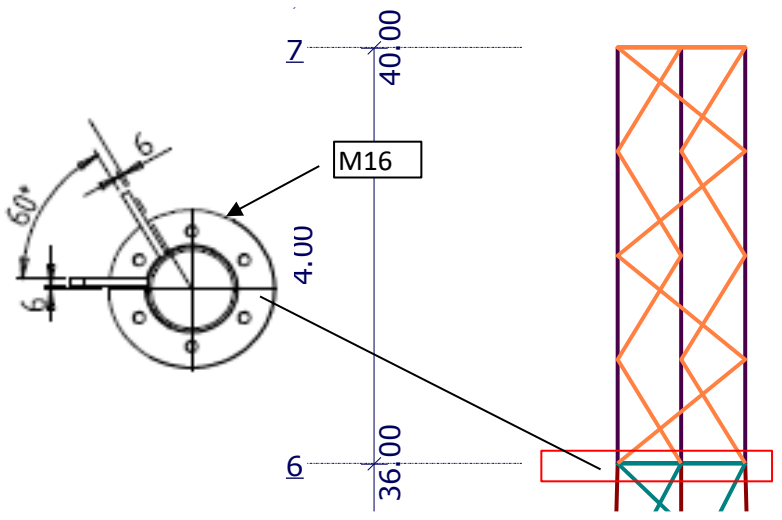
Diagonalen									
$F_{Ed,max}$	a_b	a_o	d_{dia}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}	β_w
[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]	[--]
31,9	4	0	60,3	94	0	60	188	1,25	0,9
Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$						
[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]						
S355	510	453	367						

Controle trek- of drukspanning las u.c. = σ_{Ed} / $f_{u;s}$ = 0,42 < 1,0 (ok)
Controle afschuiving las u.c. = τ_1 / $f_{u;t}$ = 0,26 < 1,0 (ok)

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[kN]		[--]	[N/mm^2]	[--]	[--]	[--]	[kN]
31,94		M20	8.8	800	1	draad	0,9	94,1

Controle trek bout u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ = 0,38 < 1,0 (ok)

Controle flensverbinding staanders en diagonalen t.p.v. Sectie 7



Controle ankers

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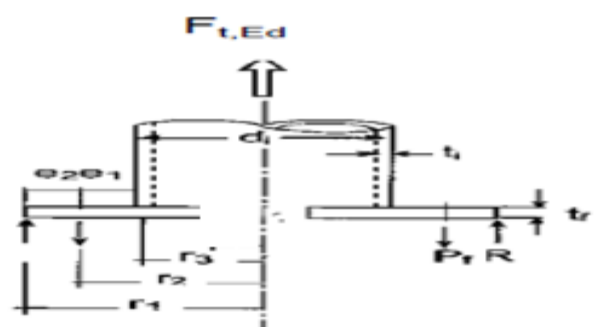
$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]		[--]	[N/mm^2]	[--]	[--]	[mm^2]	[mm^2]	[--]
43,7		M16	8.8	800	6	draad	201	157	0,6

k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$			
[--]	[kN]	[kN]	Controle trek bout	u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ =	0,08 < 1,0 (ok)
0,9	362	543			

Controle flensplaat

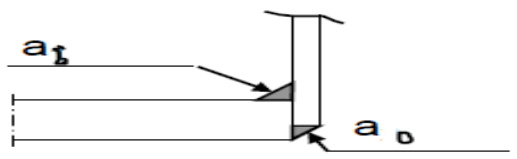


Onder

$F_{t,Ed}$		d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3
[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
43,7		114,3	5	20	92,15	54,7	0,52	2,52	4,39
t_{ben}	Staal	f_y	γ_m	e_1	e_2				
[mm]	[--]	[N/mm^2]	[--]	[mm]	[mm]				
4,4	S355	355	1,1	35	35	Controle plaat	u.c.= t_{ben} / t_{plaat}=	0,22	< 1,0 (ok)

Controle lasverbindingen

$\tau_1 = \sigma_1 =$ $F_{Ed}/((a_1+a_2)*L_{las}*\sqrt{2})$
$L_{las} = \pi * d$
$\sigma_{Ed} = (\sigma_1^2 + 3*(\tau_1^2 + \tau_2^2))^{0,5}$



Randstaven **Onder**

$F_{Ed,max}$		a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]
43,7		5	4	114,3	10	0	359	19	1,25
β_w	**Staal**	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]					
0,9	S355	510	453	367	Trek- of drukspanning las	u.c. = σ_{Ed} / $f_{u;s}$ =		0,04	< 1,0 (ok)
					Controle afschuiving las	u.c. = τ_1 / $f_{u;t}$ =		0,03	< 1,0 (ok)

Diagonalen

$F_{Ed,max}$	a_b	a_o	d_{dia}	$\tau_1 = \sigma_1$	τ_2 =	L_{las}	σ_{Ed}	γ_{M2}	β_w
[kN]	[mm]	[mm]	[mm]	[N/mm^2]	[N/mm^2]	[mm]	[N/mm^2]	[--]	[--]
16,5	4	0	48,3	49	0	60	97	1,25	0,9
Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$						
[--]	[N/mm^2]	[N/mm^2]	[N/mm^2]						
S355	510	453	367	Controle trek- of drukspanning las		u.c. = σ_{Ed} / $f_{u;s}$ =		0,21	< 1,0 (ok)
				Controle afschuiving las		u.c. = τ_1 / $f_{u;t}$ =		0,13	< 1,0 (ok)

$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[kN]		[--]	[N/mm^2]	[--]	[--]	[--]	[kN]
16,51		M16	8.8	800	1	draad	0,9	60,3

Controle trek bout u.c.= $F_{t,Ed}$ /$\Sigma F_{t,Rd}$ = 0,30 < 1,0 (ok)

VFZ

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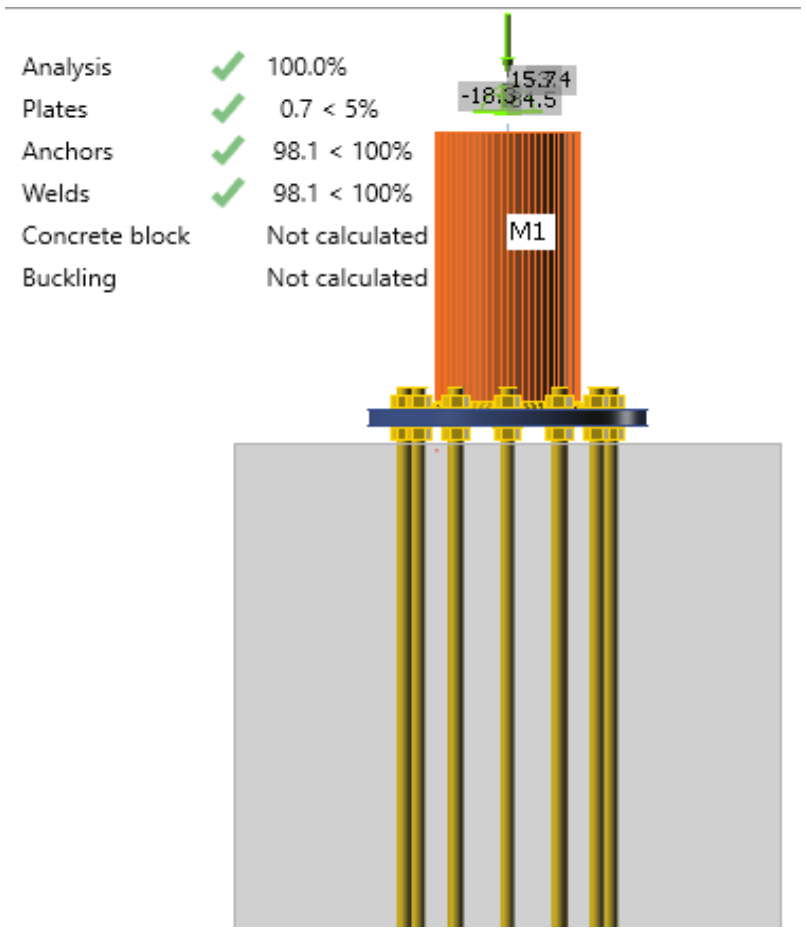
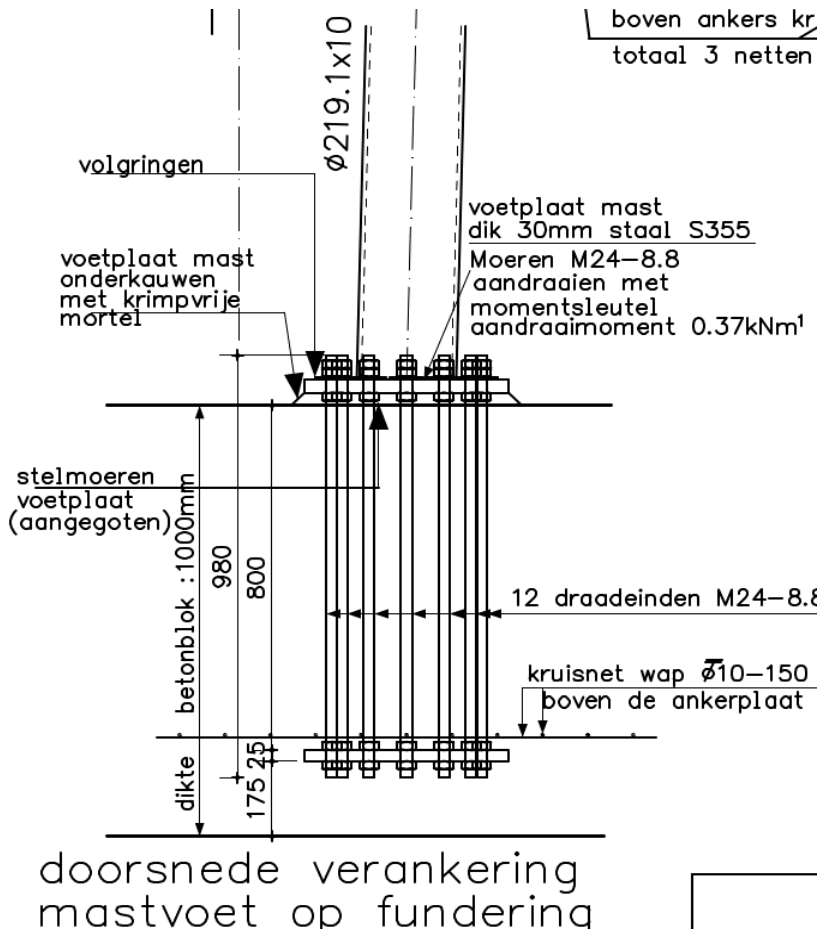
Controle ankers t.p.v. steunpunten





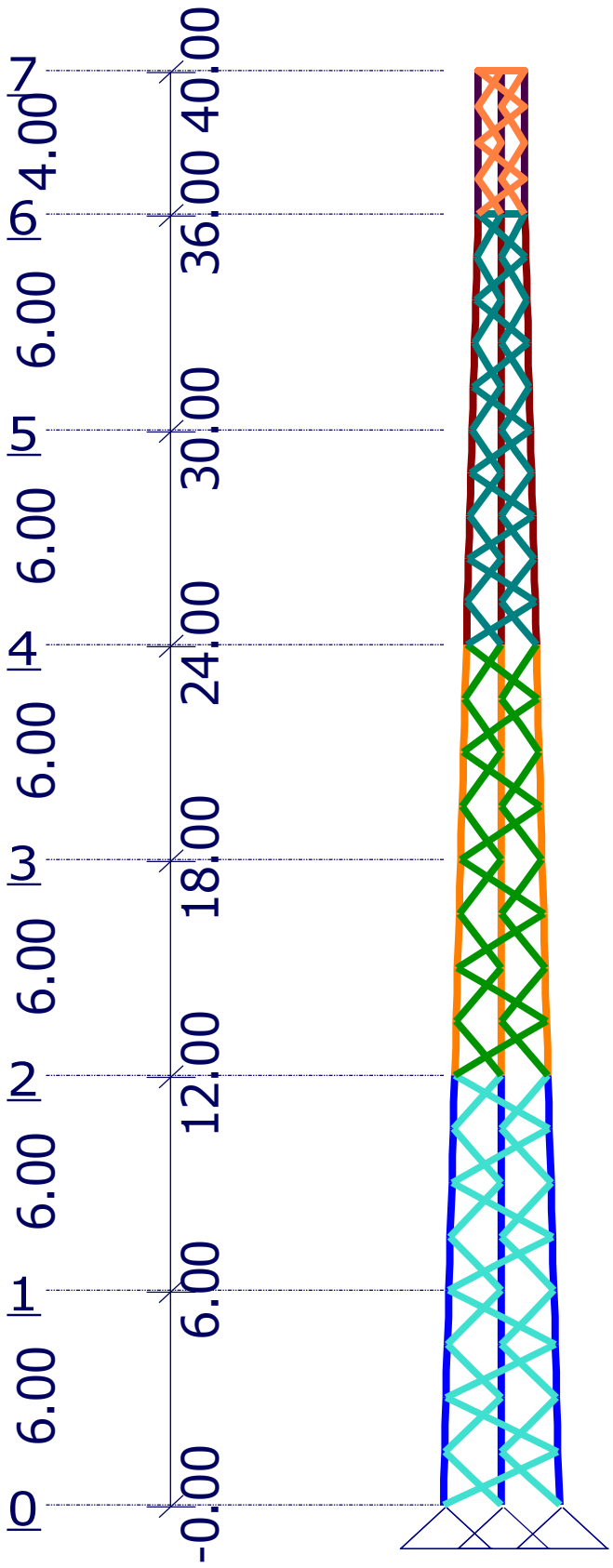
12x M24 Bolts 8,8

Plates 25mm	S355		
Welds 9mm	S355	**UC Max**	**0,98** **< 1,0 (ok)**

Zie ook bijlage blz 1 t/m 7 van IDEA StatiCa® Calculate yesterday's estimates

Bijlage 1:

Eigen Frequentie



Projectnaam	VFZ 40m 3000- 1200	Projectnummer	
Omschrijving		Constructeur	
Opdrachtgever		Eenheden	m, kN, kNm

PROFIELEN

Profiel	Profielnaam	Oppervlakte	It	Iy	Iz	Materiaal	Hoek
P1	B219x10	6.5659e-03	7.1866e-05	3.5933e-05	3.5933e-05	S355	0.0
P2	B88.9x3.2	8.6155e-04	1.5841e-06	7.9206e-07	7.9206e-07	S235	0.0
P5	B168.3x8	4.0288e-03	2.5945e-05	1.2973e-05	1.2973e-05	S355	0.0
P6	B82.5x3.2	7.9721e-04	1.2554e-06	6.2768e-07	6.2768e-07	S235	0.0
P9	B139.7x5	2.1159e-03	9.6108e-06	4.8054e-06	4.8054e-06	S355	0.0
P10	B60.3x2.9	5.2295e-04	4.3185e-07	2.1592e-07	2.1592e-07	S235	0.0
P15	B114.3x5	1.7169e-03	5.1384e-06	2.5692e-06	2.5692e-06	S355	0.0
P16	B48.3x2.6	3.7328e-04	1.9553e-07	9.7765e-08	9.7765e-08	S235	0.0
-	-	m2	m4	m4	m4	-	°

PROFIELVORMEN

Profiel	Verl. h.	hB	hE	tf	tw	tf2	B	bL	bR	Raatl.	Hoogte
P1	Nee	0,219	0,219	0,0100	0,0100	0,0000	0,219	0,000	0,000	Nee	0,000
P2	Nee	0,089	0,089	0,0032	0,0032	0,0000	0,089	0,000	0,000	Nee	0,000
P5	Nee	0,168	0,168	0,0080	0,0080	0,0000	0,168	0,000	0,000	Nee	0,000
P6	Nee	0,083	0,083	0,0032	0,0032	0,0000	0,083	0,000	0,000	Nee	0,000
P9	Nee	0,140	0,140	0,0050	0,0050	0,0000	0,140	0,000	0,000	Nee	0,000
P10	Nee	0,060	0,060	0,0029	0,0029	0,0000	0,060	0,000	0,000	Nee	0,000
P15	Nee	0,114	0,114	0,0050	0,0050	0,0000	0,114	0,000	0,000	Nee	0,000
P16	Nee	0,048	0,048	0,0026	0,0026	0,0000	0,048	0,000	0,000	Nee	0,000
-	-	m	m	m	m	m	m	m	m	-	m

MATERIALEN

Materiaalnaam	Poison	Dichtheid	E-Modulus	Uitzettingcoeff
S235	0.30	78.50	2.1000e+08	12.0000e-06
S355	0.30	78.50	2.1000e+08	12.0000e-06
-	-	kN/m3	kN/m2	C°m

OPLEGGINGEN

Oplegging	Object	Positie			Z	Xr	Yr	Zr	HoekXr	HoekYr	HoekZr
O1	K1	0.000	vast	vast	vast	vrij	vrij	vast	0	0	0
O2	K2	0.000	vast	vast	vast	vrij	vrij	vast	0	0	0
O3	K3	0.000	vast	vast	vast	vrij	vrij	vast	0	0	0
-	-	m	kN/m	kN/m	kN/m	kNm/rad	kNm/rad	kNm/rad	°	°	°

BELASTINGSGEVALLEN TYPEN

Oplegg.	Staven	B.G.Type	Gunstig/Ong.	Element	Niveau	Veld	Psi0	Psi1	Psi2	Cprob UGT/GGT
B.G.1	Permanent	Permanent	-		N.v.t.	N.v.t.				
B.G.2	Wind X	Windbelasting	-		N.v.t.	N.v.t.		0.20		1.00/1.00
B.G.3	Wind Y	Niet gedefinieerd			N.v.t.	N.v.t.				

UITGANGSPUNTEN VAN DE ANALYSE

Lineaire Elastische Analyse uitgevoerd

B.G. KNOOPVERPLAATSINGEN

Knoop	B.G.	X	Y	Z	Xr	Yr	Zr
K1	B.G.1	0.0000	0.0000	0.0000	-0.007e-03	0.000e-03	0.000e-03
	B.G.2	0.0000	0.0000	0.0000	0.012e-03	-0.560e-03	0.000e-03
	B.G.3	0.0000	0.0000	0.0000	0.491e-03	0.075e-03	-0.000e-03
K2	B.G.1	0.0000	0.0000	0.0000	0.003e-03	-0.006e-03	0.000e-03
	B.G.2	0.0000	0.0000	0.0000	0.029e-03	-0.458e-03	0.000e-03
	B.G.3	0.0000	0.0000	0.0000	0.606e-03	0.110e-03	0.000e-03

Knoop	B.G.	X	Y	Z	Xr	Yr	Zr
K3	B.G.1	0.0000	0.0000	0.0000	0.003e-03	0.006e-03	0.000e-03
	B.G.2	0.0000	0.0000	0.0000	0.106e-03	-0.430e-03	-0.000e-03

Projectnaam		VFZ 40m 3000- 1200			Projectnummer		
Omschrijving					Constructeur		
Opdrachtgever					Eenheden		m, kN, kNm
	B.G.3	0.0000	0.0000	0.0000	0.573e-03	-0.010e-03	-0.000e-03
K4	B.G.1	0.0000	0.0000	0.0000	-0.004e-03	-0.000e-03	0.000e-03
	B.G.2	0.0009	0.0000	-0.0004	0.005e-03	-0.611e-03	0.020e-03
	B.G.3	-0.0001	-0.0008	-0.0003	0.677e-03	-0.002e-03	-0.022e-03
K5	B.G.1	0.0000	0.0000	0.0000	0.002e-03	-0.003e-03	0.000e-03
	B.G.2	0.0008	0.0000	0.0004	0.029e-03	-0.621e-03	0.018e-03
	B.G.3	-0.0001	-0.0009	-0.0003	0.658e-03	0.027e-03	0.020e-03
K6	B.G.1	0.0000	0.0000	0.0000	0.002e-03	0.003e-03	0.000e-03
	B.G.2	0.0007	-0.0001	0.0000	0.009e-03	-0.545e-03	-0.014e-03
	B.G.3	0.0000	-0.0009	0.0006	0.693e-03	0.019e-03	-0.003e-03
K7	B.G.1	0.0000	0.0000	0.0000	0.000e-03	-0.001e-03	0.000e-03
	B.G.2	0.0020	0.0000	-0.0008	-0.010e-03	-0.862e-03	0.035e-03
	B.G.3	0.0000	-0.0021	-0.0005	1.010e-03	-0.027e-03	-0.039e-03
K8	B.G.1	0.0000	0.0000	0.0000	0.001e-03	0.001e-03	0.000e-03
	B.G.2	0.0019	-0.0001	0.0008	0.030e-03	-0.913e-03	0.033e-03
	B.G.3	-0.0001	-0.0021	-0.0005	0.947e-03	-0.014e-03	0.032e-03
K9	B.G.1	0.0000	0.0000	0.0000	-0.001e-03	0.000e-03	0.000e-03
	B.G.2	0.0017	-0.0001	0.0000	-0.034e-03	-0.834e-03	-0.021e-03
	B.G.3	0.0000	-0.0022	0.0011	0.991e-03	0.024e-03	-0.005e-03
K10	B.G.1	0.0000	0.0000	0.0000	0.001e-03	-0.000e-03	0.000e-03
	B.G.2	0.0035	0.0000	-0.0012	-0.027e-03	-1.188e-03	0.048e-03
	B.G.3	0.0000	-0.0039	-0.0008	1.327e-03	0.008e-03	-0.053e-03
K11	B.G.1	0.0000	0.0000	0.0000	-0.000e-03	0.001e-03	0.000e-03
	B.G.2	0.0035	-0.0001	0.0012	0.031e-03	-1.189e-03	0.047e-03
	B.G.3	-0.0001	-0.0038	-0.0008	1.323e-03	0.001e-03	0.042e-03
K12	B.G.1	0.0000	0.0000	0.0000	-0.001e-03	-0.001e-03	0.000e-03
	B.G.2	0.0032	0.0000	0.0000	0.002e-03	-1.151e-03	-0.026e-03
	B.G.3	-0.0001	-0.0040	0.0016	1.319e-03	-0.001e-03	-0.007e-03
K13	B.G.1	0.0000	0.0000	0.0001	0.000e-03	0.000e-03	0.000e-03
	B.G.2	0.0055	0.0000	-0.0015	-0.039e-03	-1.465e-03	0.061e-03
	B.G.3	0.0000	-0.0061	-0.0010	1.630e-03	0.013e-03	-0.067e-03
K14	B.G.1	0.0000	0.0000	0.0001	-0.000e-03	0.000e-03	0.000e-03
	B.G.2	0.0055	-0.0002	0.0015	0.028e-03	-1.452e-03	0.062e-03
	B.G.3	-0.0001	-0.0060	-0.0010	1.638e-03	-0.007e-03	0.050e-03
K15	B.G.1	0.0000	0.0000	0.0001	-0.000e-03	-0.000e-03	0.000e-03
	B.G.2	0.0052	0.0000	0.0000	0.005e-03	-1.432e-03	-0.030e-03
	B.G.3	0.0000	-0.0062	0.0020	1.616e-03	-0.012e-03	-0.007e-03
K16	B.G.1	0.0000	0.0000	0.0001	0.000e-03	-0.000e-03	0.001e-03
	B.G.2	0.0079	0.0001	-0.0019	-0.041e-03	-1.714e-03	0.075e-03
	B.G.3	0.0000	-0.0087	-0.0012	1.923e-03	0.003e-03	-0.079e-03
K17	B.G.1	0.0000	0.0000	0.0001	0.000e-03	0.000e-03	0.001e-03
	B.G.2	0.0079	-0.0002	0.0019	0.025e-03	-1.714e-03	0.075e-03
	B.G.3	-0.0001	-0.0087	-0.0012	1.917e-03	-0.018e-03	0.059e-03
K18	B.G.1	0.0000	0.0000	0.0001	-0.000e-03	-0.000e-03	0.001e-03
	B.G.2	0.0075	-0.0001	0.0000	-0.008e-03	-1.690e-03	-0.033e-03
	B.G.3	0.0000	-0.0088	0.0024	1.901e-03	-0.012e-03	-0.010e-03
K19	B.G.1	0.0000	0.0000	0.0001	0.000e-03	-0.001e-03	0.001e-03
	B.G.2	0.0107	0.0001	-0.0021	-0.033e-03	-1.975e-03	0.087e-03
	B.G.3	0.0000	-0.0119	-0.0014	2.206e-03	0.007e-03	-0.090e-03
K20	B.G.1	0.0000	0.0000	0.0001	0.000e-03	0.001e-03	0.001e-03
	B.G.2	0.0107	-0.0002	0.0021	0.025e-03	-1.971e-03	0.088e-03
	B.G.3	-0.0001	-0.0118	-0.0014	2.205e-03	-0.008e-03	0.065e-03
K21	B.G.1	0.0000	0.0000	0.0001	-0.001e-03	0.000e-03	0.001e-03

Projectnaam	VFZ 40m 3000- 1200		Projectnummer	
Omschrijving			Constructeur	
Opdrachtgever			Eenheden	m, kN, kNm

Knoop	B.G.	X	Y	Z	Xr	Yr	Zr
K21	B.G.2	0.0102	0.0000	0.0000	-0.001e-03	-1.946e-03	-0.034e-03
	B.G.3	0.0000	-0.0119	0.0028	2.193e-03	-0.010e-03	-0.011e-03
K22	B.G.1	0.0000	0.0000	0.0001	-0.000e-03	-0.000e-03	0.001e-03
	B.G.2	0.0138	0.0002	-0.0024	-0.017e-03	-2.226e-03	0.099e-03
	B.G.3	0.0000	-0.0154	-0.0016	2.483e-03	0.005e-03	-0.099e-03
K23	B.G.1	0.0000	0.0000	0.0001	0.000e-03	-0.000e-03	0.001e-03
	B.G.2	0.0138	-0.0002	0.0024	0.026e-03	-2.227e-03	0.099e-03
	B.G.3	-0.0001	-0.0153	-0.0015	2.475e-03	0.006e-03	0.072e-03
K24	B.G.1	0.0000	0.0000	0.0001	-0.000e-03	0.000e-03	0.001e-03
	B.G.2	0.0133	-0.0001	0.0000	0.004e-03	-2.186e-03	-0.035e-03
	B.G.3	0.0000	-0.0154	0.0031	2.479e-03	0.002e-03	-0.014e-03
K25	B.G.1	0.0000	0.0000	0.0001	-0.001e-03	0.000e-03	0.001e-03
	B.G.2	0.0173	0.0002	-0.0026	-0.004e-03	-2.433e-03	0.111e-03
	B.G.3	0.0000	-0.0193	-0.0017	2.727e-03	-0.004e-03	-0.109e-03
K26	B.G.1	0.0000	0.0000	0.0001	0.000e-03	-0.001e-03	0.001e-03
	B.G.2	0.0174	-0.0003	0.0026	0.027e-03	-2.451e-03	0.111e-03
	B.G.3	-0.0001	-0.0192	-0.0017	2.700e-03	0.008e-03	0.077e-03
K27	B.G.1	0.0000	0.0000	0.0001	0.001e-03	0.001e-03	0.001e-03
	B.G.2	0.0168	0.0000	0.0000	-0.004e-03	-2.392e-03	-0.035e-03
	B.G.3	0.0000	-0.0193	0.0034	2.722e-03	0.015e-03	-0.016e-03
K28	B.G.1	0.0000	0.0000	0.0001	-0.001e-03	-0.000e-03	0.001e-03
	B.G.2	0.0214	0.0002	-0.0030	-0.017e-03	-2.889e-03	0.145e-03
	B.G.3	0.0000	-0.0237	-0.0020	3.232e-03	0.004e-03	-0.133e-03
K29	B.G.1	0.0000	0.0000	0.0001	0.001e-03	-0.000e-03	0.001e-03
	B.G.2	0.0214	-0.0003	0.0030	0.029e-03	-2.898e-03	0.141e-03
	B.G.3	-0.0002	-0.0237	-0.0019	3.215e-03	-0.000e-03	0.092e-03
K30	B.G.1	0.0000	0.0000	0.0001	0.000e-03	0.001e-03	0.001e-03
	B.G.2	0.0207	-0.0001	0.0000	-0.001e-03	-2.857e-03	-0.034e-03
	B.G.3	0.0000	-0.0238	0.0039	3.219e-03	0.005e-03	-0.023e-03
K31	B.G.1	0.0000	0.0000	0.0001	0.000e-03	-0.001e-03	0.001e-03
	B.G.2	0.0260	0.0002	-0.0034	-0.040e-03	-3.273e-03	0.173e-03
	B.G.3	0.0000	-0.0289	-0.0022	3.649e-03	0.014e-03	-0.155e-03
K32	B.G.1	0.0000	0.0000	0.0001	0.000e-03	0.001e-03	0.001e-03
	B.G.2	0.0260	-0.0003	0.0034	0.026e-03	-3.263e-03	0.173e-03
	B.G.3	-0.0001	-0.0288	-0.0022	3.654e-03	-0.014e-03	0.101e-03
K33	B.G.1	0.0000	0.0000	0.0001	-0.001e-03	-0.000e-03	0.001e-03
	B.G.2	0.0253	0.0000	0.0000	0.001e-03	-3.254e-03	-0.029e-03
	B.G.3	0.0000	-0.0290	0.0043	3.628e-03	-0.016e-03	-0.026e-03
K34	B.G.1	0.0000	0.0000	0.0002	0.001e-03	-0.000e-03	0.001e-03
	B.G.2	0.0312	0.0003	-0.0037	-0.039e-03	-3.636e-03	0.201e-03
	B.G.3	0.0000	-0.0347	-0.0024	4.059e-03	0.004e-03	-0.172e-03
K35	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	0.001e-03	0.001e-03
	B.G.2	0.0312	-0.0004	0.0037	0.021e-03	-3.636e-03	0.200e-03
	B.G.3	-0.0002	-0.0346	-0.0024	4.053e-03	-0.019e-03	0.108e-03
K36	B.G.1	0.0000	0.0000	0.0002	-0.001e-03	-0.000e-03	0.001e-03
	B.G.2	0.0304	-0.0001	0.0000	-0.008e-03	-3.620e-03	-0.020e-03
	B.G.3	0.0000	-0.0348	0.0047	4.036e-03	-0.014e-03	-0.033e-03
K37	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.001e-03
	B.G.2	0.0369	0.0003	-0.0039	-0.030e-03	-4.000e-03	0.226e-03
	B.G.3	0.0000	-0.0411	-0.0025	4.453e-03	0.003e-03	-0.187e-03
K38	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	0.000e-03	0.001e-03
	B.G.2	0.0369	-0.0004	0.0039	0.018e-03	-3.997e-03	0.228e-03

	B.G.3	-0.0001	-0.0410	-0.0025	4.449e-03	-0.010e-03	0.110e-03
K39	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	-0.000e-03	0.001e-03
	B.G.2	0.0361	0.0000	0.0000	-0.005e-03	-3.976e-03	-0.007e-03

Knoop	**B.G.**	**X**	**Y**	**Z**	**Xr**	**Yr**	**Zr**
K39	B.G.3	0.0000	-0.0411	0.0051	4.439e-03	-0.011e-03	-0.037e-03
K40	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.002e-03
	B.G.2	0.0432	0.0003	-0.0041	-0.032e-03	-4.337e-03	0.251e-03
	B.G.3	0.0000	-0.0480	-0.0027	4.832e-03	0.004e-03	-0.197e-03
K41	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.002e-03
	B.G.2	0.0432	-0.0004	0.0042	0.018e-03	-4.337e-03	0.251e-03
	B.G.3	-0.0001	-0.0480	-0.0027	4.824e-03	-0.016e-03	0.110e-03
K42	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	-0.000e-03	0.002e-03
	B.G.2	0.0424	-0.0001	0.0000	-0.007e-03	-4.322e-03	0.009e-03
	B.G.3	0.0000	-0.0481	0.0053	4.812e-03	-0.012e-03	-0.043e-03
K43	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.002e-03
	B.G.2	0.0499	0.0004	-0.0043	-0.032e-03	-4.666e-03	0.274e-03
	B.G.3	0.0000	-0.0556	-0.0028	5.193e-03	0.015e-03	-0.206e-03
K44	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.002e-03
	B.G.2	0.0500	-0.0004	0.0043	0.023e-03	-4.661e-03	0.275e-03
	B.G.3	-0.0001	-0.0554	-0.0028	5.192e-03	-0.013e-03	0.107e-03
K45	B.G.1	0.0000	0.0000	0.0002	-0.001e-03	-0.000e-03	0.002e-03
	B.G.2	0.0491	0.0000	0.0000	0.000e-03	-4.658e-03	0.028e-03
	B.G.3	0.0000	-0.0556	0.0055	5.168e-03	-0.010e-03	-0.048e-03
K46	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.002e-03
	B.G.2	0.0572	0.0004	-0.0045	-0.017e-03	-4.977e-03	0.296e-03
	B.G.3	0.0000	-0.0636	-0.0029	5.543e-03	0.010e-03	-0.212e-03
K47	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.002e-03
	B.G.2	0.0572	-0.0004	0.0045	0.027e-03	-4.988e-03	0.297e-03
	B.G.3	-0.0001	-0.0635	-0.0028	5.525e-03	-0.004e-03	0.103e-03
K48	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	0.000e-03	0.002e-03
	B.G.2	0.0563	0.0000	0.0000	-0.002e-03	-4.967e-03	0.048e-03
	B.G.3	0.0000	-0.0636	0.0057	5.520e-03	0.004e-03	-0.054e-03
K49	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.002e-03
	B.G.2	0.0648	0.0004	-0.0045	-0.005e-03	-5.241e-03	0.318e-03
	B.G.3	0.0000	-0.0722	-0.0029	5.870e-03	-0.028e-03	-0.218e-03
K50	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	-0.000e-03	0.002e-03
	B.G.2	0.0649	-0.0004	0.0045	0.023e-03	-5.295e-03	0.318e-03
	B.G.3	-0.0001	-0.0720	-0.0029	5.795e-03	-0.022e-03	0.097e-03
K51	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.002e-03
	B.G.2	0.0640	0.0000	0.0000	-0.034e-03	-5.234e-03	0.069e-03
	B.G.3	0.0000	-0.0721	0.0058	5.841e-03	0.016e-03	-0.060e-03
K52	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	-0.000e-03	0.002e-03
	B.G.2	0.0715	0.0004	-0.0048	-0.027e-03	-5.811e-03	0.363e-03
	B.G.3	0.0000	-0.0795	-0.0031	6.399e-03	0.014e-03	-0.225e-03
K53	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.002e-03
	B.G.2	0.0715	-0.0004	0.0048	0.011e-03	-5.778e-03	0.362e-03
	B.G.3	-0.0001	-0.0794	-0.0030	6.421e-03	0.014e-03	0.082e-03
K54	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	0.000e-03	0.002e-03
	B.G.2	0.0706	0.0000	0.0000	0.016e-03	-5.760e-03	0.119e-03
	B.G.3	0.0000	-0.0795	0.0061	6.411e-03	-0.026e-03	-0.072e-03
K55	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.003e-03
	B.G.2	0.0787	0.0004	-0.0050	-0.051e-03	-6.213e-03	0.405e-03

	B.G.3	0.0000	-0.0875	-0.0032	6.864e-03	0.015e-03	-0.233e-03
K56	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.003e-03
	B.G.2	0.0788	-0.0004	0.0050	0.015e-03	-6.188e-03	0.407e-03
	B.G.3	-0.0001	-0.0873	-0.0032	6.878e-03	-0.017e-03	0.064e-03
K57	B.G.1	0.0000	0.0000	0.0002	-0.001e-03	-0.000e-03	0.003e-03
	B.G.2	0.0778	0.0000	0.0000	0.002e-03	-6.192e-03	0.171e-03
	B.G.3	0.0001	-0.0875	0.0063	6.842e-03	-0.035e-03	-0.082e-03

Knoop	**B.G.**	**X**	**Y**	**Z**	**Xr**	**Yr**	**Zr**
K58	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.003e-03
	B.G.2	0.0864	0.0005	-0.0051	-0.044e-03	-6.553e-03	0.449e-03
	B.G.3	0.0000	-0.0959	-0.0033	7.266e-03	0.006e-03	-0.237e-03
K59	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	0.000e-03	0.003e-03
	B.G.2	0.0864	-0.0005	0.0051	0.021e-03	-6.558e-03	0.448e-03
	B.G.3	-0.0001	-0.0958	-0.0032	7.247e-03	-0.029e-03	0.045e-03
K60	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	-0.000e-03	0.003e-03
	B.G.2	0.0854	0.0000	0.0000	-0.014e-03	-6.554e-03	0.224e-03
	B.G.3	0.0001	-0.0960	0.0065	7.226e-03	-0.019e-03	-0.096e-03
K61	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.003e-03
	B.G.2	0.0944	0.0005	-0.0052	-0.026e-03	-6.896e-03	0.489e-03
	B.G.3	0.0000	-0.1049	-0.0033	7.626e-03	0.008e-03	-0.240e-03
K62	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	0.000e-03	0.003e-03
	B.G.2	0.0945	-0.0005	0.0052	0.019e-03	-6.899e-03	0.490e-03
	B.G.3	0.0000	-0.1047	-0.0033	7.608e-03	-0.011e-03	0.023e-03
K63	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	-0.000e-03	0.003e-03
	B.G.2	0.0935	0.0000	0.0000	-0.006e-03	-6.888e-03	0.281e-03
	B.G.3	0.0001	-0.1049	0.0066	7.601e-03	-0.012e-03	-0.107e-03
K64	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.004e-03
	B.G.2	0.1030	0.0005	-0.0052	-0.023e-03	-7.211e-03	0.530e-03
	B.G.3	0.0000	-0.1142	-0.0033	7.964e-03	0.006e-03	-0.239e-03
K65	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.004e-03
	B.G.2	0.1029	-0.0005	0.0052	0.015e-03	-7.213e-03	0.528e-03
	B.G.3	-0.0001	-0.1141	-0.0033	7.945e-03	-0.010e-03	-0.001e-03
K66	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	-0.000e-03	0.004e-03
	B.G.2	0.1020	0.0000	0.0000	-0.006e-03	-7.203e-03	0.340e-03
	B.G.3	0.0001	-0.1142	0.0066	7.940e-03	-0.013e-03	-0.120e-03
K67	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.004e-03
	B.G.2	0.1117	0.0005	-0.0052	-0.025e-03	-7.484e-03	0.567e-03
	B.G.3	0.0000	-0.1240	-0.0033	8.260e-03	0.015e-03	-0.237e-03
K68	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.004e-03
	B.G.2	0.1118	-0.0005	0.0052	0.018e-03	-7.485e-03	0.567e-03
	B.G.3	0.0000	-0.1238	-0.0033	8.245e-03	-0.012e-03	-0.027e-03
K69	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	0.000e-03	0.004e-03
	B.G.2	0.1108	0.0000	0.0000	-0.005e-03	-7.488e-03	0.401e-03
	B.G.3	0.0001	-0.1239	0.0066	8.229e-03	-0.013e-03	-0.131e-03
K70	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.000e-03	0.005e-03
	B.G.2	0.1209	0.0005	-0.0052	-0.023e-03	-7.724e-03	0.606e-03
	B.G.3	0.0000	-0.1340	-0.0033	8.518e-03	0.011e-03	-0.234e-03
K71	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.005e-03
	B.G.2	0.1209	-0.0005	0.0052	0.013e-03	-7.726e-03	0.605e-03
	B.G.3	-0.0001	-0.1339	-0.0033	8.499e-03	-0.016e-03	-0.054e-03
K72	B.G.1	0.0000	0.0000	0.0002	-0.000e-03	0.000e-03	0.005e-03
	B.G.2	0.1200	0.0000	0.0000	-0.005e-03	-7.729e-03	0.463e-03

	B.G.3	0.0002	-0.1340	0.0066	8.484e-03	-0.017e-03	-0.143e-03
K73	B.G.1	0.0000	0.0000	0.0002	0.000e-03	0.000e-03	0.005e-03
	B.G.2	0.1302	0.0005	-0.0051	-0.022e-03	-7.934e-03	0.643e-03
	B.G.3	0.0000	-0.1444	-0.0032	8.721e-03	-0.013e-03	-0.232e-03
K74	B.G.1	0.0000	0.0000	0.0002	-0.001e-03	0.000e-03	0.005e-03
	B.G.2	0.1303	-0.0004	0.0051	-0.013e-03	-7.931e-03	0.643e-03
	B.G.3	0.0000	-0.1442	-0.0032	8.703e-03	-0.013e-03	-0.081e-03
K75	B.G.1	0.0000	0.0000	0.0002	0.000e-03	-0.001e-03	0.005e-03
	B.G.2	0.1294	0.0001	0.0000	-0.013e-03	-7.924e-03	0.526e-03
	B.G.3	0.0002	-0.1443	0.0064	8.713e-03	-0.032e-03	-0.154e-03
K76	B.G.1	0.0000	0.0000	0.0003	0.001e-03	-0.000e-03	0.005e-03

Knoop	**B.G.**	**X**	**Y**	**Z**	**Xr**	**Yr**	**Zr**
K76	B.G.2	0.1399	0.0005	-0.0049	-0.025e-03	-8.088e-03	0.680e-03
	B.G.3	0.0000	-0.1549	-0.0032	8.852e-03	0.003e-03	-0.230e-03
K77	B.G.1	0.0000	0.0000	0.0003	-0.001e-03	0.001e-03	0.005e-03
	B.G.2	0.1398	-0.0004	0.0050	-0.016e-03	-8.061e-03	0.680e-03
	B.G.3	0.0000	-0.1548	-0.0031	8.865e-03	0.007e-03	-0.108e-03
K78	B.G.1	0.0000	0.0000	0.0003	-0.001e-03	-0.001e-03	0.005e-03
	B.G.2	0.1390	0.0000	0.0000	-0.008e-03	-8.085e-03	0.589e-03
	B.G.3	0.0002	-0.1548	0.0063	8.867e-03	-0.036e-03	-0.166e-03
K79	B.G.1	0.0000	0.0000	0.0003	0.001e-03	-0.002e-03	0.006e-03
	B.G.2	0.1496	0.0005	-0.0048	-0.002e-03	-8.175e-03	0.717e-03
	B.G.3	0.0000	-0.1657	-0.0030	9.009e-03	0.053e-03	-0.225e-03
K80	B.G.1	0.0000	0.0000	0.0003	0.001e-03	0.002e-03	0.006e-03
	B.G.2	0.1496	-0.0004	0.0048	0.050e-03	-8.174e-03	0.715e-03
	B.G.3	0.0000	-0.1654	-0.0030	8.992e-03	-0.002e-03	-0.136e-03
K81	B.G.1	0.0000	0.0000	0.0003	-0.003e-03	-0.000e-03	0.006e-03
	B.G.2	0.1488	0.0001	0.0000	0.038e-03	-8.230e-03	0.652e-03
	B.G.3	0.0002	-0.1655	0.0061	8.944e-03	0.022e-03	-0.179e-03
K82	B.G.1	0.0000	0.0000	0.0003	-0.002e-03	0.000e-03	0.006e-03
	B.G.2	0.1579	0.0005	-0.0048	-0.021e-03	-8.316e-03	0.718e-03
	B.G.3	-0.0001	-0.1748	-0.0031	9.473e-03	-0.032e-03	-0.218e-03
K83	B.G.1	0.0000	0.0000	0.0003	0.001e-03	-0.002e-03	0.006e-03
	B.G.2	0.1579	-0.0005	0.0048	0.106e-03	-8.569e-03	0.714e-03
	B.G.3	0.0000	-0.1746	-0.0031	9.212e-03	-0.192e-03	-0.148e-03
K84	B.G.1	0.0000	0.0000	0.0003	0.001e-03	0.001e-03	0.006e-03
	B.G.2	0.1572	0.0000	0.0000	-0.203e-03	-8.618e-03	0.667e-03
	B.G.3	0.0001	-0.1746	0.0061	9.219e-03	0.136e-03	-0.182e-03
K85	B.G.1	0.0000	0.0000	0.0003	0.001e-03	0.000e-03	0.006e-03
	B.G.2	0.1662	0.0006	-0.0049	-0.085e-03	-8.389e-03	0.717e-03
	B.G.3	0.0000	-0.1843	-0.0031	9.130e-03	0.095e-03	-0.211e-03
K86	B.G.1	0.0000	0.0000	0.0003	-0.001e-03	0.001e-03	0.006e-03
	B.G.2	0.1665	-0.0005	0.0049	0.011e-03	-8.264e-03	0.715e-03
	B.G.3	0.0003	-0.1838	-0.0031	9.269e-03	-0.019e-03	-0.160e-03
K87	B.G.1	0.0000	0.0000	0.0003	-0.000e-03	-0.001e-03	0.006e-03
	B.G.2	0.1659	0.0003	0.0000	0.088e-03	-8.456e-03	0.681e-03
	B.G.3	0.0000	-0.1838	0.0062	9.103e-03	-0.083e-03	-0.185e-03
K88	B.G.1	0.0000	0.0000	0.0003	-0.000e-03	0.001e-03	0.006e-03
	B.G.2	0.1746	0.0006	-0.0049	0.032e-03	-8.207e-03	0.714e-03
	B.G.3	-0.0002	-0.1930	-0.0031	8.617e-03	0.056e-03	-0.209e-03
K89	B.G.1	0.0000	0.0000	0.0003	-0.001e-03	-0.000e-03	0.006e-03
	B.G.2	0.1744	-0.0005	0.0049	-0.111e-03	-7.925e-03	0.721e-03

	B.G.3	0.0000	-0.1930	-0.0031	8.918e-03	0.210e-03	-0.173e-03
K90	B.G.1	0.0000	0.0000	0.0003	0.001e-03	-0.000e-03	0.006e-03
	B.G.2	0.1740	-0.0001	0.0000	0.228e-03	-7.904e-03	0.693e-03
	B.G.3	0.0003	-0.1928	0.0062	8.879e-03	-0.140e-03	-0.183e-03
K91	B.G.1	0.0000	0.0000	0.0003	0.001e-03	-0.004e-03	0.007e-03
	B.G.2	0.1826	0.0005	-0.0049	0.144e-03	-7.832e-03	0.716e-03
	B.G.3	0.0000	-0.2018	-0.0031	8.822e-03	-0.387e-03	-0.207e-03
K92	B.G.1	0.0000	0.0000	0.0003	0.003e-03	0.003e-03	0.007e-03
	B.G.2	0.1826	-0.0004	0.0049	-0.137e-03	-8.210e-03	0.724e-03
	B.G.3	0.0000	-0.2016	-0.0031	8.402e-03	-0.082e-03	-0.181e-03
K93	B.G.1	0.0000	0.0000	0.0003	-0.004e-03	0.001e-03	0.007e-03
	B.G.2	0.1818	0.0001	0.0000	-0.357e-03	-7.752e-03	0.704e-03
	B.G.3	0.0002	-0.2017	0.0062	8.917e-03	0.108e-03	-0.185e-03
-	**-**	**m**	**m**	**m**	**rad**	**rad**	**rad**

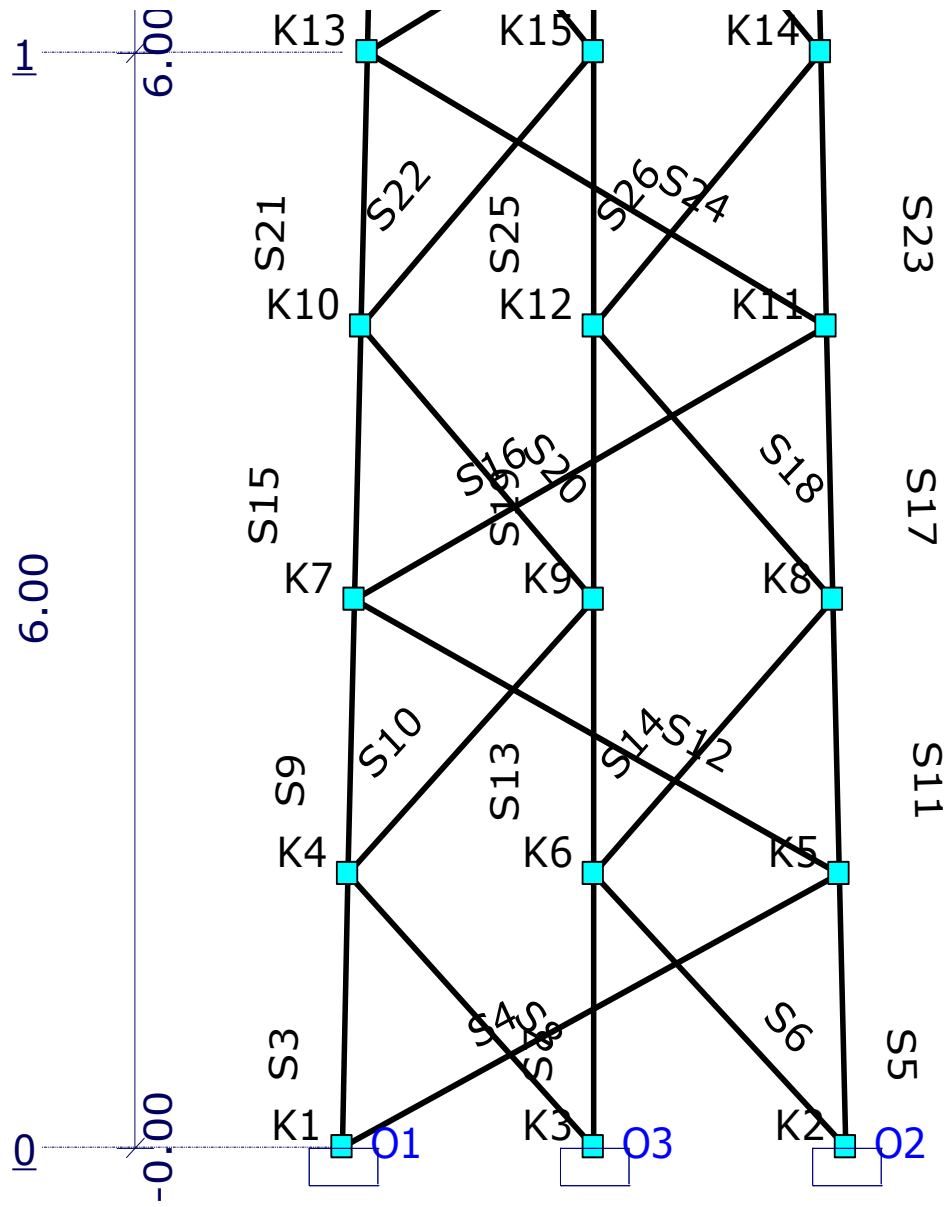
B.G. OPLEGREACTIES

B.G.	Oplegging	Knoop	X	Y	Z	Mx	My	Mz
B.G.1	O1	K1	0.44	-0.25	-16.54	0.00	0.00	0.00
B.G.1	O2	K2	-0.44	-0.26	-16.54	0.00	0.00	0.00
B.G.1	O3	K3	0.00	0.51	-16.54	0.00	0.00	0.00
	Som Reacties		**0.00**	**0.00**	**-49.62**			
	Som Lasten		**0.00**	**0.00**	**49.62**			
B.G.2	O1	K1	-34.21	6.11	420.27	0.00	0.00	0.08
B.G.2	O2	K2	-15.01	-15.48	-420.27	0.00	0.00	0.08
B.G.2	O3	K3	-4.40	9.37	0.00	0.00	0.00	-0.07
	Som Reacties		**-53.62**	**0.00**	**0.00**			
	Som Lasten		**53.62**	**0.00**	**0.00**			
B.G.3	O1	K1	-6.76	2.89	272.32	0.00	0.00	-0.10
B.G.3	O2	K2	18.59	23.23	272.32	0.00	0.00	0.09
B.G.3	O3	K3	-11.83	35.20	-544.63	0.00	0.00	-0.01
	Som Reacties		**0.00**	**61.33**	**0.00**			
	Som Lasten		**0.00**	**-61.33**	**0.00**			
-	**-**	**-**	**kN**	**kN**	**kN**	**kNm**	**kNm**	**kNm**

Bijlage 2:

Controle sterkte

Sectie 1:



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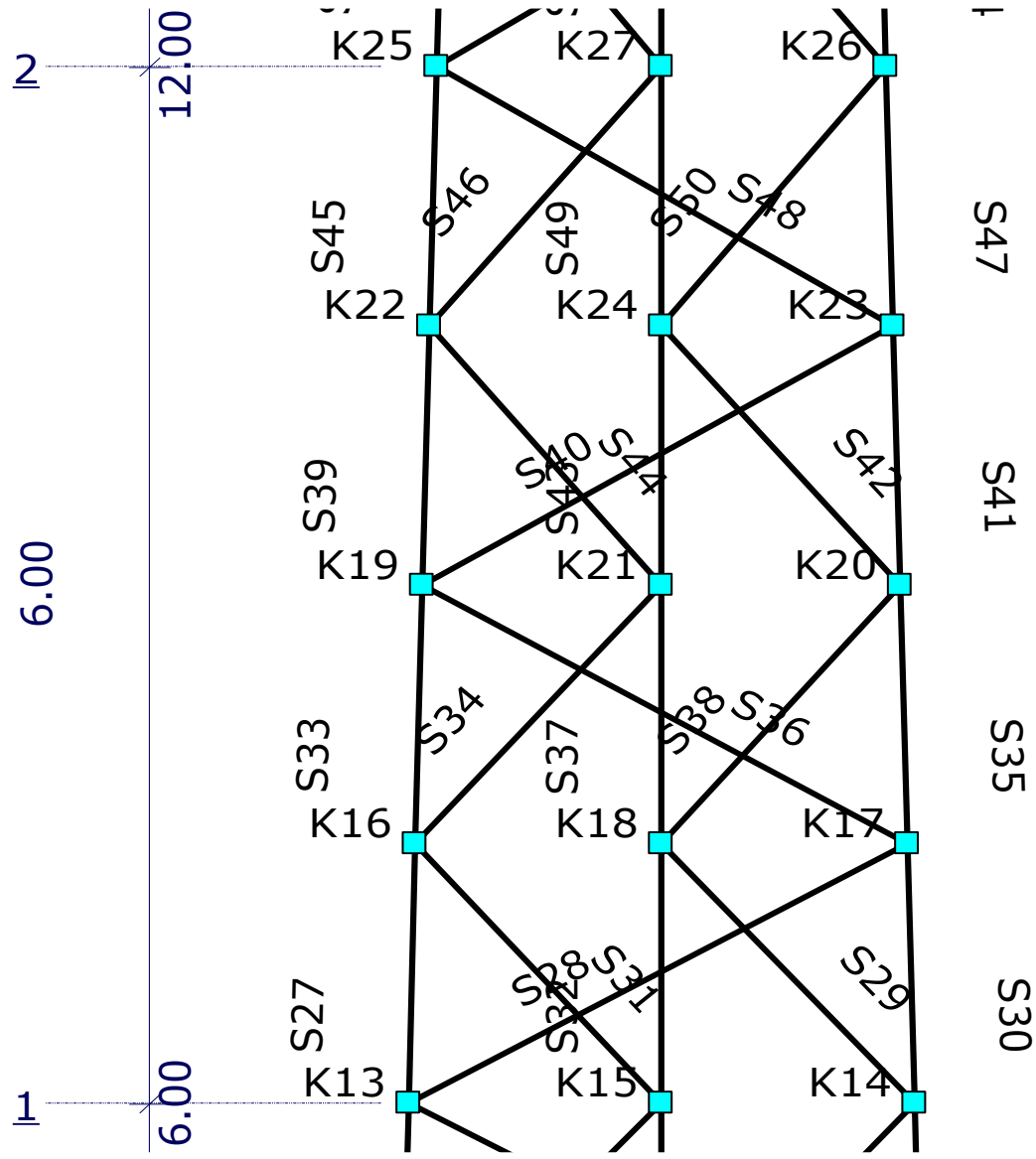
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K21
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K18
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S46
S49
S50
S48
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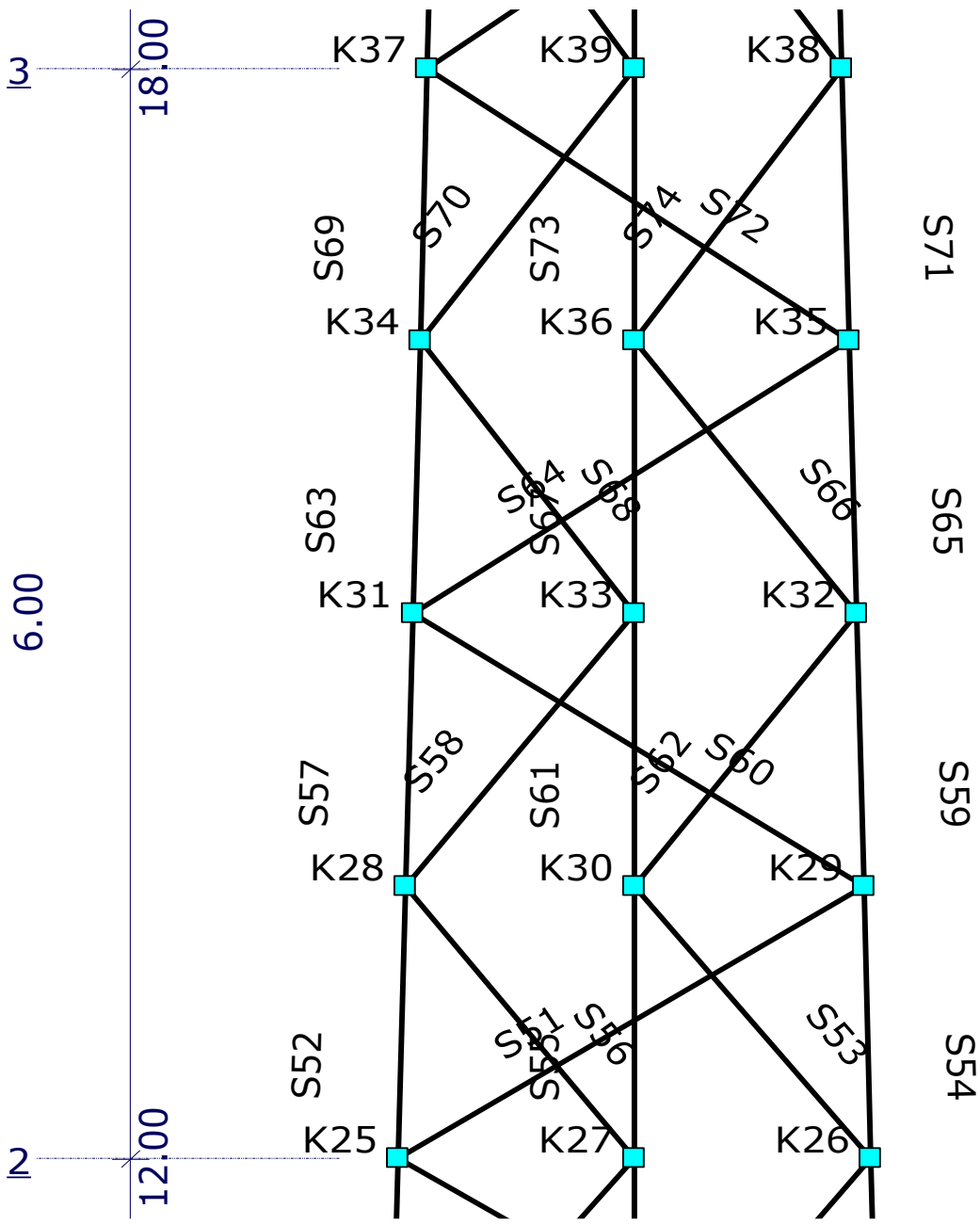
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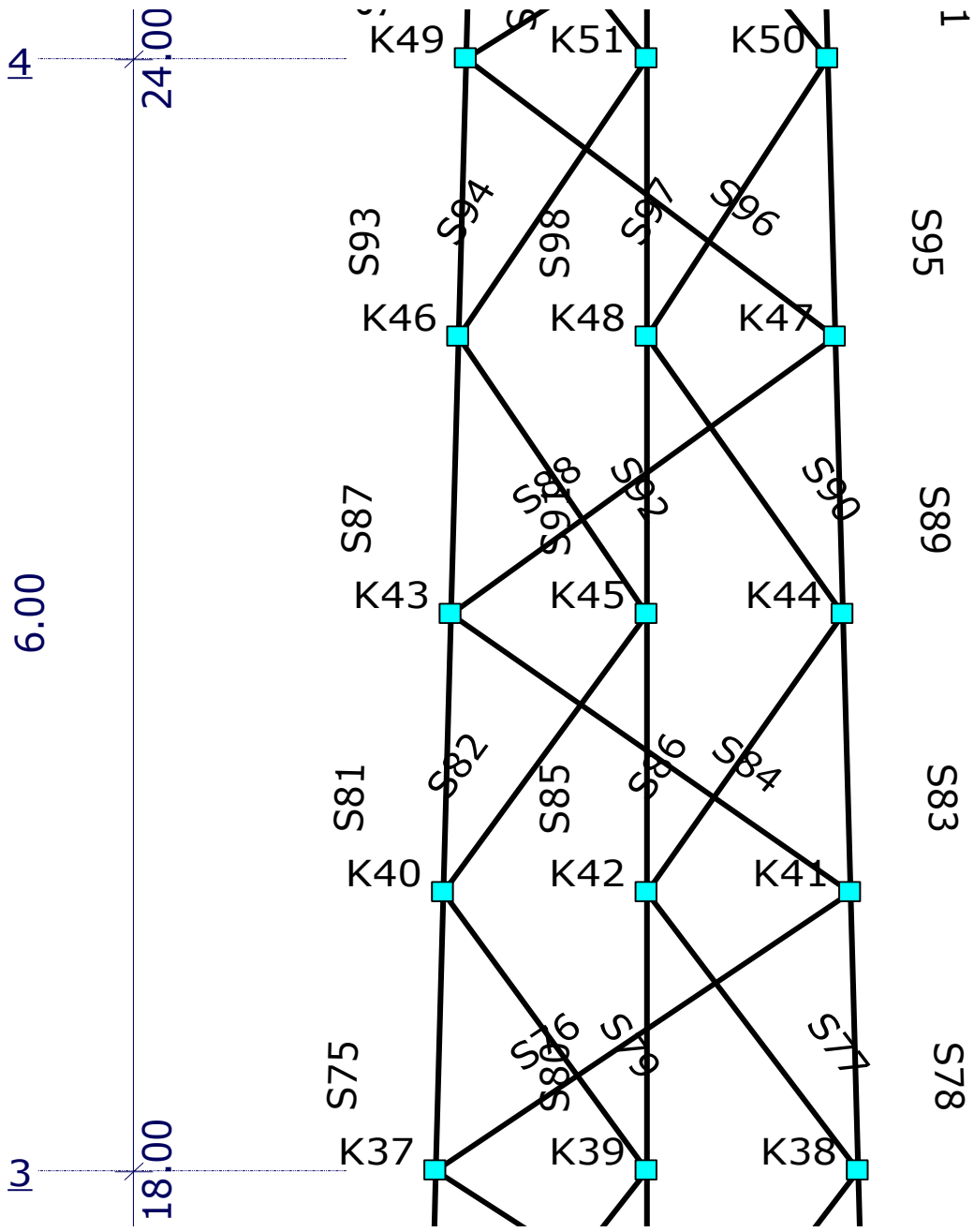
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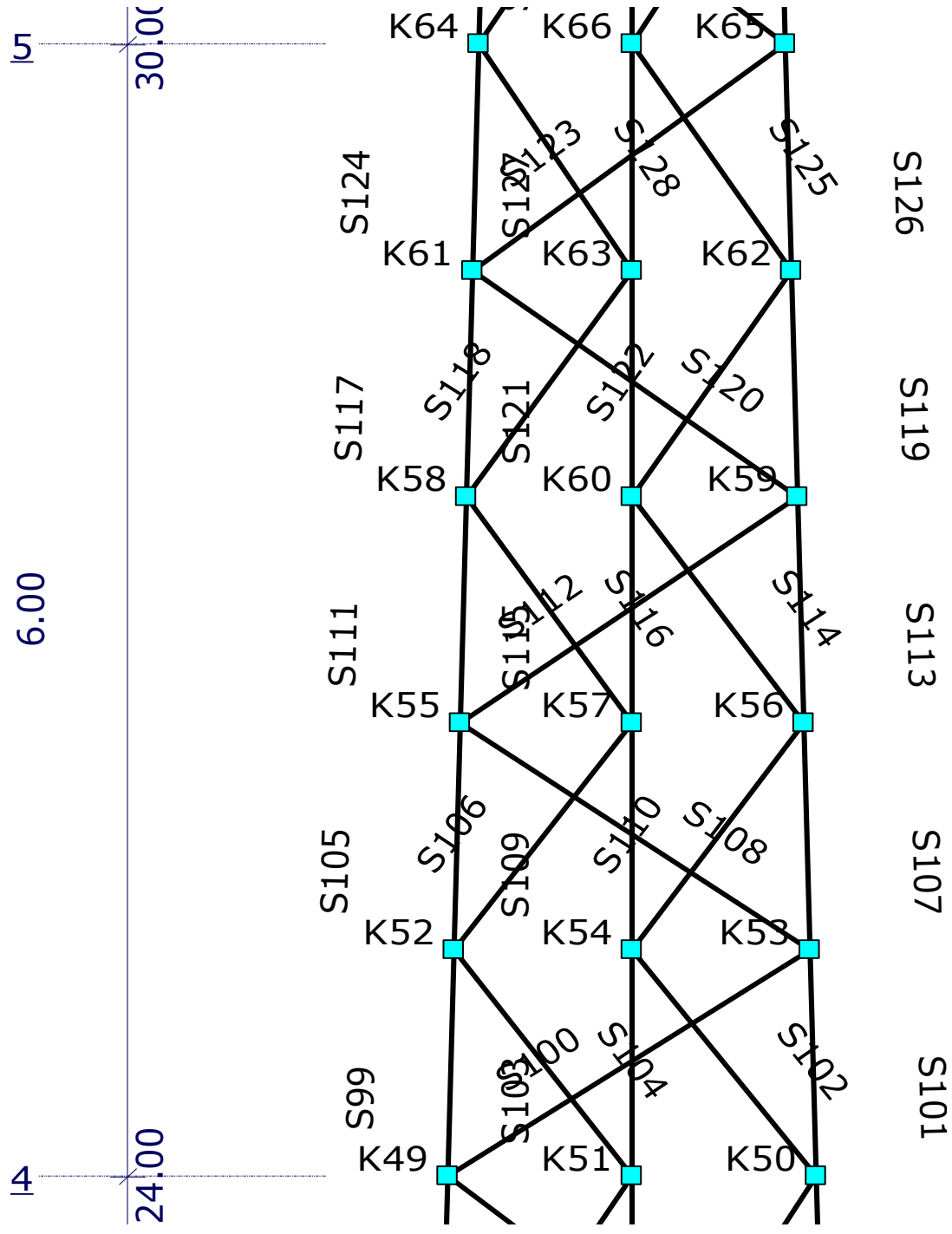
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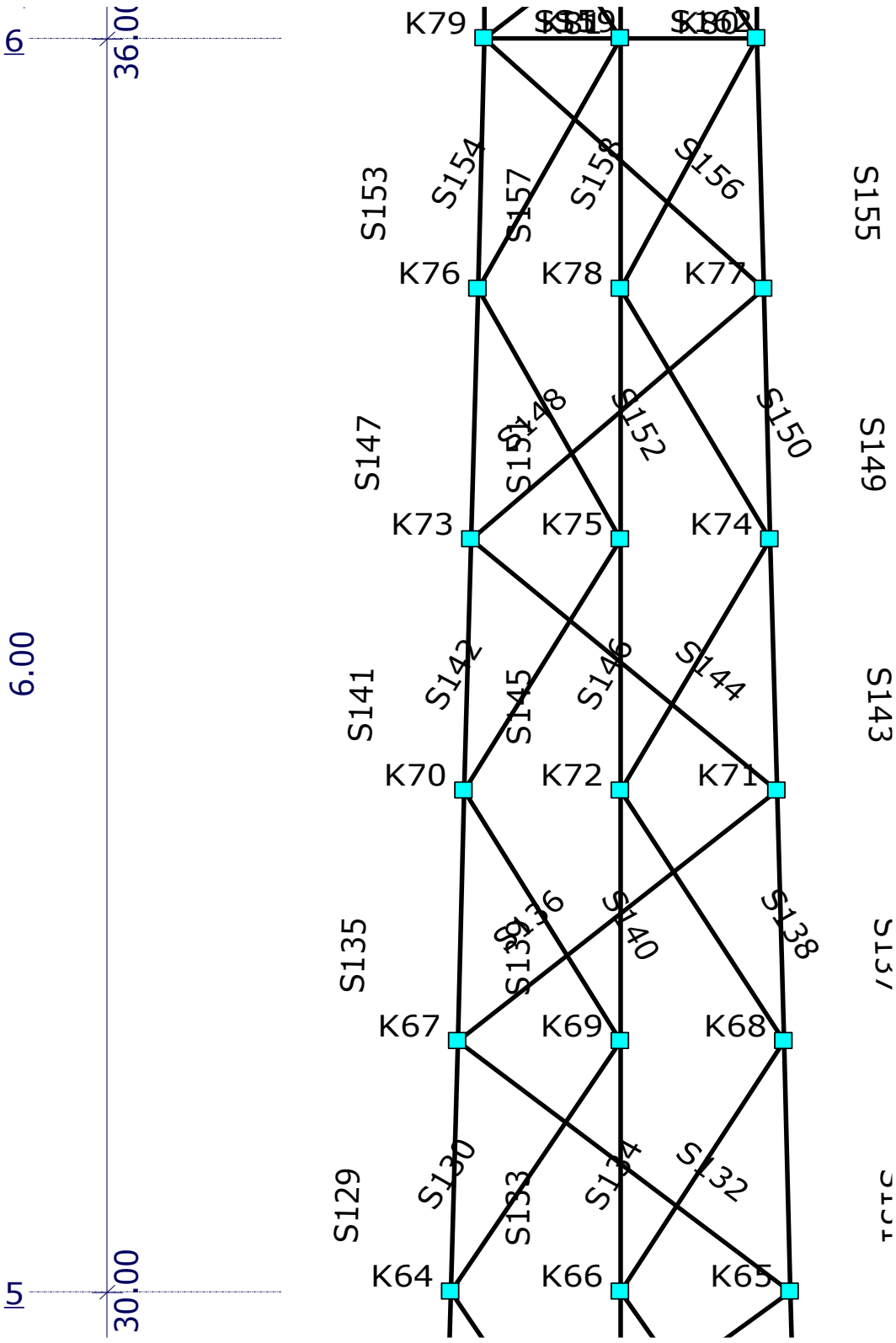
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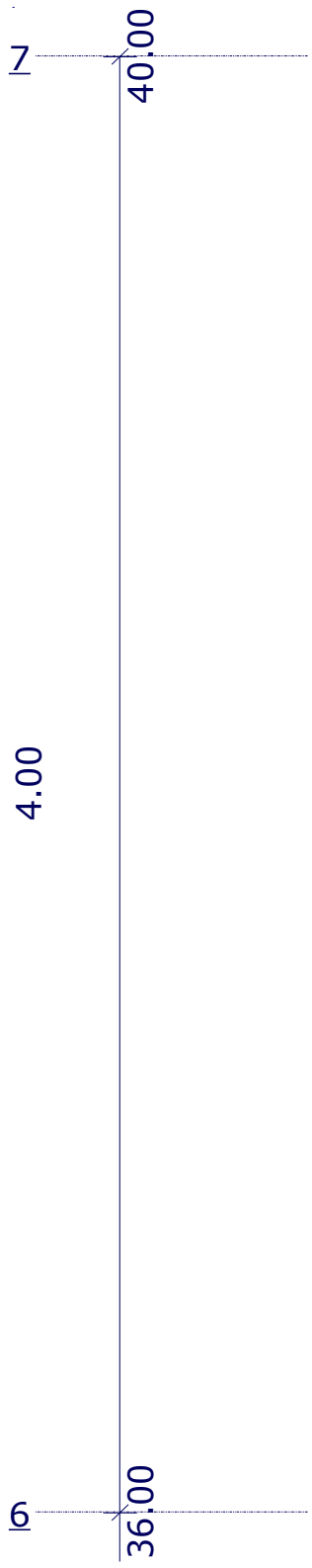
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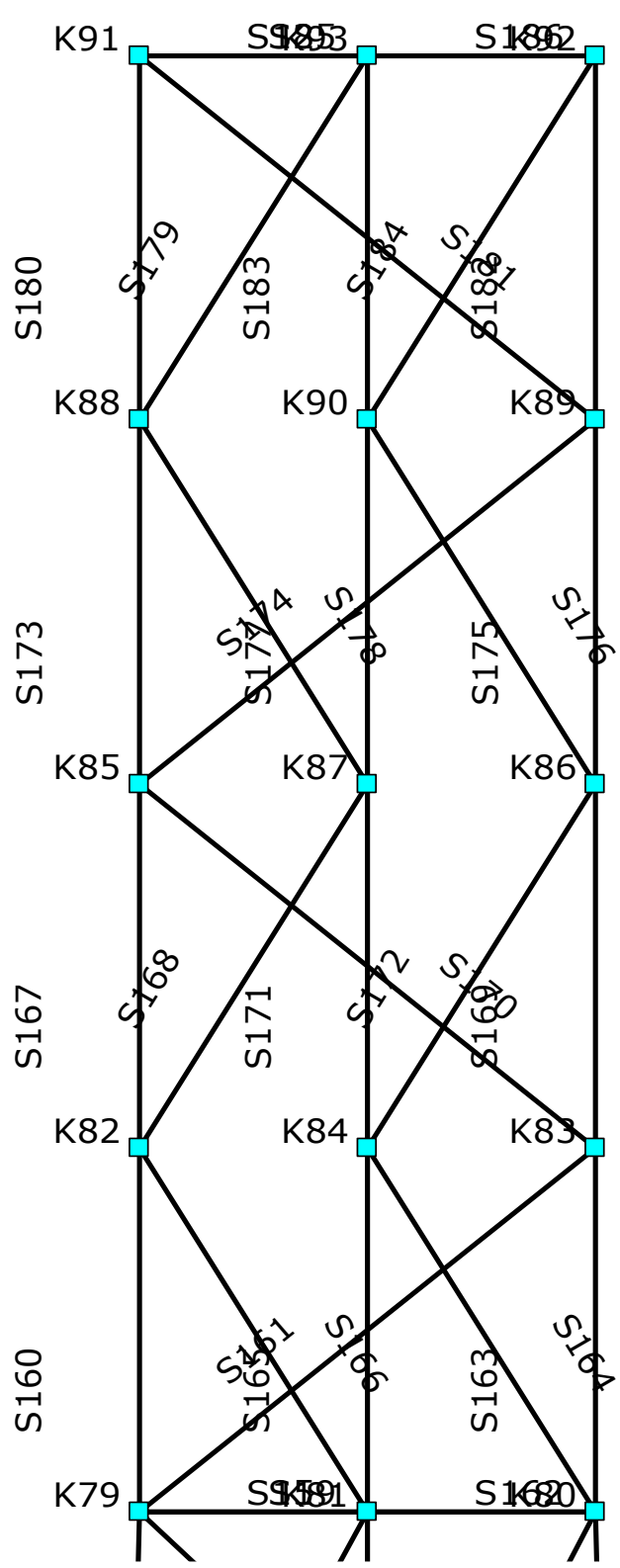
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S170
S160
S161
S162
S163
S164

Projectnaam	VFZ	Projectnummer	
Omschrijving	Controle sterkte	Constructeur	
Opdrachtgever		Eenheden	m, kN, kNm

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
3D-Raamwerk	93	186	3	16	3	8

PROFIELEN

Profiel	Profielnaam	Oppervlakte	It	Iy	Iz	Materiaal	Hoek
P1	B219x10	6.5659e-03	7.1866e-05	3.5933e-05	3.5933e-05	S355	0.0
P2	B88.9x3.2	8.6155e-04	1.5841e-06	7.9206e-07	7.9206e-07	S235	0.0
P5	B168.3x8	4.0288e-03	2.5945e-05	1.2973e-05	1.2973e-05	S355	0.0
P6	B82.5x3.2	7.9721e-04	1.2554e-06	6.2768e-07	6.2768e-07	S235	0.0
P9	B139.7x5	2.1159e-03	9.6108e-06	4.8054e-06	4.8054e-06	S355	0.0
P10	B60.3x2.9	5.2295e-04	4.3185e-07	2.1592e-07	2.1592e-07	S235	0.0
P15	B114.3x5	1.7169e-03	5.1384e-06	2.5692e-06	2.5692e-06	S355	0.0
P16	B48.3x2.6	3.7328e-04	1.9553e-07	9.7765e-08	9.7765e-08	S235	0.0
-	-	m2	m4	m4	m4	-	°

PROFIELVORMEN

Profiel	Verl. h.	hB	hE	tf	tw	tf2	B	bL	bR	Raatl.	Hoogte
P1	Nee	0,219	0,219	0,0100	0,0100	0,0000	0,219	0,000	0,000	Nee	0,000
P2	Nee	0,089	0,089	0,0032	0,0032	0,0000	0,089	0,000	0,000	Nee	0,000
P5	Nee	0,168	0,168	0,0080	0,0080	0,0000	0,168	0,000	0,000	Nee	0,000
P6	Nee	0,083	0,083	0,0032	0,0032	0,0000	0,083	0,000	0,000	Nee	0,000
P9	Nee	0,140	0,140	0,0050	0,0050	0,0000	0,140	0,000	0,000	Nee	0,000
P10	Nee	0,060	0,060	0,0029	0,0029	0,0000	0,060	0,000	0,000	Nee	0,000
P15	Nee	0,114	0,114	0,0050	0,0050	0,0000	0,114	0,000	0,000	Nee	0,000
P16	Nee	0,048	0,048	0,0026	0,0026	0,0000	0,048	0,000	0,000	Nee	0,000
-	-	m	m	m	m	m	m	m	m	-	m

MATERIALEN

Materiaalnaam	Poison	Dichtheid	E-Modulus	Uitzettingcoeff
S235	0.30	78.50	2.1000e+08	12.0000e-06
S355	0.30	78.50	2.1000e+08	12.0000e-06
-	-	kN/m3	kN/m2	C°m

OPLEGGINGEN

Oplegging	Object	Positie			Z	Xr	Yr	Zr	HoekXr	HoekYr	HoekZr
O1	K1	0.000	Vast	Vast	Vast	Vast	Vast	Vast	0	0	0
O2	K2	0.000	Vast	Vast	Vast	Vast	Vast	Vast	0	0	0
O3	K3	0.000	Vast	Vast	Vast	Vast	Vast	Vast	0	0	0
-	-	m	kN/m	kN/m	kN/m	kNm/rad	kNm/rad	kNm/rad	°	°	°

STAVEN

Staaf	Knoop B	Knoop E	X-B	Y-B	Z-B	X-E	Y-E	Z-E	Lengte	Profiel	Positie
S1	K79	K80	0.900	-0.520	-36.000	2.100	-0.520	-36.000	1.200	P10	0.000 - L(1.200)
S2	K91	K92	0.900	-0.520	-40.000	2.100	-0.520	-40.000	1.200	P16	0.000 - L(1.200)
S3	K1	K4	0.000	0.000	0.000	0.038	-0.022	-1.500	1.501	P1	0.000 - L(1.501)
S4	K1	K5	0.000	0.000	0.000	2.963	-0.022	-1.500	3.321	P2	0.000 - L(3.321)
S5	K2	K5	3.000	0.000	0.000	2.963	-0.022	-1.500	1.501	P1	0.000 - L(1.501)
S6	K2	K6	3.000	0.000	0.000	1.500	-2.555	-1.500	3.321	P2	0.000 - L(3.321)
S7	K3	K6	1.500	-2.598	0.000	1.500	-2.555	-1.500	1.501	P1	0.000 - L(1.501)
S8	K3	K4	1.500	-2.598	0.000	0.038	-0.022	-1.500	3.321	P2	0.000 - L(3.321)
S9	K4	K7	0.038	-0.022	-1.500	0.075	-0.043	-3.000	1.501	P1	0.000 - L(1.501)
S10	K4	K9	0.038	-0.022	-1.500	1.500	-2.511	-3.000	3.254	P2	0.000 - L(3.254)
S11	K5	K8	2.963	-0.022	-1.500	2.925	-0.043	-3.000	1.501	P1	0.000 - L(1.501)
S12	K5	K7	2.963	-0.022	-1.500	0.075	-0.043	-3.000	3.254	P2	0.000 - L(3.254)
S13	K6	K9	1.500	-2.555	-1.500	1.500	-2.511	-3.000	1.501	P1	0.000 - L(1.501)
S14	K6	K8	1.500	-2.555	-1.500	2.925	-0.043	-3.000	3.254	P2	0.000 - L(3.254)
S15	K7	K10	0.075	-0.043	-3.000	0.113	-0.065	-4.500	1.501	P1	0.000 - L(1.501)
S16	K7	K11	0.075	-0.043	-3.000	2.888	-0.065	-4.500	3.188	P2	0.000 - L(3.188)
S17	K8	K11	2.925	-0.043	-3.000	2.888	-0.065	-4.500	1.501	P1	0.000 - L(1.501)
S18	K8	K12	2.925	-0.043	-3.000	1.500	-2.468	-4.500	3.188	P2	0.000 - L(3.188)
S19	K9	K12	1.500	-2.511	-3.000	1.500	-2.468	-4.500	1.501	P1	0.000 - L(1.501)
S20	K9	K10	1.500	-2.511	-3.000	0.113	-0.065	-4.500	3.188	P2	0.000 - L(3.188)
S21	K10	K13	0.113	-0.065	-4.500	0.150	-0.087	-6.000	1.501	P1	0.000 - L(1.501)

Staaf	Knoop B	Knoop E	X-B	Y-B	Z-B	X-E	Y-E	Z-E	Lengte	Profiel	Positie
S22	K10	K15	0.113	-0.065	-4.500	1.500	-2.425	-6.000	3.122	P2	0.000 - L(3.122)
S23	K11	K14	2.888	-0.065	-4.500	2.850	-0.087	-6.000	1.501	P1	0.000 - L(1.501)
S24	K11	K13	2.888	-0.065	-4.500	0.150	-0.087	-6.000	3.122	P2	0.000 - L(3.122)

S25	K12	K15	1.500	-2.468	-4.500	1.500	-2.425	-6.000	1.501 P1	0.000 - L(1.501)
S26	K12	K14	1.500	-2.468	-4.500	2.850	-0.087	-6.000	3.122 P2	0.000 - L(3.122)
S27	K13	K16	0.150	-0.087	-6.000	0.188	-0.108	-7.500	1.501 P1	0.000 - L(1.501)
S28	K13	K17	0.150	-0.087	-6.000	2.813	-0.108	-7.500	3.056 P2	0.000 - L(3.056)
S29	K14	K18	2.850	-0.087	-6.000	1.500	-2.382	-7.500	3.056 P2	0.000 - L(3.056)
S30	K14	K17	2.850	-0.087	-6.000	2.813	-0.108	-7.500	1.501 P1	0.000 - L(1.501)
S31	K15	K16	1.500	-2.425	-6.000	0.188	-0.108	-7.500	3.056 P2	0.000 - L(3.056)
S32	K15	K18	1.500	-2.425	-6.000	1.500	-2.382	-7.500	1.501 P1	0.000 - L(1.501)
S33	K16	K19	0.188	-0.108	-7.500	0.225	-0.130	-9.000	1.501 P1	0.000 - L(1.501)
S34	K16	K21	0.188	-0.108	-7.500	1.500	-2.338	-9.000	2.991 P2	0.000 - L(2.991)
S35	K17	K20	2.813	-0.108	-7.500	2.775	-0.130	-9.000	1.501 P1	0.000 - L(1.501)
S36	K17	K19	2.813	-0.108	-7.500	0.225	-0.130	-9.000	2.991 P2	0.000 - L(2.991)
S37	K18	K21	1.500	-2.382	-7.500	1.500	-2.338	-9.000	1.501 P1	0.000 - L(1.501)
S38	K18	K20	1.500	-2.382	-7.500	2.775	-0.130	-9.000	2.991 P2	0.000 - L(2.991)
S39	K19	K22	0.225	-0.130	-9.000	0.263	-0.152	-10.500	1.501 P1	0.000 - L(1.501)
S40	K19	K23	0.225	-0.130	-9.000	2.738	-0.152	-10.500	2.926 P2	0.000 - L(2.926)
S41	K20	K23	2.775	-0.130	-9.000	2.738	-0.152	-10.500	1.501 P1	0.000 - L(1.501)
S42	K20	K24	2.775	-0.130	-9.000	1.500	-2.295	-10.500	2.926 P2	0.000 - L(2.926)
S43	K21	K24	1.500	-2.338	-9.000	1.500	-2.295	-10.500	1.501 P1	0.000 - L(1.501)
S44	K21	K22	1.500	-2.338	-9.000	0.263	-0.152	-10.500	2.926 P2	0.000 - L(2.926)
S45	K22	K25	0.263	-0.152	-10.500	0.300	-0.173	-12.000	1.501 P1	0.000 - L(1.501)
S46	K22	K27	0.263	-0.152	-10.500	1.500	-2.252	-12.000	2.862 P2	0.000 - L(2.862)
S47	K23	K26	2.738	-0.152	-10.500	2.700	-0.173	-12.000	1.501 P1	0.000 - L(1.501)
S48	K23	K25	2.738	-0.152	-10.500	0.300	-0.173	-12.000	2.862 P2	0.000 - L(2.862)
S49	K24	K27	1.500	-2.295	-10.500	1.500	-2.252	-12.000	1.501 P1	0.000 - L(1.501)
S50	K24	K26	1.500	-2.295	-10.500	2.700	-0.173	-12.000	2.862 P2	0.000 - L(2.862)
S51	K25	K29	0.300	-0.173	-12.000	2.663	-0.195	-13.500	2.799 P6	0.000 - L(2.799)
S52	K25	K28	0.300	-0.173	-12.000	0.338	-0.195	-13.500	1.501 P5	0.000 - L(1.501)
S53	K26	K30	2.700	-0.173	-12.000	1.500	-2.208	-13.500	2.799 P6	0.000 - L(2.799)
S54	K26	K29	2.700	-0.173	-12.000	2.663	-0.195	-13.500	1.501 P5	0.000 - L(1.501)
S55	K27	K30	1.500	-2.252	-12.000	1.500	-2.208	-13.500	1.501 P5	0.000 - L(1.501)
S56	K27	K28	1.500	-2.252	-12.000	0.338	-0.195	-13.500	2.799 P6	0.000 - L(2.799)
S57	K28	K31	0.338	-0.195	-13.500	0.375	-0.217	-15.000	1.501 P5	0.000 - L(1.501)
S58	K28	K33	0.338	-0.195	-13.500	1.500	-2.165	-15.000	2.736 P6	0.000 - L(2.736)
S59	K29	K32	2.663	-0.195	-13.500	2.625	-0.217	-15.000	1.501 P5	0.000 - L(1.501)
S60	K29	K31	2.663	-0.195	-13.500	0.375	-0.217	-15.000	2.736 P6	0.000 - L(2.736)
S61	K30	K33	1.500	-2.208	-13.500	1.500	-2.165	-15.000	1.501 P5	0.000 - L(1.501)
S62	K30	K32	1.500	-2.208	-13.500	2.625	-0.217	-15.000	2.736 P6	0.000 - L(2.736)
S63	K31	K34	0.375	-0.217	-15.000	0.413	-0.238	-16.500	1.501 P5	0.000 - L(1.501)
S64	K31	K35	0.375	-0.217	-15.000	2.588	-0.238	-16.500	2.673 P6	0.000 - L(2.673)
S65	K32	K35	2.625	-0.217	-15.000	2.588	-0.238	-16.500	1.501 P5	0.000 - L(1.501)
S66	K32	K36	2.625	-0.217	-15.000	1.500	-2.122	-16.500	2.673 P6	0.000 - L(2.673)
S67	K33	K36	1.500	-2.165	-15.000	1.500	-2.122	-16.500	1.501 P5	0.000 - L(1.501)
S68	K33	K34	1.500	-2.165	-15.000	0.413	-0.238	-16.500	2.673 P6	0.000 - L(2.673)
S69	K34	K37	0.413	-0.238	-16.500	0.450	-0.260	-18.000	1.501 P5	0.000 - L(1.501)
S70	K34	K39	0.413	-0.238	-16.500	1.500	-2.078	-18.000	2.611 P6	0.000 - L(2.611)
S71	K35	K38	2.588	-0.238	-16.500	2.550	-0.260	-18.000	1.501 P5	0.000 - L(1.501)
S72	K35	K37	2.588	-0.238	-16.500	0.450	-0.260	-18.000	2.611 P6	0.000 - L(2.611)
S73	K36	K39	1.500	-2.122	-16.500	1.500	-2.078	-18.000	1.501 P5	0.000 - L(1.501)
S74	K36	K38	1.500	-2.122	-16.500	2.550	-0.260	-18.000	2.611 P6	0.000 - L(2.611)
S75	K37	K40	0.450	-0.260	-18.000	0.488	-0.281	-19.500	1.501 P5	0.000 - L(1.501)
S76	K37	K41	0.450	-0.260	-18.000	2.513	-0.281	-19.500	2.550 P6	0.000 - L(2.550)
S77	K38	K42	2.550	-0.260	-18.000	1.500	-2.035	-19.500	2.550 P6	0.000 - L(2.550)
S78	K38	K41	2.550	-0.260	-18.000	2.513	-0.281	-19.500	1.501 P5	0.000 - L(1.501)
S79	K39	K40	1.500	-2.078	-18.000	0.488	-0.281	-19.500	2.550 P6	0.000 - L(2.550)
S80	K39	K42	1.500	-2.078	-18.000	1.500	-2.035	-19.500	1.501 P5	0.000 - L(1.501)
S81	K40	K43	0.488	-0.281	-19.500	0.525	-0.303	-21.000	1.501 P5	0.000 - L(1.501)
S82	K40	K45	0.488	-0.281	-19.500	1.500	-1.992	-21.000	2.490 P6	0.000 - L(2.490)
S83	K41	K44	2.513	-0.281	-19.500	2.475	-0.303	-21.000	1.501 P5	0.000 - L(1.501)
S84	K41	K43	2.513	-0.281	-19.500	0.525	-0.303	-21.000	2.490 P6	0.000 - L(2.490)
S85	K42	K45	1.500	-2.035	-19.500	1.500	-1.992	-21.000	1.501 P5	0.000 - L(1.501)
S86	K42	K44	1.500	-2.035	-19.500	2.475	-0.303	-21.000	2.490 P6	0.000 - L(2.490)
S87	K43	K46	0.525	-0.303	-21.000	0.563	-0.325	-22.500	1.501 P5	0.000 - L(1.501)
S88	K43	K47	0.525	-0.303	-21.000	2.438	-0.325	-22.500	2.431 P6	0.000 - L(2.431)
S89	K44	K47	2.475	-0.303	-21.000	2.438	-0.325	-22.500	1.501 P5	0.000 - L(1.501)
S90	K44	K48	2.475	-0.303	-21.000	1.500	-1.949	-22.500	2.431 P6	0.000 - L(2.431)
S91	K45	K48	1.500	-1.992	-21.000	1.500	-1.949	-22.500	1.501 P5	0.000 - L(1.501)
S92	K45	K46	1.500	-1.992	-21.000	0.563	-0.325	-22.500	2.431 P6	0.000 - L(2.431)
S93	K46	K49	0.563	-0.325	-22.500	0.600	-0.346	-24.000	1.501 P5	0.000 - L(1.501)
S94	K46	K51	0.563	-0.325	-22.500	1.500	-1.905	-24.000	2.372 P6	0.000 - L(2.372)
S95	K47	K50	2.438	-0.325	-22.500	2.400	-0.346	-24.000	1.501 P5	0.000 - L(1.501)
S96	K47	K49	2.438	-0.325	-22.500	0.600	-0.346	-24.000	2.372 P6	0.000 - L(2.372)

Projectnaam	VFZ	Projectnummer	
Omschrijving	Controle sterkte	Constructeur	
Opdrachtgever		Eenheden	m, kN, kNm

Staaf	Knoop B	Knoop E	X-B	Y-B	Z-B	X-E	Y-E	Z-E	Lengte	Profiel	Positie
S97	K48	K50	1.500	-1.949	-22.500	2.400	-0.346	-24.000	2.372	P6	0.000 - L(2.372)
S98	K48	K51	1.500	-1.949	-22.500	1.500	-1.905	-24.000	1.501	P5	0.000 - L(1.501)
S99	K49	K52	0.600	-0.346	-24.000	0.630	-0.364	-25.200	1.200	P9	0.000 - L(1.200)
S100	K49	K53	0.600	-0.346	-24.000	2.370	-0.364	-25.200	2.139	P10	0.000 - L(2.139)
S101	K50	K53	2.400	-0.346	-24.000	2.370	-0.364	-25.200	1.200	P9	0.000 - L(1.200)
S102	K50	K54	2.400	-0.346	-24.000	1.500	-1.871	-25.200	2.139	P10	0.000 - L(2.139)
S103	K51	K54	1.500	-1.905	-24.000	1.500	-1.871	-25.200	1.200	P9	0.000 - L(1.200)
S104	K51	K52	1.500	-1.905	-24.000	0.630	-0.364	-25.200	2.139	P10	0.000 - L(2.139)
S105	K52	K55	0.630	-0.364	-25.200	0.660	-0.381	-26.400	1.200	P9	0.000 - L(1.200)
S106	K52	K57	0.630	-0.364	-25.200	1.500	-1.836	-26.400	2.089	P10	0.000 - L(2.089)
S107	K53	K56	2.370	-0.364	-25.200	2.340	-0.381	-26.400	1.200	P9	0.000 - L(1.200)
S108	K53	K55	2.370	-0.364	-25.200	0.660	-0.381	-26.400	2.089	P10	0.000 - L(2.089)
S109	K54	K57	1.500	-1.871	-25.200	1.500	-1.836	-26.400	1.200	P9	0.000 - L(1.200)
S110	K54	K56	1.500	-1.871	-25.200	2.340	-0.381	-26.400	2.089	P10	0.000 - L(2.089)
S111	K55	K58	0.660	-0.381	-26.400	0.690	-0.398	-27.600	1.200	P9	0.000 - L(1.200)
S112	K55	K59	0.660	-0.381	-26.400	2.310	-0.398	-27.600	2.040	P10	0.000 - L(2.040)
S113	K56	K59	2.340	-0.381	-26.400	2.310	-0.398	-27.600	1.200	P9	0.000 - L(1.200)
S114	K56	K60	2.340	-0.381	-26.400	1.500	-1.801	-27.600	2.040	P10	0.000 - L(2.040)
S115	K57	K60	1.500	-1.836	-26.400	1.500	-1.801	-27.600	1.200	P9	0.000 - L(1.200)
S116	K57	K58	1.500	-1.836	-26.400	0.690	-0.398	-27.600	2.040	P10	0.000 - L(2.040)
S117	K58	K61	0.690	-0.398	-27.600	0.720	-0.416	-28.800	1.200	P9	0.000 - L(1.200)
S118	K58	K63	0.690	-0.398	-27.600	1.500	-1.767	-28.800	1.992	P10	0.000 - L(1.992)
S119	K59	K62	2.310	-0.398	-27.600	2.280	-0.416	-28.800	1.200	P9	0.000 - L(1.200)
S120	K59	K61	2.310	-0.398	-27.600	0.720	-0.416	-28.800	1.992	P10	0.000 - L(1.992)
S121	K60	K63	1.500	-1.801	-27.600	1.500	-1.767	-28.800	1.200	P9	0.000 - L(1.200)
S122	K60	K62	1.500	-1.801	-27.600	2.280	-0.416	-28.800	1.992	P10	0.000 - L(1.992)
S123	K61	K65	0.720	-0.416	-28.800	2.250	-0.433	-30.000	1.945	P10	0.000 - L(1.945)
S124	K61	K64	0.720	-0.416	-28.800	0.750	-0.433	-30.000	1.200	P9	0.000 - L(1.200)
S125	K62	K66	2.280	-0.416	-28.800	1.500	-1.732	-30.000	1.945	P10	0.000 - L(1.945)
S126	K62	K65	2.280	-0.416	-28.800	2.250	-0.433	-30.000	1.200	P9	0.000 - L(1.200)
S127	K63	K66	1.500	-1.767	-28.800	1.500	-1.732	-30.000	1.200	P9	0.000 - L(1.200)
S128	K63	K64	1.500	-1.767	-28.800	0.750	-0.433	-30.000	1.945	P10	0.000 - L(1.945)
S129	K64	K67	0.750	-0.433	-30.000	0.780	-0.450	-31.200	1.200	P9	0.000 - L(1.200)
S130	K64	K69	0.750	-0.433	-30.000	1.500	-1.697	-31.200	1.898	P10	0.000 - L(1.898)
S131	K65	K68	2.250	-0.433	-30.000	2.220	-0.450	-31.200	1.200	P9	0.000 - L(1.200)
S132	K65	K67	2.250	-0.433	-30.000	0.780	-0.450	-31.200	1.898	P10	0.000 - L(1.898)
S133	K66	K69	1.500	-1.732	-30.000	1.500	-1.697	-31.200	1.200	P9	0.000 - L(1.200)
S134	K66	K68	1.500	-1.732	-30.000	2.220	-0.450	-31.200	1.898	P10	0.000 - L(1.898)
S135	K67	K70	0.780	-0.450	-31.200	0.810	-0.468	-32.400	1.200	P9	0.000 - L(1.200)
S136	K67	K71	0.780	-0.450	-31.200	2.190	-0.468	-32.400	1.852	P10	0.000 - L(1.852)
S137	K68	K71	2.220	-0.450	-31.200	2.190	-0.468	-32.400	1.200	P9	0.000 - L(1.200)
S138	K68	K72	2.220	-0.450	-31.200	1.500	-1.663	-32.400	1.852	P10	0.000 - L(1.852)
S139	K69	K72	1.500	-1.697	-31.200	1.500	-1.663	-32.400	1.200	P9	0.000 - L(1.200)
S140	K69	K70	1.500	-1.697	-31.200	0.810	-0.468	-32.400	1.852	P10	0.000 - L(1.852)
S141	K70	K73	0.810	-0.468	-32.400	0.840	-0.485	-33.600	1.200	P9	0.000 - L(1.200)
S142	K70	K75	0.810	-0.468	-32.400	1.500	-1.628	-33.600	1.806	P10	0.000 - L(1.806)
S143	K71	K74	2.190	-0.468	-32.400	2.160	-0.485	-33.600	1.200	P9	0.000 - L(1.200)
S144	K71	K73	2.190	-0.468	-32.400	0.840	-0.485	-33.600	1.806	P10	0.000 - L(1.806)
S145	K72	K75	1.500	-1.663	-32.400	1.500	-1.628	-33.600	1.200	P9	0.000 - L(1.200)
S146	K72	K74	1.500	-1.663	-32.400	2.160	-0.485	-33.600	1.806	P10	0.000 - L(1.806)
S147	K73	K76	0.840	-0.485	-33.600	0.870	-0.502	-34.800	1.200	P9	0.000 - L(1.200)
S148	K73	K77	0.840	-0.485	-33.600	2.130	-0.502	-34.800	1.762	P10	0.000 - L(1.762)
S149	K74	K77	2.160	-0.485	-33.600	2.130	-0.502	-34.800	1.200	P9	0.000 - L(1.200)
S150	K74	K78	2.160	-0.485	-33.600	1.500	-1.593	-34.800	1.762	P10	0.000 - L(1.762)
S151	K75	K78	1.500	-1.628	-33.600	1.500	-1.593	-34.800	1.200	P9	0.000 - L(1.200)
S152	K75	K76	1.500	-1.628	-33.600	0.870	-0.502	-34.800	1.762	P10	0.000 - L(1.762)
S153	K76	K79	0.870	-0.502	-34.800	0.900	-0.520	-36.000	1.200	P9	0.000 - L(1.200)
S154	K76	K81	0.870	-0.502	-34.800	1.500	-1.559	-36.000	1.718	P10	0.000 - L(1.718)
S155	K77	K80	2.130	-0.502	-34.800	2.100	-0.520	-36.000	1.200	P9	0.000 - L(1.200)
S156	K77	K79	2.130	-0.502	-34.800	0.900	-0.520	-36.000	1.718	P10	0.000 - L(1.718)
S157	K78	K81	1.500	-1.593	-34.800	1.500	-1.559	-36.000	1.200	P9	0.000 - L(1.200)
S158	K78	K80	1.500	-1.593	-34.800	2.100	-0.520	-36.000	1.718	P10	0.000 - L(1.718)
S159	K81	K79	1.500	-1.559	-36.000	0.900	-0.520	-36.000	1.200	P10	0.000 - L(1.200)
S160	K79	K82	0.900	-0.520	-36.000	0.900	-0.520	-37.000	1.000	P15	0.000 - L(1.000)
S161	K79	K83	0.900	-0.520	-36.000	2.100	-0.520	-37.000	1.562	P16	0.000 - L(1.562)
S162	K80	K81	2.100	-0.520	-36.000	1.500	-1.559	-36.000	1.200	P10	0.000 - L(1.200)
S163	K80	K83	2.100	-0.520	-36.000	2.100	-0.520	-37.000	1.000	P15	0.000 - L(1.000)
S164	K80	K84	2.100	-0.520	-36.000	1.500	-1.559	-37.000	1.562	P16	0.000 - L(1.562)
S165	K81	K84	1.500	-1.559	-36.000	1.500	-1.559	-37.000	1.000	P15	0.000 - L(1.000)
S166	K81	K82	1.500	-1.559	-36.000	0.900	-0.520	-37.000	1.562	P16	0.000 - L(1.562)
S167	K82	K85	0.900	-0.520	-37.000	0.900	-0.520	-38.000	1.000	P15	0.000 - L(1.000)

S168	K82	K87	0.900	-0.520	-37.000	1.500	-1.559	-38.000	1.562 P16	0.000 - L(1.562)
S169	K83	K86	2.100	-0.520	-37.000	2.100	-0.520	-38.000	1.000 P15	0.000 - L(1.000)
S170	K83	K85	2.100	-0.520	-37.000	0.900	-0.520	-38.000	1.562 P16	0.000 - L(1.562)
S171	K84	K87	1.500	-1.559	-37.000	1.500	-1.559	-38.000	1.000 P15	0.000 - L(1.000)

Staaf	**Knoop B**	**Knoop E**	**X-B**	**Y-B**	**Z-B**	**X-E**	**Y-E**	**Z-E**	**Lengte**	**Profiel**	**Positie**
S172	K84	K86	1.500	-1.559	-37.000	2.100	-0.520	-38.000	1.562	P16	0.000 - L(1.562)
S173	K85	K88	0.900	-0.520	-38.000	0.900	-0.520	-39.000	1.000	P15	0.000 - L(1.000)
S174	K85	K89	0.900	-0.520	-38.000	2.100	-0.520	-39.000	1.562	P16	0.000 - L(1.562)
S175	K86	K89	2.100	-0.520	-38.000	2.100	-0.520	-39.000	1.000	P15	0.000 - L(1.000)
S176	K86	K90	2.100	-0.520	-38.000	1.500	-1.559	-39.000	1.562	P16	0.000 - L(1.562)
S177	K87	K90	1.500	-1.559	-38.000	1.500	-1.559	-39.000	1.000	P15	0.000 - L(1.000)
S178	K87	K88	1.500	-1.559	-38.000	0.900	-0.520	-39.000	1.562	P16	0.000 - L(1.562)
S179	K88	K93	0.900	-0.520	-39.000	1.500	-1.559	-40.000	1.562	P16	0.000 - L(1.562)
S180	K88	K91	0.900	-0.520	-39.000	0.900	-0.520	-40.000	1.000	P15	0.000 - L(1.000)
S181	K89	K91	2.100	-0.520	-39.000	0.900	-0.520	-40.000	1.562	P16	0.000 - L(1.562)
S182	K89	K92	2.100	-0.520	-39.000	2.100	-0.520	-40.000	1.000	P15	0.000 - L(1.000)
S183	K90	K93	1.500	-1.559	-39.000	1.500	-1.559	-40.000	1.000	P15	0.000 - L(1.000)
S184	K90	K92	1.500	-1.559	-39.000	2.100	-0.520	-40.000	1.562	P16	0.000 - L(1.562)
S185	K93	K91	1.500	-1.559	-40.000	0.900	-0.520	-40.000	1.200	P16	0.000 - L(1.200)
S186	K92	K93	2.100	-0.520	-40.000	1.500	-1.559	-40.000	1.200	P16	0.000 - L(1.200)
-	**-**	**-**	**m**	**m**	**m**	**m**	**m**	**m**	**m**	**-**	**-**

SCHARNIEREN

Staaf	**Positie**	**Oplegg.**	**Scharnier**		**Xr**	**Yr**	**Zr**
S1	0.000	A1	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast
S10	0.000	A6	Vast	Vast	Vast	Vrij	Vrij
	L(3.254)	A2	Vast	Vast	Vast	Vrij	Vrij
S100	0.000	A50	Vast	Vast	Vast	Vrij	Vrij
	L(2.139)	A2	Vast	Vast	Vast	Vrij	Vrij
S101	0.000	A1	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast
S102	0.000	A51	Vast	Vast	Vast	Vrij	Vrij
	L(2.139)	A2	Vast	Vast	Vast	Vrij	Vrij
S103	0.000	A1	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast
S104	0.000	A52	Vast	Vast	Vast	Vrij	Vrij
	L(2.139)	A2	Vast	Vast	Vast	Vrij	Vrij
S105	0.000	A1	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast
S106	0.000	A54	Vast	Vast	Vast	Vrij	Vrij
	L(2.089)	A2	Vast	Vast	Vast	Vrij	Vrij
S107	0.000	A1	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast
S108	0.000	A53	Vast	Vast	Vast	Vrij	Vrij
	L(2.089)	A2	Vast	Vast	Vast	Vrij	Vrij
S109	0.000	A1	Vast	Vast	Vast	Vast	Vast

	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S11	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S110	0.000	A55	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(2.089)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast
S111	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S112	0.000	A56	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(2.040)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast
S113	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S114	0.000	A57	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(2.040)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast
S115	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S116	0.000	A58	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(2.040)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast
S117	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S118	0.000	A60	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(1.992)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast

Staaf	**Positie**		**Oplegg.**	**Scharnier**	**Xr**	**Yr**	**Zr**
S119	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S12	0.000	A5	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(3.254)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast
S120	0.000	A59	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(1.992)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast
S121	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S122	0.000	A61	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(1.992)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast
S123	0.000	A62	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(1.945)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast
S124	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast

S125	0.000	A63	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.945)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S126	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S127	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S128	0.000	A64	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.945)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S129	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S13	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S130	0.000	A66	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.898)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S131	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S132	0.000	A65	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.898)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S133	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S134	0.000	A67	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.898)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S135	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S136	0.000	A68	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.852)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S137	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S138	0.000	A69	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.852)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S139	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S14	0.000	A7	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(3.254)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S140	0.000	A70	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.852)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S141	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast

	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S142	0.000	A72	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.806)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S143	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S144	0.000	A71	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.806)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S145	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast

Staaf	**Positie**		**Oplegg.**	**Scharnier**		**Xr**	**Yr**	**Zr**
S146	0.000	A73	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.806)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S147	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S148	0.000	A74	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.762)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S149	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S15	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S150	0.000	A75	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.762)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S151	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S152	0.000	A76	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.762)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S153	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S154	0.000	A78	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.718)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S155	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S156	0.000	A77	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.718)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S157	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast

	L(1.200)	A1	Vast		Vast	Vast	Vast	Vast
S158	0.000	A79	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.718)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S159	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S16	0.000	A8	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(3.188)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S160	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S161	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.562)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S162	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S163	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S164	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.562)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S165	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S166	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.562)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S167	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S168	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.562)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S169	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S17	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S170	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.562)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S171	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S172	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.562)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij

Staaf	**Positie**		**Scharnier**			
		Oplegg.		**Xr**	**Yr**	**Zr**

Projectnaam	VFZ			Projectnummer					
Omschrijving	Controle sterkte			Constructeur					
Opdrachtgever				Eenheden		m, kN, kNm			
S173	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S174	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(1.562)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
S175	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S176	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(1.562)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
S177	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S178	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij	Vast
	L(1.562)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
S179	0.000	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
	L(1.562)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
S18	0.000	A9	Vast	Vast	Vast	Vrij	Vrij	Vast	
	L(3.188)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
S180	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S181	0.000	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
	L(1.562)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
S182	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S183	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.000)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S184	0.000	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
	L(1.562)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
S185	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S186	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S19	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S2	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast
S20	0.000	A10	Vast	Vast	Vast	Vrij	Vrij	Vast	
	L(3.188)	A2	Vast	Vast	Vast	Vrij	Vrij	Vast	
S21	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast	Vast

		L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S22		0.000	A12	Vast	Vast	Vast	Vast	Vrij	Vrij
		L(3.122)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S23		0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
		L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S24		0.000	A11	Vast	Vast	Vast	Vast	Vrij	Vrij
		L(3.122)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S25		0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
		L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S26		0.000	A13	Vast	Vast	Vast	Vast	Vrij	Vrij
		L(3.122)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S27		0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
		L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S28		0.000	A14	Vast	Vast	Vast	Vast	Vrij	Vrij
		L(3.056)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S29		0.000	A15	Vast	Vast	Vast	Vast	Vrij	Vrij
		L(3.056)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S3		0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
		L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S30		0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
		L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S31		0.000	A16	Vast	Vast	Vast	Vast	Vrij	Vrij
		L(3.056)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij

Staaf	**Positie**		**Oplegg.**	**Scharnier**		**Xr**	**Yr**	**Zr**
S32	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S33	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S34	0.000	A18	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.991)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S35	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S36	0.000	A17	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.991)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S37	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast

	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S38	0.000	A19	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.991)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S39	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S4	0.000	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(3.321)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S40	0.000	A20	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.926)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S41	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S42	0.000	A21	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.926)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S43	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S44	0.000	A22	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.926)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S45	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S46	0.000	A24	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.862)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S47	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S48	0.000	A23	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.862)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S49	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S5	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S50	0.000	A25	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.862)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S51	0.000	A26	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.799)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S52	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S53	0.000	A27	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.799)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij

S54	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast		Vast	Vast	Vast	Vast	Vast
S55	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast		Vast	Vast	Vast	Vast	Vast
S56	0.000	A28	Vast		Vast	Vast	Vrij	Vrij	Vast
	L(2.799)	A2	Vast		Vast	Vast	Vrij	Vrij	Vast
S57	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast		Vast	Vast	Vast	Vast	Vast
S58	0.000	A30	Vast		Vast	Vast	Vrij	Vrij	Vast
	L(2.736)	A2	Vast		Vast	Vast	Vrij	Vrij	Vast
S59	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast		Vast	Vast	Vast	Vast	Vast

Staaf	**Positie**	**Oplegg.**		**Scharnier**	**Xr**	**Yr**	**Zr**	
S6	0.000	A3	Vast		Vast	Vast	Vrij	Vrij	Vast
	L(3.321)	A2	Vast		Vast	Vast	Vrij	Vrij	Vast
S60	0.000	A29	Vast		Vast	Vast	Vrij	Vrij	Vast
	L(2.736)	A2	Vast		Vast	Vast	Vrij	Vrij	Vast
S61	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast		Vast	Vast	Vast	Vast	Vast
S62	0.000	A31	Vast		Vast	Vast	Vrij	Vrij	Vast
	L(2.736)	A2	Vast		Vast	Vast	Vrij	Vrij	Vast
S63	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast		Vast	Vast	Vast	Vast	Vast
S64	0.000	A32	Vast		Vast	Vast	Vrij	Vrij	Vast
	L(2.673)	A2	Vast		Vast	Vast	Vrij	Vrij	Vast
S65	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast		Vast	Vast	Vast	Vast	Vast
S66	0.000	A33	Vast		Vast	Vast	Vrij	Vrij	Vast
	L(2.673)	A2	Vast		Vast	Vast	Vrij	Vrij	Vast
S67	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast		Vast	Vast	Vast	Vast	Vast
S68	0.000	A34	Vast		Vast	Vast	Vrij	Vrij	Vast
	L(2.673)	A2	Vast		Vast	Vast	Vrij	Vrij	Vast
S69	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast		Vast	Vast	Vast	Vast	Vast
S7	0.000	A1	Vast		Vast	Vast	Vast	Vast	Vast

	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S70	0.000	A36	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.611)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S71	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S72	0.000	A35	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.611)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S73	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S74	0.000	A37	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.611)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S75	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S76	0.000	A38	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.550)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S77	0.000	A39	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.550)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S78	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S79	0.000	A40	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.550)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S8	0.000	A4	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(3.321)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S80	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S81	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S82	0.000	A42	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.490)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S83	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S84	0.000	A41	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.490)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S85	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S86	0.000	A43	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.490)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij

Projectnaam	VFZ	Projectnummer	
Omschrijving	Controle sterkte	Constructeur	
Opdrachtgever		Eenheden	m, kN, kNm

Staaf	Positie	Oplegg.		Scharnier		Xr	Yr	Zr
S87	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S88	0.000	A44	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.431)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S89	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S9	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S90	0.000	A45	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.431)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S91	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S92	0.000	A46	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.431)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S93	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S94	0.000	A48	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.372)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S95	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S96	0.000	A47	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.372)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S97	0.000	A49	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.372)	A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S98	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501)	A1	Vast	Vast	Vast	Vast	Vast	Vast
S99	0.000	A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200)	A1	Vast	Vast	Vast	Vast	Vast	Vast
-	m	-	kN/m	kN/m	kN/m	kNm/rad	kNm/rad	kNm/rad

BELASTINGSGEVALLEN TYPEN

Oplegg.	Staven	B.G.Type	Gunstig/Ong.	Element	Niveau	Veld	Psi0	Psi1	Psi2	Cprob UGT/GGT
B.G.1	Permanent	Permanent	-		N.v.t.	N.v.t.				
B.G.2	Wind X	Windbelasting	-		N.v.t.	N.v.t.		0.20		1.00/1.00
B.G.3	Wind Y	Niet gedefinieerd			N.v.t.	N.v.t.				

BELASTINGSGEVALLEN

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Permanent						

qG	0.52 (1.00x)	0.52 (1.00x)	0.000	1.501(L)	Z"	S3,S5,S7,S9,S11, S13,S15,S17,S19, S21,S23,S25,S27, S30,S32-S33,S35, S37,S39,S41,S43,S45,S47,S49
qG	0.07 (1.00x)	0.07 (1.00x)	0.000	3.321(L)	Z"	S4,S6,S8
qG	0.07 (1.00x)	0.07 (1.00x)	0.000	3.254(L)	Z"	S10,S12,S14
qG	0.07 (1.00x)	0.07 (1.00x)	0.000	3.188(L)	Z"	S16,S18,S20
qG	0.07 (1.00x)	0.07 (1.00x)	0.000	3.122(L)	Z"	S22,S24,S26
qG	0.07 (1.00x)	0.07 (1.00x)	0.000	3.056(L)	Z"	S28-S29,S31
qG	0.07 (1.00x)	0.07 (1.00x)	0.000	2.991(L)	Z"	S34,S36,S38
qG	0.07 (1.00x)	0.07 (1.00x)	0.000	2.926(L)	Z"	S40,S42,S44
qG	0.07 (1.00x)	0.07 (1.00x)	0.000	2.862(L)	Z"	S46,S48,S50
qG	0.32 (1.00x)	0.32 (1.00x)	0.000	1.501(L)	Z"	S52,S54-S55,S57, S59,S61,S63,S65, S67,S69,S71,S73, S75,S78,S80-S81, S83,S85,S87,S89,S91,S93,S95,S98
qG	0.06 (1.00x)	0.06 (1.00x)	0.000	2.799(L)	Z"	S51,S53,S56
qG	0.06 (1.00x)	0.06 (1.00x)	0.000	2.736(L)	Z"	S58,S60,S62
qG	0.06 (1.00x)	0.06 (1.00x)	0.000	2.673(L)	Z"	S64,S66,S68
qG	0.06 (1.00x)	0.06 (1.00x)	0.000	2.611(L)	Z"	S70,S72,S74
qG	0.06 (1.00x)	0.06 (1.00x)	0.000	2.550(L)	Z"	S76-S77,S79

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Permanent						
qG	0.06 (1.00x)	0.06 (1.00x)	0.000	2.490(L)	Z"	S82,S84,S86
qG	0.06 (1.00x)	0.06 (1.00x)	0.000	2.431(L)	Z"	S88,S90,S92
qG	0.06 (1.00x)	0.06 (1.00x)	0.000	2.372(L)	Z"	S94,S96-S97
qG	0.17 (1.00x)	0.17 (1.00x)	0.000	1.200(L)	Z"	S99,S101,S103, S105,S107,S109, S111,S113,S115, S117,S119,S121, S124,S126-S127, S129,S131,S133, S135,S137,S139, S141,S143,S145, S147,S149,S151,S153,S155,S157
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	2.139(L)	Z"	S100,S102,S104
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	2.089(L)	Z"	S106,S108,S110
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	2.040(L)	Z"	S112,S114,S116
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	1.992(L)	Z"	S118,S120,S122
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	1.945(L)	Z"	S123,S125,S128
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	1.898(L)	Z"	S130,S132,S134
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	1.852(L)	Z"	S136,S138,S140
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	1.806(L)	Z"	S142,S144,S146
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	1.762(L)	Z"	S148,S150,S152
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	1.718(L)	Z"	S154,S156,S158
qG	0.04 (1.00x)	0.04 (1.00x)	0.000	1.200(L)	Z"	S1,S159,S162
qG	0.13 (1.00x)	0.13 (1.00x)	0.000	1.000(L)	Z"	S160,S163,S165, S167,S169,S171, S173,S175,S177,S180,S182-S183
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.200(L)	Z"	S185-S186
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.200(L)	Z"	S2
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.562(L)	Z"	S161,S170,S174,S181
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.562(L)	Z"	S166
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.562(L)	Z"	S168
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.562(L)	Z"	S178
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.562(L)	Z"	S179
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.562(L)	Z"	S164
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.562(L)	Z"	S172
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.562(L)	Z"	S176
qG	0.03 (1.00x)	0.03 (1.00x)	0.000	1.562(L)	Z"	S184
N	0.24				Z	K43-K45,K58-K60,K91-K93
N	1.36				Z	K88-K90

N	0.67				Z	K79-K81
N	0.18				Z	K73-K75
N	0.99				Z	K64-K66,K70-K72
N	0.51				Z	K55-K57
N	1.01				Z	K49-K51
N	1.16				Z	K40-K42
Som lasten	**X:**	**0,00 kN**	**Y: 0.00 kN**	**Z:**	**72,39 kN**	
B.G.2: Wind X						
q	0.37	0.37	0.000	1.500(L)	X	S3,S5,S9,S11,S15,S17,S21,S23
q	0.37	0.37	0.000	1.501(L)	X	S7,S13,S19,S25
q	0.46	0.46	0.000	1.500(L)	X	S27,S30,S33,S35, S39,S41,S45,S47, S52,S54,S57,S59, S63,S65,S69,S71,S80,S85,S91,S98
q	0.46	0.46	0.000	1.501(L)	X	S32,S37,S43,S49
q	0.44	0.44	0.000	1.501(L)	X	S55,S61,S67,S73
q	0.49	0.49	0.000	1.500(L)	X	S75,S78,S81,S83,S87,S89,S93,S95
q	0.45	0.45	0.000	1.200(L)	X	S99,S101,S105, S107,S111,S113, S117,S119,S124,S126
q	0.39	0.39	0.000	1.200(L)	X	S103,S109,S115,S121,S127
q	0.46	0.46	0.000	1.200(L)	X	S129,S131,S135, S137,S141,S143, S147,S149,S153,S155
q	0.39	0.39	0.000	1.200(L)	X	S133,S139,S145,S151,S157,S160
q	0.50	0.50	0.000	1.000(L)	X	S163,S165,S167, S169,S173,S175,S180,S182
q	0.40	0.40	0.000	1.000(L)	X	S171,S177,S183

Type	**Beginwaarde**	**Eindwaarde**	**Beginafstand**	**Eindafstand**	**Richting**	**Staaf of knoop**
B.G.2: Wind X						
N	0.51				X	K91-K93
N	1.81				X	K88-K89
N	1.33				X	K90
N	0.57				X	K57,K79-K80
N	0.40				X	K81
N	0.33				X	K73-K75
N	1.41				X	K70-K71
N	0.86				X	K72
N	1.37				X	K64-K65
N	0.84				X	K66
N	0.46				X	K58-K60
N	0.81				X	K55-K56
N	1.65				X	K49-K50
N	1.23				X	K51
N	0.43				X	K43-K45
N	1.54				X	K40-K41
N	0.95				X	K42
Som lasten	**X:**	**82,48 kN**	**Y: 0.00 kN**	**Z:**	**0,00 kN**	
B.G.3: Wind Y						
q	-0.54	-0.54	0.000	1.500(L)	Y	S3,S5,S9,S11,S15,S17,S21,S23
q	-0.33	-0.33	0.000	1.500(L)	Y	S7,S13,S19,S25
q	-0.61	-0.61	0.000	1.500(L)	Y	S27,S30,S33,S35,S39,S41,S45,S47
q	-0.37	-0.37	0.000	1.500(L)	Y	S32,S37,S43,S49
q	-0.63	-0.63	0.000	1.500(L)	Y	S52,S54,S57,S59,S63,S65,S69,S71
q	-0.35	-0.35	0.000	1.500(L)	Y	S55,S61,S67,S73
q	-0.67	-0.67	0.000	1.500(L)	Y	S75,S78,S81,S83,S87,S89,S93,S95
q	-0.37	-0.37	0.000	1.500(L)	Y	S80,S85,S91,S98
q	-0.59	-0.59	0.000	1.200(L)	Y	S99,S101,S105, S107,S111,S113, S117,S119,S124,S126
q	-0.33	-0.33	0.000	1.200(L)	Y	S103,S109,S115,S121,S127
q	-0.59	-0.59	0.000	1.200(L)	Y	S129,S131,S135, S137,S141,S143,

q	-0.33	-0.33	0.000	1.200(L)	Y	S147,S149,S153,S155 S133,S139,S145,S151,S157,S160
q	-0.59	-0.59	0.000	1.000(L)	Y	S163,S165,S167, S169,S173,S175,S180,S182
q	-0.34	-0.34	0.000	1.000(L)	Y	S171,S177,S183
N	-0.51				Y	K91-K93
N	-1.81				Y	K88-K89
N	-1.33				Y	K90
N	-0.57				Y	K57,K79-K80
N	-0.40				Y	K81
N	-0.33				Y	K73-K75
N	-1.41				Y	K70-K71
N	-0.86				Y	K72
N	-1.37				Y	K64-K65
N	-0.84				Y	K66
N	-0.46				Y	K58-K60
N	-0.81				Y	K55-K56
N	-1.65				Y	K49-K50
N	-1.23				Y	K51
N	-0.43				Y	K43-K45
N	-1.54				Y	K40-K41
N	-0.95				Y	K42
Som lasten	**X:**	**0,00 kN**	**Y: -91.87 kN**	**Z:**	**0,00 kN**	
-	-	-	m		m	- -

CHARACTERISTIC BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Ch.C.(w1)	Ch.C.1	Ch.C.2
B.G.1	Permanent	1.00	1.00	1.00
B.G.2	Wind X	-	1.00	-
B.G.3	Wind Y	-	-	1.00

PERSISTENT BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Pe.C.1	Pe.C.2	Pe.C.3	Pe.C.4	Pe.C.5
B.G.1	Permanent	1.35	1.20	1.20	0.90	0.90
B.G.2	Wind X	-	1.60	-	1.60	-
B.G.3	Wind Y	-	-	1.60	-	1.60

PE.C. OPLEGREACTIES

B.C.	Oplegging	Knoop	X	Y	Z	Mx	My	Mz
Pe.C.1	O1	K1	1.06	-0.61	-32.57	-0.15	-0.05	0.00
Pe.C.1	O2	K2	-1.06	-0.61	-32.57	0.03	0.16	0.00
Pe.C.1	O3	K3	0.00	1.22	-32.58	0.12	-0.11	0.00
	Som Reacties		**0.00**	**0.00**	**-97.73**			
	Som Lasten		**0.00**	**0.00**	**97.73**			
Pe.C.2	O1	K1	-74.63	18.35	1001.57	3.63	11.78	0.16
Pe.C.2	O2	K2	-46.14	-34.47	-1061.25	0.55	14.63	0.01
Pe.C.2	O3	K3	-11.20	16.13	-27.18	0.43	8.53	0.07
	Som Reacties		**-131.97**	**0.00**	**-86.87**			
	Som Lasten		**131.97**	**0.00**	**86.87**			
Pe.C.3	O1	K1	-20.11	15.16	620.30	12.92	1.33	0.05
Pe.C.3	O2	K2	38.44	47.07	616.87	10.51	-3.08	0.05
Pe.C.3	O3	K3	-18.33	84.76	-1324.04	15.73	-3.38	-0.09
	Som Reacties		**0.00**	**146.99**	**-86.87**			
	Som Lasten		**0.00**	**-146.99**	**86.87**			
Pe.C.4	O1	K1	-74.86	18.48	1008.80	3.66	11.79	0.16
Pe.C.4	O2	K2	-45.90	-34.34	-1054.01	0.54	14.59	0.02
Pe.C.4	O3	K3	-11.20	15.86	-19.94	0.41	8.55	0.07
	Som Reacties		**-131.97**	**0.00**	**-65.15**			
	Som Lasten		**131.97**	**0.00**	**65.15**			
Pe.C.5	O1	K1	-20.34	15.30	627.54	12.96	1.34	0.05
Pe.C.5	O2	K2	38.67	47.20	624.11	10.50	-3.12	0.05
Pe.C.5	O3	K3	-18.33	84.49	-1316.80	15.71	-3.35	-0.09
	Som Reacties		**0.00**	**146.99**	**-65.15**			

	Som Lasten		**0.00**	**-146.99**	**65.15**			
-	**-**	**-**	**kN**	**kN**	**kN**	**kNm**	**kNm**	**kNm**

CH.C. OPLEGREACTIES

B.C.	**Oplegging**	**Knoop**	**X**	**Y**	**Z**	**Mx**	**My**	**Mz**
Ch.C.(w1)	O1	K1	0.78	-0.45	-24.13	-0.11	-0.04	0.00
Ch.C.(w1)	O2	K2	-0.78	-0.45	-24.13	0.02	0.12	0.00
Ch.C.(w1)	O3	K3	0.00	0.90	-24.13	0.09	-0.08	0.00
	Som Reacties		**0.00**	**0.00**	**-72.39**			
	Som Lasten		**0.00**	**0.00**	**72.39**			
Ch.C.1	O1	K1	-46.45	11.35	619.95	2.24	7.35	0.10
Ch.C.1	O2	K2	-29.03	-21.66	-669.31	0.35	9.17	0.01
Ch.C.1	O3	K3	-7.00	10.31	-23.02	0.29	5.31	0.04
	Som Reacties		**-82.48**	**0.00**	**-72.39**			
	Som Lasten		**82.48**	**0.00**	**72.39**			
Ch.C.2	O1	K1	-12.37	9.36	381.65	8.05	0.82	0.03
Ch.C.2	O2	K2	23.83	29.30	379.51	6.57	-1.90	0.03
Ch.C.2	O3	K3	-11.45	53.20	-833.56	9.85	-2.13	-0.06
	Som Reacties		**0.00**	**91.87**	**-72.39**			
	Som Lasten		**0.00**	**-91.87**	**72.39**			
-	**-**	**-**	**kN**	**kN**	**kN**	**kNm**	**kNm**	**kNm**

CH.C. KNOOPVERPLAATSINGEN

Knoop	**B.C.**	**X**	**Y**	**Z**	**Xr**	**Yr**	**Zr**
K1	Ch.C.(w1)	0.0000	0.0000	0.0000	0.000e-03	0.000e-03	0.000e-03
	Ch.C.1	0.0000	0.0000	0.0000	0.000e-03	0.000e-03	0.000e-03
	Ch.C.2	0.0000	0.0000	0.0000	0.000e-03	0.000e-03	0.000e-03
K2	Ch.C.(w1)	0.0000	0.0000	0.0000	0.000e-03	0.000e-03	0.000e-03
	Ch.C.1	0.0000	0.0000	0.0000	0.000e-03	0.000e-03	0.000e-03
	Ch.C.2	0.0000	0.0000	0.0000	0.000e-03	0.000e-03	0.000e-03
K3	Ch.C.(w1)	0.0000	0.0000	0.0000	0.000e-03	0.000e-03	0.000e-03
	Ch.C.1	0.0000	0.0000	0.0000	0.000e-03	0.000e-03	0.000e-03
	Ch.C.2	0.0000	0.0000	0.0000	0.000e-03	0.000e-03	0.000e-03

Knoop	**B.C.**	**X**	**Y**	**Z**	**Xr**	**Yr**	**Zr**
K4	Ch.C.(w1)	0.0000	0.0000	0.0000	-0.006e-03	0.001e-03	-0.000e-03
	Ch.C.1	0.0009	-0.0002	-0.0006	0.087e-03	-1.003e-03	0.026e-03
	Ch.C.2	0.0001	-0.0009	-0.0004	1.061e-03	-0.024e-03	-0.010e-03
K5	Ch.C.(w1)	0.0000	0.0000	0.0000	0.002e-03	-0.006e-03	-0.000e-03
	Ch.C.1	0.0010	0.0000	0.0007	0.044e-03	-1.058e-03	0.019e-03
	Ch.C.2	-0.0002	-0.0008	-0.0004	1.015e-03	0.103e-03	0.017e-03
K6	Ch.C.(w1)	0.0000	0.0000	0.0000	0.004e-03	0.005e-03	-0.000e-03
	Ch.C.1	0.0007	0.0000	0.0000	0.033e-03	-0.850e-03	-0.000e-03
	Ch.C.2	-0.0002	-0.0011	0.0009	1.157e-03	0.096e-03	-0.003e-03
K7	Ch.C.(w1)	0.0000	0.0000	0.0001	0.001e-03	-0.002e-03	0.000e-03
	Ch.C.1	0.0028	-0.0001	-0.0012	-0.096e-03	-1.460e-03	0.049e-03
	Ch.C.2	0.0000	-0.0029	-0.0008	1.539e-03	0.041e-03	-0.030e-03
K8	Ch.C.(w1)	0.0000	0.0000	0.0001	0.001e-03	0.001e-03	0.000e-03
	Ch.C.1	0.0028	-0.0001	0.0013	0.047e-03	-1.388e-03	0.050e-03
	Ch.C.2	-0.0002	-0.0028	-0.0008	1.615e-03	-0.022e-03	0.034e-03
K9	Ch.C.(w1)	0.0000	0.0000	0.0001	-0.002e-03	0.000e-03	0.000e-03
	Ch.C.1	0.0024	-0.0001	0.0000	0.020e-03	-1.401e-03	-0.004e-03
	Ch.C.2	-0.0002	-0.0031	0.0017	1.517e-03	-0.050e-03	0.004e-03
K10	Ch.C.(w1)	0.0000	0.0000	0.0001	0.002e-03	-0.001e-03	0.000e-03
	Ch.C.1	0.0052	0.0000	-0.0018	-0.101e-03	-1.836e-03	0.077e-03
	Ch.C.2	0.0000	-0.0055	-0.0011	2.003e-03	0.003e-03	-0.049e-03
K11	Ch.C.(w1)	0.0000	0.0000	0.0001	-0.000e-03	0.002e-03	0.000e-03
	Ch.C.1	0.0052	-0.0001	0.0019	0.035e-03	-1.822e-03	0.077e-03
	Ch.C.2	-0.0002	-0.0056	-0.0011	2.021e-03	-0.059e-03	0.056e-03
K12	Ch.C.(w1)	0.0000	0.0000	0.0001	-0.001e-03	-0.001e-03	0.000e-03
	Ch.C.1	0.0048	-0.0001	0.0001	-0.021e-03	-1.814e-03	-0.009e-03

	Ch.C.2	-0.0001	-0.0057	0.0024	1.954e-03	-0.041e-03	0.004e-03
K13	Ch.C.(w1)	0.0000	0.0000	0.0001	0.000e-03	0.000e-03	0.000e-03
	Ch.C.1	0.0083	0.0001	-0.0023	-0.044e-03	-2.273e-03	0.103e-03
	Ch.C.2	0.0000	-0.0089	-0.0014	2.454e-03	-0.000e-03	-0.065e-03
K14	Ch.C.(w1)	0.0000	0.0000	0.0001	-0.000e-03	0.000e-03	0.000e-03
	Ch.C.1	0.0083	-0.0002	0.0025	0.039e-03	-2.272e-03	0.103e-03
	Ch.C.2	-0.0001	-0.0089	-0.0014	2.457e-03	-0.006e-03	0.075e-03
K15	Ch.C.(w1)	0.0000	0.0000	0.0001	-0.000e-03	-0.001e-03	0.000e-03
	Ch.C.1	0.0078	0.0000	0.0001	-0.000e-03	-2.213e-03	-0.012e-03
	Ch.C.2	-0.0001	-0.0091	0.0031	2.450e-03	-0.001e-03	0.005e-03
K16	Ch.C.(w1)	0.0000	0.0000	0.0001	0.000e-03	-0.000e-03	0.000e-03
	Ch.C.1	0.0121	0.0002	-0.0028	-0.044e-03	-2.680e-03	0.128e-03
	Ch.C.2	0.0000	-0.0129	-0.0017	2.901e-03	0.003e-03	-0.078e-03
K17	Ch.C.(w1)	0.0000	0.0000	0.0001	0.000e-03	0.001e-03	0.000e-03
	Ch.C.1	0.0121	-0.0002	0.0030	0.046e-03	-2.684e-03	0.127e-03
	Ch.C.2	-0.0001	-0.0130	-0.0017	2.898e-03	-0.008e-03	0.092e-03
K18	Ch.C.(w1)	0.0000	0.0000	0.0001	-0.001e-03	-0.000e-03	0.000e-03
	Ch.C.1	0.0115	-0.0001	0.0001	-0.005e-03	-2.626e-03	-0.011e-03
	Ch.C.2	-0.0001	-0.0131	0.0037	2.888e-03	0.004e-03	0.006e-03
K19	Ch.C.(w1)	0.0000	0.0000	0.0001	0.000e-03	-0.001e-03	0.000e-03
	Ch.C.1	0.0164	0.0002	-0.0032	-0.056e-03	-3.087e-03	0.150e-03
	Ch.C.2	0.0000	-0.0176	-0.0019	3.334e-03	0.010e-03	-0.090e-03
K20	Ch.C.(w1)	0.0000	0.0000	0.0001	0.001e-03	0.001e-03	0.000e-03
	Ch.C.1	0.0164	-0.0003	0.0035	0.047e-03	-3.080e-03	0.152e-03
	Ch.C.2	-0.0001	-0.0176	-0.0019	3.343e-03	-0.015e-03	0.105e-03
K21	Ch.C.(w1)	0.0000	0.0000	0.0001	-0.001e-03	0.000e-03	0.000e-03
	Ch.C.1	0.0157	0.0000	0.0001	-0.001e-03	-3.036e-03	-0.008e-03
	Ch.C.2	-0.0001	-0.0178	0.0043	3.315e-03	-0.005e-03	0.008e-03
K22	Ch.C.(w1)	0.0000	0.0000	0.0002	-0.001e-03	-0.000e-03	0.000e-03
	Ch.C.1	0.0213	0.0003	-0.0036	-0.039e-03	-3.480e-03	0.174e-03
	Ch.C.2	0.0000	-0.0229	-0.0022	3.750e-03	0.005e-03	-0.099e-03
K23	Ch.C.(w1)	0.0000	0.0000	0.0002	0.001e-03	-0.001e-03	0.000e-03
	Ch.C.1	0.0213	-0.0003	0.0039	0.046e-03	-3.481e-03	0.174e-03
	Ch.C.2	-0.0001	-0.0230	-0.0022	3.754e-03	-0.001e-03	0.117e-03

Knoop	**B.C.**	**X**	**Y**	**Z**	**Xr**	**Yr**	**Zr**
K24	Ch.C.(w1)	0.0000	0.0000	0.0002	0.000e-03	0.001e-03	0.000e-03
	Ch.C.1	0.0206	-0.0001	0.0001	0.006e-03	-3.411e-03	-0.003e-03
	Ch.C.2	-0.0001	-0.0231	0.0048	3.748e-03	0.008e-03	0.009e-03
K25	Ch.C.(w1)	0.0000	0.0000	0.0002	-0.002e-03	0.000e-03	0.001e-03
	Ch.C.1	0.0268	0.0003	-0.0039	-0.018e-03	-3.806e-03	0.196e-03
	Ch.C.2	0.0001	-0.0288	-0.0024	4.112e-03	-0.007e-03	-0.108e-03
K26	Ch.C.(w1)	0.0000	0.0000	0.0002	0.001e-03	-0.002e-03	0.001e-03
	Ch.C.1	0.0269	-0.0004	0.0043	0.049e-03	-3.832e-03	0.196e-03
	Ch.C.2	-0.0001	-0.0289	-0.0024	4.092e-03	0.007e-03	0.129e-03
K27	Ch.C.(w1)	0.0000	0.0000	0.0002	0.001e-03	0.002e-03	0.001e-03
	Ch.C.1	0.0259	0.0000	0.0002	-0.002e-03	-3.728e-03	0.002e-03
	Ch.C.2	-0.0001	-0.0290	0.0053	4.116e-03	0.029e-03	0.010e-03
K28	Ch.C.(w1)	0.0000	0.0000	0.0002	-0.001e-03	-0.000e-03	0.001e-03
	Ch.C.1	0.0331	0.0003	-0.0045	-0.023e-03	-4.515e-03	0.260e-03
	Ch.C.2	0.0000	-0.0355	-0.0027	4.858e-03	0.005e-03	-0.130e-03
K29	Ch.C.(w1)	0.0000	0.0000	0.0002	0.001e-03	-0.001e-03	0.001e-03
	Ch.C.1	0.0331	-0.0005	0.0049	0.057e-03	-4.524e-03	0.254e-03
	Ch.C.2	-0.0002	-0.0356	-0.0027	4.852e-03	0.013e-03	0.161e-03
K30	Ch.C.(w1)	0.0000	0.0000	0.0002	0.000e-03	0.001e-03	0.001e-03
	Ch.C.1	0.0321	-0.0001	0.0002	0.006e-03	-4.435e-03	0.020e-03
	Ch.C.2	-0.0001	-0.0358	0.0060	4.860e-03	0.022e-03	0.010e-03
K31	Ch.C.(w1)	0.0000	0.0000	0.0002	0.001e-03	-0.001e-03	0.001e-03

	Ch.C.1	0.0403	0.0003	-0.0050	-0.061e-03	-5.082e-03	0.314e-03
	Ch.C.2	0.0001	-0.0433	-0.0030	5.476e-03	0.009e-03	-0.149e-03
K32	Ch.C.(w1)	0.0000	0.0000	0.0002	0.000e-03	0.001e-03	0.001e-03
	Ch.C.1	0.0404	-0.0005	0.0054	0.056e-03	-5.082e-03	0.315e-03
	Ch.C.2	-0.0002	-0.0433	-0.0030	5.479e-03	-0.019e-03	0.184e-03
K33	Ch.C.(w1)	0.0000	0.0000	0.0002	-0.001e-03	-0.000e-03	0.001e-03
	Ch.C.1	0.0392	-0.0001	0.0002	-0.004e-03	-5.034e-03	0.043e-03
	Ch.C.2	-0.0001	-0.0436	0.0067	5.454e-03	-0.007e-03	0.017e-03
K34	Ch.C.(w1)	0.0000	0.0000	0.0003	0.001e-03	-0.000e-03	0.001e-03
	Ch.C.1	0.0484	0.0004	-0.0054	-0.100e-03	-5.629e-03	0.370e-03
	Ch.C.2	0.0000	-0.0520	-0.0033	6.093e-03	-0.005e-03	-0.159e-03
K35	Ch.C.(w1)	0.0000	0.0000	0.0003	-0.000e-03	0.000e-03	0.001e-03
	Ch.C.1	0.0484	-0.0006	0.0059	0.050e-03	-5.644e-03	0.368e-03
	Ch.C.2	-0.0002	-0.0521	-0.0032	6.081e-03	-0.066e-03	0.203e-03
K36	Ch.C.(w1)	0.0000	0.0000	0.0003	-0.000e-03	-0.000e-03	0.001e-03
	Ch.C.1	0.0471	-0.0001	0.0002	-0.026e-03	-5.602e-03	0.074e-03
	Ch.C.2	-0.0001	-0.0522	0.0073	6.039e-03	-0.019e-03	0.019e-03
K37	Ch.C.(w1)	0.0000	0.0000	0.0003	-0.000e-03	-0.002e-03	0.001e-03
	Ch.C.1	0.0573	0.0006	-0.0057	-0.110e-03	-6.281e-03	0.417e-03
	Ch.C.2	0.0001	-0.0616	-0.0034	6.665e-03	0.052e-03	-0.165e-03
K38	Ch.C.(w1)	0.0000	0.0000	0.0003	0.002e-03	0.001e-03	0.001e-03
	Ch.C.1	0.0573	-0.0006	0.0063	0.043e-03	-6.178e-03	0.422e-03
	Ch.C.2	0.0000	-0.0616	-0.0035	6.772e-03	-0.009e-03	0.211e-03
K39	Ch.C.(w1)	0.0000	0.0000	0.0003	-0.001e-03	0.001e-03	0.001e-03
	Ch.C.1	0.0560	0.0000	0.0003	0.030e-03	-6.170e-03	0.111e-03
	Ch.C.2	-0.0001	-0.0617	0.0077	6.643e-03	-0.040e-03	0.027e-03
K40	Ch.C.(w1)	0.0000	0.0000	0.0003	0.000e-03	-0.001e-03	0.002e-03
	Ch.C.1	0.0671	0.0007	-0.0060	-0.062e-03	-6.656e-03	0.470e-03
	Ch.C.2	0.0000	-0.0719	-0.0036	7.158e-03	-0.004e-03	-0.167e-03
K41	Ch.C.(w1)	0.0000	0.0000	0.0003	0.001e-03	0.001e-03	0.002e-03
	Ch.C.1	0.0669	-0.0007	0.0066	0.044e-03	-6.659e-03	0.471e-03
	Ch.C.2	-0.0001	-0.0722	-0.0036	7.156e-03	-0.029e-03	0.223e-03
K42	Ch.C.(w1)	0.0000	0.0000	0.0003	-0.001e-03	0.000e-03	0.002e-03
	Ch.C.1	0.0656	-0.0001	0.0003	-0.019e-03	-6.614e-03	0.151e-03
	Ch.C.2	0.0000	-0.0721	0.0081	7.134e-03	-0.003e-03	0.029e-03
K43	Ch.C.(w1)	0.0000	0.0000	0.0003	0.001e-03	0.001e-03	0.002e-03
	Ch.C.1	0.0772	0.0007	-0.0062	-0.012e-03	-6.997e-03	0.519e-03
	Ch.C.2	0.0001	-0.0830	-0.0037	7.590e-03	-0.006e-03	-0.168e-03

Knoop	**B.C.**	**X**	**Y**	**Z**	**Xr**	**Yr**	**Zr**
K44	Ch.C.(w1)	0.0000	0.0000	0.0003	-0.001e-03	0.000e-03	0.002e-03
	Ch.C.1	0.0773	-0.0007	0.0068	0.072e-03	-7.070e-03	0.519e-03
	Ch.C.2	0.0000	-0.0831	-0.0037	7.522e-03	-0.020e-03	0.232e-03
K45	Ch.C.(w1)	0.0000	0.0000	0.0003	0.000e-03	-0.001e-03	0.002e-03
	Ch.C.1	0.0758	0.0000	0.0003	-0.017e-03	-7.013e-03	0.193e-03
	Ch.C.2	-0.0001	-0.0831	0.0084	7.562e-03	0.032e-03	0.032e-03
K46	Ch.C.(w1)	0.0000	0.0000	0.0003	0.001e-03	-0.001e-03	0.002e-03
	Ch.C.1	0.0882	0.0007	-0.0063	-0.015e-03	-7.531e-03	0.565e-03
	Ch.C.2	0.0000	-0.0948	-0.0038	8.164e-03	0.012e-03	-0.159e-03
K47	Ch.C.(w1)	0.0000	0.0000	0.0003	-0.000e-03	0.001e-03	0.002e-03
	Ch.C.1	0.0882	-0.0008	0.0070	0.092e-03	-7.608e-03	0.561e-03
	Ch.C.2	-0.0001	-0.0949	-0.0038	8.094e-03	-0.020e-03	0.233e-03
K48	Ch.C.(w1)	0.0000	0.0000	0.0003	-0.001e-03	-0.001e-03	0.002e-03
	Ch.C.1	0.0867	-0.0001	0.0003	-0.018e-03	-7.514e-03	0.242e-03
	Ch.C.2	-0.0001	-0.0949	0.0086	8.081e-03	0.049e-03	0.033e-03
K49	Ch.C.(w1)	0.0000	0.0000	0.0004	0.000e-03	0.000e-03	0.002e-03
	Ch.C.1	0.0997	0.0007	-0.0064	-0.041e-03	-7.893e-03	0.609e-03
	Ch.C.2	0.0001	-0.1074	-0.0038	8.548e-03	-0.030e-03	-0.154e-03

K50	Ch.C.(w1)	0.0000	0.0000	0.0004	-0.000e-03	0.000e-03	0.002e-03
	Ch.C.1	0.1000	-0.0009	0.0071	0.068e-03	-7.972e-03	0.608e-03
	Ch.C.2	0.0001	-0.1072	-0.0038	8.456e-03	-0.054e-03	0.234e-03
K51	Ch.C.(w1)	0.0000	0.0000	0.0004	-0.000e-03	-0.000e-03	0.002e-03
	Ch.C.1	0.0983	0.0001	0.0004	-0.056e-03	-7.862e-03	0.291e-03
	Ch.C.2	-0.0002	-0.1074	0.0088	8.482e-03	0.038e-03	0.037e-03
K52	Ch.C.(w1)	0.0000	0.0000	0.0004	-0.001e-03	-0.000e-03	0.003e-03
	Ch.C.1	0.1097	0.0008	-0.0066	-0.079e-03	-8.601e-03	0.704e-03
	Ch.C.2	0.0000	-0.1178	-0.0040	9.060e-03	0.019e-03	-0.141e-03
K53	Ch.C.(w1)	0.0000	0.0000	0.0004	0.000e-03	-0.001e-03	0.003e-03
	Ch.C.1	0.1097	-0.0009	0.0074	0.003e-03	-8.480e-03	0.705e-03
	Ch.C.2	-0.0001	-0.1179	-0.0040	9.193e-03	0.037e-03	0.234e-03
K54	Ch.C.(w1)	0.0000	0.0000	0.0004	0.000e-03	0.001e-03	0.003e-03
	Ch.C.1	0.1081	-0.0001	0.0004	0.048e-03	-8.456e-03	0.398e-03
	Ch.C.2	-0.0001	-0.1179	0.0091	9.150e-03	-0.060e-03	0.046e-03
K55	Ch.C.(w1)	0.0000	0.0000	0.0004	0.001e-03	-0.001e-03	0.003e-03
	Ch.C.1	0.1203	0.0009	-0.0068	-0.096e-03	-9.127e-03	0.794e-03
	Ch.C.2	0.0001	-0.1292	-0.0041	9.724e-03	-0.029e-03	-0.121e-03
K56	Ch.C.(w1)	0.0000	0.0000	0.0004	0.001e-03	0.002e-03	0.003e-03
	Ch.C.1	0.1204	-0.0009	0.0076	0.008e-03	-9.095e-03	0.800e-03
	Ch.C.2	0.0000	-0.1292	-0.0041	9.764e-03	-0.035e-03	0.227e-03
K57	Ch.C.(w1)	0.0000	0.0000	0.0004	-0.002e-03	-0.000e-03	0.003e-03
	Ch.C.1	0.1186	0.0000	0.0004	-0.007e-03	-9.049e-03	0.511e-03
	Ch.C.2	-0.0001	-0.1293	0.0093	9.728e-03	-0.055e-03	0.057e-03
K58	Ch.C.(w1)	0.0000	0.0000	0.0004	-0.000e-03	-0.000e-03	0.003e-03
	Ch.C.1	0.1315	0.0009	-0.0069	-0.096e-03	-9.471e-03	0.888e-03
	Ch.C.2	0.0000	-0.1411	-0.0041	10.118e-03	0.003e-03	-0.102e-03
K59	Ch.C.(w1)	0.0000	0.0000	0.0004	0.000e-03	-0.000e-03	0.003e-03
	Ch.C.1	0.1314	-0.0009	0.0078	0.038e-03	-9.448e-03	0.893e-03
	Ch.C.2	0.0000	-0.1413	-0.0041	10.150e-03	-0.041e-03	0.224e-03
K60	Ch.C.(w1)	0.0000	0.0000	0.0004	0.000e-03	0.000e-03	0.003e-03
	Ch.C.1	0.1297	-0.0001	0.0004	-0.009e-03	-9.429e-03	0.623e-03
	Ch.C.2	0.0000	-0.1412	0.0095	10.109e-03	-0.023e-03	0.063e-03
K61	Ch.C.(w1)	0.0000	0.0000	0.0004	-0.000e-03	-0.002e-03	0.004e-03
	Ch.C.1	0.1431	0.0010	-0.0069	-0.085e-03	-9.963e-03	0.977e-03
	Ch.C.2	0.0001	-0.1536	-0.0041	10.602e-03	0.029e-03	-0.078e-03
K62	Ch.C.(w1)	0.0000	0.0000	0.0004	0.002e-03	0.001e-03	0.004e-03
	Ch.C.1	0.1431	-0.0009	0.0078	0.048e-03	-9.907e-03	0.984e-03
	Ch.C.2	0.0001	-0.1536	-0.0041	10.664e-03	-0.015e-03	0.213e-03
K63	Ch.C.(w1)	0.0000	0.0000	0.0004	-0.001e-03	0.001e-03	0.004e-03
	Ch.C.1	0.1413	0.0000	0.0004	-0.003e-03	-9.856e-03	0.740e-03
	Ch.C.2	0.0000	-0.1536	0.0096	10.569e-03	-0.006e-03	0.073e-03

Knoop	**B.C.**	**X**	**Y**	**Z**	**Xr**	**Yr**	**Zr**
K64	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.000e-03	-0.001e-03	0.004e-03
	Ch.C.1	0.1553	0.0011	-0.0069	-0.078e-03	-10.216e-03	1.068e-03
	Ch.C.2	0.0000	-0.1665	-0.0041	10.952e-03	-0.011e-03	-0.053e-03
K65	Ch.C.(w1)	0.0000	0.0000	0.0005	0.001e-03	0.000e-03	0.004e-03
	Ch.C.1	0.1552	-0.0009	0.0079	0.046e-03	-10.240e-03	1.075e-03
	Ch.C.2	0.0000	-0.1667	-0.0041	10.937e-03	-0.058e-03	0.205e-03
K66	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.001e-03	0.001e-03	0.004e-03
	Ch.C.1	0.1534	0.0000	0.0005	-0.020e-03	-10.188e-03	0.857e-03
	Ch.C.2	0.0000	-0.1666	0.0096	10.910e-03	-0.003e-03	0.080e-03
K67	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.000e-03	-0.002e-03	0.005e-03
	Ch.C.1	0.1676	0.0011	-0.0068	-0.059e-03	-10.519e-03	1.157e-03
	Ch.C.2	0.0001	-0.1798	-0.0040	11.227e-03	0.025e-03	-0.028e-03
K68	Ch.C.(w1)	0.0000	0.0000	0.0005	0.002e-03	0.001e-03	0.005e-03
	Ch.C.1	0.1676	-0.0010	0.0078	0.052e-03	-10.499e-03	1.166e-03

	Ch.C.2	0.0002	-0.1799	-0.0040	11.258e-03	-0.021e-03	0.194e-03
K69	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.001e-03	0.001e-03	0.005e-03
	Ch.C.1	0.1658	0.0001	0.0005	0.006e-03	-10.490e-03	0.976e-03
	Ch.C.2	0.0000	-0.1798	0.0095	11.200e-03	-0.004e-03	0.090e-03
K70	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.000e-03	-0.002e-03	0.005e-03
	Ch.C.1	0.1805	0.0011	-0.0067	-0.015e-03	-10.756e-03	1.246e-03
	Ch.C.2	0.0000	-0.1934	-0.0040	11.490e-03	0.006e-03	-0.002e-03
K71	Ch.C.(w1)	0.0000	0.0000	0.0005	0.002e-03	0.001e-03	0.005e-03
	Ch.C.1	0.1803	-0.0010	0.0077	0.044e-03	-10.766e-03	1.255e-03
	Ch.C.2	0.0001	-0.1937	-0.0039	11.488e-03	-0.004e-03	0.184e-03
K72	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.001e-03	0.001e-03	0.005e-03
	Ch.C.1	0.1786	0.0000	0.0005	-0.014e-03	-10.734e-03	1.095e-03
	Ch.C.2	0.0000	-0.1935	0.0094	11.468e-03	0.021e-03	0.097e-03
K73	Ch.C.(w1)	0.0000	0.0000	0.0005	0.001e-03	0.003e-03	0.005e-03
	Ch.C.1	0.1933	0.0011	-0.0065	0.010e-03	-10.805e-03	1.337e-03
	Ch.C.2	0.0001	-0.2073	-0.0038	11.617e-03	-0.072e-03	0.021e-03
K74	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.003e-03	-0.001e-03	0.005e-03
	Ch.C.1	0.1934	-0.0010	0.0075	0.005e-03	-10.913e-03	1.345e-03
	Ch.C.2	0.0002	-0.2074	-0.0038	11.518e-03	-0.040e-03	0.178e-03
K75	Ch.C.(w1)	0.0000	0.0000	0.0005	0.002e-03	-0.002e-03	0.005e-03
	Ch.C.1	0.1916	0.0001	0.0005	-0.050e-03	-10.840e-03	1.211e-03
	Ch.C.2	0.0000	-0.2073	0.0092	11.615e-03	0.025e-03	0.105e-03
K76	Ch.C.(w1)	0.0000	0.0000	0.0005	0.006e-03	-0.001e-03	0.006e-03
	Ch.C.1	0.2065	0.0011	-0.0063	-0.028e-03	-11.097e-03	1.422e-03
	Ch.C.2	0.0001	-0.2213	-0.0037	11.717e-03	0.022e-03	0.047e-03
K77	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.002e-03	0.005e-03	0.006e-03
	Ch.C.1	0.2065	-0.0009	0.0073	-0.016e-03	-10.999e-03	1.435e-03
	Ch.C.2	0.0001	-0.2215	-0.0037	11.823e-03	0.045e-03	0.165e-03
K78	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.003e-03	-0.005e-03	0.006e-03
	Ch.C.1	0.2047	0.0000	0.0005	0.035e-03	-11.023e-03	1.330e-03
	Ch.C.2	0.0000	-0.2214	0.0089	11.775e-03	-0.043e-03	0.115e-03
K79	Ch.C.(w1)	0.0000	0.0000	0.0005	0.003e-03	-0.003e-03	0.006e-03
	Ch.C.1	0.2198	0.0010	-0.0061	-0.008e-03	-11.140e-03	1.510e-03
	Ch.C.2	0.0001	-0.2355	-0.0035	11.910e-03	-0.050e-03	0.072e-03
K80	Ch.C.(w1)	0.0000	0.0000	0.0005	0.001e-03	0.004e-03	0.006e-03
	Ch.C.1	0.2198	-0.0009	0.0071	0.022e-03	-11.194e-03	1.523e-03
	Ch.C.2	0.0001	-0.2356	-0.0035	11.865e-03	-0.026e-03	0.155e-03
K81	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.004e-03	-0.002e-03	0.006e-03
	Ch.C.1	0.2181	0.0001	0.0005	-0.042e-03	-11.146e-03	1.448e-03
	Ch.C.2	0.0000	-0.2356	0.0086	11.914e-03	0.010e-03	0.122e-03
K82	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.006e-03	0.001e-03	0.007e-03
	Ch.C.1	0.2310	0.0011	-0.0061	-0.084e-03	-11.280e-03	1.545e-03
	Ch.C.2	0.0002	-0.2475	-0.0036	12.169e-03	-0.035e-03	0.083e-03
K83	Ch.C.(w1)	0.0000	0.0000	0.0005	0.002e-03	-0.006e-03	0.007e-03
	Ch.C.1	0.2311	-0.0009	0.0072	0.054e-03	-11.388e-03	1.560e-03
	Ch.C.2	0.0001	-0.2476	-0.0036	12.062e-03	-0.128e-03	0.150e-03

Knoop	**B.C.**	**X**	**Y**	**Z**	**Xr**	**Yr**	**Zr**
K84	Ch.C.(w1)	0.0000	0.0000	0.0005	0.004e-03	0.004e-03	0.007e-03
	Ch.C.1	0.2293	0.0001	0.0005	-0.070e-03	-11.325e-03	1.496e-03
	Ch.C.2	0.0000	-0.2476	0.0087	12.041e-03	0.016e-03	0.127e-03
K85	Ch.C.(w1)	0.0000	0.0000	0.0005	0.001e-03	-0.001e-03	0.009e-03
	Ch.C.1	0.2424	0.0012	-0.0061	-0.218e-03	-11.654e-03	1.577e-03
	Ch.C.2	0.0001	-0.2598	-0.0036	12.193e-03	0.196e-03	0.092e-03
K86	Ch.C.(w1)	0.0000	0.0000	0.0005	0.001e-03	0.001e-03	0.009e-03
	Ch.C.1	0.2425	-0.0010	0.0072	0.026e-03	-11.335e-03	1.600e-03
	Ch.C.2	0.0003	-0.2599	-0.0036	12.505e-03	-0.018e-03	0.143e-03
K87	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.002e-03	-0.000e-03	0.009e-03

	Ch.C.1	0.2408	0.0002	0.0005	0.120e-03	-11.539e-03	1.544e-03
	Ch.C.2	0.0000	-0.2596	0.0088	12.126e-03	-0.131e-03	0.136e-03
K88	Ch.C.(w1)	0.0000	0.0000	0.0005	0.000e-03	-0.001e-03	0.010e-03
	Ch.C.1	0.2541	0.0014	-0.0061	0.048e-03	-11.342e-03	1.609e-03
	Ch.C.2	-0.0001	-0.2718	-0.0036	11.903e-03	0.038e-03	0.100e-03
K89	Ch.C.(w1)	0.0000	0.0000	0.0005	0.001e-03	0.001e-03	0.010e-03
	Ch.C.1	0.2537	-0.0010	0.0072	-0.015e-03	-11.230e-03	1.641e-03
	Ch.C.2	0.0002	-0.2723	-0.0036	12.027e-03	0.136e-03	0.136e-03
K90	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.001e-03	0.000e-03	0.010e-03
	Ch.C.1	0.2522	-0.0001	0.0005	0.084e-03	-11.211e-03	1.592e-03
	Ch.C.2	0.0002	-0.2718	0.0088	12.038e-03	-0.011e-03	0.146e-03
K91	Ch.C.(w1)	0.0000	0.0000	0.0005	0.001e-03	-0.005e-03	0.011e-03
	Ch.C.1	0.2650	0.0011	-0.0062	0.288e-03	-10.623e-03	1.646e-03
	Ch.C.2	0.0002	-0.2836	-0.0036	11.769e-03	-0.416e-03	0.109e-03
K92	Ch.C.(w1)	0.0000	0.0000	0.0005	0.004e-03	0.004e-03	0.011e-03
	Ch.C.1	0.2650	-0.0009	0.0072	-0.018e-03	-11.233e-03	1.676e-03
	Ch.C.2	0.0002	-0.2838	-0.0036	11.132e-03	-0.061e-03	0.135e-03
K93	Ch.C.(w1)	0.0000	0.0000	0.0005	-0.005e-03	0.002e-03	0.011e-03
	Ch.C.1	0.2632	0.0001	0.0005	-0.309e-03	-10.786e-03	1.637e-03
	Ch.C.2	0.0000	-0.2837	0.0088	11.821e-03	0.227e-03	0.148e-03
-	**-**	**m**	**m**	**m**	**rad**	**rad**	**rad**

UITGANGSPUNTEN VAN DE ANALYSE

Lineaire Elastische Analyse uitgevoerd

KNIKLENGTEGEGEVENS

Staaf	Profiel	Lokale Y-as				Lokale Z-as		
		Lsys	methode	Lbuc	Lbuc/Lsys	methode	Lbuc	Lbuc/Lsys
C1 - V1 (0.000-1.200)	P10	1.200	Handmatige Invoer	1.200	1.00	Handmatige Invoer	1.200	1.00
C2 - V1 (0.000-1.200)	P16	1.200	Handmatige Invoer	1.200	1.00	Handmatige Invoer	1.200	1.00
C3 - V1 (0.000-1.501)	P1	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C4 - V1 (0.000-3.321)	P2	3.320	Handmatige Invoer	3.321	1.00	Handmatige Invoer	3.321	1.00
C5 - V1 (0.000-1.501)	P1	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C6 - V1 (0.000-3.321)	P2	3.320	Handmatige Invoer	3.321	1.00	Handmatige Invoer	3.321	1.00
C7 - V1 (0.000-1.501)	P1	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C8 - V1 (0.000-3.321)	P2	3.320	Handmatige Invoer	3.321	1.00	Handmatige Invoer	3.321	1.00
C9 - V1 (0.000-1.501)	P1	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C10 - V1 (0.000-3.254)	P2	3.250	Handmatige Invoer	3.254	1.00	Handmatige Invoer	3.254	1.00
C11 - V1 (0.000-1.501)	P1	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C12 - V1 (0.000-3.254)	P2	3.250	Handmatige Invoer	3.254	1.00	Handmatige Invoer	3.254	1.00
C13 - V1 (0.000-1.501)	P1	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C14 - V1 (0.000-3.254)	P2	3.250	Handmatige Invoer	3.254	1.00	Handmatige Invoer	3.254	1.00

Staaf	Profiel	Lokale Y-as				Lokale Z-as		
		Lsys	methode	Lbuc	Lbuc/Lsys	methode	Lbuc	Lbuc/Lsys
C15 - V1 (0.000-1.501)	P1	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C16 - V1 (0.000-3.188)	P2	3.190	Handmatige Invoer	3.188	1.00	Handmatige Invoer	3.188	1.00
C17 - V1 (0.000-1.501)	P1	1.500	Handmatige	2.251	1.50	Handmatige	2.251	1.50

C18 - V1 (0.000-3.188)	P2	3.190	Invoer Handmatige	3.188	1.00	Invoer Handmatige	3.188	1.00
C19 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C20 - V1 (0.000-3.188)	P2	3.190	Invoer Handmatige	3.188	1.00	Invoer Handmatige	3.188	1.00
C21 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C22 - V1 (0.000-3.122)	P2	3.120	Invoer Handmatige	3.122	1.00	Invoer Handmatige	3.122	1.00
C23 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C24 - V1 (0.000-3.122)	P2	3.120	Invoer Handmatige	3.122	1.00	Invoer Handmatige	3.122	1.00
C25 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C26 - V1 (0.000-3.122)	P2	3.120	Invoer Handmatige	3.122	1.00	Invoer Handmatige	3.122	1.00
C27 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C28 - V1 (0.000-3.056)	P2	3.060	Invoer Handmatige	3.056	1.00	Invoer Handmatige	3.056	1.00
C29 - V1 (0.000-3.056)	P2	3.060	Invoer Handmatige	3.056	1.00	Invoer Handmatige	3.056	1.00
C30 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C31 - V1 (0.000-3.056)	P2	3.060	Invoer Handmatige	3.056	1.00	Invoer Handmatige	3.056	1.00
C32 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C33 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C34 - V1 (0.000-2.991)	P2	2.990	Invoer Handmatige	2.991	1.00	Invoer Handmatige	2.991	1.00
C35 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C36 - V1 (0.000-2.991)	P2	2.990	Invoer Handmatige	2.991	1.00	Invoer Handmatige	2.991	1.00
C37 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C38 - V1 (0.000-2.991)	P2	2.990	Invoer Handmatige	2.991	1.00	Invoer Handmatige	2.991	1.00
C39 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C40 - V1 (0.000-2.926)	P2	2.930	Invoer Handmatige	2.926	1.00	Invoer Handmatige	2.926	1.00
C41 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C42 - V1 (0.000-2.926)	P2	2.930	Invoer Handmatige	2.926	1.00	Invoer Handmatige	2.926	1.00
C43 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C44 - V1 (0.000-2.926)	P2	2.930	Invoer Handmatige	2.926	1.00	Invoer Handmatige	2.926	1.00
C45 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C46 - V1 (0.000-2.862)	P2	2.860	Invoer Handmatige	2.862	1.00	Invoer Handmatige	2.862	1.00
C47 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C48 - V1 (0.000-2.862)	P2	2.860	Invoer Handmatige	2.862	1.00	Invoer Handmatige	2.862	1.00
C49 - V1 (0.000-1.501)	P1	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C50 - V1 (0.000-2.862)	P2	2.860	Invoer Handmatige	2.862	1.00	Invoer Handmatige	2.862	1.00
C51 - V1 (0.000-2.799)	P6	2.800	Invoer Handmatige	2.799	1.00	Invoer Handmatige	2.799	1.00
C52 - V1 (0.000-1.501)	P5	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C53 - V1 (0.000-2.799)	P6	2.800	Invoer Handmatige	2.799	1.00	Invoer Handmatige	2.799	1.00
C54 - V1 (0.000-1.501)	P5	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50

Projectnaam	VFZ	Projectnummer	
Omschrijving	Controle sterkte	Constructeur	
Opdrachtgever		Eenheden	m, kN, kNm

			Invoer			Invoer		
Staaf	**Profiel**		**Lokale Y-as**			**Lokale Z-as**		
		Lsys	**methode**	**Lbuc**	**Lbuc/Lsys**	**methode**	**Lbuc**	**Lbuc/Lsys**
C55 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C56 - V1 (0.000-2.799)	P6	2.800	Handmatige Invoer	2.799	1.00	Handmatige Invoer	2.799	1.00
C57 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C58 - V1 (0.000-2.736)	P6	2.740	Handmatige Invoer	2.736	1.00	Handmatige Invoer	2.736	1.00
C59 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C60 - V1 (0.000-2.736)	P6	2.740	Handmatige Invoer	2.736	1.00	Handmatige Invoer	2.736	1.00
C61 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C62 - V1 (0.000-2.736)	P6	2.740	Handmatige Invoer	2.736	1.00	Handmatige Invoer	2.736	1.00
C63 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C64 - V1 (0.000-2.673)	P6	2.670	Handmatige Invoer	2.673	1.00	Handmatige Invoer	2.673	1.00
C65 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C66 - V1 (0.000-2.673)	P6	2.670	Handmatige Invoer	2.673	1.00	Handmatige Invoer	2.673	1.00
C67 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C68 - V1 (0.000-2.673)	P6	2.670	Handmatige Invoer	2.673	1.00	Handmatige Invoer	2.673	1.00
C69 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C70 - V1 (0.000-2.611)	P6	2.610	Handmatige Invoer	2.611	1.00	Handmatige Invoer	2.611	1.00
C71 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C72 - V1 (0.000-2.611)	P6	2.610	Handmatige Invoer	2.611	1.00	Handmatige Invoer	2.611	1.00
C73 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C74 - V1 (0.000-2.611)	P6	2.610	Handmatige Invoer	2.611	1.00	Handmatige Invoer	2.611	1.00
C75 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C76 - V1 (0.000-2.550)	P6	2.550	Handmatige Invoer	2.550	1.00	Handmatige Invoer	2.550	1.00
C77 - V1 (0.000-2.550)	P6	2.550	Handmatige Invoer	2.550	1.00	Handmatige Invoer	2.550	1.00
C78 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C79 - V1 (0.000-2.550)	P6	2.550	Handmatige Invoer	2.550	1.00	Handmatige Invoer	2.550	1.00
C80 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C81 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C82 - V1 (0.000-2.490)	P6	2.490	Handmatige Invoer	2.490	1.00	Handmatige Invoer	2.490	1.00
C83 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C84 - V1 (0.000-2.490)	P6	2.490	Handmatige Invoer	2.490	1.00	Handmatige Invoer	2.490	1.00
C85 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C86 - V1 (0.000-2.490)	P6	2.490	Handmatige Invoer	2.490	1.00	Handmatige Invoer	2.490	1.00
C87 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50
C88 - V1 (0.000-2.431)	P6	2.430	Handmatige Invoer	2.431	1.00	Handmatige Invoer	2.431	1.00
C89 - V1 (0.000-1.501)	P5	1.500	Handmatige	2.251	1.50	Handmatige	2.251	1.50

C90 - V1 (0.000-2.431)	P6	2.430	Invoer Handmatige	2.431	1.00	Invoer Handmatige	2.431	1.00
C91 - V1 (0.000-1.501)	P5	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C92 - V1 (0.000-2.431)	P6	2.430	Invoer Handmatige	2.431	1.00	Invoer Handmatige	2.431	1.00
C93 - V1 (0.000-1.501)	P5	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C94 - V1 (0.000-2.372)	P6	2.370	Invoer Handmatige	2.372	1.00	Invoer Handmatige	2.372	1.00

Staaf	**Profiel**		**Lokale Y-as**			**Lokale Z-as**		
		Lsys	**methode**	**Lbuc**	**Lbuc/Lsys**	**methode**	**Lbuc**	**Lbuc/Lsys**
C95 - V1 (0.000-1.501)	P5	1.500	Handmatige	2.251	1.50	Handmatige	2.251	1.50
C96 - V1 (0.000-2.372)	P6	2.370	Invoer Handmatige	2.372	1.00	Invoer Handmatige	2.372	1.00
C97 - V1 (0.000-2.372)	P6	2.370	Invoer Handmatige	2.372	1.00	Invoer Handmatige	2.372	1.00
C98 - V1 (0.000-1.501)	P5	1.500	Invoer Handmatige	2.251	1.50	Invoer Handmatige	2.251	1.50
C99 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C100 - V1 (0.000-2.139)	P10	2.140	Invoer Handmatige	2.139	1.00	Invoer Handmatige	2.139	1.00
C101 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C102 - V1 (0.000-2.139)	P10	2.140	Invoer Handmatige	2.139	1.00	Invoer Handmatige	2.139	1.00
C103 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C104 - V1 (0.000-2.139)	P10	2.140	Invoer Handmatige	2.139	1.00	Invoer Handmatige	2.139	1.00
C105 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C106 - V1 (0.000-2.089)	P10	2.090	Invoer Handmatige	2.089	1.00	Invoer Handmatige	2.089	1.00
C107 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C108 - V1 (0.000-2.089)	P10	2.090	Invoer Handmatige	2.089	1.00	Invoer Handmatige	2.089	1.00
C109 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C110 - V1 (0.000-2.089)	P10	2.090	Invoer Handmatige	2.089	1.00	Invoer Handmatige	2.089	1.00
C111 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C112 - V1 (0.000-2.040)	P10	2.040	Invoer Handmatige	2.040	1.00	Invoer Handmatige	2.040	1.00
C113 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C114 - V1 (0.000-2.040)	P10	2.040	Invoer Handmatige	2.040	1.00	Invoer Handmatige	2.040	1.00
C115 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C116 - V1 (0.000-2.040)	P10	2.040	Invoer Handmatige	2.040	1.00	Invoer Handmatige	2.040	1.00
C117 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C118 - V1 (0.000-1.992)	P10	1.990	Invoer Handmatige	1.992	1.00	Invoer Handmatige	1.992	1.00
C119 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C120 - V1 (0.000-1.992)	P10	1.990	Invoer Handmatige	1.992	1.00	Invoer Handmatige	1.992	1.00
C121 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C122 - V1 (0.000-1.992)	P10	1.990	Invoer Handmatige	1.992	1.00	Invoer Handmatige	1.992	1.00
C123 - V1 (0.000-1.945)	P10	1.940	Invoer Handmatige	1.945	1.00	Invoer Handmatige	1.945	1.00
C124 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50

C125 - V1 (0.000-1.945)	P10	1.940	Invoer Handmatige	1.945	1.00	Invoer Handmatige	1.945	1.00
C126 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C127 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C128 - V1 (0.000-1.945)	P10	1.940	Invoer Handmatige	1.945	1.00	Invoer Handmatige	1.945	1.00
C129 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C130 - V1 (0.000-1.898)	P10	1.900	Invoer Handmatige	1.898	1.00	Invoer Handmatige	1.898	1.00
C131 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C132 - V1 (0.000-1.898)	P10	1.900	Invoer Handmatige	1.898	1.00	Invoer Handmatige	1.898	1.00
C133 - V1 (0.000-1.200)	P9	1.200	Invoer Handmatige	1.801	1.50	Invoer Handmatige	1.801	1.50
C134 - V1 (0.000-1.898)	P10	1.900	Invoer Handmatige	1.898	1.00	Invoer Handmatige	1.898	1.00

Staaf	**Profiel**		**Lokale Y-as**			**Lokale Z-as**		
		Lsys	**methode**	**Lbuc**	**Lbuc/Lsys**	**methode**	**Lbuc**	**Lbuc/Lsys**
C135 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C136 - V1 (0.000-1.852)	P10	1.850	Handmatige Invoer	1.852	1.00	Handmatige Invoer	1.852	1.00
C137 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C138 - V1 (0.000-1.852)	P10	1.850	Handmatige Invoer	1.852	1.00	Handmatige Invoer	1.852	1.00
C139 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C140 - V1 (0.000-1.852)	P10	1.850	Handmatige Invoer	1.852	1.00	Handmatige Invoer	1.852	1.00
C141 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C142 - V1 (0.000-1.806)	P10	1.810	Handmatige Invoer	1.806	1.00	Handmatige Invoer	1.806	1.00
C143 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C144 - V1 (0.000-1.806)	P10	1.810	Handmatige Invoer	1.806	1.00	Handmatige Invoer	1.806	1.00
C145 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C146 - V1 (0.000-1.806)	P10	1.810	Handmatige Invoer	1.806	1.00	Handmatige Invoer	1.806	1.00
C147 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C148 - V1 (0.000-1.762)	P10	1.760	Handmatige Invoer	1.762	1.00	Handmatige Invoer	1.762	1.00
C149 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C150 - V1 (0.000-1.762)	P10	1.760	Handmatige Invoer	1.762	1.00	Handmatige Invoer	1.762	1.00
C151 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C152 - V1 (0.000-1.762)	P10	1.760	Handmatige Invoer	1.762	1.00	Handmatige Invoer	1.762	1.00
C153 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C154 - V1 (0.000-1.718)	P10	1.720	Handmatige Invoer	1.718	1.00	Handmatige Invoer	1.718	1.00
C155 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C156 - V1 (0.000-1.718)	P10	1.720	Handmatige Invoer	1.718	1.00	Handmatige Invoer	1.718	1.00
C157 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50
C158 - V1 (0.000-1.718)	P10	1.720	Handmatige Invoer	1.718	1.00	Handmatige Invoer	1.718	1.00
C159 - V1 (0.000-1.200)	P10	1.200	Handmatige Invoer	1.200	1.00	Handmatige Invoer	1.200	1.00

C160 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C161 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C162 - V1 (0.000-1.200)	P10	1.200	Invoer Handmatige	1.200	1.00	Invoer Handmatige	1.200	1.00
C163 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C164 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C165 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C166 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C167 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C168 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C169 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C170 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C171 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C172 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C173 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C174 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00

Staaf	**Profiel**		**Lokale Y-as**			**Lokale Z-as**		
		Lsys	**methode**	**Lbuc**	**Lbuc/Lsys**	**methode**	**Lbuc**	**Lbuc/Lsys**
C175 - V1 (0.000-1.000)	P15	1.000	Handmatige	1.500	1.50	Handmatige	1.500	1.50
C176 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C177 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C178 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C179 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C180 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C181 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C182 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C183 - V1 (0.000-1.000)	P15	1.000	Invoer Handmatige	1.500	1.50	Invoer Handmatige	1.500	1.50
C184 - V1 (0.000-1.562)	P16	1.560	Invoer Handmatige	1.562	1.00	Invoer Handmatige	1.562	1.00
C185 - V1 (0.000-1.200)	P16	1.200	Invoer Handmatige	1.200	1.00	Invoer Handmatige	1.200	1.00
C186 - V1 (0.000-1.200)	P16	1.200	Invoer Handmatige	1.200	1.00	Invoer Handmatige	1.200	1.00
-	**-**	**m**	Invoer **-**	**m**	**-**	Invoer **-**	**m**	**-**

EXTREME UNITY CHECK NEN-EN1993-1-1:2016/NB:2016

Veld	**Toetsing**	**Combinatie**	**Artikel**	**UC max**
C1-V1 (0.000-1.200)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(NB.33)	0.04
C2-V1 (0.000-1.200)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(NB.33)	0.05
C3-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.53
C4-V1 (0.000-3.321)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.25
C5-V1 (0.000-1.501)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.1)	0.57
C6-V1 (0.000-3.321)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.25
C7-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.67
C8-V1 (0.000-3.321)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.47

C9-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.46
C10-V1 (0.000-3.254)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.28
C11-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.47
C12-V1 (0.000-3.254)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.55
C13-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.59
C14-V1 (0.000-3.254)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.52
C15-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.42
C16-V1 (0.000-3.188)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.31
C17-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.47

Veld	**Toetsing**	**Combinatie**	**Artikel**	**UC max**
C18-V1 (0.000-3.188)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.29
C19-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.57
C20-V1 (0.000-3.188)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.51
C21-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.41
C22-V1 (0.000-3.122)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.28
C23-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.44
C24-V1 (0.000-3.122)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.53
C25-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.54
C26-V1 (0.000-3.122)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.50
C27-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.39
C28-V1 (0.000-3.056)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.31
C29-V1 (0.000-3.056)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.28
C30-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.43
C31-V1 (0.000-3.056)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.48
C32-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.51
C33-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.38
C34-V1 (0.000-2.991)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.27
C35-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.40
C36-V1 (0.000-2.991)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.50
C37-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.49
C38-V1 (0.000-2.991)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.47
C39-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.35
C40-V1 (0.000-2.926)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.30
C41-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.38
C42-V1 (0.000-2.926)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.27
C43-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.46
C44-V1 (0.000-2.926)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.44
C45-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.33
C46-V1 (0.000-2.862)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.26
C47-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.35
C48-V1 (0.000-2.862)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.46
C49-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.43
C50-V1 (0.000-2.862)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.43
C51-V1 (0.000-2.799)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.32
C52-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.50
C53-V1 (0.000-2.799)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.28
C54-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.57
C55-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.69
C56-V1 (0.000-2.799)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.49
C57-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.47
C58-V1 (0.000-2.736)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.28
C59-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.52
C60-V1 (0.000-2.736)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.52
C61-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.64
C62-V1 (0.000-2.736)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.48
C63-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.43
C64-V1 (0.000-2.673)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.33

C65-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.49
C66-V1 (0.000-2.673)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.29
C67-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.59
C68-V1 (0.000-2.673)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.46
C69-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.42
C70-V1 (0.000-2.611)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.28
C71-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.44
C72-V1 (0.000-2.611)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.50
C73-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.54
C74-V1 (0.000-2.611)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.45
C75-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.37
C76-V1 (0.000-2.550)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.32
C77-V1 (0.000-2.550)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.27

Veld	**Toetsing**	**Combinatie**	**Artikel**	**UC max**
C78-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.41
C79-V1 (0.000-2.550)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.43
C80-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.49
C81-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.35
C82-V1 (0.000-2.490)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.26
C83-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.36
C84-V1 (0.000-2.490)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.44
C85-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.44
C86-V1 (0.000-2.490)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.40
C87-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.30
C88-V1 (0.000-2.431)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.28
C89-V1 (0.000-1.501)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.34
C90-V1 (0.000-2.431)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.24
C91-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.40
C92-V1 (0.000-2.431)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.37
C93-V1 (0.000-1.501)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.26
C94-V1 (0.000-2.372)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.23
C95-V1 (0.000-1.501)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.1)	0.29
C96-V1 (0.000-2.372)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.38
C97-V1 (0.000-2.372)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.34
C98-V1 (0.000-1.501)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.35
C99-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.44
C100-V1 (0.000-2.139)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.35
C101-V1 (0.000-1.200)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.50
C102-V1 (0.000-2.139)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.30
C103-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.58
C104-V1 (0.000-2.139)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.56
C105-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.39
C106-V1 (0.000-2.089)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.28
C107-V1 (0.000-1.200)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.1)	0.43
C108-V1 (0.000-2.089)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.57
C109-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.52
C110-V1 (0.000-2.089)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.51
C111-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.1)	0.33
C112-V1 (0.000-2.040)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.32
C113-V1 (0.000-1.200)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.38
C114-V1 (0.000-2.040)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.27
C115-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.45
C116-V1 (0.000-2.040)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.47
C117-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.27
C118-V1 (0.000-1.992)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.25
C119-V1 (0.000-1.200)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.32
C120-V1 (0.000-1.992)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.49

C121-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.39
C122-V1 (0.000-1.992)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.44
C123-V1 (0.000-1.945)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.28
C124-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.21
C125-V1 (0.000-1.945)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.24
C126-V1 (0.000-1.200)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.29
C127-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.33
C128-V1 (0.000-1.945)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.40
C129-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.19
C130-V1 (0.000-1.898)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.21
C131-V1 (0.000-1.200)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.22
C132-V1 (0.000-1.898)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.40
C133-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.28
C134-V1 (0.000-1.898)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.36
C135-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.14
C136-V1 (0.000-1.852)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.23
C137-V1 (0.000-1.200)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.20

Veld	**Toetsing**	**Combinatie**	**Artikel**	**UC max**
C138-V1 (0.000-1.852)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.19
C139-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.23
C140-V1 (0.000-1.852)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.31
C141-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.13
C142-V1 (0.000-1.806)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.16
C143-V1 (0.000-1.200)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.15
C144-V1 (0.000-1.806)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.29
C145-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.18
C146-V1 (0.000-1.806)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.27
C147-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.09
C148-V1 (0.000-1.762)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.17
C149-V1 (0.000-1.200)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.12
C150-V1 (0.000-1.762)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.14
C151-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.14
C152-V1 (0.000-1.762)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.22
C153-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.07
C154-V1 (0.000-1.718)	Doorsnede	Pe.C.5	NEN-EN1993-1-1(6.5)	0.13
C155-V1 (0.000-1.200)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.09
C156-V1 (0.000-1.718)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.22
C157-V1 (0.000-1.200)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.10
C158-V1 (0.000-1.718)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.20
C159-V1 (0.000-1.200)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(NB.33)	0.03
C160-V1 (0.000-1.000)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.05
C161-V1 (0.000-1.562)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(6.5)	0.19
C162-V1 (0.000-1.200)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(NB.33)	0.03
C163-V1 (0.000-1.000)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.08
C164-V1 (0.000-1.562)	Doorsnede	Pe.C.5	NEN-EN1993-1-1(6.5)	0.15
C165-V1 (0.000-1.000)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.09
C166-V1 (0.000-1.562)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.26
C167-V1 (0.000-1.000)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(NB.33)	0.04
C168-V1 (0.000-1.562)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.13
C169-V1 (0.000-1.000)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(NB.33)	0.05
C170-V1 (0.000-1.562)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.27
C171-V1 (0.000-1.000)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.06
C172-V1 (0.000-1.562)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.24
C173-V1 (0.000-1.000)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(NB.33)	0.06
C174-V1 (0.000-1.562)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(6.5)	0.12
C175-V1 (0.000-1.000)	Doorsnede	Pe.C.5	NEN-EN1993-1-1(NB.33)	0.07
C176-V1 (0.000-1.562)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.10

Projectnaam	VFZ		Projectnummer	
Omschrijving	Controle sterkte		Constructeur	
Opdrachtgever			Eenheden	m, kN, kNm

C177-V1 (0.000-1.000)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(NB.33)	0.05
C178-V1 (0.000-1.562)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.18
C179-V1 (0.000-1.562)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(6.5)	0.04
C180-V1 (0.000-1.000)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(NB.33)	0.06
C181-V1 (0.000-1.562)	Stabiliteit	Pe.C.2	NEN-EN1993-1-1(6.61&6.62)	0.09
C182-V1 (0.000-1.000)	Doorsnede	Pe.C.5	NEN-EN1993-1-1(NB.33)	0.07
C183-V1 (0.000-1.000)	Doorsnede	Pe.C.2	NEN-EN1993-1-1(NB.33)	0.05
C184-V1 (0.000-1.562)	Stabiliteit	Pe.C.3	NEN-EN1993-1-1(6.61&6.62)	0.09
C185-V1 (0.000-1.200)	Doorsnede	Pe.C.4	NEN-EN1993-1-1(NB.33)	0.04
C186-V1 (0.000-1.200)	Doorsnede	Pe.C.3	NEN-EN1993-1-1(NB.33)	0.06

Bijlage 3:

fundatie berekening Leegte Bouwadvies

Project:
Project no:
Author:

IDEA StatiCa
Calculate yesterday's estimates

Project data

Project name	
Project number	
Author	
Description	
Date	5/7/2020
Design code	EN

Material

Steel	S 355
Concrete	C25/30

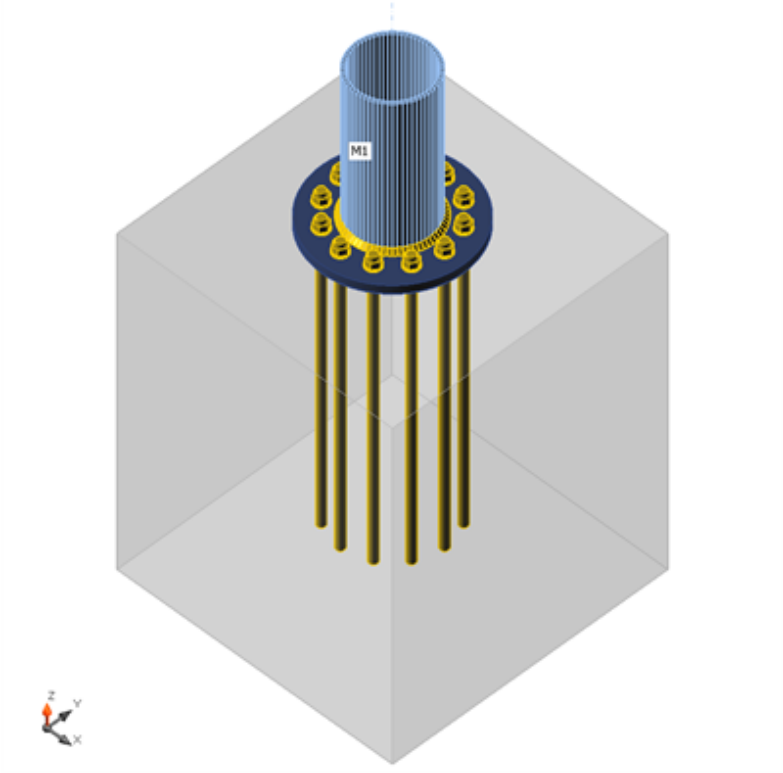
Project item CON1

Design

Name	CON1
Description	
Analysis	Stress, strain/ simplified loading

Beams and columns

Name	Cross-section	β – Direction [°]	γ - Pitch [°]	α - Rotation [°]	Offset ex [mm]	Offset ey [mm]	Offset ez [mm]	Forces in
M1	1 - B219.1/10	0.0	-90.0	0.0	0	0	0	Node



Cross-sections

Name	Material
1 - B219.1/10	S 355

Anchors

Name	Bolt assembly	Diameter [mm]	fu [MPa]	Gross area [mm^2]
M24 8.8	M24 8.8	24	800.0	452

Load effects (equilibrium not required)

Name	Member	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
LE1	M1	-1324.0	84.5	-18.3	0.0	-3.4	15.7

Foundation block

Item	Value	Unit
CB 1		
Dimensions	820 x 820	mm
Depth	1000	mm
Anchor	M24 8.8	
Anchoring length	825	mm
Shear force transfer	Anchors	
Gap	30	mm

Check

Summary

Name	Value	Status
Analysis	100.0%	OK
Plates	0.7 < 5%	OK
Anchors	98.1 < 100%	OK
Welds	98.1 < 100%	OK
Concrete block	Not calculated	
Buckling	Not calculated	

Plates

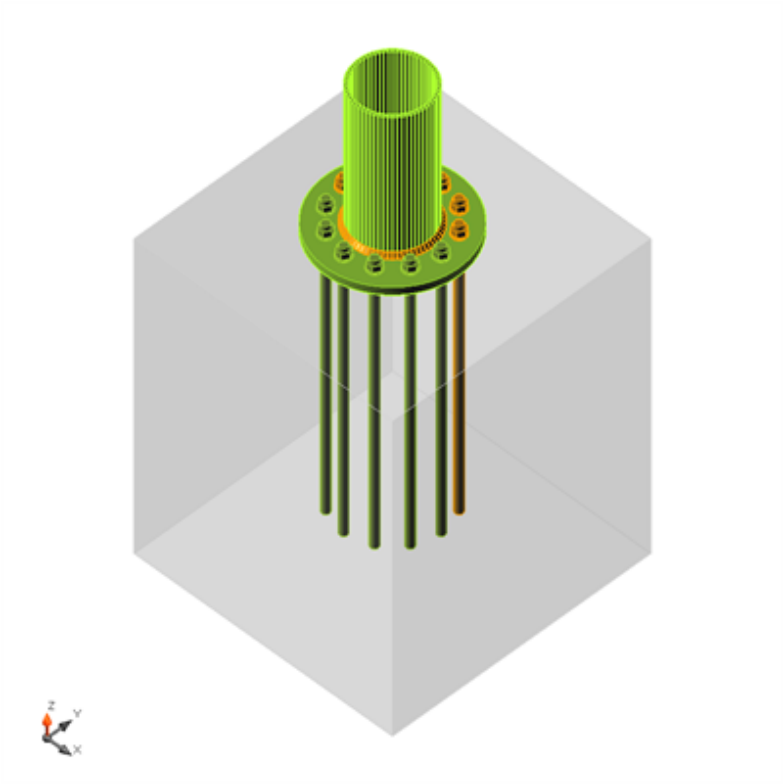
Name	Thickness [mm]	Loads	σ_{Ed} [MPa]	ε_{Pl} [%]	Status
M1	10.0	LE1	356.2	0.6	OK
BP1	25.0	LE1	356.4	0.7	OK

Design data

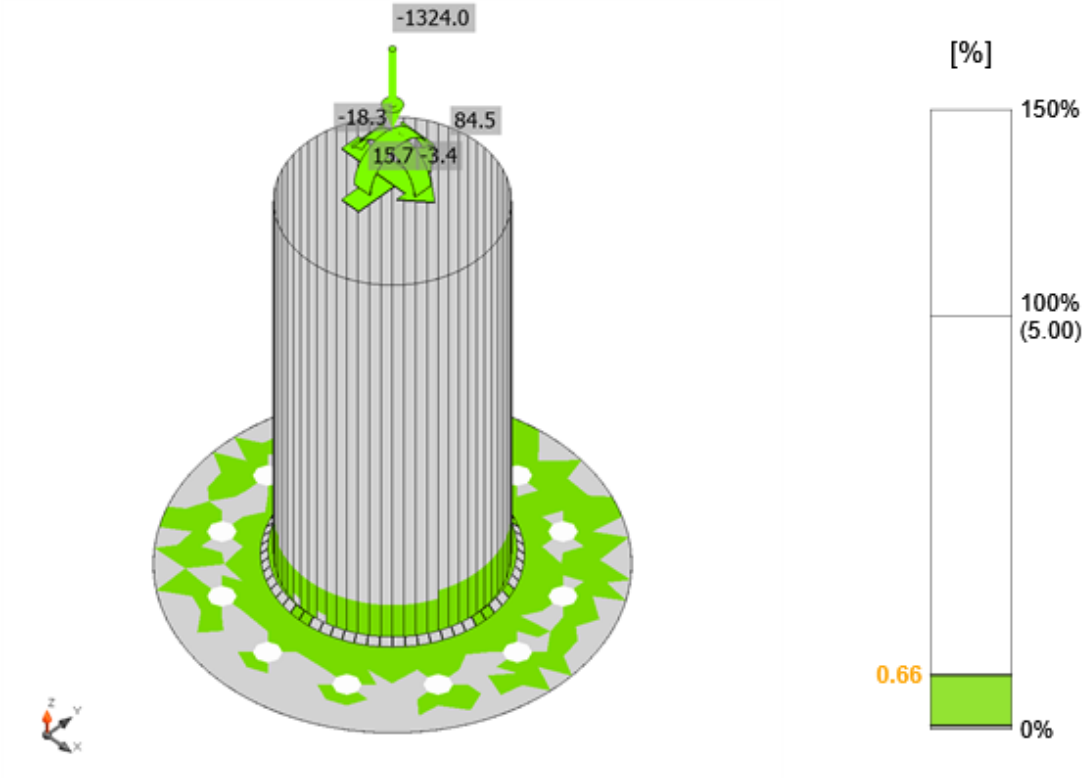
Material	f_y [MPa]	ε_{lim} [%]
S 355	355.0	5.0

Symbol explanation

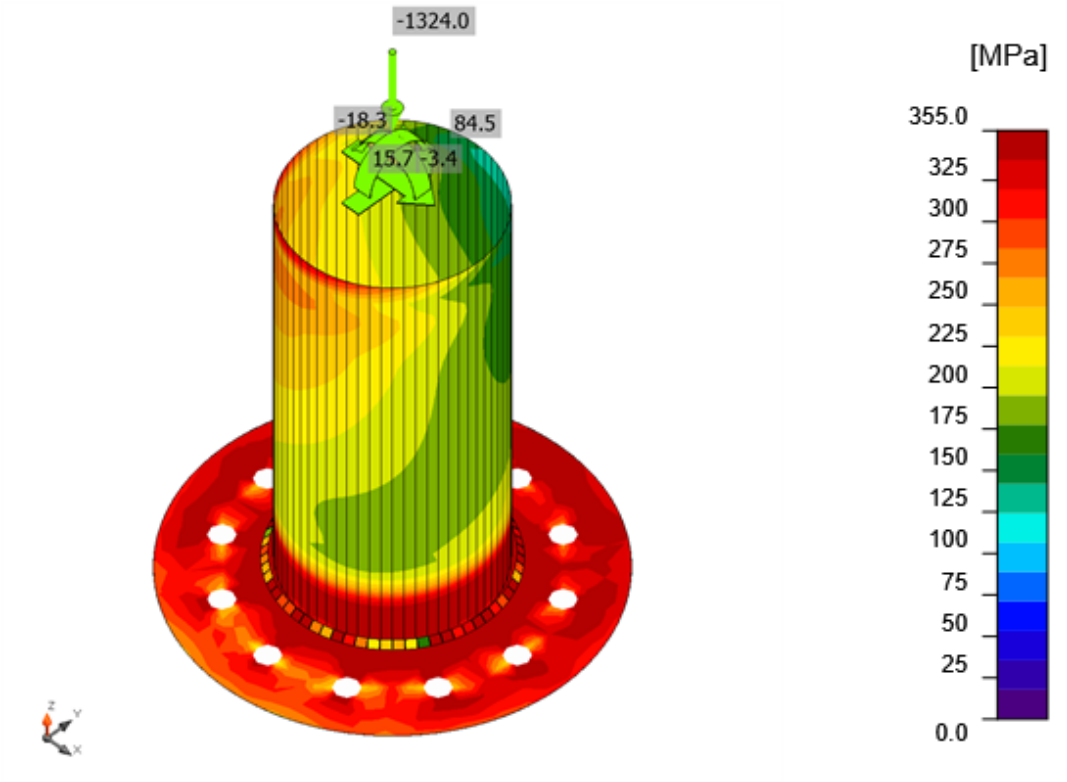
ε_{Pl}	Strain
σ_{Ed}	Eq. stress
f_y	Yield strength
ε_{lim}	Limit of plastic strain



Overall check, LE1

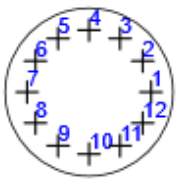


Strain check, LE1



Equivalent stress, LE1

Anchors in compression

	Name	Bolt assembly	Loads	F_c [kN]	V [kN]	M [kNm]	$N_{b,Rd}$ [kN]	$V_{pl,Rd}$ [kN]	$M_{pl,Rd}$ [kNm]	Ut_c [%]	Ut_s [%]	Ut_b [%]	Ut_{cb} [%]	Status
	A1	M24 8.8 - 1	LE1	-127.1	7.2	0.2	165.8	88.1	0.8	76.6	1.2	21.5	98.1	OK
	A2	M24 8.8 - 1	LE1	-126.9	7.1	0.2	165.8	88.1	0.8	76.5	1.2	21.6	98.1	OK
	A3	M24 8.8 - 1	LE1	-123.3	7.3	0.2	165.8	88.1	0.8	74.4	1.2	23.1	97.4	OK
	A4	M24 8.8 - 1	LE1	-114.9	7.9	0.2	165.8	88.1	0.8	69.3	1.7	26.6	95.9	OK
	A5	M24 8.8 - 1	LE1	-103.7	8.7	0.3	165.8	88.1	0.8	62.5	1.5	31.2	93.7	OK
	A6	M24 8.8 - 1	LE1	-98.2	8.2	0.3	165.8	88.1	0.8	59.2	1.4	32.8	92.0	OK
	A7	M24 8.8 - 1	LE1	-88.2	7.6	0.3	165.8	88.1	0.8	53.2	1.8	36.2	89.4	OK
	A8	M24 8.8 - 1	LE1	-90.5	9.9	0.3	165.8	88.1	0.8	54.5	1.7	36.3	90.8	OK
	A9	M24 8.8 - 1	LE1	-98.1	9.8	0.3	165.8	88.1	0.8	59.1	2.1	33.2	92.4	OK
	A10	M24 8.8 - 1	LE1	-109.2	8.9	0.2	165.8	88.1	0.8	65.9	1.5	28.6	94.5	OK
	A11	M24 8.8 - 1	LE1	-119.2	8.0	0.2	165.8	88.1	0.8	71.9	1.4	24.5	96.4	OK
	A12	M24 8.8 - 1	LE1	-124.7	7.5	0.2	165.8	88.1	0.8	75.2	1.3	22.4	97.6	OK

Symbol explanation

F_c	Compressive force
V	Resultant of shear forces Vy, Vz in bolt
M	Bending moment
$N_{b,Rd}$	Compressive resistance – EN 1993-1-1 Cl. 6.3
$V_{pl,Rd}$	Shear resistance – EN 1993-1-1 Cl. 6.2.6
$M_{pl,Rd}$	Bending resistance – EN 1993-1-1 Cl. 6.2.5
Ut_c	Utilization in compression
Ut_s	Utilization in shear
Ut_b	Utilization in bending
Ut_{cb}	Utilization in compression and bending - linear interaction

Welds (Plastic redistribution)

Item	Edge	Throat th. [mm]	Length [mm]	Loads	$\sigma_{w,Ed}$ [MPa]	ε_{Pl} [%]	$\sigma_{\perp}$ [MPa]	$\tau_{\parallel}$ [MPa]	$\tau_{\perp}$ [MPa]	Ut [%]	Ut_c [%]	Status
BP1	M1	◢9.0	656	LE1	427.2	0.2	-212.2	-188.5	101.5	98.1	78.7	OK

Design data

	β_w [-]	$\sigma_{w,Rd}$ [MPa]	0.9 σ [MPa]
S 355	0.90	435.6	352.8

Symbol explanation

ε_{Pl}	Strain
$\sigma_{w,Ed}$	Equivalent stress
$\sigma_{w,Rd}$	Equivalent stress resistance
$\sigma_{\perp}$	Perpendicular stress
$\tau_{\parallel}$	Shear stress parallel to weld axis
$\tau_{\perp}$	Shear stress perpendicular to weld axis
0.9 σ	Perpendicular stress resistance - 0.9*fu/γM2
β_w	Corelation factor EN 1993-1-8 tab. 4.1
Ut	Utilization
Utc	Weld capacity utilization

Buckling

Buckling analysis was not calculated.

Code settings

Item	Value	Unit	Reference
γ_{M0}	1.00	-	EN 1993-1-1: 6.1
γ_{M1}	1.00	-	EN 1993-1-1: 6.1
γ_{M2}	1.25	-	EN 1993-1-1: 6.1
γ_{M3}	1.25	-	EN 1993-1-8: 2.2
γ_C	1.50	-	EN 1992-1-1: 2.4.2.4
γ_{Inst}	1.20	-	ETAG 001-C: 3.2.1
Joint coefficient βj	0.67	-	EN 1993-1-8: 6.2.5

Item	Value	Unit	Reference
Effective area - influence of mesh size	0.10	-	
Friction coefficient - concrete	0.25	-	EN 1993-1-8
Friction coefficient in slip-resistance	0.30	-	EN 1993-1-8 tab 3.7
Limit plastic strain	0.05	-	EN 1993-1-5
Weld stress evaluation	Plastic redistribution		
Detailing	No		
Distance between bolts [d]	2.20	-	EN 1993-1-8: tab 3.3
Distance between bolts and edge [d]	1.20	-	EN 1993-1-8: tab 3.3
Concrete breakout resistance	Yes		ETAG 001-C
Use calculated αb in bearing check.	Yes		EN 1993-1-8: tab 3.4
Cracked concrete	Yes		
Local deformation check	No		
Local deformation limit	0.03	-	CIDECT DG 1, 3 - 1.1
Geometrical nonlinearity (GMNA)	Yes		Allow large deformations of hollow sections
Braced system	No		