



VFZ



Windgebied onbebouwd
Omgeving : I
Construction Calculations

Rev. 1
Date 6-05-20
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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 koudgeformde 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 hoekverdraaiing en sterkte

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

toetsing hoekverdraaiing:

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 hoekverdraaiing:

hoekverdraaiing (t.p.v. 3x VF dish Ø600 H=+40m)=	0,01023 radiaal =	0,59 graden < 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x VF antenna ASI4518R10v06 + 15*RRU H=37,0 m)=	0,01042 radiaal =	0,60 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x VF antenna AIR6488 H=35,0 m)=	0,01032 radiaal =	0,59 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x KPN dish Ø300 H=+34m)=	0,01006 radiaal =	0,58 graden < 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x KPN antenna 80020892 +6*RRU H=31 m)=	0,00995 radiaal =	0,57 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x KPN antenna 80020892 +6*RRU H=28 m)=	0,00948 radiaal =	0,54 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x TM dish Ø600 H=+27m)=	0,00879 radiaal =	0,50 graden < 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x TM antenna AAU5972 H=25 m)=	0,00845 radiaal =	0,48 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x TM antenna AHP4518R5V06 +6xRRU H=22 m)=	0,00732 radiaal =	0,42 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x OLO dish Ø600 H=+21m)=	0,00657 radiaal =	0,38 graden < 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x OLO antenna ASI4518R10v06 + 6*RRU H=18 m)=	0,00620 radiaal =	0,36 graden < 1,0 graden (ok)

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)

sterkte toetsing = De volledige constructie voldoet op sterkte bij een referentie periode van 15 jaar

Max UC = **0,60** < 1,0 (ok)



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Bij een $\psi_t =$ 1,00 (max. stuwdruk, referentieperiode van 50 jaar)

toetsing hoekverdraaiing:

hoekverdraaiing (t.p.v. 3x VF dish Ø600 H=+40m)=	0,01182 radiaal =	0,68 graden < 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x VF antenna ASI4518R10v06 + 15*RRU H=37,0 m)=	0,01204 radiaal =	0,69 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x VF antenna AIR6488 H=35,0 m)=	0,01191 radiaal =	0,68 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x KPN dish Ø300 H=+34m)=	0,01162 radiaal =	0,67 graden < 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x KPN antenna 80020892 +6*RRU H=31 m)=	0,01149 radiaal =	0,66 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x KPN antenna 80020892 +6*RRU H=28 m)=	0,01095 radiaal =	0,63 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x TM dish Ø600 H=+27m)=	0,01015 radiaal =	0,58 graden < 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x TM antenna AAU5972 H=25 m)=	0,00976 radiaal =	0,56 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x TM antenna AHP4518R5V06 +6*RRU H=22 m)=	0,00845 radiaal =	0,48 graden < 1,0 graden (ok)
hoekverdraaiing (t.p.v. 3x OLO dish Ø600 H=+21m)=	0,00759 radiaal =	0,43 graden < 0,7 graden (ok)
hoekverdraaiing (t.p.v. 3x OLO antenna ASI4518R10v06 + 6*RRU H=18 m)=	0,00716 radiaal =	0,41 graden < 1,0 graden (ok)

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)

Algemeen

Voor de detailberekening (verbindingen en lassen en verankering in beton) zie blad 18 van dit rapport.



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Beschrijving site

In dit rapport wordt een berekening opgesteld voor een nieuwe vakwerkmast met een nieuwe antenneconfiguratie.

De windbelastingen ten gevolge van de aanwezige feeders is meegenomen in de berekening.

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

Uitgangspunten berekening

Gevolgsklasse (= 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)

$\psi_t = 0,87$ -- (t = 15 jaar conform de Eurocode)

$\psi_t = 0,74$ -- (t = 5 jaar conform de Eurocode)

$\psi_t = 0,56$ -- (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/mm²

$E_{rep} = 210000$ N/mm²

$\rho_{staal} = 78,5$ kN/m³

Bouten: 8.8

$f_{t,b;d} = 800$ N/mm²

Belastingen

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$h_{max} = 40$ m

$p_w = 1,55$ kN/m²

$z_0 = 0,2$ 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/m²

$\psi_t = p_{w,t}/p_w = 0,87$ -- $F_t = F_b \left\{ 1 + \frac{1-\psi_1}{9} \ln\left(\frac{t}{t_b}\right) \right\}$ (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====> $F_{rep,EG,antenne} = 0,240$ kN
 $3xRG214$ kabel 0,003 kN/m $h=40,00m \Rightarrow 0,12$ kN 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====> $F_{rep,EG,antenne} = 0,661$ kN
 $Glas+DC$ cables 0,017 kN/m $h=37,0m \Rightarrow 0,63$ kN 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====> $F_{rep,EG,antenne} = 0,700$ kN

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====> $F_{rep,EG,antenne} = 0,671$ kN
 $Glas+DC$ cables 0,017 kN/m $h=35,0m \Rightarrow 0,60$ kN 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====> $F_{rep,EG,antenne} = 0,180$ kN
 $3xRG214$ kabel 0,003 kN/m $h=34,00m \Rightarrow 0,10$ kN 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====> $F_{rep,EG,antenne} = 0,490$ kN
 $Glas+DC$ cables 0,011 kN/m $h=31,0m \Rightarrow 0,35$ kN 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====> $F_{rep,EG,antenne} = 0,500$ kN

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====> $F_{rep,EG,antenne} = 0,490$ kN
 $Glas+DC$ cables 0,011 kN/m $h=28,0m \Rightarrow 0,32$ kN 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====> $F_{rep,EG,antenne} = 0,500$ kN

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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====> $F_{rep,EG,antenne} = 0,240$ kN
 $3xRG214$ kabel 0,003 kN/m $h=27,00m \Rightarrow 0,08$ kN 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====> $F_{rep,EG,antenne} = 0,510$ kN
 $Glas+DC$ cables 0,038 kN/m $h=25,00m \Rightarrow 14,45$ kN 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====> $F_{rep,EG,antenne} = 0,512$ kN
 $Glas+DC$ cables 0,038 kN/m $h=22,0m \Rightarrow 18,55$ kN 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====> $F_{rep,EG,antenne} = 0,500$ kN

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====> $F_{rep,EG,antenne} = 0,240$ kN
 $3xRG214$ kabel 0,003 kN/m $h=21,00m \Rightarrow 0,06$ kN 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====> $F_{rep,EG,antenne} = 0,661$ kN
 $Glas+DC$ cables 0,017 kN/m $h=18,0m \Rightarrow 0,31$ kN 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====> $F_{rep,EG,antenne} = 0,500$ kN

Belastingcombinaties

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



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Windbelasting algemeen:

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$P = P_w \cdot C_f \cdot C_s \cdot C_d$ kN/m^2 (Windbelasting, NEN-EN 1991-4-1)
 $C_s \cdot C_d = 1,03$ -- (Bouwwerkfactor, Procedure 2 bijlage C NEN-EN 1991-4-1)
 $\sum C_f = C_{f,s} + C_{f,A}$ -- (Druk- en krachtcoëfficiënten totaal; B2.1.3 NEN-EN 1993-3-1)
 $C_{f,s} = K_{\theta} \cdot C_{f,s,0} \cdot A_s / \Sigma A$ -- (Druk- en krachtcoëfficiënten Mast; B2.2 NEN-EN 1993-3-1 en correctieblad C1-2009)
 $C_{f,A} = K_A \cdot C_{f,A,0} \cdot \sin^2 \psi \cdot A_s / \Sigma A$ -- (Druk- en krachtcoëfficiënten Kabels; B2.3 NEN-EN 1993-3-1 en correctieblad C1-2009)
 $\varphi = A_s + A_A / A$ -- (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
 $Re = b \cdot v(ze) / \nu$ (Reynoldsgetal, art. 7.9.1 NEN-EN 1991-4-1)
 voorwaarde Reynoldsgetal: voor $Re < 4 \cdot 10^5$ is sub critical en voor $Re > 4 \cdot 10^5$ is supercritical
 $\nu = 0,000015 \text{ m}^2/\text{s}$ (De kinematische viscositeit van de lucht)
 $v(ze)$ de piekwindssnelheid op hoogte ze vastgesteld conform NEN-EN 1991-4-1
 $b_{gem} = 1,9875 \text{ m}$ (Gemiddelde breedte van de mast)
 $h_{max} = 40,0 \text{ m}$ (Totale hoogte van de mast incl. topbuis)
 $C_{tot} = C_f \cdot C_s \cdot C_d$ (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/m ²)	$P_{w,gem}$ (kN/m ²)	$P_{w,gem}$ (kN/m ²)
			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

element	V(ze)	Randstaven			Diagonalen		
		b_{rand} [mm]	Re		b_{dia} [mm]	Re	
1	36,7 m/s	219,1	536573	$< 4 \cdot 10^5$ sub crit.	88,9	217715	$< 4 \cdot 10^5$ sub crit.
2	41,6 m/s	219,1	608015	$< 4 \cdot 10^5$ sub crit.	88,9	246702	$< 4 \cdot 10^5$ sub crit.
3	44,4 m/s	168,3	498488	$< 4 \cdot 10^5$ sub crit.	82,5	244357	$< 4 \cdot 10^5$ sub crit.
4	46,4 m/s	168,3	520568	$< 4 \cdot 10^5$ sub crit.	82,5	255180	$< 4 \cdot 10^5$ sub crit.
5	47,9 m/s	139,7	446225	$< 4 \cdot 10^5$ sub crit.	60,3	192608	$< 4 \cdot 10^5$ sub crit.
6	49,1 m/s	139,7	457706	$< 4 \cdot 10^5$ sub crit.	60,3	197564	$< 4 \cdot 10^5$ sub crit.
7	50,5 m/s	139,7	470289	$< 4 \cdot 10^5$ sub crit.	60,3	202995	$< 4 \cdot 10^5$ sub crit.



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Profielgegevens

staander	\emptyset (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	\emptyset (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

element	A [m ²]	Y- richting				L _{rand,tot} [mm]
		As (y-as) _{tot} [mm ²]	As (y-as) [mm ²]	L _{dia,tot} [mm]	As (y-as) [mm ²]	
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					

element	A . cos(30°) [m ²]	X- richting				L _{rand,tot} [mm]
		As (x-as) _{tot} [mm ²]	As (x-as) . cos(30°) [mm ²]	L _{dia,tot} [mm]	As (x-as) [mm ²]	
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):

element	Hoogte (m)	Hoogte t.o.v. mv. (m)	Y-richting			
			feeders (inch)	Kabels totaal Breedte(m)	A _{ladder} (m2/m')	A _{kabels} (m2/m')
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

element	Hoogte (m)	Hoogte t.o.v. mv. (m)	X-richting			
			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



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Berekening Druk- en krachtcoëfficiënten

$K_\theta =$ 1 -- (Voor de driekhoek mast formule B.3b art. B.2.2.1 NEN-EN 1993-3-1)
 $C_1 =$ 1,9 -- (Voor de driekhoek mast B.2.2.2 NEN-EN 1993-3-1)
 $C_2 =$ 1,4 -- (Voor de driekhoek mast B.2.2.2 NEN-EN 1993-3-1)
 $\sin(\psi)^2 =$ 1 -- ($\psi = 90^\circ$)
 $K_A =$ 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 [mm ²]	A_c [mm ²]	$A_{c,sup}$ [mm ²]	A_s [mm ²]
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 [mm ²]	$C_{f,s}$ [-]	$\varphi = (A_s + A_A) / A$ [-]	$C_{f,A}$ [-]	$C_f = C_{f,s} + C_{f,A}$ [-]	$C_{tot} = C_f \cdot C_s \cdot C_d$ [-]
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 [mm ²]	A_c [mm ²]	$A_{c,sup}$ [mm ²]	A_s [mm ²]
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 [mm ²]	$C_{f,s}$ [-]	$\varphi = (A_s + A_A) / A$ [-]	$C_{f,A}$ [-]	$C_f = C_{f,s} + C_{f,A}$ [-]	$C_{tot} = C_f \cdot C_s \cdot C_d$ [-]
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
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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 spanned 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 ⁴
k=8EI/l ³ =	1330477 N/m
f _e =	2,388 Hz (zie Matrix uitvoer bijlage 1)
m _e = k / (2π * 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)
α = 0,67 + 0,05 * ln(z ₀) =	0,59 --	
L _t =	300 m	(Referentielengteschaal)
z _t =	200 m	(Referentiehoogte)
L(z) = L _t * (z/z _t) ^α > z(min) =	116,16 m	
L(z _s) = L _t * (z _s /z _t) ^α > 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(z _s) / V _m (z _s) =	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 --	
δ _a = c _r * p * b * V _m (z _s) / (2 * n * m _e)	0,031	
δ = δ _s + δ _a + δ _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)
C _z	11,50 --	(Opgegeven in bijlage C.2 NEN-EN 1991-4-1)
Ø _y	0,38 --	
Ø _z	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)



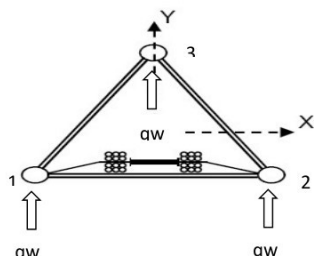
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Berekening windbelasting vakwerkmast y-richting



q_w

					Windbelasting		q _w = ΣA * C _{tot} * p _{w,gem} / h _{element}			
element 1: h =	H (m)	staander diagonaal	Ø (mm)	t (mm)	Totale lengte (m)	A (m ²)				
	6,00		219,1	10	6,0					
	6,00		88,9 (mast)	3,2	12,9					
						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		
						A _A / 2 =	1,02	zie feeders A _A Y- richting		
				(kabels)						
					Staanter 1, 2	ΣA =	3,24	stander 1	stander 2	stander 3
					Staanter 3	ΣA =	1,98	-0,538 kN/m	-0,538 kN/m	-0,328 kN/m
element 2: h =	6,00 - 12,00	staander diagonaal	219,1	10	6,0					
	6,00		88,9 (mast)	3,2	11,8					
						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		
						A _A / 2 =	1,02	zie feeders A _A Y- richting		
				(kabels)						
					Staanter 1, 2	ΣA =	3,16	stander 1	stander 2	stander 3
					Staanter 3	ΣA =	1,92	-0,613 kN/m	-0,613 kN/m	-0,372 kN/m
element 3: h =	12,00 - 18,00	staander diagonaal	168,3	8	6,0					
	6,00		82,5 (mast)	3,2	10,8					
						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		
						A _A / 2 =	1,02	zie feeders A _A Y- richting		
				(kabels)						
					Staanter 1, 2	ΣA =	2,73	stander 1	stander 2	stander 3
					Staanter 3	ΣA =	1,53	-0,628 kN/m	-0,628 kN/m	-0,351 kN/m
element 4: h =	18,00 - 24,00	staander diagonaal	168,3	8	6,0					
	6,00		82,5 (mast)	3,2	9,8					
						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		
						A _A / 2 =	1,02	zie feeders A _A Y- richting		
				(kabels)						
					Staanter 1, 2	ΣA =	2,67	stander 1	stander 2	stander 3
					Staanter 3	ΣA =	1,48	-0,674 kN/m	-0,674 kN/m	-0,373 kN/m
element 5: h =	24,00 - 30,00	staander diagonaal	139,7	5	6,0					
	6,00		60,3 (mast)	2,9	10,2					
						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		
						A _A / 2 =	0,84	zie feeders A _A Y- richting		
				(kabels)						
					Staanter 1, 2	ΣA =	2,16	stander 1	stander 2	stander 3
					Staanter 3	ΣA =	1,19	-0,590 kN/m	-0,590 kN/m	-0,325 kN/m
element 6: h =	30,00 - 36,00	staander diagonaal	139,7	5	6,0					
	6,00		60,3 (mast)	2,9	9,0					
						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		
						A _A / 2 =	0,81	zie feeders A _A Y- richting		
				(kabels)						
					Staanter 1, 2	ΣA =	2,07	stander 1	stander 2	stander 3
					Staanter 3	ΣA =	1,15	-0,594 kN/m	-0,594 kN/m	-0,330 kN/m



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



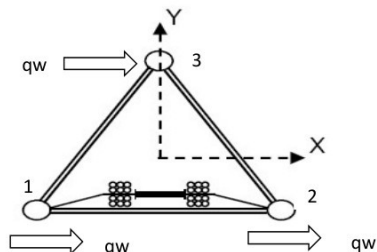
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Berekening windbelasting vakwerkmast x-richting



element	H (m)		Ø (mm)	t (mm)	Totale lengte		Windbelasting		
					(m)	A (m ²)	$q_w = \sum A \cdot C_{tot} \cdot P_{w, gem} / n_{element}$		
element 1: h =	6,00 7,50	staander diagonaal	219,1 88,9 (mast)	10 3,2	7,5				
					12,9				
					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)		
			(kabels)		A _s staander	1,64	Ø/1000 x Totale lengte staander		
					A _A / 2 =	0,47	zie feeders A _A X-richting		
					ΣA =	2,61	stander 1	stander 2	stander 3
					ΣA =	2,64	0,368 kN/m	0,368 kN/m	0,372 kN/m
element 2: h =	6,00 - 12,00 6,00	staander diagonaal	219,1 88,9 (mast)	10 3,2	6,0				
					11,8				
					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)		
			(kabels)		A _s staander	1,31	Ø/1000 x Totale lengte staander		
					A _A / 2 =	0,47	zie feeders A _A X-richting		
					ΣA =	2,24	stander 1	stander 2	stander 3
					ΣA =	2,23	0,459 kN/m	0,459 kN/m	0,456 kN/m
element 3: h =	12,00 - 18,00 6,00	staander diagonaal	168,3 82,5 (mast)	8 3,2	6,0				
					10,8				
					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)		
			(kabels)		A _s staander	1,01	Ø/1000 x Totale lengte staander		
					A _A / 2 =	0,47	zie feeders A _A X-richting		
					ΣA =	1,87	stander 1	stander 2	stander 3
					ΣA =	1,78	0,459 kN/m	0,459 kN/m	0,438 kN/m
element 4: h =	18,00 - 24,00 6,00	staander diagonaal	168,3 82,5 (mast)	8 3,2	6,0				
					9,8				
					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)		
			(kabels)		A _s staander	1,01	Ø/1000 x Totale lengte staander		
					A _A / 2 =	0,47	zie feeders A _A X-richting		
					ΣA =	1,83	stander 1	stander 2	stander 3
					ΣA =	1,71	0,491 kN/m	0,491 kN/m	0,459 kN/m
element 5: h =	24,00 - 30,00 6,00	staander diagonaal	139,7 60,3 (mast)	5 2,9	6,0				
					10,2				
					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)		
			(kabels)		A _s staander	0,84	Ø/1000 x Totale lengte staander		
					A _A / 2 =	0,47	zie feeders A _A X-richting		
					ΣA =	1,57	stander 1	stander 2	stander 3
					ΣA =	1,37	0,449 kN/m	0,449 kN/m	0,391 kN/m
element 6: h =	30,00 - 36,00 6,00	staander diagonaal	139,7 60,3 (mast)	5 2,9	6,0				
					9,0				
					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)		
			(kabels)		A _s staander	0,84	Ø/1000 x Totale lengte staander		
					A _A / 2 =	0,47	zie feeders A _A X-richting		
					ΣA =	1,54	stander 1	stander 2	stander 3
					ΣA =	1,31	0,457 kN/m	0,457 kN/m	0,388 kN/m



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element 7: h =	36,00 - 40,00	staander	114,3	5	4,0				
	4,00	diagonaal	48,3	2,6	6,3				
			(mast)		A_s dia loodrecht	0,15	$\varnothing/1000 \times \text{Totale lengte dia} / 2$		
					A_s dia schuin	0,13	$A_s \text{ dia loodrecht} \cdot \text{COS}(30)$		
					A_s staander	0,46	$\varnothing/1000 \times \text{Totale lengte staander}$		
			(kabels)		$A_A / 2 =$	0,29	zie feeders A_A X-richting		
				Staander 1, 2	$\sum A =$	0,88	stander 1	stander 2	stander 3
				Staander 3	$\sum A =$	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)	lv	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	Per mast deel incl staander
			91	92	93		F _{w,rep} (kN)	F _{w,rep} (kN)
1	219,1	6,00	88	89	90	40,0	0,51	0,51
2	219,1	6,00 - 12,00	79	80	81	38,4	1,33	1,81
3	168,3	12,00 - 18,00	73	74	75	34,0	0,40	0,57
4	168,3	18,00 - 24,00	70	71	72	32,3	0,33	0,33
5	139,7	24,00 - 30,00	64	65	66	29,3	0,86	1,41
6	139,7	30,00 - 36,00	58	59	60	27,0	0,84	1,37
7	114,3	36,00 - 40,00	55	56	57	25,8	0,46	0,46
			49	50	51	23,4	0,57	0,81
			43	44	45	21,0	1,23	1,65
			40	41	42	19,4	0,43	0,43
							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/m²

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 m²

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 m²

Lateral: extra windvang, 0,115*0,351 = 0,04037 m²

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/m²

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 m²

**VFZ**

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Antennetype: **KPN** **80020892**

Windlasten antennes: Rarside: 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/m² h= 2,693 m

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

1 antenens: $A_{w,UMTS} = \text{Gem. windload} / p_w =$ 0,694 m²

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

De RRU's worden achter de antennes geplaatst.

Rarside en Frontal: extra windvang, 0,48x0,38= 0,18240 m²

Lateral: extra windvang, 0,17*0,485 = 0,08245 m²

Antennetype: **TM** **AAU5972**

Windlasten antennes: Rarside: 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/m² h= 1,500 m

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

1 antenens: $A_{w,UMTS} = \text{Gem. windload} / p_w =$ 0,536 m²

Antennetype: **TM** **AHP4518R5v06**

Windlasten antennes: Rarside: 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/m² h= 2,769 m

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

1 antenens: $A_{w,UMTS} = \text{Gem. windload} / p_w =$ 0,942 m²

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

De RRU's worden achter de antennes geplaatst.

Rarside en Frontal: extra windvang, 0,48x0,38= 0,18240 m²

Lateral: extra windvang, 0,17*0,485 = 0,08245 m²

Antennetype: **OLO** **ASI4518R10v06**

Windlasten antennes: Rarside: 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/m² h= 2,769 m

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

1 antenens: $A_{w,UMTS} = \text{Gem. windload} / p_w =$ 0,928 m²

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

De RRU's worden achter de antennes geplaatst.

Rarside en Frontal: extra windvang, 0,48x0,38= 0,18240 m²

Lateral: extra windvang, 0,17*0,485 = 0,08245 m²



VFZ



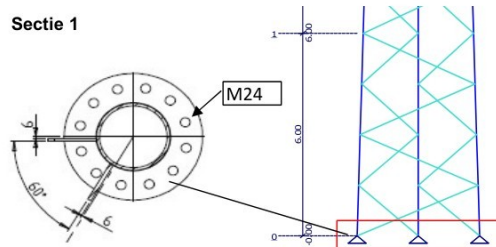
Windgebied onbebouwd
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Auteur ing. [redacted]

Controle verbindingen staanders en diagonalen t.p.v.

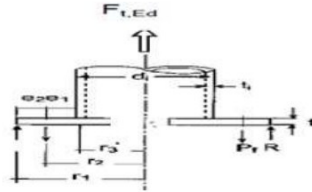
Sectie 1

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	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$	u.c. = $F_{t,Ed} / \Sigma F_{t,Rd} = 0,55 < 1,0$ (ok)					
[--]	[kN]	[kN]						
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	Controle plaat u.c. = $t_{ben} / t_{plaat} = 0,75 < 1,0$ (ok)			
[mm]	[--]	[N/mm ²]	[--]	[mm]	[mm]				
22,4	S355	355	1,1	50	50				

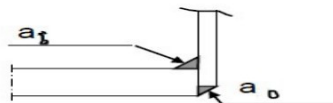
Boven									
$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
1137,0	219,1	10	30	159,55	104,6	0,42	2,42	5,28	20,6
Staal	f_y	γ_m	e_1	e_2	u.c. = $t_{ben} / t_{plaat} =$ 0,69 < 1,0 (ok)				
[--]	[N/mm ²]	[--]	[mm]	[mm]					
S355	355	1,1	50	50					

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}	τ ₁ = σ 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;σ}	f _{u;τ}	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)					
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]						
0,9	S355	510	453	367						

Randstaven	Boven								
F _{Ed,max}		a _b	a _o	d _{rand}	τ ₁ = σ 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;σ}	f _{u;τ}	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)				
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]					
0,9	S355	510	453	367					



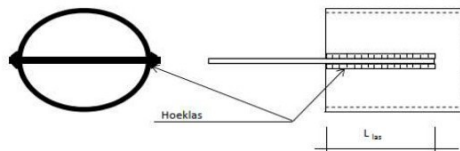
VFZ



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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}	$\tau_1 = \sigma_1$	$\tau_2 =$	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	$f_{u;\sigma}$	$f_{u;\tau}$	Controle trek- of drukspanning las Controle afschuiving las				$u.c. = \sigma_{Ed} / f_{u;s} =$	0,86 < 1,0 (ok)
[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]					$u.c. = \tau_1 / f_{u;t} =$	0,53 < 1,0 (ok)
S355	510	453	367						

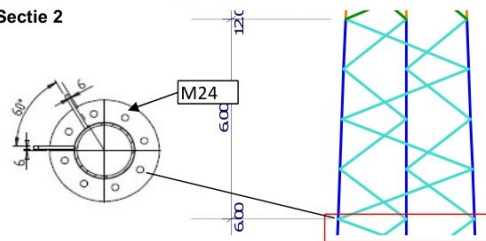
$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[kN]		[--]	[N/mm ²]	[--]	[--]	[--]	[kN]
66,53		M24	8.8	800	1	draad	0,9	135,6

Controle trek bout

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

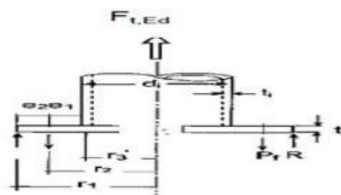
Controle flensverbinding staanders en diagonalen t.p.v.

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	ΣF _{v,Rd}	ΣF _{t,Rd}	Controle trek bout						



Controle flensplaat

Onder									
$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
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	Controle plaat u.c. = $t_{ben} / t_{plaat} =$			
[mm]	[--]	[N/mm ²]	[--]	[mm]	[mm]				
20,2	S355	355	1,1	50	50	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	
Staal	f_y	γ_m	e_1	e_2	Controle plaat u.c. = $t_{ben} / t_{plaat} =$				
[--]	[N/mm ²]	[--]	[mm]	[mm]					
S355	355	1,1	50	50	0,62 < 1,0 (ok)				



VFZ



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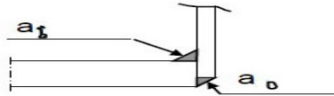
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Auteur ing. [redacted]

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]	[--]
1087,6		8	6	219,1	80	0	688	160	1,25
β_w	Staal	f_u	$f_{u,\sigma}$	$f_{u,\tau}$	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)				
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]					
0,9	S355	510	453	367					

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]	[--]
914,7		8	6	219,1	67	0	688	134	1,25
β_w	Staal	f_u	$f_{u,\sigma}$	$f_{u,\tau}$	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)				
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]					
0,9	S355	510	453	367					

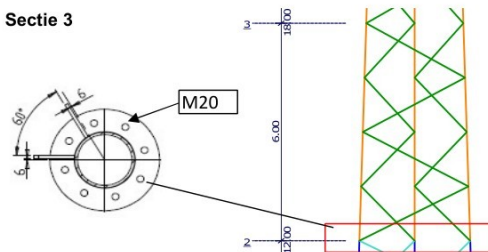
Diagonalen									
$F_{Ed,max}$	a_b	a_o	d_{dia}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}	β_w
[kN]	[mm]	[mm]	[mm]	[N/mm ²]	[N/mm ²]	[mm]	[N/mm ²]	[--]	[--]
62,0	4	0	88,9	183	0	60	365	1,25	0,9
Staal	f_u	$f_{u,\sigma}$	$f_{u,\tau}$	Controle trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u,s} = 0,81 < 1,0$ (ok) Controle afschuiving las u.c. = $\tau_1 / f_{u,t} = 0,50 < 1,0$ (ok)					
[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]						
S355	510	453	367						

$F_{t,Ed}$	Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[kN]	[--]	[N/mm ²]	[--]	[--]	[--]	[kN]
61,97	M24	8.8	800	1	draad	0,9	135,6
u.c. = $F_{t,Ed} / \Sigma F_{t,Rd} = 0,51 < 1,0$ (ok)							

Controle flensverbinding staanders en diagonalen t.p.v.

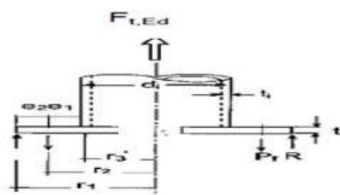
Sectie 3

Controle ankers



$F_{t,Ed}$	Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]	[--]	[N/mm ²]	[--]	[--]	[mm ²]	[mm ²]	[--]
856,3	M20	8.8	800	8	draad	314	245	0,6
k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$	u.c. = $F_{t,Ed} / \Sigma F_{t,Rd} = 0,76 < 1,0$ (ok)					
[--]	[kN]	[kN]						
0,9	753	1129						

Controle flensplaat



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Onder									
$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	
[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/mm ²]	[--]	[mm]	[mm]				
18,2	S355	355	1,1	40	40	Controle plaat u.c. = $t_{ben} / t_{plaat} =$			
						0,61 < 1,0 (ok)			

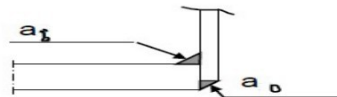
Boven									
$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
673,8	168,3	8	30	124,15	80,2	0,44	2,44	5,12	16,1
Staal	f_y	γ_m	e_1	e_2					
[--]	[N/mm ²]	[--]	[mm]	[mm]					
S355	355	1,1	40	40	Controle plaat u.c. = $t_{ben} / t_{plaat} =$				
						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}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}	
[kN]	[mm]	[mm]	[mm]	[N/mm ²]	[N/mm ²]	[mm]	[N/mm ²]	[--]	
856,3	6	6	168,3	95	0	529	191	1,25	
β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]	Trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u;\sigma} =$				
0,9	S355	510	453	367	Controle afschuiving las u.c. = $\tau_1 / f_{u;\tau} =$				
						0,42 < 1,0 (ok)			
						0,26 < 1,0 (ok)			

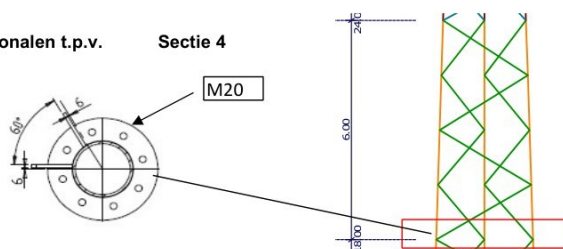
Randstaven Boven									
$F_{Ed,max}$	a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}	
[kN]	[mm]	[mm]	[mm]	[N/mm ²]	[N/mm ²]	[mm]	[N/mm ²]	[--]	
673,8	6	6	168,3	75	0	529	150	1,25	
β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$					
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]	Trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u;\sigma} =$				
0,9	S355	510	453	367	Controle afschuiving las u.c. = $\tau_1 / f_{u;\tau} =$				
						0,33 < 1,0 (ok)			
						0,20 < 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]	[--]	[--]
60,0	4	0	82,5	177	0	60	353	1,25	0,9
Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$						
[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]	Controle trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u;\sigma} =$					
S355	510	453	367	Controle afschuiving las u.c. = $\tau_1 / f_{u;\tau} =$					
						0,78 < 1,0 (ok)			
						0,48 < 1,0 (ok)			

$F_{t,Ed}$	Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
[kN]	[mm]	[--]	[N/mm ²]	[--]	[--]	[--]	[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



VFZ

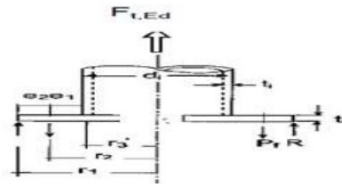


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$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]		[--]	[N/mm ²]	[--]	[--]	[mm ²]	[mm ²]	[--]
611,4		M20	8.8	800	8	draad	314	245	0,6
k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$							
[--]	[kN]	[kN]	Controle trek bout						
0,9	753	1129	u.c. = $F_{t,Ed} / \Sigma F_{t,Rd} =$						
			0,54 < 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]	[--]	[--]	[--]
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)			

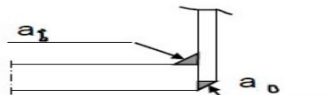
Boven									
$F_{t,Ed}$		d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
431,5		168,3	8	25	124,15	80,2	0,44	2,44	5,12
Staal	f_y	γ_m	e_1	e_2					
[--]	[N/mm ²]	[--]	[mm]	[mm]					
S355	355	1,1	40	40	Controle plaat				
					u.c. = $t_{ben} / t_{plaat} =$				
					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}	$\tau_1 = \sigma_1$	$\tau_2 =$	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]	Trek- of drukspanning las				
0,9	S355	510	453	367	Controle afschuiving las				
					u.c. = $\sigma_{Ed} / f_{u,\sigma} =$				
					0,30 < 1,0 (ok)				
					u.c. = $\tau_1 / f_{u,\tau} =$				
					0,19 < 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]	[--]
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]	Trek- of drukspanning las				
0,9	S355	510	453	367	Controle afschuiving las				
					u.c. = $\sigma_{Ed} / f_{u,\sigma} =$				
					0,21 < 1,0 (ok)				
					u.c. = $\tau_1 / f_{u,\tau} =$				
					0,13 < 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]	[--]	[--]
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]	Controle trek- of drukspanning las					
S355	510	453	367	Controle afschuiving las					
				u.c. = $\sigma_{Ed} / f_{u,\sigma} =$					
				0,77 < 1,0 (ok)					
				u.c. = $\tau_1 / f_{u,\tau} =$					
				0,48 < 1,0 (ok)					



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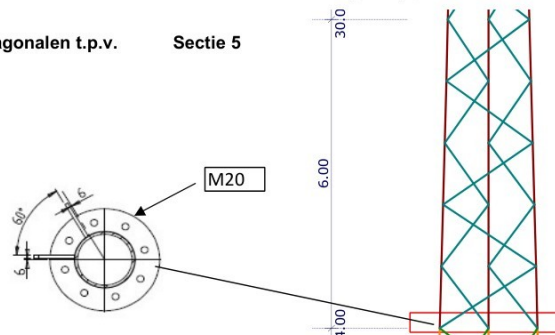
$F_{t,Ed}$	[kN]	Bout	Kwal.	f_{ub}	n	afschuif	k_2	$\Sigma F_{v,Rd}$
59,23	[kN]	M20	8.8	800	1	draad	0,9	94,1

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

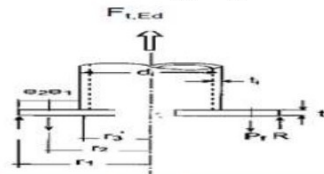
Controle ankers



$F_{t,Ed}$	[kN]	Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
380,7	[kN]	M20	8.8	800	8	draad	314	245	0,6
k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$							
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]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
380,7	[kN]	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	[kN]	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						

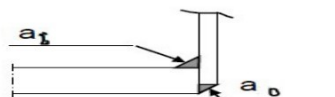
Controle plaat $u.c. = t_{ben} / t_{plaat} = 0,39 < 1,0$ (ok)

Controle lasverbindingen

$$\tau_1 = \sigma_1 = F_{Ed} / ((a_1 + a_2) * L_{las} * \sqrt{2})$$

$$L_{las} = \pi * d$$

$$\sigma_{Ed} = (\sigma_1^2 + 3 * (\tau_1^2 + \tau_2^2))^{0,5}$$



Randstaven	Onder	a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}
		[mm]		[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	$f_{u;0}$	$f_{u;t}$					
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]					
0,9	S355	510	453	367					

Trek- of drukspanning las $u.c. = \sigma_{Ed} / f_{u;s} = 0,23 < 1,0$ (ok)

Controle afschuiving las $u.c. = \tau_1 / f_{u;t} = 0,14 < 1,0$ (ok)



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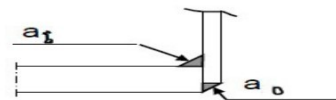
$F_{t,Ed}$	d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3	t_{ben}
[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]	[mm]
65,5	139,7	5	20	109,85	67,4	0,49	2,49	4,65	5,3
Staal	f_y	γ_m	e_1	e_2	Controle plaat u.c. = $t_{ben} / t_{plaat} = 0,26 < 1,0$ (ok)				
[--]	[N/mm ²]	[--]	[mm]	[mm]					
S355	355	1,1	40	40					

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	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	$f_{u;\sigma}$	$f_{u;\tau}$	Trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u;\sigma} = 0,14 < 1,0$ (ok) Controle afschuiving las u.c. = $\tau_1 / f_{u;\tau} = 0,09 < 1,0$ (ok)				
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]					
0,9	S355	510	453	367					

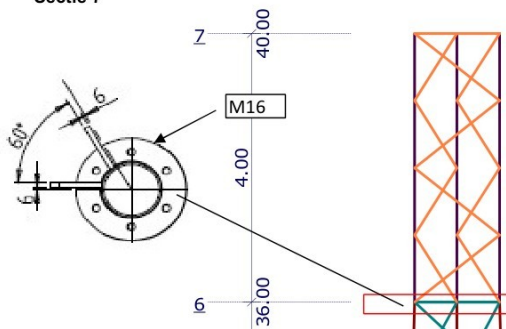
Randstaven	Boven	a_b	a_o	d_{rand}	$\tau_1 = \sigma_1$	$\tau_2 =$	L_{las}	σ_{Ed}	γ_{M2}
[kN]	[kN]	[mm]	[mm]	[mm]	[N/mm ²]	[N/mm ²]	[mm]	[N/mm ²]	[--]
65,5		5	4	139,7	12	0	439	23	1,25
β_w	Staal	f_u	$f_{u;\sigma}$	$f_{u;\tau}$	Trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u;\sigma} = 0,05 < 1,0$ (ok) Controle afschuiving las u.c. = $\tau_1 / f_{u;\tau} = 0,03 < 1,0$ (ok)				
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]					
0,9	S355	510	453	367					

Diagonalen	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	$f_{u;\sigma}$	$f_{u;\tau}$	Controle trek- of drukspanning las u.c. = $\sigma_{Ed} / f_{u;\sigma} = 0,42 < 1,0$ (ok) Controle afschuiving las u.c. = $\tau_1 / f_{u;\tau} = 0,26 < 1,0$ (ok)					
[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]						
S355	510	453	367						

$F_{t,Ed}$	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



VFZ

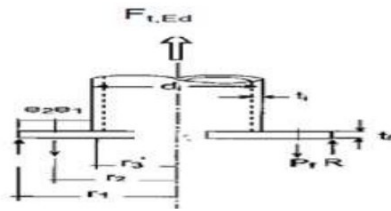


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$F_{t,Ed}$		Bout	Kwal.	f_{ub}	n	afschuif	A	As	α_v
[kN]	[kN]		[--]	[N/mm ²]	[--]	[--]	[mm ²]	[mm ²]	[--]
43,7		M16	8.8	800	6	draad	201	157	0,6
k_2	$\Sigma F_{v,Rd}$	$\Sigma F_{t,Rd}$							
[--]	[kN]	[kN]	Controle trek bout						
0,9	362	543	u.c. = $F_{t,Ed} / \Sigma F_{t,Rd} =$						
			0,08 < 1,0 (ok)						

Controle flensplaat



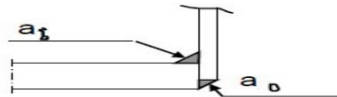
Onder									
$F_{t,Ed}$		d_{rand}	t	t_{plaat}	r_2	r_3	k_1	k_3	f_3
[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[--]	[--]	[--]
43,7		114,3	5	20	92,15	54,7	0,52	2,52	4,39
t_{ben}	Staal	f_y	γ_m	e_1	e_2				
[mm]	[--]	[N/mm ²]	[--]	[mm]	[mm]				
4,4	S355	355	1,1	35	35	Controle plaat			
						u.c. = $t_{ben} / t_{plaat} =$		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}	$\tau_1 = \sigma_1$	$\tau_2 =$	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	$f_{u/2}$	$f_{u/3}$					
[--]	[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]	Trek- of drukspanning las				
0,9	S355	510	453	367	Controle afschuiving las				
					u.c. = $\sigma_{Ed} / f_{u/3} =$		0,04 < 1,0 (ok)		
					u.c. = $\tau_1 / f_{u/2} =$		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]	[--]	[--]
16,5	4	0	48,3	49	0	60	97	1,25	0,9
β_w	Staal	f_u	$f_{u/2}$	$f_{u/3}$					
[--]	[N/mm ²]	[N/mm ²]	[N/mm ²]	[N/mm ²]	Controle trek- of drukspanning las				
S355	510	453	367	Controle afschuiving las					
					u.c. = $\sigma_{Ed} / f_{u/3} =$		0,21 < 1,0 (ok)		
					u.c. = $\tau_1 / f_{u/2} =$		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

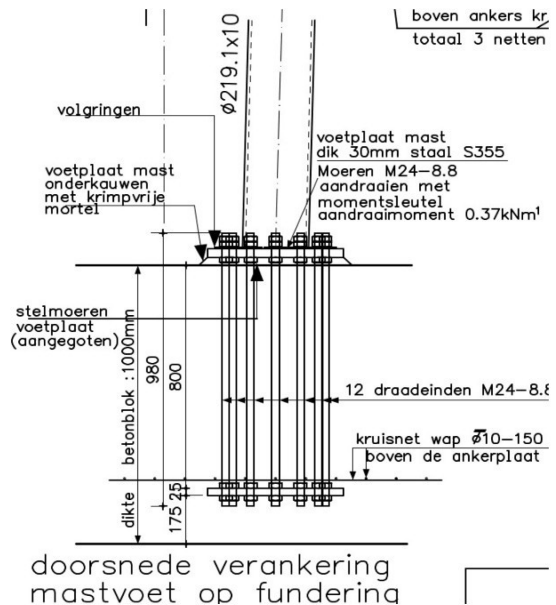
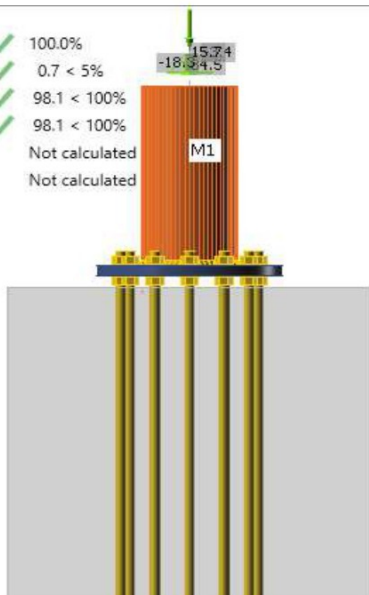


Windgebied onbebouwd
Omgeving : I
Construction Calculations

Rev. 1
Date 5/6/2020
Auteur ing. [redacted]

Controle ankers t.p.v. steunpunten

Analysis	✓	100.0%
Plates	✓	0.7 < 5%
Anchors	✓	98.1 < 100%
Welds	✓	98.1 < 100%
Concrete block		Not calculated
Buckling		Not calculated



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

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

**VFZ**

Windgebied onbebouwd
Omgeving : I
Fundatieberekening



Rev. 1
Date 5/6/2020
Auteur ing. [redacted]

Berekening Fundatieplaat:**1) 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	
	$\gamma_g=1,0$	$\gamma_q=1,0$	$\gamma_g=1,2$	$\gamma_q=1,6$	$\gamma_g=0,9$	$\gamma_q=1,6$
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	
	$\gamma_g=1,0$	$\gamma_q=1,0$	$\gamma_g=1,2$	$\gamma_q=1,6$	$\gamma_g=0,9$	$\gamma_q=1,6$
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

**VFZ**

Windgebied onbebouwd
Omgeving : I
Fundatieberekening



Rev. 1
Date 5/6/2020
Auteur ing. [redacted]

Bepaling voetkrachten t.g.v. windbelasting excl. eigen gewicht mast:Situatie 1:

Wind Y-richting

Drukkraft: $F_{C;rep} = 676 - 72/3 =$ **-652** kN
Trekkracht: $F_{A;rep} = F_{B;rep} = 1/2 * F_c =$ **326** kN

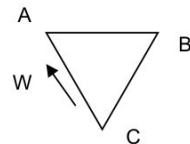
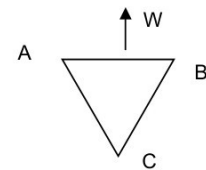
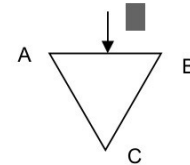
Situatie 2:

Drukkraft: $F_{A;rep} = F_{B;rep} =$ **-326** kN
Trekkracht: $F_{C;rep} =$ **652** kN

Situatie 3:

Wind X-richting

Drukkraft: $F_{A;rep} = 771 - 72/3 =$ **-746** kN
Trekkracht: $F_{C;rep} =$ **746** kN

**Grondwaterdruk:**

aanname dat er geen ondergronds water is

2) Bepalen plaatwapening en paalrealties

De funderingsplaat wordt berekend m.b.v. een 2D platengrogramma (zie bijlage 2).

toegepaste wapening: 16-150 onder en boven 1340 mm²
benodigde wapening 1329 mm²

UC = 0,99 < 1,0 (ok)



VFZ

Windgebied onbebouwd
Omgeving : I
Construction Calculations

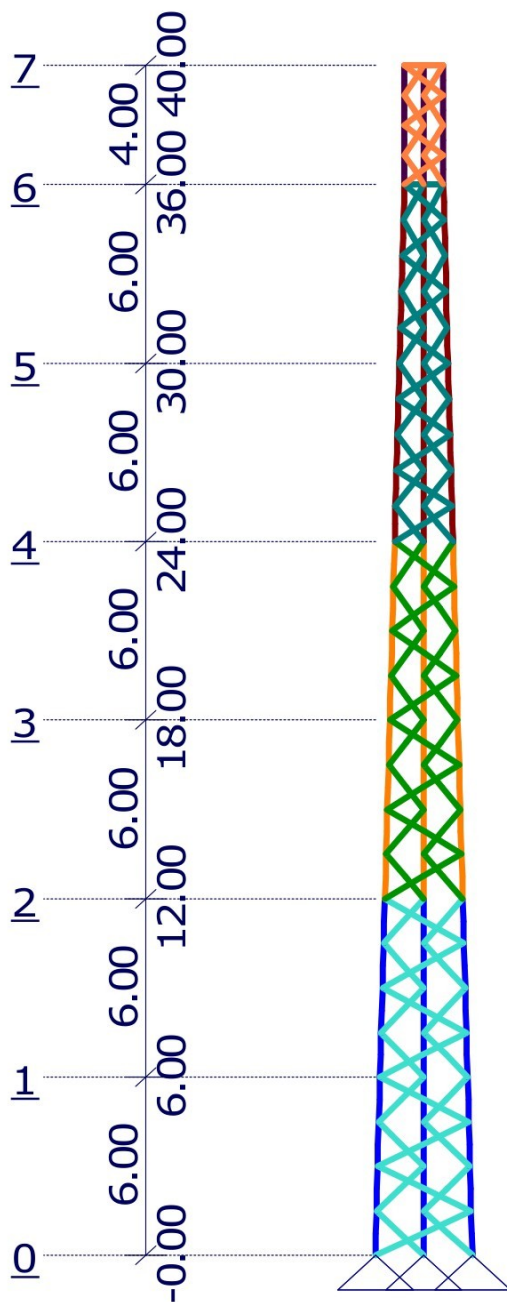


Rev.
Date
Auteur

1
5/6/2020
ing. [redacted]

Bijlage 1:

Eigen Frequentie



Projectnaam VFZ 40m 3000- 1200
Omschrijving
Opdrachtgever

Projectnummer
Constructeur
Eenheden

Ing. XXXXXXXXXX
m, kN, kNm

PROFIELEN

Profiel	Profielnaam	Oppervlakte	lt	ly	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	vrij	vrij	vast	0	0	0
O2	K2	0.000 vast	vast	vrij	vrij	vast	0	0	0
O3	K3	0.000 vast	vast	vrij	vrij	vast	0	0	0
-	-	m	kN/m	kN/m	kN/m	kN/m	°	°	°

BELASTINGSGEVALLEN TYPEN

Oplegg.	Staven	B.G.Type	Gunstig/Ong.	Element	Niveau	Veld	Psi0	Psi1	Psi2	Cprob
B.G.1	Permanent	Permanent	-		N.v.t.	N.v.t.				UGT/GGT
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		Ing. <div></div>
Omschrijving					Constructeur		
Opdrachtgever					Eenheden		
							m, kN, kNm
K4	B.G.3	0.0000	0.0000	0.0000	0.573e-03	-0.010e-03	-0.000e-03
	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
K5	B.G.3	-0.0001	-0.0008	-0.0003	0.677e-03	-0.002e-03	-0.022e-03
	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
K6	B.G.3	-0.0001	-0.0009	-0.0003	0.658e-03	0.027e-03	0.020e-03
	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
K7	B.G.3	0.0000	-0.0009	0.0006	0.693e-03	0.019e-03	-0.003e-03
	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
K8	B.G.3	0.0000	-0.0021	-0.0005	1.010e-03	-0.027e-03	-0.039e-03
	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
K9	B.G.3	-0.0001	-0.0021	-0.0005	0.947e-03	-0.014e-03	0.032e-03
	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
K10	B.G.3	0.0000	-0.0022	0.0011	0.991e-03	0.024e-03	-0.005e-03
	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
K11	B.G.3	0.0000	-0.0039	-0.0008	1.327e-03	0.008e-03	-0.053e-03
	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
K12	B.G.3	-0.0001	-0.0038	-0.0008	1.323e-03	0.001e-03	0.042e-03
	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
K13	B.G.3	-0.0001	-0.0040	0.0016	1.319e-03	-0.001e-03	-0.007e-03
	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
K14	B.G.3	0.0000	-0.0061	-0.0010	1.630e-03	0.013e-03	-0.067e-03
	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
K15	B.G.3	-0.0001	-0.0060	-0.0010	1.638e-03	-0.007e-03	0.050e-03
	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
K16	B.G.3	0.0000	-0.0062	0.0020	1.616e-03	-0.012e-03	-0.007e-03
	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
K17	B.G.3	0.0000	-0.0087	-0.0012	1.923e-03	0.003e-03	-0.079e-03
	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
K18	B.G.3	-0.0001	-0.0087	-0.0012	1.917e-03	-0.018e-03	0.059e-03
	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
K19	B.G.3	0.0000	-0.0088	0.0024	1.901e-03	-0.012e-03	-0.010e-03
	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
K20	B.G.3	0.0000	-0.0119	-0.0014	2.206e-03	0.007e-03	-0.090e-03
	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
K21	B.G.3	-0.0001	-0.0118	-0.0014	2.205e-03	-0.008e-03	0.065e-03
	B.G.1	0.0000	0.0000	0.0001	-0.001e-03	0.000e-03	0.001e-03

Projectnaam
Omschrijving
Opdrachtgever

VFZ 40m 3000- 1200

Projectnummer
Constructeur
Eenheden

Ing. 
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

Projectnaam		VFZ 40m 3000- 1200			Projectnummer		Ing. <div></div>
Omschrijving					Constructeur		
Opdrachtgever					Eenheden		
							m, kN, kNm
K39	B.G.3	-0.0001	-0.0410	-0.0025	4.449e-03	-0.010e-03	0.110e-03
	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

Projectnaam		VFZ 40m 3000- 1200			Projectnummer		Ing. <div></div>
Omschrijving					Constructeur		
Opdrachtgever					Eenheden		
							m, kN, kNm
K56	B.G.3	0.0000	-0.0875	-0.0032	6.864e-03	0.015e-03	-0.233e-03
	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
K57	B.G.3	-0.0001	-0.0873	-0.0032	6.878e-03	-0.017e-03	0.064e-03
	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

Projectnaam		VFZ 40m 3000- 1200			Projectnummer		Ing <div></div>
Omschrijving					Constructeur		
Opdrachtgever					Eenheden		
							m, kN, kNm
K73	B.G.3	0.0002	-0.1340	0.0066	8.484e-03	-0.017e-03	-0.143e-03
	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
K74	B.G.3	0.0000	-0.1444	-0.0032	8.721e-03	-0.013e-03	-0.232e-03
	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
K75	B.G.3	0.0000	-0.1442	-0.0032	8.703e-03	-0.013e-03	-0.081e-03
	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
K76	B.G.3	0.0002	-0.1443	0.0064	8.713e-03	-0.032e-03	-0.154e-03
	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
K78	B.G.3	0.0000	-0.1548	-0.0031	8.865e-03	0.007e-03	-0.108e-03
	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
K79	B.G.3	0.0002	-0.1548	0.0063	8.867e-03	-0.036e-03	-0.166e-03
	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
K80	B.G.3	0.0000	-0.1657	-0.0030	9.009e-03	0.053e-03	-0.225e-03
	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
K81	B.G.3	0.0000	-0.1654	-0.0030	8.992e-03	-0.002e-03	-0.136e-03
	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
K82	B.G.3	0.0002	-0.1655	0.0061	8.944e-03	0.022e-03	-0.179e-03
	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
K83	B.G.3	-0.0001	-0.1748	-0.0031	9.473e-03	-0.032e-03	-0.218e-03
	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
K84	B.G.3	0.0000	-0.1746	-0.0031	9.212e-03	-0.192e-03	-0.148e-03
	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
K85	B.G.3	0.0001	-0.1746	0.0061	9.219e-03	0.136e-03	-0.182e-03
	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
K86	B.G.3	0.0000	-0.1843	-0.0031	9.130e-03	0.095e-03	-0.211e-03
	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
K87	B.G.3	0.0003	-0.1838	-0.0031	9.269e-03	-0.019e-03	-0.160e-03
	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
K88	B.G.3	0.0000	-0.1838	0.0062	9.103e-03	-0.083e-03	-0.185e-03
	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
K89	B.G.3	-0.0002	-0.1930	-0.0031	8.617e-03	0.056e-03	-0.209e-03
	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

Projectnaam VFZ 40m 3000- 1200
Omschrijving
Opdrachtgever

Projectnummer
Constructeur
Eenheden

Ing. XXXXXXXXXX
m, kN, kNm

	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



VFZ

Windgebied onbebouwd
Omgeving : I
Construction Calculations



Rev.	1
Date	5/6/2020
Auteur	ing. [redacted]

Bijlage 2:
Controle sterkte

Projectnaam
Omschrijving
Opdrachtgever

VFZ
Controle sterkte

Projectnummer
Constructeur
Eenheden

Ing. XXXXXXXXXX
m, kN, kNm

CONSTRUCTIEGEGEVENS

Projecttype	Knoppen	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

Staaft	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)
Staaft	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)

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

VFZ
Controle sterkte

Projectnummer
Constructeur
Eenheden

Ing. XXXXXXXXXX
m, kN, kNm

Staafl	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)

Projectnaam		VFZ				Projectnummer		Ing. <div></div>		
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Opdrachtgever						Eenheden				
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)

Staaft	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

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

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	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	Vast	Vrij	Vrij
	L(2.089) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(2.040) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(2.040) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(2.040) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(1.992) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
Staafl	Positie		Scharnier				
	Oplegg.			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	Vast	Vrij	Vrij
	L(3.254) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S120	0.000 A59	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.992) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(1.992) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S123	0.000 A62	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(1.945) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S124	0.000 A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.200) A1	Vast	Vast	Vast	Vast	Vast	Vast

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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

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte		Projectnummer Constructeur Eenheden	Ing. XXXXXXXXXX m, kN, kNm			
	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
Staaft	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
			Vast				

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte		Projectnummer Constructeur Eenheden			Ing. XXXXXXXXXX m, kN, kNm	
	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
Staaft	Positie		Scharnier			Xr	Yr
	Oplegg.						Zr

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

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte		Projectnummer Constructeur Eenheden			Ing. XXXXXXXXXX m, kN, kNm	
	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
Staaft	Positie		Scharnier				
	Oplegg.			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
			Vast				

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte		Projectnummer Constructeur Eenheden			Ing. XXXXXXXXXX m, kN, kNm	
	L(1.501) A1	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
			Vast				

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte		Projectnummer Constructeur Eenheden			Ing. XXXXXXXXXX m, kN, kNm	
S54	0.000 A1	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	Vast	Vrij	Vrij
	L(2.799) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(2.736) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S59	0.000 A1	Vast	Vast	Vast	Vast	Vast	Vast
	L(1.501) A1	Vast	Vast	Vast	Vast	Vast	Vast
Staaft	Positie Oplegg.		Scharnier		Xr	Yr	Zr
S6	0.000 A3	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(3.321) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
S60	0.000 A29	Vast	Vast	Vast	Vast	Vrij	Vrij
	L(2.736) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(2.736) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(2.673) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(2.673) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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	Vast	Vrij	Vrij
	L(2.673) A2	Vast	Vast	Vast	Vast	Vrij	Vrij
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

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

VFZ
Controle sterkte

Projectnummer
Constructeur
Eenheden

Ing. XXXXXXXXXX
m, kN, kNm

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

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte		Projectnummer Constructeur Eenheden		Ing. <div></div> m, kN, kNm
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

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte	Projectnummer Constructeur Eenheden				Ing. <div></div> m, kN, kNm
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,

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte		Projectnummer Constructeur Eenheden		Ing. XXXXXXXXXX m, kN, kNm
q	-0.33	-0.33	0.000	1.200(L)	S147,S149,S153,S155 Y 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			

Projectnaam
Omschrijving
Opdrachtgever

VFZ
Controle sterkte

Projectnummer
Constructeur
Eenheden

Ing. XXXXXXXXXX
m, kN, kNm

	Som Lasten	0.00	-146.99	65.15			
-	-	-	kN	kN	kN	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

Projectnaam Omschrijving Opdrachtgever		VFZ Controle sterkte			Projectnummer Constructeur Eenheden		Ing m, kN, kNm
K13	Ch.C.2	-0.0001	-0.0057	0.0024	1.954e-03	-0.041e-03	0.004e-03
	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
K14	Ch.C.2	0.0000	-0.0089	-0.0014	2.454e-03	-0.000e-03	-0.065e-03
	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
K15	Ch.C.2	-0.0001	-0.0089	-0.0014	2.457e-03	-0.006e-03	0.075e-03
	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
K16	Ch.C.2	-0.0001	-0.0091	0.0031	2.450e-03	-0.001e-03	0.005e-03
	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
K17	Ch.C.2	0.0000	-0.0129	-0.0017	2.901e-03	0.003e-03	-0.078e-03
	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
K18	Ch.C.2	-0.0001	-0.0130	-0.0017	2.898e-03	-0.008e-03	0.092e-03
	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
K19	Ch.C.2	-0.0001	-0.0131	0.0037	2.888e-03	0.004e-03	0.006e-03
	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
K20	Ch.C.2	0.0000	-0.0176	-0.0019	3.334e-03	0.010e-03	-0.090e-03
	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
K21	Ch.C.2	-0.0001	-0.0176	-0.0019	3.343e-03	-0.015e-03	0.105e-03
	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
K22	Ch.C.2	-0.0001	-0.0178	0.0043	3.315e-03	-0.005e-03	0.008e-03
	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
K23	Ch.C.2	0.0000	-0.0229	-0.0022	3.750e-03	0.005e-03	-0.099e-03
	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

Projectnaam Omschrijving Opdrachtgever		VFZ Controle sterkte			Projectnummer Constructeur Eenheden		Ing. XXXXXXXXXX m, kN, kNm
K32	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
	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
K33	Ch.C.2	-0.0002	-0.0433	-0.0030	5.479e-03	-0.019e-03	0.184e-03
	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
K34	Ch.C.2	-0.0001	-0.0436	0.0067	5.454e-03	-0.007e-03	0.017e-03
	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
K35	Ch.C.2	0.0000	-0.0520	-0.0033	6.093e-03	-0.005e-03	-0.159e-03
	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
K36	Ch.C.2	-0.0002	-0.0521	-0.0032	6.081e-03	-0.066e-03	0.203e-03
	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
K37	Ch.C.2	-0.0001	-0.0522	0.0073	6.039e-03	-0.019e-03	0.019e-03
	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
K38	Ch.C.2	0.0001	-0.0616	-0.0034	6.665e-03	0.052e-03	-0.165e-03
	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
K39	Ch.C.2	0.0000	-0.0616	-0.0035	6.772e-03	-0.009e-03	0.211e-03
	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
K40	Ch.C.2	-0.0001	-0.0617	0.0077	6.643e-03	-0.040e-03	0.027e-03
	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
K41	Ch.C.2	0.0000	-0.0719	-0.0036	7.158e-03	-0.004e-03	-0.167e-03
	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
K42	Ch.C.2	-0.0001	-0.0722	-0.0036	7.156e-03	-0.029e-03	0.223e-03
	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
K43	Ch.C.2	0.0000	-0.0721	0.0081	7.134e-03	-0.003e-03	0.029e-03
	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

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

Projectnaam Omschrijving Opdrachtgever		VFZ Controle sterkte			Projectnummer Constructeur Eenheden		Ing. XXXXXXXXXX m, kN, kNm
K69	Ch.C.2	0.0002	-0.1799	-0.0040	11.258e-03	-0.021e-03	0.194e-03
	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
K70	Ch.C.2	0.0000	-0.1798	0.0095	11.200e-03	-0.004e-03	0.090e-03
	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
K71	Ch.C.2	0.0000	-0.1934	-0.0040	11.490e-03	0.006e-03	-0.002e-03
	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
K72	Ch.C.2	0.0001	-0.1937	-0.0039	11.488e-03	-0.004e-03	0.184e-03
	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
K73	Ch.C.2	0.0000	-0.1935	0.0094	11.468e-03	0.021e-03	0.097e-03
	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
K74	Ch.C.2	0.0001	-0.2073	-0.0038	11.617e-03	-0.072e-03	0.021e-03
	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
K75	Ch.C.2	0.0002	-0.2074	-0.0038	11.518e-03	-0.040e-03	0.178e-03
	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
K76	Ch.C.2	0.0000	-0.2073	0.0092	11.615e-03	0.025e-03	0.105e-03
	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
K77	Ch.C.2	0.0001	-0.2213	-0.0037	11.717e-03	0.022e-03	0.047e-03
	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
K78	Ch.C.2	0.0001	-0.2215	-0.0037	11.823e-03	0.045e-03	0.165e-03
	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
K79	Ch.C.2	0.0000	-0.2214	0.0089	11.775e-03	-0.043e-03	0.115e-03
	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
K80	Ch.C.2	0.0001	-0.2355	-0.0035	11.910e-03	-0.050e-03	0.072e-03
	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
K81	Ch.C.2	0.0001	-0.2356	-0.0035	11.865e-03	-0.026e-03	0.155e-03
	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
K82	Ch.C.2	0.0000	-0.2356	0.0086	11.914e-03	0.010e-03	0.122e-03
	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
K83	Ch.C.2	0.0002	-0.2475	-0.0036	12.169e-03	-0.035e-03	0.083e-03
	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

Projectnaam	VFZ		Projectnummer		Ing. XXXXXXXXXX		
Omschrijving	Controle sterkte		Constructeur		m, kN, kNm		
Opdrachtgever			Eenheden				
K88	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
	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
K89	Ch.C.2	-0.0001	-0.2718	-0.0036	11.903e-03	0.038e-03	0.100e-03
	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
K90	Ch.C.2	0.0002	-0.2723	-0.0036	12.027e-03	0.136e-03	0.136e-03
	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
K91	Ch.C.2	0.0002	-0.2718	0.0088	12.038e-03	-0.011e-03	0.146e-03
	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
K92	Ch.C.2	0.0002	-0.2836	-0.0036	11.769e-03	-0.416e-03	0.109e-03
	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
K93	Ch.C.2	0.0002	-0.2838	-0.0036	11.132e-03	-0.061e-03	0.135e-03
	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

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

VFZ
Controle sterkte

Projectnummer
Constructeur
Eenheden

Ing. XXXXXXXXXX
m, kN, kNm

			Invoer		Invoer			
Staat	Profiel	Lokale Y-as			Lokale Z-as			
		Lsys	methode	Lbuc	Lbuc/Lsys	methode	Lbuc	
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 Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte			Projectnummer Constructeur Eenheden		Ing. <div></div> m, kN, kNm		
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 Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50	
C96 - V1 (0.000-2.372)	P6	2.370	Handmatige Invoer	2.372	1.00	Handmatige Invoer	2.372	1.00	
C97 - V1 (0.000-2.372)	P6	2.370	Handmatige Invoer	2.372	1.00	Handmatige Invoer	2.372	1.00	
C98 - V1 (0.000-1.501)	P5	1.500	Handmatige Invoer	2.251	1.50	Handmatige Invoer	2.251	1.50	
C99 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C100 - V1 (0.000-2.139)	P10	2.140	Handmatige Invoer	2.139	1.00	Handmatige Invoer	2.139	1.00	
C101 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C102 - V1 (0.000-2.139)	P10	2.140	Handmatige Invoer	2.139	1.00	Handmatige Invoer	2.139	1.00	
C103 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C104 - V1 (0.000-2.139)	P10	2.140	Handmatige Invoer	2.139	1.00	Handmatige Invoer	2.139	1.00	
C105 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C106 - V1 (0.000-2.089)	P10	2.090	Handmatige Invoer	2.089	1.00	Handmatige Invoer	2.089	1.00	
C107 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C108 - V1 (0.000-2.089)	P10	2.090	Handmatige Invoer	2.089	1.00	Handmatige Invoer	2.089	1.00	
C109 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C110 - V1 (0.000-2.089)	P10	2.090	Handmatige Invoer	2.089	1.00	Handmatige Invoer	2.089	1.00	
C111 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C112 - V1 (0.000-2.040)	P10	2.040	Handmatige Invoer	2.040	1.00	Handmatige Invoer	2.040	1.00	
C113 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C114 - V1 (0.000-2.040)	P10	2.040	Handmatige Invoer	2.040	1.00	Handmatige Invoer	2.040	1.00	
C115 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C116 - V1 (0.000-2.040)	P10	2.040	Handmatige Invoer	2.040	1.00	Handmatige Invoer	2.040	1.00	
C117 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C118 - V1 (0.000-1.992)	P10	1.990	Handmatige Invoer	1.992	1.00	Handmatige Invoer	1.992	1.00	
C119 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C120 - V1 (0.000-1.992)	P10	1.990	Handmatige Invoer	1.992	1.00	Handmatige Invoer	1.992	1.00	
C121 - V1 (0.000-1.200)	P9	1.200	Handmatige Invoer	1.801	1.50	Handmatige Invoer	1.801	1.50	
C122 - V1 (0.000-1.992)	P10	1.990	Handmatige Invoer	1.992	1.00	Handmatige Invoer	1.992	1.00	
C123 - V1 (0.000-1.945)	P10	1.940	Handmatige Invoer	1.945	1.00	Handmatige Invoer	1.945	1.00	
C124 - V1 (0.000-1.200)	P9	1.200	Handmatige	1.801	1.50	Handmatige	1.801	1.50	

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte	Projectnummer Constructeur Eenheden	Ing. XXXXXXXXXX m, kN, kNm
C125 - V1 (0.000-1.945)	P10	1.940	Invoer
C126 - V1 (0.000-1.200)	P9	1.200	Handmatige
C127 - V1 (0.000-1.200)	P9	1.200	Invoer
C128 - V1 (0.000-1.945)	P10	1.940	Handmatige
C129 - V1 (0.000-1.200)	P9	1.200	Invoer
C130 - V1 (0.000-1.898)	P10	1.900	Handmatige
C131 - V1 (0.000-1.200)	P9	1.200	Invoer
C132 - V1 (0.000-1.898)	P10	1.900	Handmatige
C133 - V1 (0.000-1.200)	P9	1.200	Invoer
C134 - V1 (0.000-1.898)	P10	1.900	Handmatige
			Invoer

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	1.200	1.00	Handmatige	1.200	1.00

Projectnaam Omschrijving Opdrachtgever	VFZ Controle sterkte		Projectnummer Constructeur Eenheden		Ing. XXXXXXXXXX m, kN, kNm			
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 Invoer	1.500	1.50	Handmatige Invoer	1.500	1.50
C176 - V1 (0.000-1.562)	P16	1.560	Handmatige Invoer	1.562	1.00	Handmatige Invoer	1.562	1.00
C177 - V1 (0.000-1.000)	P15	1.000	Handmatige Invoer	1.500	1.50	Handmatige Invoer	1.500	1.50
C178 - V1 (0.000-1.562)	P16	1.560	Handmatige Invoer	1.562	1.00	Handmatige Invoer	1.562	1.00
C179 - V1 (0.000-1.562)	P16	1.560	Handmatige Invoer	1.562	1.00	Handmatige Invoer	1.562	1.00
C180 - V1 (0.000-1.000)	P15	1.000	Handmatige Invoer	1.500	1.50	Handmatige Invoer	1.500	1.50
C181 - V1 (0.000-1.562)	P16	1.560	Handmatige Invoer	1.562	1.00	Handmatige Invoer	1.562	1.00
C182 - V1 (0.000-1.000)	P15	1.000	Handmatige Invoer	1.500	1.50	Handmatige Invoer	1.500	1.50
C183 - V1 (0.000-1.000)	P15	1.000	Handmatige Invoer	1.500	1.50	Handmatige Invoer	1.500	1.50
C184 - V1 (0.000-1.562)	P16	1.560	Handmatige Invoer	1.562	1.00	Handmatige Invoer	1.562	1.00
C185 - V1 (0.000-1.200)	P16	1.200	Handmatige Invoer	1.200	1.00	Handmatige Invoer	1.200	1.00
C186 - V1 (0.000-1.200)	P16	1.200	Handmatige Invoer	1.200	1.00	Handmatige Invoer	1.200	1.00
-	-	m	-	m	-	-	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

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

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

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

Project:
Project no:
Author:

Project data

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

Material

Steel S 355
Concrete C25/30

Project:
Project no:
Author:

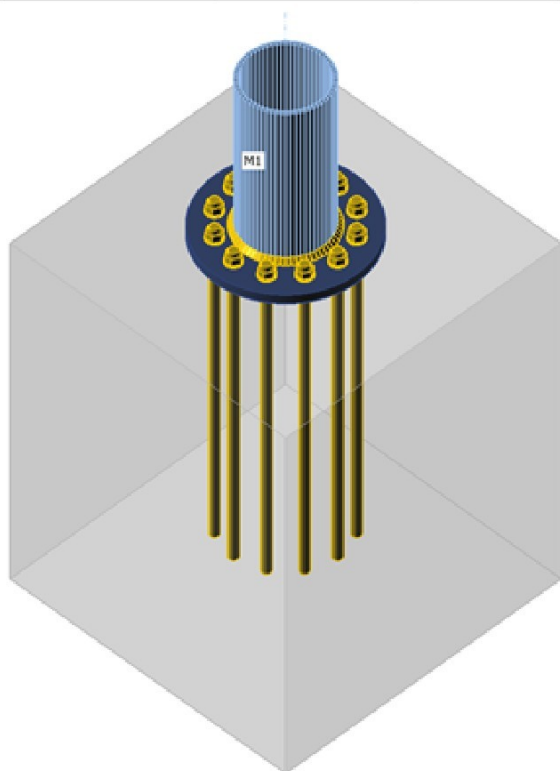
Project item CON1

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]	f_u [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

Project:
Project no:
Author:

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

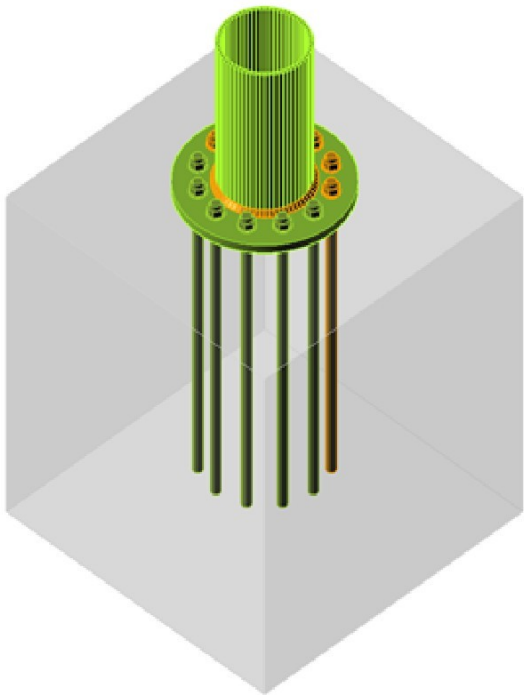
Name	Thickness [mm]	Loads	σ_{Ed} [MPa]	ϵ_{pl} [%]	Status
M1	10.0	LE1	356.2	0.6	OK
BP1	25.0	LE1	356.4	0.7	OK

Design data

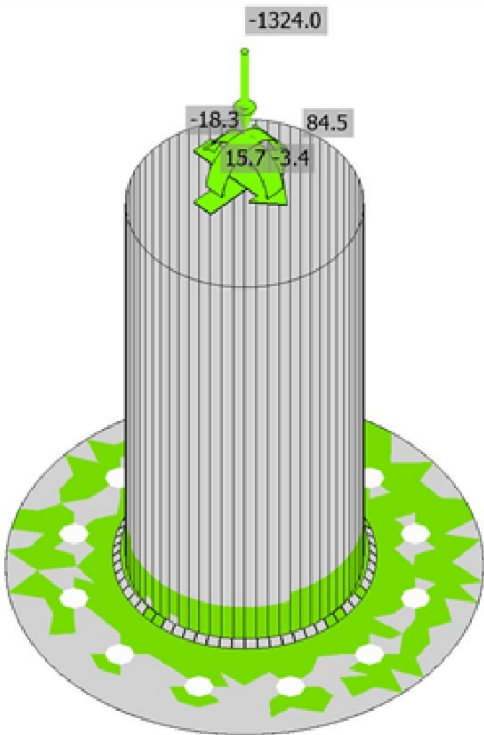
Material	f_y [MPa]	ϵ_{lim} [%]
S 355	355.0	5.0

Symbol explanation

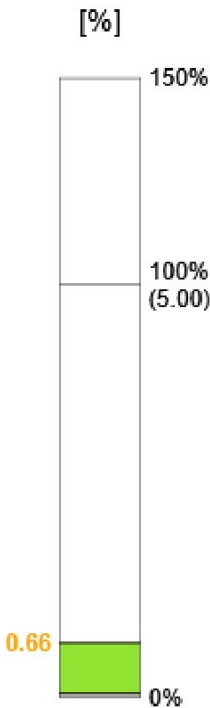
ϵ_{pl}	Strain
σ_{Ed}	Eq. stress
f_y	Yield strength
ϵ_{lim}	Limit of plastic strain



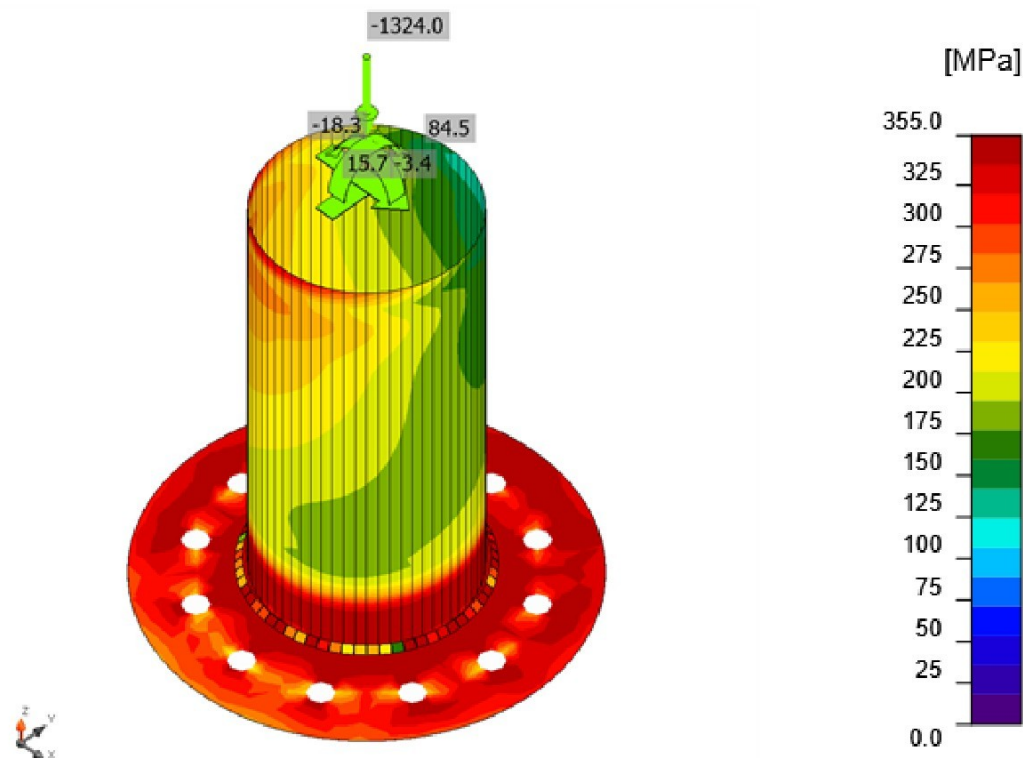
Overall check, LE1



Strain check, LE1

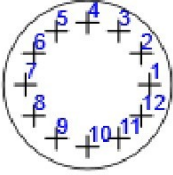


Project:
Project no:
Author:



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]	U _{t,c} [%]	U _{t,s} [%]	U _{t,b} [%]	U _{t,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

Project:
Project no:
Author:

Symbol explanation

F_c	Compressive force
V	Resultant of shear forces V_y , V_z 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
U_{tc}	Utilization in compression
U_{ts}	Utilization in shear
U_{tb}	Utilization in bending
U_{tcb}	Utilization in compression and bending - linear interaction

Welds (Plastic redistribution)

Item	Edge	Throat th. [mm]	Length [mm]	Loads	$\sigma_{w,Ed}$ [MPa]	ϵ_{pl} [%]	σ_{\perp} [MPa]	$\tau_{ }$ [MPa]	τ_{\perp} [MPa]	U_t [%]	U_{tc} [%]	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]	0.9σ [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
σ_{\perp}	Perpendicular stress
$\tau_{ }$	Shear stress parallel to weld axis
τ_{\perp}	Shear stress perpendicular to weld axis
0.9σ	Perpendicular stress resistance - $0.9 \cdot f_u / \gamma_{M2}$
β_w	Correlation factor EN 1993-1-8 tab. 4.1
U_t	Utilization
U_{tc}	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 β_j	0.67	-	EN 1993-1-8: 6.2.5

Project:
Project no:
Author:

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 ab 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		

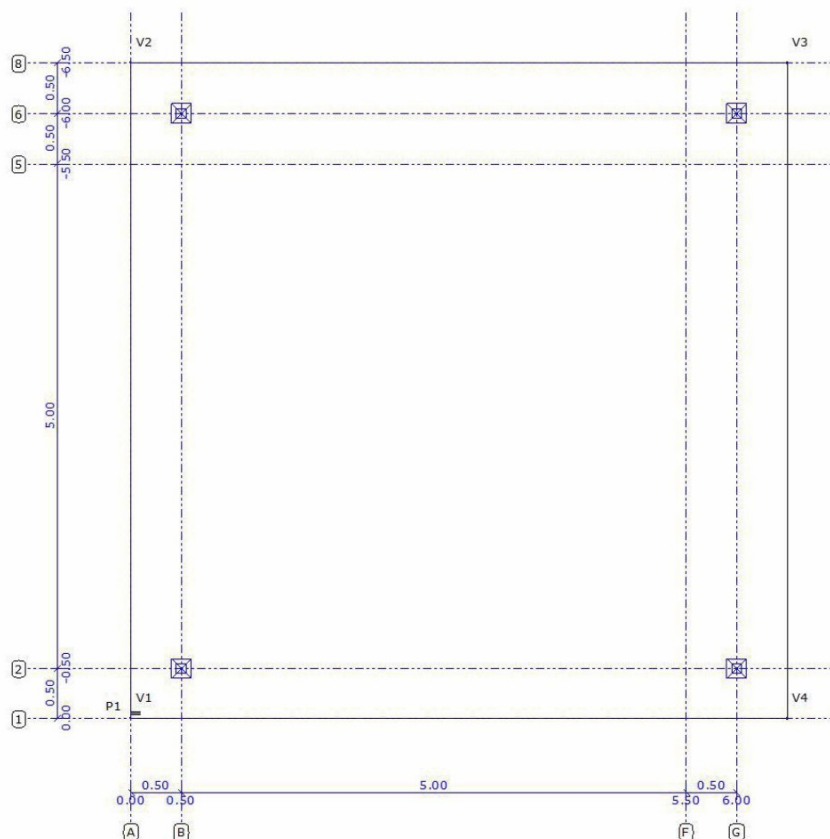
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm

AFB. GEOMETRIE



GEOMETRIE

Gebied/Polylijn	Sparing	Materiaal	Kruip	Dikte	Elasticiteit	Poisson	Dichtheid	Uitzetting
R1	Nee	C20/25	2.10	1.000	3.0000e+07	0.20	25.00	10.0000e-06
-	-	-	-	m	kN/m2	-	kN/m3	C°m

CONSTRUCTIEVE PUNTEN

Gebieden	Punt			Ref.
R1	V1	0.000	0.000	0.000 A,1
R1	V2	0.000	-6.500	0.000 A,8
R1	V3	6.500	-6.500	0.000 G,6
R1	V4	6.500	0.000	0.000 G,1
-	-	m	m	m -

OPLEGGINGEN

Gebied/Polylijn	Type		Xr	Yr
R2	Punt	35000.00	Vrij	Vrij
R4	Punt	35000.00	Vrij	Vrij
R7	Punt	35000.00	Vrij	Vrij
R9	Punt	35000.00	Vrij	Vrij
-	-	-	-	-

Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

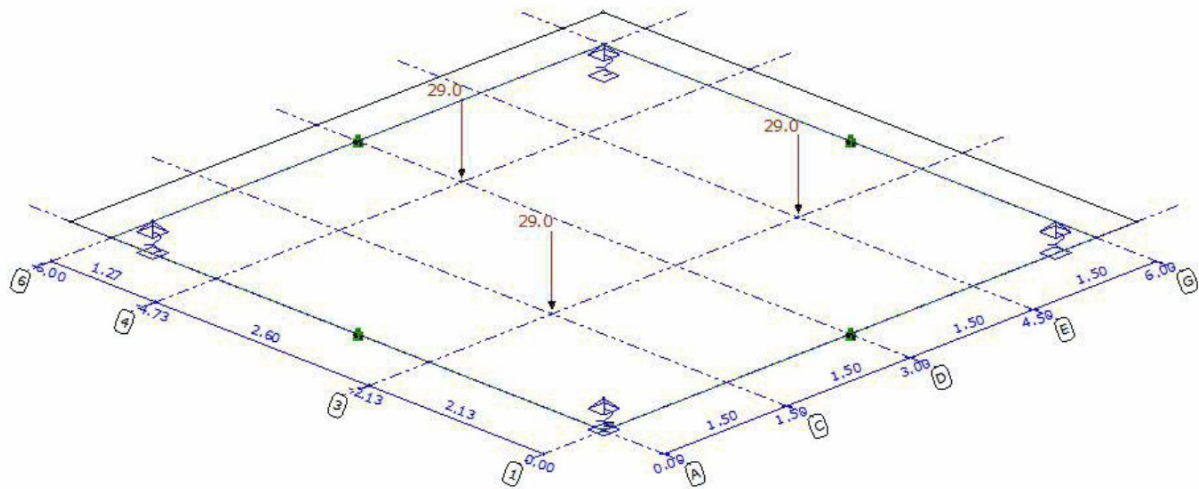
Projectnummer
Constructeur
Eenheden

m, kN, kNm

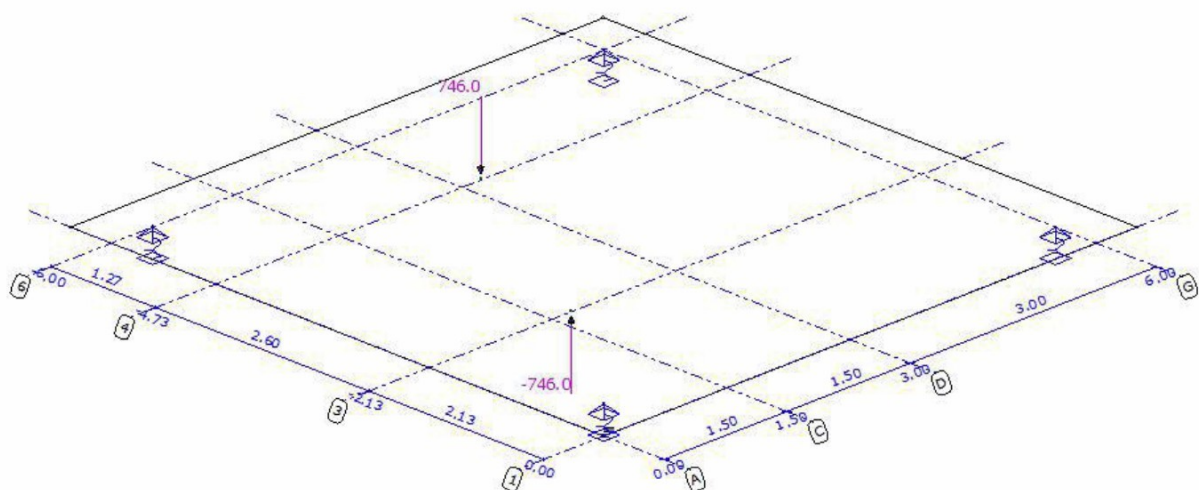
ONDERSTEUNINGSPUNTEN

Gebieden	Punt			
R2	V5	0.500	-0.500	0.000
R4	V7	6.000	-0.500	0.000
R7	V10	0.500	-6.000	0.000
R9	V12	6.000	-6.000	0.000
-	-	m	m	m

AFB. LASTEN B.G.1 PERMANENT



AFB. LASTEN B.G.2 WIND X1



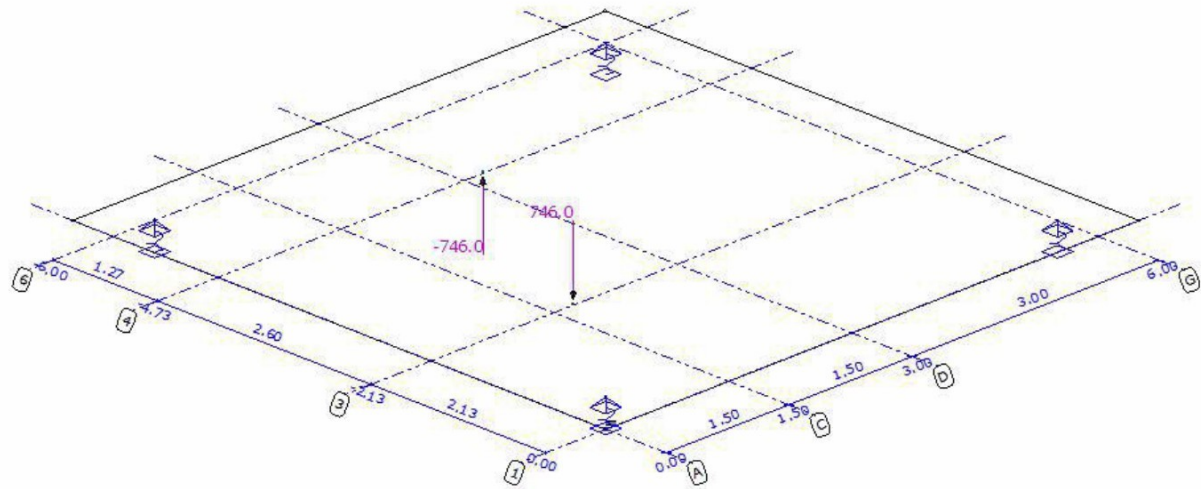
AFB. LASTEN B.G.3 WIND X2

Projectnaam
Omschrijving
Opdrachtgever

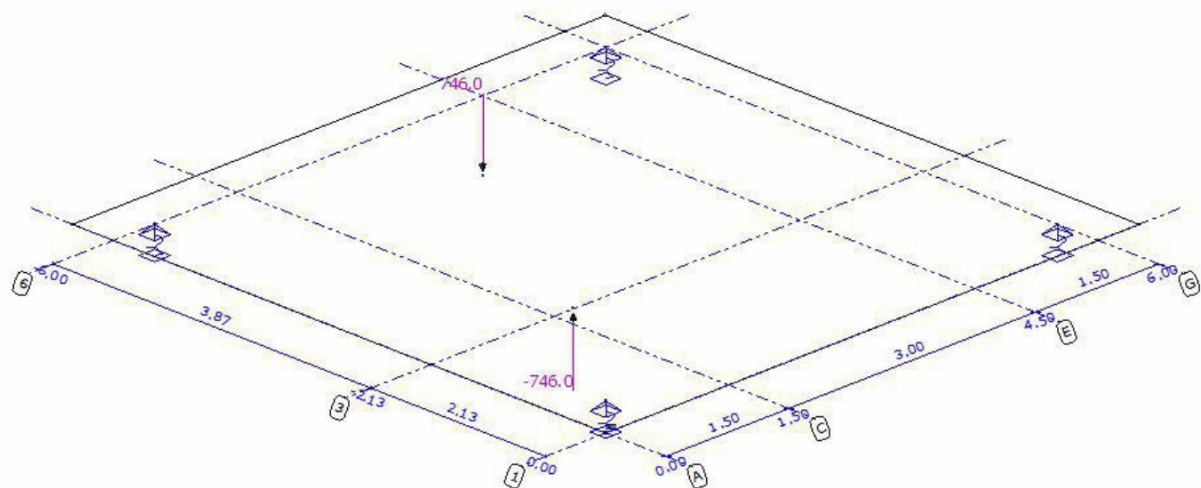
VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



AFB. LASTEN B.G.4 WINDX3



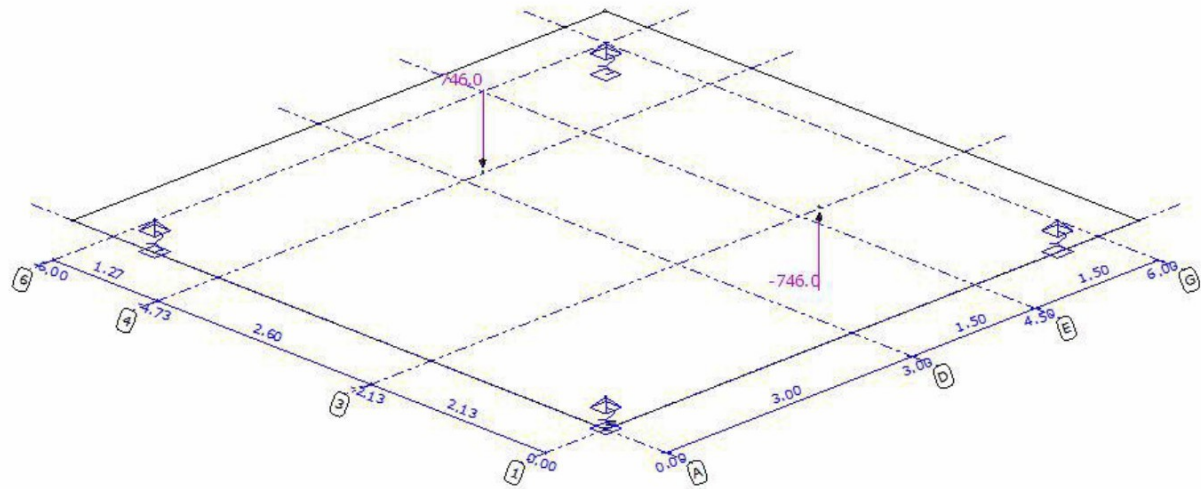
AFB. LASTEN B.G.5 WIND X4

Projectnaam
Omschrijving
Opdrachtgever

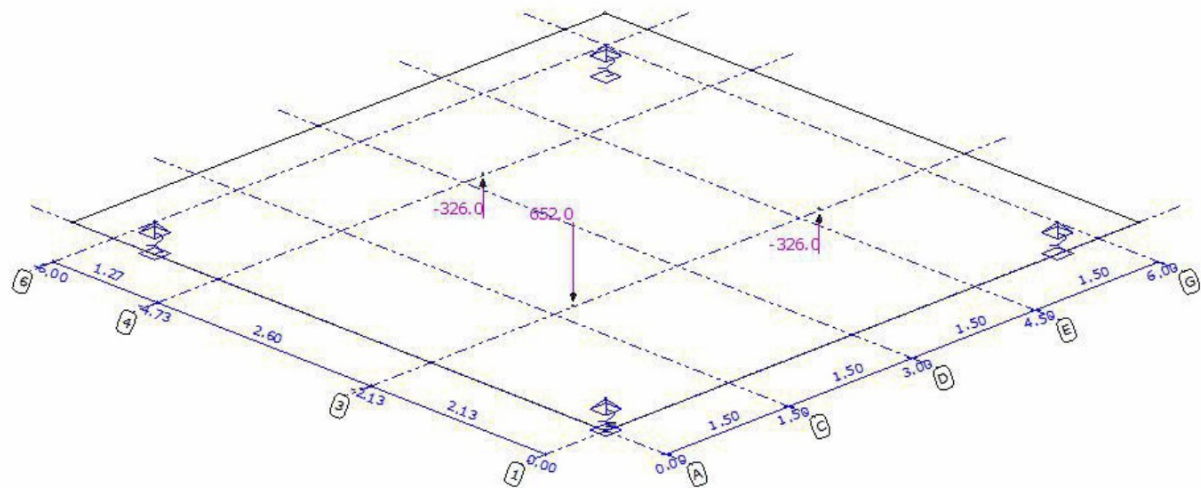
VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



AFB. LASTEN B.G.6 WIND Y1



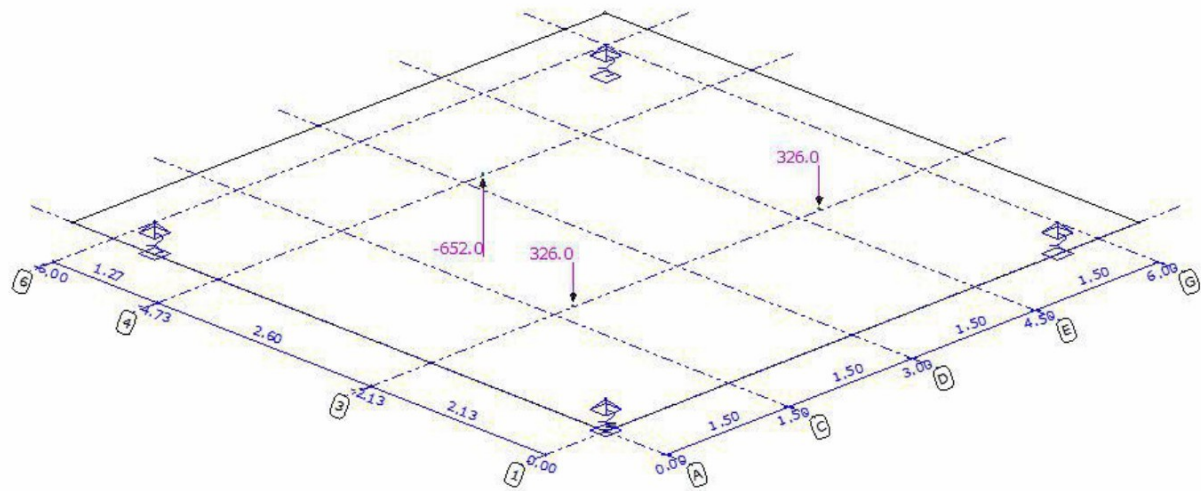
AFB. LASTEN B.G.7 WIND Y2

Projectnaam
Omschrijving
Opdrachtgever

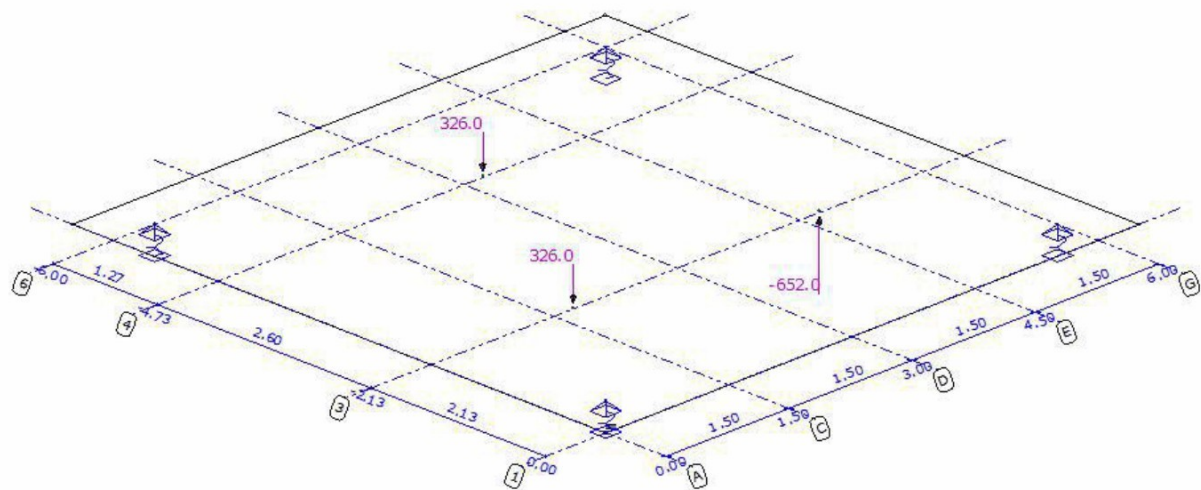
VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



AFB. LASTEN B.G.8 WIND Y3



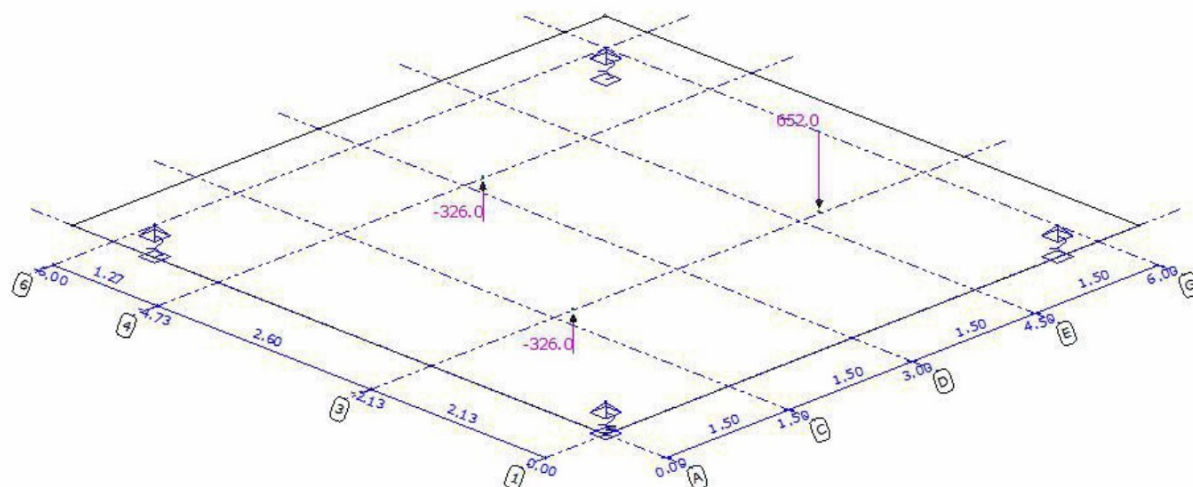
AFB. LASTEN B.G.9 WIND Y4

Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



BELASTINGSGEVALLEN

Gebied/Polylijn	Type	Type	Richting
B.G.1: Permanent			
R10	Gebied	qG	Z
R11	Punt	N	Z
R12	Punt	N	Z
R13	Punt	N	Z
B.G.2: Wind X1			
R37	Punt	N	Z
R38	Punt	N	Z
B.G.3: Wind X2			
R39	Punt	N	Z
R40	Punt	N	Z
B.G.4: WindX3			
R41	Punt	N	Z
R42	Punt	N	Z
B.G.5: Wind X4			
R21	Punt	N	Z
R22	Punt	N	Z
B.G.6: Wind Y1			
R23	Punt	N	Z
R24	Punt	N	Z
R25	Punt	N	Z
B.G.7: Wind Y2			
R26	Punt	N	Z
R27	Punt	N	Z
R28	Punt	N	Z
B.G.8: Wind Y3			
R29	Punt	N	Z
R30	Punt	N	Z
R31	Punt	N	Z
B.G.9: Wind Y4			
R32	Punt	N	Z
R33	Punt	N	Z
R34	Punt	N	Z
-	-	-	-

LASTEN VERTICES

Gebieden	Punt	Lastwaarden			
R10	V13	0.000	0.000	0.000	1.00
R10	V14	0.000	-6.000	0.000	1.00
R10	V15	6.000	-6.000	0.000	1.00
R10	V16	6.000	0.000	0.000	1.00

Projectnaam Omschrijving Opdrachtgever	VFZ Fundering-Betonplaat	Projectnummer Constructeur Eenheden	m, kN, kNm		
R11	V17	3.000	-4.732	0.000	29.00
R12	V18	1.500	-2.134	0.000	29.00
R13	V19	4.500	-2.134	0.000	29.00
R21	V30	3.250	-4.750	0.000	746.00
R22	V31	4.750	-2.150	0.000	-746.00
R23	V32	1.750	-2.150	0.000	652.00
R24	V33	4.750	-2.150	0.000	-326.00
R25	V34	3.250	-4.750	0.000	-326.00
R26	V35	1.750	-2.150	0.000	326.00
R27	V36	4.750	-2.150	0.000	326.00
R28	V37	3.250	-4.750	0.000	-652.00
R29	V38	4.750	-2.150	0.000	-652.00
R30	V39	3.250	-4.750	0.000	326.00
R31	V40	1.750	-2.150	0.000	326.00
R32	V41	3.250	-4.750	0.000	-326.00
R33	V42	1.750	-2.150	0.000	-326.00
R34	V43	4.750	-2.150	0.000	652.00
R37	V152	1.750	-2.150	0.000	-746.00
R38	V153	3.250	-4.750	0.000	746.00
R39	V154	1.750	-2.150	0.000	746.00
R40	V155	3.250	-4.750	0.000	-746.00
R41	V156	1.750	-2.150	0.000	-746.00
R42	V157	3.250	-4.750	0.000	746.00
-	-	m	m	m	-

PERSISTENT BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Pe.C.1	Pe.C.2	Pe.C.3	Pe.C.4	Pe.C.5	Pe.C.6	Pe.C.7	Pe.C.8
B.G.1	Permanent	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.2	Wind X1	-	-	1.50	-	-	-	-	-
B.G.3	Wind X2	-	-	-	1.50	-	-	-	-
B.G.4	WindX3	-	-	-	-	1.50	-	-	-
B.G.5	Wind X4	-	-	-	-	-	1.50	-	-
B.G.6	Wind Y1	-	-	-	-	-	-	1.50	-
B.G.7	Wind Y2	-	-	-	-	-	-	-	1.50
B.G.8	Wind Y3	-	-	-	-	-	-	-	-
B.G.9	Wind Y4	-	-	-	-	-	-	-	-
B.G.	Omschrijving	Pe.C.9	Pe.C.10	Pe.C.11	Pe.C.12	Pe.C.13	Pe.C.14	Pe.C.15	Pe.C.16
B.G.1	Permanent	1.20	1.20	0.90	0.90	0.90	0.90	0.90	0.90
B.G.2	Wind X1	-	-	1.50	-	-	-	-	-
B.G.3	Wind X2	-	-	-	1.50	-	-	-	-
B.G.4	WindX3	-	-	-	-	1.50	-	-	-
B.G.5	Wind X4	-	-	-	-	-	1.50	-	-
B.G.6	Wind Y1	-	-	-	-	-	-	1.50	-
B.G.7	Wind Y2	-	-	-	-	-	-	-	1.50
B.G.8	Wind Y3	1.50	-	-	-	-	-	-	-
B.G.9	Wind Y4	-	1.50	-	-	-	-	-	-
B.G.	Omschrijving	Pe.C.17	Pe.C.18						
B.G.1	Permanent	0.90	0.90						
B.G.2	Wind X1	-	-						
B.G.3	Wind X2	-	-						
B.G.4	WindX3	-	-						
B.G.5	Wind X4	-	-						
B.G.6	Wind Y1	-	-						
B.G.7	Wind Y2	-	-						
B.G.8	Wind Y3	1.50	-						
B.G.9	Wind Y4	-	1.50						

Projectnaam	VFZ	Projectnummer	
Omschrijving	Fundering-Betonplaat	Constructeur	
Opdrachtgever		Eenheden	m, kN, kNm

CHARACTERISTIC BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Ch.C.(w1)	Ch.C.1	Ch.C.2	Ch.C.3	Ch.C.4	Ch.C.5	Ch.C.6	Ch.C.7
B.G.1	Permanent	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B.G.2	Wind X1	-	-	1.00	-	-	-	-	-
B.G.3	Wind X2	-	-	-	1.00	-	-	-	-
B.G.4	WindX3	-	-	-	-	1.00	-	-	-
B.G.5	Wind X4	-	-	-	-	-	1.00	-	-
B.G.6	Wind Y1	-	-	-	-	-	-	1.00	-
B.G.7	Wind Y2	-	-	-	-	-	-	-	1.00
B.G.8	Wind Y3	-	-	-	-	-	-	-	-
B.G.9	Wind Y4	-	-	-	-	-	-	-	-
B.G.	Omschrijving	Ch.C.8	Ch.C.9	Ch.C.10	Ch.C.11	Ch.C.12	Ch.C.13	Ch.C.14	Ch.C.15
B.G.1	Permanent	1.00	1.00	0.90	0.90	0.90	0.90	0.90	0.90
B.G.2	Wind X1	-	-	1.00	-	-	-	-	-
B.G.3	Wind X2	-	-	-	1.00	-	-	-	-
B.G.4	WindX3	-	-	-	-	1.00	-	-	-
B.G.5	Wind X4	-	-	-	-	-	1.00	-	-
B.G.6	Wind Y1	-	-	-	-	-	-	1.00	-
B.G.7	Wind Y2	-	-	-	-	-	-	-	1.00
B.G.8	Wind Y3	1.00	-	-	-	-	-	-	-
B.G.9	Wind Y4	-	1.00	-	-	-	-	-	-
B.G.	Omschrijving	Ch.C.16	Ch.C.17						
B.G.1	Permanent	0.90	0.90						
B.G.2	Wind X1	-	-						
B.G.3	Wind X2	-	-						
B.G.4	WindX3	-	-						
B.G.5	Wind X4	-	-						
B.G.6	Wind Y1	-	-						
B.G.7	Wind Y2	-	-						
B.G.8	Wind Y3	1.00	-						
B.G.9	Wind Y4	-	1.00						

QUASI-PERMANENT BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Qu.C.1
B.G.1	Permanent	1.00
B.G.2	Wind X1	-
B.G.3	Wind X2	-
B.G.4	WindX3	-
B.G.5	Wind X4	-
B.G.6	Wind Y1	-
B.G.7	Wind Y2	-
B.G.8	Wind Y3	-
B.G.9	Wind Y4	-

AFB. FEM OPLEGREACTIES PE.C.1

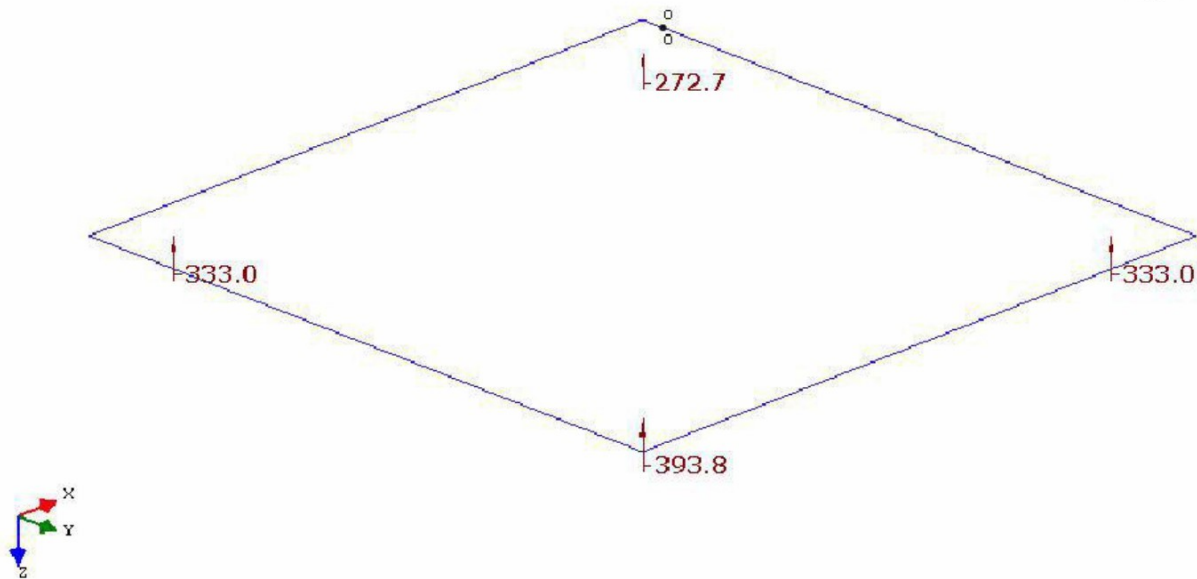
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

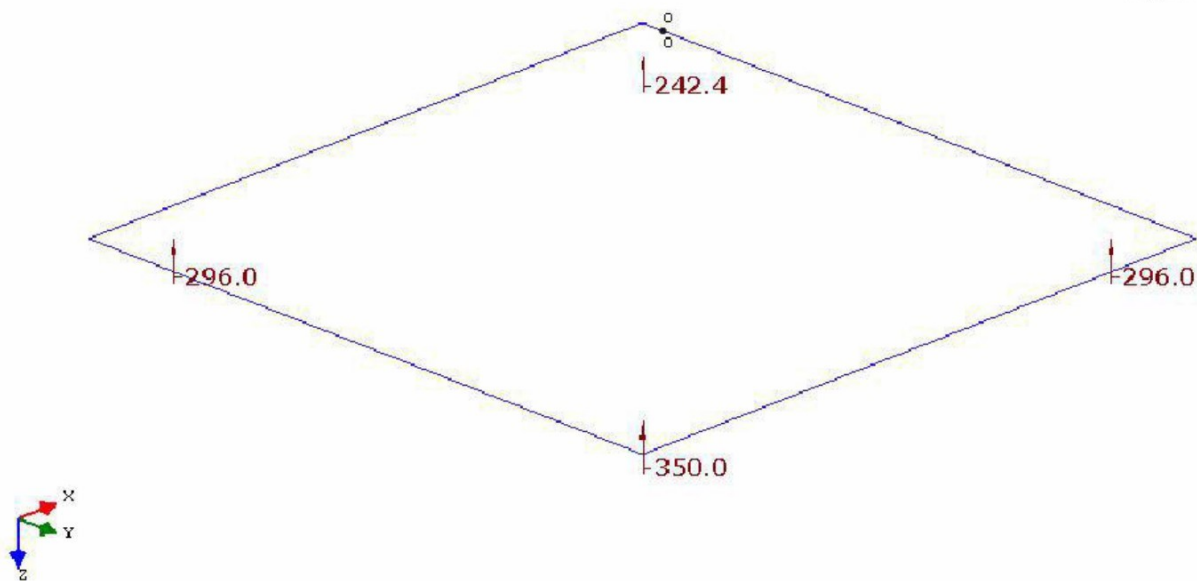
m, kN, kNm

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.2

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.3

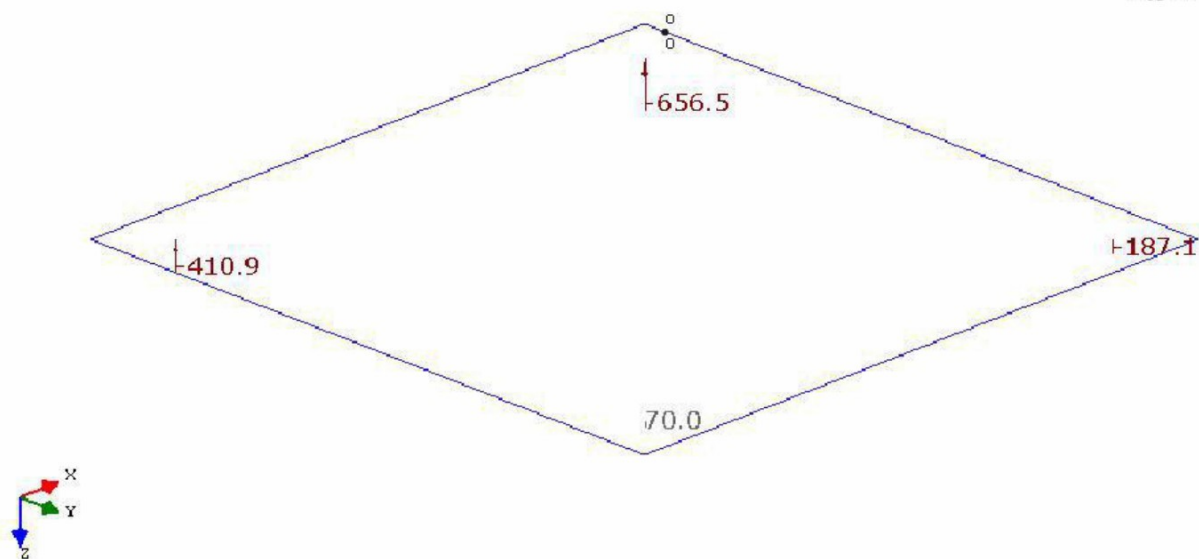
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

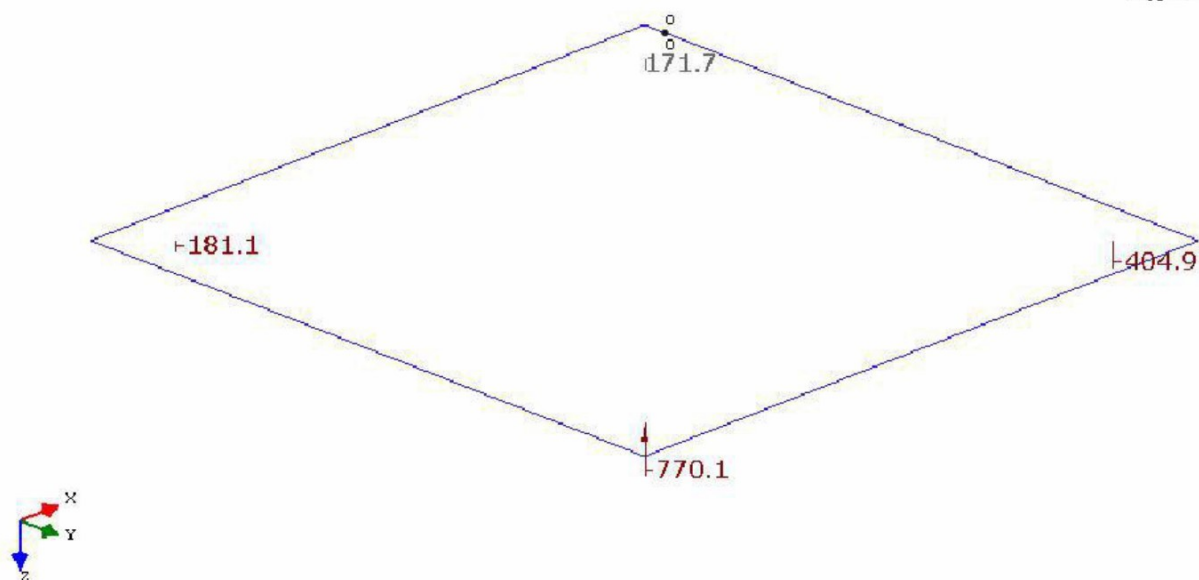
m, kN, kNm

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.4

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.5

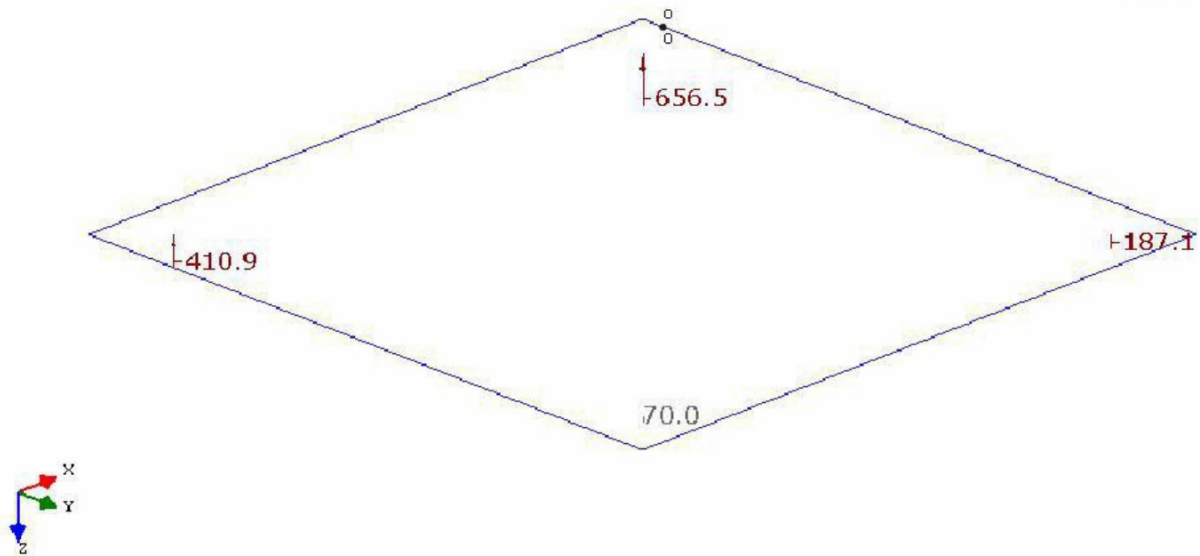
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

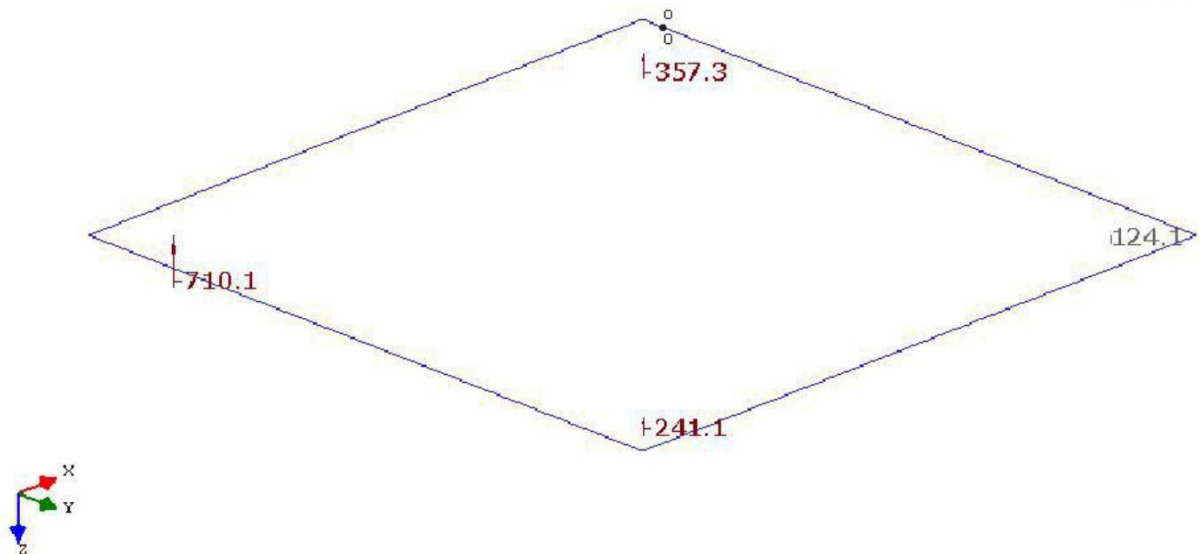
m, kN, kNm

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.6

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.7

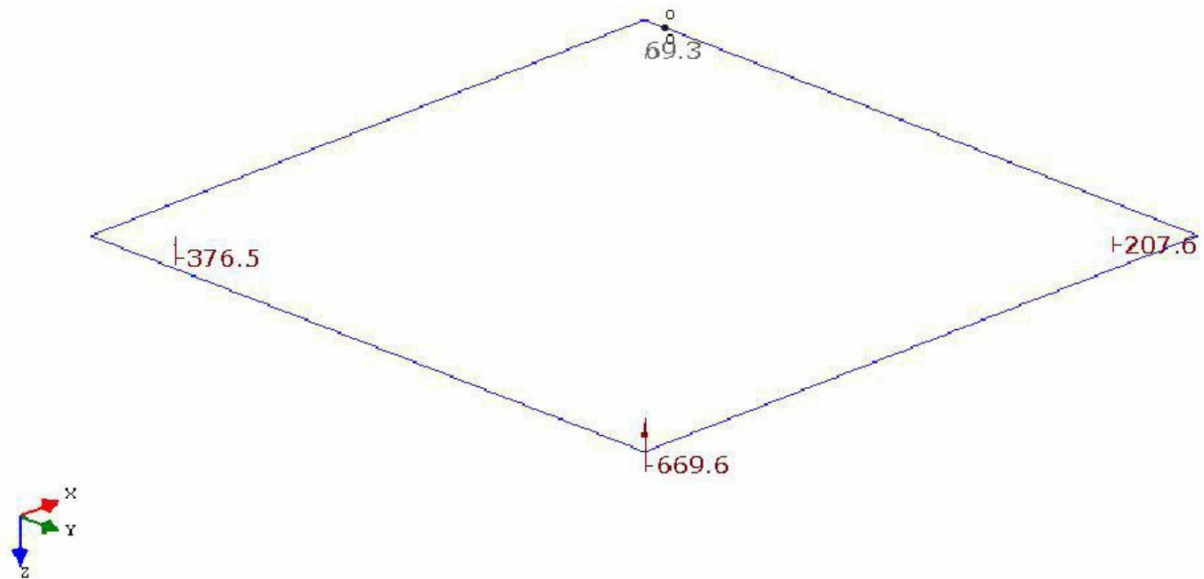
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

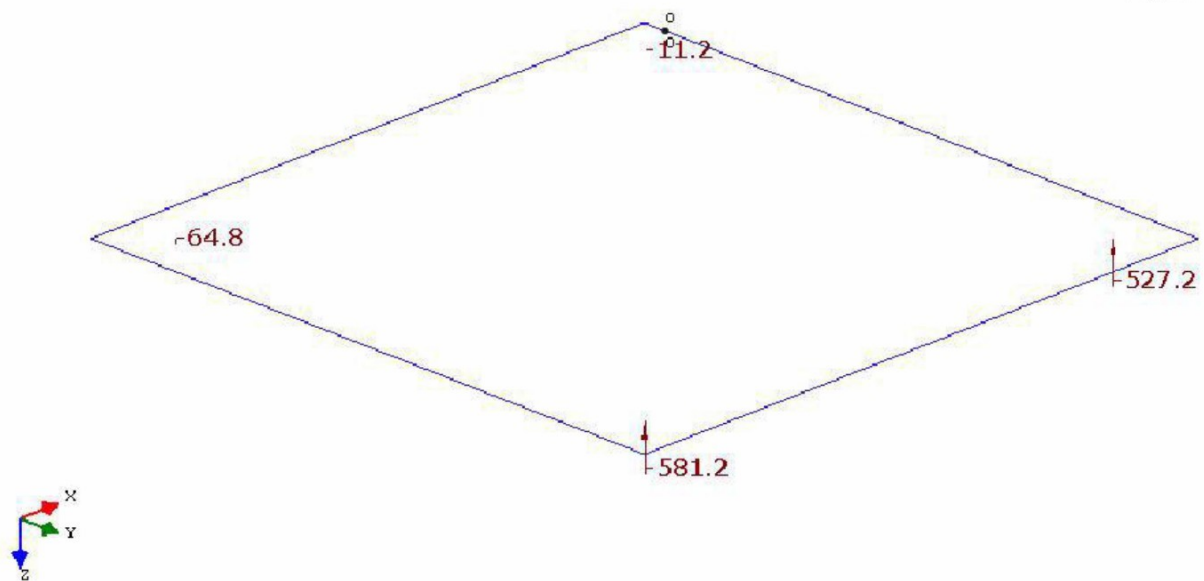
m, kN, kNm

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.8

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.9

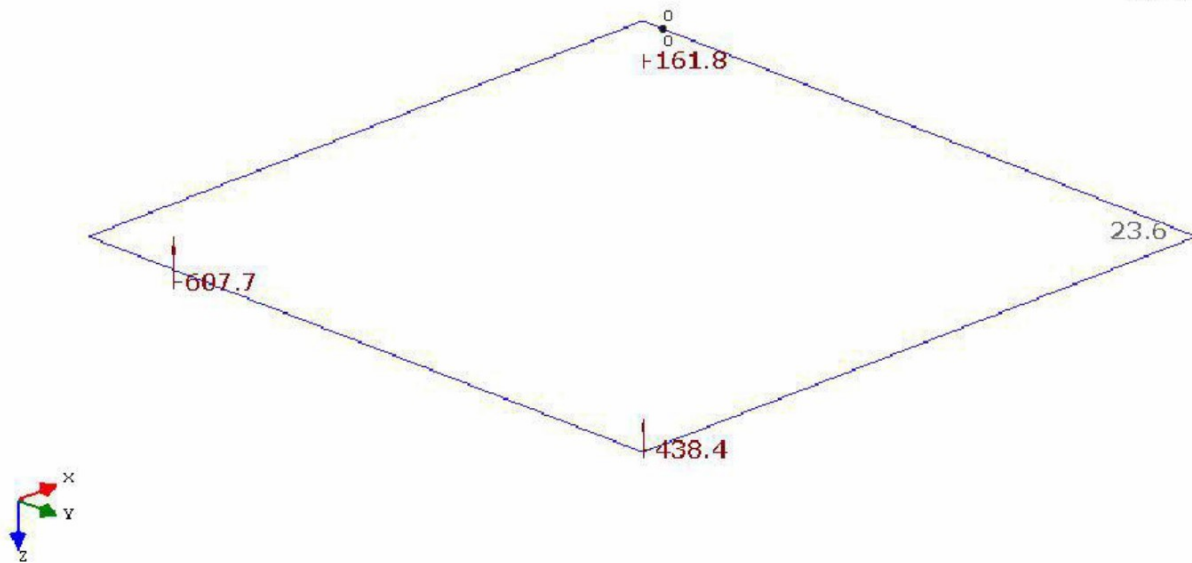
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

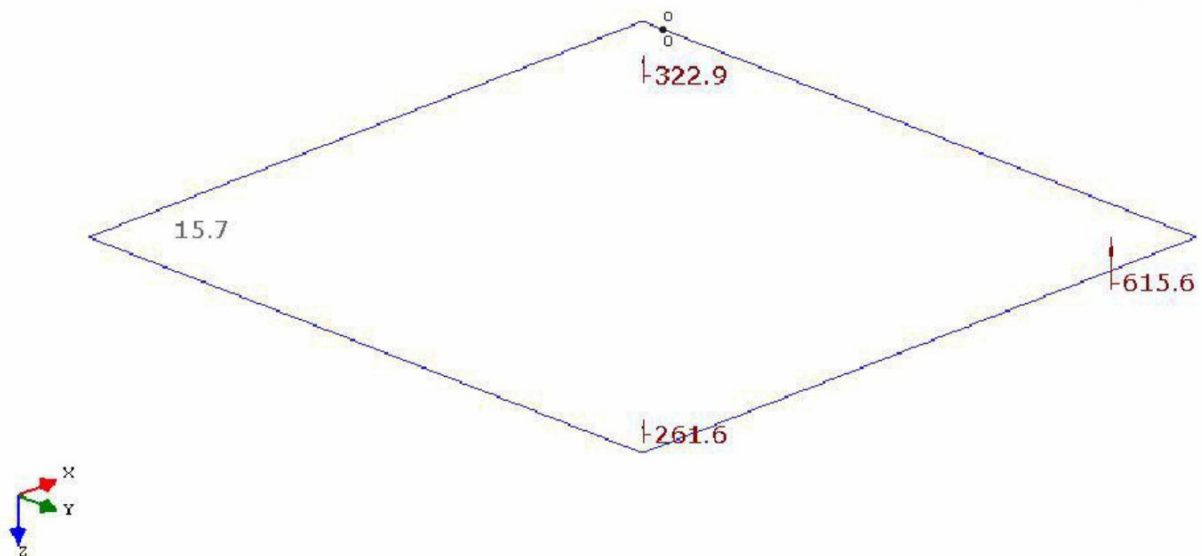
m, kN, kNm

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.10

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.11

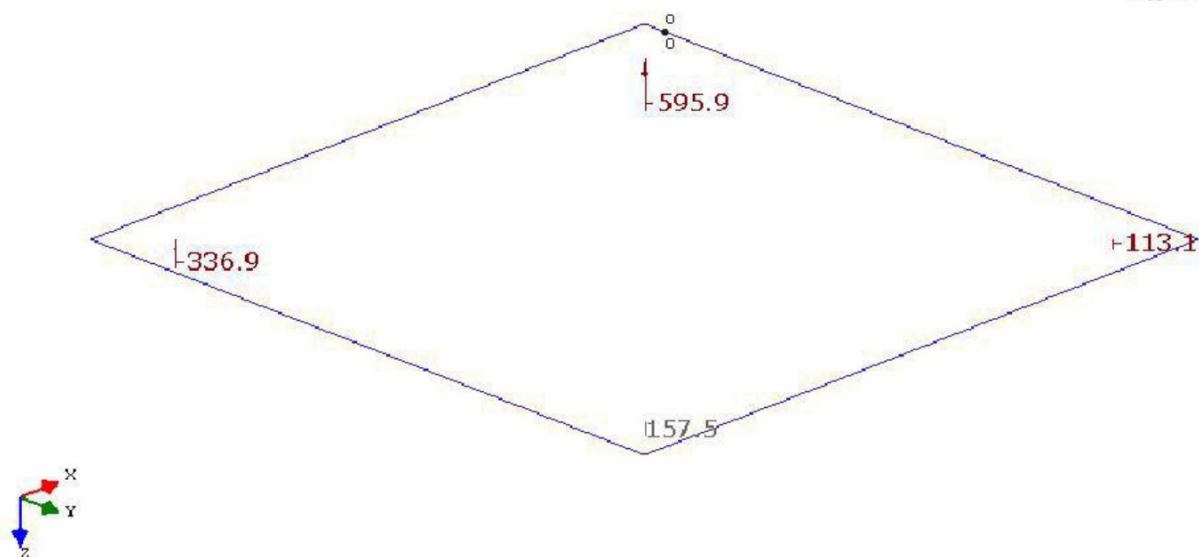
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

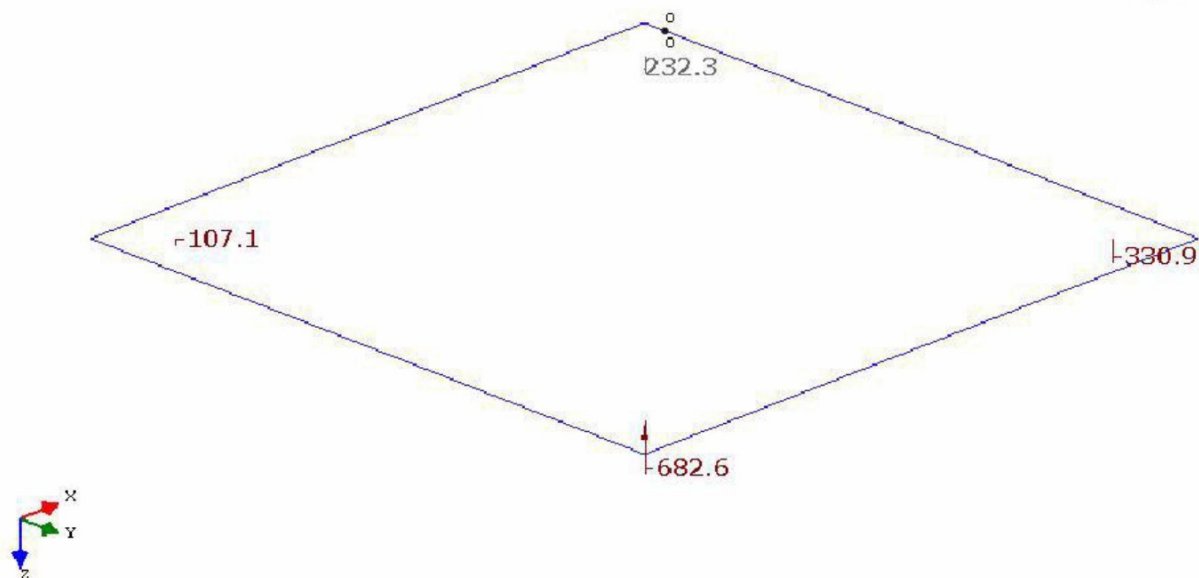
m, kN, kNm

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.12

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.13

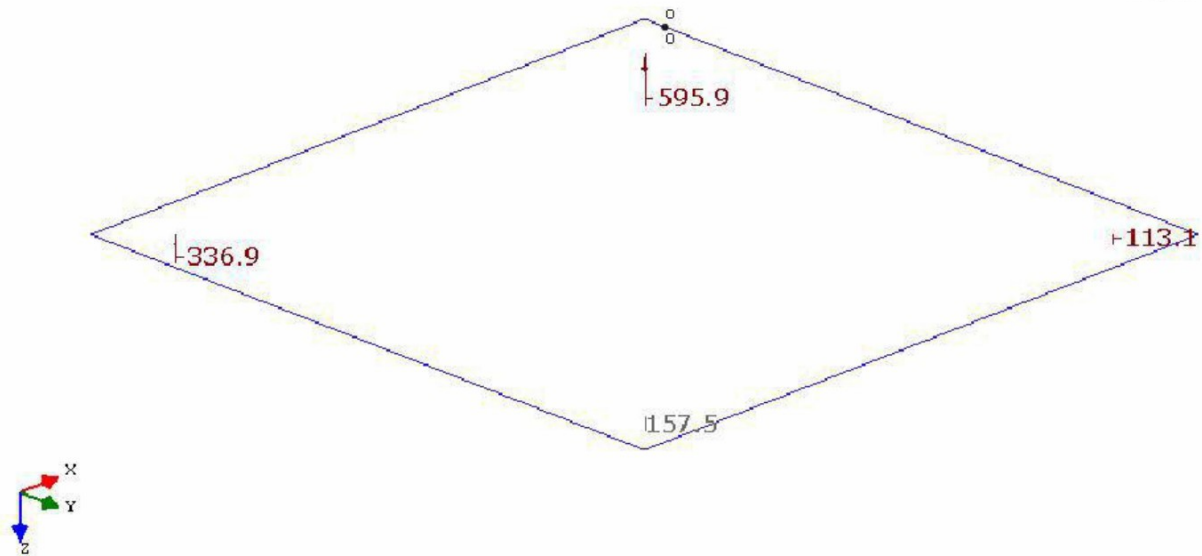
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

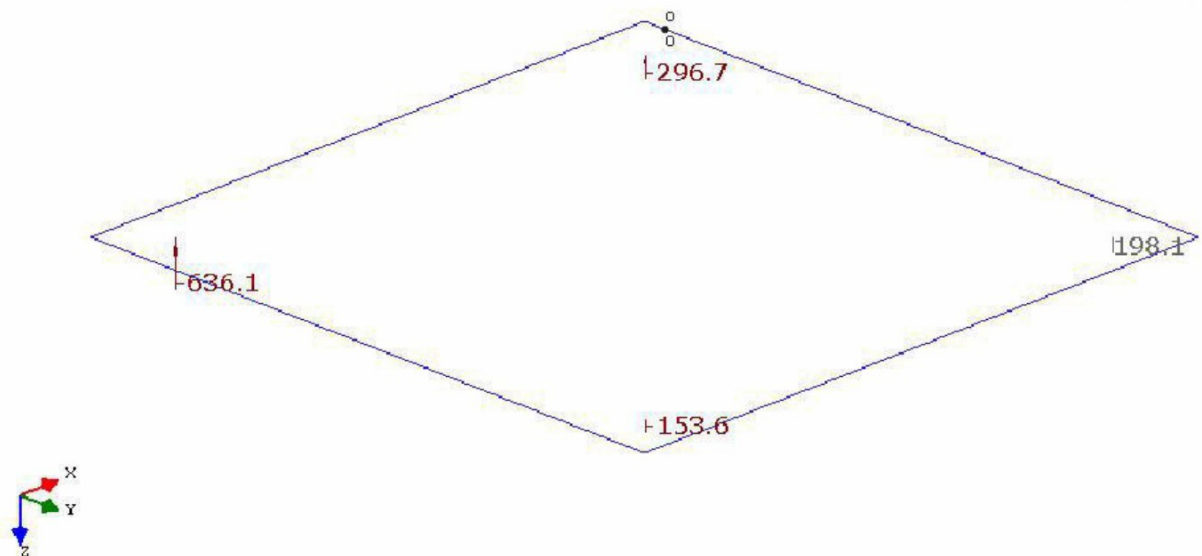
m, kN, kNm

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.14

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.15

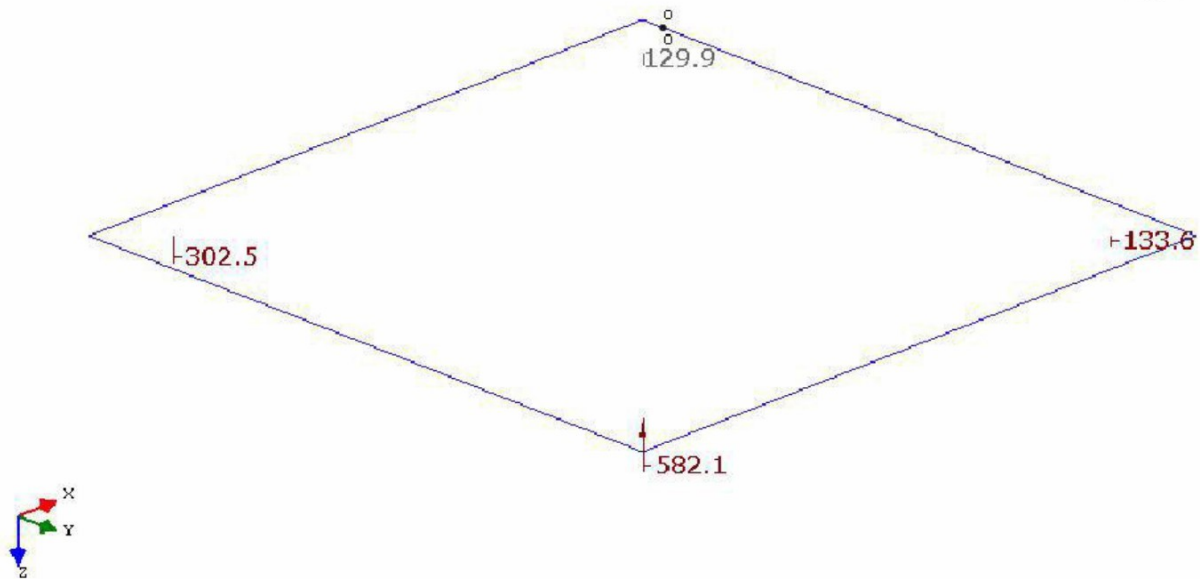
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

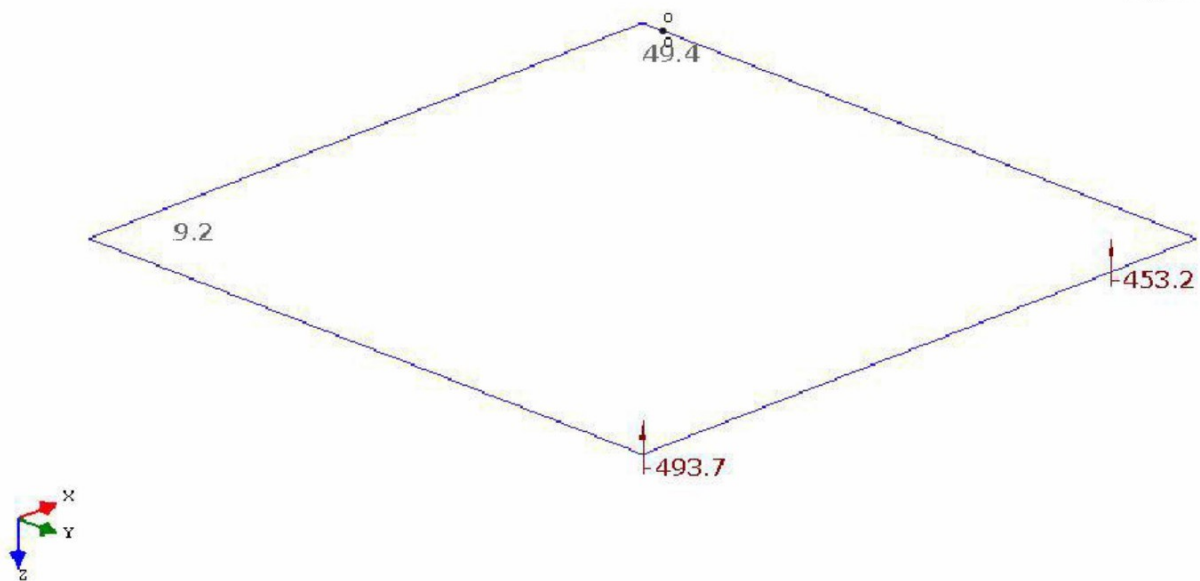
m, kN, kNm

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.16

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.17

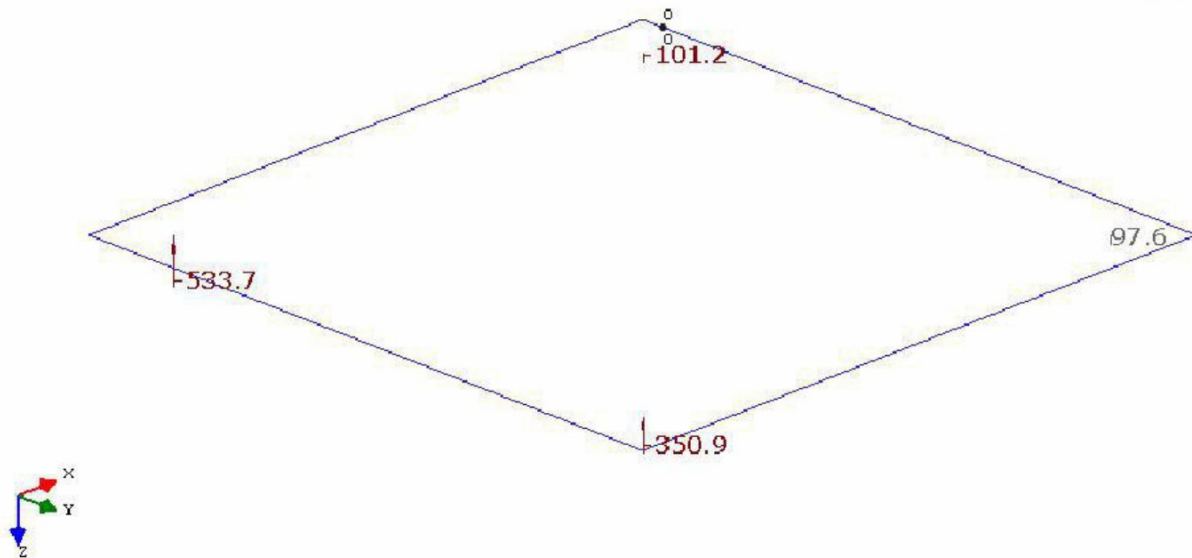
Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

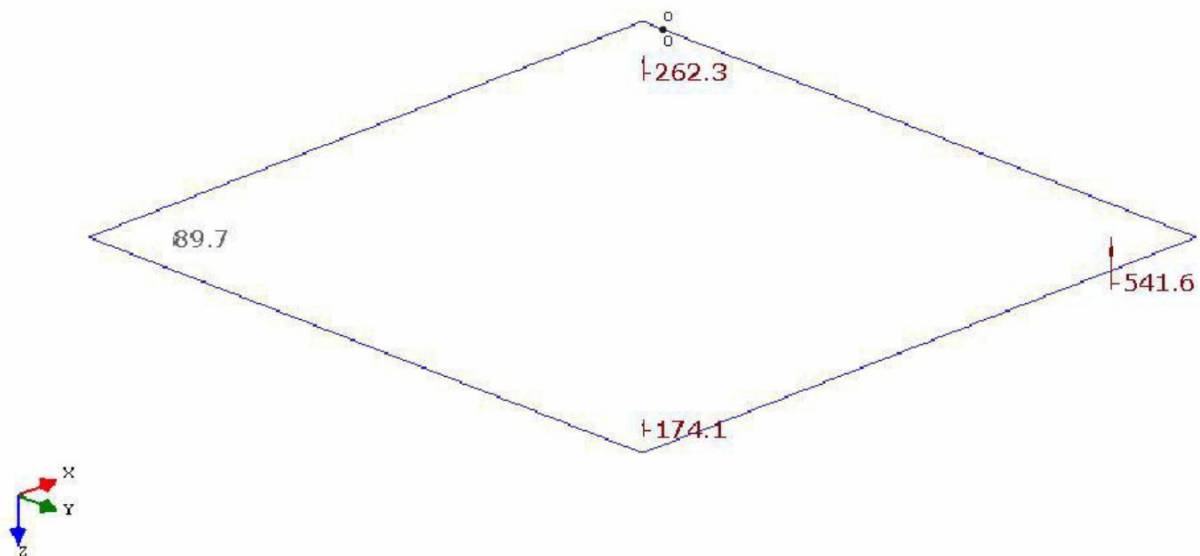
m, kN, kNm

LE analysis results
Support reactions



AFB. FEM OPLEGREACTIES PE.C.18

LE analysis results
Support reactions



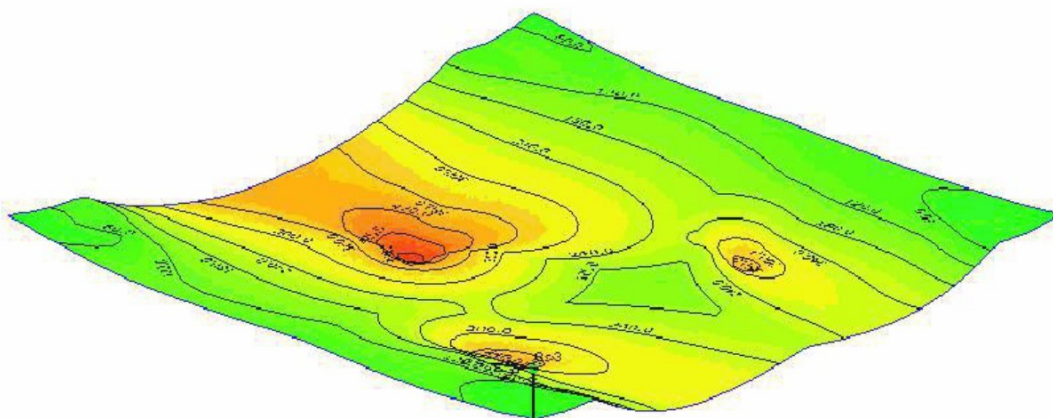
AFB. FEM +MX+-MX Y PE.C. OMHULLENDE

Projectnaam
Omschrijving
Opdrachtgever

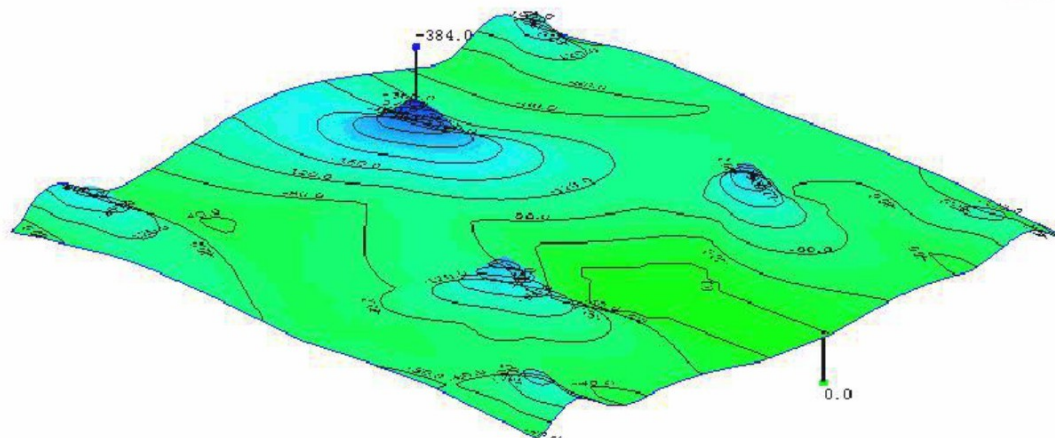
VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



AFB. FEM -MX+-MXy PE.C. OMHULLENDE



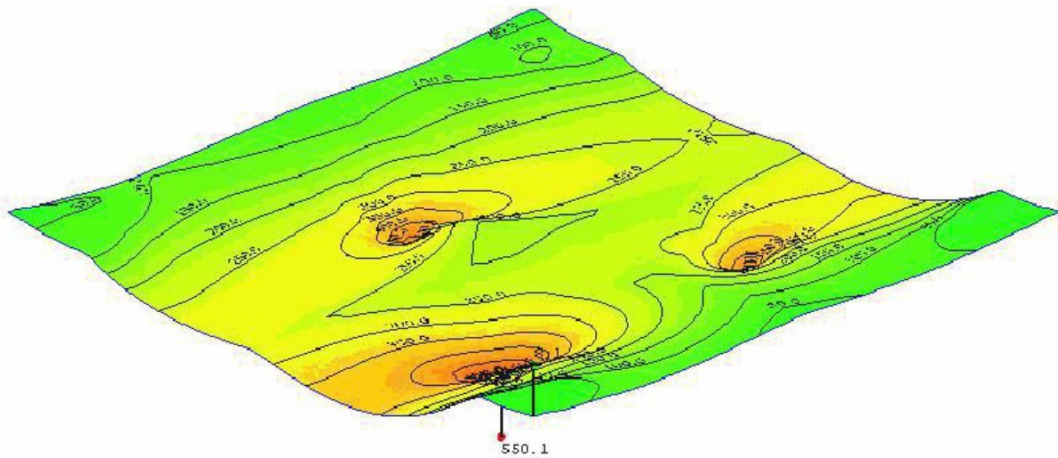
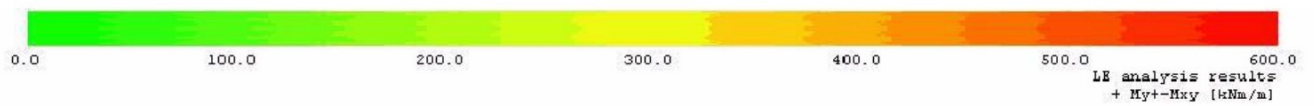
AFB. FEM +MY+-MXy PE.C. OMHULLENDE

Projectnaam
Omschrijving
Opdrachtgever

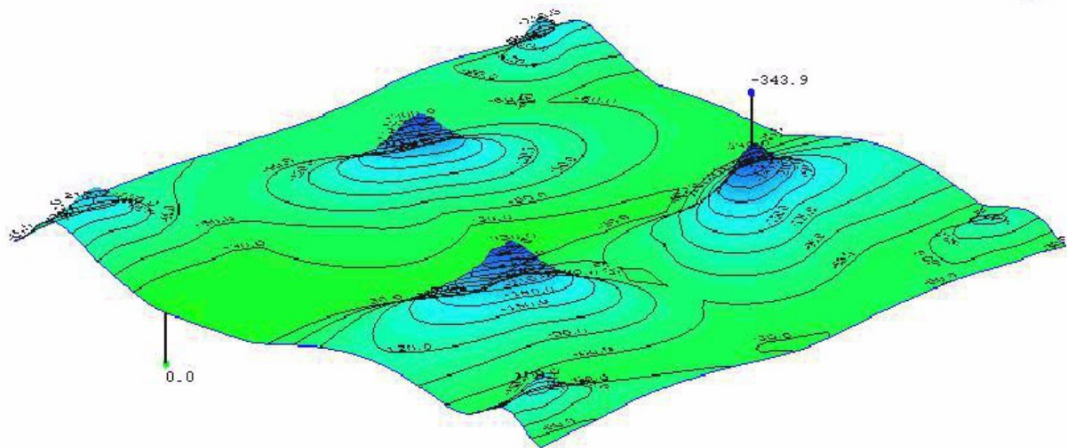
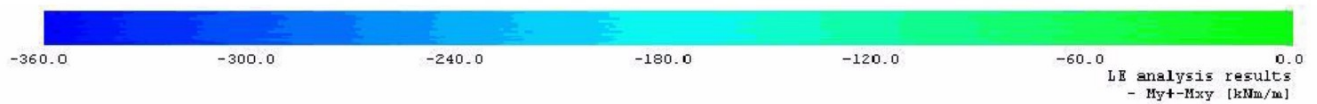
VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



AFB. FEM -MY+MXY PE.C. OMHULLENDE



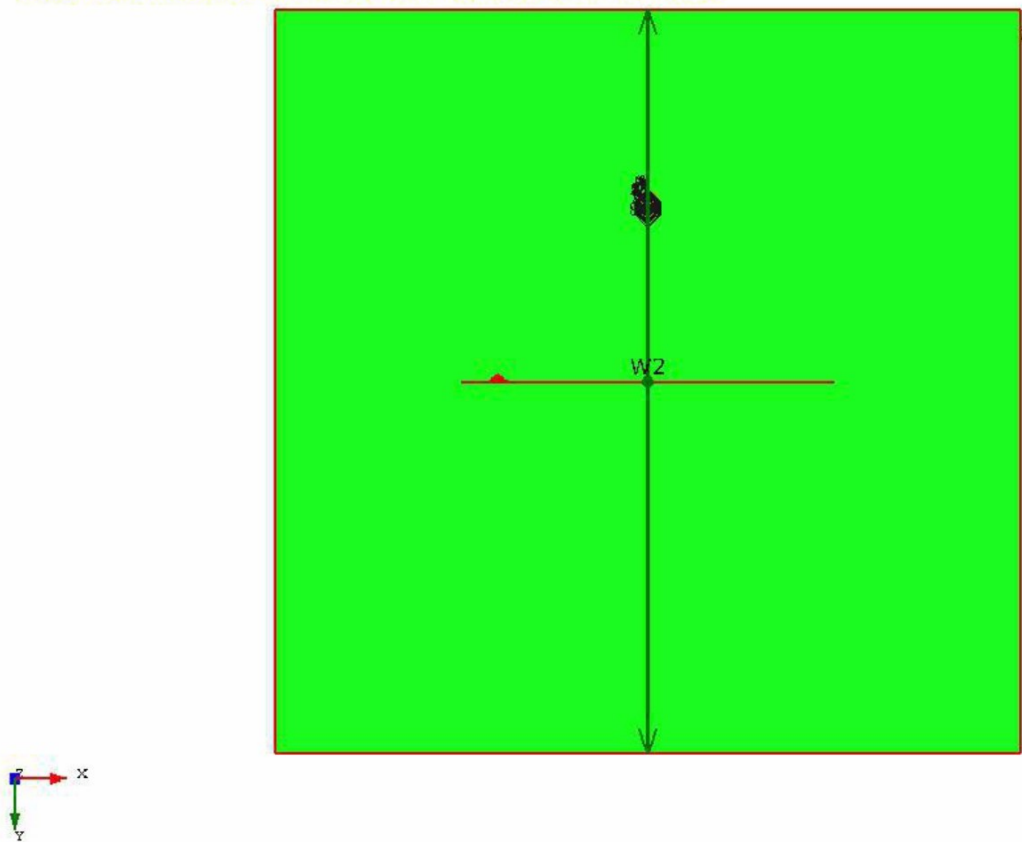
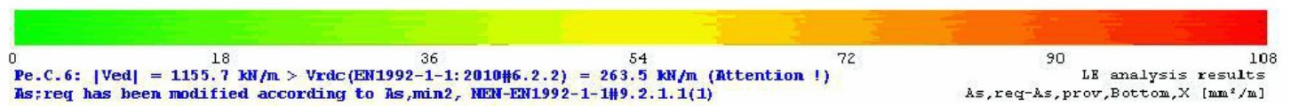
AFB. FEM AS;BEN ONDER X PE.C. OMHULLENDE

Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



WAPENING

Oplegg. Staven	Net	Staal	h-d	Omschr.	$A_{s;toe}$
W2	Nee	B500A	43		1340
-	-	-	mm	-	mm²/m

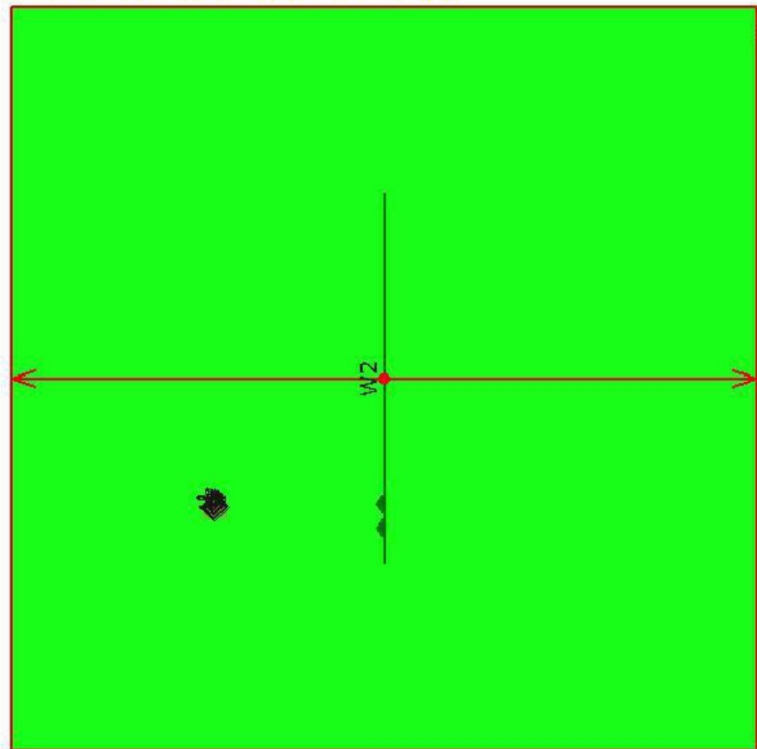
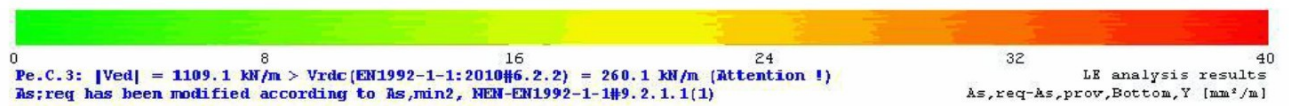
AFB. FEM AS;BEN ONDER Y PE.C. OMHULLENDE

Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



WAPENING

Oplegg. Staven	Net	Staal	h-d	Omschr.	$A_{s;toe}$
W2	Nee	B500A	59		1340
-	-	-	mm	-	mm ² /m

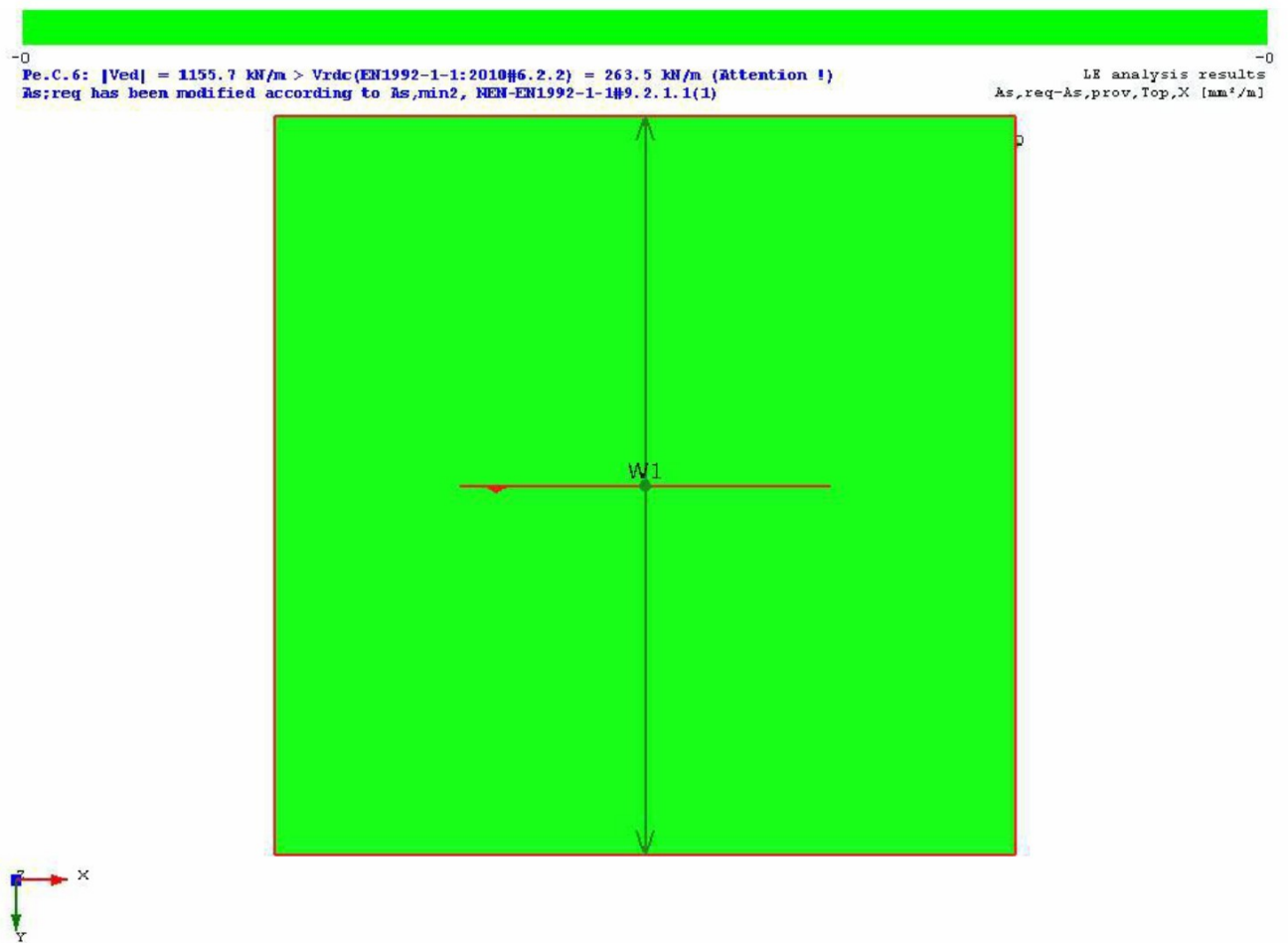
AFB. FEM AS;BEN BOVEN X PE.C. OMHULLENDE

Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



WAPENING

Oplegg. Staven	Net	Staal	h-d	Omschr.	$A_{s;toe}$
W1	Nee	B500A	43		1340
-	-	-	mm	-	mm ² /m

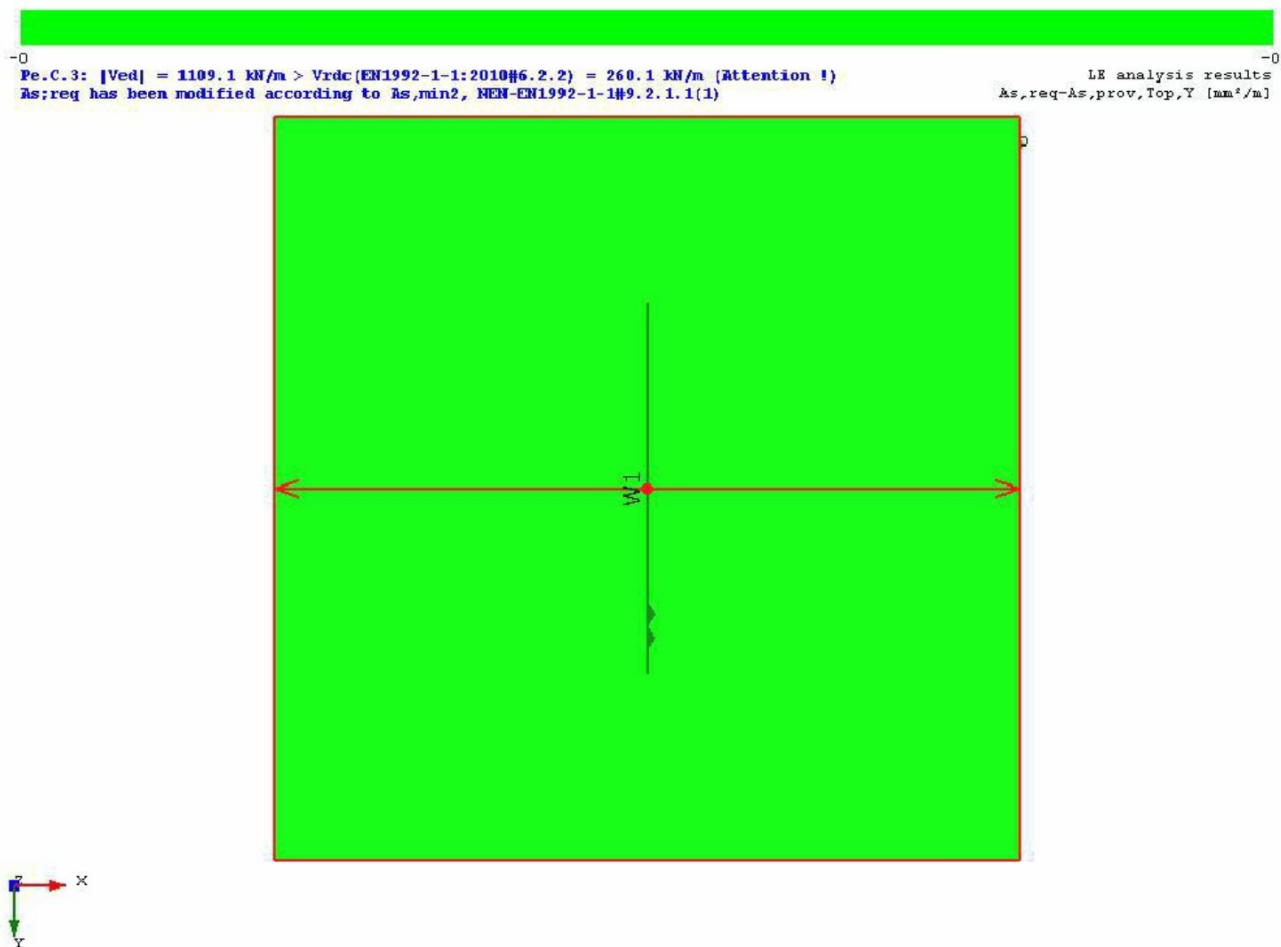
AFB. FEM AS;BEN BOVEN Y PE.C. OMHULLENDE

Projectnaam
Omschrijving
Opdrachtgever

VFZ
Fundering-Betonplaat

Projectnummer
Constructeur
Eenheden

m, kN, kNm



WAPENING

Oplegg. Staven	Net	Staal	h-d	Omschr.	$A_{s;toe}$
W1	Nee	B500A	59		1340
-	-	-	mm	-	mm ² /m

DOORSNEDE GEGEVEN

Gebied/Polylijn	Profiel	Materiaal	Dikte	Mr	Positie	Ontwerp moment	h-d	$A_{s,ben}$	$A_{s,toe}$	Wapening
1	P1	C20/25	1.00	513.33	Onderkant X	580.19	43	91	1340	W2
					Onderkant Y	550.08	59	39	1340	W2
					Bovenkant X	-51.42	43	0	1340	W1
					Bovenkant Y	-110.19	59	0	1340	W1
-	-	-	m	kNm/m	-	kNm/m	mm	mm ² /m	mm ² /m	-

DOORSNEDE GEGEVEN

Gebied/Polylijn	Profiel	Materiaal	Dikte	Mr	Positie	Ontwerp moment	h-d	$A_{s,ben}$
1	P1	C20/25	1.00	513.33	Onderkant X	580.19	43	1431
					Onderkant Y	550.08	59	1379
					Bovenkant X	-383.97	43	938
					Bovenkant Y	-343.88	59	854
-	-	-	m	kNm/m	-	kNm/m	mm	mm ² /m

Projectnaam
Omschrijving
Opdrachtgever

VFZ

Projectnummer
Constructeur
Eenheden

m, kN, kNm

1. Cross M+V+T (NEN-EN1992-1-1:2015\NB:2016)

INGEVOERDE GEGEVENS VAN DE DOORSNEDE

PROFIELGEGEVENS: R1000X1000

Hoogte	h	1000 mm	Breedte	b	1000 mm
Betonkwaliteit		C20/25 -		f _{cd}	13.3 N/mm ²
				f _{ctm}	2.21 N/mm ²
Staalkwaliteit		B500A -		f _{yd}	435 N/mm ²

DEKKING

		Boven	Onder
-			
Constructieklasse		S1	S1 -
Milieuklasse		XC2	XC2 -
Nabewerkt		Nee	Nee -
Meetnauwkeurigheid		Normaal	Normaal -
Minimale dekking	C _{min}	16	16 mm
Dekkingsafwijking	Delta Cafw	5	5 mm
Nominale dekking	C _{nom}	21	21 mm
Toegepaste dekking	C _{toe}	35	35 mm

KRACHTEN

Veldmoment	M'Ed	540.00 kNm	Moment (BGT)	MRep	280.00 kNm
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WAPENINGSDetails

Boven			Onder		
Basis	A;s	R16-150 -	Basis	A;s	R16-150 -
Extra	A;s	- -	Extra	A;s	- -
Toegepaste wap.	As,toe	1340 mm ²	Toegepaste wap.	As,toe	1340 mm ²

WAPENINGSVERDELING

Hoek dwarskrachtwap.	90 °	Hoek drukdiagonaal	45 °
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Boven

	A;sv	R16-150 -
Toegepaste wap.	As,toe	1340 mm ²

Onder

	A;sv	R16-150 -
Toegepaste wap.	As,toe	1340 mm ²

LANGSWAPENING

Benodigde wap.	As,ben	1329 mm ²	Toegepaste wap.	As,toe	1340 mm ²
Verhouding wap.	w0	0.14 %	Nuttige hoogte	d	957 mm
Momentcapaciteit	Mu	544.52 kNm	Hoogte drukzone	Xu	58 mm
Xu/d	kx	0.060 -			

VERDEELWAPENING

Toegepaste wap.	Asv,toe	1340 mm ²			
Dwarskracht weerstand	V;rdc	260.11 kN	Dwarskracht	V'Ed	0.00 kN

0.2 * As;Toe:	1340	>=	268 mm ²	Ok
V'Ed:	0.00	<=	260.11 kN	Ok

SCHEURCONTROLE

Scheurbreedte	W;k	0.25 mm	Scheurbreedte	W;max	0.50 mm
Max. spanning	Sigma;s	223.6 N/mm ²	Min. oppervl. van wap. staal	As;min	569 mm ²
Diameter	-	16.0 mm	Max. staaf diameter	-	53.5 mm
Hoh-afstand	-	150.0 mm	Max. staafafstand	-	320.5 mm

Scheurv.: Ok