GEWICHT- EN STABILITEITSBEREKENING

INCLUSIEF BEREKENING STAALCONSTRUCTIE

460518

Nieuwbouw recreatiecentrum 'De Schatberg'
Midden Peelweg 5 te Sevenum

460518-B

INGENIEURSBUREAU A. PALTE BV
VALKENBURG A/D GEUL

Titel	Gewicht- en Stabiliteitsberekening - inclusief berekening staalconstructie
Project	Nieuwbouw recreatiecentrum 'De Schatberg'
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Wijziging	Omschrijving	Datum	Auteur	Controleur
A	Diverse wijzigingen architect	2017-05-24	DaKr	PaSc
B	Diverse wijzigingen architect	2017-06-19	DaKr	PaSc

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Wijzigingen en aanvullingen

Wijziging	Omschrijving	Datum
A	Diverse wijzigingen architect	2017-05-24
B	Diverse wijzigingen architect	2017-06-19

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1. Inleiding

Voor een inleiding in het project, zie Palte document 460518-A.

Het doel van dit document is het maken van een gewichtsberekening ten behoeve van het bepalen van de afmetingen van de fundering op staal en het bereken van de staalconstructie.

2. Randvoorwaarden en uitgangspunten

Voor de van toepassing zijnde randvoorwaarden en uitgangspunten zie Palte document 460518-A.
Hierop zijn geen wijzigingen en of aanvullingen.

3. Beschrijving hoofddraagconstructie

Voor een beschrijving van de hoofddraagconstructie zie Palte document 460518-A.
Hierop zijn geen wijzigingen en of aanvullingen.

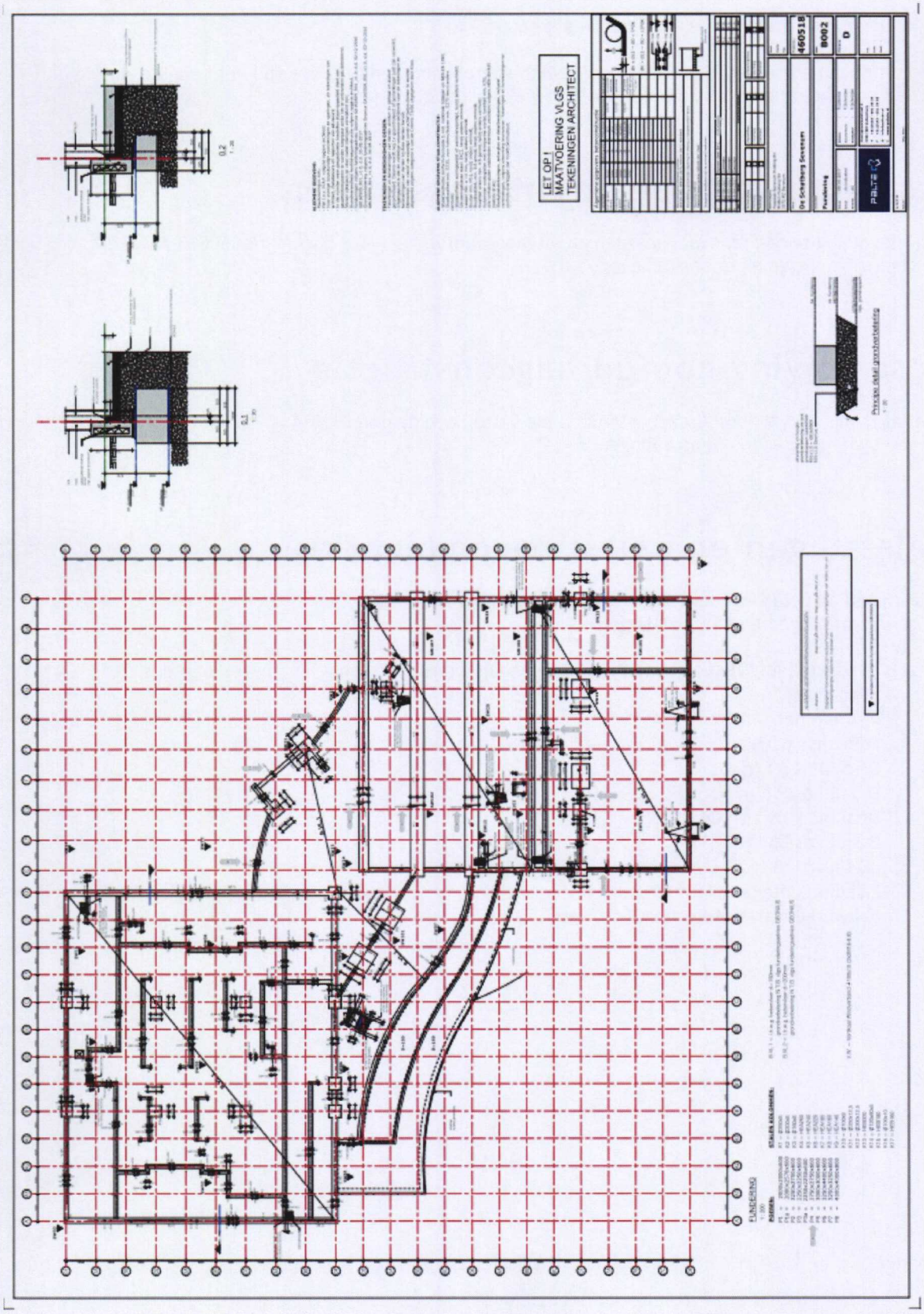
4. Belastingen en belastingcombinaties

Voor de belastingen en belastingcombinaties zie Palte document 460518-A.
Hierop zijn geen wijzigingen en of aanvullingen.

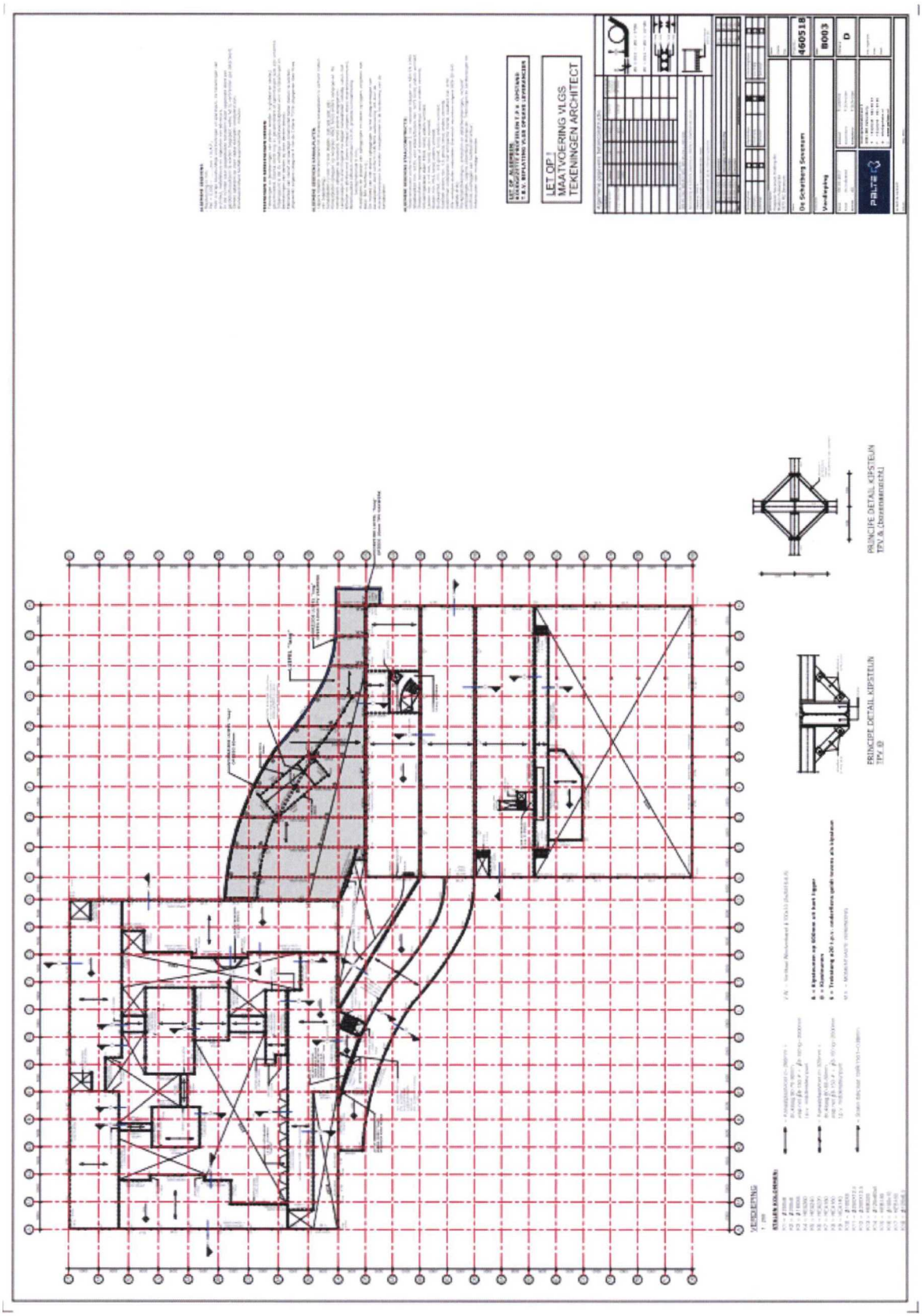
De stukken zijn aangevuld met de volgende Palte tekeningen (status voorlopig / in bewerking) d.d. 2017-04-14:

- B002 Fundering;
- B003 Verdieping;
- B004 Dakconstructie;
- B110 Drsn in as A t/m D;
- B111 Drsn in as E t/m H;
- B112 Drsn in as 01 t/m 04;
- B113 Drsn in as 05 t/m 08;
- B200 3D View;
- B201 Principe details tpv verdieping;
- B202 Vakwerken tbv luifels "hoog" en "laag".

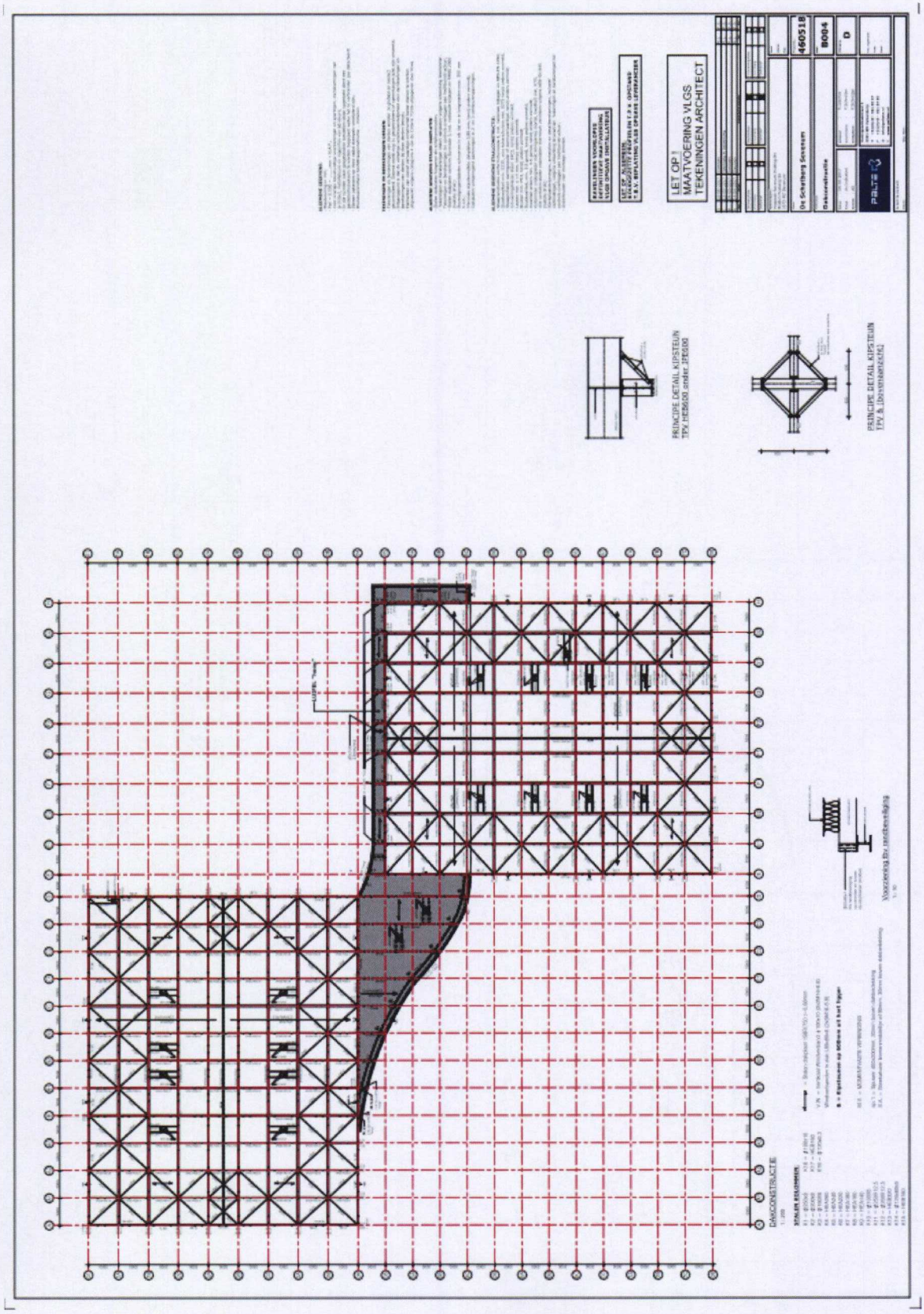
B002 Fundering



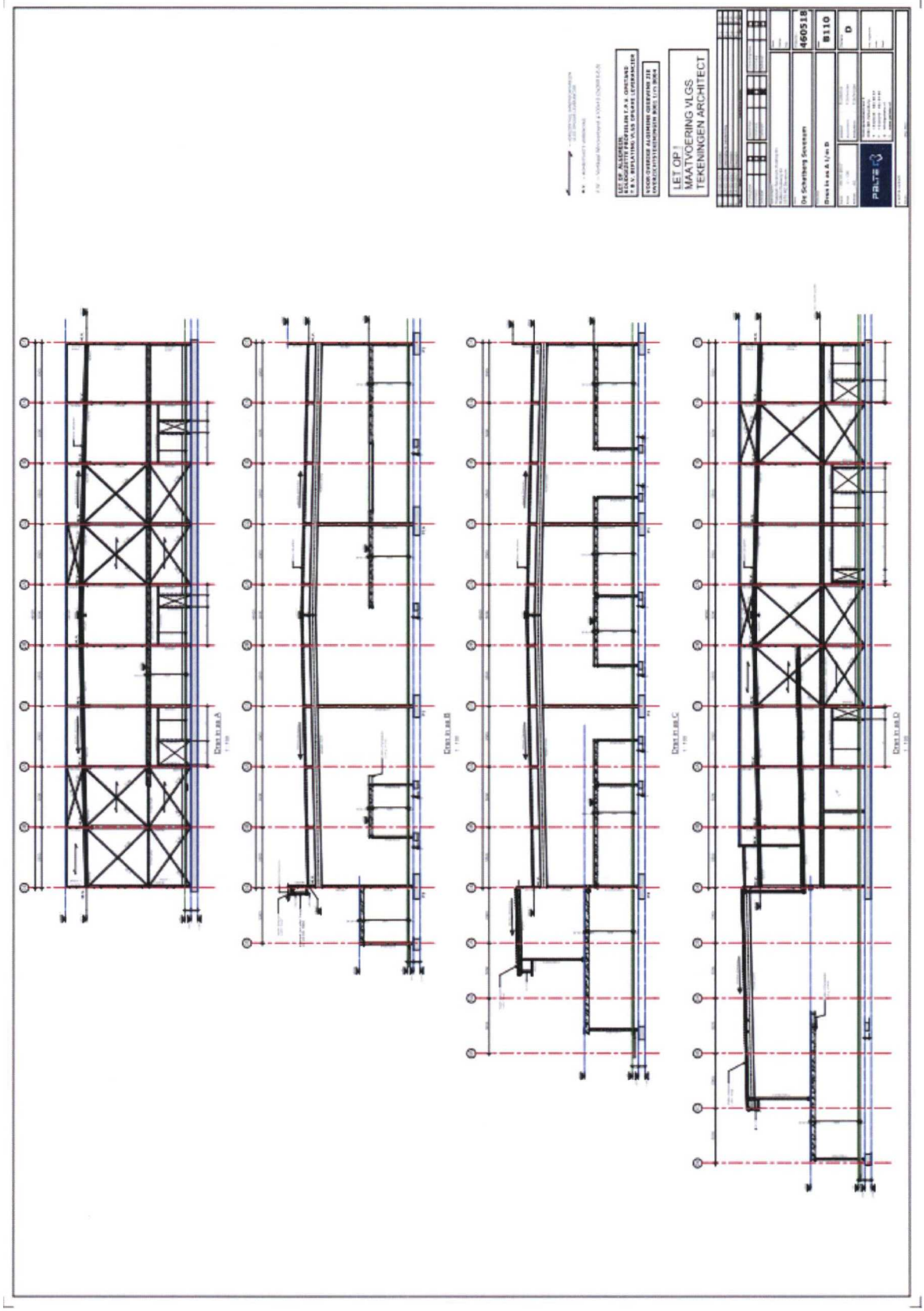
B003 Verdieping



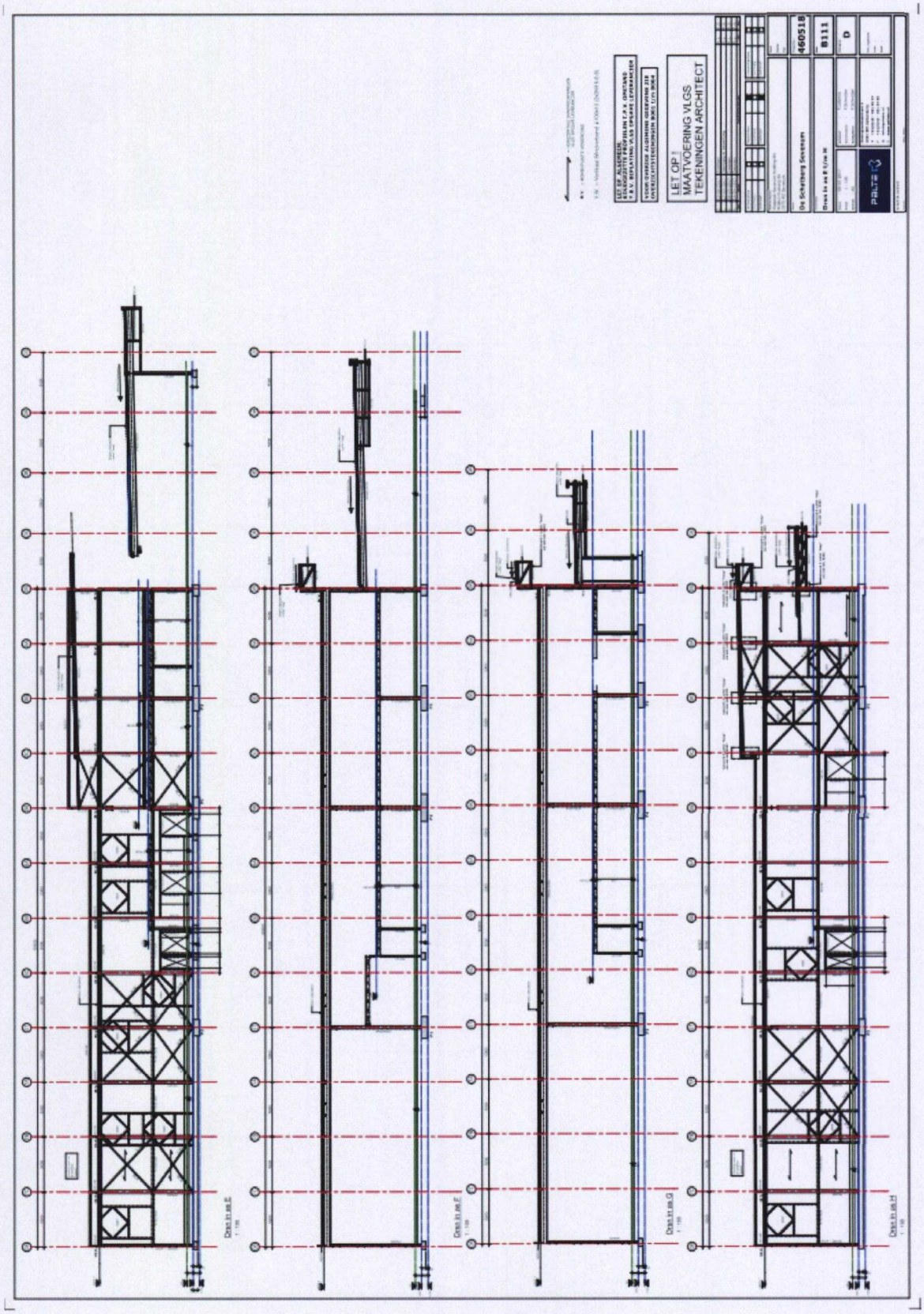
B004 Dakconstructie



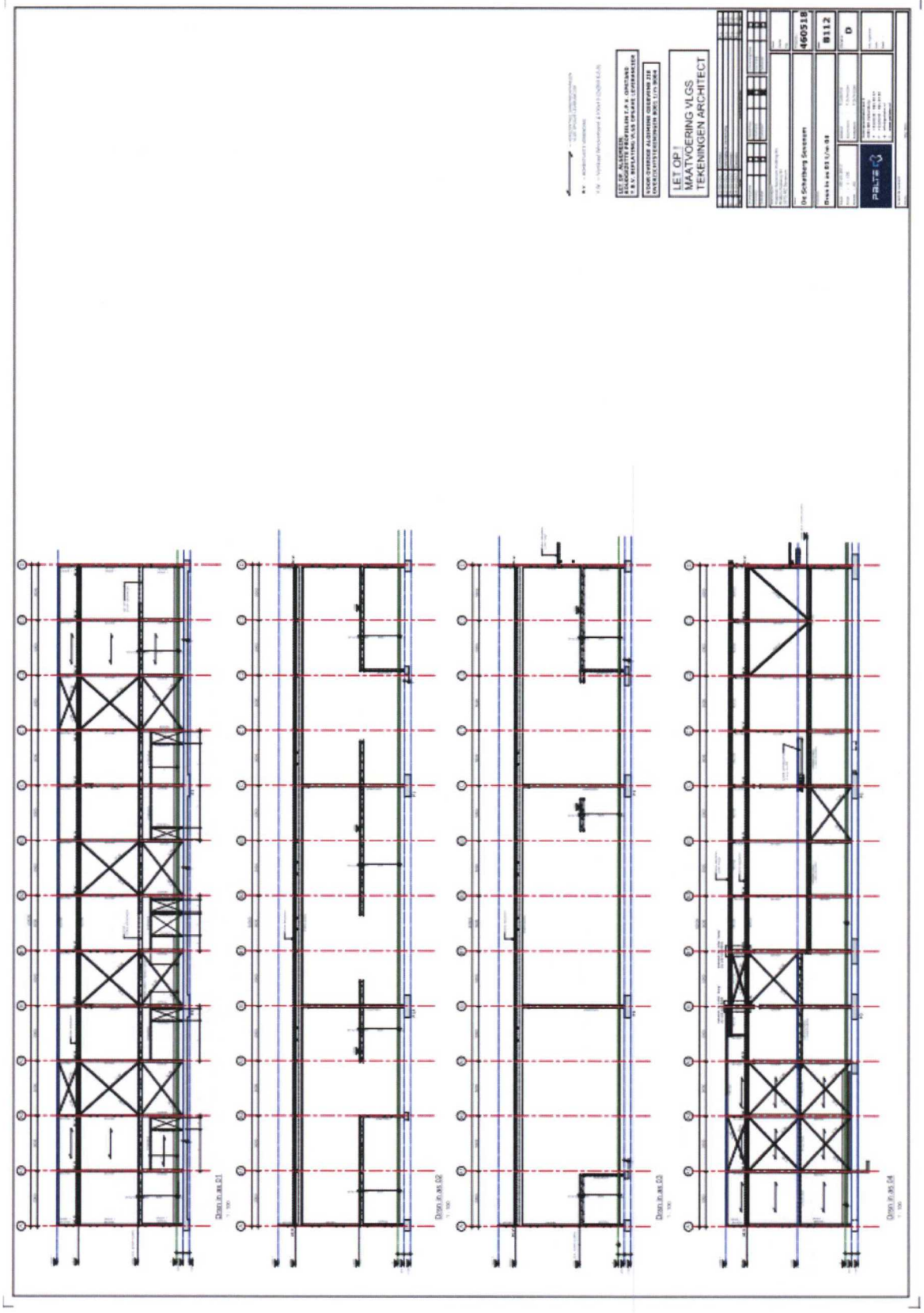
B110 Drsn in as A t/m D



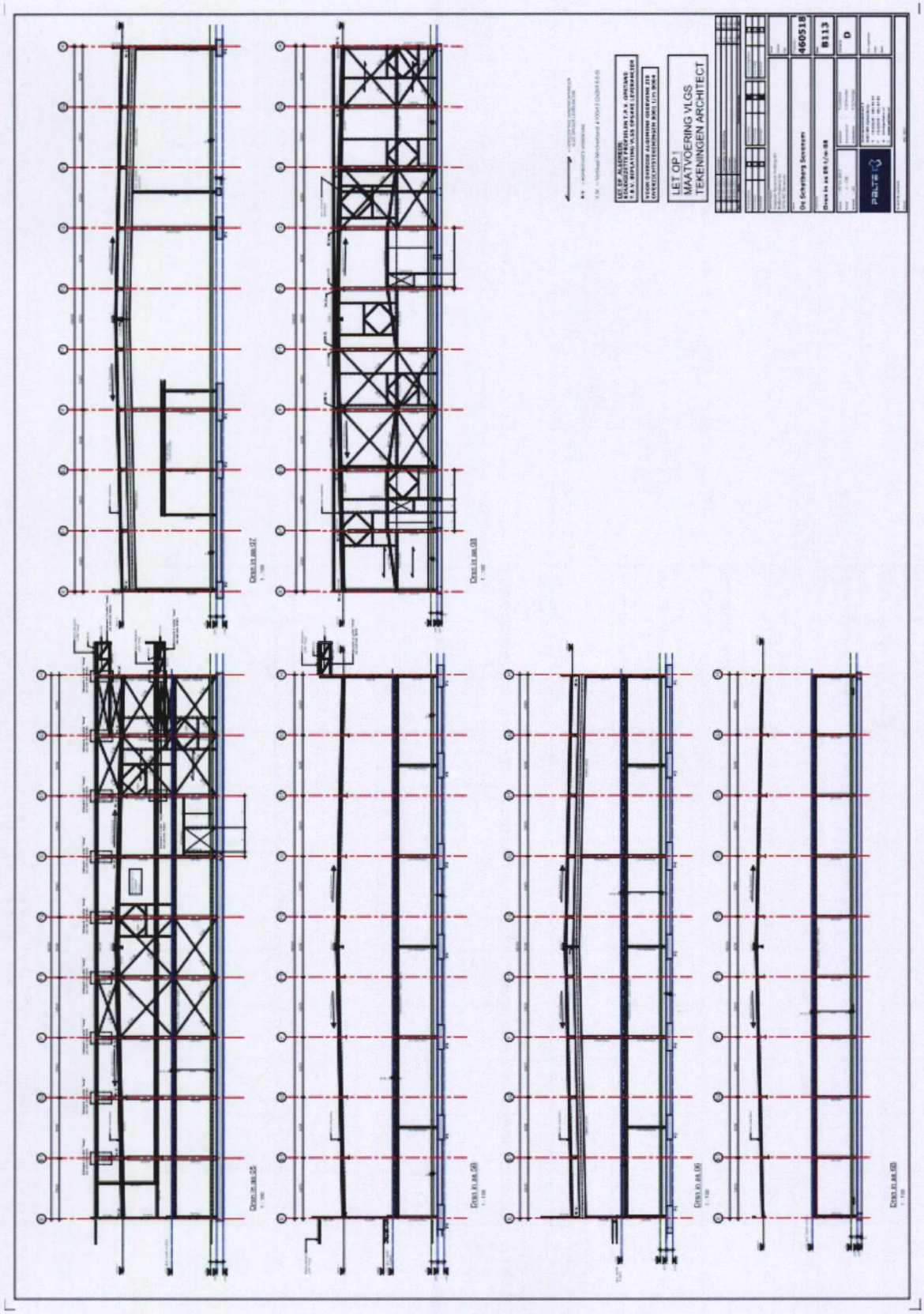
B111 Drsn in as E t/m H



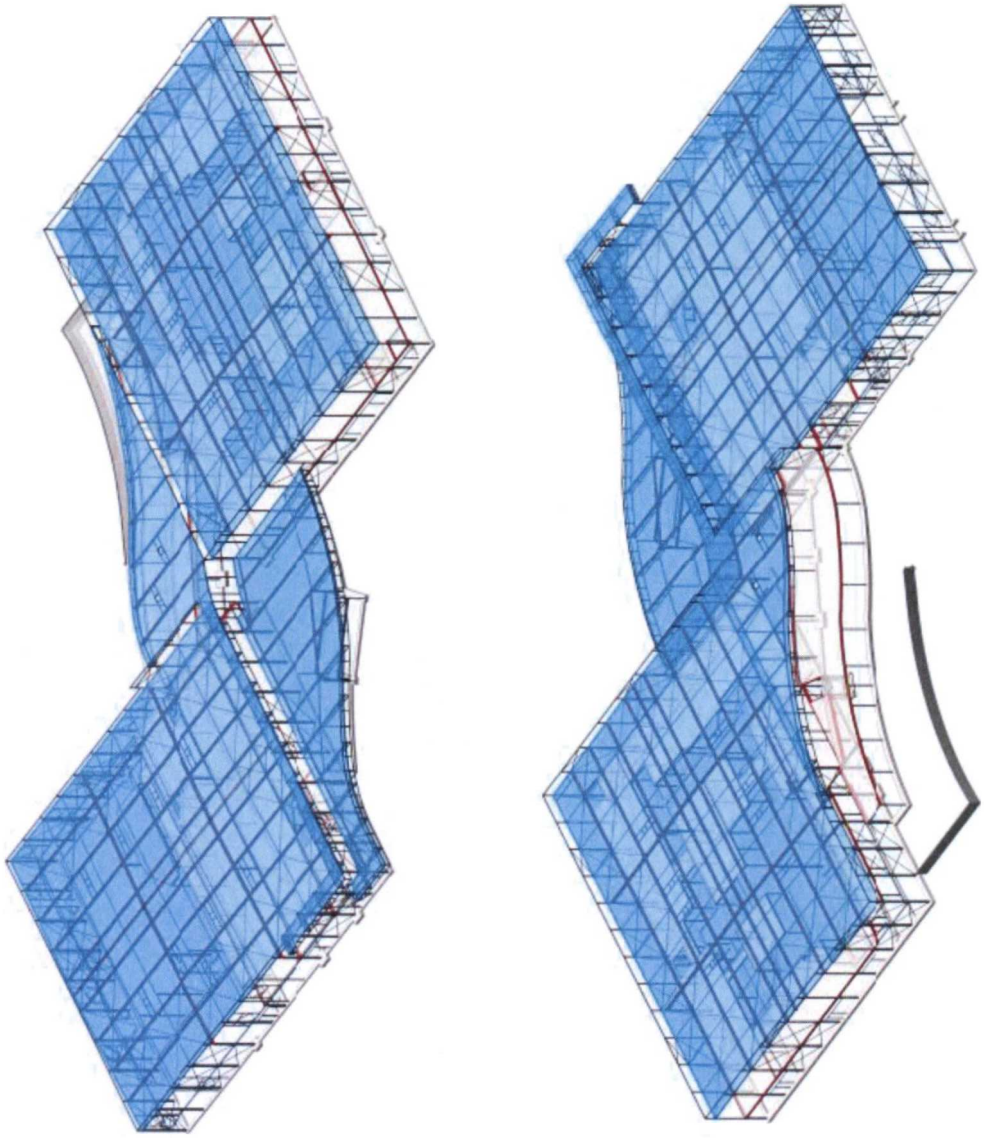
B112 Drsn in as 01 t/m 04



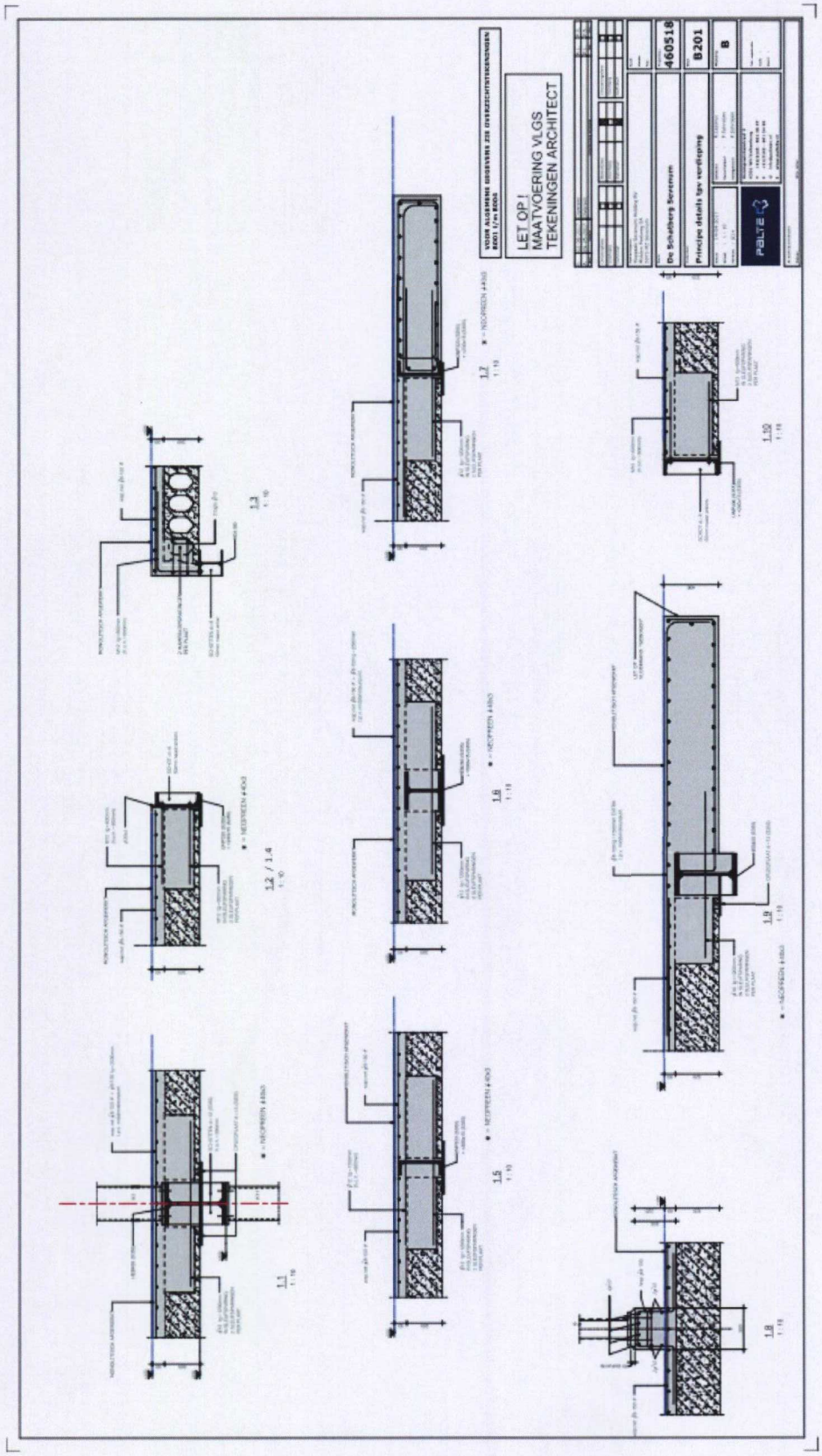
B113 Drsn in as 05 t/m 08



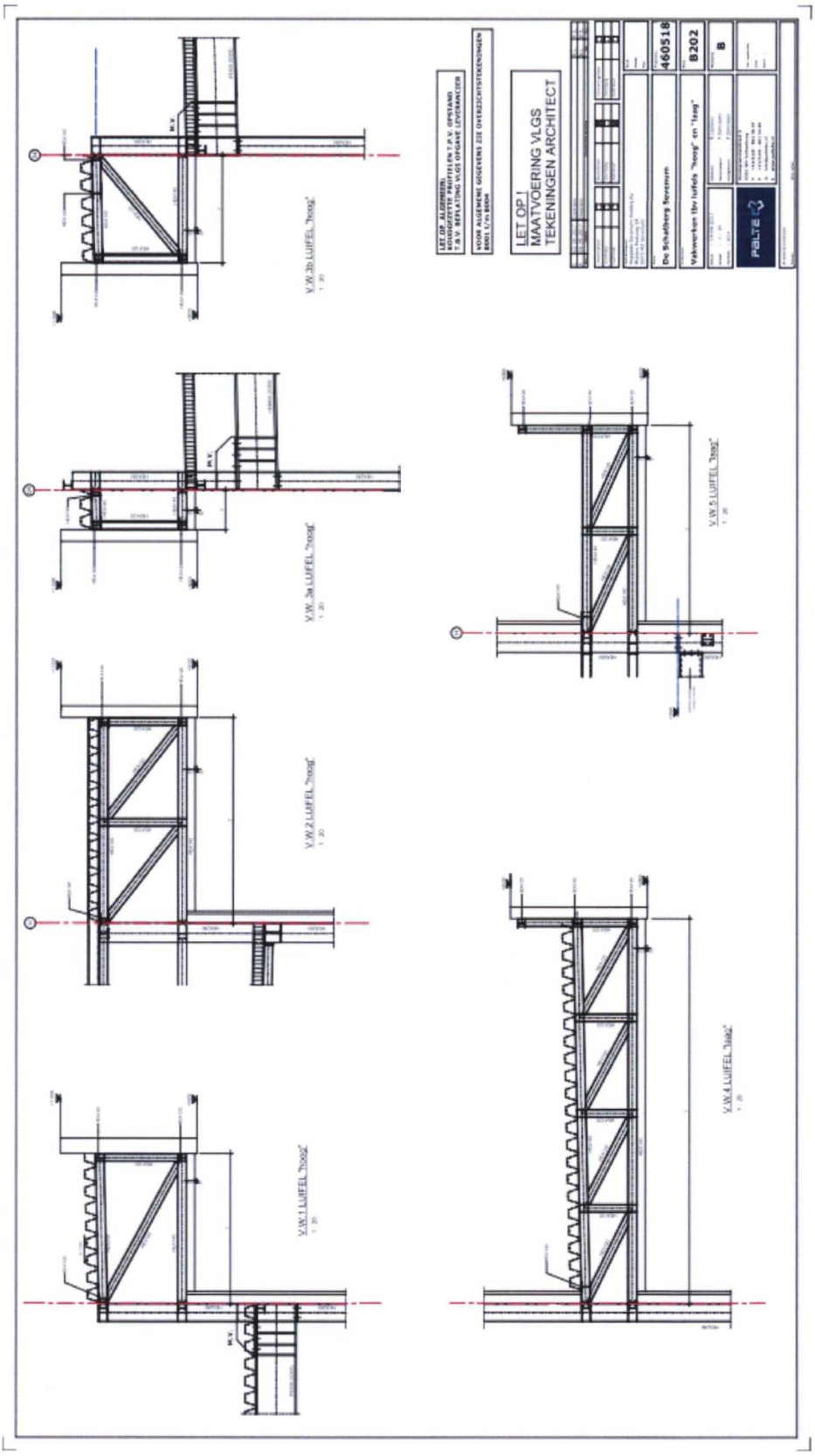
B200 3D View



B201 Principe details tpv verdieping



B202 Vakwerken tbv luifels "hoog" en "laag"



5. Stabiliteitsberekening

5.1. Belastingen ten behoeve van stabiliteit

Windbelasting ten behoeve van stabiliteit

Winddruk en windzuiging

q_w	$= P_w h_{gem}$	$= 0.725*(11.0 / 2)$	$= 3.99$	kN/m^1
$q_{w,d}$	$= \gamma_Q q_w$	$= 1.5*3.99$	$= 5.98$	kN/m^1

Windwrijving

$q_{wl,fr}$	$= P_w c_{fr} A_{l,fr} / b$	$= 0.725*0.04*1144 / 49.5$	$= 0.67$	kN/m^1
$A_{l,fr}$	$= (l - 4 h) (2 h + b)$	$= (60.0 - 4*11.0)*(2*11.0 + 49.5)$	$= 1144$	m^2
$q_{wd,fr}$	$= P_w c_{fr} A_{l,fr} / b$	$= 0.725*0.04*451 / 60.0$	$= 0.22$	kN/m^1
$A_{d,fr}$	$= (l - 4 h) (2 h + b)$	$= (49.5 - 4*11.0)*(2*11.0 + 60.0)$	$= 451$	m^2
$q_{wl,fr,d}$	$= \gamma_Q q_{wl,fr}$	$= 1.5*0.67$	$= 1.01$	kN/m^1
$q_{wd,fr,d}$	$= \gamma_Q q_{wd,fr}$	$= 1.5*0.22$	$= 0.33$	kN/m^1

Scheefstand

Het gebouw is onderverdeeld is een restaurantgedeelte, een speelhal en een centrale hal (incl. luifel).
De aanpendelende belasting wordt bepaald als de van één gebouwdeel en de volledige luifel (conservatief).
Hieronder vallen het dak, de verdiepingsvloeren en de gevels.

Oppervlakten en lengtes

Restaurant	dak	$= 3000$ m^2	$(0.55$ $kN/m^2)$
	vloeren	$= 1850$ m^2	$(6.00$ $kN/m^2)$
	gevel	$= 2400$ m^2	$(0.60$ $kN/m^2)$
	staal	$= 3200$ m^1	$(1.00$ $kN/m^1)$
Centrale hal	dak	$= 1600$ m^2	$(0.55$ $kN/m^2)$
	vloeren	$= 550$ m^2	$(8.25$ $kN/m^2)$
	gevel	$= 1100$ m^2	$(0.60$ $kN/m^2)$
	staal	$= 1000$ m^1	$(1.00$ $kN/m^1)$
Speelhal	dak	$= 3000$ m^2	$(0.55$ $kN/m^2)$
	vloeren	$= 1600$ m^2	$(6.00$ $kN/m^2)$
	gevel	$= 2400$ m^2	$(0.60$ $kN/m^2)$
	staal	$= 3000$ m^1	$(1.00$ $kN/m^1)$

Belastingen t.b.v. stabiliteit dak

$q_{\varphi l,Dak,d}$	$= \gamma_G\, q_{\varphi l,Dak,G} + \gamma_Q\, q_{\varphi l,Dak,Q}$	$= 1.2*0.24 + 1.5*0.03$	$= 0.33$	kN/m¹
$q_{\varphi l,Dak,G}$	$= \varphi\, q_{G,Dak} / b$	$= {}^{1}/_{408}*4780 / 49.5$	$= 0.24$	kN/m¹
$q_{\varphi l,Dak,Q}$	$= \varphi\, q_{Q,Dak} / b$	$= {}^{1}/_{408}*667 / 49.5$	$= 0.03$	kN/m¹
φ	$= \varphi_0\, \alpha_h\, \alpha_m$	$= {}^{1}/_{200}{}^{*1}/_{1.50}{}^{*1}/_{1.36}$	$= {}^{1}/_{408}$	-
φ_0	= basiswaarde		$= {}^{1}/_{200}$	-
α_h	$= {}^{2}/_{3} \le 2/\sqrt{h} \le 1.0$	$= {}^{2}/_{3} \le 2/\sqrt{11.0} \le 1.0$	$= {}^{1}/_{1.50}$	-
α_m	$= \sqrt{[0.5\,(1 + {}^{1}/_{m})}$	$= \sqrt{[0.5\,(1 + {}^{1}/_{12})}$	$= {}^{1}/_{1.36}$	-
$q_{G,Dak}$	$= A_{dak}\, q_G + A_{gevel}\, q_G + l_{staal}\, q_{EG}$	$= 4600*0.55 + 1750*0.60 + 1200*1.00$	$= 4780$	kN
$q_{Q,Dak}$	$= A_{dak}\, q_w$	$= 4600*0.145$	$= 667$	kN
$q_{\varphi d,Dak,d}$	$= \gamma_G\, q_{\varphi d,Dak,G} + \gamma_Q\, q_{\varphi d,Dak,Q}$	$= 1.2*0.20 + 1.5*0.03$	$= 0.29$	kN/m¹
$q_{\varphi d,Dak,G}$	$= \varphi\, q_G / b$	$= {}^{1}/_{402}*4780 / 60.0$	$= 0.20$	kN/m¹
$q_{\varphi d,Dak,Q}$	$= \varphi\, q_Q / b$	$= {}^{1}/_{402}*667 / 60.0$	$= 0.03$	kN/m¹
φ	$= \varphi_0\, \alpha_h\, \alpha_m$	$= {}^{1}/_{200}{}^{*1}/_{1.50}{}^{*1}/_{1.34}$	$= {}^{1}/_{402}$	-
α_m	$= \sqrt{[0.5\,(1 + {}^{1}/_{m})}$	$= \sqrt{[0.5\,(1 + {}^{1}/_{9})}$	$= {}^{1}/_{1.34}$	-

Belastingen t.b.v. stabiliteit verdieping

$q_{\varphi l,Ver,d}$	$= \gamma_G\, q_{\varphi l,Ver,G} + \gamma_Q\, q_{\varphi l,Ver,Q}$	$= 1.2*0.97 + 1.5*0.37$	$= 1.72$	kN/m¹
$q_{\varphi l,Ver,G}$	$= \varphi\, q_G / b$	$= {}^{1}/_{408}*19688 / 49.5$	$= 0.97$	kN/m¹
$q_{\varphi l,Ver,Q}$	$= \varphi\, q_Q / b$	$= {}^{1}/_{408}*7375 / 49.5$	$= 0.37$	kN/m¹
φ	$= \varphi_0\, \alpha_h\, \alpha_m$	$= {}^{1}/_{200}{}^{*1}/_{1.50}{}^{*1}/_{1.36}$	$= {}^{1}/_{408}$	-
φ_0	= basiswaarde		$= {}^{1}/_{200}$	-
α_h	$= {}^{2}/_{3} \le 2/\sqrt{h} \le 1.0$	$= {}^{2}/_{3} \le 2/\sqrt{11.0} \le 1.0$	$= {}^{1}/_{1.50}$	-
α_m	$= \sqrt{[0.5\,(1 + {}^{1}/_{m})}$	$= \sqrt{[0.5\,(1 + {}^{1}/_{12})}$	$= {}^{1}/_{1.36}$	-
$q_{G,Ver}$	$= A_{vloer}\, q_G + A_{gevel}\, q_G + l_{staal}\, q_{EG}$			
	$= (1850*6.00 + 550*8.25) + 1750*0.60 + 3000*1.00$		$= 19688$	kN
$q_{Q,Ver}$	$= A_{vloer}\, \Psi_0\, q_Q$	$= 2950*0.5*5.00$	$= 7375$	kN
$q_{\varphi d,Ver,d}$	$= \gamma_G\, q_{\varphi d,G} + \gamma_Q\, q_{\varphi d,Q}$	$= 1.2*0.82 + 1.5*0.31$	$= 1.45$	kN/m¹
$q_{\varphi d,Ver,G}$	$= \varphi\, q_G / b$	$= {}^{1}/_{402}*19688 / 60.0$	$= 0.82$	kN/m¹
$q_{\varphi d,Ver,Q}$	$= \varphi\, q_Q / b$	$= {}^{1}/_{402}*7375 / 60.0$	$= 0.31$	kN/m¹
φ	$= \varphi_0\, \alpha_h\, \alpha_m$	$= {}^{1}/_{200}{}^{*1}/_{1.50}{}^{*1}/_{1.34}$	$= {}^{1}/_{402}$	-
α_m	$= \sqrt{[0.5\,(1 + {}^{1}/_{m})}$	$= \sqrt{[0.5\,(1 + {}^{1}/_{9})}$	$= {}^{1}/_{1.34}$	-

Belastingen ten behoeve van stabiliteit

Belastingen op windliggers dak

q_{Hl}	$= \gamma_{stb}\, q_{wl}\, \Sigma c_{pe} + q_{wl,fr} + q_{\varphi l}$	$= 0.85*3.99*(0.8 + 0.3) + 0.67 + (0.24 + 0.03)$	$= 4.67$	kN/m¹
$q_{Hl,d}$	$= \gamma_{stb}\, q_{wl,d}\, \Sigma c_{pe} + q_{wl,fr,d} + q_{\varphi l,d}$	$= 0.85*5.98*(0.8 + 0.3) + 1.01 + 0.33$	$= 6.93$	kN/m¹
q_{Hd}	$= \gamma_{stb}\, q_{wd}\, \Sigma c_{pe} + q_{wd,fr} + q_{\varphi d}$	$= 0.85*3.99*(0.8 + 0.3) + 0.22 + (0.97 + 0.37)$	$= 5.29$	kN/m¹
$q_{Hd,d}$	$= \gamma_{stb}\, q_{wd,d}\, \Sigma c_{pe} + q_{wd,fr,d} + q_{\varphi d,d}$	$= 0.85*5.98*(0.8 + 0.3) + 0.33 + 1.72$	$= 7.64$	kN/m¹

Aanpendelende belasting

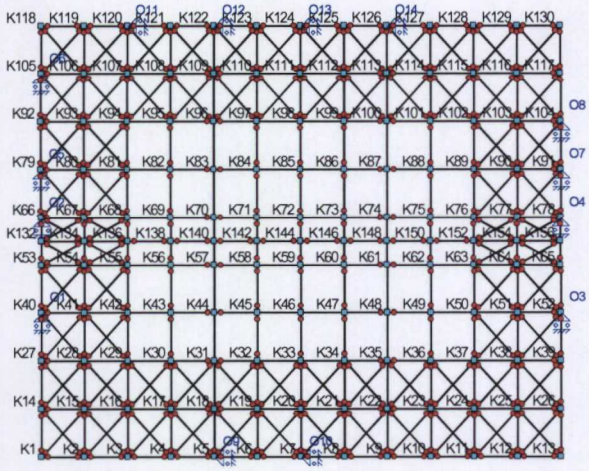
$F_{V,Dak}$	$= (q_{G,Dak} + q_{Q,Dak}) / n_{gevels}$	$= (4780 + 667) / 2$	$= 2724$	kN
$F_{V,Ver}$	$= (q_{G,Ver} + q_{Q,Ver}) / n_{gevels}$	$= (19688 + 7375) / 2$	$= 13532$	kN
$F_{V,Dak,d}$	$= (\gamma_G\, q_{G,Dak} + \gamma_Q\, q_{Q,Dak}) / n_{gevels}$	$= (1.2*4780 + 1.5*667) / 2$	$= 3368$	kN
$F_{V,Ver,d}$	$= (\gamma_G\, q_{G,Ver} + \gamma_Q\, q_{Q,Ver}) / n_{gevels}$	$= (1.2*19688 + 1.5*7375) / 2$	$= 17344$	kN

5.2. Krachten uit stabiliteit

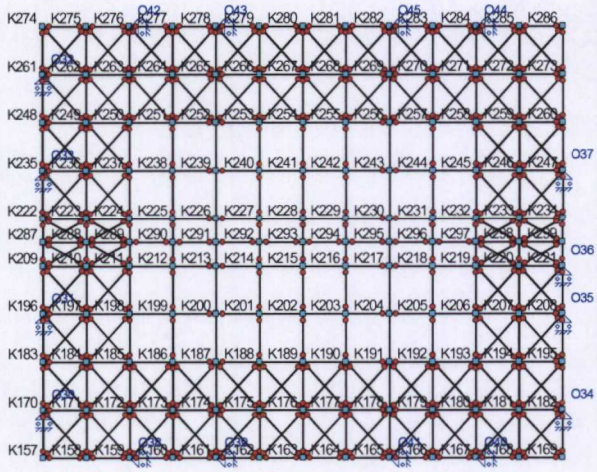
5.2.1 Uitgangspunten en belastingen

Uitgangspunten
Als gevolg van de stabiliteitsbelasting komen er trek- en of drukkrachten in zowel de primaire als secundaire dakliggers. Deze belastingen worden in de berekening van de stalen constructieonderdelen verwerkt.
De reactiekrachten uit stabiliteit worden meegenomen bij de berekening van de fundering.
Om de maatgevende normaalkrachten in de stabiliteitselementen vast te stellen is het dakvlak ingevoerd in MatrixFrame. Zie computerberekening pag. 1-31.

Overzicht geometrie



bouwdeel restaurant



bouwdeel speelhal

5.2.2 Krachten op liggers

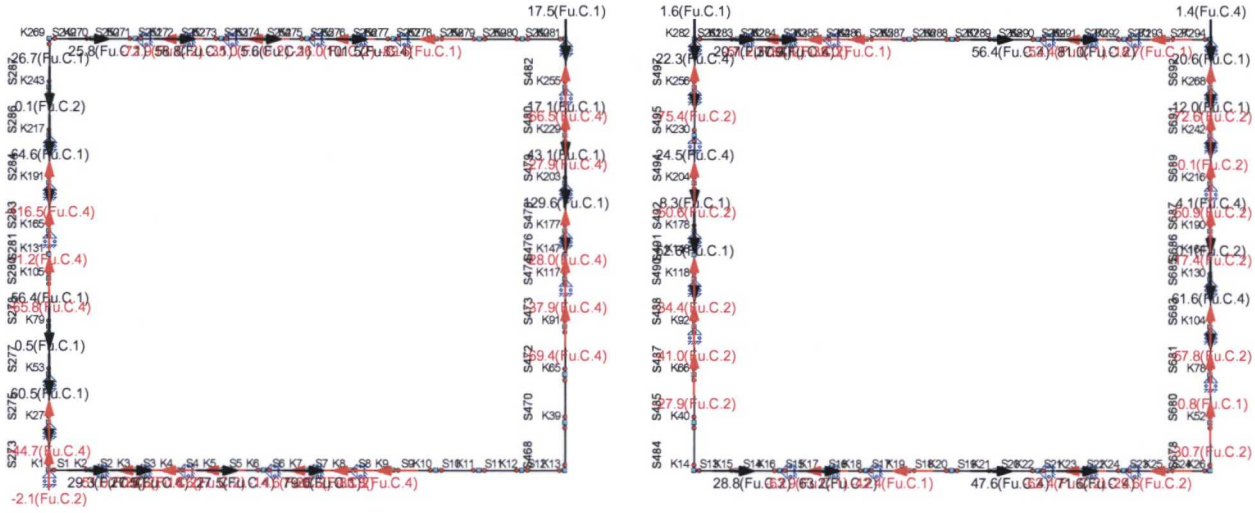
Krachten op randliggers		**HEA140**	
N_t	= zie computerberekening	= karakteristieke waarde trekkracht	= +51.2 kN
$N_{t,Ed}$	= zie computerberekening	= rekenwaarde trekkracht	= +83.8 kN
N_c	= zie computerberekening	= karakteristieke waarde drukkracht	= -74.2 kN
$N_{c,Ed}$	= zie computerberekening	= rekenwaarde drukkracht	= -90.0 kN

Krachten op secundaire liggers		**IPE600; S355**	
N_t	= zie computerberekening	= karakteristieke waarde trekkracht	= +22.0 kN
$N_{t,Ed}$	= zie computerberekening	= rekenwaarde trekkracht	= +31.8 kN
N_c	= zie computerberekening	= karakteristieke waarde drukkracht	= -53.3 kN
$N_{c,Ed}$	= zie computerberekening	= rekenwaarde drukkracht	= -77.0 kN

Krachten op primaire liggers		**HEB600; S355**	
N_c	= zie computerberekening	= karakteristieke waarde drukkracht	= -51.1 kN
$N_{c,Ed}$	= zie computerberekening	= rekenwaarde drukkracht	= -75.3 kN

Horizontale reactiekrachten op windbokken

De maximale karakteristieke waarde van de reactiekracht op de windbokken bedraagt 87.3 kN.
De maximale rekenwaarde van de reactiekracht op de windbokken bedraagt 130 kN.



5.3. Controle stabiliteitselementen

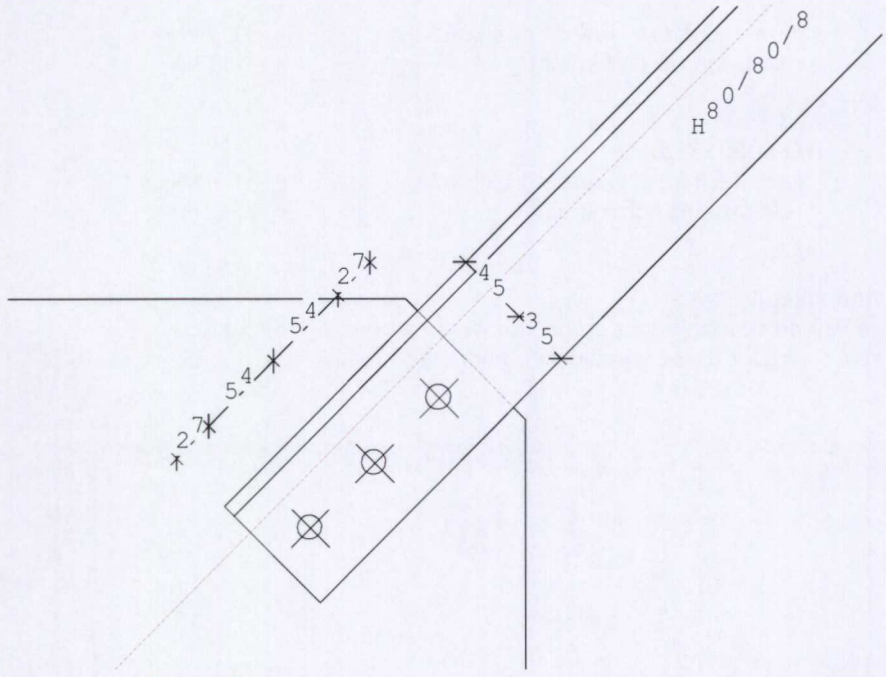
5.3.1 Controle windverbanden L80 x 80 x 8 + (2x) 3 M16 - 8.8

Controle sterkte en stabiliteit

$N_{t,d}$ = zie computerberekening = rekenwaarde trekkracht = 92.4 kN

VERBINDINGEN - BASISGEGEVENS

Verbindingstype	Stab. hoekstaal
Normaalkracht	92.40



PROFIELEN	Naam	$f_{y;d}$	Opmerking
Verbandstaaf	H80/80/8	235	
Schetsplaat	PL 10.0	235	minimale breedte 54

PROFIELGEGEVENS [mm] Gelast Klasse 3 H80/80/8

h :	80.0	i_y :	24.3	A :	1227.0	W_{ey} :	12.6E3	I_y : 72.2E4
b :	80.0	i_z :	24.3			W_{ez} :	12.6E3	I_z : 72.2E4
t_w :	8.0	r :	10.0			W_{py} :	12.6E3	I_t : 2.5E4
t_f :	8.0	r_1 :	5.0			W_{pz} :	12.6E3	I_w : 12.5E6
						I_{ksi} :	114.6E4	I_{eta} : 29.9E4

BOUTEN	d_n	kwal	milieu	v (vanaf rand schetsplaat)
	M16	8.8	Niet-corr.	27;81;135;162

BOUTGEGEVENS

d_n	d_g	slr	d_{kop}	t_{kop}	d_{moer}	t_{moer}	A	A_s	γ_M	f_{ybd}	f_{tbd}	Draad
16.0	18.0	33.3	24.0	10.0	24.0	13.0	201.1	156.7	1.25	640	800	Gerold

TUSSENRESULTATEN	Verbandstaaf	Schetsplaat
Netto staafoppervlak	1083.0	
$Beta_3$	0.54	
$Alpha_b$	0.50	0.50
k_1	2.50	2.50
$Alpha_v$	1.00	

BEZWIJKKRACHTEN

Criterium	F_{Rd}	Formule	UC
Stuik verbandstaaf	138.24	(T3.4b)	0.67
Capaciteit hoekstaal	168.43	(3.13)	
Stuik schetsplaat	172.80	(T3.4b)	
Afschuifcapaciteit bouten	180.52	(T3.4a)	

5.3.2 Controle drukkokers KK100 x 100 x 5

Controle sterkte en stabiliteit

$N_{c,d}$	= zie computerberekening	= maximale drukkracht	= -75.5 kN
q_d	= γ_G q_{EG}	= 1.2*0.15	= 0.18 kN/m[1]

Drukkoker - KK100 x 100 x 5 (NEN-EN1993-1-1:2009/NB:2011)

PROFIELGEGEVENS: KK100/5

Breedte	b	100 mm	Oppervlak	As	1.84e+03 mm²
Hoogte	h	100 mm	Systeemlengte	Lsys	5.500 m
Flensdikte	tf	5.0 mm	Lijfdikte	tw	5.0 mm
Elastisch weerstandsmoment	Wy;el	542.2e+0 2 mm³	Elastisch weerstandsmoment	Wz;el	542.2e+0 2 mm³
Plastisch weerstandsmoment	Wy;pl	645.9e+0 2 mm³	Plastisch weerstandsmoment	Wz;pl	645.9e+0 2 mm³
Sterkte klasse		S235H(E - N10219-1)	Vloeigrens staal	fy	235 N/mm²

KRACHTEN

		A	B
Normaalkracht	Nc;Ed	-75.5 kN	-75.5 kN
Dwarskracht in Y' as	q	0.0 kN/m	0.0 kN/m
Dwarskracht in Z' as	q	0.2 kN/m	0.2 kN/m
Dwarskracht in Y' as	Vy;Ed	0.0 kN	0.0 kN
Dwarskracht in Z' as	Vz;Ed	0.5 kN	-0.5 kN
Buigend moment om Y' as	My;Ed	0.0 kNm	0.0 kNm
Buigend moment om Z' as	Mz;Ed	0.0 kNm	0.0 kNm
Kniklengte Y'-as	Leff Y	5.500 m	
Kniklengte Z'-as	Leff Z	5.500 m	

Aangrijphoogte dwarsbelasting: Centrum

CAPACITEIT VAN HET PROFIEL

Normaalkrachtcapaciteit (NEN-EN1993-1-1#6.2.3,6.2.4)	Nc;Rd	431.37 kN
Dwarskrachtcapaciteit in y'-y' (NEN-EN1993-1-1#6.2.6)	Vc;y;Rd	124.53 kN
Dwarskrachtcapaciteit in z'-z' (NEN-EN1993-1-1#6.2.6)	Vc;z;Rd	124.53 kN
Momentcapaciteit om y'-y' as (NEN-EN1993-1-1#6.2.5)	Mc;y;Rd	15.18 kNm
Momentcapaciteit om z'-z' as (NEN-EN1993-1-1#6.2.5)	Mc;z;Rd	15.18 kNm

BUIGING, DWARSKRACHT EN NORMAALKRACHT (NEN-EN1993-1-1#6.2.10)

	rho y'	0.00 -	alfa	0.00 -
	rho z'	0.00 -	beta	0.00 -
	MN;Vy;ud	0.00 kNm	MN;Vz;ud	0.00 kNm

KIPKROMMEN (NEN-EN1993-1-1#6.3.2.2)

Kipsteunen bovenflens:		Geen -	Kipsteunen onderflens:		Geen -
Tabel gebruikt		NB 6.2 -		q	0.18 kN/m
		0.00 -			0.00 -
Maatgevend veld	Boven	0.000 - m 5.500		lst	5.500 m
	Lsys	5.500 m		Lg	5.500 m
	S	0.061 m		Iwa	6.1167e-09 m^6
	C1	1.130 -		C2 (Tabel)	0.450 -
	C2 (Toegepast)	0.000 -		C	0.000 -
	Mcr	0.00 kNm		kred	1.000 -
	lkip	5.500 m			

KNIKSTABILITEIT (EN1993-1-1#6.3.1)

Knik curve Y'		c -	Knik curve Z'		c
	Ncr;y	185.75 kN		Ncr;z	185.75 kN
Methode Y		Cons. - Gesch.	Methode Z		Cons. - Gesch.
	Lbuc;y	5.500 m		Lbuc;z	5.500 m
	Lam;y	1.524 -		Lam;z	1.524 -
	Chi;y	0.307 -		Chi;z	0.307 -
Kip instab. curve:		C -	Kip instab. curve:		C -
	Nb;Rd;y	132.39 kN		Nb;Rd;z	132.39 kN

STABILITEIT (NEN-EN1993-1-1#6.3)

Kiptorsie gevoelig		Nee -	Doorsnedeklasse		1 -
	My;max	0.68 kNm		Mz;max	0.00 kNm
	My;Ed; A	0.00 kNm		Mz;Ed; B	0.00 kNm
	Mb;Rd;y	15.18 kNm		Mb;Rd;z	15.18 kNm
	Delta;My	0.00 kNm		Delta;Mz	0.00 kNm
	My;Psi	0.00 kNm		Mz;Psi	0.00 kNm
	My;0	0.68 kNm		Mz;0	0.00 kNm
	Mcr	0.00 kNm			
	Cm;y	0.950 -		Cm;z	1.000 -
	Cm;LT	0.950 -			
	Kyy	1.383 -		Kzz	1.456 -
	Kyz	0.874 -		Kzy	0.830 -
	X;y	0.307 -		X;z	0.307 -
	Lam;LT	0.000 -			
	X;LT	1.000 -			

UITGEVOERDE CONTROLES

Doorsnede

NEN-EN1993-1-1(6.9)		0.18 OK
NEN-EN1993-1-1(6.12)	Y axis	0.00 OK
NEN-EN1993-1-1(6.12)	Z axis	0.00 OK
NEN-EN1993-1-1(6.17)	Y axis	0.00 OK
NEN-EN1993-1-1(6.17)	Z axis	0.00 OK
NEN-EN1993-1-1(6.31)	Y axis	0.00 OK
NEN-EN1993-1-1(6.31)	Z axis	0.00 OK

Knik

NEN-EN1993-1-1(6.46)	Y axis	0.57 OK
NEN-EN1993-1-1(6.46)	Z axis	0.57 OK

Stabiliteit

NEN-EN1993-1-1(6.61& 6.62)		0.63 OK

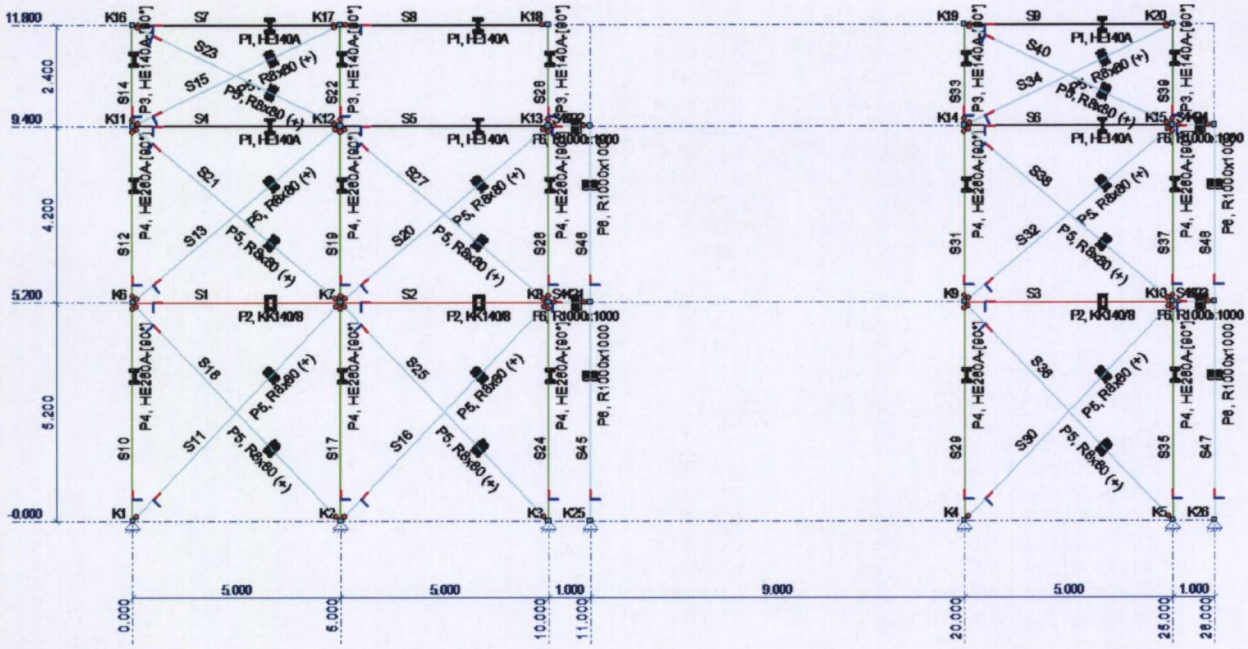
Kip

Kip N/B i.v.m. buis/koker NEN-EN 1993-1-1 #6.3.2.1(2)
Kip NVT, i.v.m. geen buiging

5.3.3 Controle windbokken

Uitgangspunten
De windbokken zijn ingevoerd in MatrixFrame. Hierbij is de maximale reactiekracht met betrekking tot stabiliteit op de windbokken gezet in combinatie met de maximale aanpendelende belasting.
Deze combinatie is tweede orde berekend.
Zie computerberekening pag. 32-38.

Overzicht geometrie



Belastingen

Karakteristieke waarde belastingen

F_H	= max. {b q_{Hl}; l q_{Hd}} / n_{gevels}	= max. {60.0*4.67; 49.5*5.29} / 2	= 131	kN
$F_{V,Dak}$	= ($q_{G,Dak}$ + $q_{Q,Dak}$) / n_{gevels}	= (4780 + 667) / 2	= 2724	kN
$F_{V,Ver}$	= ($q_{G,Ver}$ + $q_{Q,Ver}$) / n_{gevels}	= (19688 + 7375) / 2	= 13532	kN

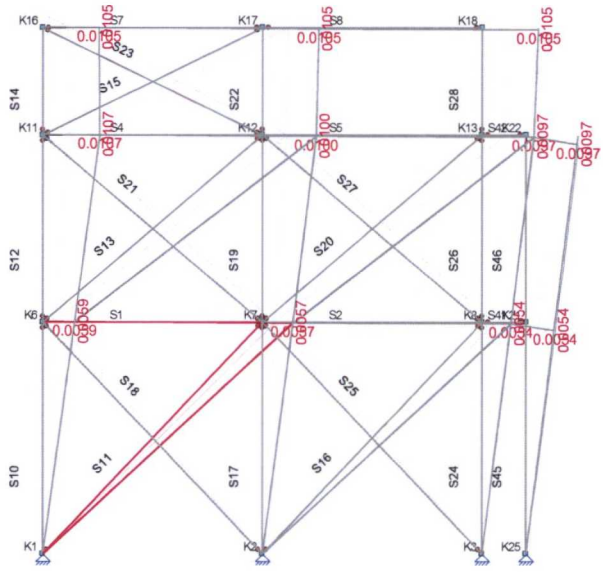
Rekenwaarde belastingen

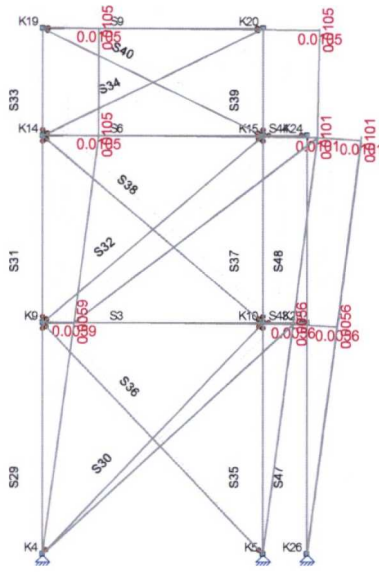
$F_{H,d}$	= max. {b $q_{Hl,d}$; l $q_{Hd,d}$} / n_{gevels}	= max. {60.0*6.93; 49.5*7.64} / 2	= 208	kN
$F_{V,Dak,d}$	= (γ_G $q_{G,Dak}$ + γ_Q $q_{Q,Dak}$) / n_{gevels}	= (1.2*4780 + 1.5*667) / 2	= 3368	kN
$F_{V,Ver,d}$	= (γ_G $q_{G,Ver}$ + γ_Q $q_{Q,Ver}$) / n_{gevels}	= (1.2*19688 + 1.5*7375) / 2	= 17344	kN

Controle verplaatsing

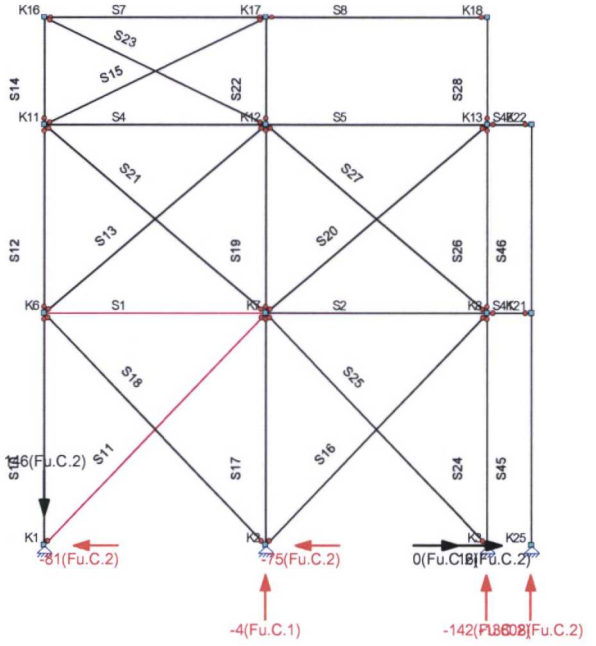
Controle totale verplaatsing (conservatief met eis per verdieping)

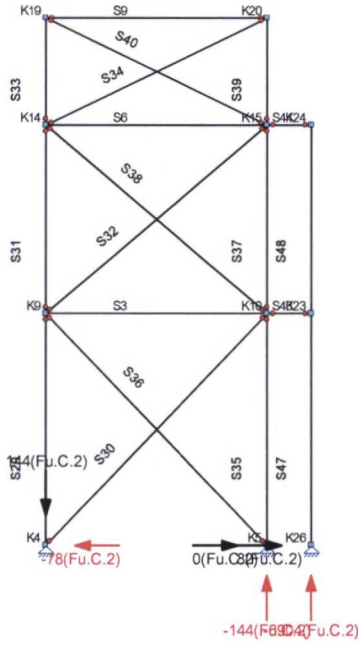
u_{max}	= zie computerberekening			= 10.1	mm
u_{toel}	= $^1/_{500}$ h	= $^1/_{500}$*5200		= 10.4	mm
u.c.	→ u_{max} / u_{toel} ≤ 1	= 10.1 / 10.4	= 0.97 < 1	→ voldoet	





Reactiekrachten op de fundering





F_{Vc}	= 88.8 kN;	$F_{vc,d}$	= 144	(druk)	
F_{Vt}	= 89.7 kN;	$F_{Vt,d}$	= 144	(trek)	
F_H	= 49.4 kN;	$F_{H,d}$	= 80.5	(horizontaal)	

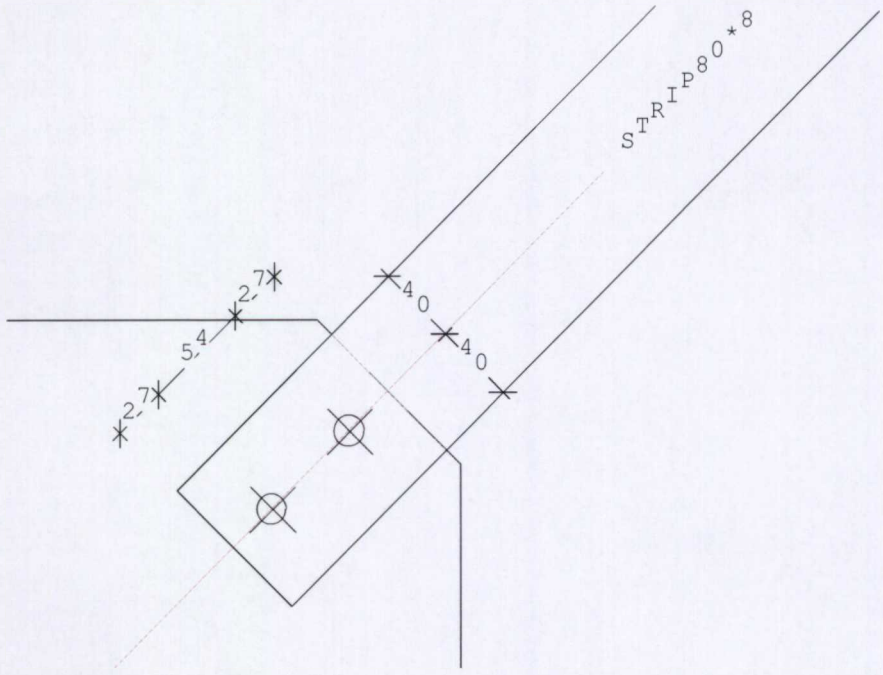
5.3.4 Controle trekstrippen gevel ≠80 x 8 + (2x) 2 M16 - 8.8

Controle sterkte en stabiliteit

$N_{t,Ed}$ = zie computerberekening = maximale trekkracht = +71.2 kN

VERBINDINGEN - BASISGEGEVENS

Verbindingstype	Stab. strip
Normaalkracht	71.20



PROFIELEN	Naam	$f_{y;d}$	Opmerking	
Verbandstaaf	STRIP80*8	235		
Schetsplaat	PL 10.0	235	minimale breedte	54

PROFIELGEGEVENS [mm] Gelast Klasse 2 STRIP80*8

h :	8.0	i_y :	2.3	A :	640.0	W_{ey} :	0.9E3	I_y :	0.3E4
b :	80.0	i_z :	23.1			W_{ez} :	8.5E3	I_z :	34.1E4
t_w :	0.0					W_{py} :	0.9E3	I_t :	1.3E4
t_f :	0.0					W_{pz} :	8.5E3	I_w :	0.0E6

BOUTEN

d_n	kwal	milieu	v (vanaf rand schetsplaat)
M16	8.8	Niet-corr.	27;81;108

BOUTGEGEVENS

d_n	d_g	slr	d_{kop}	t_{kop}	d_{moer}	t_{moer}	A	A_s	γ_M	f_{ybd}	f_{tbd}	Draad
16.0	18.0	33.3	24.0	10.0	24.0	13.0	201.1	156.7	1.25	640	800	Gerold

TUSSENRESULTATEN

	Verbandstaaf	Schetsplaat
Netto staafoppervlak	496.0	
$Alpha_b$	0.50	0.50
k_1	2.50	2.50
$Alpha_v$	1.00	

BEZWIJKKRACHTEN

Criterium	F_{Rd}	Formule	UC
Stuik verbandstaaf	92.16	(T3.4b)	0.77
Capaciteit nettodoorsnede strip	128.56		
Stuik schetsplaat	115.20	(T3.4b)	
Afschuifcapaciteit bouten	120.35	(T3.4a)	

6. Stalen constructieonderdelen

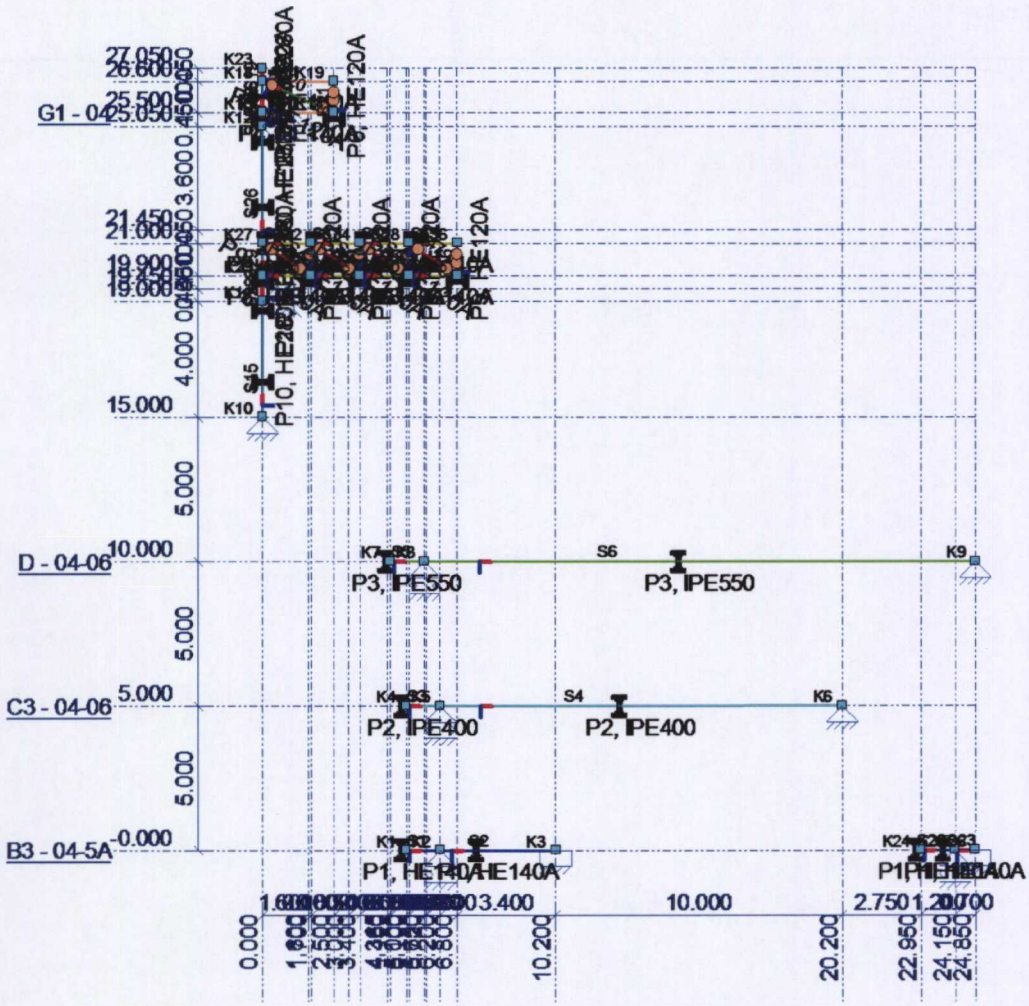
6.1. Stalen liggers luifel hoog

Uitgangspunten
De maatgevende stalen ligger per profiel wordt gecontroleerd met behulp van MatrixFrame.
Zie computerberekening pag. 39-69.

Overzicht stalen liggers luifel hoog

As B3 - 04-5A	HEA140	
As C3 - 04-06	IPE400	
As D - 04-06	IPE550	(S355)
As G1 - 04-05	HEA140 + HEA120	(kolom HEA280)

Overzicht geometrie



Belastingen

Algemeen

Eigen Gewicht conform MatrixFrame.
Belasting uit gevels hangt $^1/_2$ aan de bovenregel en steunt $^1/_2$ op de randligger.
Sneeuwophoping l_s = 5.00 m tegen borstweringen (1.40 kN/m^2).

As B3 - 04-5A en C3 - 04-06

F_G	= 5.00*2.00*0.60	= 6.00	kN
q_G	= 1.1*(5.00*0.55)	= 3.03	kN/m^1
$q_{sn,1}$	= 1.1*(5.00*0.56)	= 3.08	kN/m^1
$q_{sn,2}$	= 1.1*(5.00*1.40)	= 7.70	kN/m^1
$q_{w,p}$	= 1.1*[5.00*(-1.23)]	= -6.77	kN/m^1
	= 1.1*[5.00*(+0.22)]	= +1.21	kN/m^1
$q_{w,H}$	= 1.1*[5.00*(-0.51)]	= -2.81	kN/m^1
$q_{w,I}$	= 1.1*[5.00*(-0.15)]	= -0.83	kN/m^1
	= 1.1*[5.00*(+0.15)]	= +0.83	kN/m^1
$q_{w,i+}$	= 1.1*[5.00*(+0.15)]	= +0.83	kN/m^1
$q_{w,i-}$	= 1.1*[5.00*(-0.22)]	= -1.21	kN/m^1

As D - 04-06

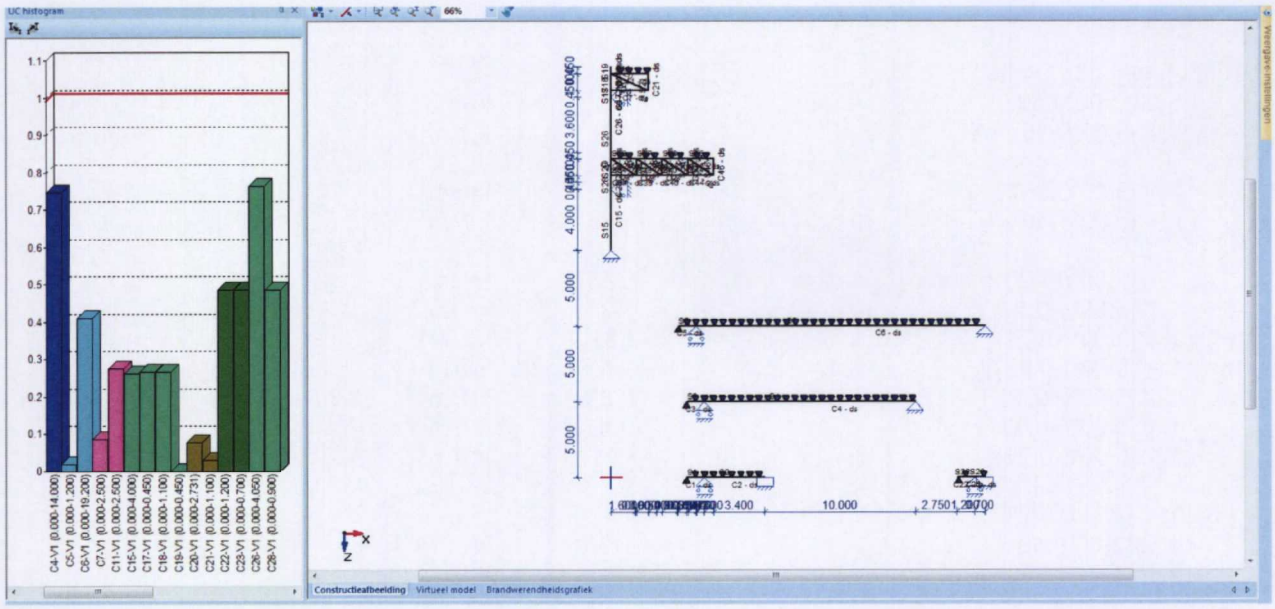
F_G	= 4.50*2.00*0.60	= 5.40	kN
q_G	= 1.1*(4.50*0.55)	= 2.72	kN/m^1
$q_{sn,1}$	= 1.1*(4.50*0.56)	= 2.77	kN/m^1
$q_{sn,2}$	= 1.1*(4.50*1.40)	= 6.93	kN/m^1
$q_{w,p}$	= 1.1*[1.50*(-1.60) + 3.00*(-1.23)]	= -6.70	kN/m^1
	= 1.1*[1.50*(+0.51) + 3.00*(+0.22)]	= +1.57	kN/m^1
$q_{w,H}$	= 1.1*[4.50*(-0.51)]	= -2.52	kN/m^1
$q_{w,I}$	= 1.1*[4.50*(-0.15)]	= -0.74	kN/m^1
	= 1.1*[4.50*(+0.15)]	= +0.74	kN/m^1
$q_{w,i+}$	= 1.1*[4.50*(+0.15)]	= +0.74	kN/m^1
$q_{w,i-}$	= 1.1*[4.50*(-0.22)]	= -1.09	kN/m^1

As G1 - 04-05

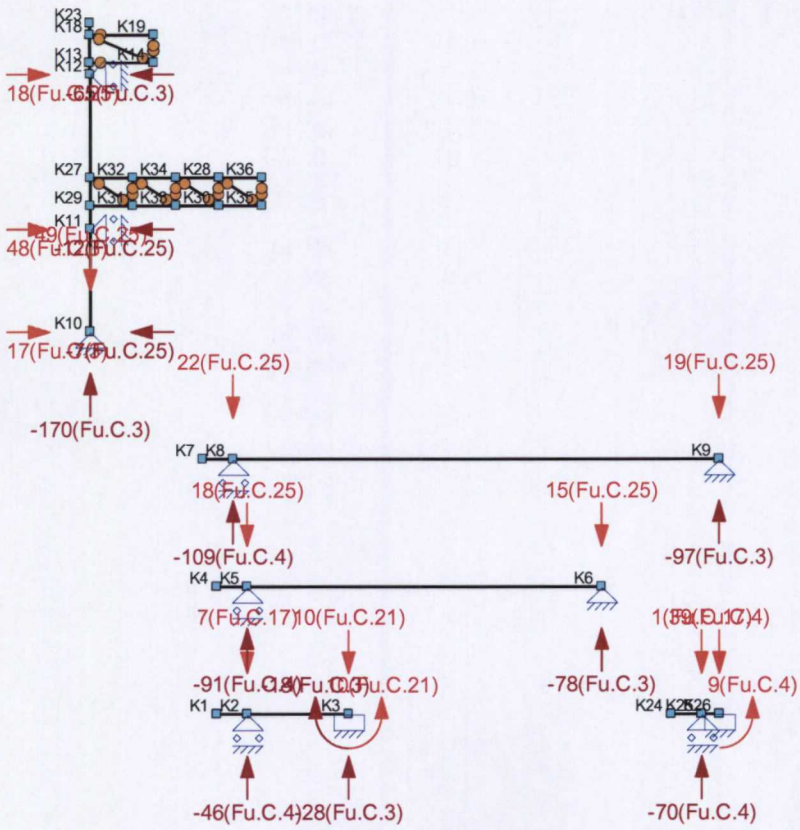
q_G	= 1.1*(5.50*0.55)	= 3.33	kN/m^1
F_G	= 5.50*2.00*0.60	= 6.60	kN
$q_{sn,1}$	= 1.1*(5.50*0.56)	= 3.39	kN/m^1
$q_{sn,2}$	= 1.1*(5.50*1.40)	= 8.47	kN/m^1
$q_{w,p}$	= 1.1*[5.50*(-1.23)]	= -7.44	kN/m^1
	= 1.1*[5.50*(+0.22)]	= +1.33	kN/m^1

Controle sterkte, stabiliteit en doorbuiging

Bovenflenzen tegen kip gesteund door stalen dakplaten, in elk dal en h.o.h. max. 300 mm.
Onderflenzen tegen kip gesteund door aansluitende profielen.
Kipsteunen onderflens ter plekke van de aansluiting met de tussenkolommen.

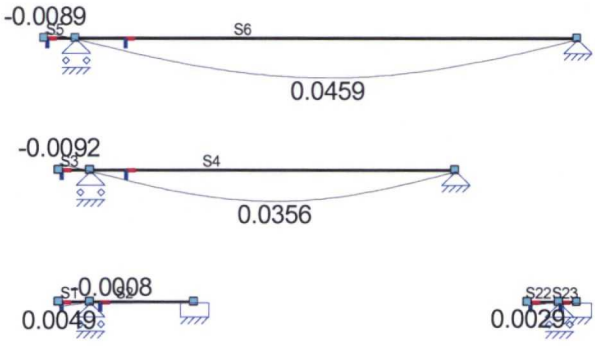


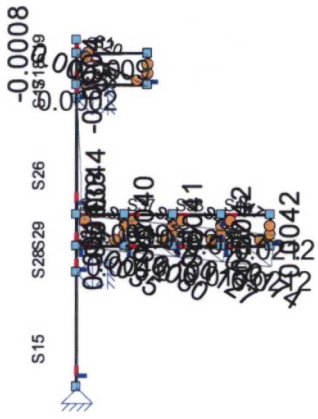
Rekenwaarden reactiekrachten



Overzicht doorbuiging en zegen

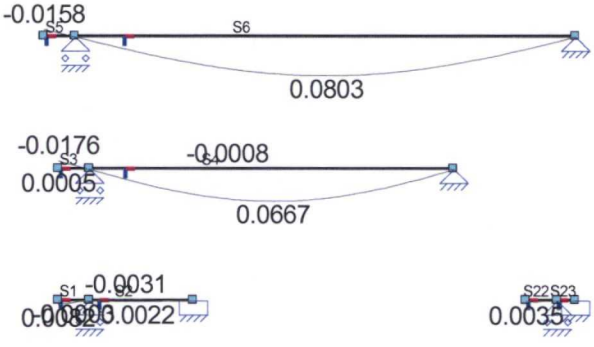
Initiële doorbuiging

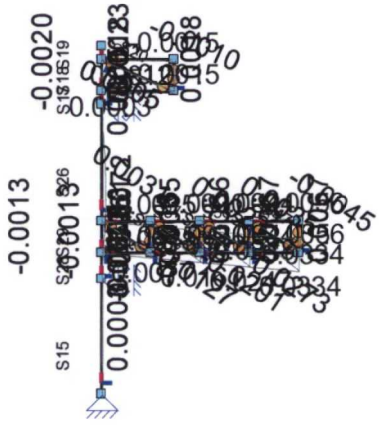




w_{init}	= 4.9	mm	kies	w_{zeeg}	= 10	mm	w_{init}	= 0.8 mm
	= 35.6	mm			= 40	mm	w_{init}	= 17.4 mm kies
	= 45.9	mm			= 50	mm	w_{zeeg}	= 60 mm

Totale doorbuiging





w_{bij}	= 8.2 - 4.9	= 3.3	mm	w_{bij}	= 1.8 - 0.8 = 1.0 mm
	= 66.7 - 35.6	= 31.1	mm	w_{bij}	= 83.4 - 17.4 = 66.0 mm
	= 80.3 - 45.9	= 34.4	mm		

Controle doorbuiging

w_{tot}	= (8.2 - 10)	/ 1200 l	= - l	→ akkoord	w_{tot} = (83.4 - 60) / 6800 l
	= (66.7 - 40)	/ 14000 l	= $^1/_{524}$ l	→ akkoord	= $^1/_{291}$ l
	= (80.3 - 50)	/ 19200 l	= $^1/_{634}$ l	→ akkoord	→ akkoord

w_{bij} = aan deze richtlijn wordt reeds voldaan bij de totale doorbuiging

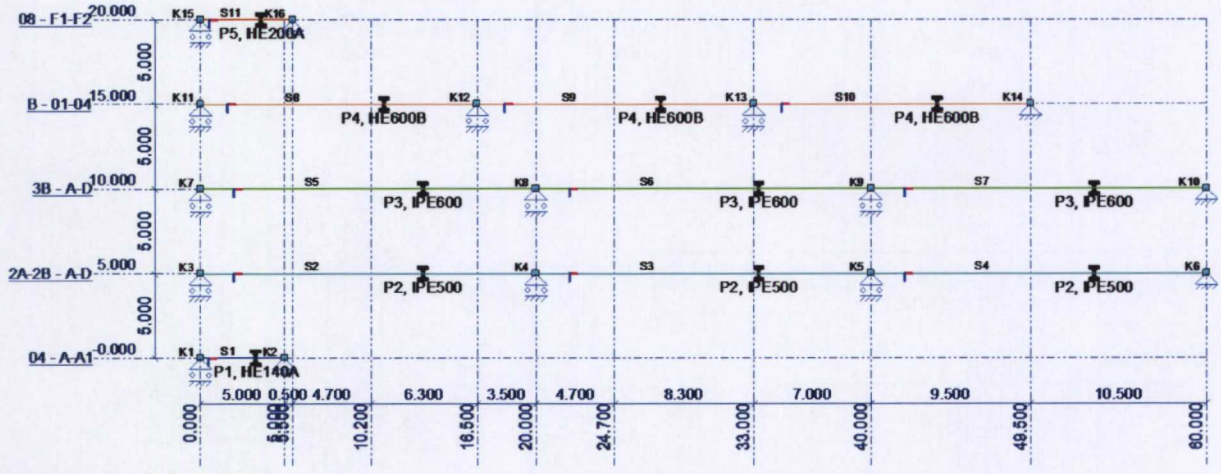
6.2. Stalen liggers dak

Uitgangspunten
De maatgevende stalen ligger per profiel wordt gecontroleerd met behulp van MatrixFrame.
Ten behoeve van de controle bij windbelasting worden conservatief de representatieve krachten op de liggers als drukkracht gecombineerd conform hoofdstuk 5.2.2: Krachten op liggers.
Zie computerberekening pag. 70-94.

Overzicht stalen liggers dak

As 04 - A-A1	HEA140	
As 2A-2B - A-D	IPE500	(S355)
As 3B - A-D	IPE600	(S355)
As B - 01-04	HEB600	(S355)
As 08 - F1-F2	HEA200	

Overzicht geometrie



Belastingen

Algemeen
Eigen Gewicht conform MatrixFrame.
Belasting uit gevels hangt $^1/_2$ aan de bovenregel en steunt $^1/_2$ op de randligger.
Sneeuwophoping l_s = 5.00 m tegen borstweringen (1.40 kN/m^2) en ter plekke van luifel hoog (2.80 kN/m^2).

As 04 - A-A1

q_G	= 2.75*0.55 + 1.20*0.60	= 2.23	kN/m^1
$q_{sn,1}$	= 2.75*0.56	= 1.54	kN/m^1
$q_{sn.2}$	= 2.75*(1.74 + 0.56)	= 6.33	kN/m^1
$q_{w,F}$	= 2.75*(-1.31)	= -4.02	kN/m^1
$q_{w,G}$	= 2.75*(-0.87)	= -2.39	kN/m^1
$q_{w,I}$	= 2.75*(+0.15)	= +0.41	kN/m^1
$q_{w,i+}$	= 2.75*(+0.15)	= +0.41	kN/m^1
$q_{w,i-}$	= 2.75*(-0.22)	= -0.61	kN/m^1
N'	= 90.0 / 1.5	= 60.0	kN

As 2A-2B - A-D

q_G	= 2.75*0.55	= 1.51	kN/m^1
$q_{sn,1}$	= 2.75*0.56	= 1.54	kN/m^1
$q_{sn,2}$	= 2.75*1.40	= 3.85	kN/m^1
$q_{w,G}$	= 2.75*(-0.87)	= -2.39	kN/m^1
$q_{w,H}$	= 2.75*(-0.51)	= -1.40	kN/m^1
$q_{w,I}$	= 2.75*(-0.15)	= -0.41	kN/m^1
	= 2.75*(+0.15)	= +0.41	kN/m^1
$q_{w,i+}$	= 2.75*(+0.15)	= +0.41	kN/m^1
$q_{w,i-}$	= 2.75*(-0.22)	= -0.61	kN/m^1

As 3B - A-D

F_G	= 5.50*(0.25 + 2.40*0.60 + 0.25)	= 10.7	kN
q_G	= 5.50*0.55	= 3.33	kN/m^1
$q_{sn,1}$	= 1.1*5.50*0.56	= 3.39	kN/m^1
$q_{sn,2-1}$	= 1.1*(5.50*1.79)	= 10.8	kN/m^1
$q_{sn,2-2}$	= 1.1*(2.25*0.62 + 5.50*0.56)	= 4.92	kN/m^1
$q_{w,FG}$	= 1.1*5.50*(-1.31 - 0.87) / 2	= -6.59	kN/m^1
$q_{w,H}$	= 1.1*5.50*(-0.51)	= -3.09	kN/m^1
$q_{w,I}$	= 1.1*5.50*(-0.15)	= -0.91	kN/m^1
	= 1.1*5.50*(+0.15)	= +0.91	kN/m^1
$q_{w,i+}$	= 1.1*5.50*(+0.15)	= +0.91	kN/m^1
$q_{w,i-}$	= 1.1*5.50*(-0.22)	= -1.33	kN/m^1
N'	= 77.0 / 1.5	= 51.3	kN

As B - 01-04

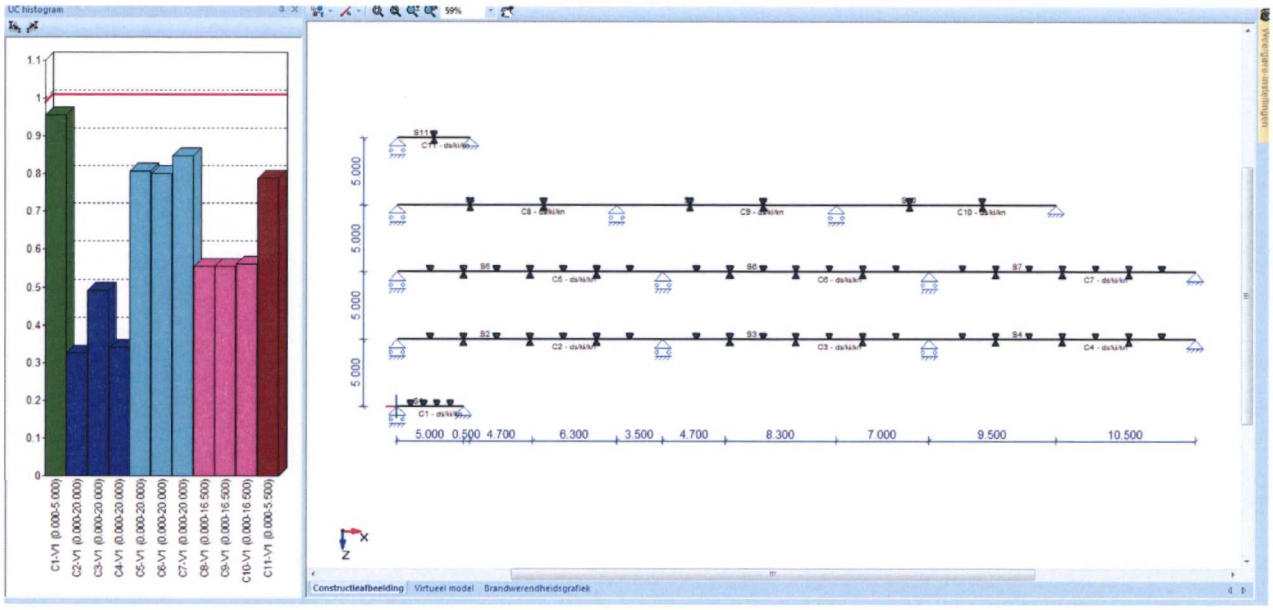
$F_{EG,1}$	= 1.1*5.00*0.25	= 1.38	kN
$F_{EG,2}$	= 1.1*20.0*1.25	= 27.5	kN
$F_{G,1}$	= 1.1*(5.00*0.25 + 5.00*2.40*0.60 + 20.0*2.75*0.55)	= 42.6	kN
$F_{G,2}$	= 1.1*20.0*5.50*0.55	= 66.6	kN
$F_{sn,1}$	= 1.1*20.0*5.50*0.56	= 67.8	kN
$F_{sn,2-1}$	= 1.1*20.0*(2.75*1.43 + 2.75*0.56)	= 120	kN
$F_{sn,2-2}$	= 1.1*20.0*(2.25*0.62 + 5.50*0.56)	= 98.5	kN
$F_{w,G}$	= 1.1*20.0*5.50*(-0.87)	= -105	kN
$F_{w,GH}$	= 1.1*[1.00*5.50*(-0.87) + 19.0*5.50*(-0.51)]	= -63.9	kN
$F_{w,H}$	= 1.1*20.0*5.50*(-0.51)	= -61.7	kN
$F_{w,I}$	= 1.1*20.0*5.50*(-0.15)	= -18.2	kN
	= 1.1*20.0*5.50*(+0.15)	= +18.2	kN
$F_{w,i+}$	= 1.1*20.0*5.50*(+0.15)	= +18.2	kN
$F_{w,i-}$	= 1.1*20.0*5.50*(-0.22)	= -26.6	kN
N'	= 75.3 / 1.5	= 50.2	kN

As 08 - F1-F2

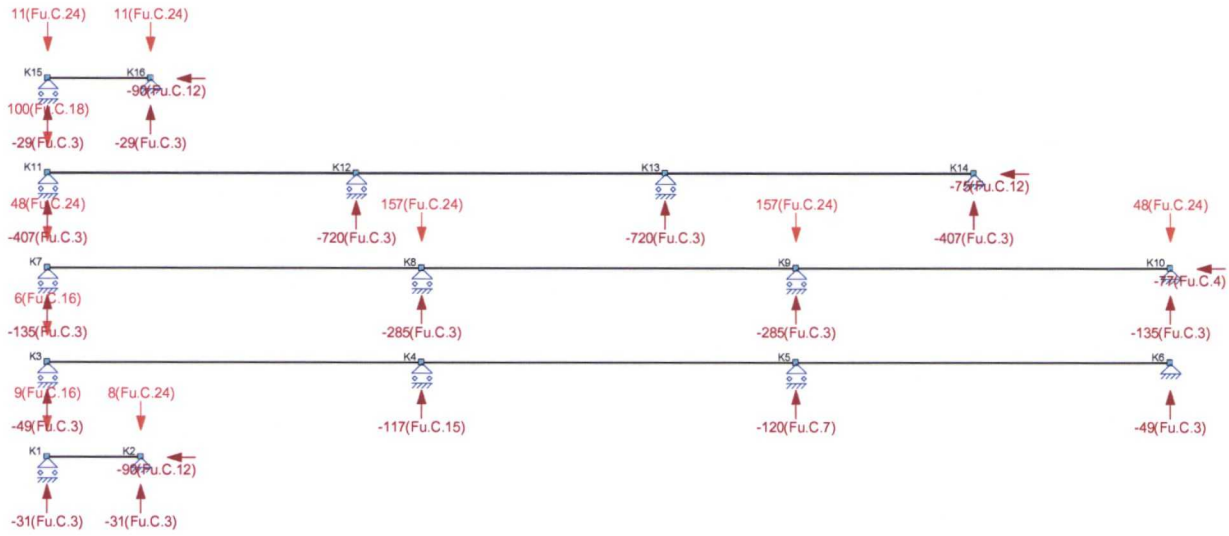
F_{EG}	= 10.0*1.00	= 10.0	kN
q_G	= 1.20*0.60	= 0.72	kN/m^1
F_G	= 10.0*2.75*0.55	= 15.1	kN
$F_{sn,1}$	= 2.75*10.0*0.56	= 15.4	kN
$F_{sn,2}$	= 2.75*(5.00*0.42 + 10.0*0.56)	= 21.2	kN
$F_{w,G}$	= 10.0*2.75*(-0.87)	= -23.9	kN
$F_{w,I}$	= 10.0*2.75*(+0.15)	= +4.13	kN
$F_{w,i+}$	= 10.0*2.75*(+0.15)	= +4.13	kN
$F_{w,i-}$	= 10.0*2.75*(-0.22)	= -6.05	kN
N'	= 90.0 / 1.5	= 60.0	kN

Controle sterkte en stabiliteit

Bovenflenzen tegen kip gesteund door stalen dakplaten, in elk dal en h.o.h. max. 300 mm.
Onderflenzen tegen kip gesteund door aansluitende profielen.

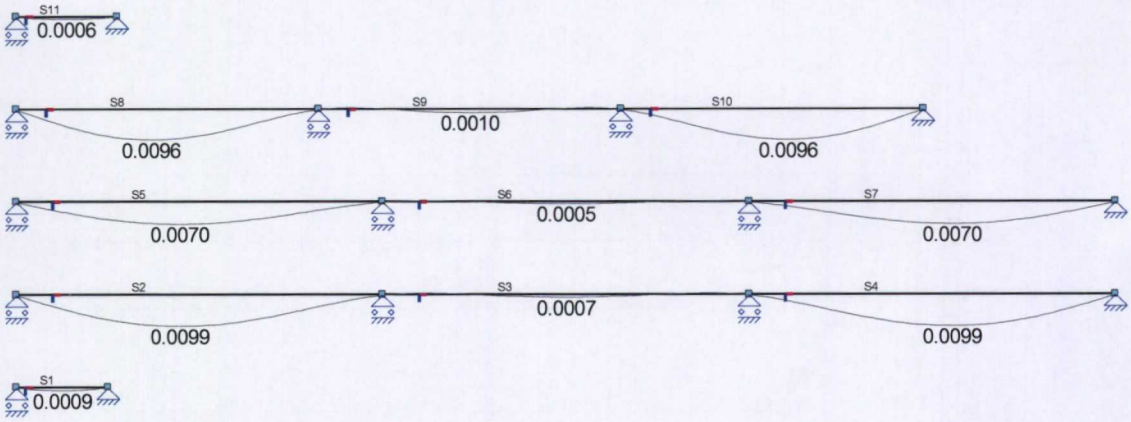


Rekenwaarden reactiekrachten



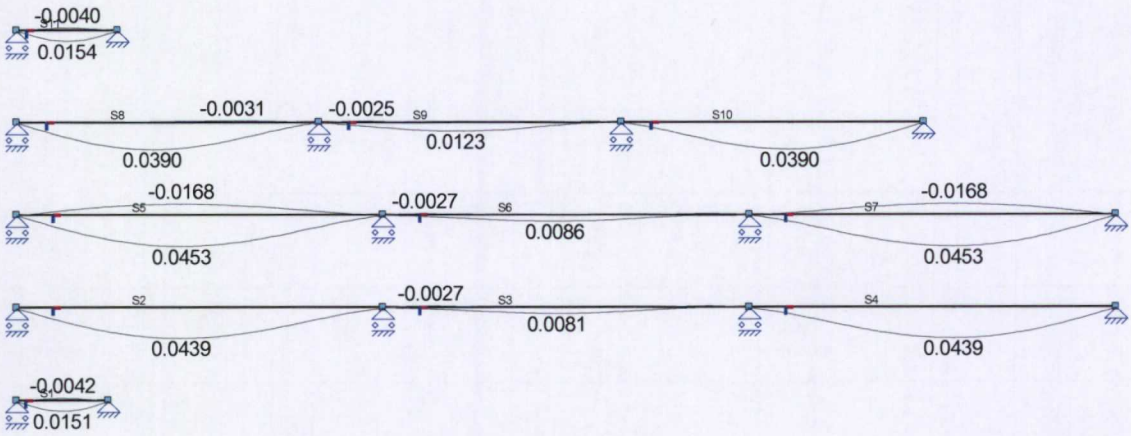
Overzicht doorbuiging en zegen

Initiële doorbuiging



w_{init}	= 9.9	mm	kies	w_{zeeg}	= 10	mm
	= 7.0	mm			= 10	mm
	= 9.6	mm			= 10	mm
	= 0.9	mm			= 0	mm

Totale doorbuiging



w_{bij}	= 39.0 - 9.9	= 30.3 mm
	= 45.3 - 7.0	= 38.3 mm
	= 43.9 - 9.6	= 34.3 mm
	= 15.1 - 0.9	= 14.2 mm

Controle doorbuiging

w_{tot}	= (39.0 - 10)	/ 20000l	= $^1/_{690}$ l	→ akkoord
	= (38.3 - 10)	/ 20000l	= $^1/_{707}$ l	→ akkoord
	= (34.3 - 10)	/ 16500l	= $^1/_{679}$ l	→ akkoord
	= (15.1 - 0)	/ 5000 l	= $^1/_{331}$ l	→ akkoord

w_{bij} = aan deze richtlijn wordt reeds voldaan bij de totale doorbuiging

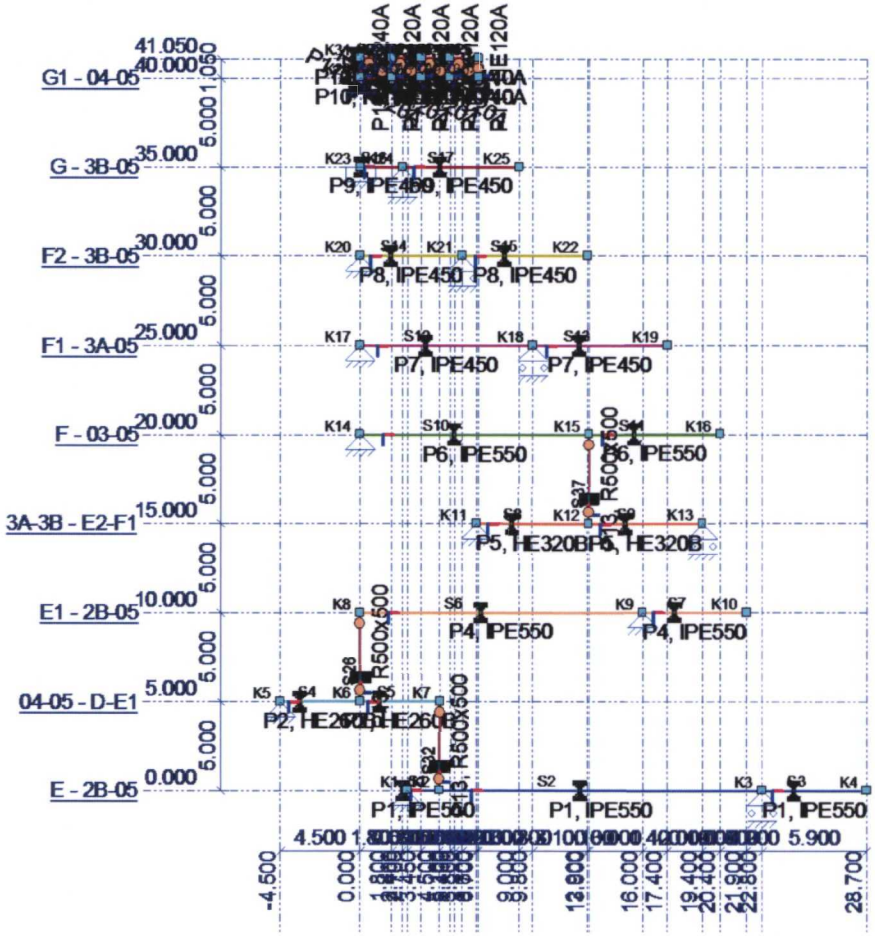
6.3. Stalen liggers luifel laag

Uitgangspunten
De maatgevende stalen ligger per profiel wordt gecontroleerd met behulp van MatrixFrame.
Ten behoeve van de controle bij windbelasting worden conservatief de representatieve krachten op de liggers als drukkracht gecombineerd conform hoofdstuk 5.2.2: Krachten op liggers.
Zie computerberekening pag. 95-135.

Luifel laag

As E - 2B-05	IPE550	(S355)
As 04-05 - D-E1	HEB260	(S355)
As E1 - 2B-05	IPE550	(S355)
As 3A-3B - E2-F1	HEB320	(S355)
As F - 03-05	IPE550	(S355)
As F1 - 3A-05	IPE450	
As F2 - 3B-05	IPE450	
As G - 3B-05	IPE450	
As G1 - 04-05	HEA140 + HEA120	

Overzicht geometrie



Belastingen

Algemeen

Eigen Gewicht conform MatrixFrame.

Sneeuwophoping l_s = 12.0 m tegen gebouw (2.80 kN/m^2).

As E - 02-05

q_G	= 4.75*0.55	= 2.61	kN/m^1
F_G	= 4.75*2.00*0.60	= 5.70	kN
q_{sn1}	= 4.75*0.56	= 2.66	kN/m^1
q_{sn2}	= 4.75*2.80	= 13.3	kN/m^1
$q_{w,p}$	= 4.75*(-0.90)	= -4.28	kN/m^1
	= 4.75*(+0.25)	= +1.19	kN/m^1
$q_{w,H}$	= 4.75*(-0.51)	= -2.42	kN/m^1
$q_{w,I}$	= 4.75*(+0.15)	= +0.71	kN/m^1
$q_{w,i+}$	= 4.75*(+0.15)	= +0.71	kN/m^1
$q_{w,i-}$	= 4.75*(-0.22)	= -1.05	kN/m^1

As 04-05 - D-E1

q_G	= 4.75*0.55	= 3.03	kN/m^1
$F_{G,1}$	= 1.90*5.00*0.60	= 5.70	kN
$F_{G,2}$	= 3.10*5.00*0.60 + 1.20*2.75*0.55	= 11.1	kN
q_{sn1}	= 2.75*0.56	= 1.54	kN/m^1
$F_{sn1,2}$	= 1.20*2.75*0.56	= 1.85	kN
$q_{w,p}$	= 2.75*(-0.90)	= -2.48	kN/m^1
	= 2.75*(+0.25)	= +0.69	kN/m^1
$F_{w,p,2}$	= 1.20*2.75*(-0.90)	= -2.97	kN
	= 1.20*2.75*(+0.25)	= +0.83	kN
$q_{w,H}$	= 2.75*(-0.51)	= -1.40	kN/m^1
$F_{w,H,2}$	= 1.20*2.75*(-0.51)	= -1.68	kN
$q_{w,I}$	= 2.75*(+0.15)	= +0.41	kN/m^1
$F_{w,I,2}$	= 1.20*2.75*(+0.15)	= +0.50	kN
$q_{w,i+}$	= 2.75*(+0.15)	= +0.41	kN/m^1
$F_{w,i+,2}$	= 1.20*2.75*(+0.15)	= +0.50	kN
$q_{w,i-}$	= 2.75*(-0.22)	= -0.61	kN/m^1
$F_{w,i-,2}$	= 1.20*2.75*(-0.22)	= -0.73	kN

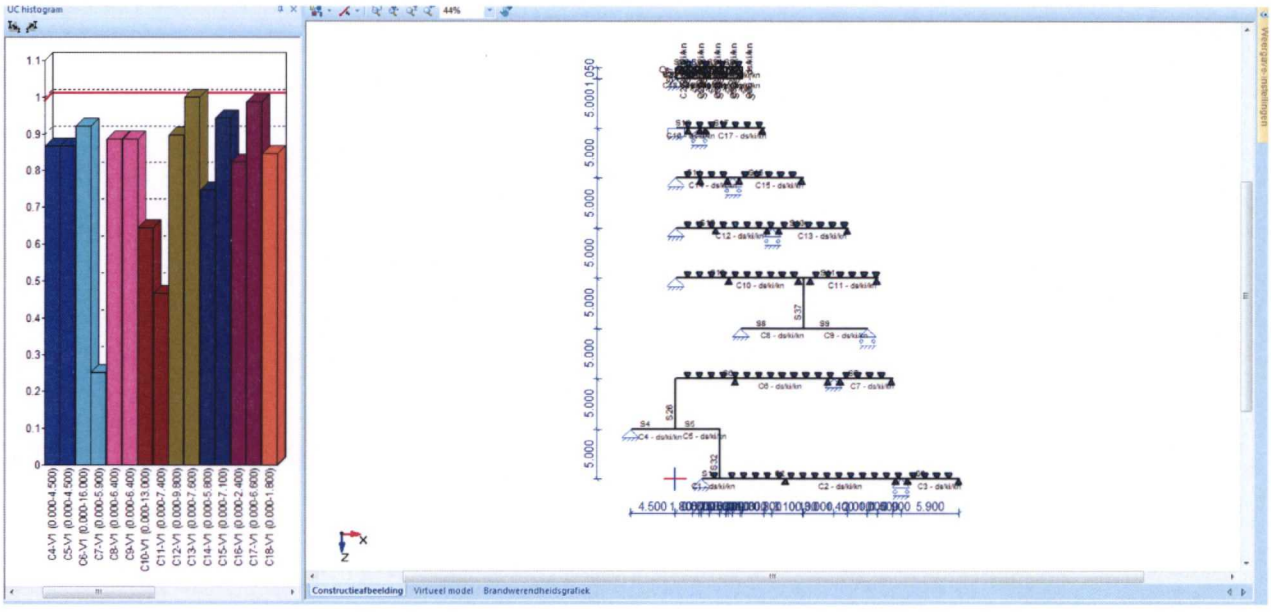
As E1 - 2B-05; F1 - 3A-05; F2 - 3B-05 en G - 3B-05

q_G	= 5.50*0.55	= 3.03	kN/m^1
F_G	= 5.50*2.00*0.60	= 6.60	kN
q_{sn1}	= 5.50*0.56	= 3.08	kN/m^1
q_{sn2}	= 5.50*2.80	= 15.4	kN/m^1
$q_{w,p}$	= 5.50*(-0.90)	= -4.95	kN/m^1
	= 5.50*(+0.25)	= +1.38	kN/m^1
$q_{w,H}$	= 5.50*(-0.51)	= -2.81	kN/m^1
$q_{w,I}$	= 5.50*(+0.15)	= +0.83	kN/m^1
$q_{w,i+}$	= 5.50*(+0.15)	= +0.83	kN/m^1
$q_{w,i-}$	= 5.50*(-0.22)	= -1.21	kN/m^1

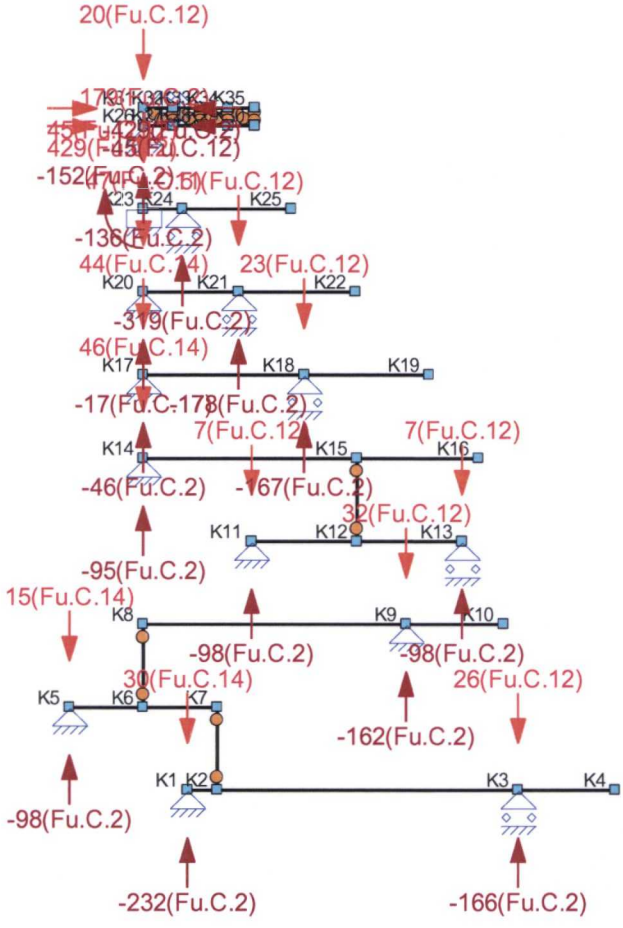
As 3A-3B - E2-F1

Op deze brugligger grijpen geen additionele belastingen naast de belastingen door ligger As F - 03-05.

Controle sterkte en stabiliteit

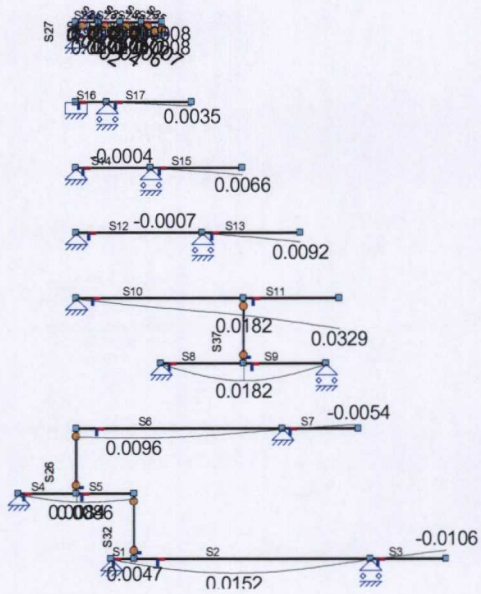


Rekenwaarden reactiekrachten



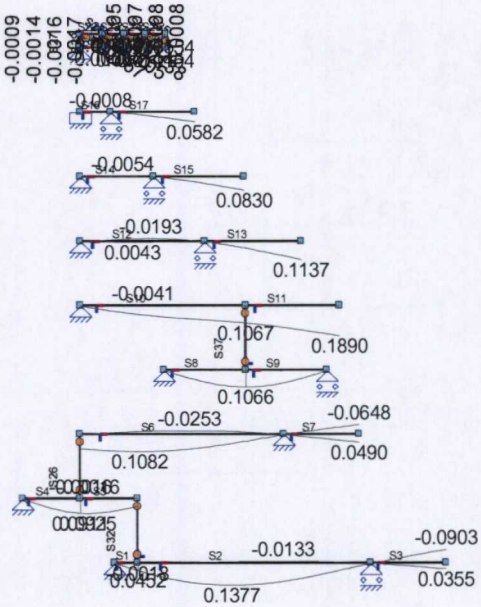
Overzicht doorbuiging en zegen

Initiële doorbuiging



w_{init} = 15.2 en 8.6 mm kies w_{zeeg} = mm
= 18.2 en 32.9 mm = en mm
= 9.2 mm = 10 mm

Totale doorbuiging



w_{bij} = 137.7 - 15.2 = 122.5 mm en 92.5 - 8.6 = mm
= 106.7 - 18.2 = 88.5 mm en 189.0 - 32.9 = 156.1 mm
= 113.7 - 9.2 = 104.5 mm

Controle doorbuiging

w_{tot} = (122.5 - 65) / 20100 l en (38.4 - 60) / 5900 l = $^1/_{350}$ l en $^1/_{l}$ → akkoord
= (88.5 -) / 6400 l en (156.1 - 60) / 7400 l = $^1/_{l}$ en $^1/_{l}$ → akkoord
= (104.5 -) / 7600 l = $^1/_{l}$ → akkoord

w_{bij} = aan deze richtlijn wordt reeds (bijna) voldaan bij de totale doorbuiging

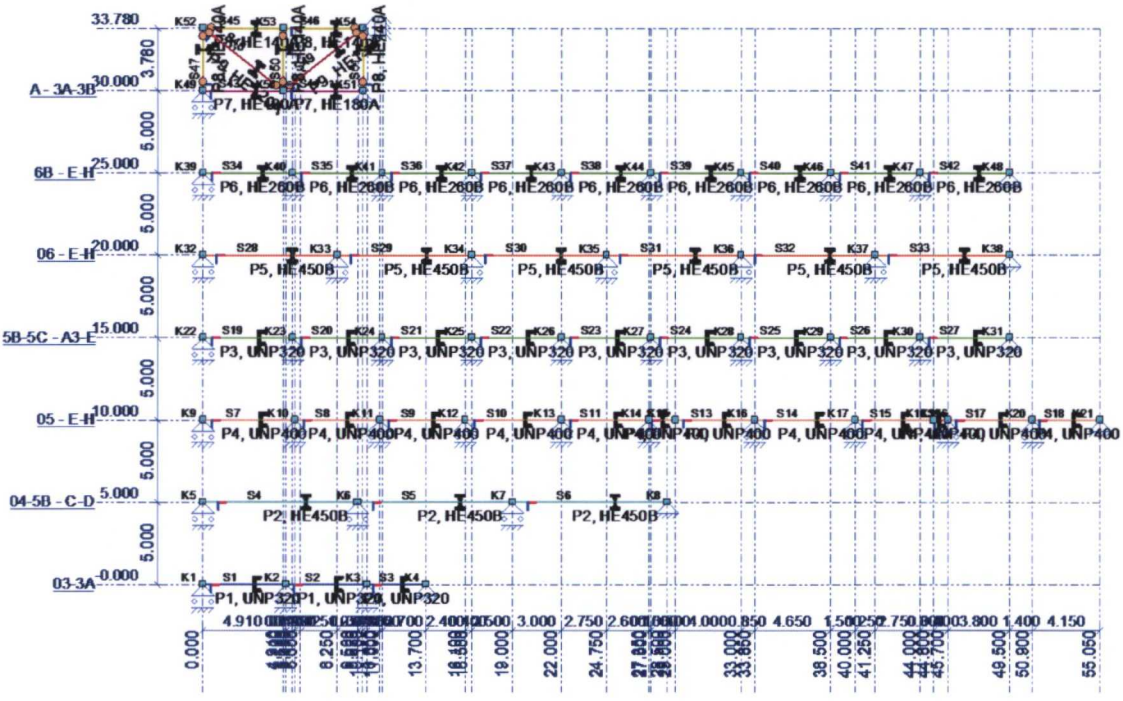
6.4. Stalen liggers eerste verdieping

Uitgangspunten
De maatgevende stalen ligger per profiel wordt gecontroleerd met behulp van MatrixFrame.
Zie computerberekening pag. 136-185.

Overzicht stalen liggers eerste verdieping

As 03-3A - B2-C1	UNP320 + ≠350 x 15	(S355)
As 04-5B - C-D	HEB450	(S355)
As 05 - E-H	UNP320 + ≠230 x 15	(S355)
As 05-5C - A3-E	UNP400 + ≠240 x 15	(S355)
As 06 - E-H	HEB450	(S355)
As 6B - E-H	HEB260 + ≠500 x 15	(S355)
As 04 - C2-D	HEA180	

Overzicht geometrie



Belastingen

Algemeen
Eigen Gewicht conform MatrixFrame.

As 03-3A - B2-C1

$\gamma_{EG,1}$	= (60.6 + 27.1) / 60.6	= 1.45	-
$\gamma_{EG,2}$	= (60.6 + 41.2) / 60.6	= 1.68	-
$q_{EG,1}$	= 1.00*4.30	= 4.30	kN/m^1
$q_{EG,2}$	= 2.00*4.30	= 8.60	kN/m^1
$q_{EG,3}$	= 5.40*4.30	= 23.2	kN/m^1
$q_{G,1}$	= 1.00*2.10	= 2.10	kN/m^1
$q_{G,2}$	= 2.00*2.10	= 4.20	kN/m^1
$q_{G,3}$	= 5.40*2.10	= 11.3	kN/m^1
$q_{Q,1}$	= 1.00*4.00	= 4.00	kN/m^1
$q_{Q,2}$	= 2.00*4.00	= 8.00	kN/m^1
$q_{Q,3}$	= 5.40*4.00	= 21.6	kN/m^1

As 04-5B - C-D

$q_{EG,1}$	= 6.40*4.30 + 0.80*10.0	= 35.5	kN/m^1
$q_{EG,2}$	= 6.40*4.30 + 1.80*10.0	= 45.5	kN/m^1
$q_{G,1}$	= 15.0*1.00 / 5.50 + 8.55*0.55 + 6.40*2.10 + 0.80*0.10	= 20.9	kN/m^1
$q_{G,2}$	= 15.0*1.00 / 5.50 + 8.55*0.55 + 6.40*2.10 + 1.80*0.10	= 21.0	kN/m^1
$q_{Q,1}$	= 7.20*5.00	= 36.0	kN/m^1
$q_{Q,2}$	= 8.20*5.00	= 41.0	kN/m^1

As 05 - E-H

γ_{EG}	= (60.6 + 27.1) / 60.6	= 1.45	-
q_{EG}	= 5.40*4.30	= 23.2	kN/m^1
q_G	= 15.0*1.00 / 5.50 + 8.55*0.55 + 5.40*2.10	= 18.8	kN/m^1
q_Q	= 5.40*5.00	= 27.0	kN/m^1

As 05-5C - A3-E

γ_{EG}	= (73.2 + 28.3) / 73.2	= 1.39	-
q_{EG}	= 5.00*4.30	= 21.5	kN/m^1
q_G	= 5.00*3.60	= 18.0	kN/m^1
q_Q	= 5.00*5.00	= 25.0	kN/m^1

As 06 - E-H

q_{EG}	= 10.5*3.85	= 40.4	kN/m^1
q_G	= 10.5*2.10	= 22.1	kN/m^1
q_Q	= 10.5*5.00	= 52.5	kN/m^1

As 6B - E-H

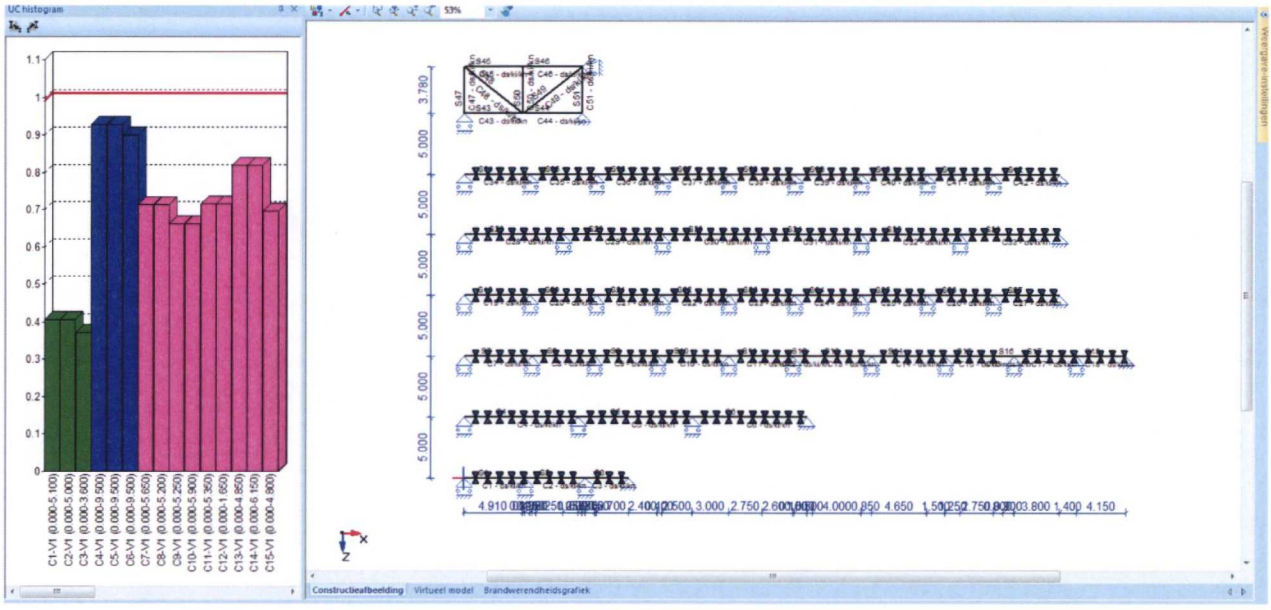
γ_{EG}	= (94.8 + 58.9) / 94.8	= 1.62	-
$q_{EG,1}$	= 5.70*3.85	= 21.9	kN/m^1
$q_{EG,2}$	= 6.80*3.85	= 26.2	kN/m^1
$q_{G,1}$	= 5.70*2.10	= 12.0	kN/m^1
$q_{G,2}$	= 6.80*2.10	= 14.3	kN/m^1
$q_{Q,1}$	= 5.70*5.00	= 28.5	kN/m^1
$q_{Q,2}$	= 6.80*5.00	= 34.0	kN/m^1

As 04 - C3-D

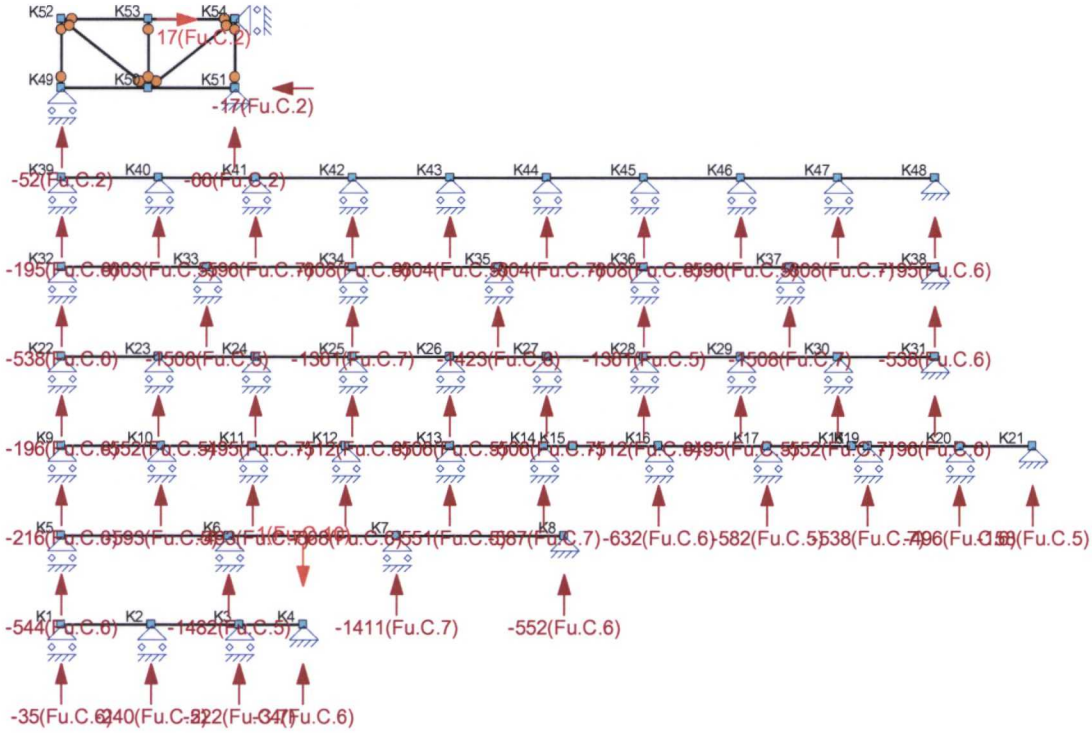
$q_{EG,V1}$	= 0.50*4.30	= 2.15	kN/m^1
$q_{G,Dak}$	= 2.75*0.55	= 1.51	kN/m^1
$q_{G,V1}$	= 0.50*2.10	= 1.05	kN/m^1
$q_{Q,Dak}$	= 2.75*1.21	= 3.33	kN/m^1
$q_{Q,V1}$	= 0.50*4.00	= 2.00	kN/m^1

Controle sterkte, stabiliteit en doorbuiging

Stalen liggers tegen kip en knik om de zwakke as gesteund door koppeling met de vloer.
Onderflenzen tegen kip gesteund door aansluitende profielen.

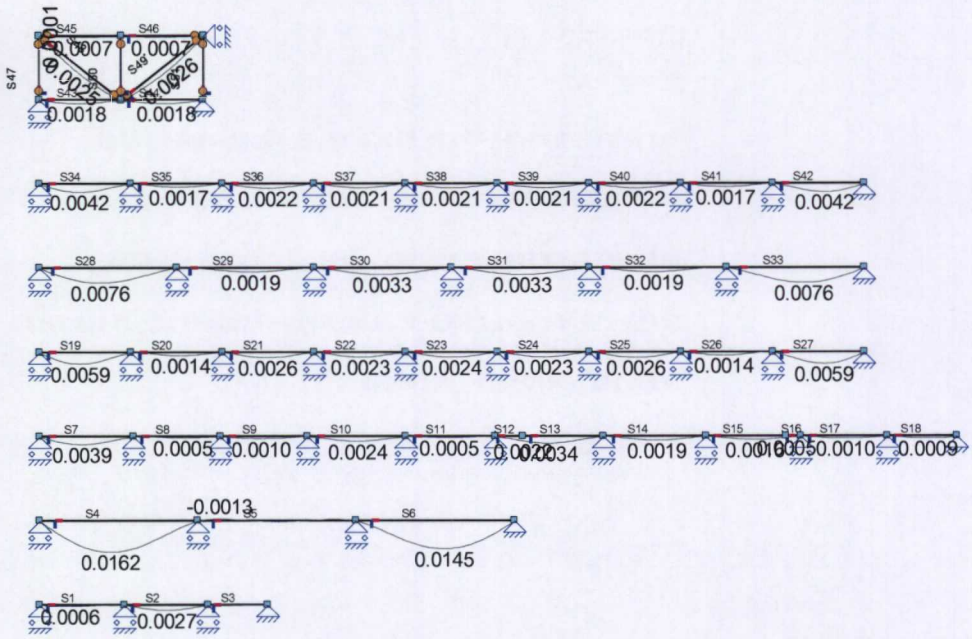


Rekenwaarden reactiekrachten

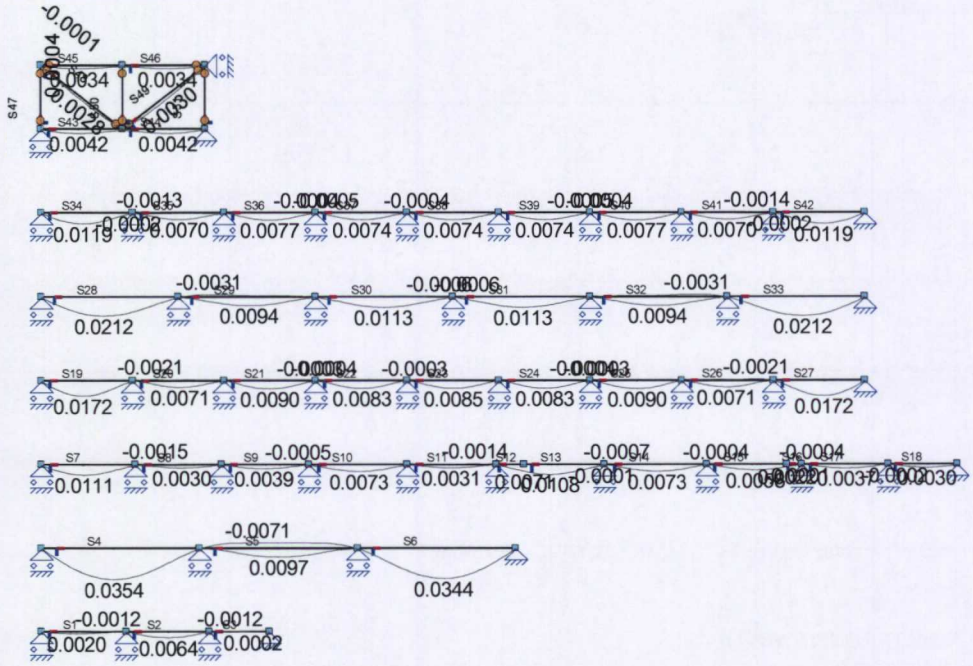


Overzicht doorbuiging

Initiële doorbuiging



Totale doorbuiging



Controle doorbuiging

De doorbuiging is reeds getoetst in de staalcontrole met behulp van MatrixFrame.
Deze voldoen aan de gestelde richtlijnen.

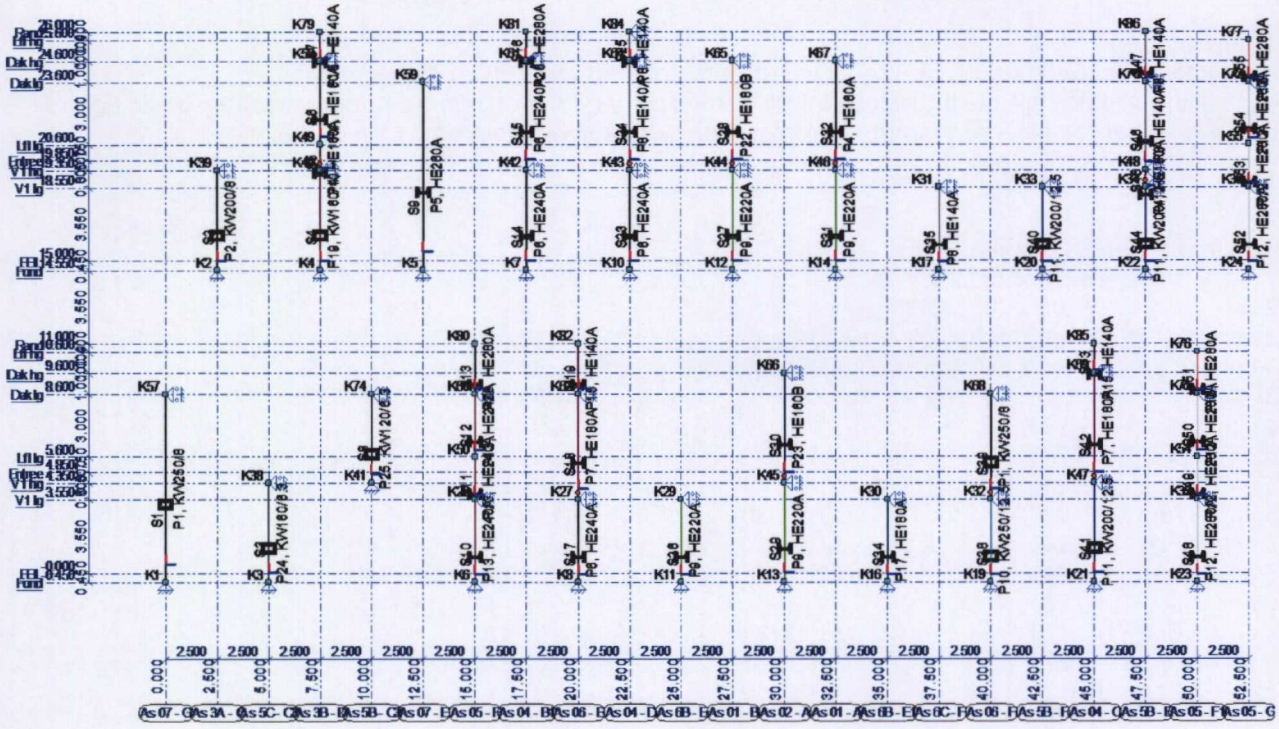
6.5. Stalen kolommen

Uitgangspunten
De maatgevende stalen kolom per profiel wordt gecontroleerd met behulp van MatrixFrame.
Ten behoeve van de controle bij windbelasting worden conservatief de representatieve krachten op de liggers als drukkracht gecombineerd conform hoofdstuk 5.3.3: Controle windbokken.
Zie computerberekening pag. 186-207.

Overzicht stalen kolommen

K1	KW250 x 250 x 8		As 07 - G
K2 on	KW200 x 200 x 8		As 3A - C
K3 on	KW160 x 160 x 6.3		As 5C - C3
K3 on / K8 op	KW160 x 160 x 8	/ HEA160	As 3B - D
K3 op	KW120 x 120 x 6.3		As 5B - C3
K4	HEA260		As 07 - E
K5 on / op	HEA240	/ HEA240	As 05 - F
K5 on / K5 op	HEA240	/ HEA240	As 04 - B1
K5 on / K7 op	HEA240	/ HEA180	As 06 - E
K5 on / K8 op	HEA240	/ HEA160	As 05 - E1
K5 on / K9 op	HEA240	/ HEA140	As 04 - D
K6 on	HEA220		As 6B - E
K6 on / K7 op	HEA220	/ HEB180	As 01 - B
K6 on / K14 op	HEA220	/ HEB160	As 02 - A
K6 on / K9 op	HEA220	/ HEA160	As 01 - A
K7 on	HEA180		As 6B - E1
K9 on	HEA140		As 6C - F
K11 on / K1 op	KW250 x 250 x 12.5	/ KW250 x 250 x 8	As 06 - F
K12 on	KW200 x 200 x 12.5		As 5B - F
K12 on / K7 op	KW200 x 200 x 12.5	/ HEA180	As 04 - C
K12 on / K9 op	KW200 x 200 x 12.5	/ HEA140	As 5B - E
K13 on / op	HEA280	/ HEA280	As 05 - F1
K13 on / op	HEA280	/ HEA280	As 05 - G

Overzicht geometrie



Belastingen

K1 on As 07 - G

$F_{G,Dak}$	= 1.1*(20.0*16.5*0.55 + 20.0*1.50 + 16.5*2.00)	= 269	kN
$F_{sn,Dak}$	= 1.1*(20.0*16.5*0.56)	= 203	kN

K2 on As 3A - C

$F_{G,V1}$	= 1.1*(4.30*6.75*5.95 + 4.30*1.54)	= 197	kN
$F_{Q,V1}$	= 1.1*4.30*6.75*5.00	= 160	kN

K3 on As 5C - C3

$F_{G,Dak}$	= 1.1*(5.50*0.25 + 5.50*2.00*0.60 + 9.00*5.00*0.55 + 5.00*1.25)	= 42.9	kN
$F_{G,V1}$	= 6.20*0.38 / 2 + 5.50*1.20*0.60 + 5.50*0.25 + 5.95*5.00*6.40 + 5.95*1.01	= 203	kN
$q_{G,Gvl}$	= 5.50*0.60	= 3.30	kN/m^1
$F_{sn,Dak}$	= 1.1*(9.00*5.00*0.56)	= 27.7	kN
$F_{Q,V1}$	= 5.95*5.00*5.00	= 149	kN
F_w	= 1.1*[9.00*5.00*(+0.15 + 0.22)]	= +18.3	kN
q_w	= 5.50*(+0.58 + 0.22)	= +4.40	kN/m^1

K3 on / K8 op As 3B - D

$F_{G,LHg}$	= 1.1*(4.80*0.25*3.60 / 5.50 + 5.50*3.30*0.60)	= 12.9	kN
$F_{G,Dak}$	= 1.1*(5.50*0.25 + 5.50*2.40*0.60 + 5.50*0.25)	= 11.8	kN
$F_{G,LLg}$	= 1.1*(2*5.70*0.25 + 10.8*5.70*0.60 + 10.8*6.50*0.55 + 2*6.50*0.79 + 10.8*2.67)	= 130	kN
$F_{G,V1}$	= 5.50*0.25 + 5.50*4.81*5.95 + 5.50*0.90*0.60	= 162	kN
$q_{G,Gvl}$	= 5.50*0.60	= 3.30	kN/m^1
$F_{sn,LHg}$	= 1.1*(5.50*3.30*0.56)	= 11.2	kN
$F_{sn,LLg}$	= 1.1*[6.50*(5.80*2.24 / 2 + 10.8*0.56)]	= 229	kN
$F_{Q,V1}$	= 5.50*4.81*5.00	= 132	kN
F_w	= 1.1*[5.50*3.30*(+0.59) + 10.8*6.50*(+0.59)]	= +57.3	kN
$q_{w,bw}$	= 3.70*(1.31)	= +4.83	kN/m^1
q_w	= 2.75*(+0.58 + 0.22) + 2.75*(+0.22)	= +2.81	kN/m^1

K3 op As 5B - C3

$F_{G,Dak}$	= 1.1*(5.50*0.25 + 5.50*2.00*0.60 + 9.00*5.00*0.55 + 5.00*1.25)	= 42.9	kN
$q_{G,Gvl}$	= 5.50*0.60	= 3.30	kN/m^1
$F_{sn,Dak}$	= 1.1*(9.00*5.00*0.56)	= 27.7	kN
F_w	= 1.1*[9.00*5.00*(+0.15 + 0.22)]	= +18.3	kN
q_w	= 5.50*(+0.58 + 0.22)	= +4.40	kN/m^1

K4 As 07 - E

$F_{G,Dak}$	= 1.1*[5.00*0.25 + 5.00*1.60*0.60 + 1.60*0.36 + 8.25*20.0*0.55 + 20.0*1.50 + 8.25*2.00 + 5.00*0.25]	= 160	kN
$q_{G,Gvl}$	= 5.00*0.60	= 3.00	kN/m^1
$F_{sn,Dak}$	= 1.1*[20.0*(5.00*0.84 / 2 + 8.25*0.56)]	= 147	kN
F_w	= windkracht uit stabiliteit: zie hoofdstuk 5.3	= +96.0	kN
q_w	= 5.00*(+0.58 + 0.22)	= +4.00	kN/m^1

K5 on / op As 05 - F

$F_{G,LHg}$	= 5.50*2.00*0.60 + 1.1*(2.50*5.50*0.55 + 3*5.50*0.25)	= 19.5	kN
$M_{G,LHg}$	= 2.50*6.60 + $^1/_2$*4.15*2.50^2	= 29.5	kNm
$F_{G,Dak}$	= 1.1*(10.0*5.50*0.55 + 5.50*0.36 + 10.0*1.25)	= 49.2	kN
$F_{G,LLg}$	= 1.1*(6.50*5.50*0.55 + 6.50*1.25)	= 30.6	kN
$F_{G,V1}$	= 5.50*5.00*5.95 + 5.50*0.88	= 168	kN
$q_{G,Gvl}$	= 5.50*0.60	= 3.30	kN/m^1
$F_{sn,LHg}$	= 1.1*(2.50*5.50*0.56)	= 8.47	kN
$M_{sn,LHg}$	= $^1/_2$*8.47*2.50^2	= 26.5	kNm
$F_{sn,Dak}$	= 1.1*[5.50*(5.00*0.84 / 2 + 10.0*0.56)]	= 46.6	kN
$F_{sn,LLg}$	= 1.1*6.50*5.50*0.56	= 22.0	kN
$F_{Q,V1}$	= 5.50*5.00*5.00	= 138	kN
F_w	= windkracht uit stabiliteit: zie hoofdstuk 5.3	= +96.0	kN
$q_{w,bw}$	= 5.50*(+1.31)	= +7.21	kN/m^1
q_w	= 5.50*(+0.22)	= +1.21	kN/m^1

K5 on / K5 op As 04 - B1

$F_{G,LHg}$	= 5.50*2.00*0.60 + 1.1*(2.00*5.50*0.55 + 3*5.50*0.25)	= 17.8	kN
$M_{G,LHg}$	= 2.00*6.60 + $^1/_2$*4.15*2.00^2	= 21.5	kNm
$F_{G,Dak}$	= 1.1*(5.00*0.25 + 2.40*5.00*0.60 + 2.40*0.25 + 5.50*5.00*0.55 + 5.00*0.25)	= 27.9	kN
$F_{G,V1}$	= 3.90*5.00*7.90 + 5.00*4.70*5.95 + 5.00*1.54	= 302	kN
$q_{G,Gvl}$	= 5.00*0.60	= 3.00	kN/m^1
$F_{sn,LHg}$	= 1.1*2.00*5.50*0.56	= 6.78	kN
$M_{sn,LHg}$	= $^1/_2$*6.78*2.00^2	= 13.6	kNm
$F_{sn,Dak}$	= 1.1*[5.00*(5.00*2.24 / 2 + 5.50*0.56)]	= 47.7	kN
$F_{Q,V1}$	= 3.90*5.00*5.00 + 5.00*4.70*5.00	= 215	kN
F_w	= windkracht uit stabiliteit: zie hoofdstuk 5.3	= +96.0	kN
$q_{w,bw}$	= 5.00*(+1.31)	= +6.55	kN/m^1
q_w	= 5.00*(+0.22)	= +1.10	kN/m^1

K5 on / K7 op As 06 - E

$F_{G,LHg}$	= 1.1*(7.00*0.25 + 5.00*0.40*0.60 + 2.00*2.00*0.60 + 2.00*5.00*0.55 + 2.40*0.25)	= 13.5	kN
$F_{G,Dak}$	= 1.1*(8.25*5.00*0.55 + 2.00*5.00*0.60 + 2.00*0.36 + 5.00*0.25)	= 33.8	kN
$F_{G,V1}$	= 2.00*5.00*6.40 + 2.00*1.01 + 4.125*10.0*5.95 + 5.00*0.36 + 10.0*1.81	= 331	kN
$q_{G,Gvl}$	= 7.00*0.60	= 4.20	kN/m^1
$F_{sn,LHg}$	= 1.1*(2.00*5.00*0.56)	= 6.16	kN
$F_{sn,Dak}$	= 1.1*[5.00*(5.00*2.24 / 2 + 8.25*0.56)]	= 56.2	kN
$F_{Q,V1}$	= 4.125*10.0*5.00	= 206	kN
F_w	= windkracht uit stabiliteit: zie hoofdstuk 5.3	= +96.0	kN
$q_{w,bw,y}$	= 5.00*(+1.31)	= +6.55	kN/m^1
$q_{w,y}$	= 5.00*(+0.58 - 0.15)	= +2.15	kN/m^1
$M_{w,bw,z,d}$	= $^1/_8$*[1.5*2.00*(+1.02)]*2.40^2	≈ +2	kNm
$M_{w,z,d}$	= $^1/_8$*[1.5*2.00*(+0.87 + 0.15)]*4.90^2	≈ +9	kNm

K5 on / K9 op As 04 - D

$F_{G,Dak}$	= 1.1*(5.00*2.75*0.55 + 7.75*0.36)	= 11.4	kN
$F_{G,LLg}$	= 1.1*(8.10*4.75*0.55 + 4.05*1.00 + 4.75*0.50)	= 30.3	kN
$F_{G,V1}$	= 6.50*0.36 + 5.00*1.00*5.95	= 32.1	kN
$q_{G,Gvl}$	= 7.75*0.60	= 4.65	kN/m^1
$F_{sn,Dak}$	= 1.1*(5.00*2.75*2.18)	= 33.0	kN
$F_{G,LLg}$	= 1.1*8.10*4.75*2.00	= 84.6	kN
$F_{Q,V1}$	= 5.00*1.00*5.00	= 25.0	kN
F_w	= 1.1*[(9.60 + 8.10)*4.75*(+0.59) + 5.00*2.75*(+0.15 + 0.22)]	= +60.2	kN
$q_{w,bw}$	= 2.50*(+1.52)	= +3.80	kN/m^1
q_w	= 2.5*(+0.58 + 0.22)	= +2.00	kN/m^1

K6 on As 6B - E

$F_{G,V1}$	= 5.60*2.75*5.95 + 2.75*1.54	= 95.9	kN
$F_{Q,V1}$	= 5.60*2.75*5.00	= 77.0	kN
q_w	= 5.00*(+0.58 + 0.22)	= +4.00	kN/m^1

K6 on / K7 op As 01 - B

$F_{G,Dak}$	= 1.1*(5.00*0.25 + 5.00*2.40*0.60 + 2.40*0.25 + 5.00*0.25 + 5.00*2.75*0.55 + 5.50*20.0*0.55 + 1.5*20.0*1.25 + 8.25*2.00)	= 145	kN
$F_{G,V1}$	= 4.65*5.00*5.95 + 5.00*0.88	= 143	kN
$q_{G,Gvl}$	= 5.00*0.60	= 3.00	kN/m^1
$F_{sn,Dak}$	= 1.1*[5.00*2.75*1.21 + 20.0*(2.25*0.79 + 3.25*0.56)]	= 97.5	kN
$F_{Q,V1}$	= 4.65*5.00*5.00	= 116	kN
F_w	= windkracht uit stabiliteit: zie hoofdstuk 5.3	= +96.0	kN
q_w	= 5.00*(+0.58 + 0.22)	= +4.00	kN/m^1

K6 on / K8 op As 02 - A

$F_{G,Dak}$	= 1.1*(5.50*0.25 + 5.50*2.40*0.60 + 2.40*0.25 + 5.50*0.25 + 10.0*5.50*0.55 + 10.0*1.25)	= 59.3	kN
$F_{G,V1}$	= 5.50*4.55*5.95 + 5.50*0.88	= 154	kN
$q_{G,Gvl}$	= 5.50*0.60	= 3.30	kN/m^1
$F_{sn,Dak}$	= 1.1*[5.50*(5.00*0.84 / 2 + 10.0*0.56)]	= 46.6	kN
$F_{Q,V1}$	= 5.50*4.55*5.00	= 125	kN
F_w	= windkracht uit stabiliteit: zie hoofdstuk 5.3	= +96.0	kN
q_w	= 5.50*(+0.58 + 0.22)	= +4.40	kN/m^1

K6 on / K9 op As 01 - A

$F_{G,Dak}$	= 1.1*(5.25*0.25 + 5.25*2.40*0.60 + 2.40*0.25 + 5.25*0.25 + 2.50*2.75*0.55)	= 16.1	kN
$F_{G,V1}$	= 2.50*4.65*5.95 + 5.25*0.88	= 71.0	kN
$q_{G,Gvl}$	= 5.25*0.60	= 3.15	kN/m^1
$F_{sn,Dak}$	= 1.1*(2.50*2.75*1.17)	= 8.84	kN
$F_{Q,V1}$	= 2.50*4.65*5.00	= 58.1	kN
F_w	= 1.1*[2.50*2.75*(+1.31 + 0.22)]	= +11.6	kN
$q_{w,y}$	= 2.50*(+0.58 - 0.15)	= +1.08	kN/m^1
$M_{w,z,d}$	= $^1/_8$*[1.5*2.75*(+0.87 + 0.15)]*4.97^2	≈ +13	kNm

K7 on As 6B - E1

$F_{G,V1}$	= 1.1*[(5.50*5.50 + 3.14*1.30)*5.95 + 5.50*1.54]	= 234	kN
$F_{Q,V1}$	= 1.1*(5.50*5.50 + 3.14*1.30)*5.00	= 189	kN

K9 on As 6C - F

$F_{G,V1}$	= 1.1*(5.50*1.30*5.95 + 5.50*0.88)	= 52.1	kN
$F_{Q,V1}$	= 1.1*5.50*1.30*5.00	= 39.3	kN

K11 on / K1 op As 06 - F

$F_{G,Dak}$	= 1.1*(16.5*20.0*0.55 + 20.0*1.25 + 16.5*2.16)	= 266	kN
$F_{G,V1}$	= 1.1*(8.25*10.6*5.95 + 8.25*1.81)	= 589	kN
$F_{sn,Dak}$	= 1.1*16.5*20.0*0.56	= 203	kN
$F_{Q,V1}$	= 1.1*8.25*10.6*5.00	= 481	kN

K12 on As 5B - F

$F_{G,V1}$	= 1.1*(8.25*10.0*5.95 + 8.25*1.81)	= 556	kN
$F_{Q,V1}$	= 1.1*8.25*10.0*5.00	= 454	kN

K12 on / K7 op As 04 - C

$F_{G,LHg}$	= 1.1*(5.00*0.25 + 3.25*5.00*0.55 + 5.00*0.40*0.60 + 0.40*0.25)	= 21.3	kN
$F_{G,Dak}$	= (5.00*0.25 + 5.00*2.00*0.60 + 5.00*2.75*0.55 + 5.00*0.25 + 5.50*20.0*0.55 + 20.0*1.25 + 5.50*2.16)	= 124	kN
$F_{G,V1}$	= 4.75*(1.90*10.1 + 5.60*5.95) + 4.75*1.91 + 4.75*5.00*5.95 + 5.00*1.54	= 408	kN
$q_{G,Gvl}$	= 5.00*0.60	= 3.00	kN/m^1
$F_{sn,LHg}$	= 1.1*3.25*5.00*0.56	= 10.0	kN
$F_{sn,Dak}$	= 1.1*[5.00*2.75*1.17 + 20.0*(2.75*0.75 + 2.75*0.56)]	= 96.9	kN
$F_{Q,V1}$	= 4.75*(1.90 + 5.60 + 5.00)*5.00	= 297	kN
F_w	= 1.1*[3.25*5.00*(+0.15 + 0.22) + (5.00*2.75 + 5.50*20.0)*(+0.15 + 0.22)]	= +57.0	kN
$q_{w,bw}$	= 5.00*(+1.31)	= +6.55	kN/m^1
q_w	= 5.00*(+0.22)	= +1.10	kN/m^1

K12 on / K9 op As 5B - E

$F_{G,LHg}$	= 1.1*(5.00*0.25 + 5.00*0.40*0.60 + 5.00*2.00*0.55 + 0.40*0.25)	= 8.86	kN
$F_{G,Dak}$	= 1.1*(5.00*0.25 + 5.00*2.00*0.60 + 5.00*2.75*0.55)	= 16.3	kN
$F_{G,V1,Hg}$	= 4.80*(1.50*10.1 + 6.00*8.45) + 4.80*1.91	= 325	kN
$F_{G,V1,Lg}$	= 4.125*10.0*5.95 + 4.125*1.81 + 5.00*0.36	= 255	kN
$q_{G,Gvl}$	= 5.00*0.60	= 3.00	kN/m^1
$F_{sn,LHg}$	= 1.1*(5.00*2.00*0.56)	= 6.16	kN
$F_{sn,Dak}$	= 1.1*(5.00*2.75*1.17)	= 17.7	kN
$F_{Q,V1,Hg}$	= 4.80*(1.50 + 6.00)*5.00	= 180	kN
$F_{Q,V1,Lg}$	= 4.125*10.0*5.00	= 206	kN
F_w	= 1.1*[5.00*2.00*(+0.59) + 5.00*2.75*(+0.22 + 0.15)]	= +12.1	kN
$q_{w,bw}$	= 5.00*(+1.31)	= +6.55	kN/m^1
q_w	= 5.00*(+0.58 + 0.22)	= +4.00	kN/m^1

K13 on / op As 05 - F1

$F_{G,LHg}$	= 1.1*(5.50*0.25 + 5.50*2.00*0.60 + 2.50*5.50*0.55 + 3*2.50*0.25)	= 19.2	kN
$M_{G,LHg}$	= 2.50*6.60 + $^1/_2$*4.15*2.50^2	= 29.5	kNm
$F_{G,Dak}$	= 1.1*(10.0*5.50*0.55 + 5.50*0.36 + 10.0*1.25)	= 54.1	kN
$F_{G,LLg}$	= 1.1*(4.90*5.50*0.55 + 4.90*0.79 + 5.50*0.25)	= 22.1	kN
$F_{G,V1}$	= 5.50*5.00*5.95 + 5.50*0.88	= 168	kN
$q_{G,Gvl}$	= 5.50*0.60	= 3.30	kN/m^1
$F_{sn,LHg}$	= 1.1*(5.50*5.50*0.56)	= 18.6	kN
$M_{sn,LHg}$	= $^1/_2$*3.39*2.50^2	= 10.6	kNm
$F_{sn,Dak}$	= 1.1*[5.50*(5.00*0.84 / 2 + 10.0*0.56)]	= 46.6	kN
$F_{sn,LLg}$	= 1.1*(4.90*5.50*2.34)	= 69.4	kN
$F_{Q,V1}$	= 5.50*5.00*5.00	= 138	kN
F_w	= windkracht uit stabiliteit: zie hoofdstuk 5.3	= +96.0	kN
M_w	= 1.1*{$^1/_2$*[5.50*(+0.51)]*5.80^2}	= +51.9	kNm
$q_{w,bw}$	= 5.50*(+1.31)	= +7.21	kN/m^1
q_w	= 5.50*(+0.58 + 0.22)	= +4.40	kN/m^1

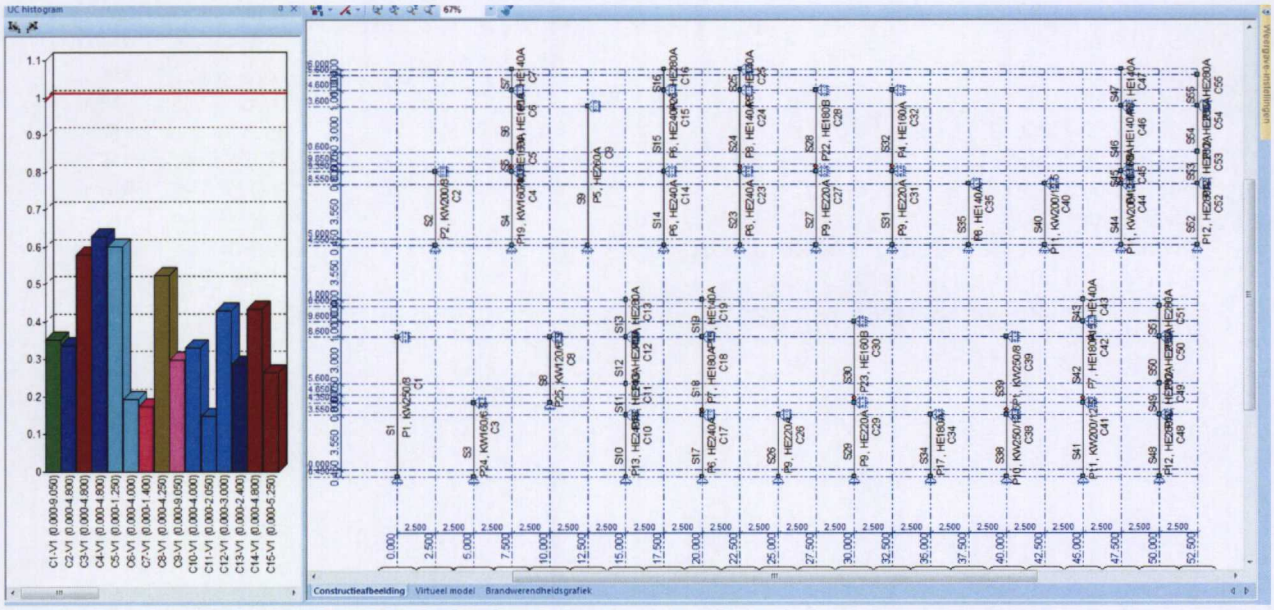
K13 on / op As 05 - G1

$F_{G,LHg}$	= 1.1*(5.50*0.25 + 5.50*2.00*0.60 + 2.50*5.50*0.55 + 3*2.50*0.25)	= 19.2	kN
$M_{G,LHg}$	= 2.50*6.60 + $^1/_2$*4.15*2.50^2	= 29.5	kNm
$F_{G,Dak}$	= 1.1*(10.0*5.50*0.55 + 5.50*0.36 + 10.0*1.25)	= 49.2	kN
$F_{G,LLg}$	= 1.1*(5.50*0.25 + 5.50*2.00*0.60 + 6.75*5.50*0.55 + 6.75*0.75)	= 36.9	kN
$M_{G,LLg}$	= 1.1*(6.75*7.98 + $^1/_2$*3.78*6.75^2)	= 154	kNm
$F_{G,V1}$	= 5.50*5.00*5.95 + 5.50*0.88	= 168	kN
$q_{G,Gvl}$	= 5.50*0.60	= 3.30	kN/m^1
$F_{sn,LHg}$	= 1.1*(5.50*5.50*0.56)	= 18.6	kN
$M_{sn,LHg}$	= $^1/_2$*3.39*2.50^2	= 10.6	kNm
$F_{sn,Dak}$	= 1.1*[5.50*(5.00*0.84 / 2 + 10.0*0.56)]	= 46.6	kN
$F_{sn,LLg}$	= 1.1*(6.75*5.50*2.17)	= 88.7	kN
$M_{sn,LLg}$	= 1.1*[5.50*($^1/_2$*0.56 + $^1/_6$*2.24)*6.75^2]	= 180	kNm
$F_{Q,V1}$	= 5.50*5.00*5.00	= 138	kN
F_w	= windkracht uit stabiliteit: zie hoofdstuk 5.3	= +96.0	kN
$M_{w,Hg}$	= 1.1*{$^1/_2$*[5.50*(+0.51)]*5.80^2}	= +51.9	kNm
$M_{w,Lg}$	= 1.1*{$^1/_2$*[5.50*(+0.51)]*6.80^2}	= +71.4	kNm
$q_{w,bw}$	= 5.50*(+1.31)	= +7.21	kN/m^1
q_w	= 5.50*(+0.58 + 0.22)	= +4.40	kN/m^1

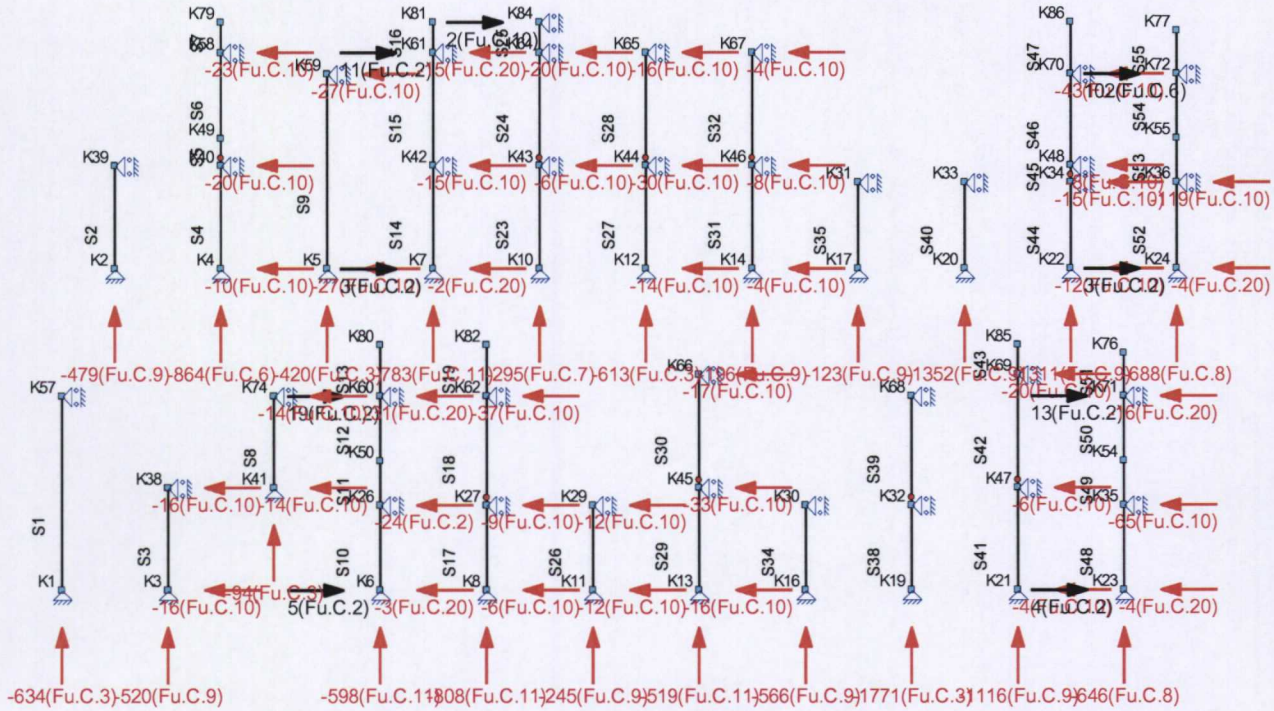
Controle sterkte en stabiliteit

Additionele momenten (rekenwaarde)

As 06 - E	C17 en C18 = 9 kNm; C19 = 2 kNm
As 01 - A	C31 en C32 = 13 kNm;
As 3B - F1	C33 = 3 kNm
As 05 - G	C56; C57 en C58 = 26 kNm



Reactiekrachten ten behoeve van fundering



$R_{V,max,d}$ = 1771 kN

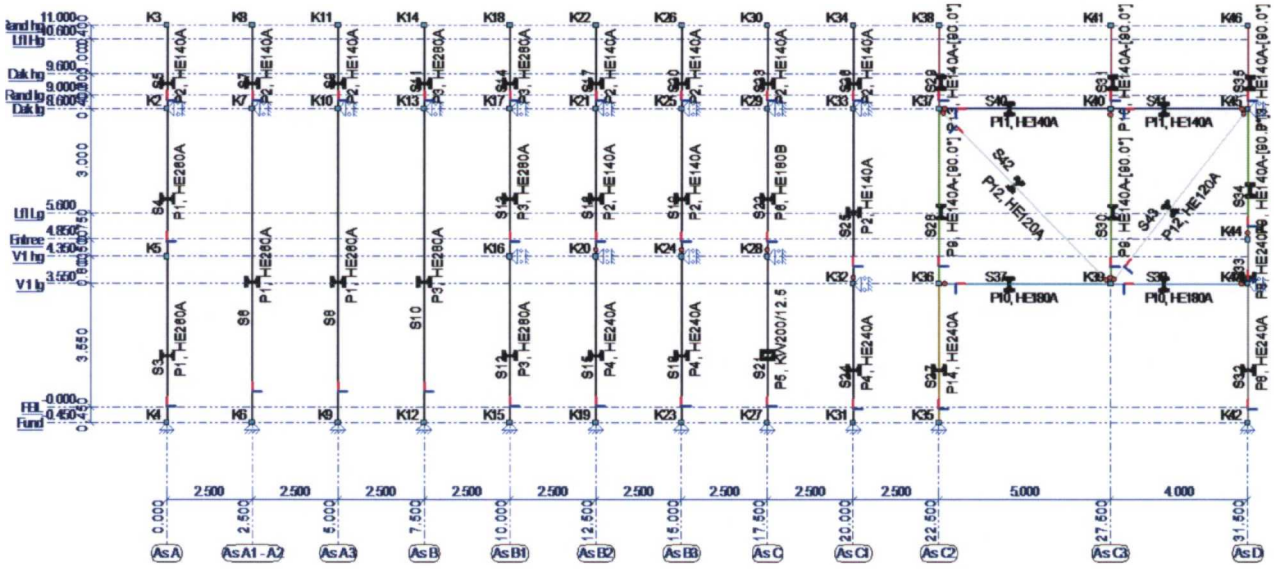
$R_{H,max,d}$ = 65 kN

6.6. Stalen kolommen As 04

Uitgangspunten

Zie computerberekening pag. 208-255.

Overzicht geometrie



Belastingen kolommen As 04

<u>As A</u>

Dak	F_G	= 5.25*(2*0.25 + 0.40*0.60) + 2.50*2.75*0.55	= 9.56	kN
	F_{sn}	= 2.50*2.75*1.40	= 9.63	kN
V+1	F_G	= 5.25*4.25*0.60	= 12.6	kN
V0	F_G	= 5.25*4.80*0.60	= 15.1	kN
Wind	F_w	= ten gevolge van stabiliteit	= 90.0	kN
	$q_{w,y}$	= 2.50*(0.36 - 0.15)	= 0.53	kN/m^1
	$q_{w,z}$	= 2.75*(0.87 + 0.15)	= 2.81	kN/m^1

<u>As A1 - A2</u>

Dak	F_G	= 5.00*(2*0.25 + 0.40*0.60) + 5.00*2.75*0.55	= 11.3	kN
	F_{sn}	= 5.00*2.75*1.40	= 19.3	kN
V+1	F_G	= 5.00*4.25*0.60	= 12.8	kN
V0	F_G	= 5.00*4.80*0.60	= 14.4	kN
Wind	F_w	= ten gevolge van stabiliteit	= 90.0	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1

<u>As A3</u>

Dak	F_G	= 5.00*(2*0.25 + 0.40*0.60) + 5.00*2.75*0.55	= 11.3	kN
	F_{sn}	= 5.00*2.75*1.40	= 19.3	kN
V+1	F_G	= 3.00*5.00*6.40 + 5.00*4.25*0.60	= 103	kN
	F_Q	= 3.00*5.00*4.00	= 60.0	kN
V0	F_G	= 5.00*4.80*0.60	= 14.4	kN
Wind	F_w	= ten gevolge van stabiliteit	= 90.0	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1

As B				
LHg	F_G	= 5.00*1.20*0.55 + (2*5.00 + 2.00)*0.25 + 5.00*2.00*0.60	= 12.3	kN
	M_G	= $^1/_2$*3.30*1.20^2 + 9.00*1.20	= 13.2	kNm
	F_{sn}	= 5.00*1.20*1.40	= 8.40	kN
	M_{sn}	= $^1/_2$*(5.00*1.40)*1.20^2	= 5.40	kNm
Dak	F_G	= 5.25*(2*0.25 + 0.40*0.60 + 8.25*1.75) + 1.1*8.25*10.0*0.55	= 130	kN
	F_{sn}	= 1.1*8.25*10.0*0.82	= 74.4	kN
V+1	F_G	= ($^1/_2$*5.00*5.50)*6.40 + 5.00*4.25*0.60	= 100	kN
	F_Q	= $^1/_2$*5.00*5.50*4.00	= 55.0	kN
V0	F_G	= 5.00*4.80*0.60	= 14.4	kN
Wind	F_w	= ten gevolge van stabiliteit	= 90.0	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1
As B1				
LHg	F_G	= 5.00*2.00*0.55 + (2*5.00 + 2.00)*0.25 + 5.00*2.00*0.60	= 14.5	kN
	M_G	= $^1/_2$*3.30*2.00^2 + 9.00*2.00	= 24.6	kNm
	F_{sn}	= 5.00*3.30*1.40	= 23.1	kN
	M_{sn}	= $^1/_2$*(5.00*1.40)*2.00^2	= 14.0	kNm
Dak	F_G	= 5.00*(2*0.25 + 0.40*0.60) + 5.00*2.75*0.55	= 11.3	kN
	F_{sn}	= 5.00*2.75*1.40	= 19.3	kN
V+1	F_G	= ($^1/_6$*5.00*2.50 + $^1/_2$*11.0*4.25)*6.40 + $^1/_2$*11.0*1.00 + 2.50*4.75*5.95 + 5.00*4.25*0.60	= 251	kN
	F_Q	= ($^1/_6$*5.00*2.50 + $^1/_2$*11.0*4.25 + 2.50*4.75)*4.00	= 149	kN
V0	F_G	= 5.00*4.80*0.60	= 14.4	kN
Wind	F_w	= ten gevolge van stabiliteit	= 90.0	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1
As B2				
LHg	F_G	= 5.00*2.00*0.55 + (2*5.00 + 2.00)*0.25 + 5.00*2.00*0.60	= 14.5	kN
	F_{sn}	= 5.00*3.30*1.40	= 23.1	kN
Dak	F_G	= 5.00*(2*0.25 + 0.40*0.60) + 5.00*2.75*0.55	= 11.3	kN
	F_{sn}	= 5.00*2.75*1.40	= 19.3	kN
V+1	F_G	= 5.00*1.25*6.40 + 5.00*4.75*5.95 + 5.00*4.25*0.60 + $^1/_2$*[5.00*3.20*0.55 + (2*5.00 + 2.00)*0.25 + 5.00*2.00*0.60]	= 203	kN
	F_Q	= (5.00*1.25 + 5.00*4.75)*4.00	= 120	kN
V0	F_G	= 5.00*4.80*0.60	= 14.4	kN
Wind	F_w	= (5.00*2.00 + 5.00*2.75)*(0.22 + 0.15)	= 8.79	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1
As B3				
LHg	F_G	= 5.00*2.00*0.55	= 5.50	kN
	F_{sn}	= 5.00*2.00*1.40	= 14.0	kN
Dak	F_G	= 5.00*(2*0.25 + 0.40*0.60) + 5.00*2.75*0.55	= 11.3	kN
	F_{sn}	= 5.00*2.75*1.40	= 19.3	kN
V+1	F_G	= $^5/_6$*5.00*2.50*6.40 + 2.50*4.75*5.95 + 5.00*4.25*0.60	= 150	kN
	F_Q	= ($^5/_6$*5.00*2.50 + 2.50*4.75)*4.00	= 89.2	kN
V0	F_G	= 5.00*4.80*0.60	= 14.4	kN
Wind	F_w	= ten gevolge van stabiliteit	= 90.0	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1

<u>As C</u>

LHg	F_G	= 5.00*3.25*0.55	= 8.94	kN
	F_{sn}	= 5.00*3.25*1.40	= 22.8	kN
Dak	F_G	= 5.25*(2*0.25 + 0.40*0.60 + 8.25*1.75) + 1.1*8.25*10.0*0.55	= 130	kN
	F_{sn}	= 1.1*8.25*10.0*0.82	= 74.4	kN
V+1	F_G	= 5.00*4.75*5.95 + 4.75*4.75*6.40 + 4.75*1.00 + 5.00*4.25*0.60 + $^1/_2$*[5.00*4.45*0.55 + (2*5.00 + 2.00)*0.25 + 5.00*2.00*0.60]	= 134	kN
	F_Q	= (5.00*4.75 + 4.75*4.75)*4.00	= 185	kN
V0	F_G	= 5.00*4.80*0.60	= 14.4	kN
Wind	F_w	= ten gevolge van stabiliteit	= 90.0	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1

<u>As C1</u>

LHg	F_G	= 5.00*4.90*0.55	= 13.5	kN
	F_{sn}	= 5.00*4.90*1.40	= 34.3	kN
Dak	F_G	= 5.00*(2*0.25 + 0.40*0.60) + 5.00*2.75*0.55	= 11.3	kN
	F_{sn}	= 5.00*2.75*1.40	= 19.3	kN
V+1	F_G	= 5.00*3.05*5.95 + 5.00*4.25*0.60	= 103	kN

F_Q = 5.00*3.05*4.00 = 61.0 kN

V0	F_G	= 5.00*4.80*0.60	= 14.4	kN
Wind	F_w	= (5.00*4.90 + 5.00*2.75)*(0.22 + 0.15)	= 14.2	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1

<u>As C2</u>

LHg	F_G	= 5.00*7.00*0.55	= 19.3	kN
	F_{sn}	= 5.00*7.00*1.40	= 49.0	kN
Dak	F_G	= 5.00*(2*0.25 + 0.40*0.60) + 5.00*2.75*0.55	= 11.3	kN
	F_{sn}	= 5.00*2.75*1.40	= 19.3	kN
V+1	F_G	= (3.00*3.05 + $^1/_4$*4.55*9.60)*5.95 + 2.50*4.25*0.60	= 126	kN
	F_Q	= (3.00*3.05 + $^1/_4$*4.55*9.60)*4.00	= 80.3	kN
V0	F_G	= 5.00*4.80*0.60	= 14.4	kN
Wind	F_w	= (5.00*7.00 + 5.00*2.75)*(0.22 + 0.15)	= 18.1	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1

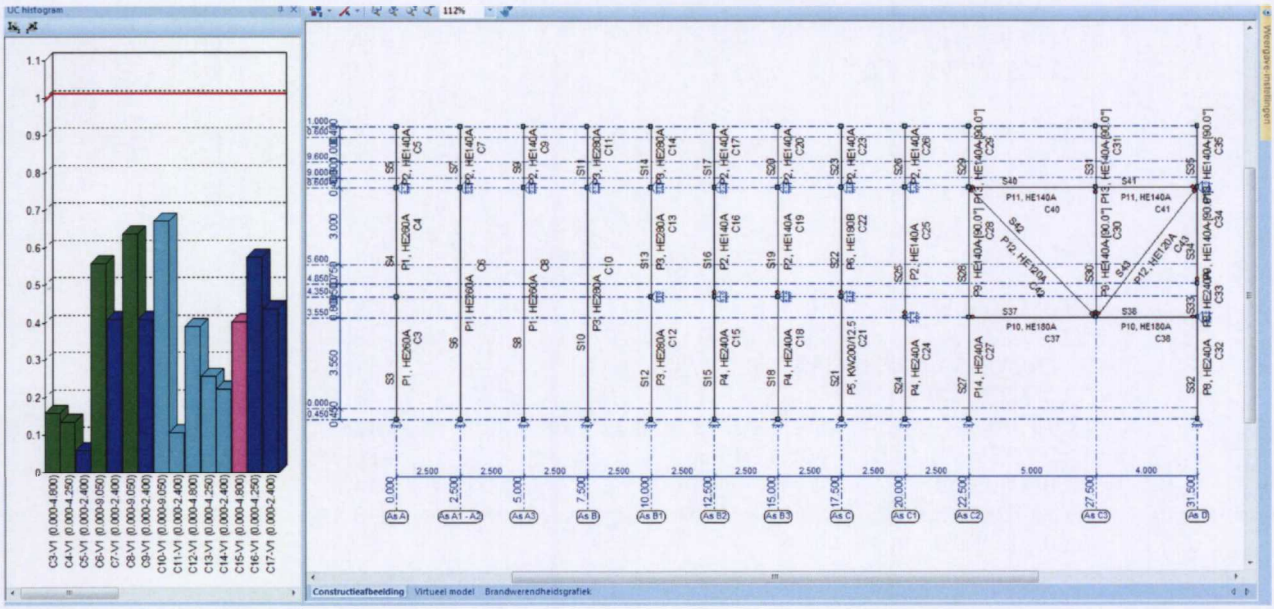
<u>As C3</u>

LHg	F_G	= 5.00*8.60*0.55	= 23.7	kN
	F_{sn}	= 5.00*8.60*1.40	= 60.2	kN
Dak	F_G	= 5.00*(2*0.25 + 0.40*0.60) + 5.00*2.75*0.55	= 11.3	kN
	F_{sn}	= 5.00*2.75*1.40	= 19.3	kN
V+1	F_G	= 5.00*4.25*0.60	= 12.8	kN
	$q_{w,y}$	= 2.50*(0.36 - 0.15)	= 0.53	kN/m^1
Wind	F_w	= (5.00*8.60 + 5.00*2.75)*(0.22 + 0.15)	= 21.0	kN
	$q_{w,y}$	= 5.00*(0.58 + 0.15)	= 3.65	kN/m^1

As D

LHg	F_G	= 4.50*9.60*0.55	= 23.8	kN
	F_{sn}	= 4.50*9.60*1.40	= 60.5	kN
Dak	F_G	= 5.25*(2*0.25 + 0.40*0.60) + 2.50*2.75*0.55	= 9.56	kN
	F_{sn}	= 2.50*2.75*1.40	= 9.63	kN
LLg	F_G	= (2.75*2.00 + $^1/_2$*11.0*4.75)*0.55 + $^1/_2$*11.0*1.50	= 25.6	kN
	F_{sn}	= (2.75*2.00 + $^1/_2$*11.0*4.75)*1.40	= 44.3	kN
V+1	F_G	= 5.25*4.25*0.60	= 12.6	kN
V0	F_G	= 5.25*4.80*0.60	= 15.1	kN
Wind	F_w	= (4.50*9.60 + 2.50*2.75 + 2.75*2.00 + $^1/_2$*11.0*4.75)*(0.22 + .15)	= 30.2	kN
	$q_{w,y}$	= 2.50*(0.36 - 0.15)	= 0.53	kN/m^1
	$q_{w,z}$	= 2.75*(0.87 + 0.15)	= 2.81	kN/m^1

Controle sterkte en stabiliteit



Overzicht reactiekrachten t.b.v. fundering

6.7. Overige stalen liggers en kolommen

6.7.1 As 2A - B1 Stalen ligger loopbrug UNP320 + ≠150 x 15 mm; S355

Belastingen

q_G	= 0.88 + 0.35*6.40	= 3.12	kN/m^1
F_G	= $^1/_2$*2*6.00*0.65 + $^1/_4$*6.00*1.40*6.40	= 17.3	kN
q_Q	= 0.35*5.00	= 1.75	kN/m^1
F_Q	= $^1/_4$*6.00*1.40*5.00	= 10.5	kN
q_d	= 1.2*3.12 + 1.5*1.75	= 6.37	kN/m^1
F_d	= 1.2*17.3 + 1.5*10.5	= 36.5	kN

Controle sterkte

M_{Ed}	= $^1/_8$*65.7*4.70^2	= 181	kNm
$W_{y,rqd}$	= (181*10^6 / 355)*10^{-3}	= 679	cm^3

Controle doorbuiging

u_{toel}	= $^1/_{250}$*8900	= 35.6	mm
$I_{y,rqd}$	= [5*9.49*8900^4 / (384*210000*35.6)]*10^{-4} + [27800*2900*(8900^2 - 2900^2)$^{3/2}$ / 16*210000*35.6*8900)]*10^{-4}	= 14881	cm^4

Kies profiel

UNP320 + ≠150 x 15 mm (S355) (W_y = 793 cm^3 en I_y = 15736 cm^4)

6.7.2 As 2A - B3-C Stalen ligger restaurant HEB260 + ≠500 x 15 mm; S355

Belastingen

q_G	= 1.54 + 7.65*6.40	= 50.5	kN/m^1
q_Q	= 7.65*5.00	= 38.3	kN/m^1
q_d	= 1.2*50.5 + 1.5*38.3	= 118	kN/m^1

Controle sterkte

M_{Ed}	= $^1/_{10}$*118*5.59^2	= 369	kNm
$W_{y,rqd}$	= (369*10^6 / 355)*10^{-3}	= 1039	cm^3

Controle doorbuiging

u_{toel}	= $^1/_{250}$*5590	= 22.4	mm
$I_{y,rqd}$	= [0.0068*88.8*5590^4 / (210000*22.4)]*10^{-4}	= 12534	cm^4

Kies profiel

HEB260 + ≠500 x 15 mm (S355) (W_y = 1287 cm^3 en I_y = 23600 cm^4)

6.7.3 As 06-6A - E-E1 Stalen ligger naast trap UNP320 + ≠230 x 15 mm; S355

Belastingen

q_G	= 0.88 + 4.25*6.40	= 28.1	kN/m^1
q_Q	= 4.25*5.00	= 21.3	kN/m^1
q_d	= 1.2*28.1 + 1.5*21.3	= 65.7	kN/m^1

Controle sterkte

M_{Ed}	= $^1/_8$*65.7*4.70^2	= 181	kNm
$W_{y,rqd}$	= (181*10^6 / 355)*10^{-3}	= 679	cm^3

Controle doorbuiging

u_{toel}	= $^1/_{250}$*4700	= 18.8	mm
$I_{y,rqd}$	= [5*49.4*4700^4 / (384*210000*18.8)]*10^{-4}	= 7950	cm^4

Kies profiel

UNP320 + ≠230 x 15 mm (S355) (W_y = 825 cm^3 en I_y = 17520 cm^4)

6.7.4 As 6A-6B - E2-F Stalen ligger bij liftkern HEA140

Belastingen

q_G	= 0.25 + 3.90*6.40	= 25.2	kN/m^1
q_Q	= 3.90*5.00	= 19.5	kN/m^1
q_d	= 1.2*25.2 + 1.5*19.5	= 59.5	kN/m^1

Controle sterkte

M_{Ed}	= $^1/_8$*59.5*1.65^2	= 20.2	kNm
$W_{y,rqd}$	= (20.2*10^6 / 235)*10^{-3}	= 86.2	cm^3

Controle doorbuiging

u_{toel}	= $^1/_{250}$*1650	= 6.60	mm
$I_{y,rqd}$	= [5*44.7*1650^4 / (384*210000*6.60)]*10^{-4}	= 311	cm^4

Kies profiel

HEA140 (W_y = 220 cm^3 en I_y = 1673 cm^4)

6.7.5 As 07 - E1-F1 Stalen ligger dj area UNP320 + ≠230 x 15 mm; S355

Belastingen

q_G	= 0.88 + 3.30*6.40	= 22.0	kN/m^1
q_Q	= 3.30*5.00	= 16.5	kN/m^1
q_d	= 1.2*22.0 + 1.5*16.5	= 51.2	kN/m^1

Controle sterkte

M_{Ed}	= $^1/_8$*51.2*5.65^2	= 204	kNm
$W_{y,rqd}$	= (204*10^6 / 355)*10^{-3}	= 575	cm^3

Controle doorbuiging

u_{toel}	= $^1/_{250}$*5650	= 22.6	mm
$I_{y,rqd}$	= [5*38.5*5650^4 / (384*210000*22.6)]*10^{-4}	= 10764	cm^4

Kies profiel

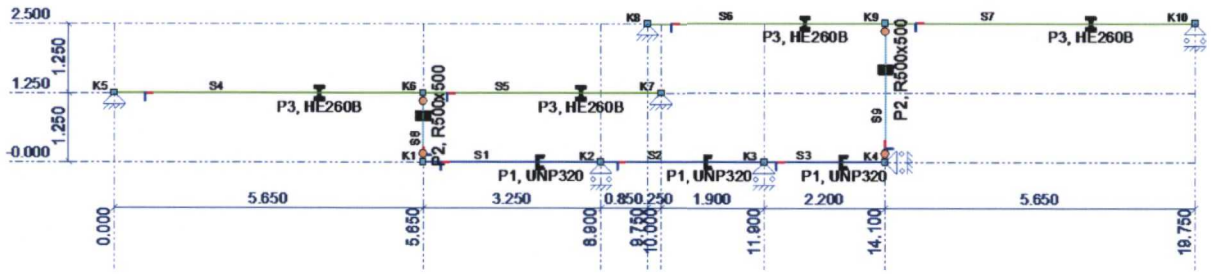
UNP320 + ≠230 x 15 mm (S355) (W_y = 825 cm^3 en I_y = 17520 cm^4)

6.7.6 As 5A-F2 - 5B- G1 Stalen liggers trap- en liftsparing

Stalen dwarsligger **UNP320 + ≠230 x 15 mm; S355**

Overzicht geometrie

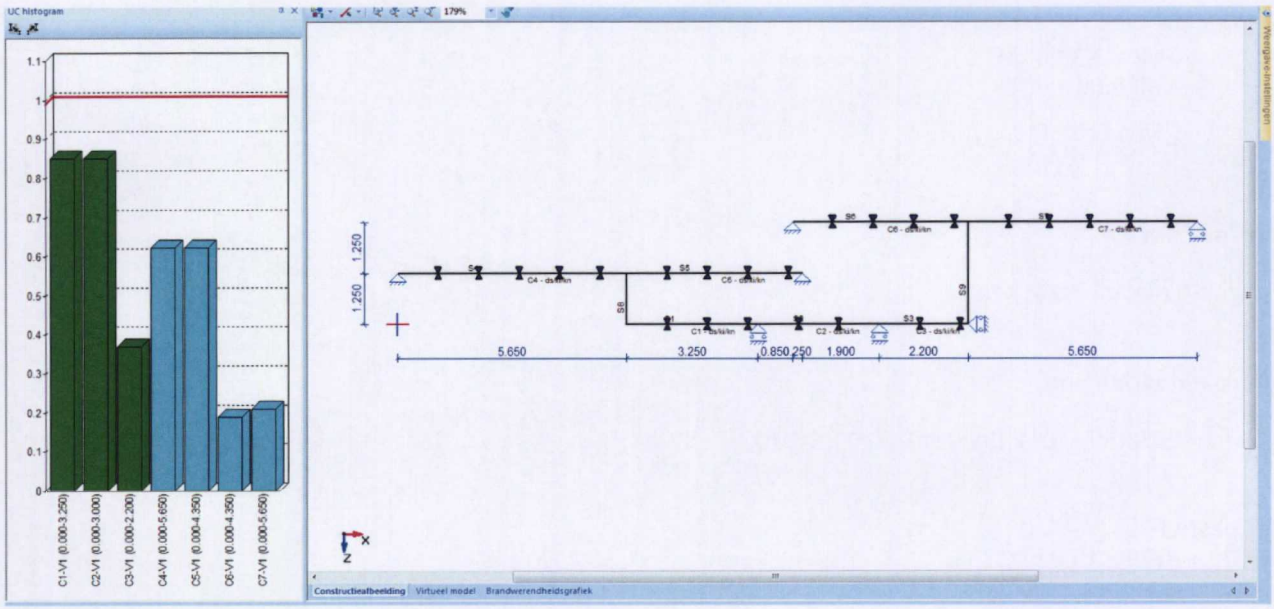
Zie computerberekening pag. 256-267.



Belastingen

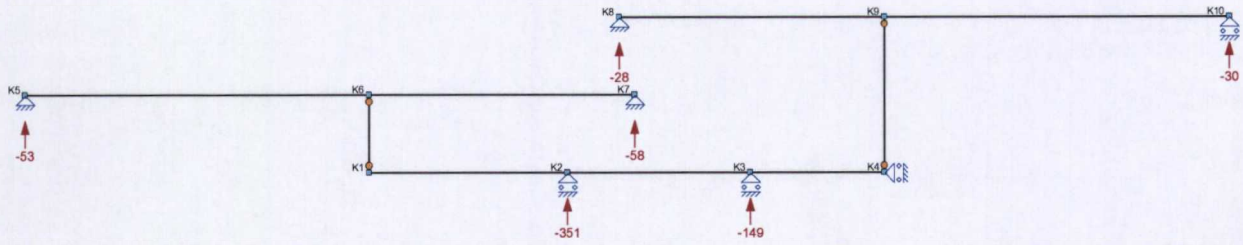
γ_{EG}	= conservatief	= 1.5	-
$q_{G,1-1}$	= 2.15*6.40 + 2.20*8.50	= 32.5	kN/m^1
$q_{G,1-2}$	= 2.15*6.40	= 13.8	kN/m^1
$q_{G,2}$	= 0.35*6.40	= 2.24	kN/m^1
$q_{Q,1-1}$	= (2.15 + 2.20)*5.00	= 21.8	kN/m^1
$q_{Q,1-2}$	= 2.15*5.00	= 10.8	kN/m^1
$q_{Q,2}$	= 0.35*5.00	= 1.75	kN/m^1

Controle sterkte en stabiliteit



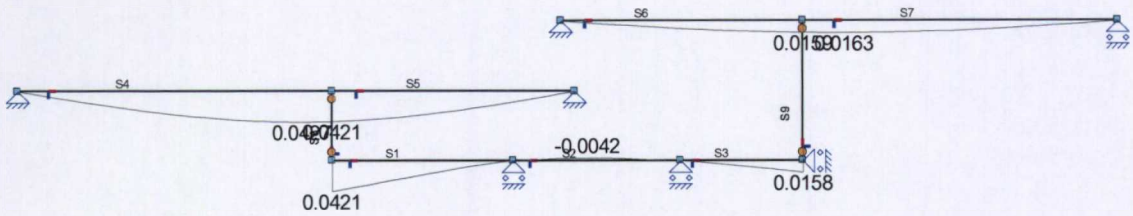
Reactiekrachten ten behoeve van stalen kolommen

$R_{Vd,max}$	= zie onderstaande reactiekrachten	= 351	kN
$R_{Vd,min}$	= zie onderstaande reactiekrachten	= 149	kN



Controle doorbuiging

u_{max}	= 42.1*(108690000 / 175203000)		= 26.1	mm
u_{toel}	= $^{1}/_{250}$*10000		= 40.0	mm
u.c.	= 26.1 / 40.0	= 0.65 < 1	→ voldoet	

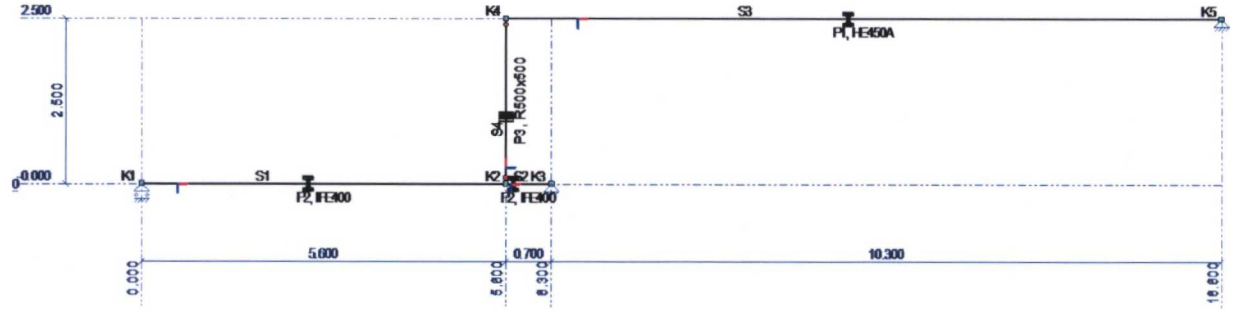


6.7.7 Stalen liggers As 04-05 - B1-B3

Uitgangspunten

Zie computerberekening pag. 268 -274.

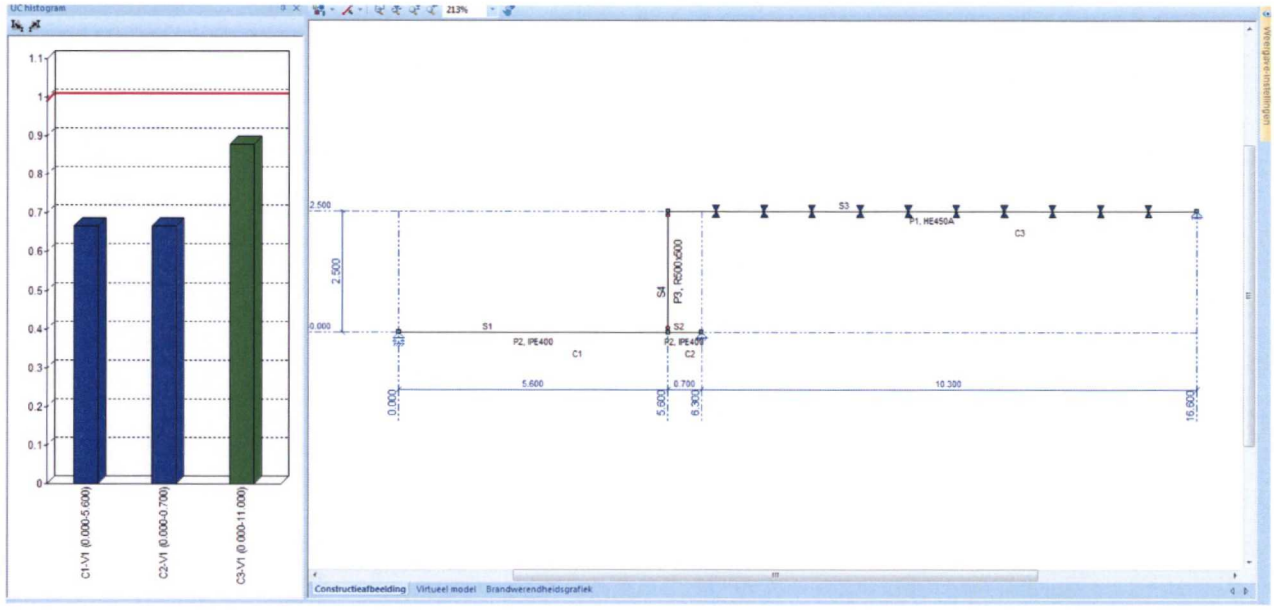
Overzicht geometrie



Belastingen

LHg	F_G	= 5.50*2.60*0.55 + (2*5.50 + 2.00)*0.25 + 5.50*2.00*0.60	= 21.6	kN
	F_{sn}	= 5.50*2.60*1.40	= 20.0	kN
V+1	$q_{G,1}$	= 3.10*6.40 + 5.50*0.60	= 23.1	kN/m^1
	$q_{G,2}$	= 5.10*6.40 + 5.50*0.60	= 35.9	kN/m^1
	$q_{Q,1}$	= 3.10*4.00	= 12.4	kN/m^1
	$q_{Q,2}$	= 5.10*4.00	= 20.4	kN/m^1

Controle sterkte, stabiliteit en doorbuiging



6.7.8 Stalen kolommen dj area en liftsparing zwaar HEA160

Belastingen

N'_{Ed} = uit stalen ligger As 07 - E1-F1 = 1.25*5.65*51.2 = 362 kN

Controle sterkte en stabiliteit

PROFIELGEGEVENS: HE160A

Breedte	b	160 mm	Oppervlak	As	3.88e+03 mm²
Hoogte	h	152 mm	Systeemlengte	Lsys	4.540 m
Flensdikte	tf	9.0 mm	Lijfdikte	tw	6.0 mm
Elastisch weerstandsmoment	Wy;el	220.1e+0 mm³	Elastisch weerstandsmoment	Wz;el	769.5e+0 mm³
Plastisch weerstandsmoment	Wy;pl	245.1e+0 mm³	Plastisch weerstandsmoment	Wz;pl	117.6e+0 mm³
Sterkte klasse		S235 -	Vloeigrens staal	fy	235 N/mm²

KRACHTEN

		A	B
Normaalkracht	Nc;Ed	-362.0 kN	-362.0 kN
Dwarskracht in Y' as	q	0.0 kN/m	0.0 kN/m
Dwarskracht in Z' as	q	0.0 kN/m	0.0 kN/m
Dwarskracht in Y' as	Vy;Ed	0.0 kN	0.0 kN
Dwarskracht in Z' as	Vz;Ed	0.0 kN	0.0 kN
Buigend moment om Y' as	My;Ed	0.0 kNm	0.0 kNm
Buigend moment om Z' as	Mz;Ed	0.0 kNm	0.0 kNm
Kniklengte Y'-as	Leff Y	4.540 m	
Kniklengte Z'-as	Leff Z	4.540 m	

Aangrijphoogte dwarsbelasting: Centrum

CAPACITEIT VAN HET PROFIEL

Normaalkrachtcapaciteit (NEN-EN1993-1-1#6.2.3,6.2.4)	Nc;Rd	911.13 kN
Dwarskrachtcapaciteit in y'-y' (NEN-EN1993-1-1#6.2.6)	Vc;y;Rd	416.96 kN
Dwarskrachtcapaciteit in z'-z' (NEN-EN1993-1-1#6.2.6)	Vc;z;Rd	179.25 kN
Momentcapaciteit om y'-y' as (NEN-EN1993-1-1#6.2.5)	Mc;y;Rd	57.61 kNm
Momentcapaciteit om z'-z' as (NEN-EN1993-1-1#6.2.5)	Mc;z;Rd	27.64 kNm

BUIGING, DWARSKRACHT EN NORMAALKRACHT (NEN-EN1993-1-1#6.2.10)

	rho y'	0.00 -	alfa	0.00 -
	rho z'	0.00 -	beta	0.00 -
	MN;Vy;ud	0.00 kNm	MN;Vz;ud	0.00 kNm

KIPKROMMEN (NEN-EN1993-1-1#6.3.2.2)

Kipsteunen bovenflens:		Geen -	Kipsteunen onderflens:		Geen -
Tabel gebruikt		NB 6.4 -		F	0.00 kN
		0.00 -			0.00 -
Maatgevend veld	Boven	0.000 - m 4.540		lst	4.540 m
	Lsys	4.540 m		Lg	4.540 m
	S	0.818 m		Iwa	3.1410e-08 m^6
	C1	1.040 -		C2 (Tabel)	0.420 -
	C2 (Toegepast)	0.000 -		C	3.755 -
	Mcr	93.32 kNm		kred	1.000 -
	lkip	4.540 m			

KNIKSTABILITEIT (EN1993-1-1#6.3.1)

Knik curve Y'		b -	Knik curve Z'		c
	Ncr;y	1682.28 kN		Ncr;z	618.99 kN
Methode Y		Cons. - Gesch.	Methode Z		Cons. - Gesch.
	Lbuc;y	4.540 m		Lbuc;z	4.540 m
	Lam;y	0.736 -		Lam;z	1.213 -
	Chi;y	0.763 -		Chi;z	0.428 -
Kip instab. curve:		B -	Kip instab. curve:		C -
	Nb;Rd;y	695.22 kN		Nb;Rd;z	389.51 kN

STABILITEIT (NEN-EN1993-1-1#6.3)

Kiptorsie gevoelig		Ja -	Doorsnedeklasse		1 -
	My;max	0.00 kNm		Mz;max	0.00 kNm
	My;Ed; A	0.00 kNm		Mz;Ed; B	0.00 kNm
	Mb;Rd;y	46.30 kNm		Mb;Rd;z	27.64 kNm
	Delta;My	0.00 kNm		Delta;Mz	0.00 kNm
	My;Psi	0.00 kNm		Mz;Psi	0.00 kNm
	My;0	0.00 kNm		Mz;0	0.00 kNm
	Mcr	93.32 kNm			
	Cm;y	1.000 -		Cm;z	1.000 -
	Cm;LT	1.000 -			
	Kyy	1.279 -		Kzz	2.301 -
	Kyz	1.381 -		Kzy	0.876 -
	X;y	0.763 -		X;z	0.428 -
	Lam;LT	0.786 -			
	X;LT	1.000 -			

UITGEVOERDE CONTROLES

Doorsnede

NEN-EN1993-1-1(6.9)		0.40 OK
NEN-EN1993-1-1(6.12)	Y axis	0.00 OK
NEN-EN1993-1-1(6.12)	Z axis	0.00 OK
NEN-EN1993-1-1(6.17)	Y axis	0.00 OK
NEN-EN1993-1-1(6.17)	Z axis	0.00 OK

Knik

NEN-EN1993-1-1(6.46)	Y axis	0.52 OK
NEN-EN1993-1-1(6.46)	Z axis	0.93 OK

Stabiliteit

NEN-EN1993-1-1(6.61& 6.62)		0.93 OK

Kip

Kip NVT, i.v.m. geen buiging
Kip NVT, i.v.m. geen buiging

6.7.9 Stalen kolommen naast trap en bij liftkern HEA140

Belastingen

N'_{Ed} = uit stalen ligger As 06-6A - E-E1 = $^1/_2$*4.70*65.7 = 154 kN

Controle sterkte en stabiliteit

PROFIELGEGEVENS: HE140A

Breedte	b	140 mm	Oppervlak	As	3.14e+03 mm²
Hoogte	h	133 mm	Systeemlengte	Lsys	3.550 m
Flensdikte	tf	8.5 mm	Lijfdikte	tw	5.5 mm
Elastisch weerstandsmoment	Wy;el	155.4e+0 3 mm³	Elastisch weerstandsmoment	Wz;el	556.2e+0 2 mm³
Plastisch weerstandsmoment	Wy;pl	173.5e+0 3 mm³	Plastisch weerstandsmoment	Wz;pl	848.5e+0 2 mm³
Sterkte klasse		S235 -	Vloeigrens staal	fy	235 N/mm²

KRACHTEN

		A	B
Normaalkracht	Nt;Ed	0.0 kN	0.0 kN
Dwarskracht in Y' as	q	0.0 kN/m	0.0 kN/m
Dwarskracht in Z' as	q	0.0 kN/m	0.0 kN/m
Dwarskracht in Y' as	Vy;Ed	0.0 kN	0.0 kN
Dwarskracht in Z' as	Vz;Ed	0.0 kN	0.0 kN
Buigend moment om Y' as	My;Ed	0.0 kNm	0.0 kNm
Buigend moment om Z' as	Mz;Ed	0.0 kNm	0.0 kNm
Kniklengte Y'-as	Leff Y	3.550 m	
Kniklengte Z'-as	Leff Z	3.550 m	
Aangrijphoogte dwarsbelasting: Centrum			

CAPACITEIT VAN HET PROFIEL

Normaalkrachtcapaciteit (NEN-EN1993-1-1#6.2.3,6.2.4)	Nt;Rd	738.28 kN
Dwarskrachtcapaciteit in y'-y' (NEN-EN1993-1-1#6.2.6)	Vc;y;Rd	339.68 kN
Dwarskrachtcapaciteit in z'-z' (NEN-EN1993-1-1#6.2.6)	Vc;z;Rd	137.35 kN
Momentcapaciteit om y'-y' as (NEN-EN1993-1-1#6.2.5)	Mc;y;Rd	40.77 kNm
Momentcapaciteit om z'-z' as (NEN-EN1993-1-1#6.2.5)	Mc;z;Rd	19.94 kNm

BUIGING, DWARSKRACHT EN NORMAALKRACHT (NEN-EN1993-1-1#6.2.10)

	rho y'	0.00 -	alfa	0.00 -
	rho z'	0.00 -	beta	0.00 -
	MN;Vy;ud	0.00 kNm	MN;Vz;ud	0.00 kNm

KIPKROMMEN (NEN-EN1993-1-1#6.3.2.2)

Kipsteunen bovenflens:		Geen -	Kipsteunen onderflens:		Geen -
Tabel gebruikt		NB 6.4 -		F	0.00 kN
		0.00 -			0.00 -
Maatgevend veld	Boven	0.000 - m 3.550		lst	3.550 m
	Lsys	3.550 m		Lg	3.550 m
	S	0.694 m		Iwa	1.5064e-08 m^6
	C1	1.040 -		C2 (Tabel)	0.420 -
	C2 (Toegepast)	0.000 -		C	3.834 -
	Mcr	79.14 kNm		kred	1.000 -
	lkip	3.550 m			

KNIKSTABILITEIT (EN1993-1-1#6.3.1)

Knik curve Y'		b -	Knik curve Z'		c
	Ncr;y	1699.09 kN		Ncr;z	640.28 kN
Methode Y		Cons. - Gesch.	Methode Z		Cons. - Gesch.
	Lbuc;y	3.550 m		Lbuc;z	3.550 m
	Lam;y	0.000 -		Lam;z	0.000 -
	Chi;y	0.000 -		Chi;z	0.000 -
Kip instab. curve:		B -	Kip instab. curve:		C -
	Nb;Rd;y	0.00 kN		Nb;Rd;z	0.00 kN

STABILITEIT (NEN-EN1993-1-1#6.3)

Kiptorsie gevoelig		Nee -	Doorsnedeklasse		1 -
	My;max	0.00 kNm		Mz;max	0.00 kNm
	My;Ed; A	0.00 kNm		Mz;Ed; B	0.00 kNm
	Mb;Rd;y	34.22 kNm		Mb;Rd;z	19.94 kNm
	Delta;My	0.00 kNm		Delta;Mz	0.00 kNm
	My;Psi	0.00 kNm		Mz;Psi	0.00 kNm
	My;0	0.00 kNm		Mz;0	0.00 kNm
	Mcr	79.14 kNm			
	Cm;y	0.000 -		Cm;z	0.000 -
	Cm;LT	0.000 -			
	Kyy	0.000 -		Kzz	0.000 -
	Kyz	0.000 -		Kzy	0.000 -
	X;y	0.000 -		X;z	0.000 -
	Lam;LT	0.718 -			
	X;LT	0.000 -			

UITGEVOERDE CONTROLES

Doorsnede

NEN-EN1993-1-1(6.5)		0.00	OK
NEN-EN1993-1-1(6.12)	Y axis	0.00	OK
NEN-EN1993-1-1(6.12)	Z axis	0.00	OK
NEN-EN1993-1-1(6.17)	Y axis	0.00	OK
NEN-EN1993-1-1(6.17)	Z axis	0.00	OK

Kip

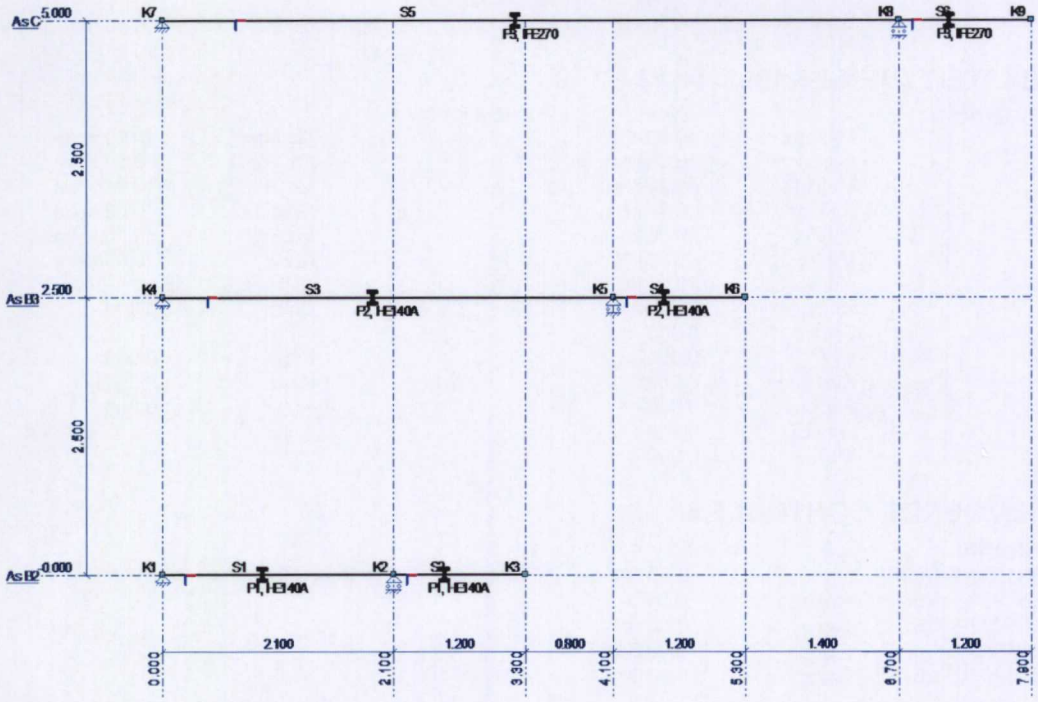
Kip NVT, i.v.m. geen buiging
Kip NVT, i.v.m. geen buiging

6.7.10 Stalen liggers luifel hoog As B2 - C

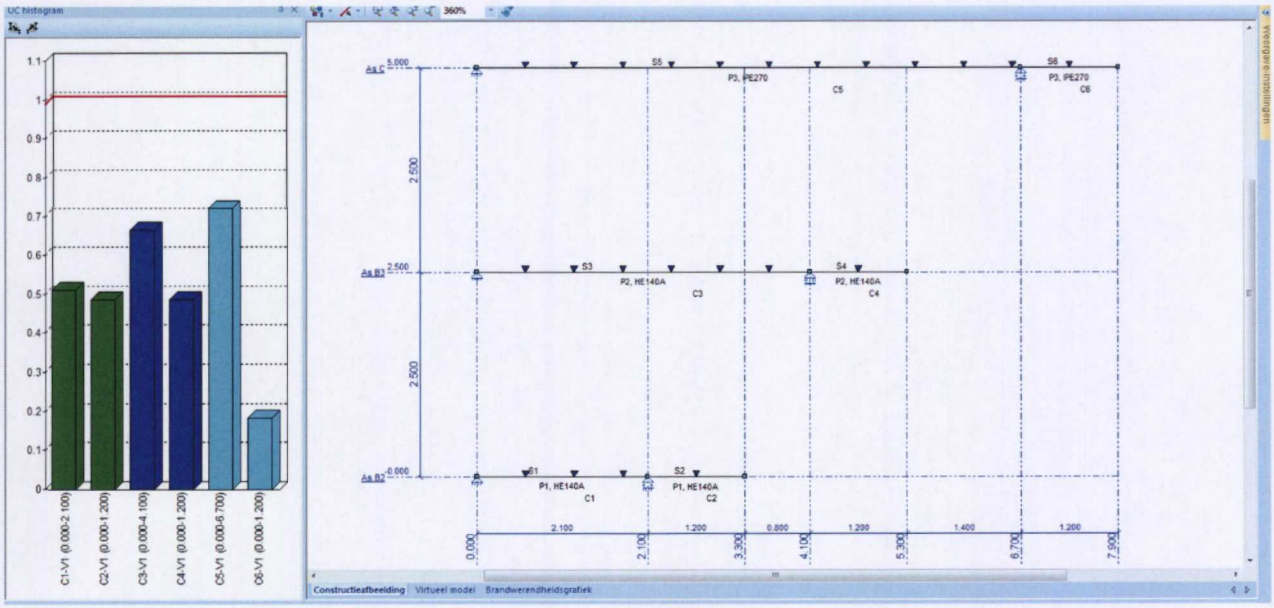
Uitgangspunten en belastingen

Zie computerberekening pag. 275-292.

Overzicht geometrie



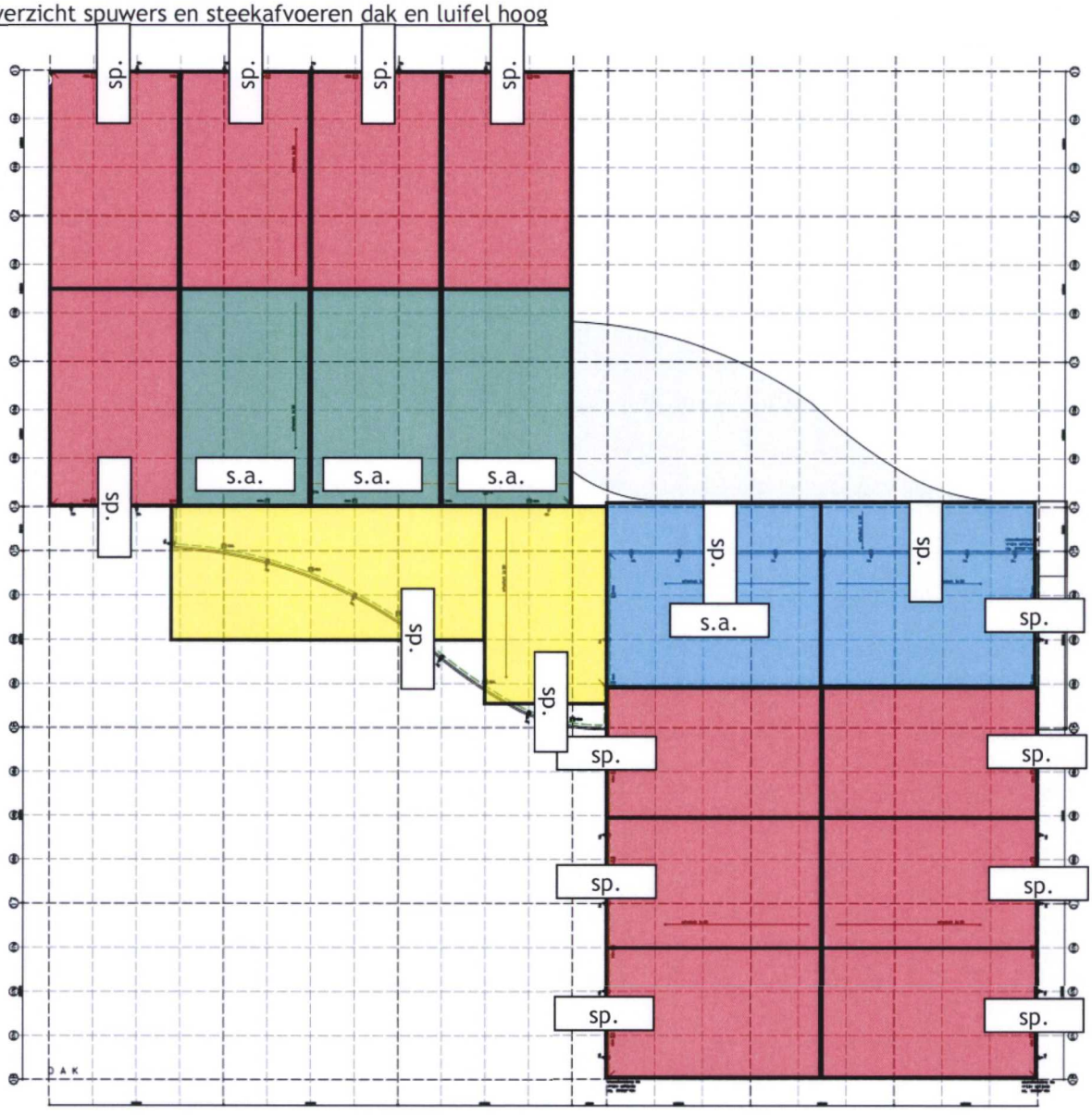
Controle sterkte en stabiliteit



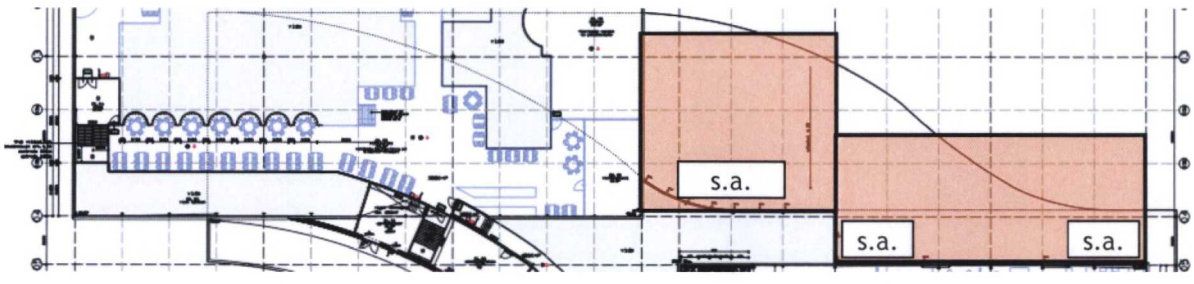
6.8. Noodafvoeren

Overzicht spuwers en steekafvoeren
Als noodafvoer voor het hemelwater op het dak en de luifels worden spuwers (sp.) door de gevels en steekafvoeren door het dak (s.a.) met interne debietleiding door het dak toegepast.

Overzicht spuwers en steekafvoeren dak en luifel hoog



Overzicht spuwers en steekafvoeren luifel laag



Controle spuwer 400 x 200 mm

Uitgangspunten
Maatgevend dakoppervlak voor een spuwer ter plekke van dakvlak As 06 - 05 en F1-F2 - H waarop het dakoppervlak van de luifel hoog As 04 - 05 - en F1-F2 - H ook afwatert.

Controle waterhoogte boven noodafvoer

A	= (24.5*5.50 + 24.5*15.00)		= 502	m^2
i_r	= regenintensiteit		= $0.0500*10^{-3}$	m/s
Q_h	= $502*(0.0500*10^{-3})$		= 0.0251	m^3/s
d_{nd}	= $0.70*(0.0251 / 0.400)^{2/3}$		= 0.110	m
h_{nd}	= minimaal		= 0.030	m
d_{hw}	= 0.110 + 0.030		= 0.140	m
u.c.	= 0.140 / 0.200	= 0.70 < 1	→ voldoet	

Controle belasting op het dak

p_{hw}	= 0.140*10		= 1.40	kN/m^2
p_{sn2}	= maximaal aan de randen		= 1.40	kN/m^2
u.c.	= 1.40 / 1.40	= 1.00 < 1	→ voldoet	

Controle steekafvoer binnenmiddellijn Ø 190 mm

Uitgangspunten
Maatgevend dakoppervlak voor een steekafvoer ter plekke van dakvlak As 06 - 05 en E - F1-F2 waarop het dakoppervlak van de luifel hoog As 04 - 05 - en E - F1-F2 ook afwatert.

Controle debiet

A	= (24.5*5.50 + 24.5*15.00)		= 502	m^2
i_r	= regenintensiteit		= $0.0500*10^{-3}$	m/s
d	= binnenmiddellijn		= 0.190	m
Q_h	= $502*(0.0500*10^{-3})$		= 0.0251	m^3/s
$Q_{h,u}$	= $2.5*0.190^{5/2}$		= 0.0393	m^3/s
u.c.	= 0.0251 / 0.0393	= 0.64 < 1	→ voldoet	

Controle waterhoogte boven noodafvoer

d_{nd}	= $0.29*(0.0251 / 0.190)^{2/3}$		= 0.075	m
h_{nd}	= minimaal		= 0.030	m
d_{hw}	= 0.075 + 0.030		= 0.105	m
u.c.	= 0.105 / 0.190	= 0.55 < 1	→ voldoet	

Controle belasting op het dak

p_{hw}	= 0.105*10		= 1.05	kN/m^2
p_{sn2}	= maximaal aan de randen		= 1.40	kN/m^2
u.c.	= 1.05 / 1.40	= 0.75 < 1	→ voldoet	

7. Gewichtsberekening

7.1. Uitgangspunten

Voor de gewichtsberekening is er per kolom met bijbehorende poer de maatgevende belasting berekend.
Het funderingsadvies onderscheid vier door sonderingen omsloten vlakken met verschillende paaldraagvermogens en paalpuntniveau's ten behoeve van een paalfundering.
De beddingconstante varieert tussen de 5300 en 11800 kN/m^3 voor een fundering op staal.

Voor de fundering is er gekozen voor een fundering op staal. Ook de begane grondvloeren worden conform het funderingsadvies op staal gefundeerd, al dan niet op grondverbetering indien benodigd in het door sonderingen omsloten vlak. Deze vloer wordt in het volgende niet meer beschouwd.

7.2. Overzicht maatgevende belastingen per kolom

Kolom K1 op poer 1.60 x 1.60 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma\psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Dak													
Dak (stalen dakplaten)	16.500	20.000			330.00	0.55	181.50	0.56	0.00	0.0			
Stalen ligger		20.000			20.00	1.50	30.00						
Stalen ligger	16.500				16.50	2.00	33.00						
Druk op 1e verdieping							244.50			0.0	184.8	330	571
Begane grond													
Stalen kolom			9.400		9.40	0.75	7.05						
Druk op fundering							251.55			0.0	184.8	340	579
Fundering													
Poer (IHW 1000)	1.600	1.600			2.56	25.00	64.00						
Druk op ondergrond							315.55			0.0	184.8	426	656

Kolommen As 07 maatgevend

Stalen ligger dak IPE600: 125 kg/m = 1.50
Stalen ligger dak HEB600: 216 kg/m = 2.00
Stalen kolom bg KK250 x 250 x 8: 60.2 kg/m = 0.75

Kolom K2 op poer 1.60 x 1.60 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
1e verdieping													
1e verdieping (KPV 260)	4.550	7.700			35.04	5.95	208.46	5.00	0.40	70.1			
Stalen ligger	4.550				4.55	1.50	6.83						
Druk op begane grond							215.28			70.1	175.2	396	521
Begane grond													
Stalen kolom			4.800		4.80	0.50	2.40						
Druk op fundering							217.68			70.1	175.2	399	524
Fundering													
Poer (IHW 1000)	1.600	1.600			2.56	25.00	64.00						
Druk op ondergrond							281.68			70.1	175.2	485	601

Kolom op As 3A - C maatgevend

Stalen ligger 1e HEB260 + =500 x 15: 154 kg/m = 1.50
Stalen kolom bg KK200 x 200 x 8: 47.4 = 0.50

Kolom K3 op poer 1.60 x 1.60 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Dak													
Aluminium gevel	5.500		2.000	0.50	5.50	0.60							
Dak (stalen dakplaten)	7.450	5.000			37.25	0.55	20.49	0.56	0.00	0.0			
Stalen ligger	7.450				7.45	1.50	11.18						
Stalen kolom			2.000		2.00	0.25	0.50						
Druk op 1e verdieping							32.16			0.0	20.9	43	70
1e verdieping													
Aluminium gevel	5.500		1.200		6.60	0.60	3.96						
Buitenruimte 1e (KPV 320)	5.500	5.000			27.50	7.90	217.25	5.00	0.40	55.0			
Stalen ligger	5.500				5.50	1.00	5.50						
Stalen kolom			6.600		6.60	0.50	3.30						
Druk op begane grond							262.17			55.0	158.4	436	552
Begane grond													
Aluminium gevel	5.500		4.400		24.20	0.60	14.52						
Stalen kolom			4.800		4.80	0.50	2.40						
Druk op fundering							279.09			55.0	158.4	459	572
Fundering													
Poer (IHW 1000)	1.600	1.600			2.56	25.00	64.00						
Druk op ondergrond							343.09			55.0	158.4	546	649

Kolom op As 5A - B3 maatgevend
dompeffect dakvloer met 1.35 G en 0.9 G = 6.70 en 8.20 m
overstek verdiepingsvloer 0.60 m

Stalen kolom dak HEA140: 25.1 kg/m = 0.25
Stalen ligger dak IPE600: 125 kg/m = 1.50
Stalen ligger 1e UNP400 + pl. 240 x 15: 101 kg/m = 1.00
Stalen kolom 1e KK160 x 160 x 8: 38.4 kg/m = 0.50
Stalen kolom bg KK160 x 160 x 8: 38.4 kg/m = 0.50

Kolom K4 op poer 1.40 x 1.40 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Dak													
Groene gevel	5.000		0.400		2.00	0.60	1.20						
Dak (stalen dakplaten)	8.250	20.000			165.00	0.55	90.75	0.56	0.00	0.0			
Stalen randligger		5.000			5.00	0.25	1.25						
Stalen ligger		20.000		1.50	30.00	1.50	45.00						
Stalen ligger	8.250				8.25	2.00	16.50						
Stalen kolom			0.400		0.40	0.25	0.10						
Druk op 1e verdieping							154.80			0.0	92.4	209	324
1e verdieping													
Groene gevel	5.000		4.900		24.50	0.60	14.64						
Stalen ligger	5.000				5.00	0.50	2.50						
Stalen kolom			4.900		4.90	0.75	3.68						
Druk op begane grond							175.61			0.0	92.4	237	349
Begane grond													
Groene gevel	5.000		3.700		18.50	0.60	11.06						
Stalen kolom			4.100		4.10	0.75	3.08						
Druk op fundering							189.75			0.0	92.4	256	366
Fundering													
Poer (IHW 1000)	1.400	1.400			1.96	25.00	49.00						
Druk op ondergrond							238.75			0.0	92.4	322	425

Kolom op As 07 - E maatgevend

Stalen kolom dak HEA140: 25.1 kg/m = 0.25
Stalen randligger dak HEA140: 25.1 kg/m = 0.25
Stalen ligger dak IPE600: 125 kg/m = 1.50
Stalen ligger dak HEB600: 216 kg/m = 2.00
Stalen kolom 1e HEA260: 69.5 kg/m = 0.75
Stalen kolom 1e KK140 x 140 x 8: 32.0 kg/m = 0.50
Stalen kolom bg HEA260: 69.5 = 0.75

Kolom K5 op poer 2.00 x 2.00 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Dak													
Aluminium gevel	2.500		2.400		6.00	0.60	3.60						
Groene gevel	2.500		1.400		3.50	0.60	2.09						
Dak (stalen dakplaten)	8.250	20.000			165.00	0.55	90.75	0.56	0.00	0.0			
Stalen randligger		5.000			5.00	0.25	1.25						
Stalen ligger		20.000		1.50	30.00	1.50	45.00						
Stalen ligger	8.250				8.25	2.00	16.50						
Stalen kolom			2.400		2.40	0.25	0.60						
Druk op 1e verdieping							159.79			0.0	92.4	216	330
Luifel													
Aluminium gevel		2.000	2.000		4.00	0.60	2.40						
Luifel (stalen dakplaten)	8.200	2.000			16.40	0.55	9.02	0.56	0.00	0.0			
Stalen ligger	2.000				2.00	1.00	2.00						
Druk op 1e verdieping							173.21			0.0	101.6	234	360
1e verdieping													
Groene gevel	5.000		3.400		17.00	0.60	10.16						
Aluminium gevel		2.000	1.200		2.40	0.60	1.44						
1e verdieping (KPV 320)	2.000	5.900			11.80	6.40	75.52	5.00	0.40	23.6			
1e verdieping (KPV 260)	5.000	4.125			20.63	5.95	122.72	5.00	0.40	41.3			
Stalen ligger		4.125			4.13	2.00	8.25						
Stalen ligger	5.000				5.00	0.50	2.50						
Stalen kolom			4.900		4.90	0.75	3.68						
Druk op begane grond							397.48			64.9	254.5	634	859
Begane grond													
Groene gevel	5.000		3.700		18.50	0.60	11.06						
Aluminium gevel		2.000	4.400		8.80	0.60	5.28						
Stalen kolom			4.100		4.10	0.75	3.08						
Druk op fundering							416.89			64.9	254.5	660	882
Fundering													
Poer (IHW 1000)	2.000	2.000			4.00	25.00	100.00						
Druk op ondergrond							516.89			64.9	254.5	795	1002

Kolom op As 06 - E maatgevend
dompeffect dakvloer met 1.2 G en 1.5 Q en 0.9 G = 6.00 en 10.4
overstek verdiepingsvloer 0.30 m

Stalen kolom dak HEA140: 25.1 kg/m = 0.25
Stalen randligger dak HEA140: 25.1 kg/m = 0.25
Stalen ligger dak IPE600: 125 kg/m = 1.50
Stalen ligger dak HEB600: 216 kg/m = 2.00
Stalen ligger luifel UNP400 + pl. 240 x 15: 101 kg/m = 1.00
Stalen ligger 1e HEA600: 181 kg/m = 2.00
Stalen ligger 1e: HEA180: 36.2 kg/m = 0.50
Stalen kolom 1e HEA240: 61.5 kg/m = 0.75
Stalen kolom bg HEA240: 61.5 kg/m = 0.75

Kolom K6 op poer 1.60 x 1.60 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Dak													
Sinusplaten gevel	5.500		2.400		13.20	0.60	7.92						
Dak (stalen dakplaten)	10.000	5.500			55.00	0.55	30.25	0.56	0.00	0.0			
Stalen randligger		5.500			5.50	0.25	1.38						
Stalen ligger	10.000				10.00	1.50	15.00						
Stalen kolom			2.400		2.40	0.25	0.60						
Druk op 1e verdieping							55.15			0.0	30.8	74	112
1e verdieping													
Sinusplaten gevel	5.500		4.200		23.10	0.60	13.86						
1e verdieping (KPV 260)	5.500	4.525			24.89	5.95	148.08	5.00	0.40	49.8			
Stalen ligger	5.500				5.50	0.75	4.13						
Stalen kolom			4.200		4.20	0.50	2.10						
Druk op begane grond							223.31			49.8	155.2	376	501
Begane grond													
Sinusplaten gevel			4.400		4.40	0.60	2.64						
Stalen kolom	1.000	1.000	4.800		4.80	0.50	2.40						
Druk op fundering							228.35			49.8	155.2	383	507
Fundering													
Poer (IHW 1000)	1.600	1.600			2.56	25.00	64.00						
Druk op ondergrond							292.35			49.8	155.2	469	584

Kolom op As 2A - A maatgevend

Stalen kolom dak HEA140: 25.1 kg/m = 0.25
Stalen ligger dak IPE600: 125 kg/m = 1.50
Stalen ligger dak HEB600: 216 kg/m = 2.00
Stalen kolom 1e HEA160: 31.0 kg/m = 0.50
Stalen ligger 1e UNP320 + pl. 230 x 15: 87.7 kg/m = 1.00
Stalen kolom bg HEA220: 51.5 kg/m = 0.50

Kolom K7 op poer 1.60 x 1.60 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
1e verdieping													
1e verdieping (KPV 260)	5.500	6.800			37.40	5.95	222.53	5.00	0.40	74.8			
Stalen ligger	5.500				5.50	1.50	8.25						
Druk op begane grond							230.78			74.8	187.0	424	557
Begane grond													
Stalen kolom			4.100		4.10	0.50	2.05						
Druk op fundering							232.83			74.8	187.0	427	560
Fundering													
Poer (IHW 1000)	1.600	1.600			2.56	25.00	64.00						
Druk op ondergrond							296.83			74.8	187.0	513	637

Kolom op As 06B - F1 maatgevend
overstek verdiepingsvloer 2.60 m

Stalen ligger 1e: HEB260 + pl. 500 x 15: 154 kg/m = 1.50
Stalen kolom bg HEA180: 36.2 kg/m = 0.50

Kolom K8 op poer 0.80 x 0.80 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Dak													
Aluminium gevel	1.000		2.400		2.40	0.60	1.44						
Stalen kolom			2.400		2.40	0.25	0.60						
Druk op 1e verdieping							2.04					3	2
1e verdieping													
Sinusplaten gevel	2.500		4.900		12.25	0.60	7.35						
Stalen ligger	2.500				2.50	0.50	1.25						
Druk op begane grond							10.64					14	13
Begane grond													
Sinusplaten gevel	2.500		3.700		9.25	0.60	5.55						
Stalen kolom			4.100		4.10	0.50	2.05						
Druk op fundering							18.24					25	22
Fundering													
Poer (IHW 1000)	0.800	0.800			0.64	25.00	16.00						
Druk op ondergrond							34.24					46	41

Kolom op As 05A-05B - 6B - E maatgevend

Stalen kolom dak HEA140: 25.1 kg/m = 0.25
Stalen ligger 1e HEA180: 36.2 kg/m = 0.50
Stalen kolom bg HEA180: 36.2 kg/m = 0.50

Kolom K9 op poer 1.60 x 1.60 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Luifel													
Aluminium gevel	6.600		2.000		13.20	0.60	7.92						
Luifel (stalen dakplaten)	16.500	5.500			90.75	0.55	49.91	1.40	0.00	0.0			
Luifel (stalen dakplaten)	2.750	16.000			44.00	0.55	24.20	1.40	0.00	0.0			
Stalen randligger		3.300			3.30	0.25	0.83						
Stalen randligger		6.600			6.60	1.50	9.90						
Stalen ligger	16.000				16.00	1.00	16.00						
Druk op 1e verdieping							108.76			0.0	188.7	147	413
Begane grond													
Aluminium gevel	6.600		5.000		33.00	0.60	19.80						
Stalen kolom			5.700		5.70	0.50	2.85						
Druk op fundering							131.41			0.0	188.7	177	441
Fundering													
Poer (IHW 1000)	1.600	1.600			2.56	25.00	64.00						
Druk op ondergrond							195.41			0.0	188.7	264	517

Kolom op As 3B - F1 maatgevend

Stalen randligger luifel HEA140: 25.1 kg/m = 0.25
Stalen ligger randligger luifel HEA450: 142 kg/m = 1.50
Stalen ligger luifel IPE450: 79.1 kg/m = 1.00
Stalen kolom bg KK140 x 140 x 8: 33.2 kg/m = 0.50

Kolom K10 op poer 2.00 x 2.00 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Dak													
Sinusplaten gevel			2.400		2.40	0.60	1.44						
Dak (stalen dakplaten)	16.500	20.000			330.00	0.55	181.50	0.56	0.00	0.0			
Stalen ligger		20.000			20.00	1.50	30.00						
Stalen ligger	16.500				16.50	2.00	33.00						
Stalen kolom			2.400		2.40	0.25	0.60						
Druk op 1e verdieping							246.54			0.0	184.8	333	573
1e verdieping													
Sinusplaten gevel	5.500		4.200		23.10	0.60	13.86						
1e verdieping (KPV 260)	5.500	4.525			24.89	5.95	148.08	5.00	0.40	49.8			
Stalen ligger	5.500				5.50	0.75	4.13						
Stalen kolom			4.200		4.20	0.50	2.10						
Druk op begane grond							414.71			49.8	309.2	635	962
Begane grond													
Sinusplaten gevel			4.400		4.40	0.60	2.64						
Stalen kolom			4.800		4.80	0.50	2.40						
Druk op fundering							419.75			49.8	309.2	641	968
Fundering													
Poer (IHW 1000)	2.000	2.000			4.00	25.00	100.00						
Druk op ondergrond							519.75			49.8	309.2	776	1088

Kolom op As 02 - A maatgevend

Stalen kolom dak HEA140: 25.1 kg/m = 0.25
Stalen ligger dak IPE600: 125 kg/m = 1.50
Stalen ligger dak HEB600: 216 kg/m = 2.00
Stalen kolom 1e HEA160: 31.0 kg/m = 0.50
Stalen ligger 1e UNP320 + pl. 230 x 15: 87.7 kg/m = 1.00
Stalen kolom bg HEA220: 51.5 kg/m = 0.50

Kolom K11 op poer 2.50 x 2.50 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Dak													
Dak (stalen dakplaten)	16.500	20.000			330.00	0.55	181.50	0.56	0.00	0.0	184.8		
Stalen ligger		20.000		3.00	60.00	1.50	90.00						
Stalen ligger	16.500				16.50	2.00	33.00						
Druk op 1e verdieping							304.50			0.0	184.8	411	643
1e verdieping													
1e verdieping (KPV 260)	8.250	10.000			82.50	5.95	490.88	5.00	0.40	165.0	412.5		
Stalen ligger	8.250				8.25	2.00	16.50						
Stalen kolom			4.900		4.90	1.00	4.90						
Druk op begane grond							816.78			165.0	597.3	1350	1876
Begane grond													
Stalen kolom			4.100		4.10	1.00	4.10						
Druk op fundering							820.88			165.0	597.3	1356	1881
Fundering													
Poer (IHW 1000)	2.600	2.600			6.76	25.00	169.00						
Druk op ondergrond							989.88			165.0	597.3	1584	1899

Kolommen As 06 maatgevend

Stalen ligger dak IPE600: 156 kg/m = 1.50
Stalen ligger dak HEB600: 216 kg/m = 2.00
Stalen ligger 1e HEA600: 181 kg/m = 2.00
Stalen kolom 1e KK250 x 250 x 12.5 = 93.7 kg/m = 1.00
Stalen kolom bg KK250 x 250 x 12.5 = 93.7 kg/m = 1.00

Kolom K12 op poer 2.20 x 2.20 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
1e verdieping													
1e verdieping (KPV 260)	8.250	10.000			82.50	5.95	490.88	5.00	0.40	165.0			
Stalen ligger	8.250				8.25	2.50	20.63						
Druk op begane grond							511.50			165.0	412.5	938	1233
Begane grond													
Stalen kolom			4.100		4.10	1.00	4.10						
Druk op fundering							515.60			165.0	412.5	944	1237
Fundering													
Poer (IHW 1000)	2.200	2.200			1.00	25.00	25.00						
Druk op ondergrond							540.60			165.0	412.5	977	1267

Kolommen op As 5B maatgevend
Kolommen met dompeffect op As 05 - C1-C2 niet maatgevend

Stalen ligger 1e HEA600 + pl. 500 x 15: 240 kg/m = 2.50
Stalen ligger 1e KK250 x 250 x 12.5: 93.7 kg/m = 1.00

Kolom K13 op poer 1.80 x 1.80 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Luifel (hoog)													
Aluminium gevel		5.500	2.000		11.00	0.60	6.57						
Luifel (stalen dakplaten)	5.800	5.500	1.400		44.66	0.55	24.56	0.56	0.00	0.0			
Stalen ligger	5.800				5.80	1.00	5.80						
Druk op dak							36.94			0.0	25.0	50	82
Dak													
Groene gevel		5.500	2.400		13.20	0.60	7.89						
Dak (stalen dakplaten)	10.000	5.500			55.00	0.55	30.25	1.40	0.00	0.0			
Stalen randligger	5.500				5.50	0.25	1.38						
Stalen ligger	10.000				10.00	1.50	15.00						
Stalen kolom			2.400		2.40	1.50	3.60						
Druk op luifel laag							95.05			0.0	102.0	128	267
Luifel (laag)													
Aluminium gevel		5.500	2.000		11.00	0.60	6.60						
Luifel (stalen dakplaten)	6.800	5.500			37.40	0.55	20.57	2.80	0.00	0.0			
Stalen ligger	6.800				6.80	1.00	6.80						
Druk op 1e verdieping							129.02			0.0	181.7	174	427
1e verdieping													
Groene gevel	5.000		4.900		24.50	0.60	14.64						
1e verdieping (KPV 260)	5.000	5.500			27.50	5.95	163.63	5.00	0.40	55.0			
Stalen ligger	5.000				5.00	1.00	5.00						
Stalen kolom			4.900		4.90	0.75	3.68						
Druk op begane grond							315.97			55.0	242.2	509	742
Begane grond													
Groene gevel		2.000	3.700		7.40	0.60	4.42						
Stalen kolom			4.100		4.10	0.75	3.08						
Druk op fundering							323.46			55.0	242.2	519	751
Fundering													
Poer (IHW 1000)	1.800	1.800			3.24	25.00	81.00						
Druk op ondergrond							404.46			55.0	242.2	629	849

Kolom op As 05 - G maatgevend

Stalen kolom luifel hoog IPE600: 125 kg/m = 1.50
Stalen vakwerk luifel hoog HEA140 + HEA120: 3 x 0.25 kg/m = 1.00
Stalen ligger dak IPE600: 125 kg/m = 1.50
Stalen ligger luifel IPE450: 79.1 kg/m = 1.00
Stalen kolom HEB320: 129 kg/m = 1.50
Stalen ligger 1e UNP320 + pl 230 x 15 mm: 87.7 kg/m = 1.00
Stalen kolom 1e HEB320: 129 kg/m = 1.50
Stalen kolom bg HEB320: 129 kg/m = 1.50

Gevel op strook 0.50 x 0.60 m

	Afmetingen					Permanent		Veranderlijk				Rekenwaarden	
	l	b	h	factor	totaal	p_g	G	p_q	ψ	$\Sigma \psi_0 Q_k$	$Q_{k1} + Q_{k2} + \Sigma \psi_0 Q_k$	Vgl. 6.10a	Vgl. 6.10b
	m	m	m	-	m^2	kN/m^2	kN	kN/m^2	-	kN	kN	kN	kN
Gevel													
Gevel algemeen	1.000		11.400		11.40	0.60	6.81						
Hulpstaal	1.000		11.400		11.40	0.10	1.14						
Druk op begane grond							7.95					11	10
Fundering													
Strook (IHW 500 x 600)	1.000				1.00	25.00	25.00						
Druk op ondergrond							32.95					44	40

Gevel met hoogte 11.0 m matgevend

Conservatief hulpstaal gerekend 0.10 kN/m^2

7.3. Controle poer- en strookbelastingen

Poer- en strookbelastingen	Poeren en stroken						Gronddruk			
	l	b	$\sigma_{gd,Rd}$	I	$e_{x,o}$	$e_{x,b}$	$R_{V,d}$	e_x	$\sigma_{Ed,gd}$	U.C.
	m	m	kN/m^2	A m^4	m	m	kN	m	m	-
Kolom K1 op poer 1.60 x 1.60 m	1.60	1.60	270				656		256	0.95
Kolom K2 op poer 1.60 x 1.60 m	1.60	1.60	270				601		235	0.87
Kolom K3 op poer 1.60 x 1.60 m	1.60	1.60	270				649		254	0.94
Kolom K4 op poer 1.40 x 1.40 m	1.40	1.40	260				425		217	0.83
Kolom K5 op poer 2.00 x 2.00 m	2.00	2.00	295				1002		251	0.85
Kolom K6 op poer 1.60 x 1.60 m	1.60	1.60	270				584		228	0.84
Kolom K7 op poer 1.60 x 1.60 m	1.60	1.60	270				637		249	0.92
Kolom K8 op poer 0.80 x 0.80 m	0.80	0.80	235				46		72	0.31
Kolom K9 op poer 1.60 x 1.60 m	1.60	1.60	270				517		202	0.75
Kolom K10 op poer 2.00 x 2.00 m	2.00	2.00	295				1088		272	0.92
Kolom K11 op poer 2.50 x 2.50 m	2.50	2.50	320				1899		304	0.95
Kolom K12 op poer 2.20 x 2.20 m	2.20	2.20	315				1267		262	0.83
Kolom K13 op poer 1.80 x 1.80 m	1.80	1.80	280				849		262	0.94
Gevel op strook 0.50 x 0.60 m	1.00	0.50	160				44		89	0.56

Grondrapport en of funderingsadvies		
Uiterst opneembare belasting op stroken of vierkante poeren bij verticale centrische belasting (zie grondmechanisch advies GA160509 - R01 - v1.0, d.d. 2 december 2016, Geonius)		
	Toelaatbare gronddruk kN/m^2	Aanlegniveau m t.o.v. N.A.P.
Stroken		+30.20
500 x 600 mm	170	
600 x 600 mm	180	
700 x 600 mm	185	
800 x 600 mm	190	
Poeren		n.t.b.
800 x 800 mm	240	
1000 x 1000 mm	245	
1200 x 1200 mm	255	
1400 x 1400 mm	265	
1600 x 1600 mm	270	
1800 x 1800 mm	280	
2000 x 2000 mm	295	
2200 x 2200 mm	310	
2400 x 2400 mm	320	
2600 x 2600 mm	325	

8. Bijlagen

8.1. Computerberekening

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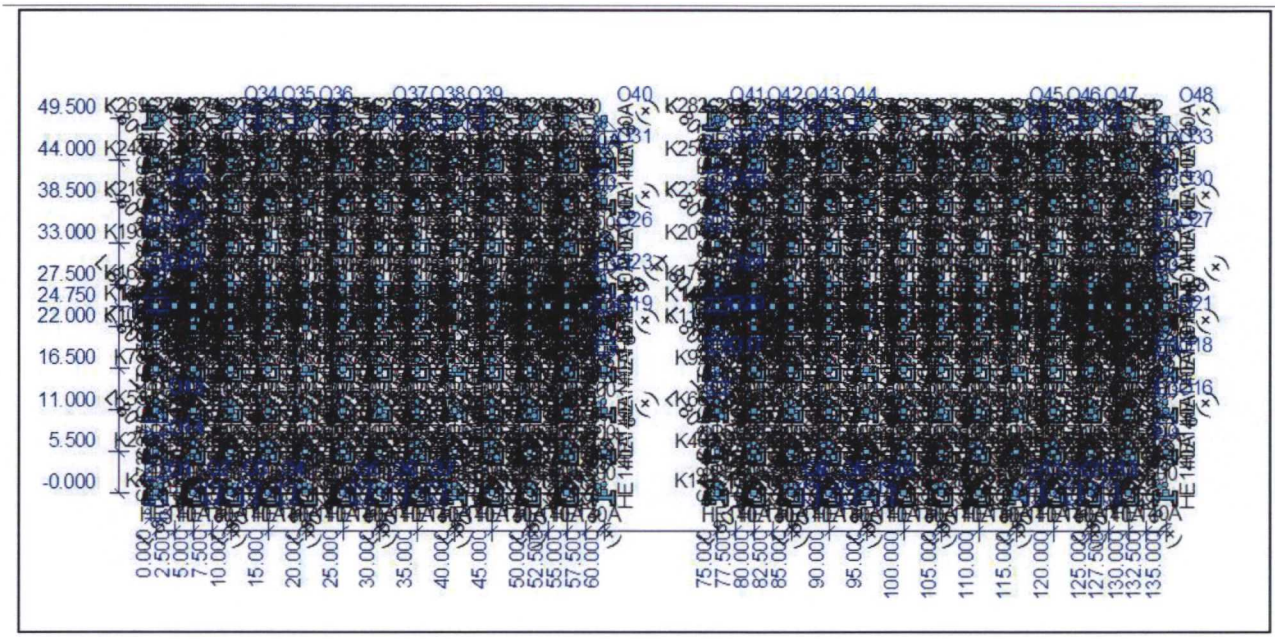
Valkenburg aan de Geul	Ingenieursbureau A. Palte B.V.	043 - 601 36 37
Computerberekening		

Projectnaam	'De Schatberg' te Sevenum	Projectnummer	460518
Omschrijving	Stabiliteit dak	Constructeur	DaKr
Opdrachtgever	Janssen Wuts Architecten BV	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Stabiliteit dak.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	294	692	48	5	8	8

AFB. GEOMETRIE 1



STAVEN

Staaf	Knoop B		Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S1	K1	NV-	NV-	K2	P1	0.000	0.000	5.000	0.000	5.000
S2	K2	NV-	NV-	K3	P1	5.000	0.000	10.000	0.000	5.000
S3	K3	NV-	NV-	K4	P1	10.000	0.000	15.000	0.000	5.000
S4	K4	NV-	NV-	K5	P1	15.000	0.000	20.000	0.000	5.000
S5	K5	NV-	NV-	K6	P1	20.000	0.000	25.000	0.000	5.000
S6	K6	NV-	NV-	K7	P1	25.000	0.000	30.000	0.000	5.000
S7	K7	NV-	NV-	K8	P1	30.000	0.000	35.000	0.000	5.000
S8	K8	NV-	NV-	K9	P1	35.000	0.000	40.000	0.000	5.000
S9	K9	NV-	NV-	K10	P1	40.000	0.000	45.000	0.000	5.000
S10	K10	NV-	NV-	K11	P1	45.000	0.000	50.000	0.000	5.000
S11	K11	NV-	NV-	K12	P1	50.000	0.000	55.000	0.000	5.000
S12	K12	NV-	NV-	K13	P1	55.000	0.000	60.000	0.000	5.000
S13	K14	NV-	NV-	K15	P1	75.000	0.000	80.000	0.000	5.000
S14	K15	NV-	NV-	K16	P1	80.000	0.000	85.000	0.000	5.000
S15	K16	NV-	NV-	K17	P1	85.000	0.000	90.000	0.000	5.000
S16	K17	NV-	NV-	K18	P1	90.000	0.000	95.000	0.000	5.000
S17	K18	NV-	NV-	K19	P1	95.000	0.000	100.000	0.000	5.000
S18	K19	NV-	NV-	K20	P1	100.000	0.000	105.000	0.000	5.000
S19	K20	NV-	NV-	K21	P1	105.000	0.000	110.000	0.000	5.000
S20	K21	NV-	NV-	K22	P1	110.000	0.000	115.000	0.000	5.000
S21	K22	NV-	NV-	K23	P1	115.000	0.000	120.000	0.000	5.000
S22	K23	NV-	NV-	K24	P1	120.000	0.000	125.000	0.000	5.000
S23	K24	NV-	NV-	K25	P1	125.000	0.000	130.000	0.000	5.000
S24	K25	NV-	NV-	K26	P1	130.000	0.000	135.000	0.000	5.000
S25	K27	NV-	NVM	K28	P3	0.000	-5.500	5.000	-5.500	5.000
S26	K28	NVM	NVM	K29	P3	5.000	-5.500	10.000	-5.500	5.000
S27	K29	NVM	NVM	K30	P3	10.000	-5.500	15.000	-5.500	5.000
S28	K30	NVM	NV-	K31	P3	15.000	-5.500	20.000	-5.500	5.000
S29	K31	NV-	NVM	K32	P3	20.000	-5.500	25.000	-5.500	5.000
S30	K32	NVM	NVM	K33	P3	25.000	-5.500	30.000	-5.500	5.000
S31	K33	NVM	NVM	K34	P3	30.000	-5.500	35.000	-5.500	5.000

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S32	K34	NVM	NV-	K35	P3	35.000	-5.500	40.000	-5.500	5.000
S33	K35	NV-	NVM	K36	P3	40.000	-5.500	45.000	-5.500	5.000
S34	K36	NVM	NVM	K37	P3	45.000	-5.500	50.000	-5.500	5.000
S35	K37	NVM	NVM	K38	P3	50.000	-5.500	55.000	-5.500	5.000
S36	K38	NVM	NV-	K39	P3	55.000	-5.500	60.000	-5.500	5.000
S37	K40	NV-	NVM	K41	P3	75.000	-5.500	80.000	-5.500	5.000
S38	K41	NVM	NVM	K42	P3	80.000	-5.500	85.000	-5.500	5.000
S39	K42	NVM	NVM	K43	P3	85.000	-5.500	90.000	-5.500	5.000
S40	K43	NVM	NV-	K44	P3	90.000	-5.500	95.000	-5.500	5.000
S41	K44	NV-	NVM	K45	P3	95.000	-5.500	100.000	-5.500	5.000
S42	K45	NVM	NVM	K46	P3	100.000	-5.500	105.000	-5.500	5.000
S43	K46	NVM	NVM	K47	P3	105.000	-5.500	110.000	-5.500	5.000
S44	K47	NVM	NV-	K48	P3	110.000	-5.500	115.000	-5.500	5.000
S45	K48	NV-	NVM	K49	P3	115.000	-5.500	120.000	-5.500	5.000
S46	K49	NVM	NVM	K50	P3	120.000	-5.500	125.000	-5.500	5.000
S47	K50	NVM	NVM	K51	P3	125.000	-5.500	130.000	-5.500	5.000
S48	K51	NVM	NV-	K52	P3	130.000	-5.500	135.000	-5.500	5.000
S49	K53	NV-	NVM	K54	P3	0.000	-11.000	5.000	-11.000	5.000
S50	K54	NVM	NVM	K55	P3	5.000	-11.000	10.000	-11.000	5.000
S51	K55	NVM	NVM	K56	P3	10.000	-11.000	15.000	-11.000	5.000
S52	K56	NVM	NV-	K57	P3	15.000	-11.000	20.000	-11.000	5.000
S53	K57	NV-	NVM	K58	P3	20.000	-11.000	25.000	-11.000	5.000
S54	K58	NVM	NVM	K59	P3	25.000	-11.000	30.000	-11.000	5.000
S55	K59	NVM	NVM	K60	P3	30.000	-11.000	35.000	-11.000	5.000
S56	K60	NVM	NV-	K61	P3	35.000	-11.000	40.000	-11.000	5.000
S57	K61	NV-	NVM	K62	P3	40.000	-11.000	45.000	-11.000	5.000
S58	K62	NVM	NVM	K63	P3	45.000	-11.000	50.000	-11.000	5.000
S59	K63	NVM	NVM	K64	P3	50.000	-11.000	55.000	-11.000	5.000
S60	K64	NVM	NV-	K65	P3	55.000	-11.000	60.000	-11.000	5.000
S61	K66	NV-	NVM	K67	P3	75.000	-11.000	80.000	-11.000	5.000
S62	K67	NVM	NVM	K68	P3	80.000	-11.000	85.000	-11.000	5.000
S63	K68	NVM	NVM	K69	P3	85.000	-11.000	90.000	-11.000	5.000
S64	K69	NVM	NV-	K70	P3	90.000	-11.000	95.000	-11.000	5.000
S65	K70	NV-	NVM	K71	P3	95.000	-11.000	100.000	-11.000	5.000
S66	K71	NVM	NVM	K72	P3	100.000	-11.000	105.000	-11.000	5.000
S67	K72	NVM	NVM	K73	P3	105.000	-11.000	110.000	-11.000	5.000
S68	K73	NVM	NV-	K74	P3	110.000	-11.000	115.000	-11.000	5.000
S69	K74	NV-	NVM	K75	P3	115.000	-11.000	120.000	-11.000	5.000
S70	K75	NVM	NVM	K76	P3	120.000	-11.000	125.000	-11.000	5.000
S71	K76	NVM	NVM	K77	P3	125.000	-11.000	130.000	-11.000	5.000
S72	K77	NVM	NV-	K78	P3	130.000	-11.000	135.000	-11.000	5.000
S73	K79	NV-	NVM	K80	P3	0.000	-16.500	5.000	-16.500	5.000
S74	K80	NVM	NVM	K81	P3	5.000	-16.500	10.000	-16.500	5.000
S75	K81	NVM	NVM	K82	P3	10.000	-16.500	15.000	-16.500	5.000
S76	K82	NVM	NV-	K83	P3	15.000	-16.500	20.000	-16.500	5.000
S77	K83	NV-	NVM	K84	P3	20.000	-16.500	25.000	-16.500	5.000
S78	K84	NVM	NVM	K85	P3	25.000	-16.500	30.000	-16.500	5.000
S79	K85	NVM	NVM	K86	P3	30.000	-16.500	35.000	-16.500	5.000
S80	K86	NVM	NV-	K87	P3	35.000	-16.500	40.000	-16.500	5.000
S81	K87	NV-	NVM	K88	P3	40.000	-16.500	45.000	-16.500	5.000
S82	K88	NVM	NVM	K89	P3	45.000	-16.500	50.000	-16.500	5.000
S83	K89	NVM	NVM	K90	P3	50.000	-16.500	55.000	-16.500	5.000
S84	K90	NVM	NV-	K91	P3	55.000	-16.500	60.000	-16.500	5.000
S85	K92	NV-	NVM	K93	P3	75.000	-16.500	80.000	-16.500	5.000
S86	K93	NVM	NVM	K94	P3	80.000	-16.500	85.000	-16.500	5.000
S87	K94	NVM	NVM	K95	P3	85.000	-16.500	90.000	-16.500	5.000
S88	K95	NVM	NV-	K96	P3	90.000	-16.500	95.000	-16.500	5.000
S89	K96	NV-	NVM	K97	P3	95.000	-16.500	100.000	-16.500	5.000
S90	K97	NVM	NVM	K98	P3	100.000	-16.500	105.000	-16.500	5.000
S91	K98	NVM	NVM	K99	P3	105.000	-16.500	110.000	-16.500	5.000
S92	K99	NVM	NV-	K100	P3	110.000	-16.500	115.000	-16.500	5.000
S93	K100	NV-	NVM	K101	P3	115.000	-16.500	120.000	-16.500	5.000
S94	K101	NVM	NVM	K102	P3	120.000	-16.500	125.000	-16.500	5.000
S95	K102	NVM	NVM	K103	P3	125.000	-16.500	130.000	-16.500	5.000
S96	K103	NVM	NV-	K104	P3	130.000	-16.500	135.000	-16.500	5.000
S97	K105	NV-	NVM	K106	P3	0.000	-22.000	5.000	-22.000	5.000
S98	K106	NVM	NVM	K107	P3	5.000	-22.000	10.000	-22.000	5.000
S99	K107	NVM	NVM	K108	P3	10.000	-22.000	15.000	-22.000	5.000
S100	K108	NVM	NV-	K109	P3	15.000	-22.000	20.000	-22.000	5.000
S101	K109	NV-	NVM	K110	P3	20.000	-22.000	25.000	-22.000	5.000
S102	K110	NVM	NVM	K111	P3	25.000	-22.000	30.000	-22.000	5.000

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S103	K111	NVM	NVM	K112	P3	30.000	-22.000	35.000	-22.000	5.000
S104	K112	NVM	NV-	K113	P3	35.000	-22.000	40.000	-22.000	5.000
S105	K113	NV-	NVM	K114	P3	40.000	-22.000	45.000	-22.000	5.000
S106	K114	NVM	NVM	K115	P3	45.000	-22.000	50.000	-22.000	5.000
S107	K115	NVM	NVM	K116	P3	50.000	-22.000	55.000	-22.000	5.000
S108	K116	NVM	NV-	K117	P3	55.000	-22.000	60.000	-22.000	5.000
S109	K118	NV-	NVM	K119	P3	75.000	-22.000	80.000	-22.000	5.000
S110	K119	NVM	NVM	K120	P3	80.000	-22.000	85.000	-22.000	5.000
S111	K120	NVM	NVM	K121	P3	85.000	-22.000	90.000	-22.000	5.000
S112	K121	NVM	NV-	K122	P3	90.000	-22.000	95.000	-22.000	5.000
S113	K122	NV-	NVM	K123	P3	95.000	-22.000	100.000	-22.000	5.000
S114	K123	NVM	NVM	K124	P3	100.000	-22.000	105.000	-22.000	5.000
S115	K124	NVM	NVM	K125	P3	105.000	-22.000	110.000	-22.000	5.000
S116	K125	NVM	NV-	K126	P3	110.000	-22.000	115.000	-22.000	5.000
S117	K126	NV-	NVM	K127	P3	115.000	-22.000	120.000	-22.000	5.000
S118	K127	NVM	NVM	K128	P3	120.000	-22.000	125.000	-22.000	5.000
S119	K128	NVM	NVM	K129	P3	125.000	-22.000	130.000	-22.000	5.000
S120	K129	NVM	NV-	K130	P3	130.000	-22.000	135.000	-22.000	5.000
S121	K131	NV-	NVM	K132	P2	0.000	-24.750	2.500	-24.750	2.500
S122	K132	NVM	NV-	K133	P2	2.500	-24.750	5.000	-24.750	2.500
S123	K133	NV-	NVM	K134	P2	5.000	-24.750	7.500	-24.750	2.500
S124	K134	NVM	NV-	K135	P2	7.500	-24.750	10.000	-24.750	2.500
S125	K135	NV-	NV-	K136	P2	10.000	-24.750	15.000	-24.750	5.000
S126	K136	NV-	NV-	K137	P2	15.000	-24.750	20.000	-24.750	5.000
S127	K137	NV-	NV-	K138	P2	20.000	-24.750	25.000	-24.750	5.000
S128	K138	NV-	NV-	K139	P2	25.000	-24.750	30.000	-24.750	5.000
S129	K139	NV-	NV-	K140	P2	30.000	-24.750	35.000	-24.750	5.000
S130	K140	NV-	NV-	K141	P2	35.000	-24.750	40.000	-24.750	5.000
S131	K141	NV-	NV-	K142	P2	40.000	-24.750	45.000	-24.750	5.000
S132	K142	NV-	NV-	K143	P2	45.000	-24.750	50.000	-24.750	5.000
S133	K143	NV-	NVM	K144	P2	50.000	-24.750	52.500	-24.750	2.500
S134	K144	NVM	NV-	K145	P2	52.500	-24.750	55.000	-24.750	2.500
S135	K145	NV-	NVM	K146	P2	55.000	-24.750	57.500	-24.750	2.500
S136	K146	NVM	NV-	K147	P2	57.500	-24.750	60.000	-24.750	2.500
S137	K148	NV-	NVM	K149	P2	75.000	-24.750	77.500	-24.750	2.500
S138	K149	NVM	NV-	K150	P2	77.500	-24.750	80.000	-24.750	2.500
S139	K150	NV-	NVM	K151	P2	80.000	-24.750	82.500	-24.750	2.500
S140	K151	NVM	NV-	K152	P2	82.500	-24.750	85.000	-24.750	2.500
S141	K152	NV-	NV-	K153	P2	85.000	-24.750	90.000	-24.750	5.000
S142	K153	NV-	NV-	K154	P2	90.000	-24.750	95.000	-24.750	5.000
S143	K154	NV-	NV-	K155	P2	95.000	-24.750	100.000	-24.750	5.000
S144	K155	NV-	NV-	K156	P2	100.000	-24.750	105.000	-24.750	5.000
S145	K156	NV-	NV-	K157	P2	105.000	-24.750	110.000	-24.750	5.000
S146	K157	NV-	NV-	K158	P2	110.000	-24.750	115.000	-24.750	5.000
S147	K158	NV-	NV-	K159	P2	115.000	-24.750	120.000	-24.750	5.000
S148	K159	NV-	NV-	K160	P2	120.000	-24.750	125.000	-24.750	5.000
S149	K160	NV-	NVM	K161	P2	125.000	-24.750	127.500	-24.750	2.500
S150	K161	NVM	NV-	K162	P2	127.500	-24.750	130.000	-24.750	2.500
S151	K162	NV-	NVM	K163	P2	130.000	-24.750	132.500	-24.750	2.500
S152	K163	NVM	NV-	K164	P2	132.500	-24.750	135.000	-24.750	2.500
S153	K165	NV-	NVM	K166	P3	0.000	-27.500	5.000	-27.500	5.000
S154	K166	NVM	NVM	K167	P3	5.000	-27.500	10.000	-27.500	5.000
S155	K167	NVM	NVM	K168	P3	10.000	-27.500	15.000	-27.500	5.000
S156	K168	NVM	NV-	K169	P3	15.000	-27.500	20.000	-27.500	5.000
S157	K169	NV-	NVM	K170	P3	20.000	-27.500	25.000	-27.500	5.000
S158	K170	NVM	NVM	K171	P3	25.000	-27.500	30.000	-27.500	5.000
S159	K171	NVM	NVM	K172	P3	30.000	-27.500	35.000	-27.500	5.000
S160	K172	NVM	NV-	K173	P3	35.000	-27.500	40.000	-27.500	5.000
S161	K173	NV-	NVM	K174	P3	40.000	-27.500	45.000	-27.500	5.000
S162	K174	NVM	NVM	K175	P3	45.000	-27.500	50.000	-27.500	5.000
S163	K175	NVM	NVM	K176	P3	50.000	-27.500	55.000	-27.500	5.000
S164	K176	NVM	NV-	K177	P3	55.000	-27.500	60.000	-27.500	5.000
S165	K178	NV-	NVM	K179	P3	75.000	-27.500	80.000	-27.500	5.000
S166	K179	NVM	NVM	K180	P3	80.000	-27.500	85.000	-27.500	5.000
S167	K180	NVM	NVM	K181	P3	85.000	-27.500	90.000	-27.500	5.000
S168	K181	NVM	NV-	K182	P3	90.000	-27.500	95.000	-27.500	5.000
S169	K182	NV-	NVM	K183	P3	95.000	-27.500	100.000	-27.500	5.000
S170	K183	NVM	NVM	K184	P3	100.000	-27.500	105.000	-27.500	5.000
S171	K184	NVM	NVM	K185	P3	105.000	-27.500	110.000	-27.500	5.000
S172	K185	NVM	NV-	K186	P3	110.000	-27.500	115.000	-27.500	5.000
S173	K186	NV-	NVM	K187	P3	115.000	-27.500	120.000	-27.500	5.000

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S174	K187	NVM	NVM	K188	P3	120.000	-27.500	125.000	-27.500	5.000
S175	K188	NVM	NVM	K189	P3	125.000	-27.500	130.000	-27.500	5.000
S176	K189	NVM	NV-	K190	P3	130.000	-27.500	135.000	-27.500	5.000
S177	K191	NV-	NVM	K192	P3	0.000	-33.000	5.000	-33.000	5.000
S178	K192	NVM	NVM	K193	P3	5.000	-33.000	10.000	-33.000	5.000
S179	K193	NVM	NVM	K194	P3	10.000	-33.000	15.000	-33.000	5.000
S180	K194	NVM	NV-	K195	P3	15.000	-33.000	20.000	-33.000	5.000
S181	K195	NV-	NVM	K196	P3	20.000	-33.000	25.000	-33.000	5.000
S182	K196	NVM	NVM	K197	P3	25.000	-33.000	30.000	-33.000	5.000
S183	K197	NVM	NVM	K198	P3	30.000	-33.000	35.000	-33.000	5.000
S184	K198	NVM	NV-	K199	P3	35.000	-33.000	40.000	-33.000	5.000
S185	K199	NV-	NVM	K200	P3	40.000	-33.000	45.000	-33.000	5.000
S186	K200	NVM	NVM	K201	P3	45.000	-33.000	50.000	-33.000	5.000
S187	K201	NVM	NVM	K202	P3	50.000	-33.000	55.000	-33.000	5.000
S188	K202	NVM	NV-	K203	P3	55.000	-33.000	60.000	-33.000	5.000
S189	K204	NV-	NVM	K205	P3	75.000	-33.000	80.000	-33.000	5.000
S190	K205	NVM	NVM	K206	P3	80.000	-33.000	85.000	-33.000	5.000
S191	K206	NVM	NVM	K207	P3	85.000	-33.000	90.000	-33.000	5.000
S192	K207	NVM	NV-	K208	P3	90.000	-33.000	95.000	-33.000	5.000
S193	K208	NV-	NVM	K209	P3	95.000	-33.000	100.000	-33.000	5.000
S194	K209	NVM	NVM	K210	P3	100.000	-33.000	105.000	-33.000	5.000
S195	K210	NVM	NVM	K211	P3	105.000	-33.000	110.000	-33.000	5.000
S196	K211	NVM	NV-	K212	P3	110.000	-33.000	115.000	-33.000	5.000
S197	K212	NV-	NVM	K213	P3	115.000	-33.000	120.000	-33.000	5.000
S198	K213	NVM	NVM	K214	P3	120.000	-33.000	125.000	-33.000	5.000
S199	K214	NVM	NVM	K215	P3	125.000	-33.000	130.000	-33.000	5.000
S200	K215	NVM	NV-	K216	P3	130.000	-33.000	135.000	-33.000	5.000
S201	K217	NV-	NVM	K218	P3	0.000	-38.500	5.000	-38.500	5.000
S202	K218	NVM	NVM	K219	P3	5.000	-38.500	10.000	-38.500	5.000
S203	K219	NVM	NVM	K220	P3	10.000	-38.500	15.000	-38.500	5.000
S204	K220	NVM	NV-	K221	P3	15.000	-38.500	20.000	-38.500	5.000
S205	K221	NV-	NVM	K222	P3	20.000	-38.500	25.000	-38.500	5.000
S206	K222	NVM	NVM	K223	P3	25.000	-38.500	30.000	-38.500	5.000
S207	K223	NVM	NVM	K224	P3	30.000	-38.500	35.000	-38.500	5.000
S208	K224	NVM	NV-	K225	P3	35.000	-38.500	40.000	-38.500	5.000
S209	K225	NV-	NVM	K226	P3	40.000	-38.500	45.000	-38.500	5.000
S210	K226	NVM	NVM	K227	P3	45.000	-38.500	50.000	-38.500	5.000
S211	K227	NVM	NVM	K228	P3	50.000	-38.500	55.000	-38.500	5.000
S212	K228	NVM	NV-	K229	P3	55.000	-38.500	60.000	-38.500	5.000
S213	K230	NV-	NVM	K231	P3	75.000	-38.500	80.000	-38.500	5.000
S214	K231	NVM	NVM	K232	P3	80.000	-38.500	85.000	-38.500	5.000
S215	K232	NVM	NVM	K233	P3	85.000	-38.500	90.000	-38.500	5.000
S216	K233	NVM	NV-	K234	P3	90.000	-38.500	95.000	-38.500	5.000
S217	K234	NV-	NVM	K235	P3	95.000	-38.500	100.000	-38.500	5.000
S218	K235	NVM	NVM	K236	P3	100.000	-38.500	105.000	-38.500	5.000
S219	K236	NVM	NVM	K237	P3	105.000	-38.500	110.000	-38.500	5.000
S220	K237	NVM	NV-	K238	P3	110.000	-38.500	115.000	-38.500	5.000
S221	K238	NV-	NVM	K239	P3	115.000	-38.500	120.000	-38.500	5.000
S222	K239	NVM	NVM	K240	P3	120.000	-38.500	125.000	-38.500	5.000
S223	K240	NVM	NVM	K241	P3	125.000	-38.500	130.000	-38.500	5.000
S224	K241	NVM	NV-	K242	P3	130.000	-38.500	135.000	-38.500	5.000
S225	K243	NV-	NVM	K244	P3	0.000	-44.000	5.000	-44.000	5.000
S226	K244	NVM	NVM	K245	P3	5.000	-44.000	10.000	-44.000	5.000
S227	K245	NVM	NVM	K246	P3	10.000	-44.000	15.000	-44.000	5.000
S228	K246	NVM	NV-	K247	P3	15.000	-44.000	20.000	-44.000	5.000
S229	K247	NV-	NVM	K248	P3	20.000	-44.000	25.000	-44.000	5.000
S230	K248	NVM	NVM	K249	P3	25.000	-44.000	30.000	-44.000	5.000
S231	K249	NVM	NVM	K250	P3	30.000	-44.000	35.000	-44.000	5.000
S232	K250	NVM	NV-	K251	P3	35.000	-44.000	40.000	-44.000	5.000
S233	K251	NV-	NVM	K252	P3	40.000	-44.000	45.000	-44.000	5.000
S234	K252	NVM	NVM	K253	P3	45.000	-44.000	50.000	-44.000	5.000
S235	K253	NVM	NVM	K254	P3	50.000	-44.000	55.000	-44.000	5.000
S236	K254	NVM	NV-	K255	P3	55.000	-44.000	60.000	-44.000	5.000
S237	K256	NV-	NVM	K257	P3	75.000	-44.000	80.000	-44.000	5.000
S238	K257	NVM	NVM	K258	P3	80.000	-44.000	85.000	-44.000	5.000
S239	K258	NVM	NVM	K259	P3	85.000	-44.000	90.000	-44.000	5.000
S240	K259	NVM	NV-	K260	P3	90.000	-44.000	95.000	-44.000	5.000
S241	K260	NV-	NVM	K261	P3	95.000	-44.000	100.000	-44.000	5.000
S242	K261	NVM	NVM	K262	P3	100.000	-44.000	105.000	-44.000	5.000
S243	K262	NVM	NVM	K263	P3	105.000	-44.000	110.000	-44.000	5.000
S244	K263	NVM	NV-	K264	P3	110.000	-44.000	115.000	-44.000	5.000

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S245	K264	NV-	NVM	K265	P3	115.000	-44.000	120.000	-44.000	5.000
S246	K265	NVM	NVM	K266	P3	120.000	-44.000	125.000	-44.000	5.000
S247	K266	NVM	NVM	K267	P3	125.000	-44.000	130.000	-44.000	5.000
S248	K267	NVM	NV-	K268	P3	130.000	-44.000	135.000	-44.000	5.000
S249	K269	NV-	NV-	K270	P1	0.000	-49.500	5.000	-49.500	5.000
S250	K270	NV-	NV-	K271	P1	5.000	-49.500	10.000	-49.500	5.000
S251	K271	NV-	NV-	K272	P1	10.000	-49.500	15.000	-49.500	5.000
S252	K272	NV-	NV-	K273	P1	15.000	-49.500	20.000	-49.500	5.000
S253	K273	NV-	NV-	K274	P1	20.000	-49.500	25.000	-49.500	5.000
S254	K274	NV-	NV-	K275	P1	25.000	-49.500	30.000	-49.500	5.000
S255	K275	NV-	NV-	K276	P1	30.000	-49.500	35.000	-49.500	5.000
S256	K276	NV-	NV-	K277	P1	35.000	-49.500	40.000	-49.500	5.000
S257	K277	NV-	NV-	K278	P1	40.000	-49.500	45.000	-49.500	5.000
S258	K278	NV-	NV-	K279	P1	45.000	-49.500	50.000	-49.500	5.000
S259	K279	NV-	NV-	K280	P1	50.000	-49.500	55.000	-49.500	5.000
S260	K280	NV-	NV-	K281	P1	55.000	-49.500	60.000	-49.500	5.000
S261	K282	NV-	NV-	K283	P1	75.000	-49.500	80.000	-49.500	5.000
S262	K283	NV-	NV-	K284	P1	80.000	-49.500	85.000	-49.500	5.000
S263	K284	NV-	NV-	K285	P1	85.000	-49.500	90.000	-49.500	5.000
S264	K285	NV-	NV-	K286	P1	90.000	-49.500	95.000	-49.500	5.000
S265	K286	NV-	NV-	K287	P1	95.000	-49.500	100.000	-49.500	5.000
S266	K287	NV-	NV-	K288	P1	100.000	-49.500	105.000	-49.500	5.000
S267	K288	NV-	NV-	K289	P1	105.000	-49.500	110.000	-49.500	5.000
S268	K289	NV-	NV-	K290	P1	110.000	-49.500	115.000	-49.500	5.000
S269	K290	NV-	NV-	K291	P1	115.000	-49.500	120.000	-49.500	5.000
S270	K291	NV-	NV-	K292	P1	120.000	-49.500	125.000	-49.500	5.000
S271	K292	NV-	NV-	K293	P1	125.000	-49.500	130.000	-49.500	5.000
S272	K293	NV-	NV-	K294	P1	130.000	-49.500	135.000	-49.500	5.000
S273	K1	NV-	NV-	K27	P1	0.000	0.000	0.000	-5.500	5.500
S274	K1	NV-	NV-	K28	P5	0.000	0.000	5.000	-5.500	7.433
S275	K27	NV-	NV-	K53	P1	0.000	-5.500	0.000	-11.000	5.500
S276	K53	NV-	NV-	K80	P5	0.000	-11.000	5.000	-16.500	7.433
S277	K53	NV-	NV-	K79	P1	0.000	-11.000	0.000	-16.500	5.500
S278	K79	NV-	NV-	K105	P1	0.000	-16.500	0.000	-22.000	5.500
S279	K105	NV-	NV-	K132	P5	0.000	-22.000	2.500	-24.750	3.717
S280	K105	NV-	NVM	K131	P1	0.000	-22.000	0.000	-24.750	2.750
S281	K131	NVM	NV-	K165	P1	0.000	-24.750	0.000	-27.500	2.750
S282	K165	NV-	NV-	K192	P5	0.000	-27.500	5.000	-33.000	7.433
S283	K165	NV-	NV-	K191	P1	0.000	-27.500	0.000	-33.000	5.500
S284	K191	NV-	NV-	K217	P1	0.000	-33.000	0.000	-38.500	5.500
S285	K217	NV-	NV-	K244	P5	0.000	-38.500	5.000	-44.000	7.433
S286	K217	NV-	NV-	K243	P1	0.000	-38.500	0.000	-44.000	5.500
S287	K243	NV-	NV-	K269	P1	0.000	-44.000	0.000	-49.500	5.500
S288	K165	NV-	NV-	K132	P5	0.000	-27.500	2.500	-24.750	3.717
S289	K132	NV-	NV-	K166	P5	2.500	-24.750	5.000	-27.500	3.717
S290	K2	NV-	NV-	K28	P2	5.000	0.000	5.000	-5.500	5.500
S291	K53	NV-	NV-	K28	P5	0.000	-11.000	5.000	-5.500	7.433
S292	K28	NV-	NV-	K54	P2	5.000	-5.500	5.000	-11.000	5.500
S293	K28	NV-	NV-	K55	P5	5.000	-5.500	10.000	-11.000	7.433
S294	K54	NV-	NV-	K80	P2	5.000	-11.000	5.000	-16.500	5.500
S295	K80	NV-	NV-	K107	P5	5.000	-16.500	10.000	-22.000	7.433
S296	K105	NV-	NV-	K80	P5	0.000	-22.000	5.000	-16.500	7.433
S297	K80	NV-	NV-	K106	P2	5.000	-16.500	5.000	-22.000	5.500
S298	K132	NV-	NV-	K106	P5	2.500	-24.750	5.000	-22.000	3.717
S299	K106	NV-	NV-	K134	P5	5.000	-22.000	7.500	-24.750	3.717
S300	K106	NV-	NVM	K133	P2	5.000	-22.000	5.000	-24.750	2.750
S301	K133	NVM	NV-	K166	P2	5.000	-24.750	5.000	-27.500	2.750
S302	K166	NV-	NV-	K192	P2	5.000	-27.500	5.000	-33.000	5.500
S303	K192	NV-	NV-	K219	P5	5.000	-33.000	10.000	-38.500	7.433
S304	K192	NV-	NV-	K218	P2	5.000	-33.000	5.000	-38.500	5.500
S305	K217	NV-	NV-	K192	P5	0.000	-38.500	5.000	-33.000	7.433
S306	K218	NV-	NV-	K244	P2	5.000	-38.500	5.000	-44.000	5.500
S307	K244	NV-	NV-	K271	P5	5.000	-44.000	10.000	-49.500	7.433
S308	K269	NV-	NV-	K244	P5	0.000	-49.500	5.000	-44.000	7.433
S309	K244	NV-	NV-	K270	P2	5.000	-44.000	5.000	-49.500	5.500
S310	K134	NV-	NV-	K167	P5	7.500	-24.750	10.000	-27.500	3.717
S311	K166	NV-	NV-	K134	P5	5.000	-27.500	7.500	-24.750	3.717
S312	K28	NV-	NV-	K3	P5	5.000	-5.500	10.000	0.000	7.433
S313	K3	NV-	NV-	K30	P5	10.000	0.000	15.000	-5.500	7.433
S314	K3	NV-	NV-	K29	P2	10.000	0.000	10.000	-5.500	5.500
S315	K29	NV-	NV-	K55	P2	10.000	-5.500	10.000	-11.000	5.500

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S316	K80	NV-	NV-	K55	P5	5.000	-16.500	10.000	-11.000	7.433
S317	K55	NV-	NV-	K81	P2	10.000	-11.000	10.000	-16.500	5.500
S318	K81	NV-	NV-	K107	P2	10.000	-16.500	10.000	-22.000	5.500
S319	K107	NV-	NVM	K135	P2	10.000	-22.000	10.000	-24.750	2.750
S320	K134	NV-	NV-	K107	P5	7.500	-24.750	10.000	-22.000	3.717
S321	K135	NVM	NV-	K167	P2	10.000	-24.750	10.000	-27.500	2.750
S322	K192	NV-	NV-	K167	P5	5.000	-33.000	10.000	-27.500	7.433
S323	K167	NV-	NV-	K193	P2	10.000	-27.500	10.000	-33.000	5.500
S324	K193	NV-	NV-	K219	P2	10.000	-33.000	10.000	-38.500	5.500
S325	K219	NV-	NV-	K246	P5	10.000	-38.500	15.000	-44.000	7.433
S326	K219	NV-	NV-	K245	P2	10.000	-38.500	10.000	-44.000	5.500
S327	K244	NV-	NV-	K219	P5	5.000	-44.000	10.000	-38.500	7.433
S328	K245	NV-	NV-	K271	P2	10.000	-44.000	10.000	-49.500	5.500
S329	K4	NV-	NV-	K30	P2	15.000	0.000	15.000	-5.500	5.500
S330	K30	NV-	NV-	K56	P2	15.000	-5.500	15.000	-11.000	5.500
S331	K30	NV-	NV-	K57	P5	15.000	-5.500	20.000	-11.000	7.433
S332	K55	NV-	NV-	K30	P5	10.000	-11.000	15.000	-5.500	7.433
S333	K56	NV-	NV-	K82	P2	15.000	-11.000	15.000	-16.500	5.500
S334	K82	NV-	NV-	K108	P2	15.000	-16.500	15.000	-22.000	5.500
S335	K108	NV-	NVM	K136	P2	15.000	-22.000	15.000	-24.750	2.750
S336	K136	NVM	NV-	K168	P2	15.000	-24.750	15.000	-27.500	2.750
S337	K168	NV-	NV-	K194	P2	15.000	-27.500	15.000	-33.000	5.500
S338	K194	NV-	NV-	K220	P2	15.000	-33.000	15.000	-38.500	5.500
S339	K220	NV-	NV-	K246	P2	15.000	-38.500	15.000	-44.000	5.500
S340	K246	NV-	NV-	K272	P2	15.000	-44.000	15.000	-49.500	5.500
S341	K246	NV-	NV-	K273	P5	15.000	-44.000	20.000	-49.500	7.433
S342	K271	NV-	NV-	K246	P5	10.000	-49.500	15.000	-44.000	7.433
S343	K5	NV-	NVM	K31	P2	20.000	0.000	20.000	-5.500	5.500
S344	K5	NV-	NV-	K32	P5	20.000	0.000	25.000	-5.500	7.433
S345	K30	NV-	NV-	K5	P5	15.000	-5.500	20.000	0.000	7.433
S346	K31	NVM	NVM	K57	P4	20.000	-5.500	20.000	-11.000	5.500
S347	K57	NVM	NVM	K83	P4	20.000	-11.000	20.000	-16.500	5.500
S348	K83	NVM	NVM	K109	P4	20.000	-16.500	20.000	-22.000	5.500
S349	K109	NVM	NVM	K137	P4	20.000	-22.000	20.000	-24.750	2.750
S350	K137	NVM	NVM	K169	P4	20.000	-24.750	20.000	-27.500	2.750
S351	K169	NVM	NVM	K195	P4	20.000	-27.500	20.000	-33.000	5.500
S352	K195	NVM	NVM	K221	P4	20.000	-33.000	20.000	-38.500	5.500
S353	K221	NV-	NV-	K248	P5	20.000	-38.500	25.000	-44.000	7.433
S354	K221	NVM	NVM	K247	P4	20.000	-38.500	20.000	-44.000	5.500
S355	K246	NV-	NV-	K221	P5	15.000	-44.000	20.000	-38.500	7.433
S356	K247	NVM	NV-	K273	P4	20.000	-44.000	20.000	-49.500	5.500
S357	K6	NV-	NV-	K32	P2	25.000	0.000	25.000	-5.500	5.500
S358	K57	NV-	NV-	K32	P5	20.000	-11.000	25.000	-5.500	7.433
S359	K32	NV-	NV-	K58	P2	25.000	-5.500	25.000	-11.000	5.500
S360	K32	NV-	NV-	K59	P5	25.000	-5.500	30.000	-11.000	7.433
S361	K58	NV-	NV-	K84	P2	25.000	-11.000	25.000	-16.500	5.500
S362	K84	NV-	NV-	K110	P2	25.000	-16.500	25.000	-22.000	5.500
S363	K110	NV-	NVM	K138	P2	25.000	-22.000	25.000	-24.750	2.750
S364	K138	NVM	NV-	K170	P2	25.000	-24.750	25.000	-27.500	2.750
S365	K170	NV-	NV-	K196	P2	25.000	-27.500	25.000	-33.000	5.500
S366	K196	NV-	NV-	K222	P2	25.000	-33.000	25.000	-38.500	5.500
S367	K222	NV-	NV-	K248	P2	25.000	-38.500	25.000	-44.000	5.500
S368	K273	NV-	NV-	K248	P5	20.000	-49.500	25.000	-44.000	7.433
S369	K248	NV-	NV-	K275	P5	25.000	-44.000	30.000	-49.500	7.433
S370	K248	NV-	NV-	K274	P2	25.000	-44.000	25.000	-49.500	5.500
S371	K7	NV-	NV-	K33	P2	30.000	0.000	30.000	-5.500	5.500
S372	K7	NV-	NV-	K34	P5	30.000	0.000	35.000	-5.500	7.433
S373	K32	NV-	NV-	K7	P5	25.000	-5.500	30.000	0.000	7.433
S374	K33	NV-	NV-	K59	P2	30.000	-5.500	30.000	-11.000	5.500
S375	K59	NV-	NV-	K85	P2	30.000	-11.000	30.000	-16.500	5.500
S376	K85	NV-	NV-	K111	P2	30.000	-16.500	30.000	-22.000	5.500
S377	K111	NV-	NVM	K139	P2	30.000	-22.000	30.000	-24.750	2.750
S378	K139	NVM	NV-	K171	P2	30.000	-24.750	30.000	-27.500	2.750
S379	K171	NV-	NV-	K197	P2	30.000	-27.500	30.000	-33.000	5.500
S380	K197	NV-	NV-	K223	P2	30.000	-33.000	30.000	-38.500	5.500
S381	K223	NV-	NV-	K249	P2	30.000	-38.500	30.000	-44.000	5.500
S382	K223	NV-	NV-	K250	P5	30.000	-38.500	35.000	-44.000	7.433
S383	K248	NV-	NV-	K223	P5	25.000	-44.000	30.000	-38.500	7.433
S384	K249	NV-	NV-	K275	P2	30.000	-44.000	30.000	-49.500	5.500
S385	K8	NV-	NV-	K34	P2	35.000	0.000	35.000	-5.500	5.500
S386	K34	NV-	NV-	K61	P5	35.000	-5.500	40.000	-11.000	7.433

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S387	K59	NV-	NV-	K34	P5	30.000	-11.000	35.000	-5.500	7.433
S388	K34	NV-	NV-	K60	P2	35.000	-5.500	35.000	-11.000	5.500
S389	K60	NV-	NV-	K86	P2	35.000	-11.000	35.000	-16.500	5.500
S390	K86	NV-	NV-	K112	P2	35.000	-16.500	35.000	-22.000	5.500
S391	K112	NV-	NVM	K140	P2	35.000	-22.000	35.000	-24.750	2.750
S392	K140	NVM	NV-	K172	P2	35.000	-24.750	35.000	-27.500	2.750
S393	K172	NV-	NV-	K198	P2	35.000	-27.500	35.000	-33.000	5.500
S394	K198	NV-	NV-	K224	P2	35.000	-33.000	35.000	-38.500	5.500
S395	K224	NV-	NV-	K250	P2	35.000	-38.500	35.000	-44.000	5.500
S396	K250	NV-	NV-	K276	P2	35.000	-44.000	35.000	-49.500	5.500
S397	K250	NV-	NV-	K277	P5	35.000	-44.000	40.000	-49.500	7.433
S398	K275	NV-	NV-	K250	P5	30.000	-49.500	35.000	-44.000	7.433
S399	K9	NV-	NV-	K36	P5	40.000	0.000	45.000	-5.500	7.433
S400	K34	NV-	NV-	K9	P5	35.000	-5.500	40.000	0.000	7.433
S401	K9	NV-	NVM	K35	P4	40.000	0.000	40.000	-5.500	5.500
S402	K35	NVM	NVM	K61	P4	40.000	-5.500	40.000	-11.000	5.500
S403	K61	NVM	NVM	K87	P4	40.000	-11.000	40.000	-16.500	5.500
S404	K87	NVM	NVM	K113	P4	40.000	-16.500	40.000	-22.000	5.500
S405	K113	NVM	NVM	K141	P4	40.000	-22.000	40.000	-24.750	2.750
S406	K141	NVM	NVM	K173	P4	40.000	-24.750	40.000	-27.500	2.750
S407	K173	NVM	NVM	K199	P4	40.000	-27.500	40.000	-33.000	5.500
S408	K199	NVM	NVM	K225	P4	40.000	-33.000	40.000	-38.500	5.500
S409	K225	NVM	NVM	K251	P4	40.000	-38.500	40.000	-44.000	5.500
S410	K225	NV-	NV-	K252	P5	40.000	-38.500	45.000	-44.000	7.433
S411	K250	NV-	NV-	K225	P5	35.000	-44.000	40.000	-38.500	7.433
S412	K251	NVM	NV-	K277	P4	40.000	-44.000	40.000	-49.500	5.500
S413	K10	NV-	NV-	K36	P2	45.000	0.000	45.000	-5.500	5.500
S414	K36	NV-	NV-	K63	P5	45.000	-5.500	50.000	-11.000	7.433
S415	K61	NV-	NV-	K36	P5	40.000	-11.000	45.000	-5.500	7.433
S416	K36	NV-	NV-	K62	P2	45.000	-5.500	45.000	-11.000	5.500
S417	K62	NV-	NV-	K88	P2	45.000	-11.000	45.000	-16.500	5.500
S418	K88	NV-	NV-	K114	P2	45.000	-16.500	45.000	-22.000	5.500
S419	K114	NV-	NVM	K142	P2	45.000	-22.000	45.000	-24.750	2.750
S420	K142	NVM	NV-	K174	P2	45.000	-24.750	45.000	-27.500	2.750
S421	K174	NV-	NV-	K200	P2	45.000	-27.500	45.000	-33.000	5.500
S422	K200	NV-	NV-	K226	P2	45.000	-33.000	45.000	-38.500	5.500
S423	K226	NV-	NV-	K252	P2	45.000	-38.500	45.000	-44.000	5.500
S424	K252	NV-	NV-	K278	P2	45.000	-44.000	45.000	-49.500	5.500
S425	K277	NV-	NV-	K252	P5	40.000	-49.500	45.000	-44.000	7.433
S426	K252	NV-	NV-	K279	P5	45.000	-44.000	50.000	-49.500	7.433
S427	K11	NV-	NV-	K37	P2	50.000	0.000	50.000	-5.500	5.500
S428	K36	NV-	NV-	K11	P5	45.000	-5.500	50.000	0.000	7.433
S429	K11	NV-	NV-	K38	P5	50.000	0.000	55.000	-5.500	7.433
S430	K37	NV-	NV-	K63	P2	50.000	-5.500	50.000	-11.000	5.500
S431	K63	NV-	NV-	K90	P5	50.000	-11.000	55.000	-16.500	7.433
S432	K63	NV-	NV-	K89	P2	50.000	-11.000	50.000	-16.500	5.500
S433	K89	NV-	NV-	K115	P2	50.000	-16.500	50.000	-22.000	5.500
S434	K115	NV-	NVM	K143	P2	50.000	-22.000	50.000	-24.750	2.750
S435	K115	NV-	NV-	K144	P5	50.000	-22.000	52.500	-24.750	3.717
S436	K143	NVM	NV-	K175	P2	50.000	-24.750	50.000	-27.500	2.750
S437	K175	NV-	NV-	K201	P2	50.000	-27.500	50.000	-33.000	5.500
S438	K175	NV-	NV-	K202	P5	50.000	-27.500	55.000	-33.000	7.433
S439	K201	NV-	NV-	K227	P2	50.000	-33.000	50.000	-38.500	5.500
S440	K227	NV-	NV-	K254	P5	50.000	-38.500	55.000	-44.000	7.433
S441	K227	NV-	NV-	K253	P2	50.000	-38.500	50.000	-44.000	5.500
S442	K252	NV-	NV-	K227	P5	45.000	-44.000	50.000	-38.500	7.433
S443	K253	NV-	NV-	K279	P2	50.000	-44.000	50.000	-49.500	5.500
S444	K144	NV-	NV-	K176	P5	52.500	-24.750	55.000	-27.500	3.717
S445	K175	NV-	NV-	K144	P5	50.000	-27.500	52.500	-24.750	3.717
S446	K12	NV-	NV-	K38	P2	55.000	0.000	55.000	-5.500	5.500
S447	K63	NV-	NV-	K38	P5	50.000	-11.000	55.000	-5.500	7.433
S448	K38	NV-	NV-	K64	P2	55.000	-5.500	55.000	-11.000	5.500
S449	K38	NV-	NV-	K65	P5	55.000	-5.500	60.000	-11.000	7.433
S450	K64	NV-	NV-	K90	P2	55.000	-11.000	55.000	-16.500	5.500
S451	K90	NV-	NV-	K116	P2	55.000	-16.500	55.000	-22.000	5.500
S452	K90	NV-	NV-	K117	P5	55.000	-16.500	60.000	-22.000	7.433
S453	K115	NV-	NV-	K90	P5	50.000	-22.000	55.000	-16.500	7.433
S454	K144	NV-	NV-	K116	P5	52.500	-24.750	55.000	-22.000	3.717
S455	K116	NV-	NV-	K146	P5	55.000	-22.000	57.500	-24.750	3.717
S456	K116	NV-	NVM	K145	P2	55.000	-22.000	55.000	-24.750	2.750
S457	K145	NVM	NV-	K176	P2	55.000	-24.750	55.000	-27.500	2.750

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S458	K176	NV-	NV-	K202	P2	55.000	-27.500	55.000	-33.000	5.500
S459	K227	NV-	NV-	K202	P5	50.000	-38.500	55.000	-33.000	7.433
S460	K202	NV-	NV-	K229	P5	55.000	-33.000	60.000	-38.500	7.433
S461	K202	NV-	NV-	K228	P2	55.000	-33.000	55.000	-38.500	5.500
S462	K228	NV-	NV-	K254	P2	55.000	-38.500	55.000	-44.000	5.500
S463	K254	NV-	NV-	K280	P2	55.000	-44.000	55.000	-49.500	5.500
S464	K254	NV-	NV-	K281	P5	55.000	-44.000	60.000	-49.500	7.433
S465	K279	NV-	NV-	K254	P5	50.000	-49.500	55.000	-44.000	7.433
S466	K146	NV-	NV-	K177	P5	57.500	-24.750	60.000	-27.500	3.717
S467	K176	NV-	NV-	K146	P5	55.000	-27.500	57.500	-24.750	3.717
S468	K13	NV-	NV-	K39	P1	60.000	0.000	60.000	-5.500	5.500
S469	K38	NV-	NV-	K13	P5	55.000	-5.500	60.000	0.000	7.433
S470	K39	NV-	NV-	K65	P1	60.000	-5.500	60.000	-11.000	5.500
S471	K90	NV-	NV-	K65	P5	55.000	-16.500	60.000	-11.000	7.433
S472	K65	NV-	NV-	K91	P1	60.000	-11.000	60.000	-16.500	5.500
S473	K91	NV-	NV-	K117	P1	60.000	-16.500	60.000	-22.000	5.500
S474	K117	NV-	NVM	K147	P1	60.000	-22.000	60.000	-24.750	2.750
S475	K146	NV-	NV-	K117	P5	57.500	-24.750	60.000	-22.000	3.717
S476	K147	NVM	NV-	K177	P1	60.000	-24.750	60.000	-27.500	2.750
S477	K202	NV-	NV-	K177	P5	55.000	-33.000	60.000	-27.500	7.433
S478	K177	NV-	NV-	K203	P1	60.000	-27.500	60.000	-33.000	5.500
S479	K203	NV-	NV-	K229	P1	60.000	-33.000	60.000	-38.500	5.500
S480	K229	NV-	NV-	K255	P1	60.000	-38.500	60.000	-44.000	5.500
S481	K254	NV-	NV-	K229	P5	55.000	-44.000	60.000	-38.500	7.433
S482	K255	NV-	NV-	K281	P1	60.000	-44.000	60.000	-49.500	5.500
S483	K14	NV-	NV-	K41	P5	75.000	0.000	80.000	-5.500	7.433
S484	K14	NV-	NV-	K40	P1	75.000	0.000	75.000	-5.500	5.500
S485	K40	NV-	NV-	K66	P1	75.000	-5.500	75.000	-11.000	5.500
S486	K66	NV-	NV-	K93	P5	75.000	-11.000	80.000	-16.500	7.433
S487	K66	NV-	NV-	K92	P1	75.000	-11.000	75.000	-16.500	5.500
S488	K92	NV-	NV-	K118	P1	75.000	-16.500	75.000	-22.000	5.500
S489	K118	NV-	NV-	K149	P5	75.000	-22.000	77.500	-24.750	3.717
S490	K118	NV-	NVM	K148	P1	75.000	-22.000	75.000	-24.750	2.750
S491	K148	NVM	NV-	K178	P1	75.000	-24.750	75.000	-27.500	2.750
S492	K178	NV-	NV-	K204	P1	75.000	-27.500	75.000	-33.000	5.500
S493	K178	NV-	NV-	K205	P5	75.000	-27.500	80.000	-33.000	7.433
S494	K204	NV-	NV-	K230	P1	75.000	-33.000	75.000	-38.500	5.500
S495	K230	NV-	NV-	K256	P1	75.000	-38.500	75.000	-44.000	5.500
S496	K230	NV-	NV-	K257	P5	75.000	-38.500	80.000	-44.000	7.433
S497	K256	NV-	NV-	K282	P1	75.000	-44.000	75.000	-49.500	5.500
S498	K149	NV-	NV-	K179	P5	77.500	-24.750	80.000	-27.500	3.717
S499	K178	NV-	NV-	K149	P5	75.000	-27.500	77.500	-24.750	3.717
S500	K15	NV-	NV-	K41	P2	80.000	0.000	80.000	-5.500	5.500
S501	K41	NV-	NV-	K68	P5	80.000	-5.500	85.000	-11.000	7.433
S502	K66	NV-	NV-	K41	P5	75.000	-11.000	80.000	-5.500	7.433
S503	K41	NV-	NV-	K67	P2	80.000	-5.500	80.000	-11.000	5.500
S504	K67	NV-	NV-	K93	P2	80.000	-11.000	80.000	-16.500	5.500
S505	K93	NV-	NV-	K120	P5	80.000	-16.500	85.000	-22.000	7.433
S506	K93	NV-	NV-	K119	P2	80.000	-16.500	80.000	-22.000	5.500
S507	K118	NV-	NV-	K93	P5	75.000	-22.000	80.000	-16.500	7.433
S508	K119	NV-	NV-	K151	P5	80.000	-22.000	82.500	-24.750	3.717
S509	K119	NV-	NVM	K150	P2	80.000	-22.000	80.000	-24.750	2.750
S510	K149	NV-	NV-	K119	P5	77.500	-24.750	80.000	-22.000	3.717
S511	K150	NVM	NV-	K179	P2	80.000	-24.750	80.000	-27.500	2.750
S512	K179	NV-	NV-	K205	P2	80.000	-27.500	80.000	-33.000	5.500
S513	K230	NV-	NV-	K205	P5	75.000	-38.500	80.000	-33.000	7.433
S514	K205	NV-	NV-	K231	P2	80.000	-33.000	80.000	-38.500	5.500
S515	K205	NV-	NV-	K232	P5	80.000	-33.000	85.000	-38.500	7.433
S516	K231	NV-	NV-	K257	P2	80.000	-38.500	80.000	-44.000	5.500
S517	K257	NV-	NV-	K283	P2	80.000	-44.000	80.000	-49.500	5.500
S518	K282	NV-	NV-	K257	P5	75.000	-49.500	80.000	-44.000	7.433
S519	K257	NV-	NV-	K284	P5	80.000	-44.000	85.000	-49.500	7.433
S520	K151	NV-	NV-	K180	P5	82.500	-24.750	85.000	-27.500	3.717
S521	K179	NV-	NV-	K151	P5	80.000	-27.500	82.500	-24.750	3.717
S522	K16	NV-	NV-	K42	P2	85.000	0.000	85.000	-5.500	5.500
S523	K16	NV-	NV-	K43	P5	85.000	0.000	90.000	-5.500	7.433
S524	K41	NV-	NV-	K16	P5	80.000	-5.500	85.000	0.000	7.433
S525	K42	NV-	NV-	K68	P2	85.000	-5.500	85.000	-11.000	5.500
S526	K68	NV-	NV-	K94	P2	85.000	-11.000	85.000	-16.500	5.500
S527	K93	NV-	NV-	K68	P5	80.000	-16.500	85.000	-11.000	7.433
S528	K94	NV-	NV-	K120	P2	85.000	-16.500	85.000	-22.000	5.500

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S529	K151	NV-	NV-	K120	P5	82.500	-24.750	85.000	-22.000	3.717
S530	K120	NV-	NVM	K152	P2	85.000	-22.000	85.000	-24.750	2.750
S531	K152	NVM	NV-	K180	P2	85.000	-24.750	85.000	-27.500	2.750
S532	K180	NV-	NV-	K206	P2	85.000	-27.500	85.000	-33.000	5.500
S533	K205	NV-	NV-	K180	P5	80.000	-33.000	85.000	-27.500	7.433
S534	K206	NV-	NV-	K232	P2	85.000	-33.000	85.000	-38.500	5.500
S535	K232	NV-	NV-	K258	P2	85.000	-38.500	85.000	-44.000	5.500
S536	K232	NV-	NV-	K259	P5	85.000	-38.500	90.000	-44.000	7.433
S537	K257	NV-	NV-	K232	P5	80.000	-44.000	85.000	-38.500	7.433
S538	K258	NV-	NV-	K284	P2	85.000	-44.000	85.000	-49.500	5.500
S539	K17	NV-	NV-	K43	P2	90.000	0.000	90.000	-5.500	5.500
S540	K43	NV-	NV-	K69	P2	90.000	-5.500	90.000	-11.000	5.500
S541	K43	NV-	NV-	K70	P5	90.000	-5.500	95.000	-11.000	7.433
S542	K68	NV-	NV-	K43	P5	85.000	-11.000	90.000	-5.500	7.433
S543	K69	NV-	NV-	K95	P2	90.000	-11.000	90.000	-16.500	5.500
S544	K95	NV-	NV-	K121	P2	90.000	-16.500	90.000	-22.000	5.500
S545	K121	NV-	NVM	K153	P2	90.000	-22.000	90.000	-24.750	2.750
S546	K153	NVM	NV-	K181	P2	90.000	-24.750	90.000	-27.500	2.750
S547	K181	NV-	NV-	K207	P2	90.000	-27.500	90.000	-33.000	5.500
S548	K207	NV-	NV-	K233	P2	90.000	-33.000	90.000	-38.500	5.500
S549	K233	NV-	NV-	K259	P2	90.000	-38.500	90.000	-44.000	5.500
S550	K259	NV-	NV-	K285	P2	90.000	-44.000	90.000	-49.500	5.500
S551	K259	NV-	NV-	K286	P5	90.000	-44.000	95.000	-49.500	7.433
S552	K284	NV-	NV-	K259	P5	85.000	-49.500	90.000	-44.000	7.433
S553	K18	NV-	NV-	K45	P5	95.000	0.000	100.000	-5.500	7.433
S554	K43	NV-	NV-	K18	P5	90.000	-5.500	95.000	0.000	7.433
S555	K18	NV-	NVM	K44	P4	95.000	0.000	95.000	-5.500	5.500
S556	K44	NVM	NVM	K70	P4	95.000	-5.500	95.000	-11.000	5.500
S557	K70	NVM	NVM	K96	P4	95.000	-11.000	95.000	-16.500	5.500
S558	K96	NVM	NVM	K122	P4	95.000	-16.500	95.000	-22.000	5.500
S559	K122	NVM	NVM	K154	P4	95.000	-22.000	95.000	-24.750	2.750
S560	K154	NVM	NVM	K182	P4	95.000	-24.750	95.000	-27.500	2.750
S561	K182	NVM	NVM	K208	P4	95.000	-27.500	95.000	-33.000	5.500
S562	K208	NVM	NVM	K234	P4	95.000	-33.000	95.000	-38.500	5.500
S563	K234	NV-	NV-	K261	P5	95.000	-38.500	100.000	-44.000	7.433
S564	K234	NVM	NVM	K260	P4	95.000	-38.500	95.000	-44.000	5.500
S565	K259	NV-	NV-	K234	P5	90.000	-44.000	95.000	-38.500	7.433
S566	K260	NVM	NV-	K286	P4	95.000	-44.000	95.000	-49.500	5.500
S567	K19	NV-	NV-	K45	P2	100.000	0.000	100.000	-5.500	5.500
S568	K70	NV-	NV-	K45	P5	95.000	-11.000	100.000	-5.500	7.433
S569	K45	NV-	NV-	K71	P2	100.000	-5.500	100.000	-11.000	5.500
S570	K45	NV-	NV-	K72	P5	100.000	-5.500	105.000	-11.000	7.433
S571	K71	NV-	NV-	K97	P2	100.000	-11.000	100.000	-16.500	5.500
S572	K97	NV-	NV-	K123	P2	100.000	-16.500	100.000	-22.000	5.500
S573	K123	NV-	NVM	K155	P2	100.000	-22.000	100.000	-24.750	2.750
S574	K155	NVM	NV-	K183	P2	100.000	-24.750	100.000	-27.500	2.750
S575	K183	NV-	NV-	K209	P2	100.000	-27.500	100.000	-33.000	5.500
S576	K209	NV-	NV-	K235	P2	100.000	-33.000	100.000	-38.500	5.500
S577	K235	NV-	NV-	K261	P2	100.000	-38.500	100.000	-44.000	5.500
S578	K261	NV-	NV-	K287	P2	100.000	-44.000	100.000	-49.500	5.500
S579	K261	NV-	NV-	K288	P5	100.000	-44.000	105.000	-49.500	7.433
S580	K286	NV-	NV-	K261	P5	95.000	-49.500	100.000	-44.000	7.433
S581	K20	NV-	NV-	K47	P5	105.000	0.000	110.000	-5.500	7.433
S582	K20	NV-	NV-	K46	P2	105.000	0.000	105.000	-5.500	5.500
S583	K45	NV-	NV-	K20	P5	100.000	-5.500	105.000	0.000	7.433
S584	K46	NV-	NV-	K72	P2	105.000	-5.500	105.000	-11.000	5.500
S585	K72	NV-	NV-	K98	P2	105.000	-11.000	105.000	-16.500	5.500
S586	K98	NV-	NV-	K124	P2	105.000	-16.500	105.000	-22.000	5.500
S587	K124	NV-	NVM	K156	P2	105.000	-22.000	105.000	-24.750	2.750
S588	K156	NVM	NV-	K184	P2	105.000	-24.750	105.000	-27.500	2.750
S589	K184	NV-	NV-	K210	P2	105.000	-27.500	105.000	-33.000	5.500
S590	K210	NV-	NV-	K236	P2	105.000	-33.000	105.000	-38.500	5.500
S591	K261	NV-	NV-	K236	P5	100.000	-44.000	105.000	-38.500	7.433
S592	K236	NV-	NV-	K263	P5	105.000	-38.500	110.000	-44.000	7.433
S593	K236	NV-	NV-	K262	P2	105.000	-38.500	105.000	-44.000	5.500
S594	K262	NV-	NV-	K288	P2	105.000	-44.000	105.000	-49.500	5.500
S595	K21	NV-	NV-	K47	P2	110.000	0.000	110.000	-5.500	5.500
S596	K47	NV-	NV-	K74	P5	110.000	-5.500	115.000	-11.000	7.433
S597	K72	NV-	NV-	K47	P5	105.000	-11.000	110.000	-5.500	7.433
S598	K47	NV-	NV-	K73	P2	110.000	-5.500	110.000	-11.000	5.500
S599	K73	NV-	NV-	K99	P2	110.000	-11.000	110.000	-16.500	5.500

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S600	K99	NV-	NV-	K125	P2	110.000	-16.500	110.000	-22.000	5.500
S601	K125	NV-	NVM	K157	P2	110.000	-22.000	110.000	-24.750	2.750
S602	K157	NVM	NV-	K185	P2	110.000	-24.750	110.000	-27.500	2.750
S603	K185	NV-	NV-	K211	P2	110.000	-27.500	110.000	-33.000	5.500
S604	K211	NV-	NV-	K237	P2	110.000	-33.000	110.000	-38.500	5.500
S605	K237	NV-	NV-	K263	P2	110.000	-38.500	110.000	-44.000	5.500
S606	K263	NV-	NV-	K290	P5	110.000	-44.000	115.000	-49.500	7.433
S607	K288	NV-	NV-	K263	P5	105.000	-49.500	110.000	-44.000	7.433
S608	K263	NV-	NV-	K289	P2	110.000	-44.000	110.000	-49.500	5.500
S609	K47	NV-	NV-	K22	P5	110.000	-5.500	115.000	0.000	7.433
S610	K22	NV-	NV-	K49	P5	115.000	0.000	120.000	-5.500	7.433
S611	K22	NV-	NVM	K48	P4	115.000	0.000	115.000	-5.500	5.500
S612	K48	NVM	NVM	K74	P4	115.000	-5.500	115.000	-11.000	5.500
S613	K74	NVM	NVM	K100	P4	115.000	-11.000	115.000	-16.500	5.500
S614	K100	NVM	NVM	K126	P4	115.000	-16.500	115.000	-22.000	5.500
S615	K126	NVM	NVM	K158	P4	115.000	-22.000	115.000	-24.750	2.750
S616	K158	NVM	NVM	K186	P4	115.000	-24.750	115.000	-27.500	2.750
S617	K186	NVM	NVM	K212	P4	115.000	-27.500	115.000	-33.000	5.500
S618	K212	NVM	NVM	K238	P4	115.000	-33.000	115.000	-38.500	5.500
S619	K238	NVM	NVM	K264	P4	115.000	-38.500	115.000	-44.000	5.500
S620	K263	NV-	NV-	K238	P5	110.000	-44.000	115.000	-38.500	7.433
S621	K238	NV-	NV-	K265	P5	115.000	-38.500	120.000	-44.000	7.433
S622	K264	NVM	NV-	K290	P4	115.000	-44.000	115.000	-49.500	5.500
S623	K23	NV-	NV-	K49	P2	120.000	0.000	120.000	-5.500	5.500
S624	K49	NV-	NV-	K75	P2	120.000	-5.500	120.000	-11.000	5.500
S625	K49	NV-	NV-	K76	P5	120.000	-5.500	125.000	-11.000	7.433
S626	K74	NV-	NV-	K49	P5	115.000	-11.000	120.000	-5.500	7.433
S627	K75	NV-	NV-	K101	P2	120.000	-11.000	120.000	-16.500	5.500
S628	K101	NV-	NV-	K127	P2	120.000	-16.500	120.000	-22.000	5.500
S629	K127	NV-	NVM	K159	P2	120.000	-22.000	120.000	-24.750	2.750
S630	K159	NVM	NV-	K187	P2	120.000	-24.750	120.000	-27.500	2.750
S631	K187	NV-	NV-	K213	P2	120.000	-27.500	120.000	-33.000	5.500
S632	K213	NV-	NV-	K239	P2	120.000	-33.000	120.000	-38.500	5.500
S633	K239	NV-	NV-	K265	P2	120.000	-38.500	120.000	-44.000	5.500
S634	K265	NV-	NV-	K291	P2	120.000	-44.000	120.000	-49.500	5.500
S635	K265	NV-	NV-	K292	P5	120.000	-44.000	125.000	-49.500	7.433
S636	K290	NV-	NV-	K265	P5	115.000	-49.500	120.000	-44.000	7.433
S637	K49	NV-	NV-	K24	P5	120.000	-5.500	125.000	0.000	7.433
S638	K24	NV-	NV-	K50	P2	125.000	0.000	125.000	-5.500	5.500
S639	K24	NV-	NV-	K51	P5	125.000	0.000	130.000	-5.500	7.433
S640	K50	NV-	NV-	K76	P2	125.000	-5.500	125.000	-11.000	5.500
S641	K76	NV-	NV-	K102	P2	125.000	-11.000	125.000	-16.500	5.500
S642	K76	NV-	NV-	K103	P5	125.000	-11.000	130.000	-16.500	7.433
S643	K102	NV-	NV-	K128	P2	125.000	-16.500	125.000	-22.000	5.500
S644	K128	NV-	NV-	K161	P5	125.000	-22.000	127.500	-24.750	3.717
S645	K128	NV-	NVM	K160	P2	125.000	-22.000	125.000	-24.750	2.750
S646	K160	NVM	NV-	K188	P2	125.000	-24.750	125.000	-27.500	2.750
S647	K188	NV-	NV-	K215	P5	125.000	-27.500	130.000	-33.000	7.433
S648	K188	NV-	NV-	K214	P2	125.000	-27.500	125.000	-33.000	5.500
S649	K214	NV-	NV-	K240	P2	125.000	-33.000	125.000	-38.500	5.500
S650	K240	NV-	NV-	K266	P2	125.000	-38.500	125.000	-44.000	5.500
S651	K240	NV-	NV-	K267	P5	125.000	-38.500	130.000	-44.000	7.433
S652	K265	NV-	NV-	K240	P5	120.000	-44.000	125.000	-38.500	7.433
S653	K266	NV-	NV-	K292	P2	125.000	-44.000	125.000	-49.500	5.500
S654	K188	NV-	NV-	K161	P5	125.000	-27.500	127.500	-24.750	3.717
S655	K161	NV-	NV-	K189	P5	127.500	-24.750	130.000	-27.500	3.717
S656	K25	NV-	NV-	K51	P2	130.000	0.000	130.000	-5.500	5.500
S657	K76	NV-	NV-	K51	P5	125.000	-11.000	130.000	-5.500	7.433
S658	K51	NV-	NV-	K78	P5	130.000	-5.500	135.000	-11.000	7.433
S659	K51	NV-	NV-	K77	P2	130.000	-5.500	130.000	-11.000	5.500
S660	K77	NV-	NV-	K103	P2	130.000	-11.000	130.000	-16.500	5.500
S661	K103	NV-	NV-	K129	P2	130.000	-16.500	130.000	-22.000	5.500
S662	K128	NV-	NV-	K103	P5	125.000	-22.000	130.000	-16.500	7.433
S663	K103	NV-	NV-	K130	P5	130.000	-16.500	135.000	-22.000	7.433
S664	K161	NV-	NV-	K129	P5	127.500	-24.750	130.000	-22.000	3.717
S665	K129	NV-	NV-	K163	P5	130.000	-22.000	132.500	-24.750	3.717
S666	K129	NV-	NVM	K162	P2	130.000	-22.000	130.000	-24.750	2.750
S667	K162	NVM	NV-	K189	P2	130.000	-24.750	130.000	-27.500	2.750
S668	K189	NV-	NV-	K215	P2	130.000	-27.500	130.000	-33.000	5.500
S669	K215	NV-	NV-	K242	P5	130.000	-33.000	135.000	-38.500	7.433
S670	K240	NV-	NV-	K215	P5	125.000	-38.500	130.000	-33.000	7.433

Staaf	Knoop B	B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S671	K215	NV-	NV-	K241	P2	130.000	-33.000	130.000	-38.500	5.500
S672	K241	NV-	NV-	K267	P2	130.000	-38.500	130.000	-44.000	5.500
S673	K267	NV-	NV-	K293	P2	130.000	-44.000	130.000	-49.500	5.500
S674	K267	NV-	NV-	K294	P5	130.000	-44.000	135.000	-49.500	7.433
S675	K292	NV-	NV-	K267	P5	125.000	-49.500	130.000	-44.000	7.433
S676	K189	NV-	NV-	K163	P5	130.000	-27.500	132.500	-24.750	3.717
S677	K163	NV-	NV-	K190	P5	132.500	-24.750	135.000	-27.500	3.717
S678	K26	NV-	NV-	K52	P1	135.000	0.000	135.000	-5.500	5.500
S679	K51	NV-	NV-	K26	P5	130.000	-5.500	135.000	0.000	7.433
S680	K52	NV-	NV-	K78	P1	135.000	-5.500	135.000	-11.000	5.500
S681	K78	NV-	NV-	K104	P1	135.000	-11.000	135.000	-16.500	5.500
S682	K103	NV-	NV-	K78	P5	130.000	-16.500	135.000	-11.000	7.433
S683	K104	NV-	NV-	K130	P1	135.000	-16.500	135.000	-22.000	5.500
S684	K163	NV-	NV-	K130	P5	132.500	-24.750	135.000	-22.000	3.717
S685	K130	NV-	NVM	K164	P1	135.000	-22.000	135.000	-24.750	2.750
S686	K164	NVM	NV-	K190	P1	135.000	-24.750	135.000	-27.500	2.750
S687	K190	NV-	NV-	K216	P1	135.000	-27.500	135.000	-33.000	5.500
S688	K215	NV-	NV-	K190	P5	130.000	-33.000	135.000	-27.500	7.433
S689	K216	NV-	NV-	K242	P1	135.000	-33.000	135.000	-38.500	5.500
S690	K267	NV-	NV-	K242	P5	130.000	-44.000	135.000	-38.500	7.433
S691	K242	NV-	NV-	K268	P1	135.000	-38.500	135.000	-44.000	5.500
S692	K268	NV-	NV-	K294	P1	135.000	-44.000	135.000	-49.500	5.500
-	-	-	-	-	-	m	m	m	m	m

PROFIELEN

Profiel	Profielnaam	Oppervlakte	Iy	Materiaal	Hoek
P1	HE140A	3.1416e-03	1.0331e-05	S235	0.0
P2	KK100/5	1.8356e-03	2.7110e-06	S235H(EN10219-1)	0.0
P3	IPE600	1.5598e-02	9.2083e-04	S355	0.0
P4	HE600B	2.6996e-02	1.7104e-03	S355	0.0
P5	L 80 x 80 x 8	1.2267e-03	7.2247e-07	S235	0.0
-	-	m2	m4	-	°

MATERIALEN

Materiaal	Dichtheid	E-Modulus	Uitzettingcoeff
S235	78.50	2.1000e+08	12.0000e-06
S235H(EN10219-1)	78.50	2.1000e+08	12.0000e-06
S355	78.50	2.1000e+08	12.0000e-06
-	kN/m3	kN/m2	C°m

PROFIELEN (GEAVANCEERD)

Profiel	Ivv	Avz	Trek	Druk	Kabelelement	Voorspanning
P5	2.9888e-07	6.4000e-04	Ja	Nee	Nee	0.00
-	m4	m2	-	-	-	kN

OPLEGGINGEN

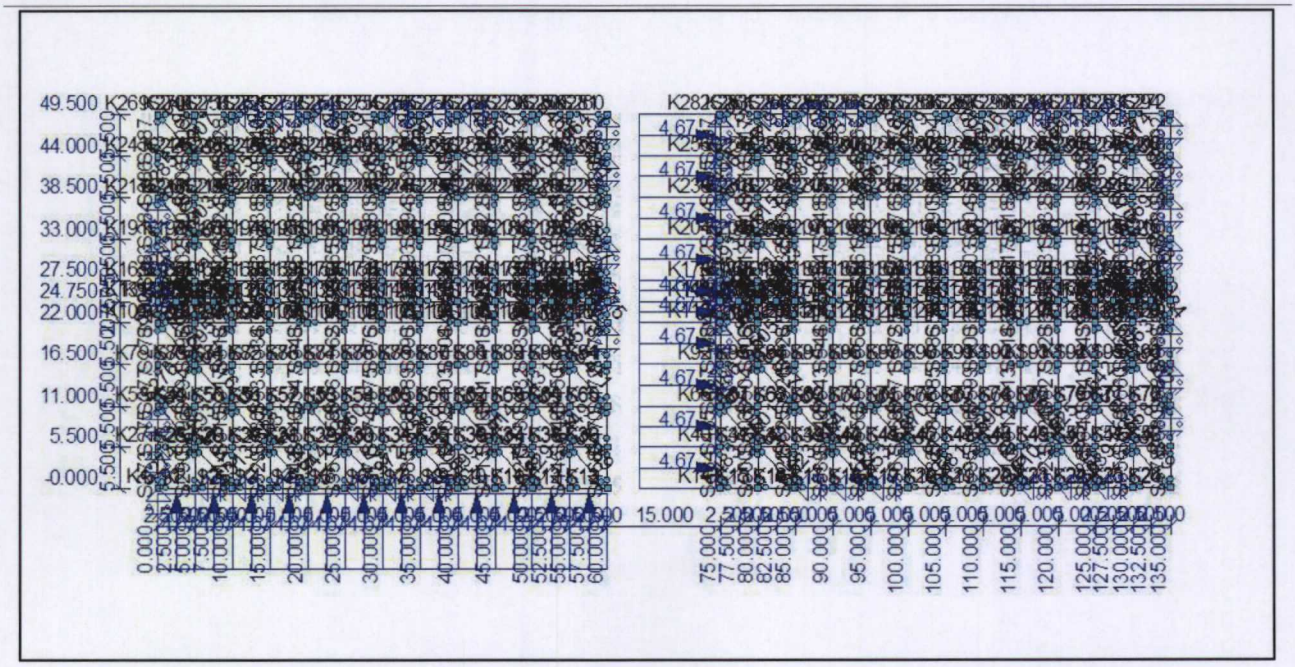
Oplegging	Knoop	X	Z	Yr	HoekYr
O1	K1	vrij	vast	vrij	0
O2	K2	vast	0.00:0.00	vrij	0
O3	K3	vast	0.00:0.00	vrij	0
O4	K4	vast	0.00:0.00	vrij	0
O5	K6	vast	0.00:0.00	vrij	0
O6	K7	vast	0.00:0.00	vrij	0
O7	K8	vast	0.00:0.00	vrij	0
O8	K16	vast	0.00:0.00	vrij	0
O9	K17	vast	0.00:0.00	vrij	0
O10	K18	vast	0.00:0.00	vrij	0
O11	K22	vast	0.00:0.00	vrij	0
O12	K23	vast	0.00:0.00	vrij	0
O13	K24	vast	0.00:0.00	vrij	0
O14	K27	vrij	vast	vrij	0
O15	K53	vrij	vast	vrij	0
O16	K78	vrij	vast	vrij	0
O17	K92	vrij	vast	vrij	0
O18	K104	vrij	vast	vrij	0
O19	K117	vrij	vast	vrij	0

Oplegging	Knoop	X	Z	Yr	HoekYr
O20	K118	vrij	vast	vrij	0
O21	K130	vrij	vast	vrij	0
O22	K165	vrij	vast	vrij	0
O23	K177	vrij	vast	vrij	0
O24	K178	vrij	vast	vrij	0
O25	K191	vrij	vast	vrij	0
O26	K203	vrij	vast	vrij	0
O27	K216	vrij	vast	vrij	0
O28	K217	vrij	vast	vrij	0
O29	K230	vrij	vast	vrij	0
O30	K242	vrij	vast	vrij	0
O31	K255	vrij	vast	vrij	0
O32	K256	vrij	vast	vrij	0
O33	K268	vrij	vast	vrij	0
O34	K271	vast	0.00:0.00	vrij	0
O35	K272	vast	0.00:0.00	vrij	0
O36	K273	vast	0.00:0.00	vrij	0
O37	K275	vast	0.00:0.00	vrij	0
O38	K276	vast	0.00:0.00	vrij	0
O39	K277	vast	0.00:0.00	vrij	0
O40	K281	vrij	vast	vrij	0
O41	K282	vrij	vast	vrij	0
O42	K283	vast	0.00:0.00	vrij	0
O43	K284	vast	0.00:0.00	vrij	0
O44	K285	vast	0.00:0.00	vrij	0
O45	K290	vast	0.00:0.00	vrij	0
O46	K291	vast	0.00:0.00	vrij	0
O47	K292	vast	0.00:0.00	vrij	0
O48	K294	vrij	vast	vrij	0
-	-	kN/m	kN/m	kNm/rad	°

B.G.1: STABILITEIT WIND VAN VOREN

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Stabiliteit Wind van Voren						
q	-4.67	-4.67	0.000	5.000(L)	Z'	S1-S12
q	4.67	4.67	0.000	5.500(L)	Z'	S484-S485,S487-S488, S490-S492,S494-S495,S497
-	-	-	m	m	-	-

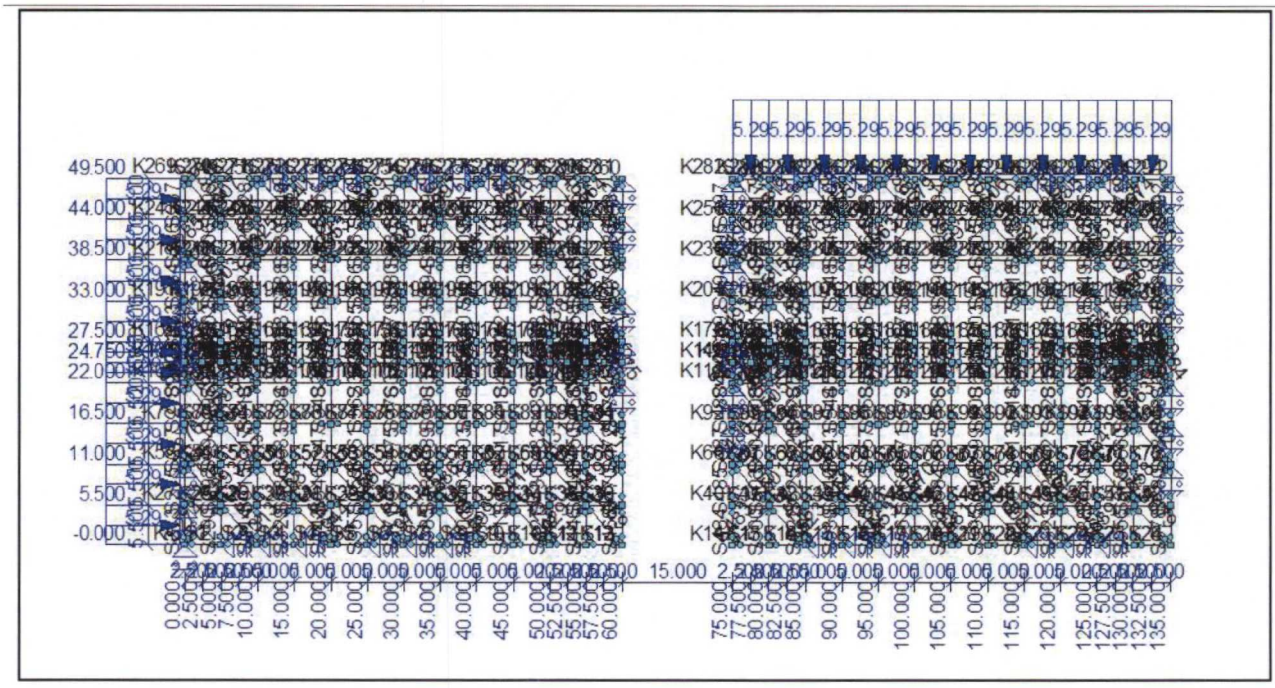
B.G.1: STABILITEIT WIND VAN VOREN



B.G.2: STABILITEIT WIND VAN LINKS

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Stabiliteit Wind van Links						
q	5.29	5.29	0.000	5.500(L)	Z'	S261-S273,S275, S277-S278,S280-S281,S283-S284,S286-S287
-	-	-	m	m	-	-

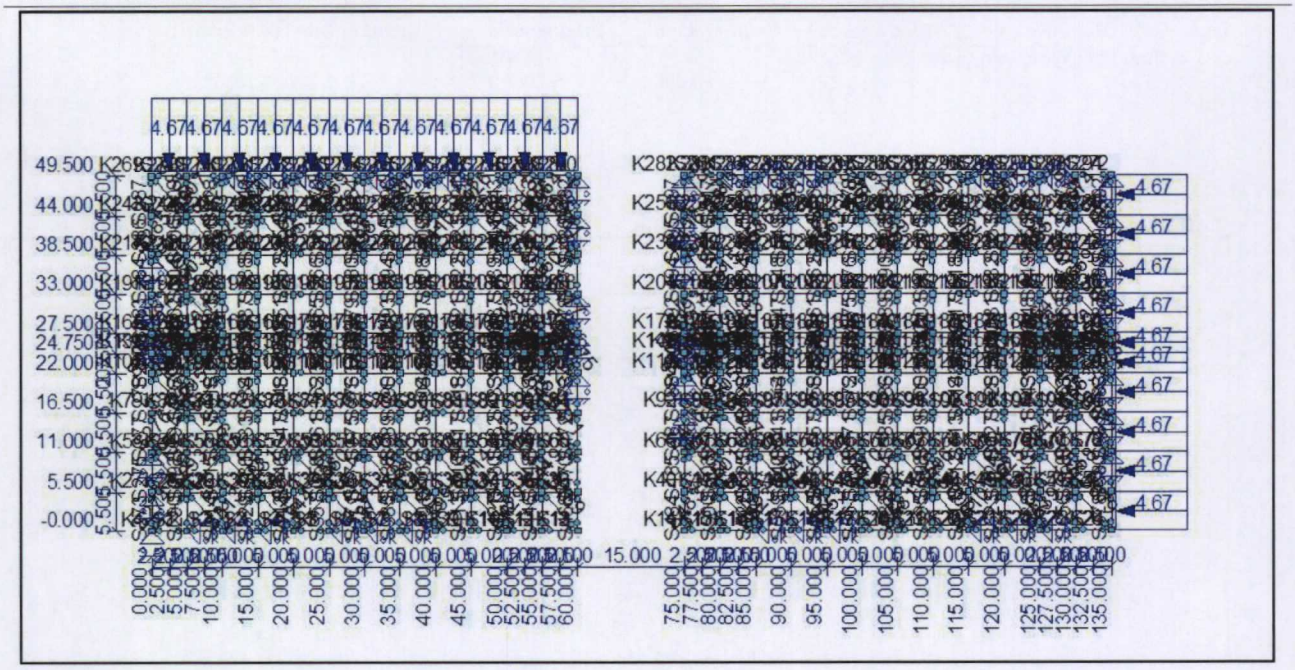
B.G.2: STABILITEIT WIND VAN LINKS



B.G.3: STABILITEIT WIND VAN ACHTER

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Stabiliteit Wind van Achter						
q	4.67	4.67	0.000	5.000(L)	Z'	S249-S260
q	-4.67	-4.67	0.000	5.500(L)	Z'	S678,S680-S681, S683,S685-S687,S689,S691-S692
-	-	-	m	m	-	-

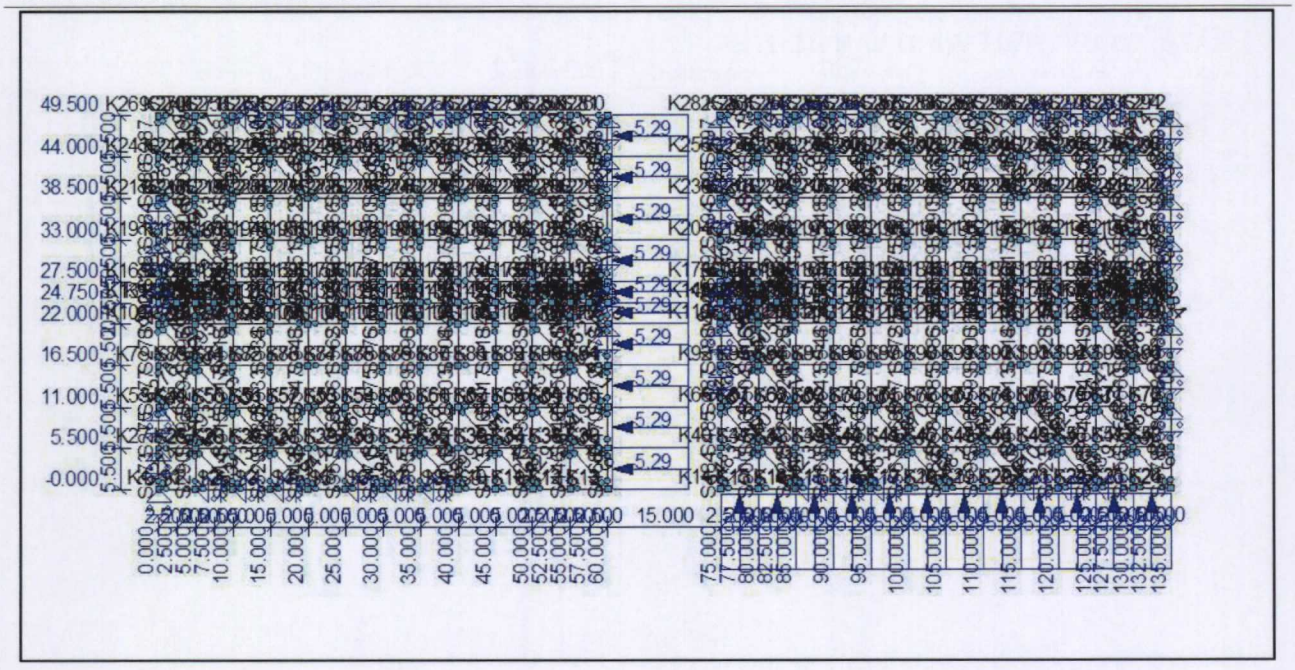
B.G.3: STABILITEIT WIND VAN ACHTER



B.G.4: STABILITEIT WIND VAN RECHTS

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.4: Stabiliteit Wind van Rechts						
q	-5.29	-5.29	0.000	5.500(L)	Z'	S13-S24,S468,S470, S472-S474,S476,S478-S480,S482
-	-	-	m	m		- -

B.G.4: STABILITEIT WIND VAN RECHTS

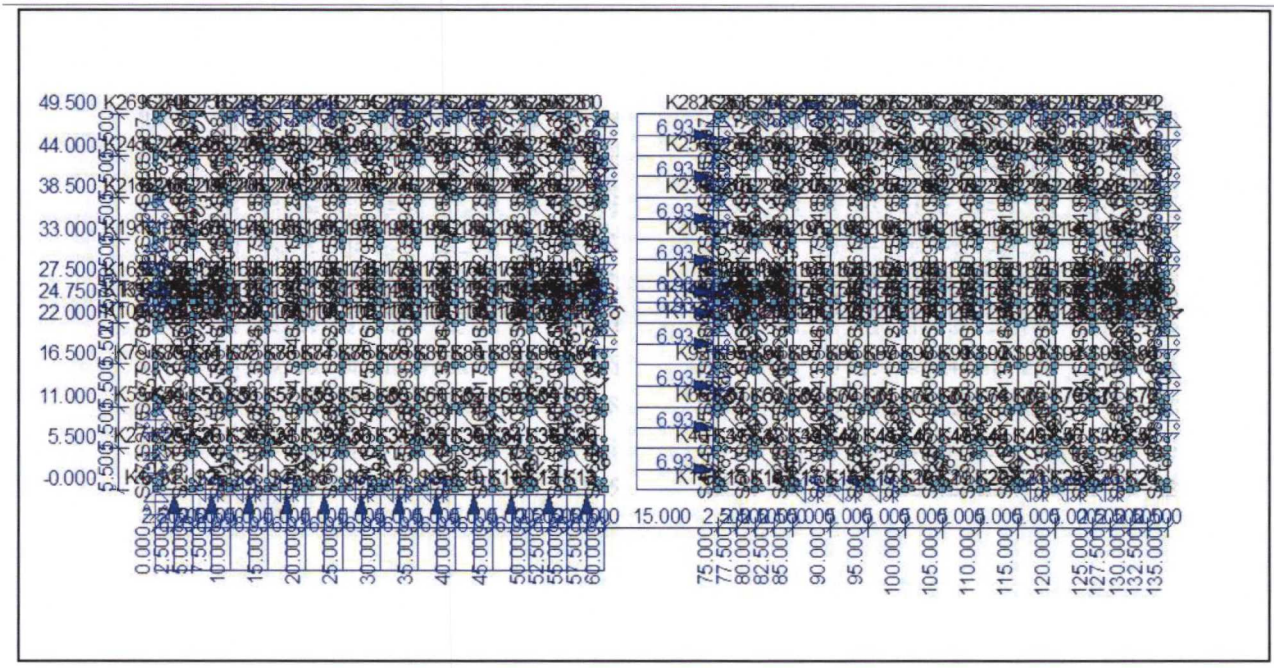


B.G.5: STABILITEIT WIND VAN VOREN (REK)

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Stabiliteit Wind van Voren (rek)						
q	-6.93	-6.93	0.000	5.000(L)	Z'	S1-S12

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Stabiliteit Wind van Voren (rek)						
q	6.93	6.93	0.000	5.500(L)	Z'	S484-S485,S487-S488, S490-S492,S494-S495,S497
-	-	-	m	m	-	-

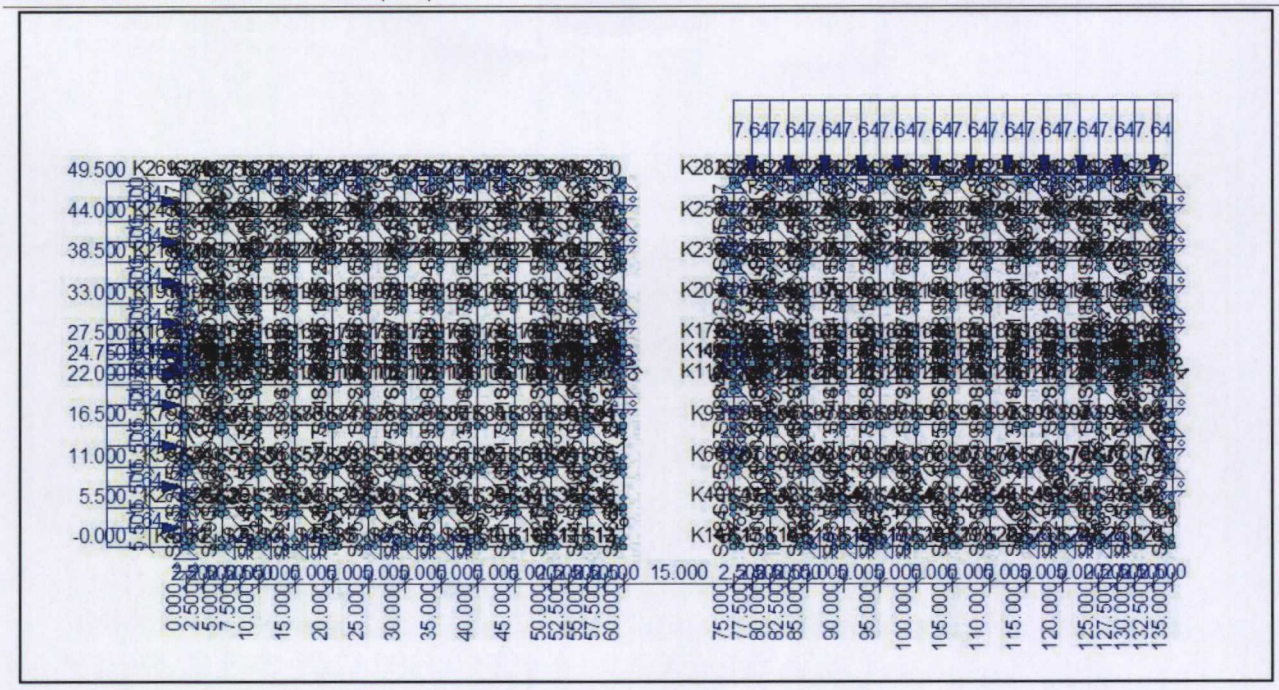
B.G.5: STABILITEIT WIND VAN VOREN (REK)



B.G.6: STABILITEIT WIND VAN LINKS (REK)

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.6: Stabiliteit Wind van Links (rek)						
q	7.64	7.64	0.000	5.500(L)	Z'	S261-S273,S275, S277-S278,S280-S281,S283-S284,S286-S287
-	-	-	m	m	-	-

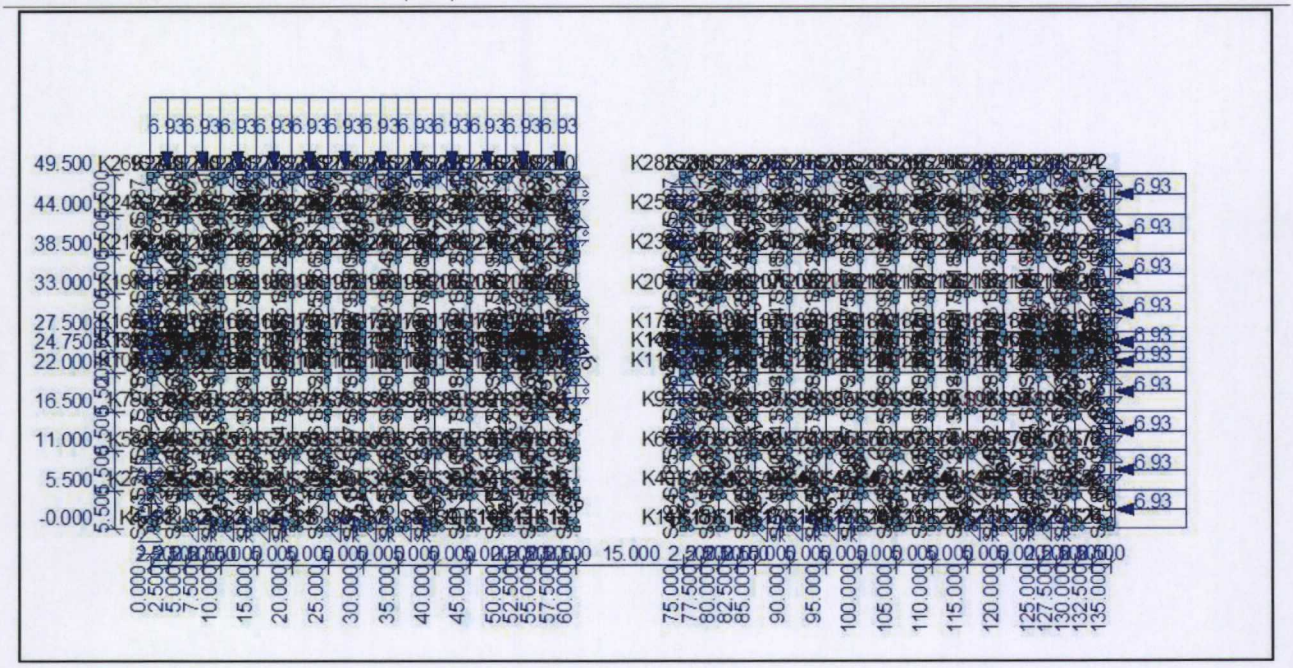
B.G.6: STABILITEIT WIND VAN LINKS (REK)



B.G.7: STABILITEIT WIND VAN ACHTER (REK)

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting Staaf of knoop
B.G.7: Stabiliteit Wind van Achter (rek)					
q	6.93	6.93	0.000	5.000(L)	Z' S249-S260
q	-6.93	-6.93	0.000	5.500(L)	Z' S678,S680-S681, S683,S685-S687,S689,S691-S692
-	-	-	m	m	- -

B.G.7: STABILITEIT WIND VAN ACHTER (REK)

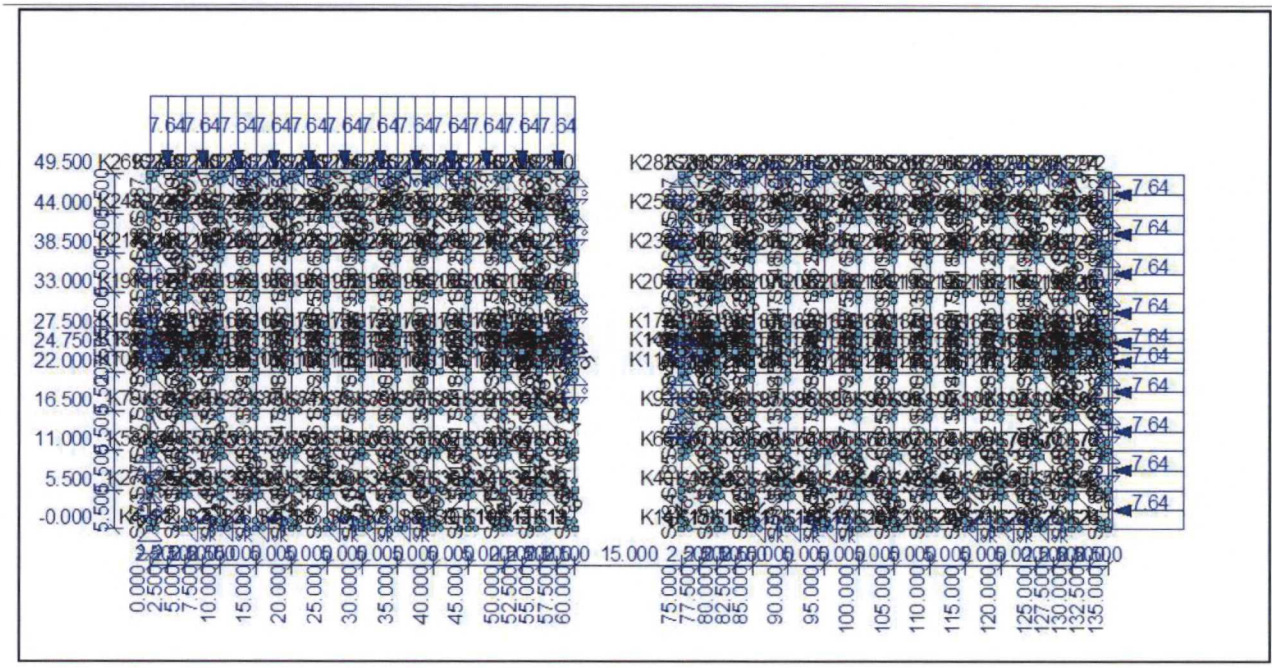


B.G.8: STABILITEIT WIND VAN RECHTS (REK)

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting Staaf of knoop
B.G.8: Stabiliteit Wind van Rechts (rek)					

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.8: Stabiliteit Wind van Rechts (rek)						
q	7.64	7.64	0.000	5.000(L)	Z'	S249-S260
q	-7.64	-7.64	0.000	5.500(L)	Z'	S678,S680-S681, S683,S685-S687,S689,S691-S692
-	-	-	m	m		- -

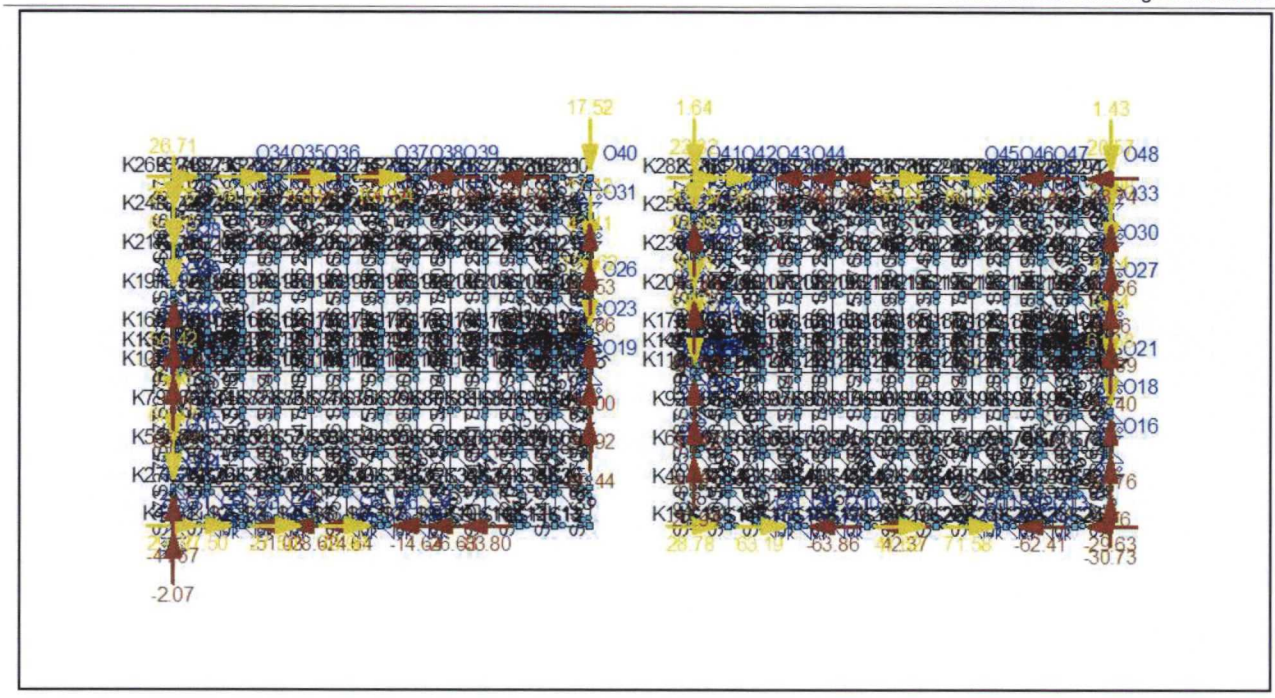
B.G.8: STABILITEIT WIND VAN RECHTS (REK)



FU.C. EXTREME OPLEGREACTIES ANALYSE

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O1	K1					Fu.C.1	0.00	**60.47**	0.00				
O2	K2	Fu.C.2	**-51.03**	0.00	0.00								
O3	K3	Fu.C.4	**29.27**	0.00	0.00								
O3	K3	Fu.C.2	**-28.62**	0.00	0.00								
O4	K4	Fu.C.4	**27.50**	0.00	0.00								
O4	K4	Fu.C.2	**-14.64**	0.00	0.00								
O5	K6	Fu.C.4	**27.50**	0.00	0.00								
O5	K6	Fu.C.2	**-14.64**	0.00	0.00								
O6	K7	Fu.C.2	**-26.63**	0.00	0.00								
O7	K8	Fu.C.1	**78.96**	0.00	0.00								
O7	K8	Fu.C.4	**-83.80**	0.00	0.00								
O8	K16	Fu.C.2	**28.78**	0.00	0.00								
O8	K16	Fu.C.1	**-63.86**	0.00	0.00								
O10	K18	Fu.C.2	**63.19**	0.00	0.00								
O10	K18	Fu.C.1	**-42.37**	0.00	0.00								
O11	K22	Fu.C.4	**47.62**	0.00	0.00								
O11	K22	Fu.C.2	**-62.41**	0.00	0.00								
O13	K24	Fu.C.4	**71.58**	0.00	0.00								
O13	K24	Fu.C.2	**-29.63**	0.00	0.00								
O14	K27					Fu.C.1	0.00	**0.48**	0.00				
O14	K27					Fu.C.2	0.00	**-2.07**	0.00				
O15	K53					Fu.C.1	0.00	**56.42**	0.00				
O15	K53					Fu.C.4	0.00	**-44.67**	0.00				
O16	K78					Fu.C.4	0.00	**61.58**	0.00				
O16	K78					Fu.C.2	0.00	**-30.73**	0.00				
O17	K92					Fu.C.1	0.00	**52.65**	0.00				
O17	K92					Fu.C.2	0.00	**-27.94**	0.00				
O18	K104					Fu.C.2	0.00	**0.14**	0.00				
O18	K104					Fu.C.1	0.00	**-0.76**	0.00				
O19	K117					Fu.C.1	0.00	**129.62**	0.00				
O19	K117					Fu.C.4	0.00	**-69.44**	0.00				
O20	K118					Fu.C.1	0.00	**8.28**	0.00				

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O20	K118					Fu.C.2	0.00	**-41.01**	0.00				
O21	K130					Fu.C.4	0.00	**4.14**	0.00				
O21	K130					Fu.C.2	0.00	**-57.76**	0.00				
O22	K165					Fu.C.1	0.00	**64.55**	0.00				
O22	K165					Fu.C.4	0.00	**-65.77**	0.00				
O23	K177					Fu.C.1	0.00	**43.11**	0.00				
O23	K177					Fu.C.4	0.00	**-37.92**	0.00				
O24	K178					Fu.C.4	0.00	**24.48**	0.00				
O24	K178					Fu.C.2	0.00	**-34.43**	0.00				
O25	K191					Fu.C.2	0.00	**0.10**	0.00				
O25	K191					Fu.C.4	0.00	**-1.21**	0.00				
O26	K203					Fu.C.1	0.00	**17.12**	0.00				
O26	K203					Fu.C.4	0.00	**-28.00**	0.00				
O27	K216					Fu.C.1	0.00	**11.98**	0.00				
O27	K216					Fu.C.2	0.00	**-17.40**	0.00				
O28	K217					Fu.C.1	0.00	**26.71**	0.00				
O28	K217					Fu.C.4	0.00	**-116.48**	0.00				
O29	K230					Fu.C.4	0.00	**22.32**	0.00				
O29	K230					Fu.C.2	0.00	**-50.62**	0.00				
O30	K242					Fu.C.1	0.00	**20.57**	0.00				
O30	K242					Fu.C.2	0.00	**-50.89**	0.00				
O31	K255					Fu.C.1	0.00	**17.52**	0.00				
O31	K255					Fu.C.4	0.00	**-27.86**	0.00				
O32	K256					Fu.C.1	0.00	**1.64**	0.00				
O33	K268					Fu.C.4	0.00	**1.43**	0.00				
O33	K268					Fu.C.2	0.00	**-0.06**	0.00				
O34	K271	Fu.C.1	**25.78**	0.00	0.00								
O34	K271	Fu.C.2	**-72.86**	0.00	0.00								
O36	K273	Fu.C.1	**58.81**	0.00	0.00								
O36	K273	Fu.C.2	**-34.97**	0.00	0.00								
O37	K275	Fu.C.1	**5.65**	0.00	0.00								
O37	K275	Fu.C.2	**-25.99**	0.00	0.00								
O39	K277	Fu.C.4	**101.54**	0.00	0.00								
O39	K277	Fu.C.1	**-89.59**	0.00	0.00								
O40	K281					Fu.C.4	0.00	**-66.53**	0.00				
O41	K282					Fu.C.2	0.00	**-75.40**	0.00				
O42	K283	Fu.C.2	**-51.18**	0.00	0.00								
O43	K284	Fu.C.4	**20.75**	0.00	0.00								
O43	K284	Fu.C.2	**-32.12**	0.00	0.00								
O44	K285	Fu.C.4	**37.90**	0.00	0.00								
O44	K285	Fu.C.1	**-31.97**	0.00	0.00								
O45	K290	Fu.C.4	**56.44**	0.00	0.00								
O45	K290	Fu.C.1	**-53.43**	0.00	0.00								
O47	K292	Fu.C.2	**80.97**	0.00	0.00								
O47	K292	Fu.C.1	**-18.74**	0.00	0.00								
O48	K294					Fu.C.2	0.00	**-72.56**	0.00				
Globale extreme waarden													
O39	K277	Fu.C.4	**101.54**	0.00	0.00								
O39	K277	Fu.C.1	**-89.59**	0.00	0.00								
O19	K117					Fu.C.1	0.00	**129.62**	0.00				
O28	K217					Fu.C.4	0.00	**-116.48**	0.00				
-	-	-	**kN**	**kN**	**kNm**	-	**kN**	**kN**	**kNm**		**kN**	**kN**	**kNm**



FU.C. OMHULLENDE ANALYSE

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S1	-51.03	0.00	-39.22	0.00	-17.33	17.33	-21.66	0.00
S2	0.00	0.00	0.00	0.00	-17.33	17.33	-21.66	0.00
S3	0.00	0.00	0.00	0.00	-17.33	17.33	-21.66	0.00
S4	-27.50	14.64	-24.94	8.32	-17.33	17.33	-21.66	0.00
S5	-14.64	27.50	-8.32	24.94	-17.33	17.33	-21.66	0.00
S6	0.00	0.00	0.00	0.00	-17.33	17.33	-21.66	0.00
S7	0.00	0.00	0.00	0.00	-17.33	17.33	-21.66	0.00
S8	-78.96	83.80	-78.96	52.42	-17.33	17.33	-21.66	0.00
S9	-50.71	23.56	-50.71	16.26	-17.33	17.33	-21.66	0.00
S10	-50.71	23.56	-50.71	16.26	-17.33	17.33	-21.66	0.00
S11	-26.73	0.00	-26.73	0.00	-17.33	17.33	-21.66	0.00
S12	-26.73	0.00	-26.73	0.00	-17.33	17.33	-21.66	0.00
S13	-39.01	0.00	-39.01	0.00	0.00	0.00	0.00	0.00
S14	-39.01	0.00	-39.01	0.00	0.00	0.00	0.00	0.00
S15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S17	-12.01	10.83	-0.42	10.83	0.00	0.00	0.00	0.00
S18	-12.01	10.83	-0.42	10.83	0.00	0.00	0.00	0.00
S19	-10.83	12.01	-10.83	0.42	0.00	0.00	0.00	0.00
S20	-10.83	12.01	-10.83	0.42	0.00	0.00	0.00	0.00
S21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S23	-44.25	0.00	-40.14	0.00	0.00	0.00	0.00	0.00
S24	-44.25	0.00	-40.14	0.00	0.00	0.00	0.00	0.00
S25	-42.02	0.00	-42.02	0.00	-0.48	2.07	-2.40	10.37
S26	-35.30	4.89	-0.74	4.89	-4.76	0.79	-21.22	10.37
S27	-35.30	4.89	-0.74	4.89	-2.41	4.52	-21.22	6.38
S28	-30.71	2.51	-2.56	2.27	-1.28	2.10	-10.48	6.38
S29	-26.27	1.20	-2.33	1.09	-2.71	1.40	-13.57	7.00
S30	-20.43	10.21	-20.43	7.56	-3.48	0.63	-15.46	7.19
S31	-20.43	10.21	-20.43	7.56	-0.38	3.26	-15.46	7.19
S32	-16.75	2.76	-12.47	2.50	-1.18	1.03	-5.13	5.92
S33	-14.30	1.33	-5.16	1.21	-2.28	1.35	-11.38	6.77
S34	-6.66	1.93	-0.05	1.75	-4.41	2.79	-17.91	6.77

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S35	-6.66	1.93	-0.05	1.75	-0.62	3.22	-17.91	3.67
S36	0.00	0.00	0.00	0.00	-0.73	0.70	-3.52	3.67
S37	-38.12	0.00	-38.12	0.00	0.00	1.45	0.00	7.26
S38	-39.05	0.00	-1.70	0.00	-4.60	0.00	-21.87	7.26
S39	-39.05	0.00	-1.70	0.00	0.00	5.84	-21.87	8.60
S40	-36.79	0.00	-7.23	0.00	-1.72	0.00	0.00	8.60
S41	-25.56	0.00	-9.48	0.00	0.00	1.54	0.00	7.70
S42	-20.60	0.00	-0.56	0.00	-2.96	0.62	-8.00	7.70
S43	-20.60	0.00	-0.56	0.00	-0.58	3.25	-8.00	8.27
S44	-28.21	0.00	-9.05	0.00	-1.65	0.00	0.00	8.27
S45	-40.05	0.00	-6.41	0.00	0.00	1.59	0.00	7.93
S46	-42.32	0.00	-1.04	0.00	-5.93	0.00	-21.92	7.93
S47	-42.32	0.00	-1.04	0.00	0.00	4.84	-21.92	6.90
S48	-42.02	0.00	-38.12	0.00	-1.38	0.00	0.00	6.90
S49	-72.85	0.00	-25.81	0.00	-1.32	0.62	-6.62	3.09
S50	-72.85	0.00	-25.81	0.00	-2.44	3.96	-13.83	13.17
S51	-49.55	0.00	-5.37	0.00	-5.02	2.34	-13.83	13.17
S52	-49.55	0.00	-5.37	0.00	0.00	2.38	-11.92	0.00
S53	-50.86	26.09	-38.50	26.09	-2.78	0.94	-13.88	4.71
S54	-50.86	26.09	-38.50	26.09	0.00	0.82	-13.88	7.63
S55	-50.86	25.16	-15.07	25.16	-0.43	0.33	-9.78	7.63
S56	-50.86	25.16	-15.07	25.16	-1.10	1.63	-8.13	5.50
S57	-38.46	0.00	-3.85	0.00	-2.52	0.68	-12.61	3.40
S58	-38.46	0.00	-3.85	0.00	-2.32	4.93	-12.61	12.05
S59	-37.23	0.00	-16.21	0.00	-3.30	2.08	-11.39	12.05
S60	-37.23	0.00	-16.21	0.00	-0.44	1.38	-6.88	2.19
S61	-67.21	0.00	-17.06	0.00	-0.81	0.72	-4.06	3.58
S62	-67.21	0.00	-17.06	0.00	-2.44	0.09	-12.81	3.58
S63	-46.32	0.00	-12.88	0.00	-0.59	2.88	-12.81	4.30
S64	-46.32	0.00	-12.88	0.00	-0.86	0.27	-1.35	4.30
S65	-50.17	0.00	-17.88	0.00	-0.48	1.01	-2.40	5.05
S66	-50.17	0.00	-17.88	0.00	0.00	0.97	-2.40	7.88
S67	-50.17	0.00	-18.39	0.00	-0.83	0.00	-1.93	7.88
S68	-50.17	0.00	-18.39	0.00	-1.03	0.39	-1.93	5.16
S69	-52.38	0.00	-14.16	0.00	-0.33	0.77	-1.64	3.86
S70	-52.38	0.00	-14.16	0.00	-2.99	0.80	-13.03	3.86
S71	-75.92	0.00	-18.38	0.00	-0.58	2.51	-13.03	4.28
S72	-75.92	0.00	-18.38	0.00	-0.86	0.47	-2.35	4.28
S73	-42.02	0.00	-42.02	0.00	-0.82	0.73	-4.10	3.63
S74	-31.77	5.37	-7.67	5.37	-2.87	3.69	-15.62	14.35
S75	-31.77	5.37	-7.67	5.37	-4.49	3.20	-15.62	14.35
S76	-31.77	5.37	-7.67	5.37	-0.08	1.62	-8.11	0.39
S77	-22.00	3.87	-7.66	3.87	-2.20	1.09	-10.98	5.47
S78	-22.00	3.87	-7.66	3.87	0.00	0.54	-10.98	8.16
S79	-22.00	3.87	-7.66	3.87	-0.45	0.61	-10.19	8.16
S80	-22.00	3.87	-7.66	3.87	-1.18	1.43	-7.14	5.89
S81	-10.68	3.44	-7.10	3.44	-1.79	0.51	-8.97	2.54
S82	-10.68	3.44	-7.10	3.44	-3.40	4.28	-14.47	12.44
S83	-10.68	3.44	-7.10	3.44	-3.85	2.39	-14.47	12.44
S84	0.00	0.00	0.00	0.00	-0.67	1.36	-6.79	3.33
S85	-38.12	0.00	-38.12	0.00	-0.38	0.95	-1.92	4.74
S86	-29.25	0.00	-7.46	0.00	-2.87	0.65	-14.72	4.74
S87	-29.25	0.00	-7.46	0.00	-0.51	3.54	-14.72	3.00
S88	-29.25	0.00	-7.46	0.00	-0.60	0.25	-1.25	3.00
S89	-20.73	0.00	-8.25	0.00	-0.23	1.15	-1.14	5.76
S90	-20.73	0.00	-8.25	0.00	0.00	0.52	-1.14	8.35
S91	-20.73	0.00	-8.25	0.00	-0.52	0.00	-0.88	8.35
S92	-20.73	0.00	-8.25	0.00	-1.15	0.18	-0.88	5.74
S93	-30.17	0.00	-7.34	0.00	-0.27	0.63	-1.35	3.17
S94	-30.17	0.00	-7.34	0.00	-3.56	0.49	-14.61	3.17
S95	-30.17	0.00	-7.34	0.00	0.00	2.78	-14.61	3.82

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S96	-42.02	0.00	-38.12	0.00	-0.76	0.14	-0.72	3.82
S97	-38.08	0.00	-28.05	0.00	-1.72	0.05	-8.62	0.27
S98	-56.81	0.00	-5.06	0.00	-3.54	6.55	-19.32	24.12
S99	-22.47	23.63	-18.89	21.43	-6.80	4.96	-19.32	24.12
S100	-22.47	23.63	-18.91	21.43	-1.10	1.98	-9.88	5.49
S101	-20.40	20.30	-20.15	18.41	-1.80	1.25	-8.99	6.24
S102	-20.40	20.30	-20.17	18.41	-0.18	0.51	-9.90	8.79
S103	-20.40	20.30	-20.18	18.41	-0.48	0.67	-9.90	8.79
S104	-20.40	20.30	-20.19	18.41	-1.27	1.31	-6.56	6.36
S105	-23.48	22.09	-20.75	20.03	-2.15	1.52	-10.77	7.62
S106	-23.47	22.09	-20.77	20.03	-5.42	6.35	-19.48	20.99
S107	-57.27	0.00	-6.78	0.00	-7.33	4.10	-19.48	20.99
S108	-39.78	0.00	-22.93	0.00	-0.35	3.13	-15.64	1.75
S109	-37.18	0.00	-20.49	0.00	-0.86	0.26	-4.28	1.32
S110	-37.58	0.00	-8.03	0.00	-3.79	1.53	-18.54	3.38
S111	-20.48	19.74	-17.36	19.74	-1.11	5.17	-18.54	7.34
S112	-20.47	19.74	-17.37	19.74	-1.47	0.44	-2.18	7.34
S113	-20.02	17.52	-18.02	17.52	-0.06	1.30	-0.32	6.49
S114	-20.00	17.52	-18.03	17.52	-0.02	0.49	-0.32	8.94
S115	-19.99	17.52	-18.05	17.52	-0.52	0.00	-0.18	8.94
S116	-19.97	17.52	-18.06	17.52	-1.27	0.04	-0.18	6.35
S117	-19.09	19.37	-17.32	19.37	-0.48	1.51	-2.42	7.53
S118	-19.08	19.37	-17.30	19.37	-5.27	1.28	-18.84	7.53
S119	-41.11	0.00	-9.00	0.00	-1.30	3.93	-18.84	3.97
S120	-37.34	0.00	-20.02	0.00	-0.16	0.51	-2.53	0.82
S121	-26.01	0.00	-0.06	0.00	-0.01	0.00	-0.03	0.00
S122	-12.36	0.00	-0.04	0.00	0.00	0.01	-0.03	0.00
S123	-12.33	0.00	-0.05	0.00	-0.01	0.01	-0.03	0.03
S124	-2.60	0.00	-0.07	0.00	-0.01	0.01	-0.03	0.03
S125	-2.57	0.00	-0.07	0.00	0.00	0.00	0.00	0.00
S126	-2.54	0.00	-0.07	0.00	0.00	0.00	0.00	0.00
S127	-2.60	0.00	-0.02	0.00	0.00	0.00	0.00	0.00
S128	-2.58	0.00	-0.02	0.00	0.00	0.00	0.00	0.00
S129	-2.55	0.00	-0.03	0.00	0.00	0.00	0.00	0.00
S130	-2.52	0.00	-0.03	0.00	0.00	0.00	0.00	0.00
S131	-4.41	0.00	-0.06	0.00	0.00	0.00	0.00	0.00
S132	-4.39	0.00	-0.06	0.00	0.00	0.00	0.00	0.00
S133	-4.37	0.00	-0.06	0.00	-0.01	0.01	-0.03	0.03
S134	-3.80	0.00	-0.04	0.00	-0.01	0.01	-0.03	0.03
S135	-3.79	0.00	-0.03	0.00	-0.01	0.01	-0.02	0.03
S136	-0.06	0.00	-0.05	0.00	-0.01	0.01	-0.02	0.03
S137	-23.59	0.00	-0.06	0.00	-0.01	0.01	-0.02	0.03
S138	-10.80	0.00	-0.05	0.00	-0.01	0.01	-0.02	0.03
S139	-10.77	0.00	-0.06	0.00	0.00	0.01	0.00	0.03
S140	-4.25	0.00	-0.07	0.00	-0.01	0.00	0.00	0.03
S141	-4.27	0.00	-0.07	0.00	0.00	0.00	0.00	0.00
S142	-4.29	0.00	-0.07	0.00	0.00	0.00	0.00	0.00
S143	-2.49	0.00	-0.05	0.00	0.00	0.00	0.00	0.00
S144	-2.52	0.00	-0.05	0.00	0.00	0.00	0.00	0.00
S145	-2.54	0.00	-0.05	0.00	0.00	0.00	0.00	0.00
S146	-2.57	0.00	-0.05	0.00	0.00	0.00	0.00	0.00
S147	-4.01	0.00	-0.08	0.00	0.00	0.00	0.00	0.00
S148	-3.99	0.00	-0.08	0.00	0.00	0.00	0.00	0.00
S149	-3.97	0.00	-0.08	0.00	0.00	0.01	-0.01	0.03
S150	-12.41	0.00	-0.06	0.00	-0.01	0.00	-0.01	0.03
S151	-12.44	0.00	-0.05	0.00	0.00	0.01	-0.01	0.01
S152	-26.01	0.00	-0.06	0.00	-0.01	0.00	-0.01	0.01
S153	-38.48	0.00	-29.47	0.00	-0.17	2.35	-0.83	11.76
S154	-61.67	0.00	-10.39	0.00	-7.51	3.99	-25.79	19.12
S155	-23.11	18.40	-18.97	18.40	-5.20	7.04	-25.79	19.12
S156	-23.11	18.40	-18.98	18.40	-1.88	1.37	-6.86	9.41

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S157	-19.71	16.63	-17.88	16.63	-1.50	1.42	-7.52	7.12
S158	-19.71	16.63	-17.88	16.63	-0.36	0.46	-9.33	9.43
S159	-19.71	16.63	-17.88	16.63	-0.50	0.63	-9.33	9.43
S160	-19.71	16.64	-17.87	16.64	-1.39	1.23	-6.16	6.96
S161	-22.01	18.60	-19.41	18.60	-1.52	2.33	-7.59	11.64
S162	-22.01	18.60	-19.42	18.60	-7.57	4.28	-26.19	13.80
S163	-61.82	0.00	-5.56	0.00	-3.28	7.62	-26.19	13.80
S164	-38.69	0.00	-21.59	0.00	-2.38	0.52	-2.62	11.88
S165	-32.70	0.00	-19.70	0.00	-0.15	1.99	-0.76	9.95
S166	-56.88	0.00	-18.00	0.00	-6.84	0.52	-24.23	9.95
S167	-19.76	0.00	-17.36	0.00	-0.34	7.01	-24.23	10.80
S168	-19.76	0.00	-17.37	0.00	-2.16	0.00	0.00	10.80
S169	-19.76	0.00	-17.22	0.00	0.00	1.47	0.00	7.35
S170	-19.75	0.00	-17.22	0.00	-0.17	0.44	-0.48	9.55
S171	-19.73	0.00	-17.22	0.00	-0.50	0.14	-0.48	9.55
S172	-19.72	0.00	-17.22	0.00	-1.41	0.07	-0.34	7.06
S173	-19.54	0.00	-17.33	0.00	-0.06	2.16	-0.29	10.80
S174	-19.54	0.00	-17.32	0.00	-6.99	0.33	-24.15	10.80
S175	-56.66	0.00	-18.47	0.00	-0.28	6.64	-24.15	9.06
S176	-35.79	0.00	-20.21	0.00	-1.81	0.01	-0.07	9.06
S177	-42.02	0.00	-42.02	0.00	-0.10	1.21	-0.50	6.05
S178	-30.08	9.32	-6.10	8.46	-4.12	2.73	-14.55	14.71
S179	-30.08	9.32	-6.10	8.46	-3.44	4.37	-14.55	14.71
S180	-30.08	9.32	-6.10	8.46	-1.46	0.49	-2.47	7.28
S181	-21.05	7.74	-6.89	7.02	-1.26	1.64	-6.29	8.21
S182	-21.05	7.74	-6.89	7.02	-0.49	0.35	-8.73	9.98
S183	-21.05	7.74	-6.89	7.02	-0.45	0.58	-8.73	9.98
S184	-21.05	7.74	-6.89	7.02	-1.55	1.17	-5.84	7.75
S185	-11.13	7.58	-5.66	6.87	-0.85	1.99	-4.24	9.97
S186	-11.13	7.58	-5.66	6.87	-5.16	2.99	-15.81	10.69
S187	-11.13	7.58	-5.66	6.87	-2.30	4.42	-15.81	10.69
S188	0.00	0.00	0.00	0.00	-1.26	0.74	-3.68	6.29
S189	-38.12	0.00	-38.12	0.00	-0.82	0.74	-4.09	3.72
S190	-29.85	7.60	-10.20	7.60	-3.47	2.00	-13.61	5.91
S191	-29.85	7.60	-10.20	7.60	-1.39	4.48	-13.61	8.79
S192	-29.85	7.60	-10.20	7.60	-1.76	0.21	-1.06	8.79
S193	-21.61	7.08	-19.60	7.08	0.00	1.69	0.00	8.47
S194	-21.61	7.08	-19.60	7.08	-0.53	0.31	-1.38	10.03
S195	-21.61	7.08	-19.60	7.08	-0.41	0.47	-1.38	10.03
S196	-21.61	7.08	-19.60	7.08	-1.60	0.15	-0.73	7.99
S197	-31.42	7.98	-10.84	7.98	-0.32	1.74	-1.58	8.68
S198	-31.42	7.98	-10.84	7.98	-4.47	1.39	-13.66	8.68
S199	-31.42	7.98	-10.84	7.98	-1.91	3.64	-13.66	5.38
S200	-42.02	0.00	-38.12	0.00	-0.90	0.84	-4.19	4.52
S201	-76.98	0.00	-24.54	0.00	0.00	1.88	0.00	9.42
S202	-76.98	0.00	-24.54	0.00	-4.57	2.10	-13.41	13.14
S203	-52.87	0.00	-8.07	0.00	-2.86	4.89	-13.41	13.14
S204	-52.87	0.00	-8.07	0.00	-2.21	0.23	-1.14	11.05
S205	-49.14	29.86	-44.02	27.09	-1.03	1.94	-5.14	9.72
S206	-49.14	29.86	-44.02	27.09	-0.62	0.10	-8.24	10.21
S207	-49.14	30.02	-20.07	27.23	-0.26	0.77	-8.24	10.21
S208	-49.14	30.02	-20.07	27.23	-1.78	1.10	-5.52	8.90
S209	-42.03	0.00	-4.81	0.00	-0.82	2.95	-4.08	14.75
S210	-42.03	0.00	-4.81	0.00	-6.00	2.64	-15.23	14.75
S211	-47.40	0.00	-18.03	0.00	-2.23	4.40	-15.23	9.63
S212	-47.40	0.00	-18.03	0.00	-1.36	0.61	-3.03	6.79
S213	-65.57	0.00	-17.29	0.00	-0.95	1.06	-4.75	5.32
S214	-65.57	0.00	-17.29	0.00	-3.49	2.82	-12.12	9.37
S215	-45.49	0.00	-3.36	0.00	-2.51	4.92	-12.12	12.48
S216	-45.49	0.00	-3.36	0.00	-2.50	0.63	-3.16	12.48
S217	-38.69	31.84	-18.13	31.84	0.00	2.01	0.00	10.07

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S218	-38.69	31.84	-18.13	31.84	-1.09	0.01	-2.80	10.10
S219	-44.12	31.34	-16.58	31.34	-0.15	1.02	-2.80	10.10
S220	-44.12	31.34	-16.58	31.34	-1.87	0.18	-0.88	9.34
S221	-50.98	0.00	-4.01	0.00	-0.75	2.45	-3.76	12.24
S222	-50.98	0.00	-4.01	0.00	-4.87	2.46	-12.11	12.24
S223	-74.10	0.00	-17.87	0.00	-2.62	3.70	-12.11	8.56
S224	-74.10	0.00	-17.87	0.00	-1.27	0.91	-4.53	6.37
S225	-42.02	0.00	-42.02	0.00	-1.36	0.00	-6.80	0.00
S226	-42.09	0.00	-0.03	0.00	0.00	4.36	-6.80	20.56
S227	-42.09	0.00	-0.03	0.00	-5.31	1.24	-5.97	20.56
S228	-39.75	0.00	-4.91	0.00	-1.55	1.19	-5.97	7.75
S229	-27.86	0.00	-5.05	0.00	-1.81	1.34	-9.06	6.68
S230	-20.46	15.58	-20.46	2.99	-0.75	3.59	-9.06	17.88
S231	-20.46	15.58	-20.46	2.99	-2.69	0.52	-7.91	17.88
S232	-18.77	0.00	-4.84	0.00	-1.08	1.06	-5.31	5.42
S233	-9.48	0.00	-2.11	0.00	-1.84	2.65	-9.20	13.27
S234	-0.35	1.85	-0.35	0.93	-3.29	5.49	-9.20	18.26
S235	-0.35	1.85	-0.35	0.93	-4.21	1.75	-5.79	18.26
S236	0.00	0.00	0.00	0.00	-1.11	1.16	-5.79	5.57
S237	-38.12	0.00	-38.12	0.00	-1.64	0.00	-8.19	0.00
S238	-34.43	9.83	-1.53	9.83	0.00	4.40	-8.19	14.87
S239	-34.43	9.83	-1.53	9.83	-4.40	0.98	-7.11	14.87
S240	-32.54	6.48	-6.00	6.48	-1.71	1.42	-7.11	8.53
S241	-22.85	5.90	-15.70	5.90	-1.19	1.44	-5.96	7.22
S242	-17.92	26.29	-15.68	26.29	0.00	2.44	-5.96	17.56
S243	-17.92	26.29	-15.68	26.29	-3.12	0.00	-8.30	17.56
S244	-24.86	4.59	-18.28	4.59	-1.23	1.66	-8.30	6.13
S245	-37.26	4.12	-6.66	4.12	-1.52	1.65	-7.62	8.26
S246	-39.69	7.51	-0.86	7.51	-0.97	4.22	-7.62	13.50
S247	-39.69	7.51	-0.86	7.51	-3.98	0.00	-7.14	13.50
S248	-42.02	0.00	-38.12	0.00	-0.06	1.43	-7.14	0.31
S249	-45.05	0.00	-35.33	0.00	-19.10	19.10	0.00	23.88
S250	-45.05	0.00	-35.33	0.00	-19.10	19.10	0.00	23.88
S251	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S252	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S253	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S254	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S255	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S256	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S257	-70.42	29.46	-63.88	18.38	-19.10	19.10	0.00	23.88
S258	-70.42	29.46	-63.88	18.38	-19.10	19.10	0.00	23.88
S259	-43.12	0.00	-39.11	0.00	-19.10	19.10	0.00	23.88
S260	-43.12	0.00	-39.11	0.00	-19.10	19.10	0.00	23.88
S261	-51.18	0.00	-42.82	0.00	-19.10	19.10	0.00	23.88
S262	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S263	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S264	-37.90	31.97	-34.38	21.99	-19.10	19.10	0.00	23.88
S265	-5.50	2.41	-1.89	2.41	-19.10	19.10	0.00	23.88
S266	-5.50	2.41	-1.89	2.41	-19.10	19.10	0.00	23.88
S267	-18.40	21.03	-5.50	19.08	-19.10	19.10	0.00	23.88
S268	-18.40	21.03	-5.50	19.08	-19.10	19.10	0.00	23.88
S269	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S270	0.00	0.00	0.00	0.00	-19.10	19.10	0.00	23.88
S271	-48.60	0.00	-42.13	0.00	-19.10	19.10	0.00	23.88
S272	-48.60	0.00	-42.13	0.00	-19.10	19.10	0.00	23.88
S273	0.00	0.00	0.00	0.00	-21.01	21.01	0.00	28.89
S274	0.00	58.31	0.00	44.63	0.00	0.00	0.00	0.00
S275	0.00	0.00	0.00	0.00	-21.01	21.01	0.00	28.89
S276	0.00	59.03	0.00	45.83	0.00	0.00	0.00	0.00
S277	-13.70	11.42	-12.43	2.00	-21.01	21.01	0.00	28.89
S278	-13.95	10.60	-12.65	2.72	-21.01	21.01	0.00	28.89

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S279	0.00	41.75	0.00	10.12	0.00	0.00	0.00	0.00
S280	-22.02	27.65	-4.71	25.08	-13.00	8.01	-6.87	4.20
S281	-22.02	27.64	-4.73	25.07	-8.01	13.00	-6.87	4.20
S282	0.00	57.26	0.00	57.26	0.00	0.00	0.00	0.00
S283	0.00	0.00	0.00	0.00	-21.01	21.01	0.00	28.89
S284	0.00	0.00	0.00	0.00	-21.01	21.01	0.00	28.89
S285	0.00	36.48	0.00	36.48	0.00	0.00	0.00	0.00
S286	-61.94	0.25	-25.08	0.25	-21.01	21.01	0.00	28.89
S287	-61.95	0.00	-26.44	0.00	-21.01	21.01	0.00	28.89
S288	0.00	48.35	0.00	10.16	0.00	0.00	0.00	0.00
S289	0.00	41.75	0.00	41.75	0.00	0.00	0.00	0.00
S290	-34.65	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S291	0.00	42.30	0.00	38.37	0.00	0.00	0.00	0.00
S292	-28.00	1.13	-3.96	1.13	0.00	0.00	0.00	0.00
S293	0.00	51.05	0.00	34.64	0.00	0.00	0.00	0.00
S294	-22.72	0.14	-5.87	0.14	0.00	0.00	0.00	0.00
S295	0.00	51.04	0.00	30.59	0.00	0.00	0.00	0.00
S296	0.00	56.65	0.00	51.39	0.00	0.00	0.00	0.00
S297	-12.30	10.11	-12.30	0.19	0.00	0.00	0.00	0.00
S298	0.00	48.31	0.00	43.82	0.00	0.00	0.00	0.00
S299	0.00	42.76	0.00	7.23	0.00	0.00	0.00	0.00
S300	-38.76	5.27	-35.16	5.27	-0.01	0.02	-0.02	0.05
S301	-38.77	5.25	-35.16	5.25	-0.02	0.01	-0.02	0.05
S302	-16.53	9.61	-0.63	9.61	0.00	0.00	0.00	0.00
S303	0.00	66.32	0.00	66.32	0.00	0.00	0.00	0.00
S304	-32.11	0.00	-3.60	0.00	0.00	0.00	0.00	0.00
S305	0.00	71.17	0.00	51.98	0.00	0.00	0.00	0.00
S306	-38.56	0.00	-3.24	0.00	0.00	0.00	0.00	0.00
S307	0.00	38.32	0.00	38.32	0.00	0.00	0.00	0.00
S308	0.00	57.90	0.00	35.73	0.00	0.00	0.00	0.00
S309	-38.20	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S310	0.00	42.79	0.00	42.79	0.00	0.00	0.00	0.00
S311	0.00	43.38	0.00	9.09	0.00	0.00	0.00	0.00
S312	0.00	43.52	0.00	39.48	0.00	0.00	0.00	0.00
S313	0.00	42.55	0.00	35.27	0.00	0.00	0.00	0.00
S314	-60.75	0.00	-29.21	0.00	0.00	0.00	0.00	0.00
S315	-63.95	0.00	-20.79	0.00	0.00	0.00	0.00	0.00
S316	0.00	69.23	0.00	62.80	0.00	0.00	0.00	0.00
S317	-35.15	1.65	-4.73	1.65	0.00	0.00	0.00	0.00
S318	-43.34	1.89	-43.34	0.78	0.00	0.00	0.00	0.00
S319	-22.76	21.61	-18.92	21.61	0.00	0.01	0.00	0.04
S320	0.00	43.41	0.00	1.85	0.00	0.00	0.00	0.00
S321	-22.75	21.61	-18.93	21.61	-0.01	0.00	0.00	0.04
S322	0.00	57.31	0.00	34.23	0.00	0.00	0.00	0.00
S323	-50.60	3.54	-0.59	3.54	0.00	0.00	0.00	0.00
S324	-42.12	0.16	-2.62	0.16	0.00	0.00	0.00	0.00
S325	0.00	81.34	0.00	81.34	0.00	0.00	0.00	0.00
S326	-75.54	0.00	-18.69	0.00	0.00	0.00	0.00	0.00
S327	0.00	57.95	0.00	35.84	0.00	0.00	0.00	0.00
S328	-74.62	0.00	-28.36	0.00	0.00	0.00	0.00	0.00
S329	-34.65	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S330	-38.34	0.38	-7.67	0.38	0.00	0.00	0.00	0.00
S331	0.00	46.34	0.00	35.73	0.00	0.00	0.00	0.00
S332	0.00	86.71	0.00	78.65	0.00	0.00	0.00	0.00
S333	-30.94	1.02	-9.41	1.02	0.00	0.00	0.00	0.00
S334	-24.82	1.56	-12.39	1.56	0.00	0.00	0.00	0.00
S335	-19.72	2.90	-16.04	2.90	0.00	0.01	0.00	0.04
S336	-19.72	2.90	-16.04	2.90	-0.01	0.00	0.00	0.04
S337	-28.64	0.88	-9.47	0.88	0.00	0.00	0.00	0.00
S338	-34.46	0.02	-5.54	0.02	0.00	0.00	0.00	0.00
S339	-41.56	0.00	-1.16	0.00	0.00	0.00	0.00	0.00

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S340	-38.20	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S341	0.00	86.80	0.00	86.80	0.00	0.00	0.00	0.00
S342	0.00	49.22	0.00	41.35	0.00	0.00	0.00	0.00
S343	-60.50	0.00	-32.20	0.00	-0.01	0.01	-0.03	0.07
S344	0.00	43.52	0.00	24.76	0.00	0.00	0.00	0.00
S345	0.00	81.76	0.00	74.16	0.00	0.00	0.00	0.00
S346	-59.41	0.00	-29.53	0.00	-4.43	1.31	-24.28	7.18
S347	-44.39	0.00	-3.36	0.00	-1.23	8.56	-24.28	22.81
S348	-43.22	0.00	-3.64	0.00	-1.25	0.98	-6.44	22.81
S349	-40.87	0.00	-4.13	0.00	-1.09	2.08	-6.44	16.26
S350	-40.87	0.00	-4.13	0.00	-0.93	2.04	-4.31	16.52
S351	-39.12	0.00	-3.76	0.00	-1.37	0.84	-4.31	20.29
S352	-40.87	0.00	-3.70	0.00	-8.35	1.64	-25.62	20.29
S353	0.00	27.13	0.00	27.13	0.00	0.00	0.00	0.00
S354	-72.88	0.00	-31.65	0.00	-2.12	8.28	-25.62	19.91
S355	0.00	57.53	0.00	37.87	0.00	0.00	0.00	0.00
S356	-70.00	0.00	-34.49	0.00	-3.62	0.42	-2.29	19.91
S357	-34.65	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S358	0.00	19.60	0.00	17.78	0.00	0.00	0.00	0.00
S359	-21.43	1.55	-9.15	1.55	0.00	0.00	0.00	0.00
S360	0.00	34.84	0.00	10.05	0.00	0.00	0.00	0.00
S361	-17.84	1.86	-9.48	1.86	0.00	0.00	0.00	0.00
S362	-15.49	2.05	-9.98	2.05	0.00	0.00	0.00	0.00
S363	-13.87	2.23	-10.65	2.23	0.00	0.01	0.00	0.04
S364	-13.87	2.23	-10.65	2.23	-0.01	0.00	0.00	0.04
S365	-12.73	2.43	-11.53	2.43	0.00	0.00	0.00	0.00
S366	-14.00	2.64	-11.96	2.64	0.00	0.00	0.00	0.00
S367	-15.84	2.74	-11.55	2.74	0.00	0.00	0.00	0.00
S368	0.00	46.61	0.00	38.98	0.00	0.00	0.00	0.00
S369	0.00	11.63	0.00	11.63	0.00	0.00	0.00	0.00
S370	-38.20	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S371	-34.65	0.00	-9.49	0.00	0.00	0.00	0.00	0.00
S372	0.00	39.59	0.00	7.19	0.00	0.00	0.00	0.00
S373	0.00	6.21	0.00	5.63	0.00	0.00	0.00	0.00
S374	-32.20	0.00	-10.40	0.00	0.00	0.00	0.00	0.00
S375	-16.80	2.66	-11.31	2.66	0.00	0.00	0.00	0.00
S376	-16.34	2.45	-12.21	2.45	0.00	0.00	0.00	0.00
S377	-15.50	2.46	-13.11	2.46	0.00	0.01	0.00	0.04
S378	-15.50	2.46	-13.11	2.46	-0.01	0.00	0.00	0.04
S379	-15.42	2.65	-13.98	2.65	0.00	0.00	0.00	0.00
S380	-16.22	3.11	-13.43	3.11	0.00	0.00	0.00	0.00
S381	-33.47	0.00	-12.27	0.00	0.00	0.00	0.00	0.00
S382	0.00	11.30	0.00	10.25	0.00	0.00	0.00	0.00
S383	0.00	35.61	0.00	10.46	0.00	0.00	0.00	0.00
S384	-38.20	0.00	-10.99	0.00	0.00	0.00	0.00	0.00
S385	-34.65	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S386	0.00	34.12	0.00	17.23	0.00	0.00	0.00	0.00
S387	0.00	11.43	0.00	11.43	0.00	0.00	0.00	0.00
S388	-13.65	0.00	-0.40	0.00	0.00	0.00	0.00	0.00
S389	-12.36	0.10	-8.66	0.10	0.00	0.00	0.00	0.00
S390	-11.54	0.28	-9.32	0.28	0.00	0.00	0.00	0.00
S391	-11.06	0.22	-10.03	0.22	0.00	0.01	0.00	0.04
S392	-11.06	0.22	-10.03	0.22	-0.01	0.00	0.00	0.04
S393	-11.96	0.00	-0.06	0.00	0.00	0.00	0.00	0.00
S394	-13.06	0.00	-0.65	0.00	0.00	0.00	0.00	0.00
S395	-14.58	0.00	-1.76	0.00	0.00	0.00	0.00	0.00
S396	-38.20	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S397	0.00	45.12	0.00	40.93	0.00	0.00	0.00	0.00
S398	0.00	38.63	0.00	3.23	0.00	0.00	0.00	0.00
S399	0.00	90.97	0.00	49.20	0.00	0.00	0.00	0.00
S400	0.00	41.21	0.00	41.21	0.00	0.00	0.00	0.00

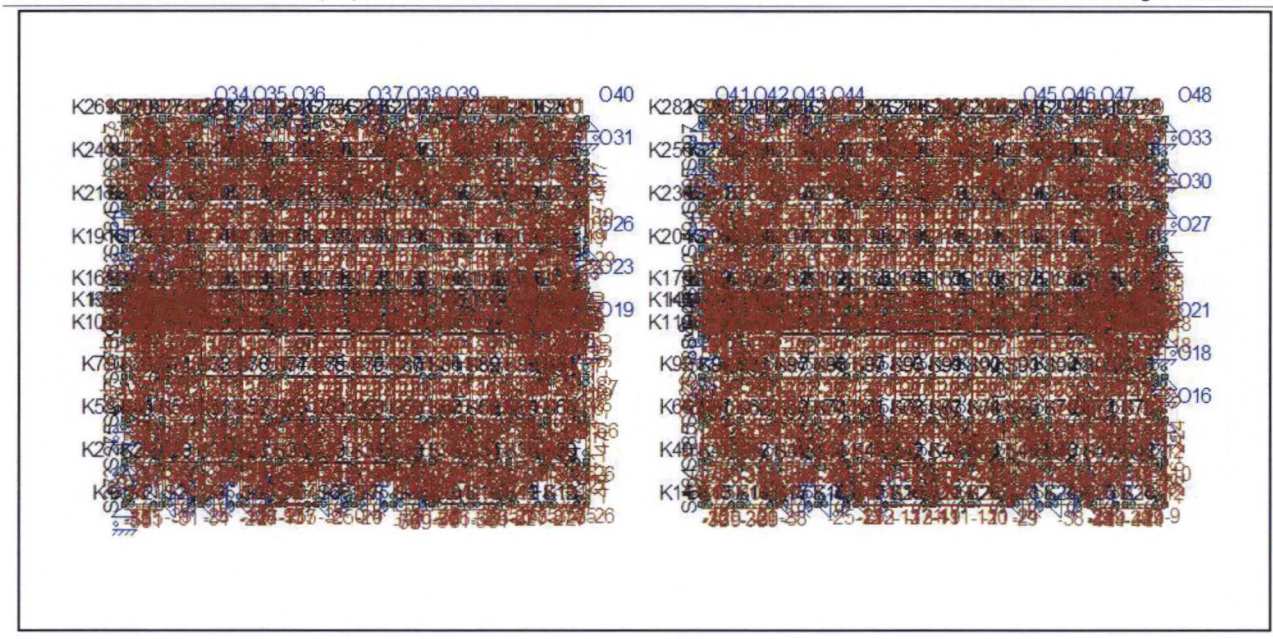
Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S401	-67.31	0.00	-36.40	0.00	-0.96	3.07	-5.28	16.86
S402	-68.45	0.00	-33.86	0.00	-8.53	1.30	-30.04	16.86
S403	-50.22	0.00	-8.11	0.00	-1.32	9.91	-30.04	24.45
S404	-48.53	0.00	-7.92	0.00	-1.41	0.23	-7.89	24.45
S405	-45.74	0.00	-7.90	0.00	-1.56	2.19	-7.89	16.67
S406	-45.74	0.00	-7.90	0.00	-1.52	1.97	-5.23	17.18
S407	-47.24	0.00	-7.97	0.00	0.00	0.84	-5.23	21.79
S408	-49.26	0.00	-8.19	0.00	-9.08	0.94	-28.14	21.79
S409	-75.32	0.00	-35.40	0.00	-1.54	8.62	-28.14	19.26
S410	0.00	56.20	0.00	50.97	0.00	0.00	0.00	0.00
S411	0.00	36.12	0.00	14.86	0.00	0.00	0.00	0.00
S412	-71.59	0.00	-37.94	0.00	-3.50	0.77	-4.23	19.26
S413	-34.65	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S414	0.00	90.08	0.00	41.60	0.00	0.00	0.00	0.00
S415	0.00	47.02	0.00	47.02	0.00	0.00	0.00	0.00
S416	-38.00	0.42	-4.16	0.42	0.00	0.00	0.00	0.00
S417	-30.54	0.00	-2.58	0.00	0.00	0.00	0.00	0.00
S418	-24.46	0.00	-4.17	0.00	0.00	0.00	0.00	0.00
S419	-17.81	0.00	-4.55	0.00	0.00	0.01	0.00	0.03
S420	-17.81	0.00	-4.55	0.00	-0.01	0.00	0.00	0.03
S421	-27.70	0.00	-4.03	0.00	0.00	0.00	0.00	0.00
S422	-34.86	0.00	-2.22	0.00	0.00	0.00	0.00	0.00
S423	-43.80	1.04	-2.97	1.04	0.00	0.00	0.00	0.00
S424	-38.20	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S425	0.00	87.81	0.00	51.27	0.00	0.00	0.00	0.00
S426	0.00	40.59	0.00	36.82	0.00	0.00	0.00	0.00
S427	-61.03	0.00	-17.89	0.00	0.00	0.00	0.00	0.00
S428	0.00	35.66	0.00	35.66	0.00	0.00	0.00	0.00
S429	0.00	35.03	0.00	24.17	0.00	0.00	0.00	0.00
S430	-64.43	0.00	-10.82	0.00	0.00	0.00	0.00	0.00
S431	0.00	70.80	0.00	50.01	0.00	0.00	0.00	0.00
S432	-35.94	0.00	-1.03	0.00	0.00	0.00	0.00	0.00
S433	-44.07	4.65	-9.59	4.22	0.00	0.00	0.00	0.00
S434	-20.57	0.00	-8.88	0.00	0.00	0.01	0.00	0.02
S435	0.00	43.94	0.00	0.42	0.00	0.00	0.00	0.00
S436	-20.59	0.00	-8.88	0.00	-0.01	0.00	0.00	0.02
S437	-46.95	0.00	-1.56	0.00	0.00	0.00	0.00	0.00
S438	0.00	59.20	0.00	53.69	0.00	0.00	0.00	0.00
S439	-37.38	0.00	-6.84	0.00	0.00	0.00	0.00	0.00
S440	0.00	62.58	0.00	56.76	0.00	0.00	0.00	0.00
S441	-73.28	0.00	-12.14	0.00	0.00	0.00	0.00	0.00
S442	0.00	81.92	0.00	41.91	0.00	0.00	0.00	0.00
S443	-68.23	0.00	-20.22	0.00	0.00	0.00	0.00	0.00
S444	0.00	43.91	0.00	39.83	0.00	0.00	0.00	0.00
S445	0.00	35.93	0.00	0.42	0.00	0.00	0.00	0.00
S446	-34.65	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S447	0.00	49.63	0.00	49.63	0.00	0.00	0.00	0.00
S448	-41.25	0.00	-3.90	0.00	0.00	0.00	0.00	0.00
S449	0.00	37.90	0.00	24.10	0.00	0.00	0.00	0.00
S450	-37.07	0.00	-3.47	0.00	0.00	0.00	0.00	0.00
S451	-28.08	2.94	-28.08	2.62	0.00	0.00	0.00	0.00
S452	0.00	59.18	0.00	34.14	0.00	0.00	0.00	0.00
S453	0.00	50.24	0.00	50.24	0.00	0.00	0.00	0.00
S454	0.00	35.90	0.00	35.90	0.00	0.00	0.00	0.00
S455	0.00	48.02	0.00	2.78	0.00	0.00	0.00	0.00
S456	-44.19	0.00	-0.14	0.00	0.00	0.01	0.00	0.02
S457	-44.19	0.00	-0.14	0.00	-0.01	0.00	0.00	0.02
S458	-14.43	2.32	-3.94	2.32	0.00	0.00	0.00	0.00
S459	0.00	65.98	0.00	48.69	0.00	0.00	0.00	0.00
S460	0.00	70.46	0.00	63.91	0.00	0.00	0.00	0.00
S461	-28.44	0.00	-7.42	0.00	0.00	0.00	0.00	0.00

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S462	-34.21	0.00	-4.58	0.00	0.00	0.00	0.00	0.00
S463	-38.20	0.00	-34.65	0.00	0.00	0.00	0.00	0.00
S464	0.00	64.10	0.00	58.14	0.00	0.00	0.00	0.00
S465	0.00	43.79	0.00	27.32	0.00	0.00	0.00	0.00
S466	0.00	48.04	0.00	43.58	0.00	0.00	0.00	0.00
S467	0.00	49.25	0.00	2.77	0.00	0.00	0.00	0.00
S468	-46.72	0.00	-46.72	0.00	0.00	0.00	0.00	0.00
S469	0.00	39.73	0.00	39.73	0.00	0.00	0.00	0.00
S470	-46.83	0.73	-0.64	0.73	0.00	0.00	0.00	0.00
S471	0.00	55.35	0.00	55.35	0.00	0.00	0.00	0.00
S472	-88.67	25.96	-88.67	19.00	0.00	0.00	0.00	0.00
S473	-90.03	25.46	-90.03	19.67	0.00	0.00	0.00	0.00
S474	-0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.08
S475	0.00	49.28	0.00	49.28	0.00	0.00	0.00	0.00
S476	0.00	0.01	0.00	0.00	-0.03	0.00	0.00	0.08
S477	0.00	57.56	0.00	32.14	0.00	0.00	0.00	0.00
S478	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S479	-26.75	16.97	-24.26	10.22	0.00	0.00	0.00	0.00
S480	-16.97	26.75	-10.22	24.26	0.00	0.00	0.00	0.00
S481	0.00	46.54	0.00	26.80	0.00	0.00	0.00	0.00
S482	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S483	0.00	29.66	0.00	29.66	0.00	0.00	0.00	0.00
S484	-21.95	0.00	-21.95	0.00	-19.06	19.06	0.00	26.20
S485	-20.49	1.23	-20.49	0.22	-19.06	19.06	0.00	26.20
S486	0.00	43.25	0.00	43.25	0.00	0.00	0.00	0.00
S487	-52.27	28.01	-52.27	20.53	-19.06	19.06	0.00	26.20
S488	0.00	0.00	0.00	0.00	-19.06	19.06	0.00	26.20
S489	0.00	10.04	0.00	10.04	0.00	0.00	0.00	0.00
S490	-0.01	0.00	0.00	0.00	-11.80	7.26	-6.24	3.80
S491	0.00	0.01	0.00	0.00	-7.26	11.80	-6.24	3.80
S492	-0.37	0.41	-0.37	0.31	-19.06	19.06	0.00	26.20
S493	0.00	32.33	0.00	29.32	0.00	0.00	0.00	0.00
S494	-0.41	0.37	-0.31	0.37	-19.06	19.06	0.00	26.20
S495	0.00	0.00	0.00	0.00	-19.06	19.06	0.00	26.20
S496	0.00	28.33	0.00	25.70	0.00	0.00	0.00	0.00
S497	0.00	0.00	0.00	0.00	-19.06	19.06	0.00	26.20
S498	0.00	2.77	0.00	0.51	0.00	0.00	0.00	0.00
S499	0.00	43.34	0.00	9.49	0.00	0.00	0.00	0.00
S500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S501	0.00	31.05	0.00	31.05	0.00	0.00	0.00	0.00
S502	0.00	38.65	0.00	25.36	0.00	0.00	0.00	0.00
S503	-5.46	0.00	-1.76	0.00	0.00	0.00	0.00	0.00
S504	-6.45	0.00	-2.70	0.00	0.00	0.00	0.00	0.00
S505	0.00	30.07	0.00	30.07	0.00	0.00	0.00	0.00
S506	0.00	5.19	0.00	1.71	0.00	0.00	0.00	0.00
S507	0.00	55.32	0.00	30.50	0.00	0.00	0.00	0.00
S508	0.00	6.68	0.00	6.68	0.00	0.00	0.00	0.00
S509	-33.23	2.64	-0.83	2.64	-0.01	0.02	-0.02	0.04
S510	0.00	43.33	0.00	2.52	0.00	0.00	0.00	0.00
S511	-33.22	2.65	-0.83	2.65	-0.02	0.01	-0.02	0.04
S512	-11.52	7.04	-11.52	1.64	0.00	0.00	0.00	0.00
S513	0.00	66.47	0.00	40.82	0.00	0.00	0.00	0.00
S514	-24.09	0.00	-1.21	0.00	0.00	0.00	0.00	0.00
S515	0.00	49.04	0.00	44.48	0.00	0.00	0.00	0.00
S516	-28.64	0.00	-0.67	0.00	0.00	0.00	0.00	0.00
S517	-38.20	0.00	-38.20	0.00	0.00	0.00	0.00	0.00
S518	0.00	76.08	0.00	35.33	0.00	0.00	0.00	0.00
S519	0.00	30.85	0.00	27.98	0.00	0.00	0.00	0.00
S520	0.00	0.32	0.00	0.24	0.00	0.00	0.00	0.00
S521	0.00	41.26	0.00	6.43	0.00	0.00	0.00	0.00
S522	-31.66	0.00	-20.63	0.00	0.00	0.00	0.00	0.00

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S523	0.00	36.95	0.00	36.95	0.00	0.00	0.00	0.00
S524	0.00	42.78	0.00	27.88	0.00	0.00	0.00	0.00
S525	-21.92	0.00	-12.70	0.00	0.00	0.00	0.00	0.00
S526	-14.05	0.37	-2.25	0.37	0.00	0.00	0.00	0.00
S527	0.00	66.41	0.00	44.34	0.00	0.00	0.00	0.00
S528	-10.58	4.17	-0.79	4.17	0.00	0.00	0.00	0.00
S529	0.00	41.29	0.00	0.30	0.00	0.00	0.00	0.00
S530	-17.42	18.81	-9.04	18.81	-0.01	0.01	-0.03	0.04
S531	-17.41	18.81	-9.04	18.81	-0.01	0.01	-0.03	0.04
S532	-44.39	0.00	-0.11	0.00	0.00	0.00	0.00	0.00
S533	0.00	55.18	0.00	28.53	0.00	0.00	0.00	0.00
S534	-36.45	0.25	-12.69	0.25	0.00	0.00	0.00	0.00
S535	-73.52	0.00	-12.72	0.00	0.00	0.00	0.00	0.00
S536	0.00	41.90	0.00	38.00	0.00	0.00	0.00	0.00
S537	0.00	61.47	0.00	29.85	0.00	0.00	0.00	0.00
S538	-73.53	0.00	-20.70	0.00	0.00	0.00	0.00	0.00
S539	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S540	-2.39	0.37	-0.88	0.34	0.00	0.00	0.00	0.00
S541	0.00	33.59	0.00	33.59	0.00	0.00	0.00	0.00
S542	0.00	85.80	0.00	38.13	0.00	0.00	0.00	0.00
S543	-5.59	0.00	-0.02	0.00	0.00	0.00	0.00	0.00
S544	-9.74	0.74	-4.48	0.74	0.00	0.00	0.00	0.00
S545	-16.38	2.29	-4.96	2.29	-0.01	0.01	-0.03	0.04
S546	-16.38	2.29	-4.96	2.29	-0.01	0.01	-0.03	0.04
S547	-25.54	0.67	-4.67	0.67	0.00	0.00	0.00	0.00
S548	-31.78	0.00	-0.16	0.00	0.00	0.00	0.00	0.00
S549	-39.20	0.00	-0.37	0.00	0.00	0.00	0.00	0.00
S550	-38.20	0.00	-38.20	0.00	0.00	0.00	0.00	0.00
S551	0.00	49.21	0.00	44.64	0.00	0.00	0.00	0.00
S552	0.00	47.75	0.00	35.89	0.00	0.00	0.00	0.00
S553	0.00	41.89	0.00	41.89	0.00	0.00	0.00	0.00
S554	0.00	92.44	0.00	46.35	0.00	0.00	0.00	0.00
S555	-68.40	0.00	-31.00	0.00	-3.43	3.36	-18.88	18.46
S556	-66.04	0.00	-28.53	0.00	-7.88	8.58	-24.86	28.31
S557	-49.21	0.00	-3.75	0.00	-9.31	8.21	-24.86	28.31
S558	-47.46	0.00	-3.84	0.00	-0.83	1.16	-22.91	20.32
S559	-44.69	0.00	-4.18	0.00	-0.18	1.68	-16.56	15.75
S560	-44.69	0.00	-4.18	0.00	-1.10	1.66	-17.66	15.44
S561	-41.06	0.00	-3.74	0.00	-0.94	0.83	-22.85	20.00
S562	-37.61	0.00	-3.49	0.00	-8.28	9.42	-25.57	28.98
S563	0.00	34.39	0.00	31.20	0.00	0.00	0.00	0.00
S564	-72.12	0.00	-27.66	0.00	-7.98	7.17	-25.57	28.98
S565	0.00	52.73	0.00	33.08	0.00	0.00	0.00	0.00
S566	-68.97	0.00	-29.75	0.00	-2.52	2.71	-14.92	13.88
S567	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S568	0.00	34.80	0.00	20.94	0.00	0.00	0.00	0.00
S569	-10.09	2.94	-2.04	2.94	0.00	0.00	0.00	0.00
S570	0.00	31.84	0.00	31.84	0.00	0.00	0.00	0.00
S571	-10.53	3.00	-0.73	3.00	0.00	0.00	0.00	0.00
S572	-11.17	2.91	-0.11	2.91	0.00	0.00	0.00	0.00
S573	-11.98	2.79	-11.98	0.05	-0.01	0.01	-0.04	0.04
S574	-11.98	2.79	-11.98	0.05	-0.01	0.01	-0.04	0.04
S575	-13.01	2.65	-0.18	2.65	0.00	0.00	0.00	0.00
S576	-14.39	2.41	-0.88	2.41	0.00	0.00	0.00	0.00
S577	-16.39	1.79	-2.35	1.79	0.00	0.00	0.00	0.00
S578	-38.20	0.00	-38.20	0.00	0.00	0.00	0.00	0.00
S579	0.00	34.37	0.00	31.18	0.00	0.00	0.00	0.00
S580	0.00	41.58	0.00	40.20	0.00	0.00	0.00	0.00
S581	0.00	32.21	0.00	6.43	0.00	0.00	0.00	0.00
S582	-26.43	0.00	-10.44	0.00	0.00	0.00	0.00	0.00
S583	0.00	35.72	0.00	7.68	0.00	0.00	0.00	0.00

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S584	-20.91	0.00	-11.64	0.00	0.00	0.00	0.00	0.00
S585	-12.75	4.64	-12.75	3.66	0.00	0.00	0.00	0.00
S586	-13.79	4.06	-13.79	3.19	0.00	0.00	0.00	0.00
S587	-14.80	3.92	-14.80	3.08	-0.01	0.01	-0.04	0.04
S588	-14.80	3.92	-14.80	3.08	-0.01	0.01	-0.04	0.04
S589	-15.74	4.12	-15.74	3.31	0.00	0.00	0.00	0.00
S590	-16.46	4.78	-16.46	4.01	0.00	0.00	0.00	0.00
S591	0.00	32.87	0.00	11.27	0.00	0.00	0.00	0.00
S592	0.00	35.88	0.00	12.02	0.00	0.00	0.00	0.00
S593	-33.85	0.00	-18.41	0.00	0.00	0.00	0.00	0.00
S594	-38.20	0.00	-22.89	0.00	0.00	0.00	0.00	0.00
S595	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S596	0.00	31.39	0.00	19.06	0.00	0.00	0.00	0.00
S597	0.00	36.31	0.00	32.94	0.00	0.00	0.00	0.00
S598	-9.71	3.46	-2.09	3.14	0.00	0.00	0.00	0.00
S599	-10.19	3.67	-0.87	3.33	0.00	0.00	0.00	0.00
S600	-10.82	3.69	-0.29	3.35	0.00	0.00	0.00	0.00
S601	-11.57	3.70	-0.14	3.35	-0.01	0.01	-0.04	0.04
S602	-11.57	3.70	-0.14	3.35	-0.01	0.01	-0.04	0.04
S603	-12.48	3.74	-0.36	3.39	0.00	0.00	0.00	0.00
S604	-13.67	3.75	-1.07	3.40	0.00	0.00	0.00	0.00
S605	-15.39	3.55	-2.58	3.22	0.00	0.00	0.00	0.00
S606	0.00	47.13	0.00	42.75	0.00	0.00	0.00	0.00
S607	0.00	30.93	0.00	30.93	0.00	0.00	0.00	0.00
S608	-38.20	0.00	-38.20	0.00	0.00	0.00	0.00	0.00
S609	0.00	47.62	0.00	43.20	0.00	0.00	0.00	0.00
S610	0.00	92.29	0.00	47.92	0.00	0.00	0.00	0.00
S611	-68.29	0.00	-31.96	0.00	-3.57	3.22	-19.65	17.70
S612	-65.80	0.00	-29.55	0.00	-8.10	8.27	-26.86	25.82
S613	-50.28	0.00	-4.73	0.00	-8.55	8.77	-26.86	25.82
S614	-48.50	0.00	-4.88	0.00	-0.92	0.89	-21.21	21.40
S615	-45.72	0.00	-5.29	0.00	-1.40	0.01	-16.30	16.35
S616	-45.72	0.00	-5.29	0.00	-1.38	0.83	-16.97	16.08
S617	-42.15	0.00	-4.95	0.00	-0.86	0.94	-21.72	21.03
S618	-38.82	0.00	-4.85	0.00	-9.00	8.95	-28.45	27.52
S619	-73.84	0.00	-29.20	0.00	-8.70	8.40	-28.45	27.52
S620	0.00	31.47	0.00	31.47	0.00	0.00	0.00	0.00
S621	0.00	53.16	0.00	33.06	0.00	0.00	0.00	0.00
S622	-70.96	0.00	-31.63	0.00	-3.22	3.70	-20.36	17.74
S623	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S624	-2.28	0.61	-1.06	0.61	0.00	0.00	0.00	0.00
S625	0.00	85.27	0.00	39.15	0.00	0.00	0.00	0.00
S626	0.00	37.24	0.00	33.78	0.00	0.00	0.00	0.00
S627	-5.66	0.00	-0.04	0.00	0.00	0.00	0.00	0.00
S628	-9.85	0.72	-4.27	0.65	0.00	0.00	0.00	0.00
S629	-16.63	2.48	-4.68	2.25	-0.01	0.01	-0.04	0.03
S630	-16.63	2.48	-4.68	2.25	-0.01	0.01	-0.04	0.03
S631	-25.78	0.81	-4.29	0.73	0.00	0.00	0.00	0.00
S632	-31.99	0.02	-2.59	0.02	0.00	0.00	0.00	0.00
S633	-39.30	0.63	-0.93	0.63	0.00	0.00	0.00	0.00
S634	-38.20	0.00	-38.20	0.00	0.00	0.00	0.00	0.00
S635	0.00	48.13	0.00	36.34	0.00	0.00	0.00	0.00
S636	0.00	47.28	0.00	47.28	0.00	0.00	0.00	0.00
S637	0.00	40.62	0.00	36.85	0.00	0.00	0.00	0.00
S638	-32.60	0.00	-21.36	0.00	0.00	0.00	0.00	0.00
S639	0.00	44.05	0.00	28.87	0.00	0.00	0.00	0.00
S640	-24.36	0.00	-13.10	0.00	0.00	0.00	0.00	0.00
S641	-12.81	0.16	-2.78	0.15	0.00	0.00	0.00	0.00
S642	0.00	66.47	0.00	45.44	0.00	0.00	0.00	0.00
S643	-9.70	3.55	-0.30	3.55	0.00	0.00	0.00	0.00
S644	0.00	42.18	0.00	0.32	0.00	0.00	0.00	0.00

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S645	-18.45	21.35	-9.23	19.36	-0.01	0.01	-0.04	0.02
S646	-18.44	21.35	-9.24	19.37	-0.01	0.01	-0.04	0.02
S647	0.00	55.18	0.00	28.96	0.00	0.00	0.00	0.00
S648	-45.64	0.25	-9.60	0.23	0.00	0.00	0.00	0.00
S649	-37.53	0.62	-12.91	0.56	0.00	0.00	0.00	0.00
S650	-74.16	0.00	-12.41	0.00	0.00	0.00	0.00	0.00
S651	0.00	61.08	0.00	31.17	0.00	0.00	0.00	0.00
S652	0.00	38.66	0.00	38.66	0.00	0.00	0.00	0.00
S653	-73.81	0.00	-20.61	0.00	0.00	0.00	0.00	0.00
S654	0.00	0.40	0.00	0.33	0.00	0.00	0.00	0.00
S655	0.00	42.15	0.00	6.77	0.00	0.00	0.00	0.00
S656	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S657	0.00	35.00	0.00	31.75	0.00	0.00	0.00	0.00
S658	0.00	41.55	0.00	27.33	0.00	0.00	0.00	0.00
S659	-4.75	0.00	-3.45	0.00	0.00	0.00	0.00	0.00
S660	-7.46	0.00	-3.69	0.00	0.00	0.00	0.00	0.00
S661	0.00	8.74	0.00	0.32	0.00	0.00	0.00	0.00
S662	0.00	32.78	0.00	29.73	0.00	0.00	0.00	0.00
S663	0.00	55.56	0.00	29.81	0.00	0.00	0.00	0.00
S664	0.00	7.87	0.00	7.14	0.00	0.00	0.00	0.00
S665	0.00	42.12	0.00	2.57	0.00	0.00	0.00	0.00
S666	-34.94	4.73	-0.85	4.29	-0.02	0.01	-0.05	0.02
S667	-34.93	4.73	-0.86	4.29	-0.01	0.02	-0.05	0.02
S668	-12.20	9.05	-12.20	1.34	0.00	0.00	0.00	0.00
S669	0.00	67.05	0.00	43.25	0.00	0.00	0.00	0.00
S670	0.00	46.20	0.00	46.20	0.00	0.00	0.00	0.00
S671	-25.52	0.00	-1.82	0.00	0.00	0.00	0.00	0.00
S672	-30.49	0.00	-1.78	0.00	0.00	0.00	0.00	0.00
S673	-38.20	0.00	-38.20	0.00	0.00	0.00	0.00	0.00
S674	0.00	72.25	0.00	34.30	0.00	0.00	0.00	0.00
S675	0.00	27.86	0.00	27.86	0.00	0.00	0.00	0.00
S676	0.00	2.57	0.00	2.57	0.00	0.00	0.00	0.00
S677	0.00	42.13	0.00	9.14	0.00	0.00	0.00	0.00
S678	-25.56	0.00	-23.19	0.00	-21.01	21.01	-28.89	0.00
S679	0.00	34.55	0.00	31.34	0.00	0.00	0.00	0.00
S680	-24.18	1.26	-21.93	0.46	-21.01	21.01	-28.89	0.00
S681	0.00	0.00	0.00	0.00	-21.01	21.01	-28.89	0.00
S682	0.00	50.39	0.00	45.71	0.00	0.00	0.00	0.00
S683	0.00	0.00	0.00	0.00	-21.01	21.01	-28.89	0.00
S684	0.00	10.09	0.00	9.15	0.00	0.00	0.00	0.00
S685	-16.49	11.14	-3.48	11.14	-8.00	13.01	-4.19	6.88
S686	-16.50	11.14	-3.48	11.14	-13.01	8.00	-4.19	6.88
S687	-11.14	16.49	-11.14	3.48	-21.01	21.01	-28.89	0.00
S688	0.00	30.09	0.00	30.09	0.00	0.00	0.00	0.00
S689	0.00	0.00	0.00	0.00	-21.01	21.01	-28.89	0.00
S690	0.00	26.57	0.00	26.57	0.00	0.00	0.00	0.00
S691	0.00	0.00	0.00	0.00	-21.01	21.01	-28.89	0.00
S692	0.00	0.00	0.00	0.00	-21.01	21.01	-28.89	0.00
-	kN	kN	kN	kN	kN	kN	kNm	kNm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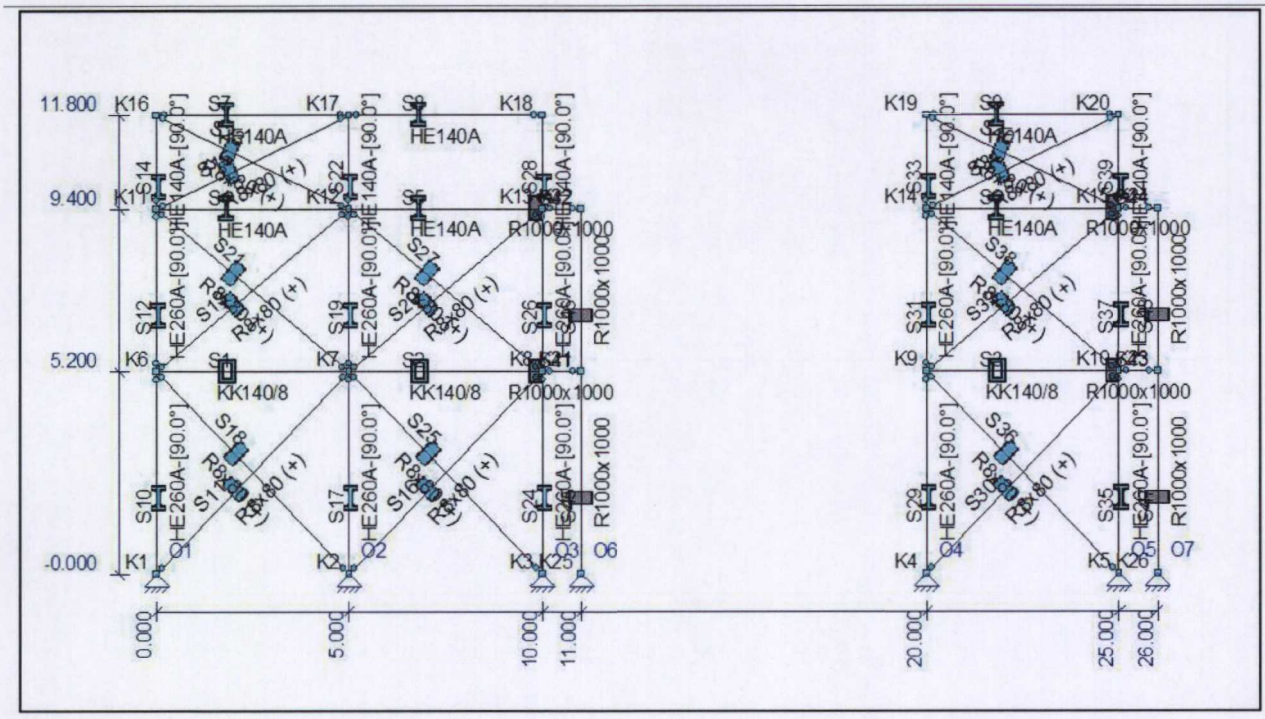
O16

Projectnaam	'De Schatberg' te Sevenum	Projectnummer	460518
Omschrijving	Stabiliteit gevel	Constructeur	DaKr
Opdrachtgever	Janssen Wuts Architecten BV	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Stabiliteit gevel.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	26	48	7	6	4	6

AFB. GEOMETRIE 1



STAVEN

Staaf	Knoop B		Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S1	K6	NVM	NVM	K7	P2	0.000	-5.200	5.000	-5.200	5.000
S2	K7	NVM	NVM	K8	P2	5.000	-5.200	10.000	-5.200	5.000
S3	K9	NVM	NVM	K10	P2	20.000	-5.200	25.000	-5.200	5.000
S4	K11	NVM	NVM	K12	P1	0.000	-9.400	5.000	-9.400	5.000
S5	K12	NVM	NVM	K13	P1	5.000	-9.400	10.000	-9.400	5.000
S6	K14	NVM	NVM	K15	P1	20.000	-9.400	25.000	-9.400	5.000
S7	K16	NV-	NV-	K17	P1	0.000	-11.800	5.000	-11.800	5.000
S8	K17	NV-	NV-	K18	P1	5.000	-11.800	10.000	-11.800	5.000
S9	K19	NV-	NV-	K20	P1	20.000	-11.800	25.000	-11.800	5.000
S10	K1	NVM	NV-	K6	P4	0.000	0.000	0.000	-5.200	5.200
S11	K1	NV-	NV-	K7	P5	0.000	0.000	5.000	-5.200	7.214
S12	K6	NV-	NV-	K11	P4	0.000	-5.200	0.000	-9.400	4.200
S13	K6	NV-	NV-	K12	P5	0.000	-5.200	5.000	-9.400	6.530
S14	K11	NV-	NVM	K16	P3	0.000	-9.400	0.000	-11.800	2.400
S15	K11	NV-	NV-	K17	P5	0.000	-9.400	5.000	-11.800	5.546
S16	K2	NV-	NV-	K8	P5	5.000	0.000	10.000	-5.200	7.214
S17	K2	NVM	NV-	K7	P4	5.000	0.000	5.000	-5.200	5.200
S18	K6	NV-	NV-	K2	P5	0.000	-5.200	5.000	0.000	7.214
S19	K7	NV-	NV-	K12	P4	5.000	-5.200	5.000	-9.400	4.200
S20	K7	NV-	NV-	K13	P5	5.000	-5.200	10.000	-9.400	6.530
S21	K11	NV-	NV-	K7	P5	0.000	-9.400	5.000	-5.200	6.530
S22	K12	NV-	NVM	K17	P3	5.000	-9.400	5.000	-11.800	2.400
S23	K16	NV-	NV-	K12	P5	0.000	-11.800	5.000	-9.400	5.546
S24	K3	NVM	NV-	K8	P4	10.000	0.000	10.000	-5.200	5.200
S25	K7	NV-	NV-	K3	P5	5.000	-5.200	10.000	0.000	7.214
S26	K8	NV-	NV-	K13	P4	10.000	-5.200	10.000	-9.400	4.200
S27	K12	NV-	NV-	K8	P5	5.000	-9.400	10.000	-5.200	6.530

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S28	K13	NV-	NVM	K18	P3	10.000	-9.400	10.000	-11.800	2.400
S29	K4	NVM	NV-	K9	P4	20.000	0.000	20.000	-5.200	5.200
S30	K4	NV-	NV-	K10	P5	20.000	0.000	25.000	-5.200	7.214
S31	K9	NV-	NV-	K14	P4	20.000	-5.200	20.000	-9.400	4.200
S32	K9	NV-	NV-	K15	P5	20.000	-5.200	25.000	-9.400	6.530
S33	K14	NV-	NVM	K19	P3	20.000	-9.400	20.000	-11.800	2.400
S34	K14	NV-	NV-	K20	P5	20.000	-9.400	25.000	-11.800	5.546
S35	K5	NVM	NV-	K10	P4	25.000	0.000	25.000	-5.200	5.200
S36	K9	NV-	NV-	K5	P5	20.000	-5.200	25.000	0.000	7.214
S37	K10	NV-	NV-	K15	P4	25.000	-5.200	25.000	-9.400	4.200
S38	K14	NV-	NV-	K10	P5	20.000	-9.400	25.000	-5.200	6.530
S39	K15	NV-	NVM	K20	P3	25.000	-9.400	25.000	-11.800	2.400
S40	K19	NV-	NV-	K15	P5	20.000	-11.800	25.000	-9.400	5.546
S41	K8	NV-	NV-	K21	P6	10.000	-5.200	11.000	-5.200	1.000
S42	K13	NV-	NV-	K22	P6	10.000	-9.400	11.000	-9.400	1.000
S43	K10	NV-	NV-	K23	P6	25.000	-5.200	26.000	-5.200	1.000
S44	K15	NV-	NV-	K24	P6	25.000	-9.400	26.000	-9.400	1.000
S45	K25	NVM	NVM	K21	P6	11.000	0.000	11.000	-5.200	5.200
S46	K21	NVM	NVM	K22	P6	11.000	-5.200	11.000	-9.400	4.200
S47	K26	NVM	NVM	K23	P6	26.000	0.000	26.000	-5.200	5.200
S48	K23	NVM	NVM	K24	P6	26.000	-5.200	26.000	-9.400	4.200
-	-	-	-	-	-	m	m	m	m	m

PROFIELEN

Profiel	Profielnaam	Oppervlakte	Iy	Materiaal	Hoek
P1	HE140A	3.1416e-03	1.0331e-05	S235	0.0
P2	KK140/8	3.9493e-03	1.0988e-05	S235H(EN10219-1)	0.0
P3	HE140A	3.1416e-03	3.8932e-06	S235	90.0
P4	HE260A	8.6819e-03	3.6676e-05	S235	90.0
P5	R8x80	6.4000e-04	3.4133e-07	S235	0.0
P6	R1000x1000	1.0000e+00	8.3333e-02	C50/60	0.0
-	-	m2	m4	-	°

PROFIELVORMEN

Profiel	Verl. h.	hB	hE	tf	tw	tf2	B	bL	bR	Raatl.	Hoogte
P5	Nee	0.080	0.080	0.000	0.000	0.000	0.008	0.000	0.000	Nee	0.000
P6	Nee	1.000	1.000	0.000	0.000	0.000	1.000	0.000	0.000	Nee	0.000
-	-	m	m	m	m	m	m	m	m	-	m

MATERIALEN

Materiaal	Dichtheid	E-Modulus	Uitzettingcoeff
S235	78.50	2.1000e+08	12.0000e-06
C50/60	25.00	3.7000e+07	10.0000e-06
S235H(EN10219-1)	78.50	2.1000e+08	12.0000e-06
-	kN/m3	kN/m2	C°m

PROFIELEN (GEAVANCEERD)

Profiel	Ivv	Avz	Trek	Druk	Kabelelement	Voorspanning
P5	3.4133e-09	5.3333e-04	Ja	Nee	Nee	0.00
-	m4	m2	-	-	-	kN

OPLEGGINGEN

Oplegging	Knoop	X	Z	Yr	HoekYr
O1	K1	vast	vast	vrij	0
O2	K2	vast	vast	vrij	0
O3	K3	vast	vast	vrij	0
O4	K4	vast	vast	vrij	0
O5	K5	vast	vast	vrij	0
O6	K25	vast	vast	vrij	0
O7	K26	vast	vast	vrij	0
-	-	kN/m	kN/m	kNm/rad	°

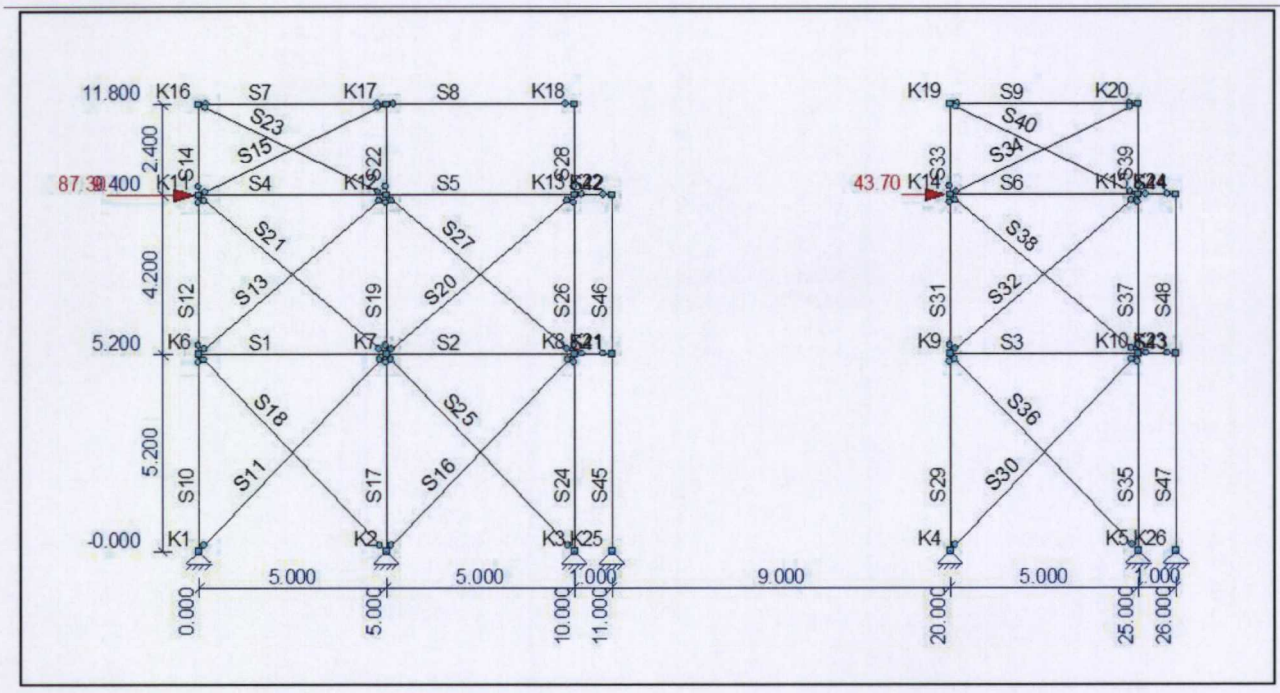
B.G.1: STABILITEIT BGT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop

B.G.1: Stabiliteit BGT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Stabiliteit BGT						
N	87.30					X K11
N	43.70					X K14
-	-	-	m	m	-	-

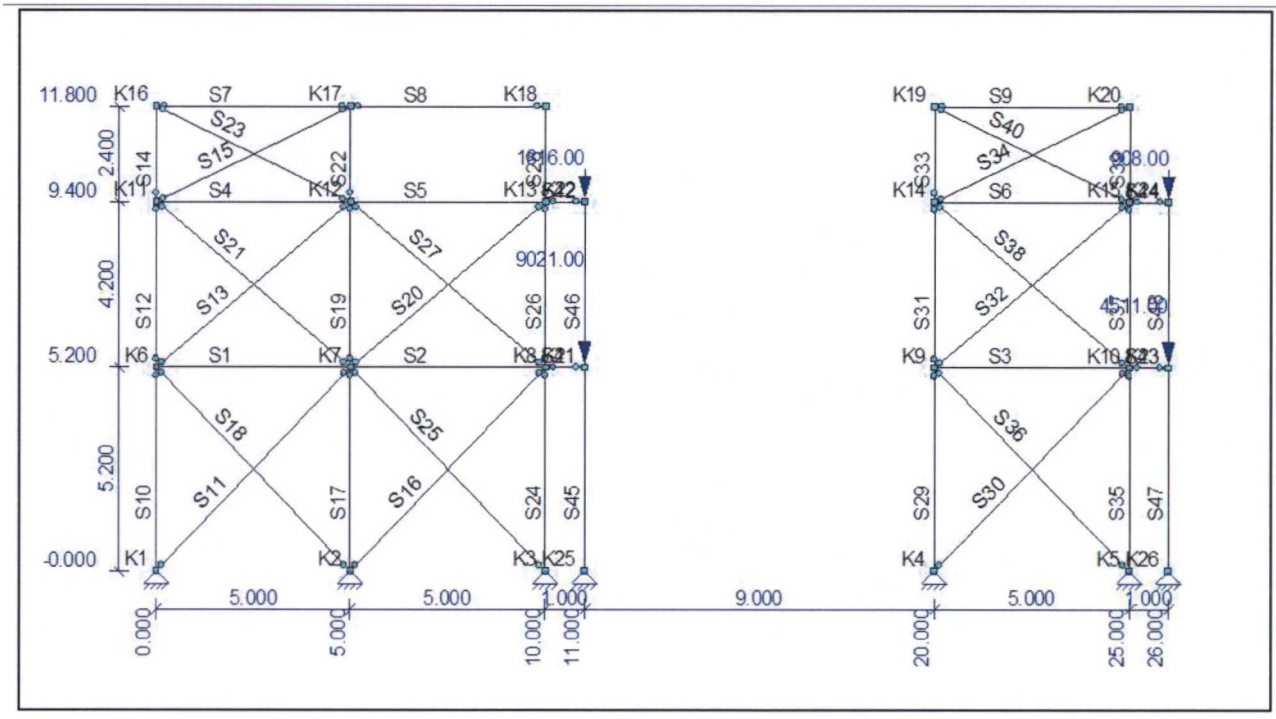
B.G.1: STABILITEIT BGT



B.G.2: AANPENDELEND BGT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Aanpendelend BGT						
N	1,816.00					Z K22
N	908.00					Z K24
N	9,021.00					Z K21
N	4,511.00					Z K23
-	-	-	m	m	-	-

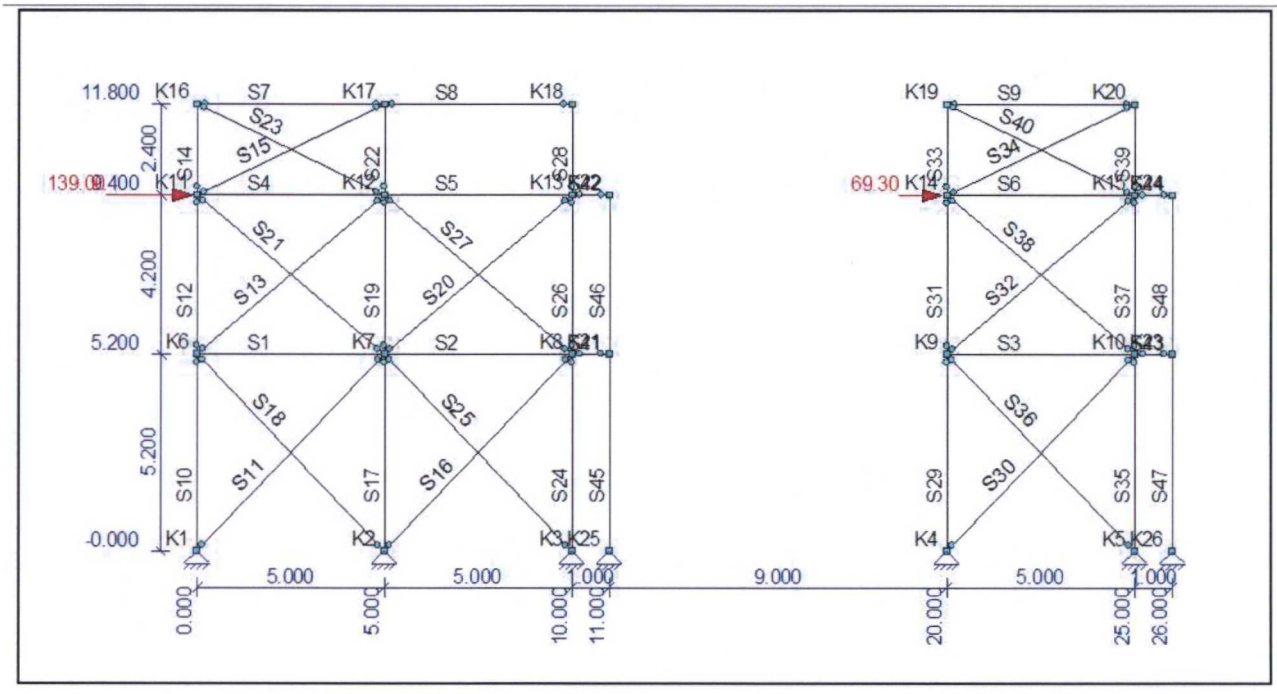
B.G.2: AANPENDELEND BGT



B.G.3: STABILITEIT UGT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Stabiliteit UGT						
N	139.00				X	K11
N	69.30				X	K14
-	-	-	m	m	-	-

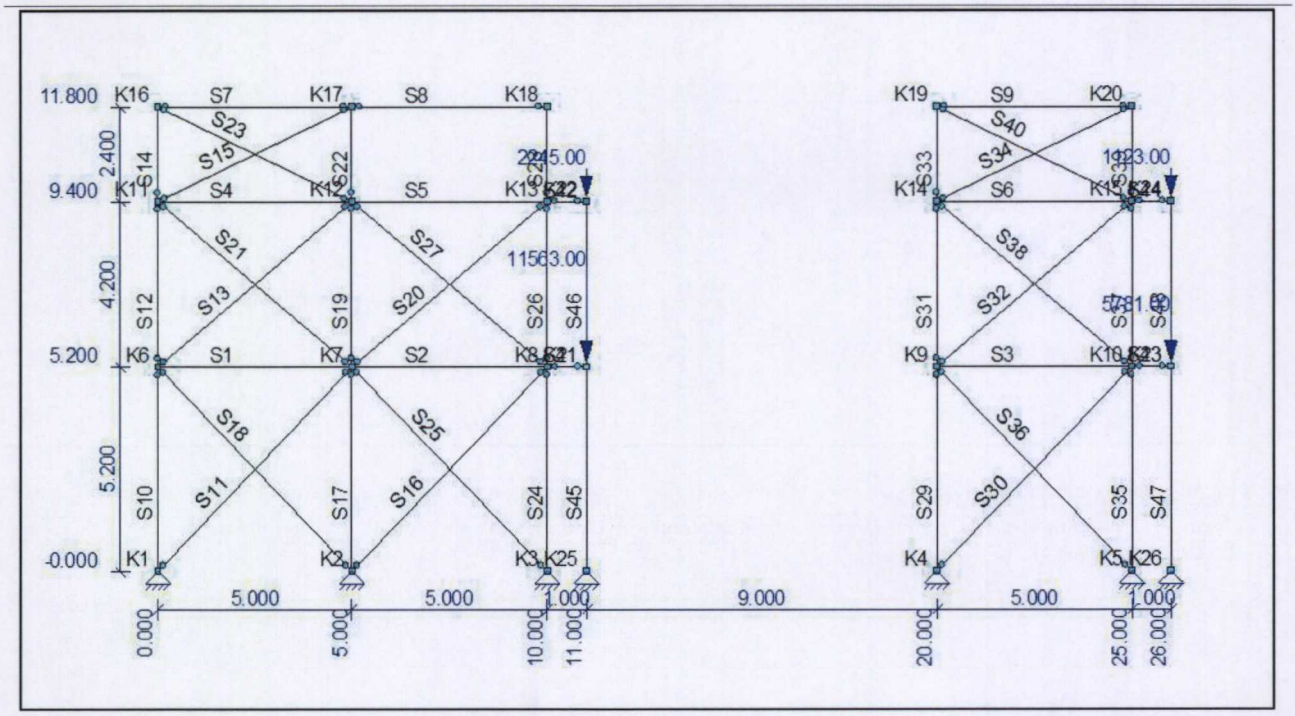
B.G.3: STABILITEIT UGT



B.G.4: AANPENDELEND UGT

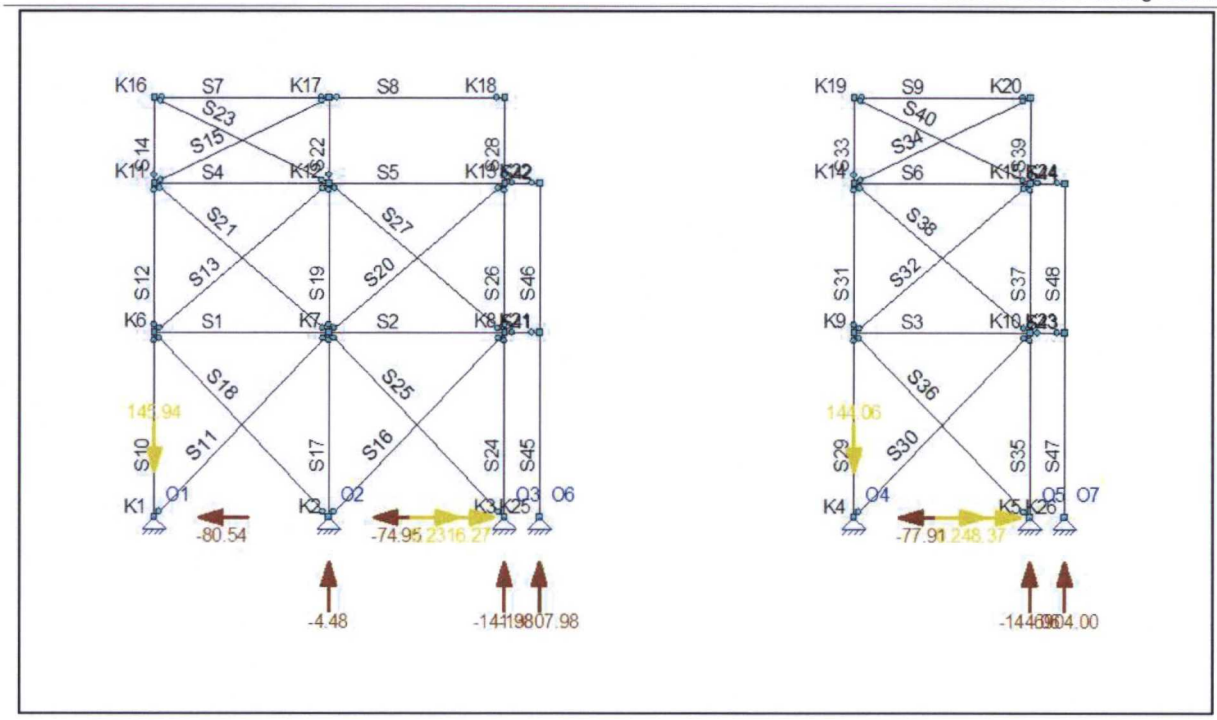
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting Staaf of knoop
B.G.4: Aanpendelend UGT					
N	2,245.00				Z K22
N	1,123.00				Z K24
N	11,563.00				Z K21
N	5,781.00				Z K23
-	-	-	m	m	- -

B.G.4: AANPENDELEND UGT



FU.C. EXTREME OPLEGREACTIES ANALYSE

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O1	K1					Fu.C.2	-80.54	**145.94**	0.00				
O1	K1	Fu.C.2	**-80.54**	145.94	0.00								
O2	K2	Fu.C.2	**-74.95**	-3.98	0.00	Fu.C.1	-67.31	**-4.48**	0.00				
O3	K3	Fu.C.2	**0.23**	-141.98	0.00								
O3	K3					Fu.C.2	0.23	**-141.98**	0.00				
O4	K4					Fu.C.2	-77.91	**144.06**	0.00				
O4	K4	Fu.C.2	**-77.91**	144.06	0.00								
O5	K5	Fu.C.2	**0.24**	-144.06	0.00								
O5	K5					Fu.C.2	0.24	**-144.06**	0.00				
O6	K25	Fu.C.2	**16.27**	13807.98	0.00								
O6	K25					Fu.C.2	16.27	**13807.98**	0.00				
O7	K26	Fu.C.2	**8.37**	-6904.00	0.00								
O7	K26					Fu.C.2	8.37	**-6904.00**	0.00				
Globale extreme waarden													
O6	K25	Fu.C.2	**16.27**	13807.98	0.00								
O1	K1	Fu.C.2	**-80.54**	145.94	0.00								
O1	K1					Fu.C.2	-80.54	**145.94**	0.00				
O6	K25					Fu.C.2	16.27	**13807.98**	0.00				
-	-	-	**kN**	**kN**	**kNm**	-	**kN**	**kN**	**kNm**		**kN**	**kN**	**kNm**



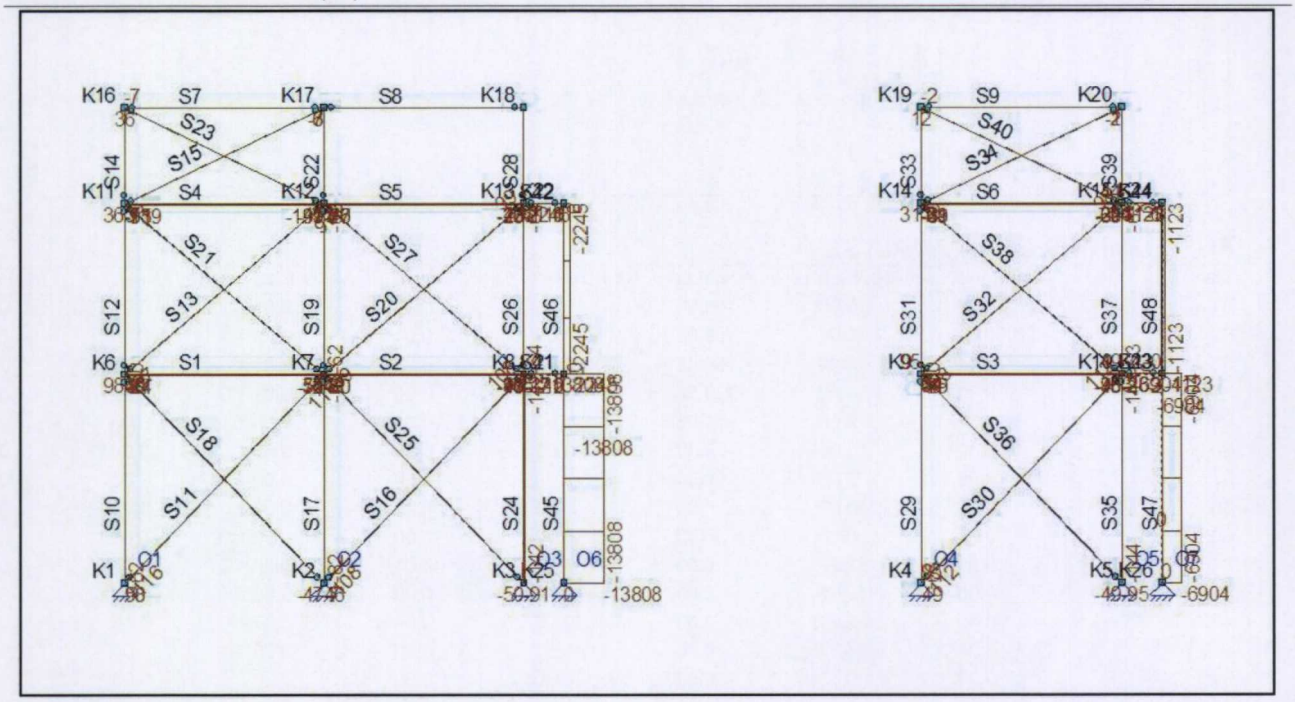
FU.C. OMHULLENDE ANALYSE

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S1	-74.04	0.00	-68.69	0.00	0.00	0.01	0.00	0.03
S2	-69.64	0.00	-65.92	0.00	-0.01	0.00	0.00	0.03
S3	-75.04	0.00	-68.45	0.00	0.00	0.00	0.00	0.00
S4	-139.00	0.00	-139.00	0.00	0.00	0.01	0.00	0.05
S5	-70.30	0.00	-64.95	0.00	-0.01	0.00	0.00	0.05
S6	-69.30	0.00	-69.30	0.00	0.00	0.00	0.00	0.00
S7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S10	0.00	62.29	0.00	57.79	-0.01	0.00	0.00	0.00
S11	0.00	116.05	0.00	104.47	0.00	0.00	0.00	0.00
S12	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
S13	0.00	96.83	0.00	89.83	0.00	0.00	0.00	0.00
S14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S16	0.00	108.34	0.00	97.28	0.00	0.00	0.00	0.00
S17	-82.08	0.00	-74.60	0.00	0.00	0.01	0.00	0.00
S18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S19	-62.28	0.00	-57.78	0.00	0.00	0.01	0.00	0.00
S20	0.00	99.25	0.00	90.91	0.00	0.00	0.00	0.00
S21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S24	-141.98	0.00	-128.61	0.00	0.00	0.01	0.00	0.00
S25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S26	-63.87	0.00	-58.48	0.00	0.00	0.01	0.00	0.00
S27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S29	0.00	63.14	0.00	57.59	-0.01	0.00	0.00	0.00
S30	0.00	112.25	0.00	101.12	0.00	0.00	0.00	0.00
S31	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
S32	0.00	98.14	0.00	89.51	0.00	0.00	0.00	0.00
S33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S35	-144.06	0.00	-130.48	0.00	0.00	0.01	0.00	0.00
S36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S37	-63.14	0.00	-57.58	0.00	0.00	0.01	0.00	0.00
S38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S41	0.00	5.33	0.00	1.40	0.00	0.00	0.00	0.00
S42	-0.78	10.94	-0.78	10.94	0.00	0.00	0.00	0.00
S43	0.00	2.63	0.00	1.53	0.00	0.00	0.00	0.00
S44	-0.85	5.74	-0.85	5.74	0.00	0.00	0.00	0.00
S45	-13807.98	0.00	0.00	0.00	-0.63	7.27	-3.26	31.06
S46	-2245.00	0.00	-2,245.00	0.00	-7.22	0.78	-3.26	31.06
S47	-6904.00	0.00	0.00	0.00	-0.68	3.78	-3.56	16.33
S48	-1123.01	0.00	-1,123.01	0.00	-3.79	0.85	-3.56	16.33
-	kN	kN	kN	kN	kN	kN	kNm	kNm

AFB. FU.C. NORMAALKRACHT (NX) OMHULLENDE

Fundamenteel Belastingscombinaties

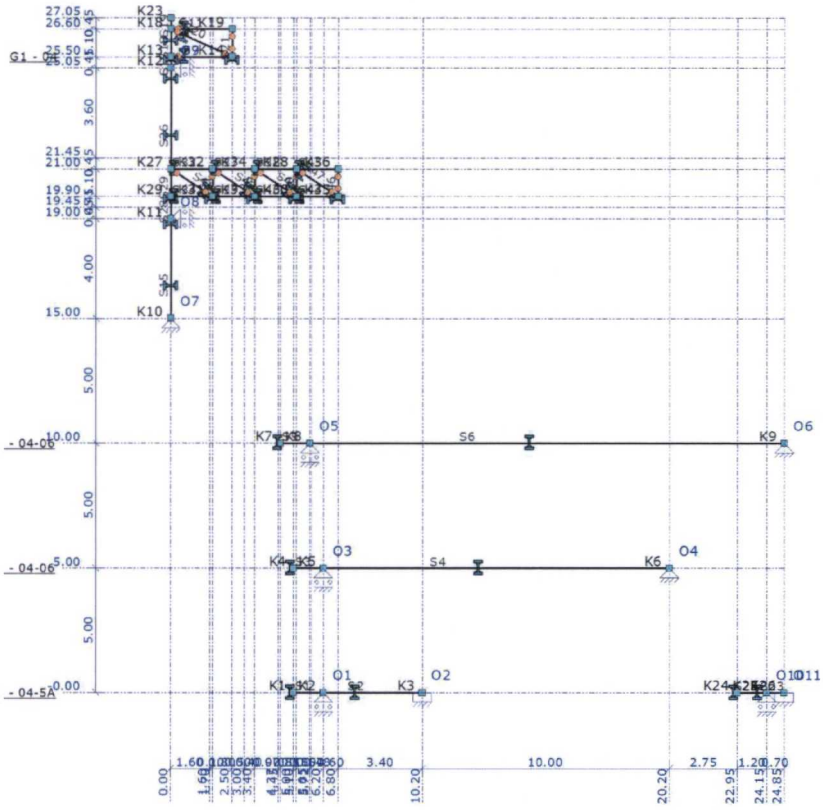


Computerberekening			
Projectnaam	'De Schatberg' te Sevenum	Projectnummer	460518
Omschrijving	Stalen liggers luifel hoog	Constructeur	DaKr
Opdrachtgever	Janssen Wuts Architecten BV	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Stalen liggers luifel hoog.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	30	35	11	10	13	57

AFB. GEOMETRIE RAAMWERK



STAVEN

Staaf	Knoop B		Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S1	K1		NVM	NVM	K2	P1	5.000	0.000	6.200	0.000	1.200
S2	K2		NVM	NVM	K3	P1	6.200	0.000	10.200	0.000	4.000
S3	K4		NVM	NVM	K5	P2	5.000	-5.000	6.200	-5.000	1.200
S4	K5		NVM	NVM	K6	P2	6.200	-5.000	20.200	-5.000	14.000
S5	K7		NVM	NVM	K8	P3	4.450	-10.000	5.650	-10.000	1.200
S6	K8		NVM	NVM	K9	P3	5.650	-10.000	24.850	-10.000	19.200
S7	K13		NV-	NVM	K14	P4	0.000	-25.500	2.500	-25.500	2.500
S11	K18		NV-	NVM	K19	P4	0.000	-26.600	2.500	-26.600	2.500
S15	K10		NVM	NVM	K11	P10	0.000	-15.000	0.000	-19.000	4.000
S17	K12		NVM	NVM	K13	P10	0.000	-25.050	0.000	-25.500	0.450
S18	K13		NVM	NVM	K18	P10	0.000	-25.500	0.000	-26.600	1.100
S19	K18		NVM	NVM	K23	P10	0.000	-26.600	0.000	-27.050	0.450
S20	K18		NV-	NV-	K14	P6	0.000	-26.600	2.500	-25.500	2.731
S21	K14		NV-	NV-	K19	P6	2.500	-25.500	2.500	-26.600	1.100
S22	K24		NVM	NVM	K25	P1	22.950	0.000	24.150	0.000	1.200
S23	K25		NVM	NVM	K26	P1	24.150	0.000	24.850	0.000	0.700
S26	K27		NVM	NVM	K12	P10	0.000	-21.000	0.000	-25.050	4.050
S28	K11		NVM	NVM	K29	P10	0.000	-19.000	0.000	-19.900	0.900
S29	K29		NVM	NVM	K27	P10	0.000	-19.900	0.000	-21.000	1.100
S30	K30		NV-	NV-	K28	P9	5.100	-19.900	5.100	-21.000	1.100
S31	K31		NV-	NV-	K32	P9	1.700	-19.900	1.700	-21.000	1.100

Staaf	Knoop B	Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S32	K27	NVM	NVM	K32	P8	0.000	-21.000	1.700	-21.000	1.700
S34	K29	NVM	NVM	K31	P8	0.000	-19.900	1.700	-19.900	1.700
S36	K33	NV-	NV-	K34	P9	3.400	-19.900	3.400	-21.000	1.100
S37	K32	NVM	NVM	K34	P8	1.700	-21.000	3.400	-21.000	1.700
S38	K34	NVM	NVM	K28	P8	3.400	-21.000	5.100	-21.000	1.700
S39	K31	NVM	NVM	K33	P8	1.700	-19.900	3.400	-19.900	1.700
S40	K33	NVM	NVM	K30	P8	3.400	-19.900	5.100	-19.900	1.700
S41	K31	NV-	NV-	K27	P9	1.700	-19.900	0.000	-21.000	2.025
S42	K33	NV-	NV-	K32	P9	3.400	-19.900	1.700	-21.000	2.025
S43	K30	NV-	NV-	K34	P9	5.100	-19.900	3.400	-21.000	2.025
S44	K30	NVM	NVM	K35	P8	5.100	-19.900	6.800	-19.900	1.700
S45	K28	NVM	NVM	K36	P8	5.100	-21.000	6.800	-21.000	1.700
S46	K35	NV-	NV-	K36	P9	6.800	-19.900	6.800	-21.000	1.100
S47	K28	NV-	NV-	K35	P9	5.100	-21.000	6.800	-19.900	2.025
-	-	-	-	-	-	m	m	m	m	m

PROFIELEN

Profiel	Profielnaam	Oppervlakte	Iy	Materiaal	Hoek
P1	HE140A	3.1416e-03	1.0331e-05	S235	0.0
P2	IPE400	8.4464e-03	2.3128e-04	S235	0.0
P3	IPE550	1.3442e-02	6.7117e-04	S355	0.0
P4	HE140A	3.1416e-03	1.0331e-05	S235	0.0
P6	HE120A	2.5336e-03	6.0615e-06	S355	0.0
P8	HE140A	3.1416e-03	1.0331e-05	S235	0.0
P9	HE120A	2.5336e-03	6.0615e-06	S235	0.0
P10	HE280A	9.7264e-03	1.3673e-04	S235	0.0
-	-	m2	m4	-	°

MATERIALEN

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

OPLEGGINGEN

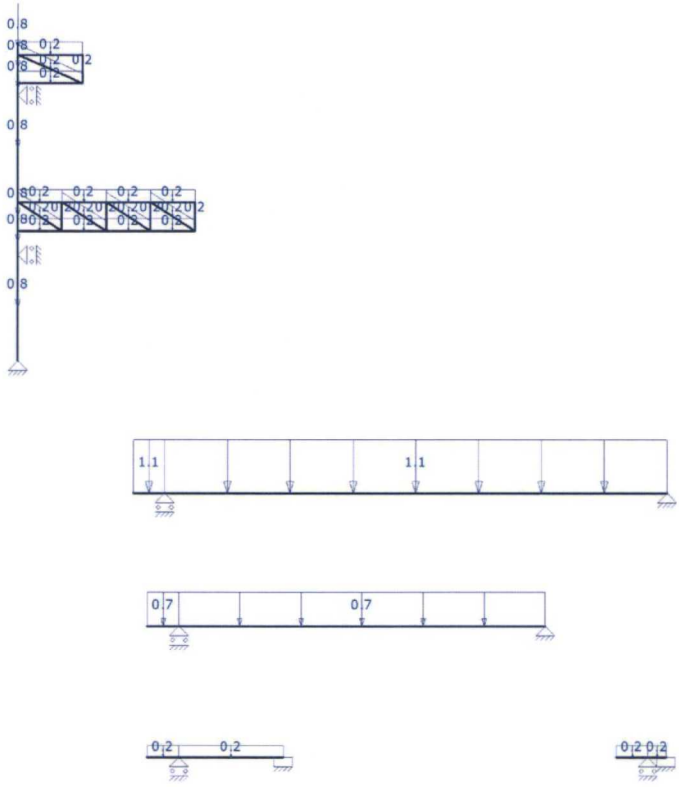
Oplegging	Knoop	X	Z	Yr	HoekYr
O1	K2	vrij	vast	vrij	0
O2	K3	vast	vast	vast	0
O3	K5	vrij	vast	vrij	0
O4	K6	vast	vast	vrij	0
O5	K8	vrij	vast	vrij	0
O6	K9	vast	vast	vrij	0
O7	K10	vast	vast	vrij	0
O8	K11	vast	0.00:0.00	vrij	0
O9	K12	vast	0.00:0.00	vrij	0
O10	K25	vrij	vast	vrij	0
O11	K26	vast	vast	vast	0
-	-	kN/m	kN/m	kNm/rad	°

B.G.1: EIGEN GEWICHT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	1.200(L)	Z"	S1,S22
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	4.000(L)	Z"	S2
qG	0.66 (1.00x)	0.66 (1.00x)	0.000	1.200(L)	Z"	S3
qG	0.66 (1.00x)	0.66 (1.00x)	0.000	14.000(L)	Z"	S4
qG	1.06 (1.00x)	1.06 (1.00x)	0.000	1.200(L)	Z"	S5
qG	1.06 (1.00x)	1.06 (1.00x)	0.000	19.200(L)	Z"	S6
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	2.500(L)	Z"	S7,S11
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	4.000(L)	Z"	S15
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	0.450(L)	Z"	S17,S19
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	1.100(L)	Z"	S18,S29
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	2.731(L)	Z"	S20
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	1.100(L)	Z"	S21
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	0.700(L)	Z"	S23
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	4.050(L)	Z"	S26
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	0.900(L)	Z"	S28

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	1.100(L)	Z"	S30-S31,S36
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	1.700(L)	Z"	S32,S34,S37-S40,S44
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	2.025(L)	Z"	S41-S43
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	1.700(L)	Z"	S45
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	1.100(L)	Z"	S46
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	2.025(L)	Z"	S47
Som lasten	**X: 0.00**	**kN Z: 50.39**	**kN**			
-	-	-	m	m	-	-

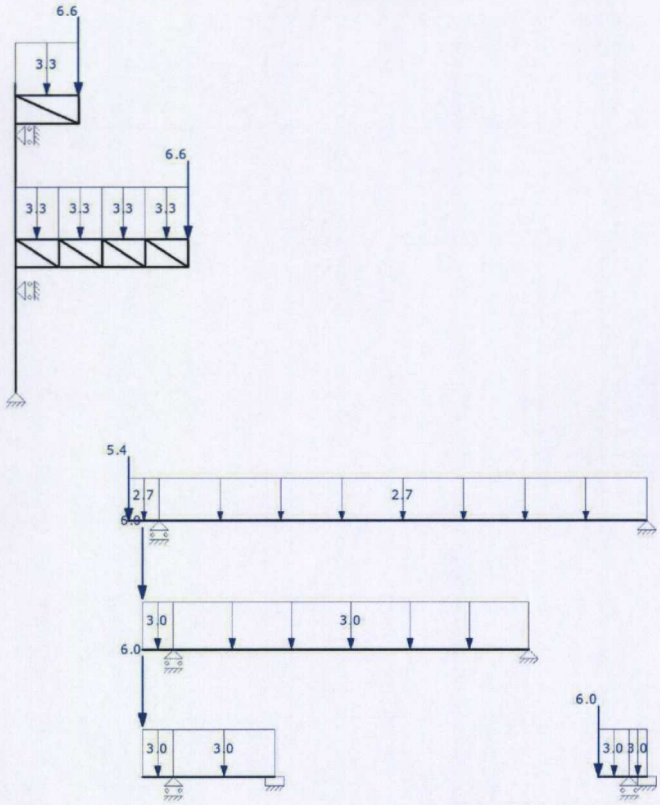
B.G.1: EIGEN GEWICHT



B.G.2: PERMANENT

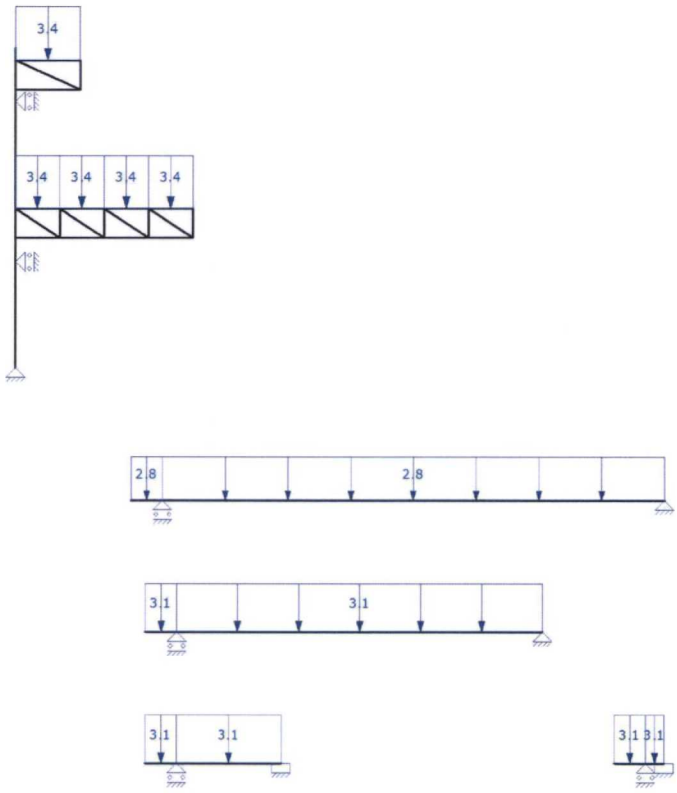
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent						
N	6.00				Z	K1,K4,K24
q	3.03	3.03	0.000	1.200(L)	Z'	S1-S4,S22-S23
N	5.40				Z	K7
q	2.72	2.72	0.000	1.200(L)	Z'	S5-S6
q	3.33	3.33	0.000	2.500(L)	Z'	S11,S32,S37-S38,S45
N	6.60				Z	K19,K36
Som lasten	**X: 0.00**	**kN Z: 190.63**	**kN**			
-	-	-	m	m	-	-

B.G.2: PERMANENT



B.G.3: SNEEUW

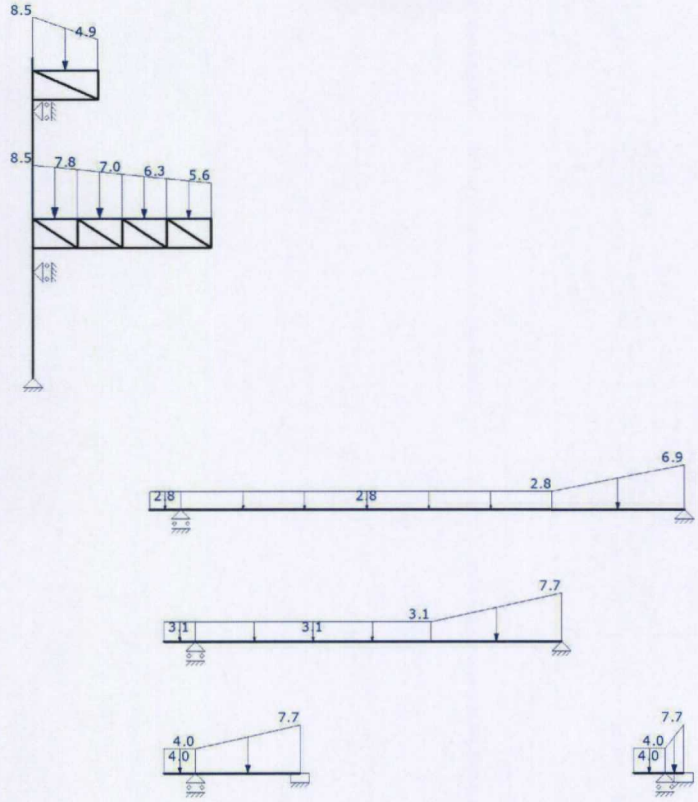
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Sneeuw						
q	3.08	3.08	0.000	1.200(L)	Z'	S1-S4,S22-S23
q	2.77	2.77	0.000	1.200(L)	Z'	S5-S6
q	3.39	3.39	0.000	2.500(L)	Z'	S11,S32,S37-S38,S45
Som lasten	**X: 0.00**	**kN Z: 156.72**	**kN**			
-	-	-	m	m	-	-



B.G.4: SNEEUWOPHOPING GEBOUW

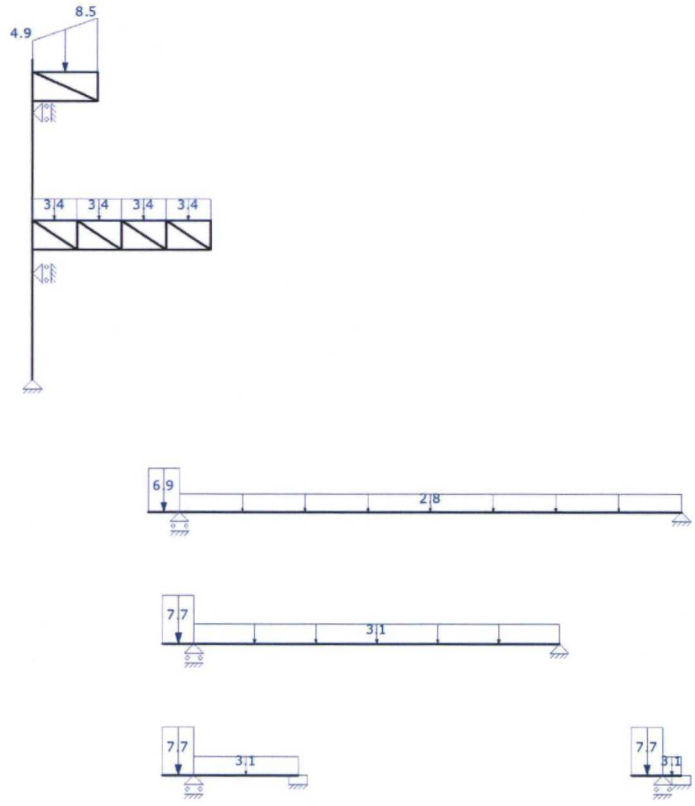
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.4: Sneeuwophoping gebouw						
q	4.00	4.00	0.000	1.200(L)	Z'	S1,S22
q	4.00	7.70	0.000	4.000(L)	Z'	S2,S23
q	3.08	3.08	0.000	1.200(L)	Z'	S3
q	3.08	3.08	0.000	9.000	Z'	S4
q	3.08	7.70	9.000	14.000(L)	Z'	S4
q	2.77	2.77	0.000	1.200(L)	Z'	S5
q	2.77	2.77	0.000	14.200	Z'	S6
q	2.77	6.93	14.200	19.200(L)	Z'	S6
q	8.47	4.91	0.000	2.500(L)	Z'	S11
q	8.47	7.75	0.000	1.700(L)	Z'	S32
q	7.75	7.03	0.000	1.700(L)	Z'	S37
q	7.03	6.31	0.000	1.700(L)	Z'	S38
q	6.31	5.59	0.000	1.700(L)	Z'	S45
Som lasten	**X: 0.00**	**kN Z: 226.90**	**kN**			
-	-	-	m	m	-	-

B.G.4: SNEEUWOPHOPING GEBOUW



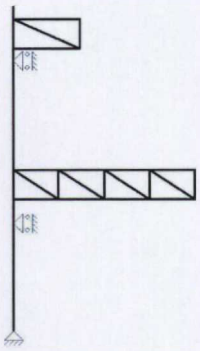
B.G.5: SNEEUWOPHOPING LUIFEL

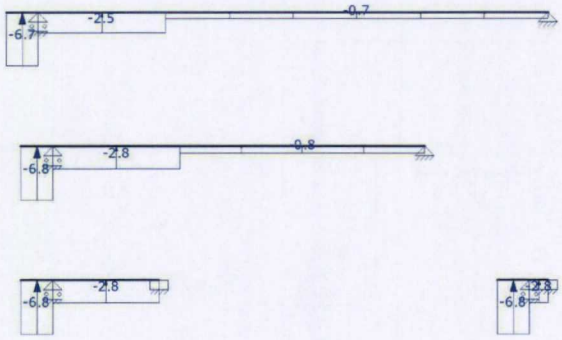
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Sneeuwophoping luifel						
q	7.70	7.70	0.000	1.200(L)	Z'	S1,S3,S22
q	3.08	3.08	0.000	4.000(L)	Z'	S2,S4,S23
q	6.93	6.93	0.000	1.200(L)	Z'	S5
q	2.77	2.77	0.000	19.200(L)	Z'	S6
q	4.91	8.47	0.000	2.500(L)	Z'	S11
q	3.39	3.39	0.000	1.700(L)	Z'	S32,S37-S38,S45
Som lasten	**X: 0.00**	**kN Z: 186.59**	**kN**			
-	-	-	m	m	-	-



B.G.6: WIND VAN DE ZIJKANT 1

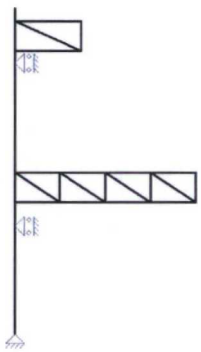
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.6: Wind van de Zijkant 1						
q	-6.77	-6.77	0.000	1.200(L)	Z'	S1,S3,S22
q	-2.81	-2.81	0.000	4.000(L)	Z'	S2,S23
q	-2.81	-2.81	0.000	4.800	Z'	S4
q	-0.83	-0.83	4.800	14.000(L)	Z'	S4
q	-6.70	-6.70	0.000	1.200(L)	Z'	S5
q	-2.52	-2.52	0.000	4.800	Z'	S6
q	-0.74	-0.74	4.800	19.200(L)	Z'	S6
Som lasten	**X: 0.00**	**kN Z: -89.50**	**kN**			
-	-	-	m	m	-	-

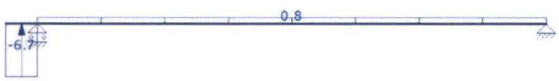


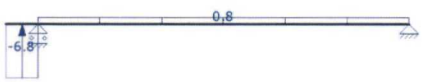


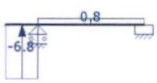
B.G.7: WIND VAN DE ZIJKANT 2

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting Staaf of knoop
B.G.7: Wind van de Zijkant 2					
q	-6.77	-6.77	0.000	1.200(L)	Z' S1,S3,S22
q	0.83	0.83	0.000	4.000(L)	Z' S2,S4,S6,S23
q	-6.70	-6.70	0.000	1.200(L)	Z' S5
Som lasten	**X: 0.00**	**kN Z: -0.96**	**kN**		
-	-	-	m	m	- -



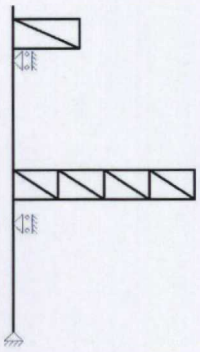


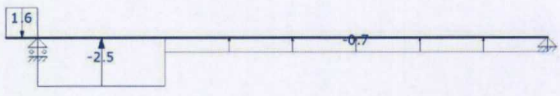


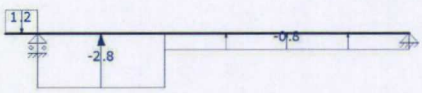


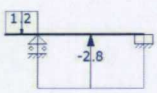
B.G.8: WIND VAN DE ZIJKANT 3

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.8: Wind van de Zijkant 3						
q	1.21	1.21	0.000	1.200(L)	Z'	S1,S3,S22
q	-2.81	-2.81	0.000	4.000(L)	Z'	S2,S23
q	-2.81	-2.81	0.000	4.800	Z'	S4
q	-0.83	-0.83	4.800	14.000(L)	Z'	S4
q	1.57	1.57	0.000	1.200(L)	Z'	S5
q	-2.52	-2.52	0.000	4.800	Z'	S6
q	-0.74	-0.74	4.800	19.200(L)	Z'	S6
Som lasten	**X: 0.00**	**kN Z: -50.84**	**kN**			
-	-	-	m	m	- -	



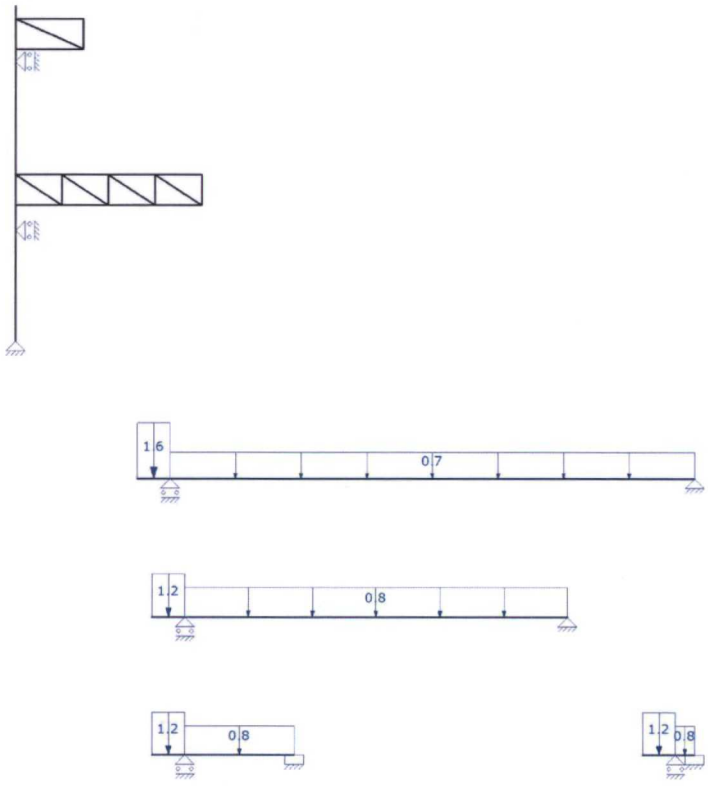






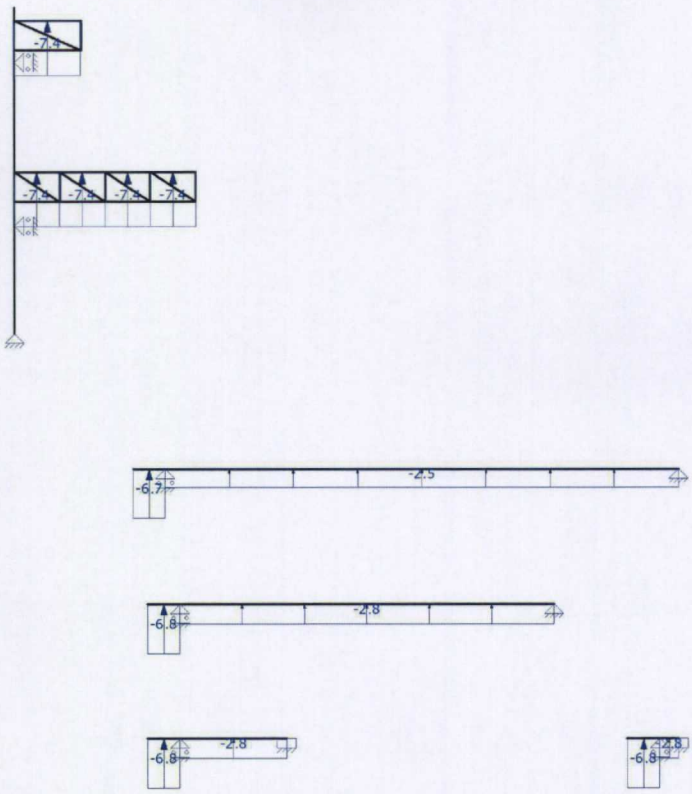
B.G.9: WIND VAN DE ZIJKANT 4

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.9: Wind van de Zijkant 4						
q	1.21	1.21	0.000	1.200(L)	Z'	S1,S3,S22
q	0.83	0.83	0.000	4.000(L)	Z'	S2,S4,S23
q	1.57	1.57	0.000	1.200(L)	Z'	S5
q	0.74	0.74	0.000	19.200(L)	Z'	S6
Som lasten	**X: 0.00**	**kN Z: 35.97**	**kN**			
-	-	-	m	m	-	-



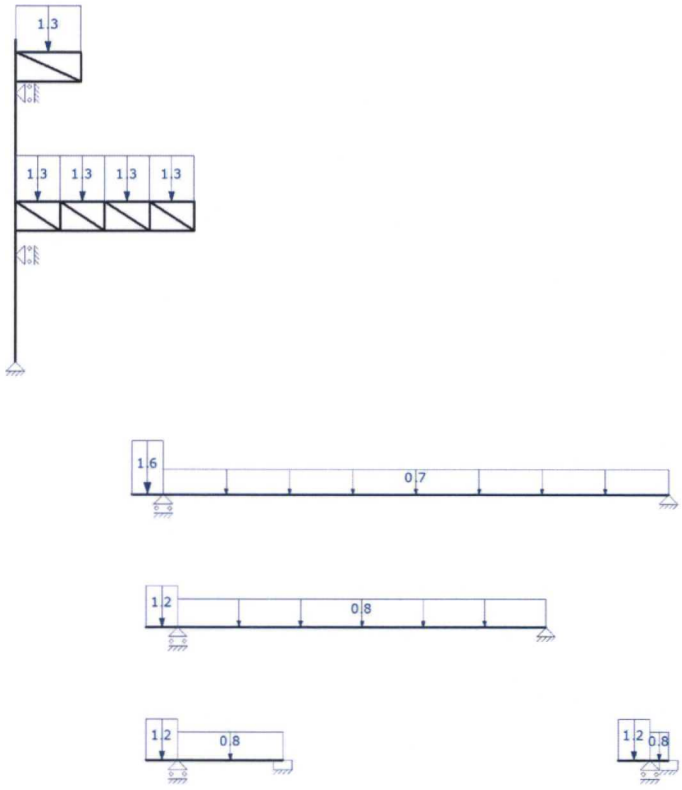
B.G.10: WIND OP DE KOP 1

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.10: Wind op de Kop 1						
q	-6.77	-6.77	0.000	1.200(L)	Z'	S1,S3,S22
q	-2.81	-2.81	0.000	4.000(L)	Z'	S2,S4,S23
q	-6.70	-6.70	0.000	1.200(L)	Z'	S5
q	-2.52	-2.52	0.000	19.200(L)	Z'	S6
q	-7.44	-7.44	0.000	2.500(L)	Z'	S11,S32,S37-S38,S45
Som lasten	**X: 0.00**	**kN Z: -202.53**	**kN**			
-	-	-	m	m	-	-



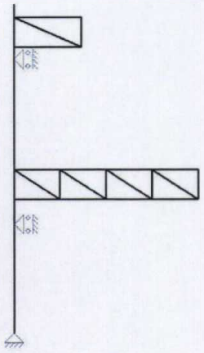
B.G.11: WIND OP DE KOP 2

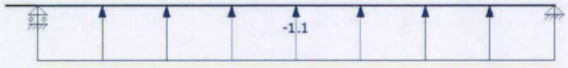
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.11: Wind op de Kop 2						
q	1.21	1.21	0.000	1.200(L)	Z'	S1,S3,S22
q	0.83	0.83	0.000	4.000(L)	Z'	S2,S4,S23
q	1.57	1.57	0.000	1.200(L)	Z'	S5
q	0.74	0.74	0.000	19.200(L)	Z'	S6
q	1.33	1.33	0.000	2.500(L)	Z'	S11,S32,S37-S38,S45
Som lasten	**X: 0.00**	**kN Z: 48.34**	**kN**			
-	-	-	m	m	-	-

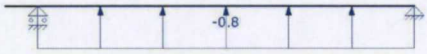


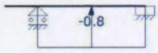
B.G.12: WIND OVERDRUK

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.12: Wind Overdruk						
q	-0.83	-0.83	0.000	4.000(L)	Z'	S2,S4,S23
q	-1.09	-1.09	0.000	19.200(L)	Z'	S6
Som lasten	**X: 0.00**	**kN Z: -36.45**	**kN**			
-	-	-	**m**	**m**	-	-





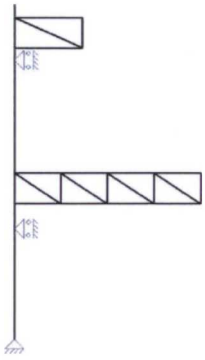


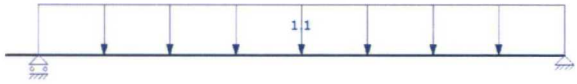


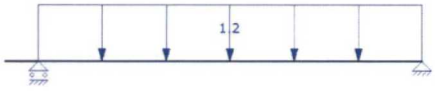
B.G.13: WIND ONDERDRUK

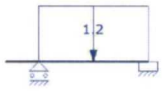
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.13: Wind Onderdruk						
q	1.21	1.21	0.000	4.000(L)	Z'	S2,S4,S23
q	1.09	1.09	0.000	19.200(L)	Z'	S6
Som lasten	**X: 0.00**	**kN Z: 43.55**	**kN**			
-	-	-	m	m	-	-

B.G.13: WIND ONDERDRUK









FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

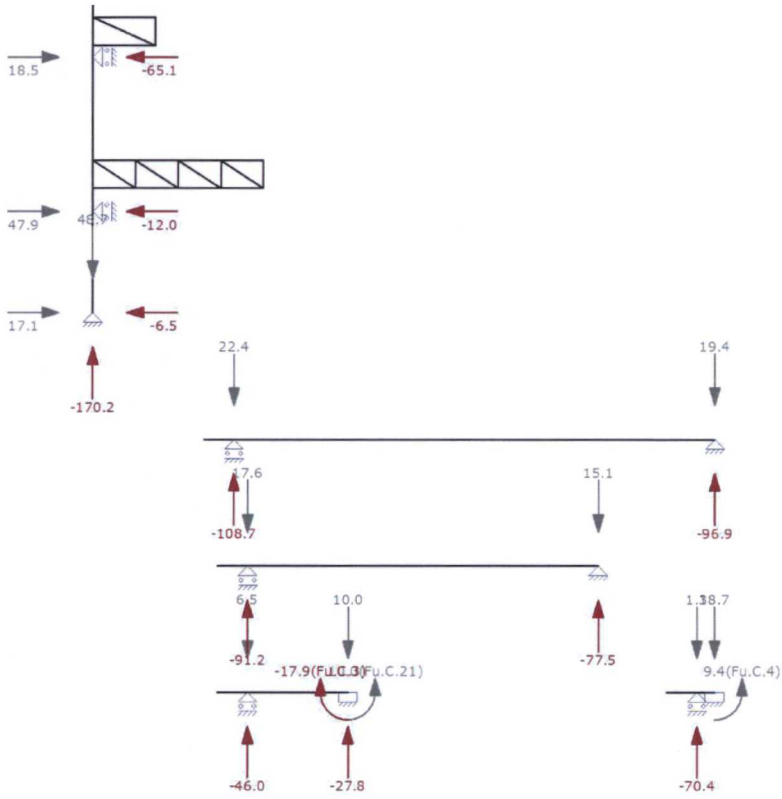
B.G.	Omschrijving	Fu.C.1	Fu.C.2	Fu.C.3	Fu.C.4	Fu.C.5	Fu.C.6	Fu.C.7	Fu.C.8
B.G.1	Eigen Gewicht	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.2	Permanent	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.3	Sneeuw	-	1.50	-	-	-	-	-	-
B.G.4	Sneeuwophoping gebouw	-	-	1.50	-	-	-	-	-
B.G.5	Sneeuwophoping luifel	-	-	-	1.50	-	-	-	-
B.G.6	Wind van de Zijkant 1	-	-	-	-	1.50	1.50	-	-
B.G.7	Wind van de Zijkant 2	-	-	-	-	-	-	1.50	1.50
B.G.8	Wind van de Zijkant 3	-	-	-	-	-	-	-	-
B.G.9	Wind van de Zijkant 4	-	-	-	-	-	-	-	-
B.G.10	Wind op de Kop 1	-	-	-	-	-	-	-	-
B.G.11	Wind op de Kop 2	-	-	-	-	-	-	-	-
B.G.12	Wind Overdruk	-	-	-	-	1.50	-	1.50	-
B.G.13	Wind Onderdruk	-	-	-	-	-	1.50	-	1.50
B.G.	**Omschrijving**	**Fu.C.9**	**Fu.C.10**	**Fu.C.11**	**Fu.C.12**	**Fu.C.13**	**Fu.C.14**	**Fu.C.15**	**Fu.C.16**
B.G.1	Eigen Gewicht	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.2	Permanent	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.3	Sneeuw	-	-	-	-	-	-	-	-
B.G.4	Sneeuwophoping gebouw	-	-	-	-	-	-	-	-
B.G.5	Sneeuwophoping luifel	-	-	-	-	-	-	-	-
B.G.6	Wind van de Zijkant 1	-	-	-	-	-	-	-	-
B.G.7	Wind van de Zijkant 2	-	-	-	-	-	-	-	-
B.G.8	Wind van de Zijkant 3	1.50	1.50	-	-	-	-	-	-
B.G.9	Wind van de Zijkant 4	-	-	1.50	1.50	-	-	-	-
B.G.10	Wind op de Kop 1	-	-	-	-	1.50	1.50	-	-
B.G.11	Wind op de Kop 2	-	-	-	-	-	-	1.50	1.50
B.G.12	Wind Overdruk	1.50	-	1.50	-	1.50	-	1.50	-
B.G.13	Wind Onderdruk	-	1.50	-	1.50	-	1.50	-	1.50
B.G.	**Omschrijving**	**Fu.C.17**	**Fu.C.18**	**Fu.C.19**	**Fu.C.20**	**Fu.C.21**	**Fu.C.22**	**Fu.C.23**	**Fu.C.24**

B.G.1	Eigen Gewicht	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
B.G.2	Permanent	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
B.G.3	Sneeuw	-	-	-	-	-	-	-	-
B.G.4	Sneeuwophoping gebouw	-	-	-	-	-	-	-	-
B.G.5	Sneeuwophoping luifel	-	-	-	-	-	-	-	-
B.G.6	Wind van de Zijkant 1	1.50	1.50	-	-	-	-	-	-
B.G.7	Wind van de Zijkant 2	-	-	1.50	1.50	-	-	-	-
B.G.8	Wind van de Zijkant 3	-	-	-	-	1.50	1.50	-	-
B.G.9	Wind van de Zijkant 4	-	-	-	-	-	-	1.50	1.50
B.G.10	Wind op de Kop 1	-	-	-	-	-	-	-	-
B.G.11	Wind op de Kop 2	-	-	-	-	-	-	-	-
B.G.12	Wind Overdruk	1.50	-	1.50	-	1.50	-	1.50	-
B.G.13	Wind Onderdruk	-	1.50	-	1.50	-	1.50	-	1.50

B.G.	**Omschrijving**	**Fu.C.25**	**Fu.C.26**	**Fu.C.27**	**Fu.C.28**
B.G.1	Eigen Gewicht	0.90	0.90	0.90	0.90
B.G.2	Permanent	0.90	0.90	0.90	0.90
B.G.3	Sneeuw	-	-	-	-
B.G.4	Sneeuwophoping gebouw	-	-	-	-
B.G.5	Sneeuwophoping luifel	-	-	-	-
B.G.6	Wind van de Zijkant 1	-	-	-	-
B.G.7	Wind van de Zijkant 2	-	-	-	-
B.G.8	Wind van de Zijkant 3	-	-	-	-
B.G.9	Wind van de Zijkant 4	-	-	-	-
B.G.10	Wind op de Kop 1	1.50	1.50	-	-
B.G.11	Wind op de Kop 2	-	-	1.50	1.50
B.G.12	Wind Overdruk	1.50	-	1.50	-
B.G.13	Wind Onderdruk	-	1.50	-	1.50

FU.C. EXTREME OPLEGREACTIES

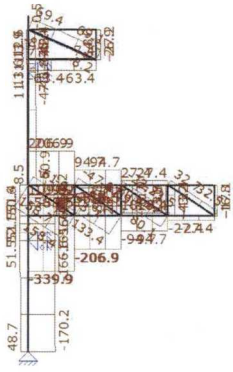
Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O1	K2					Fu.C.17	0.00	**6.53**	0.00				
O1	K2					Fu.C.4	0.00	**-46.03**	0.00				
O2	K3					Fu.C.21	0.00	**9.99**	9.98	Fu.C.21	0.00	9.99	**9.98**
O2	K3					Fu.C.3	0.00	**-27.79**	-17.89	Fu.C.3	0.00	-27.79	**-17.89**
O3	K5					Fu.C.25	0.00	**17.64**	0.00				
O3	K5					Fu.C.4	0.00	**-91.18**	0.00				
O4	K6					Fu.C.25	0.00	**15.07**	0.00				
O4	K6					Fu.C.3	0.00	**-77.54**	0.00				
O5	K8					Fu.C.25	0.00	**22.44**	0.00				
O5	K8					Fu.C.4	0.00	**-108.73**	0.00				
O6	K9					Fu.C.25	0.00	**19.42**	0.00				
O6	K9					Fu.C.3	0.00	**-96.89**	0.00				
O7	K10	Fu.C.3	**17.15**	-170.24	0.00	Fu.C.25	-6.53	**48.70**	0.00				
O7	K10	Fu.C.25	**-6.53**	48.70	0.00	Fu.C.3	17.15	**-170.24**	0.00				
O8	K11	Fu.C.3	**47.93**	0.00	0.00								
O8	K11	Fu.C.25	**-11.96**	0.00	0.00								
O9	K12	Fu.C.25	**18.49**	0.00	0.00								
O9	K12	Fu.C.3	**-65.08**	0.00	0.00								
O10	K25					Fu.C.17	0.00	**1.14**	0.00				
O10	K25					Fu.C.4	0.00	**-70.42**	0.00				
O11	K26					Fu.C.4	0.00	**38.66**	9.37	Fu.C.4	0.00	38.66	**9.37**
Globale extreme waarden													
O8	K11	Fu.C.3	**47.93**	0.00	0.00								
O9	K12	Fu.C.3	**-65.08**	0.00	0.00								
O7	K10					Fu.C.25	-6.53	**48.70**	0.00				
O7	K10					Fu.C.3	17.15	**-170.24**	0.00				
O2	K3									Fu.C.21	0.00	9.99	**9.98**
O2	K3									Fu.C.3	0.00	-27.79	**-17.89**
-	-	-	**kN**	**kN**	**kNm**	-		**kN**	**kN**	**kNm**		**kN**	**kN**	**kNm**



FU.C. EXTREME STAAFKRACHTEN

Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0	T/D	Nmax	Vb	Vmax	Ve
S1	Fu.C.1	0.00	0.00	0.000	-12.90	0.000	0.000	-	0.00	**-8.10**	-13.41	-13.41
	Fu.C.4	0.00	0.00	0.000	**-19.79**	0.000	0.000	-	0.00	-7.20	**-25.78**	**-25.78**
	Fu.C.5	0.00	**-4.17**	1.157	-4.16	0.000	0.000	-	0.00	-7.20	-7.20	0.27
	Fu.C.17	0.00	-2.02	0.749	-1.29	0.000	0.000	-	0.00	-5.40	-5.40	**3.25**
S2	Fu.C.3	-15.79	**8.58**	2.031	**-17.89**	0.846	3.168	-	0.00	**23.04**	**-27.79**	**-27.79**
	Fu.C.4	**-19.79**	4.18	2.368	-7.21	1.379	3.357	-	0.00	20.25	**20.25**	-13.96
	Fu.C.17	-1.29	-3.44	1.307	5.67	2.962	0.000	-	0.00	**-3.28**	6.76	6.76
	Fu.C.21	-9.91	**-9.91**	0.020	**9.98**	2.830	0.000	-	0.00	-0.05	9.99	**9.99**
S3	Fu.C.1	0.00	0.00	0.000	-13.31	0.000	0.000	-	0.00	**-8.10**	-14.08	-14.08
	Fu.C.4	0.00	0.00	0.000	**-20.15**	0.000	0.000	-	0.00	-7.20	**-26.38**	**-26.38**
	Fu.C.17	0.00	**-2.13**	0.790	-1.56	0.000	0.000	-	0.00	-5.40	-5.40	**2.80**
S4	Fu.C.3	-15.16	**229.17**	7.347	0.00	0.232	0.000	-	0.00	**66.51**	**-77.54**	**-77.54**
	Fu.C.4	**-20.15**	211.81	7.159	0.00	0.318	0.000	-	0.00	64.80	**64.80**	-61.92
	Fu.C.25	-1.56	**-53.12**	6.948	0.00	0.000	0.000	-	0.00	**-14.84**	15.07	**15.07**
S5	Fu.C.1	0.00	0.00	0.000	-12.42	0.000	0.000	-	0.00	**-7.29**	-13.41	-13.41
	Fu.C.4	0.00	0.00	0.000	**-18.52**	0.000	0.000	-	0.00	-6.48	**-24.39**	**-24.39**
	Fu.C.5	0.00	**-3.80**	1.174	-3.80	0.000	0.000	-	0.00	-6.48	-6.48	0.14
	Fu.C.17	0.00	-1.78	0.731	-1.04	0.000	0.000	-	0.00	-4.86	-4.86	**3.12**
S6	Fu.C.3	-14.03	**406.45**	9.840	0.00	0.166	0.000	-	0.00	**85.46**	**-96.89**	**-96.89**
	Fu.C.4	**-18.52**	391.01	9.711	0.00	0.222	0.000	-	0.00	84.34	**84.34**	-82.41
	Fu.C.25	-1.04	**-93.48**	9.573	0.00	0.000	0.000	-	0.00	**-19.31**	19.42	**19.42**
S7	Fu.C.1	0.00	**0.26**	1.250	0.00	0.000	0.000	D	-36.42	**0.42**	**-0.42**	**-0.42**
	Fu.C.4	0.00	0.23	1.250	0.00	0.000	0.000	D	**-63.41**	0.37	-0.37	-0.37
	Fu.C.25	0.00	0.17	1.250	0.00	0.000	0.000	T	**7.43**	0.28	-0.28	-0.28
S11	Fu.C.3	0.00	**11.20**	1.211	0.00	0.000	0.000	-	0.00	**19.02**	**19.02**	-16.80
	Fu.C.4	0.00	11.20	1.289	0.00	0.000	0.000	-	0.00	16.80	**-19.02**	**-19.02**
	Fu.C.25	0.00	**-6.20**	1.250	0.00	0.000	0.000	-	0.00	**-9.93**	-9.93	**9.93**
S15	Fu.C.3	0.00	0.00	0.000	**-68.59**	0.000	0.000	D	**-170.24**	**-17.15**	**-17.15**	**-17.15**

Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0 T/D	Nmax	Vb	Vmax	Ve
S15	Fu.C.25	0.00	0.00	0.000	**26.12**	0.000	0.000 T	**51.45**	**6.53**	**6.53**	**6.53**
S17	Fu.C.3	-64.19	-64.19	0.150	-64.19	0.000	0.000 D	**-47.22**	0.00	0.00	0.00
	Fu.C.4	**-69.75**	**-69.75**	0.150	**-69.75**	0.000	0.000 D	-47.22	0.00	0.00	0.00
	Fu.C.25	**8.17**	**8.17**	0.150	**8.17**	0.000	0.000 T	**11.61**	0.00	0.00	0.00
S18	Fu.C.3	-64.19	0.00	0.000	0.00	0.000	0.000 D	**-46.44**	58.35	58.35	58.35
	Fu.C.4	**-69.75**	0.00	0.000	0.00	0.000	0.000 D	-46.44	**63.41**	**63.41**	**63.41**
	Fu.C.25	**8.17**	0.00	0.000	0.00	0.000	0.000 T	**12.64**	**-7.43**	**-7.43**	**-7.43**
S19	Fu.C.1	0.00	0.00	0.000	0.00	0.150	0.300 D	**-0.46**	0.00	0.00	0.00
S20	Fu.C.1	0.00	**0.23**	1.366	0.00	0.000	0.000 T	39.93	**0.34**	**-0.34**	**-0.34**
	Fu.C.4	0.00	0.20	1.366	0.00	0.000	0.000 T	**69.41**	0.30	-0.30	-0.30
	Fu.C.25	0.00	0.15	1.366	0.00	0.000	0.000 D	**-8.21**	0.22	-0.22	-0.22
S21	Fu.C.4	0.00	0.00	0.000	0.00	0.367	0.733 D	**-27.20**	0.00	0.00	0.00
	Fu.C.25	0.00	0.00	0.000	0.00	0.367	0.733 T	**3.99**	0.00	0.00	0.00
S22	Fu.C.1	0.00	0.00	0.000	-12.90	0.000	0.000 -	0.00	**-8.10**	-13.41	-13.41
	Fu.C.4	0.00	0.00	0.000	**-19.79**	0.000	0.000 -	0.00	-7.20	**-25.78**	**-25.78**
	Fu.C.5	0.00	**-4.17**	1.157	-4.16	0.000	0.000 -	0.00	-7.20	-7.20	0.27
	Fu.C.17	0.00	-2.02	0.749	-1.29	0.000	0.000 -	0.00	-5.40	-5.40	**3.25**
S23	Fu.C.4	**-19.79**	0.00	0.000	**9.37**	0.464	0.000 -	0.00	**44.65**	**44.65**	**38.66**
S26	Fu.C.3	**199.38**	0.00	0.000	-64.19	3.064	0.000 D	**-50.93**	**-65.08**	**-65.08**	**-65.08**
	Fu.C.4	141.44	0.00	0.000	**-69.75**	2.712	0.000 D	-50.93	-52.15	-52.15	-52.15
	Fu.C.25	**-66.70**	0.00	0.000	**8.17**	3.608	0.000 T	**11.30**	**18.49**	**18.49**	**18.49**
S28	Fu.C.3	**-68.59**	0.00	0.000	**-127.16**	0.000	0.000 D	**-166.57**	**-65.08**	**-65.08**	**-65.08**
	Fu.C.25	**26.12**	0.00	0.000	**42.76**	0.000	0.000 T	**52.07**	**18.49**	**18.49**	**18.49**
S29	Fu.C.3	**-119.86**	0.00	0.000	**182.49**	0.436	0.000 D	**-161.15**	**274.87**	**274.87**	**274.87**
	Fu.C.25	**40.21**	0.00	0.000	**-60.34**	0.440	0.000 T	**51.37**	**-91.41**	**-91.41**	**-91.41**
S30	Fu.C.3	0.00	0.00	0.000	0.00	0.367	0.733 D	**-43.45**	0.00	0.00	0.00
	Fu.C.25	0.00	0.00	0.000	0.00	0.367	0.733 T	**13.84**	0.00	0.00	0.00
S31	Fu.C.3	0.00	0.00	0.000	0.00	0.367	0.733 D	**-90.10**	0.00	0.00	0.00
	Fu.C.25	0.00	0.00	0.000	0.00	0.367	0.733 T	**35.79**	0.00	0.00	0.00
S32	Fu.C.3	**-16.88**	**-1.25**	1.380	**-2.07**	0.000	0.000 T	**206.86**	**22.85**	**22.85**	**-5.12**
	Fu.C.25	**6.36**	**0.32**	1.234	**1.18**	0.000	0.000 D	**-58.53**	**-9.80**	**-9.80**	**3.70**
S34	Fu.C.3	**-7.30**	0.00	0.000	**0.09**	1.678	0.000 D	**-339.94**	**4.60**	**4.60**	**4.09**
	Fu.C.13	1.81	0.00	0.000	**-0.28**	1.505	0.000 T	73.16	-0.98	-1.48	-1.48
	Fu.C.25	**2.55**	0.00	0.000	-0.25	1.564	0.000 T	**109.90**	**-1.46**	**-1.83**	**-1.83**
S36	Fu.C.3	0.00	0.00	0.000	0.00	0.367	0.733 D	**-70.95**	0.00	0.00	0.00
	Fu.C.25	0.00	0.00	0.000	0.00	0.367	0.733 T	**26.40**	0.00	0.00	0.00
S37	Fu.C.3	**-2.07**	**2.44**	0.761	**-4.28**	0.201	1.325 T	**94.73**	**11.93**	**-14.22**	**-14.22**
	Fu.C.25	**1.18**	**-1.30**	0.791	**1.98**	0.218	1.363 D	**-18.35**	**-6.28**	**7.22**	**7.22**
S38	Fu.C.3	**-4.28**	**1.17**	0.868	**-3.71**	0.464	1.275 T	**27.37**	**12.64**	**12.64**	**-11.66**
	Fu.C.25	**1.98**	**-0.81**	0.839	**2.13**	0.387	1.291 T	1.27	**-6.66**	6.84	**6.84**
S39	Fu.C.1	-0.16	**-0.13**	0.408	-0.41	0.000	0.000 D	-108.28	0.14	-0.43	-0.43
	Fu.C.3	**0.09**	0.00	0.000	**-0.57**	0.442	0.000 D	**-206.86**	**-0.14**	**-0.64**	**-0.64**
	Fu.C.13	**-0.28**	-0.05	1.256	-0.08	0.000	0.000 T	34.46	**0.37**	**0.37**	-0.13
	Fu.C.25	-0.25	**0.01**	1.538	**0.01**	1.177	0.000 T	**58.53**	0.34	0.34	-0.04
S40	Fu.C.3	**-0.57**	0.00	0.000	**0.23**	0.991	0.000 D	**-94.73**	**0.72**	**0.72**	**0.22**
	Fu.C.13	-0.08	**-0.06**	0.357	**-0.33**	0.000	0.000 T	5.94	0.11	**-0.40**	**-0.40**
	Fu.C.25	**0.01**	0.00	0.000	-0.32	0.295	0.000 T	**18.35**	**-0.01**	-0.38	-0.38
S41	Fu.C.1	0.00	**-0.12**	1.012	0.00	0.000	0.000 T	68.09	**-0.23**	**-0.23**	**0.23**
	Fu.C.3	0.00	-0.10	1.012	0.00	0.000	0.000 T	**158.65**	-0.20	-0.20	0.20
	Fu.C.25	0.00	-0.08	1.012	0.00	0.000	0.000 D	**-61.28**	-0.15	-0.15	0.15
S42	Fu.C.1	0.00	**-0.12**	1.012	0.00	0.000	0.000 T	62.56	**-0.23**	**-0.23**	**0.23**
	Fu.C.3	0.00	-0.10	1.012	0.00	0.000	0.000 T	**133.68**	-0.20	-0.20	0.20
	Fu.C.25	0.00	-0.08	1.012	0.00	0.000	0.000 D	**-47.95**	-0.15	-0.15	0.15
S43	Fu.C.1	0.00	**-0.12**	1.012	0.00	0.000	0.000 T	42.68	**-0.23**	**-0.23**	**0.23**
	Fu.C.3	0.00	-0.10	1.012	0.00	0.000	0.000 T	**80.36**	-0.20	-0.20	0.20
	Fu.C.25	0.00	-0.08	1.012	0.00	0.000	0.000 D	**-23.47**	-0.15	-0.15	0.15
S44	Fu.C.3	**0.23**	**0.25**	0.393	0.00	0.000	0.000 D	**-27.37**	0.12	**-0.39**	**-0.39**
	Fu.C.13	**-0.33**	0.01	1.499	0.00	1.299	0.000 D	-5.75	**0.44**	**0.44**	-0.06
S45	Fu.C.3	**-3.71**	**3.09**	1.010	0.00	0.327	0.000 -	0.00	**13.57**	**13.57**	**-8.90**
	Fu.C.25	**2.13**	**-1.90**	1.008	0.00	0.316	0.000 -	0.00	**-8.00**	**-8.00**	**5.50**
S46	Fu.C.3	0.00	0.00	0.000	0.00	0.367	0.733 D	**-17.08**	0.00	0.00	0.00
S47	Fu.C.1	0.00	**0.12**	1.012	0.00	0.000	0.000 T	24.17	**0.23**	**0.23**	**-0.23**
	Fu.C.3	0.00	0.10	1.012	0.00	0.000	0.000 T	**32.73**	0.20	0.20	-0.20
-	-	**kNm**	**kNm**	**m**	**kNm**	**m**	**m -**	**kN**	**kN**	**kN**	**kN**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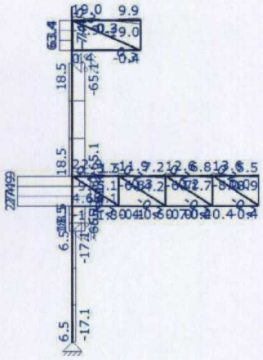
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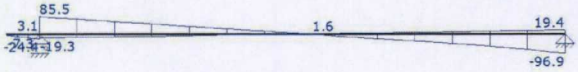
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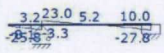
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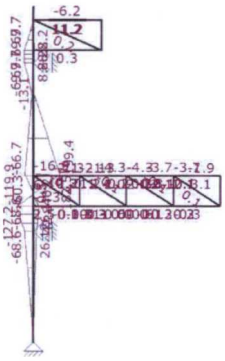
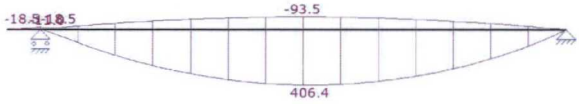
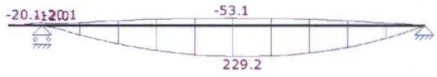




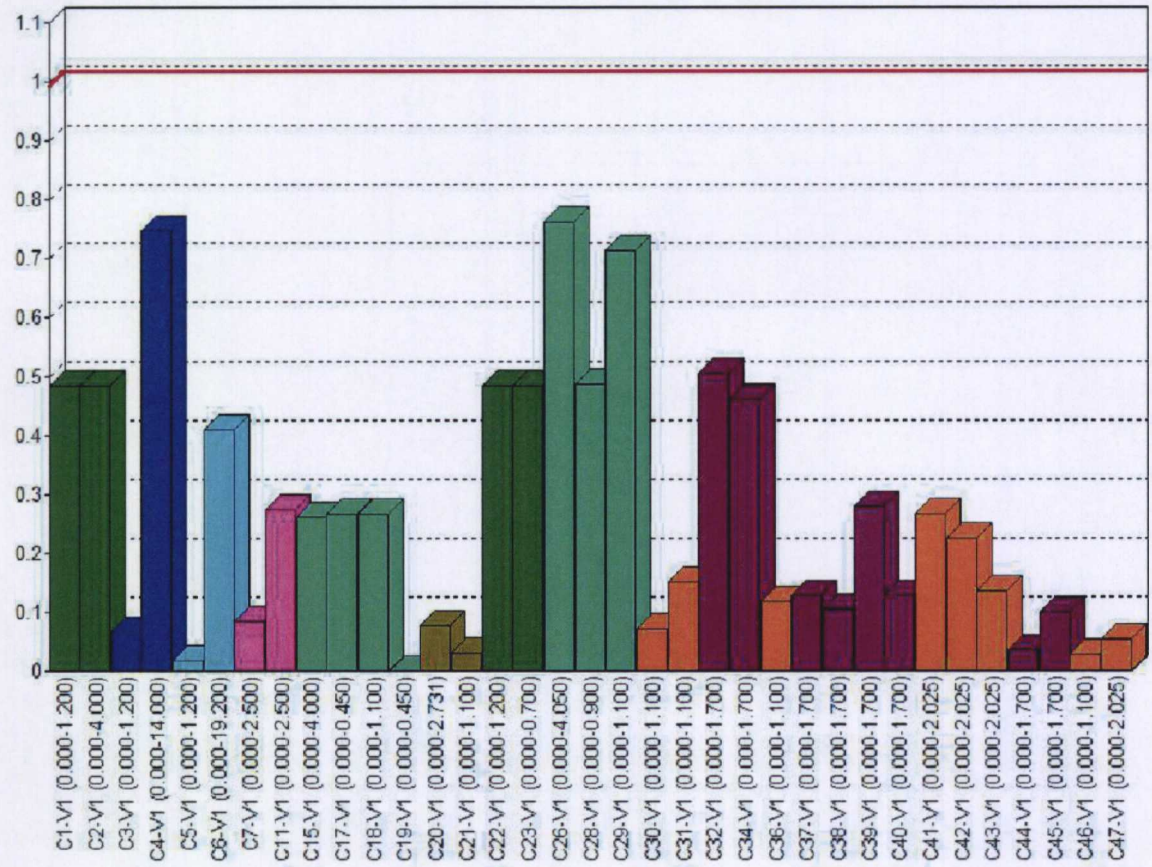


EXTREME UNITY CHECK NEN-EN1993-1-1:2016/NB:2016

Veld	Toetsing	Combinatie	Artikel	UC max
C1-V1 (0.000-1.200)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.12)	0.49
C2-V1 (0.000-4.000)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.12)	0.49
C3-V1 (0.000-1.200)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.12)	0.07
C4-V1 (0.000-14.000)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.75
C5-V1 (0.000-1.200)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.12)	0.02
C6-V1 (0.000-19.200)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.41
C7-V1 (0.000-2.500)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.9)	0.09
C11-V1 (0.000-2.500)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.27
C15-V1 (0.000-4.000)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.26
C17-V1 (0.000-0.450)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.12)	0.27
C18-V1 (0.000-1.100)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.12)	0.27
C19-V1 (0.000-0.450)	Doorsnede	Fu.C.1	NEN-EN1993-1-1(6.9)	0.00
C20-V1 (0.000-2.731)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.5)	0.08
C21-V1 (0.000-1.100)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.9)	0.03
C22-V1 (0.000-1.200)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.12)	0.49
C23-V1 (0.000-0.700)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.12)	0.49
C26-V1 (0.000-4.050)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.76
C28-V1 (0.000-0.900)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.49
C29-V1 (0.000-1.100)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.30)	0.71
C30-V1 (0.000-1.100)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.07
C31-V1 (0.000-1.100)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.15
C32-V1 (0.000-1.700)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.31)	0.51
C34-V1 (0.000-1.700)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.46
C36-V1 (0.000-1.100)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.12
C37-V1 (0.000-1.700)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.5)	0.13

Veld	Toetsing	Combinatie	Artikel	UC max
C38-V1 (0.000-1.700)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.10
C39-V1 (0.000-1.700)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.28
C40-V1 (0.000-1.700)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.13
C41-V1 (0.000-2.025)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.5)	0.27
C42-V1 (0.000-2.025)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.5)	0.22
C43-V1 (0.000-2.025)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.5)	0.13
C44-V1 (0.000-1.700)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.04
C45-V1 (0.000-1.700)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.17)	0.10
C46-V1 (0.000-1.100)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.03
C47-V1 (0.000-2.025)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.5)	0.05

AFB. STAAL UC DIAGRAM



STAALTOETS RESULTATEN MET PROFIELGEGEVENS NEN-EN1993-1-1:2016/NB:2016

Uitgangspunten berekening voor staalcontrole

Alpha;cr = 44.68 > 10;

Profielgegevens staaf C1-V1 (0.000-1.200)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C1-V1 (0.000-1.200)

Maatgevende combinatie: Fu.C.4 op 1.200 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = -25.8 kN	My;Ed = -19.8 kNm
		Mz;Ed = 0.0 kNm

N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.49 < 1

Profielgegevens staaf C2-V1 (0.000-4.000)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C2-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.4 op 0.000 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -19.8 kNm
	Vz;Ed = 20.2 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.49 < 1

Profielgegevens staaf C3-V1 (0.000-1.200)

IPE400	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 400.0 mm	A = 8.45e-03 m2	Wy;el = 115.6e-05 m3	Wy;pl = 130.7e-05 m3
b = 180.0 mm	Iy = 231.3e-06 m4	Wz;el = 146.4e-06 m3	Wz;pl = 229.0e-06 m3
tf = 13.5 mm	Iz = 131.8e-07 m4	Aw;y;el = 5.24e-03 m2	Aw;y;pl = 5.24e-03 m2
tw = 8.6 mm	Massa/m = 66.3 kg/m	Aw;z;el = 4.27e-03 m2	Aw;z;pl = 4.27e-03 m2
r = 21.0 mm		It = 510.8e-09 m4	Iwa = 490.0e-09 m6

Doorsnedetoetsing C3-V1 (0.000-1.200)

Maatgevende combinatie: Fu.C.4 op 1.200 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -20.1 kNm
	Vz;Ed = -26.4 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,984.9 kN	Vy;Rd = 710.8 kN	MyRd = 307.2 kNm
	Vz;Rd = 579.3 kN	MzRd = 53.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.07 < 1

Profielgegevens staaf C4-V1 (0.000-14.000)

IPE400	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 400.0 mm	A = 8.45e-03 m2	Wy;el = 115.6e-05 m3	Wy;pl = 130.7e-05 m3
b = 180.0 mm	Iy = 231.3e-06 m4	Wz;el = 146.4e-06 m3	Wz;pl = 229.0e-06 m3
tf = 13.5 mm	Iz = 131.8e-07 m4	Aw;y;el = 5.24e-03 m2	Aw;y;pl = 5.24e-03 m2
tw = 8.6 mm	Massa/m = 66.3 kg/m	Aw;z;el = 4.27e-03 m2	Aw;z;pl = 4.27e-03 m2
r = 21.0 mm		It = 510.8e-09 m4	Iwa = 490.0e-09 m6

Doorsnedetoetsing C4-V1 (0.000-14.000)

Maatgevende combinatie: Fu.C.3 op 7.315 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 229.2 kNm
	Vz;Ed = 0.3 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,984.9 kN	Vy;Rd = 710.8 kN	MyRd = 307.2 kNm
	Vz;Rd = 579.3 kN	MzRd = 53.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.75 < 1

Profielgegevens staaf C5-V1 (0.000-1.200)

IPE550	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 550.0 mm	A = 13.44e-03 m2	Wy;el = 244.1e-05 m3	Wy;pl = 278.7e-05 m3
b = 210.0 mm	Iy = 671.2e-06 m4	Wz;el = 254.1e-06 m3	Wz;pl = 400.5e-06 m3
tf = 17.2 mm	Iz = 266.8e-07 m4	Aw;y;el = 7.72e-03 m2	Aw;y;pl = 7.72e-03 m2
tw = 11.1 mm	Massa/m = 105.5 kg/m	Aw;z;el = 7.23e-03 m2	Aw;z;pl = 7.23e-03 m2
r = 24.0 mm		It = 123.2e-08 m4	Iwa = 188.4e-08 m6

Doorsnedetoetsing C5-V1 (0.000-1.200)

Maatgevende combinatie: Fu.C.4 op 1.200 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -18.5 kNm
	Vz;Ed = -24.4 kN	Mz;Ed = 0.0 kNm
N;Rd = 4,771.8 kN	Vy;Rd = 1,582.0 kN	MyRd = 989.4 kNm
	Vz;Rd = 1,482.7 kN	MzRd = 142.2 kNm

NEN-EN1993-1-1(6.12): UC = 0.02 < 1

Profielgegevens staaf C6-V1 (0.000-19.200)

IPE550	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 550.0 mm	A = 13.44e-03 m2	Wy;el = 244.1e-05 m3	Wy;pl = 278.7e-05 m3
b = 210.0 mm	Iy = 671.2e-06 m4	Wz;el = 254.1e-06 m3	Wz;pl = 400.5e-06 m3
tf = 17.2 mm	Iz = 266.8e-07 m4	Aw;y;el = 7.72e-03 m2	Aw;y;pl = 7.72e-03 m2
tw = 11.1 mm	Massa/m = 105.5 kg/m	Aw;z;el = 7.23e-03 m2	Aw;z;pl = 7.23e-03 m2
r = 24.0 mm		It = 123.2e-08 m4	Iwa = 188.4e-08 m6

Doorsnedetoetsing C6-V1 (0.000-19.200)

Maatgevende combinatie: Fu.C.3 op 9.840 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 406.4 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 4,771.8 kN	Vy;Rd = 1,582.0 kN	MyRd = 989.4 kNm
	Vz;Rd = 1,482.7 kN	MzRd = 142.2 kNm

NEN-EN1993-1-1(6.12): UC = 0.41 < 1

Profielgegevens staaf C7-V1 (0.000-2.500)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C7-V1 (0.000-2.500)

Maatgevende combinatie: Fu.C.4 op 0.000 m — Profielklasse = 1

N;Ed = -63.4 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.4 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.09 < 1

Profielgegevens staaf C11-V1 (0.000-2.500)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C11-V1 (0.000-2.500)

Maatgevende combinatie: Fu.C.3 op 1.211 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 11.2 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.27 < 1

Profielgegevens staaf C15-V1 (0.000-4.000)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2

r = 24.0 mm | It = 621.0e-09 m4 | Iwa = 785.4e-09 m6

Doorsnedetoetsing C15-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.3 op 4.000 m | Profielklasse = 1

N;Ed = -166.6 kN	Vy;Ed = 0.0 kN	My;Ed = -68.6 kNm
	Vz;Ed = -17.1 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.26 < 1

Profielgegevens staaf C17-V1 (0.000-0.450)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C17-V1 (0.000-0.450)

Maatgevende combinatie: Fu.C.4 op 0.000 m | Profielklasse = 1

N;Ed = -47.2 kN	Vy;Ed = 0.0 kN	My;Ed = -69.7 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.27 < 1

Profielgegevens staaf C18-V1 (0.000-1.100)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C18-V1 (0.000-1.100)

Maatgevende combinatie: Fu.C.4 op 0.000 m | Profielklasse = 1

N;Ed = -46.4 kN	Vy;Ed = 0.0 kN	My;Ed = -69.7 kNm
	Vz;Ed = 63.4 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.27 < 1

Profielgegevens staaf C19-V1 (0.000-0.450)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C19-V1 (0.000-0.450)

Maatgevende combinatie: Fu.C.1 op 0.000 m | Profielklasse = 1

N;Ed = -0.5 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm

NEN-EN1993-1-1(6.9): UC = 0.00 < 1

Profielgegevens staaf C20-V1 (0.000-2.731)

HE120A	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3

b = 120.0 mm | Iy = 606.2e-08 m4 | Wz;el = 384.8e-07 m3 | Wz;pl = 588.5e-07 m3
tf = 8.0 mm | Iz = 230.9e-08 m4 | Aw;y;el = 2.04e-03 m2 | Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm | Massa/m = 19.9 kg/m | Aw;z;el = 8.46e-04 m2 | Aw;z;pl = 8.46e-04 m2
r = 12.0 mm | | It = 599.4e-10 m4 | Iwa = 647.2e-11 m6

Doorsnedetoetsing C20-V1 (0.000-2.731)

Maatgevende combinatie: Fu.C.4 op 0.000 m | Profielklasse = 1
N;Ed = 69.4 kN | Vy;Ed = 0.0 kN | My;Ed = 0.0 kNm
Vz;Ed = 0.3 kN | Mz;Ed = 0.0 kNm
N;Rd = 899.4 kN | Vy;Rd = 418.9 kN | MyRd = 42.4 kNm
Vz;Rd = 173.3 kN | MzRd = 20.9 kNm

NEN-EN1993-1-1(6.5): UC = 0.08 < 1

Profielgegevens staaf C21-V1 (0.000-1.100)

HE120A | Analyse | Staal S355 fyd(toegepast) = 355 N/mm2
h = 114.0 mm | A = 2.53e-03 m2 | Wy;el = 106.3e-06 m3 | Wy;pl = 119.5e-06 m3
b = 120.0 mm | Iy = 606.2e-08 m4 | Wz;el = 384.8e-07 m3 | Wz;pl = 588.5e-07 m3
tf = 8.0 mm | Iz = 230.9e-08 m4 | Aw;y;el = 2.04e-03 m2 | Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm | Massa/m = 19.9 kg/m | Aw;z;el = 8.46e-04 m2 | Aw;z;pl = 8.46e-04 m2
r = 12.0 mm | | It = 599.4e-10 m4 | Iwa = 647.2e-11 m6

Doorsnedetoetsing C21-V1 (0.000-1.100)

Maatgevende combinatie: Fu.C.4 op 0.000 m | Profielklasse = 1
N;Ed = -27.2 kN | Vy;Ed = 0.0 kN | My;Ed = 0.0 kNm
Vz;Ed = 0.0 kN | Mz;Ed = 0.0 kNm
N;Rd = 899.4 kN | Vy;Rd = 418.9 kN | MyRd = 42.4 kNm
Vz;Rd = 173.3 kN | MzRd = 20.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.03 < 1

Profielgegevens staaf C22-V1 (0.000-1.200)

HE140A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 133.0 mm | A = 3.14e-03 m2 | Wy;el = 155.4e-06 m3 | Wy;pl = 173.5e-06 m3
b = 140.0 mm | Iy = 103.3e-07 m4 | Wz;el = 556.2e-07 m3 | Wz;pl = 848.5e-07 m3
tf = 8.5 mm | Iz = 389.3e-08 m4 | Aw;y;el = 2.50e-03 m2 | Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm | Massa/m = 24.7 kg/m | Aw;z;el = 1.01e-03 m2 | Aw;z;pl = 1.01e-03 m2
r = 12.0 mm | | It = 813.0e-10 m4 | Iwa = 150.6e-10 m6

Doorsnedetoetsing C22-V1 (0.000-1.200)

Maatgevende combinatie: Fu.C.4 op 1.200 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -19.8 kNm
Vz;Ed = -25.8 kN | Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN | Vy;Rd = 339.7 kN | MyRd = 40.8 kNm
Vz;Rd = 137.4 kN | MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.49 < 1

Profielgegevens staaf C23-V1 (0.000-0.700)

HE140A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 133.0 mm | A = 3.14e-03 m2 | Wy;el = 155.4e-06 m3 | Wy;pl = 173.5e-06 m3
b = 140.0 mm | Iy = 103.3e-07 m4 | Wz;el = 556.2e-07 m3 | Wz;pl = 848.5e-07 m3
tf = 8.5 mm | Iz = 389.3e-08 m4 | Aw;y;el = 2.50e-03 m2 | Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm | Massa/m = 24.7 kg/m | Aw;z;el = 1.01e-03 m2 | Aw;z;pl = 1.01e-03 m2
r = 12.0 mm | | It = 813.0e-10 m4 | Iwa = 150.6e-10 m6

Doorsnedetoetsing C23-V1 (0.000-0.700)

Maatgevende combinatie: Fu.C.4 op 0.000 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -19.8 kNm
Vz;Ed = 44.6 kN | Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN | Vy;Rd = 339.7 kN | MyRd = 40.8 kNm
Vz;Rd = 137.4 kN | MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.49 < 1

Profielgegevens staaf C26-V1 (0.000-4.050)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C26-V1 (0.000-4.050)

Maatgevende combinatie: Fu.C.3 op 0.000 m		Profielklasse = 1	
N;Ed = -50.9 kN	Vy;Ed = 0.0 kN	My;Ed = 199.4 kNm	
	Vz;Ed = -65.1 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm	
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.76 < 1

Profielgegevens staaf C28-V1 (0.000-0.900)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C28-V1 (0.000-0.900)

Maatgevende combinatie: Fu.C.3 op 0.900 m		Profielklasse = 1	
N;Ed = -165.7 kN	Vy;Ed = 0.0 kN	My;Ed = -127.2 kNm	
	Vz;Ed = -65.1 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm	
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.49 < 1

Profielgegevens staaf C29-V1 (0.000-1.100)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C29-V1 (0.000-1.100)

Maatgevende combinatie: Fu.C.3 op 1.100 m		Profielklasse = 1	
Nx;Ed = -160.1 kN	Vy;Ed = 0.0 kN	My;Ed = 182.5 kNm	a1 = 0.252
	Vz;Ed = 274.9 kN	Mz;Ed = 0.0 kNm	a2 = 0.232
Nc;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	My;Rd = 261.4 kNm	p = 0.076
	Vz;Rd = 430.7 kN	Mz;Rd = 121.8 kNm	q = 0.793
NVy;Rd = 2,228.7 kN	NVz;Rd = 2,285.7 kN	MV;y;Rd = 255.7 kNm	MV;z;Rd = 121.8 kNm

NEN-EN1993-1-1(6.30): UC = 0.71 < 1

Profielgegevens staaf C30-V1 (0.000-1.100)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C30-V1 (0.000-1.100)

Maatgevende combinatie: Fu.C.3 op 0.000 m		Profielklasse = 1	
N;Ed = -43.4 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm	

Vz;Rd = 114.7 kN MzRd = 13.8 kNm

NEN-EN1993-1-1(6.9): UC = 0.07 < 1

Profielgegevens staaf C31-V1 (0.000-1.100)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C31-V1 (0.000-1.100)

Maatgevende combinatie: Fu.C.3 op 0.000 m Profielklasse = 1

N;Ed = -90.1 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm

NEN-EN1993-1-1(6.9): UC = 0.15 < 1

Profielgegevens staaf C32-V1 (0.000-1.700)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C32-V1 (0.000-1.700)

Maatgevende combinatie: Fu.C.3 op 0.000 m Profielklasse = 1

N;Ed = 206.9 kN	Vy;Ed = 0.0 kN	My;Ed = -16.9 kNm
	Vz;Ed = 22.9 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MNyRd = 33.4 kNm
	Vz;Rd = 137.4 kN	MNzRd = 19.9 kNm

NEN-EN1993-1-1(6.31): UC = 0.51 < 1

Profielgegevens staaf C34-V1 (0.000-1.700)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C34-V1 (0.000-1.700)

Maatgevende combinatie: Fu.C.3 op 0.000 m Profielklasse = 1

N;Ed = -339.9 kN	Vy;Ed = 0.0 kN	My;Ed = -7.3 kNm
	Vz;Ed = 4.6 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.46 < 1

Profielgegevens staaf C36-V1 (0.000-1.100)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C36-V1 (0.000-1.100)

Maatgevende combinatie: Fu.C.3 op 0.000 m Profielklasse = 1

N;Ed = -70.9 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm

NEN-EN1993-1-1(6.9): UC = 0.12 < 1

Profielgegevens staaf C37-V1 (0.000-1.700)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C37-V1 (0.000-1.700)

Maatgevende combinatie: Fu.C.3 op 0.000 m — Profielklasse = 1

N;Ed = 94.7 kN	Vy;Ed = 0.0 kN	My;Ed = -2.1 kNm
	Vz;Ed = 11.9 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.5): UC = 0.13 < 1

Profielgegevens staaf C38-V1 (0.000-1.700)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C38-V1 (0.000-1.700)

Maatgevende combinatie: Fu.C.3 op 0.000 m — Profielklasse = 1

N;Ed = 27.4 kN	Vy;Ed = 0.0 kN	My;Ed = -4.3 kNm
	Vz;Ed = 12.6 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.10 < 1

Profielgegevens staaf C39-V1 (0.000-1.700)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C39-V1 (0.000-1.700)

Maatgevende combinatie: Fu.C.3 op 0.000 m — Profielklasse = 1

N;Ed = -206.9 kN	Vy;Ed = 0.0 kN	My;Ed = 0.1 kNm
	Vz;Ed = -0.1 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.28 < 1

Profielgegevens staaf C40-V1 (0.000-1.700)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C40-V1 (0.000-1.700)

Maatgevende combinatie: Fu.C.3 op 0.000 m — Profielklasse = 1

N;Ed = -94.7 kN	Vy;Ed = 0.0 kN	My;Ed = -0.6 kNm
	Vz;Ed = 0.7 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.13 < 1

Profielgegevens staaf C41-V1 (0.000-2.025)

HE120A — Analyse — Staal S235 fyd(toegepast) = 235 N/mm2

h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C41-V1 (0.000-2.025)

Maatgevende combinatie: Fu.C.3 op 2.025 m — Profielklasse = 1

N;Ed = 158.7 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.2 kN	Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm

NEN-EN1993-1-1(6.5): UC = 0.27 < 1

Profielgegevens staaf C42-V1 (0.000-2.025)

HE120A — Analyse — Staal S235 fyd(toegepast) = 235 N/mm2

h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C42-V1 (0.000-2.025)

Maatgevende combinatie: Fu.C.3 op 2.025 m — Profielklasse = 1

N;Ed = 133.7 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.2 kN	Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm

NEN-EN1993-1-1(6.5): UC = 0.22 < 1

Profielgegevens staaf C43-V1 (0.000-2.025)

HE120A — Analyse — Staal S235 fyd(toegepast) = 235 N/mm2

h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C43-V1 (0.000-2.025)

Maatgevende combinatie: Fu.C.3 op 2.025 m — Profielklasse = 1

N;Ed = 80.4 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.2 kN	Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm

NEN-EN1993-1-1(6.5): UC = 0.13 < 1

Profielgegevens staaf C44-V1 (0.000-1.700)

HE140A — Analyse — Staal S235 fyd(toegepast) = 235 N/mm2

h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3

tf = 8.5 mm | Iz = 389.3e-08 m4 | Aw;y;el = 2.50e-03 m2 | Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm | Massa/m = 24.7 kg/m | Aw;z;el = 1.01e-03 m2 | Aw;z;pl = 1.01e-03 m2
r = 12.0 mm | | It = 813.0e-10 m4 | Iwa = 150.6e-10 m6

Doorsnedetoetsing C44-V1 (0.000-1.700)

Maatgevende combinatie: Fu.C.3 op 0.000 m | Profielklasse = 1
N;Ed = -27.4 kN | Vy;Ed = 0.0 kN | My;Ed = 0.2 kNm
Vz;Ed = 0.1 kN | Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN | Vy;Rd = 339.7 kN | MyRd = 40.8 kNm
Vz;Rd = 137.4 kN | MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.04 < 1

Profielgegevens staaf C45-V1 (0.000-1.700)

HE140A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 133.0 mm | A = 3.14e-03 m2 | Wy;el = 155.4e-06 m3 | Wy;pl = 173.5e-06 m3
b = 140.0 mm | Iy = 103.3e-07 m4 | Wz;el = 556.2e-07 m3 | Wz;pl = 848.5e-07 m3
tf = 8.5 mm | Iz = 389.3e-08 m4 | Aw;y;el = 2.50e-03 m2 | Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm | Massa/m = 24.7 kg/m | Aw;z;el = 1.01e-03 m2 | Aw;z;pl = 1.01e-03 m2
r = 12.0 mm | | It = 813.0e-10 m4 | Iwa = 150.6e-10 m6

Doorsnedetoetsing C45-V1 (0.000-1.700)

Maatgevende combinatie: Fu.C.3 op 0.000 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -3.7 kNm
Vz;Ed = 13.6 kN | Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN | Vy;Rd = 339.7 kN | MyRd = 40.8 kNm
Vz;Rd = 137.4 kN | MzRd = 19.9 kNm

NEN-EN1993-1-1(6.17): UC = 0.10 < 1

Profielgegevens staaf C46-V1 (0.000-1.100)

HE120A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 114.0 mm | A = 2.53e-03 m2 | Wy;el = 106.3e-06 m3 | Wy;pl = 119.5e-06 m3
b = 120.0 mm | Iy = 606.2e-08 m4 | Wz;el = 384.8e-07 m3 | Wz;pl = 588.5e-07 m3
tf = 8.0 mm | Iz = 230.9e-08 m4 | Aw;y;el = 2.04e-03 m2 | Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm | Massa/m = 19.9 kg/m | Aw;z;el = 8.46e-04 m2 | Aw;z;pl = 8.46e-04 m2
r = 12.0 mm | | It = 599.4e-10 m4 | Iwa = 647.2e-11 m6

Doorsnedetoetsing C46-V1 (0.000-1.100)

Maatgevende combinatie: Fu.C.3 op 0.000 m | Profielklasse = 1
N;Ed = -17.1 kN | Vy;Ed = 0.0 kN | My;Ed = 0.0 kNm
Vz;Ed = 0.0 kN | Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN | Vy;Rd = 277.3 kN | MyRd = 28.1 kNm
Vz;Rd = 114.7 kN | MzRd = 13.8 kNm

NEN-EN1993-1-1(6.9): UC = 0.03 < 1

Profielgegevens staaf C47-V1 (0.000-2.025)

HE120A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 114.0 mm | A = 2.53e-03 m2 | Wy;el = 106.3e-06 m3 | Wy;pl = 119.5e-06 m3
b = 120.0 mm | Iy = 606.2e-08 m4 | Wz;el = 384.8e-07 m3 | Wz;pl = 588.5e-07 m3
tf = 8.0 mm | Iz = 230.9e-08 m4 | Aw;y;el = 2.04e-03 m2 | Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm | Massa/m = 19.9 kg/m | Aw;z;el = 8.46e-04 m2 | Aw;z;pl = 8.46e-04 m2
r = 12.0 mm | | It = 599.4e-10 m4 | Iwa = 647.2e-11 m6

Doorsnedetoetsing C47-V1 (0.000-2.025)

Maatgevende combinatie: Fu.C.3 op 0.000 m | Profielklasse = 1
N;Ed = 32.7 kN | Vy;Ed = 0.0 kN | My;Ed = 0.0 kNm
Vz;Ed = 0.2 kN | Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN | Vy;Rd = 277.3 kN | MyRd = 28.1 kNm
Vz;Rd = 114.7 kN | MzRd = 13.8 kNm

NEN-EN1993-1-1(6.5): UC = 0.05 < 1

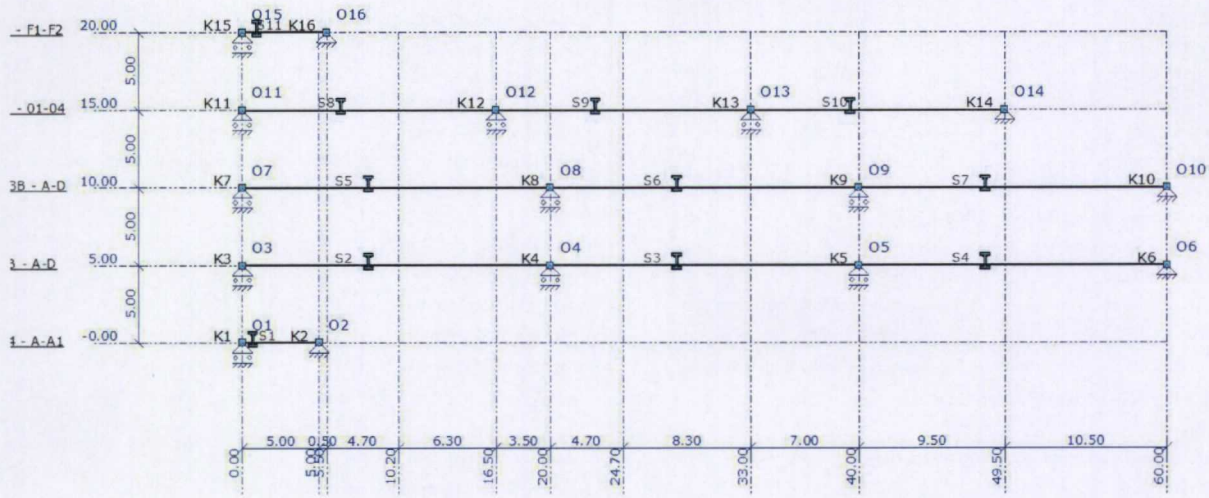
Valkenburg aan de Geul	Ingenieursbureau A. Palte BV	043 - 601 36 37
Computerberekening		

Projectnaam	'De Schatberg' te Sevenum	Projectnummer	460518
Omschrijving	Stalen liggers dak	Constructeur	DaKr
Opdrachtgever	Janssen Wuts Architecten BV	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Stalen liggers dak.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	16	11	16	5	12	56

AFB. GEOMETRIE RAAMWERK



STAVEN

Staaf	Knoop B	B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S1	K1	NVM	NVM	K2	P1	0.000	0.000	5.000	0.000	5.000
S2	K3	NVM	NVM	K4	P2	0.000	-5.000	20.000	-5.000	20.000
S3	K4	NVM	NVM	K5	P2	20.000	-5.000	40.000	-5.000	20.000
S4	K5	NVM	NVM	K6	P2	40.000	-5.000	60.000	-5.000	20.000
S5	K7	NVM	NVM	K8	P3	0.000	-10.000	20.000	-10.000	20.000
S6	K8	NVM	NVM	K9	P3	20.000	-10.000	40.000	-10.000	20.000
S7	K9	NVM	NVM	K10	P3	40.000	-10.000	60.000	-10.000	20.000
S8	K11	NVM	NVM	K12	P4	0.000	-15.000	16.500	-15.000	16.500
S9	K12	NVM	NVM	K13	P4	16.500	-15.000	33.000	-15.000	16.500
S10	K13	NVM	NVM	K14	P4	33.000	-15.000	49.500	-15.000	16.500
S11	K15	NVM	NVM	K16	P5	0.000	-20.000	5.500	-20.000	5.500
-	-	-	-	-	-	m	m	m	m	m

PROFIELEN

Profiel	Profielnaam	Oppervlakte	Iy	Materiaal	Hoek
P1	HE140A	3.1416e-03	1.0331e-05	S235	0.0
P2	IPE500	1.1552e-02	4.8199e-04	S355	0.0
P3	IPE600	1.5598e-02	9.2083e-04	S355	0.0
P4	HE600B	2.6996e-02	1.7104e-03	S355	0.0
P5	HE200A	5.3831e-03	3.6922e-05	S235	0.0
-	-	m2	m4	-	°

MATERIALEN

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

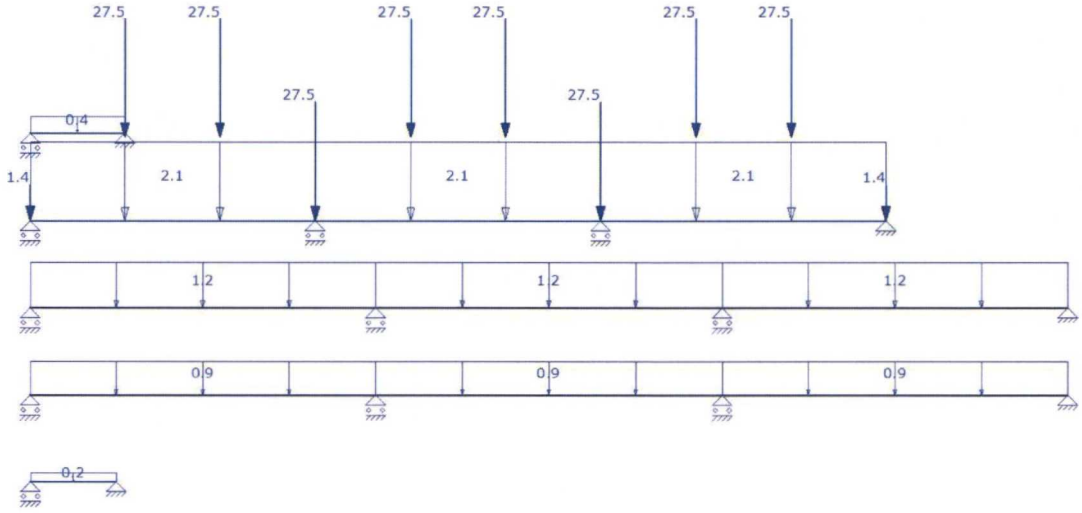
OPLEGGINGEN

Oplegging	Knoop	X	Z	Yr	HoekYr
O1	K1	vrij	vast	vrij	0
O2	K2	vast	vast	vrij	0
O3	K3	vrij	vast	vrij	0
O4	K4	vrij	vast	vrij	0
O5	K5	vrij	vast	vrij	0
O6	K6	vast	vast	vrij	0
O7	K7	vrij	vast	vrij	0
O8	K8	vrij	vast	vrij	0
O9	K9	vrij	vast	vrij	0
O10	K10	vast	vast	vrij	0
O11	K11	vrij	vast	vrij	0
O12	K12	vrij	vast	vrij	0
O13	K13	vrij	vast	vrij	0
O14	K14	vast	vast	vrij	0
O15	K15	vrij	vast	vrij	0
O16	K16	vast	vast	vrij	0
-	-	kN/m	kN/m	kNm/rad	°

B.G.1: EIGEN GEWICHT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	5.000(L)	Z"	S1
qG	0.91 (1.00x)	0.91 (1.00x)	0.000	20.000(L)	Z"	S2-S4
qG	1.22 (1.00x)	1.22 (1.00x)	0.000	20.000(L)	Z"	S5-S7
qG	2.12 (1.00x)	2.12 (1.00x)	0.000	16.500(L)	Z"	S8-S10
qG	0.42 (1.00x)	0.42 (1.00x)	0.000	5.500(L)	Z"	S11
N	1.38				Z	K11,K14
F	27.50		5.500		Z'	S8-S10
F	27.50		11.000		Z'	S8-S10
N	27.50				Z	K12-K13
Som lasten	X: 0.00	kN	Z: 459.10	kN		
-	-	-	m	m	-	-

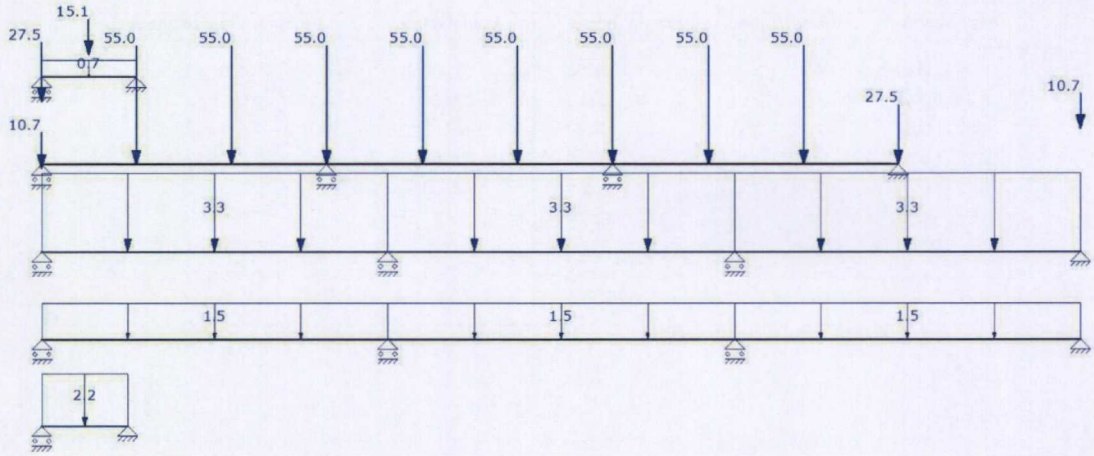
B.G.1: EIGEN GEWICHT



B.G.2: PERMANENT

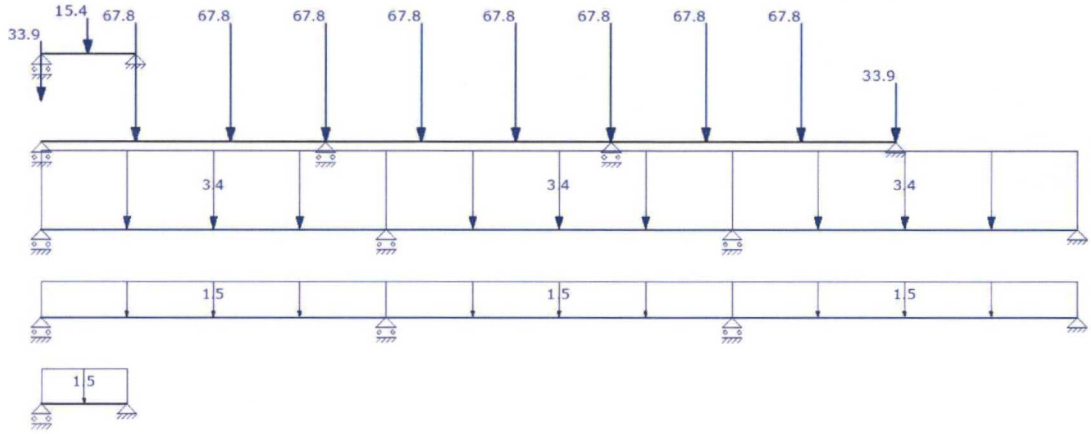
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent						
q	2.23	2.23	0.000	5.000(L)	Z'	S1
q	1.51	1.51	0.000	20.000(L)	Z'	S2-S4
q	3.33	3.33	0.000	20.000(L)	Z'	S5-S7
N	10.70				Z	K7,K10
N	27.50				Z	K11,K14
F	55.00		5.500		Z'	S8-S10
F	55.00		11.000		Z'	S8-S10
N	55.00				Z	K12-K13
q	0.72	0.72	0.000	5.500(L)	Z'	S11
F	15.10		2.750		Z'	S11
Som lasten	**X: 0.00**	**kN Z: 837.01**	**kN**			
-	-	-	m	m	-	-

B.G.2: PERMANENT



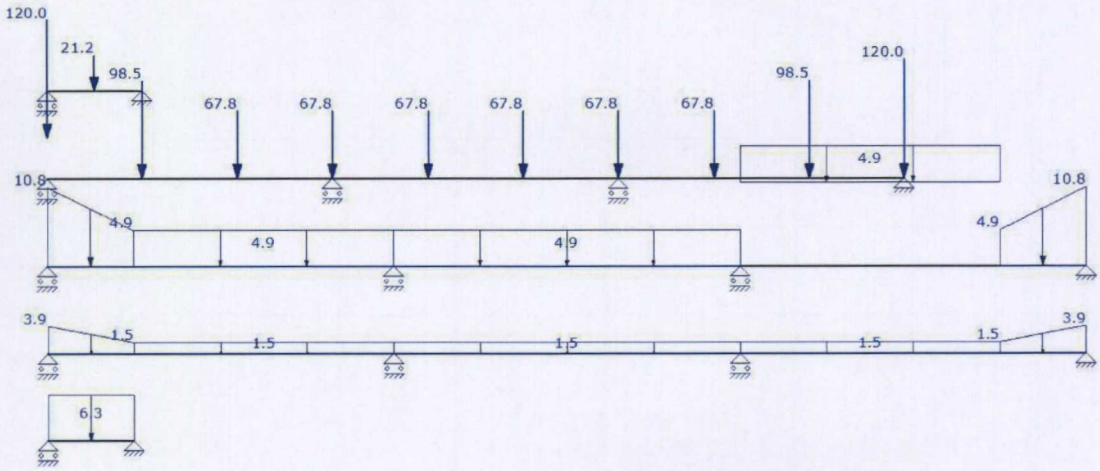
B.G.3: SNEEUW

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Sneeuw						
q	1.54	1.54	0.000	5.000(L)	Z'	S1-S4
q	3.39	3.39	0.000	20.000(L)	Z'	S5-S7
N	33.90				Z	K11,K14
F	67.80		5.500		Z'	S8-S10
F	67.80		11.000		Z'	S8-S10
N	67.80				Z	K12-K13
F	15.40		2.750		Z'	S11
Som lasten	**X: 0.00**	**kN Z: 929.10**	**kN**			
-	-	-	m	m	-	-



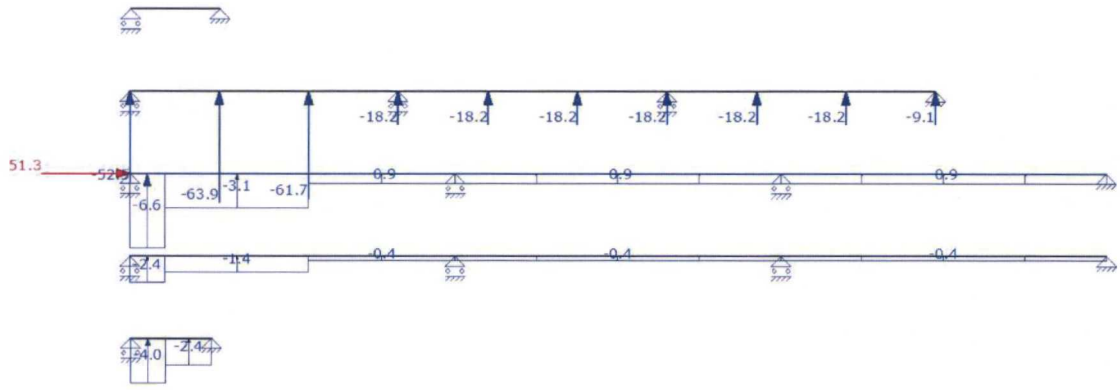
B.G.4: SNEEUWOPHOPING

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.4: Sneeuwophoping						
q	6.33	6.33	0.000	5.000(L)	Z'	S1
q	3.85	1.54	0.000	5.000	Z'	S2
q	1.54	1.54	5.000	20.000(L)	Z'	S2
q	1.54	1.54	0.000	20.000(L)	Z'	S3
q	1.54	1.54	0.000	15.000	Z'	S4
q	1.54	3.85	15.000	20.000(L)	Z'	S4
q	10.80	4.92	0.000	5.000	Z'	S5
q	4.92	4.92	5.000	20.000(L)	Z'	S5
q	4.92	4.92	0.000	20.000(L)	Z'	S6
q	4.92	4.92	0.000	15.000	Z	S7
q	4.92	10.80	15.000	20.000(L)	Z'	S7
N	120.00				Z	K11,K14
F	98.50		5.500		Z'	S8
F	67.80		11.000		Z'	S8-S9
N	67.80				Z	K12-K13
F	67.80		5.500		Z'	S9-S10
F	98.50		11.000		Z'	S10
F	21.20		2.750		Z'	S11
Som lasten	**X: 0.00**	**kN**	**Z: 1,325.20**	**kN**		
-	-	-	m	m	-	-



B.G.5: WIND VAN DE ZIJKANT 1

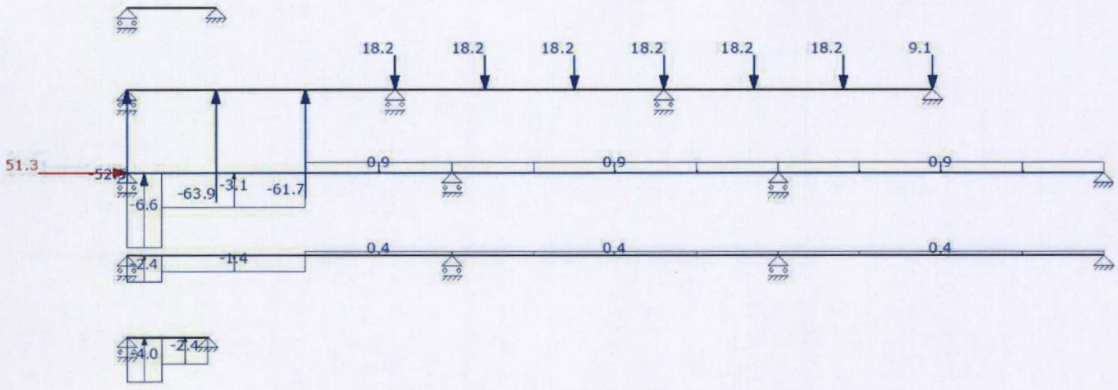
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Wind van de Zijkant 1						
q	-4.02	-4.02	0.000	2.200	Z'	S1
q	-2.39	-2.39	2.200	5.000(L)	Z'	S1
q	-2.39	-2.39	0.000	2.200	Z'	S2
q	-1.40	-1.40	2.200	11.000	Z'	S2
q	-0.41	-0.41	11.000	20.000(L)	Z'	S2
q	-0.41	-0.41	0.000	20.000(L)	Z'	S3-S4
q	-6.59	-6.59	0.000	2.200	Z'	S5
q	-3.09	-3.09	2.200	11.000	Z'	S5
q	-0.91	-0.91	11.000	20.000(L)	Z'	S5
q	-0.91	-0.91	0.000	20.000(L)	Z'	S6-S7
N	51.30				X	K7
N	-52.50				Z	K11
F	-63.90		5.500		Z'	S8
F	-61.70		11.000		Z'	S8
N	-18.20				Z	K12-K13
F	-18.20		5.500		Z'	S9-S10
F	-18.20		11.000		Z'	S9-S10
N	-9.10				Z	K14
Som lasten	**X: 51.30**	**kN Z: -435.88**	**kN**			
-	-	-	m	m	-	-



B.G.6: WIND VAN DE ZIJKANT 2

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.6: Wind van de Zijkant 2						
q	-4.02	-4.02	0.000	2.200	Z'	S1
q	-2.39	-2.39	2.200	5.000(L)	Z'	S1
q	-2.39	-2.39	0.000	2.200	Z'	S2
q	-1.40	-1.40	2.200	11.000	Z'	S2
q	0.41	0.41	11.000	20.000(L)	Z'	S2
q	0.41	0.41	0.000	20.000(L)	Z'	S3-S4
q	-6.59	-6.59	0.000	2.200	Z'	S5
q	-3.09	-3.09	2.200	11.000	Z'	S5
q	0.91	0.91	11.000	20.000(L)	Z'	S5
q	0.91	0.91	0.000	20.000(L)	Z'	S6-S7
N	51.30				X	K7
N	-52.50				Z	K11
F	-63.90		5.500		Z'	S8
F	-61.70		11.000		Z'	S8
N	18.20				Z	K12-K13
F	18.20		5.500		Z'	S9-S10
F	18.20		11.000		Z'	S9-S10
N	9.10				Z	K14
Som lasten	**X: 51.30**	**kN Z: -69.92**	**kN**			
-	-	-	m	m	-	-

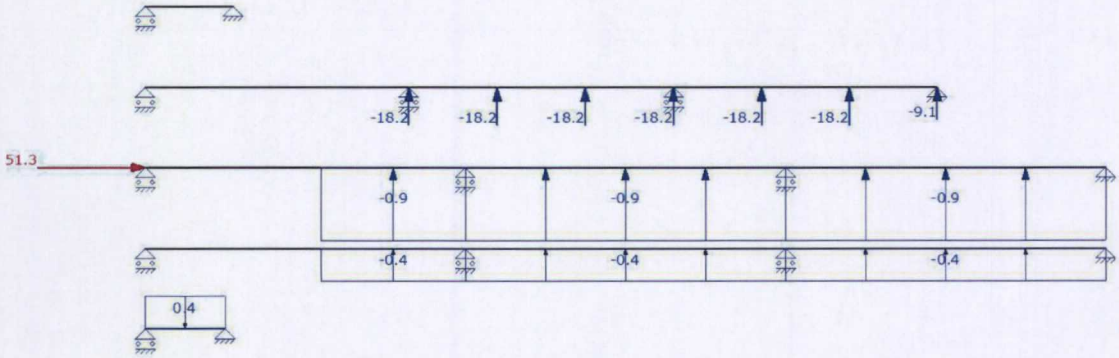
B.G.6: WIND VAN DE ZIJKANT 2



B.G.7: WIND VAN DE ZIJKANT 3

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.7: Wind van de Zijkant 3						
q	0.41	0.41	0.000	5.000(L)	Z'	S1
q	-0.41	-0.41	11.000	20.000(L)	Z'	S2
q	-0.41	-0.41	0.000	20.000(L)	Z'	S3-S4
q	-0.91	-0.91	11.000	20.000(L)	Z'	S5
q	-0.91	-0.91	0.000	20.000(L)	Z'	S6-S7
N	51.30				X	K7
N	-18.20				Z	K12-K13
F	-18.20		5.500		Z'	S9-S10
F	-18.20		11.000		Z'	S9-S10
N	-9.10				Z	K14
Som lasten	**X: 51.30**	**kN Z: -180.93**	**kN**			
-	-	-	m	m	-	-

B.G.7: WIND VAN DE ZIJKANT 3

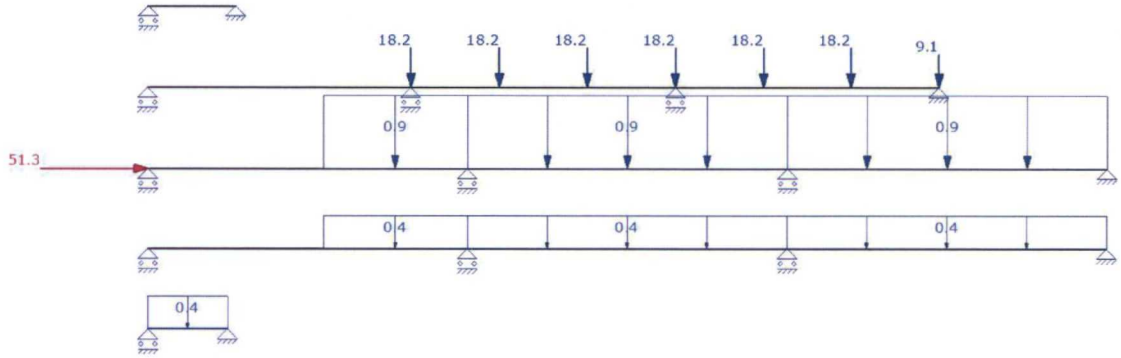


B.G.8: WIND VAN DE ZIJKANT 4

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.8: Wind van de Zijkant 4						
q	0.41	0.41	0.000	5.000(L)	Z'	S1,S3-S4

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.8: Wind van de Zijkant 4						
q	0.41	0.41	11.000	20.000(L)	Z'	S2
q	0.91	0.91	11.000	20.000(L)	Z'	S5
q	0.91	0.91	0.000	20.000(L)	Z'	S6-S7
N	51.30				X	K7
N	18.20				Z	K12-K13
F	18.20		5.500		Z'	S9-S10
F	18.20		11.000		Z'	S9-S10
N	9.10				Z	K14
Som lasten	**X: 51.30**	**kN**	**Z: 185.03**	**kN**		
-	-	-	m	m	-	-

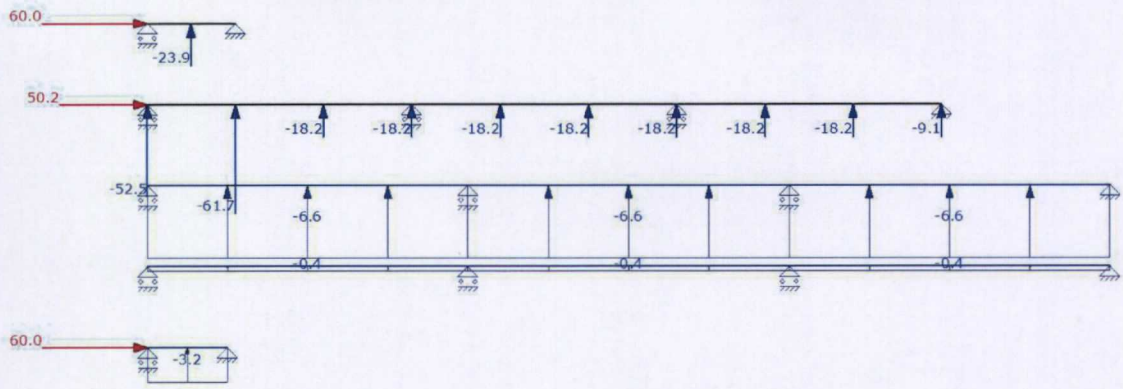
B.G.8: WIND VAN DE ZIJKANT 4



B.G.9: WIND OP DE KOP 1

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.9: Wind op de Kop 1						
q	-3.18	-3.18	0.000	5.000(L)	Z'	S1
N	60.00				X	K1,K15
q	-0.41	-0.41	0.000	20.000(L)	Z'	S2-S4
q	-6.59	-6.59	0.000	20.000(L)	Z'	S5-S7
N	-52.50				Z	K11
F	-61.70		5.500		Z'	S8
F	-18.20		11.000		Z'	S8-S10
N	-18.20				Z	K12-K13
F	-18.20		5.500		Z'	S9-S10
N	-9.10				Z	K14
N	50.20				X	K11
F	-23.90		2.750		Z'	S11
Som lasten	**X: 170.20**	**kN**	**Z: -710.50**	**kN**		
-	-	-	m	m	-	-

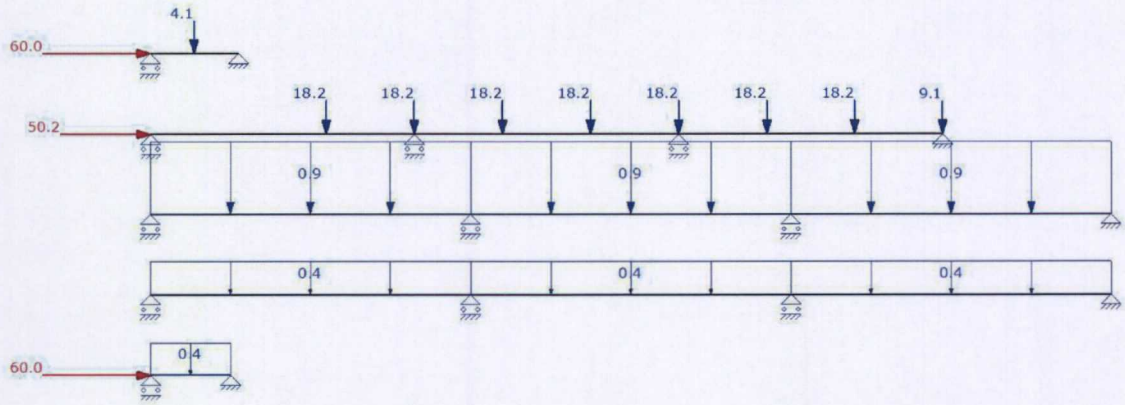
B.G.9: WIND OP DE KOP 1



B.G.10: WIND OP DE KOP 2

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.10: Wind op de Kop 2						
q	0.41	0.41	0.000	5.000(L)	Z'	S1-S4
N	60.00				X	K1
q	0.91	0.91	0.000	20.000(L)	Z'	S5-S7
F	18.20		11.000		Z'	S8-S10
N	18.20				Z	K12-K13
F	18.20		5.500		Z'	S9-S10
N	9.10				Z	K14
N	50.20				X	K11
F	4.13		2.750		Z'	S11
N	60.00				X	K15
Som lasten	**X: 170.20**	**kN Z: 221.88**	**kN**			
-	-	-	m	m	-	-

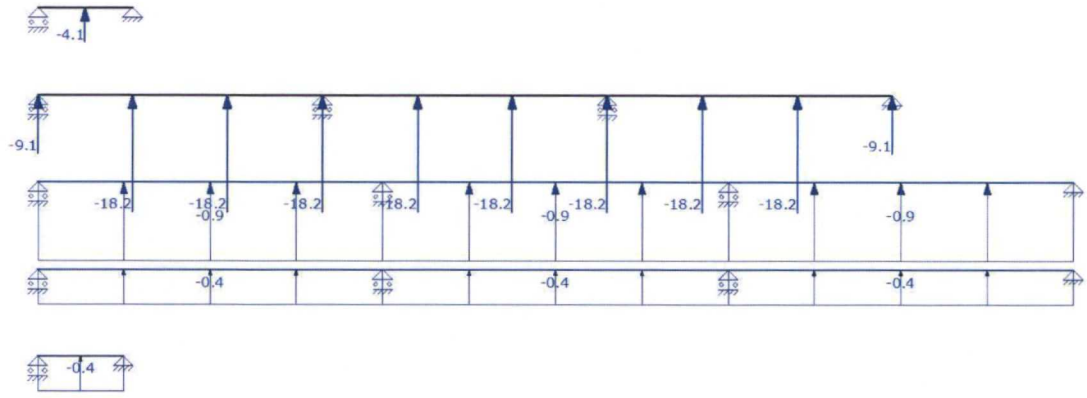
B.G.10: WIND OP DE KOP 2



B.G.11: WIND OVERDRUK

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.11: Wind Overdruk						
q	-0.41	-0.41	0.000	5.000(L)	Z'	S1-S4
q	-0.91	-0.91	0.000	20.000(L)	Z'	S5-S7
N	-9.10				Z	K11,K14
F	-18.20		5.500		Z'	S8-S10
F	-18.20		11.000		Z'	S8-S10
N	-18.20				Z	K12-K13
F	-4.13		2.750		Z'	S11
Som lasten	**X: 0.00**	**kN Z: -249.18**	**kN**			
-	-	-	m	m	-	-

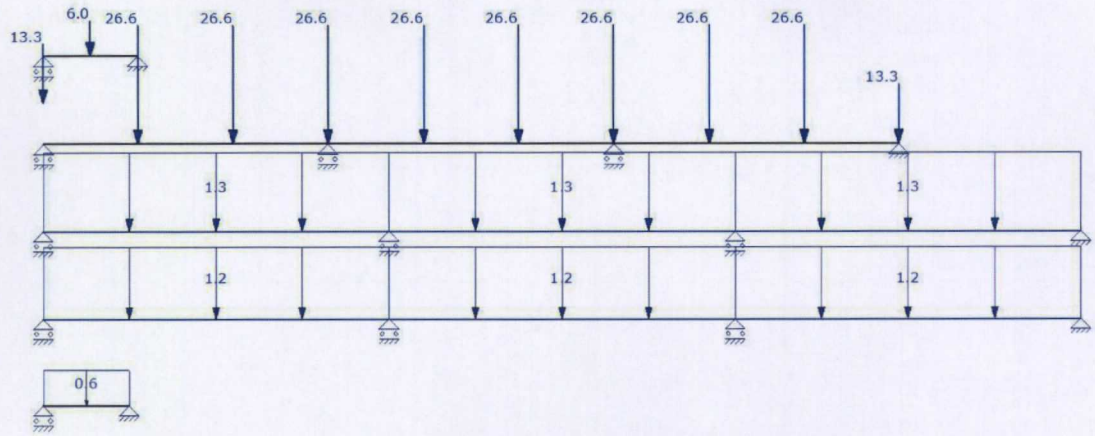
B.G.11: WIND OVERDRUK



B.G.12: WIND ONDERDRUK

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.12: Wind Onderdruk						
q	0.61	0.61	0.000	5.000(L)	Z'	S1
q	1.21	1.21	0.000	20.000(L)	Z'	S2-S4
q	1.33	1.33	0.000	20.000(L)	Z'	S5-S7
N	13.30				Z	K11,K14
F	26.60		5.500		Z'	S8-S10
F	26.60		11.000		Z'	S8-S10
N	26.60				Z	K12-K13
F	6.05		2.750		Z'	S11
Som lasten	**X: 0.00**	**kN Z: 400.90**	**kN**			
-	-	-	m	m	-	-

B.G.12: WIND ONDERDRUK



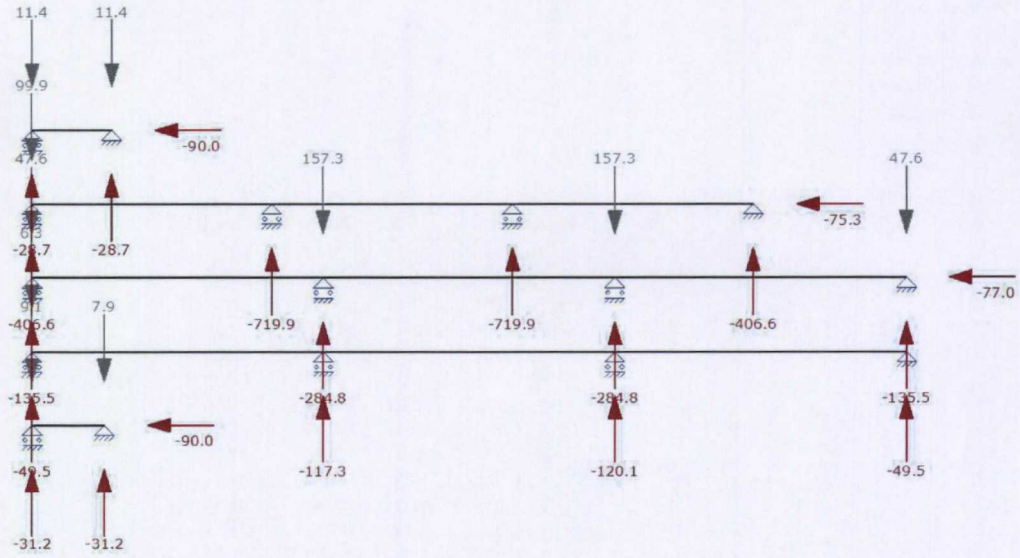
FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Fu.C.1	Fu.C.2	Fu.C.3	Fu.C.4	Fu.C.5	Fu.C.6	Fu.C.7	Fu.C.8
B.G.1	Eigen Gewicht	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.2	Permanent	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.3	Sneeuw	-	1.50	-	-	-	-	-	-
B.G.4	Sneeuwophoping	-	-	1.50	-	-	-	-	-
B.G.5	Wind van de Zijkant 1	-	-	-	1.50	1.50	-	-	-
B.G.6	Wind van de Zijkant 2	-	-	-	-	-	1.50	1.50	-
B.G.7	Wind van de Zijkant 3	-	-	-	-	-	-	-	1.50
B.G.8	Wind van de Zijkant 4	-	-	-	-	-	-	-	-
B.G.9	Wind op de Kop 1	-	-	-	-	-	-	-	-
B.G.10	Wind op de Kop 2	-	-	-	-	-	-	-	-
B.G.11	Wind Overdruk	-	-	-	1.50	-	1.50	-	1.50
B.G.12	Wind Onderdruk	-	-	-	-	1.50	-	1.50	-
B.G.	**Omschrijving**	**Fu.C.9**	**Fu.C.10**	**Fu.C.11**	**Fu.C.12**	**Fu.C.13**	**Fu.C.14**	**Fu.C.15**	**Fu.C.16**
B.G.1	Eigen Gewicht	1.20	1.20	1.20	1.20	1.20	1.20	1.20	0.90
B.G.2	Permanent	1.20	1.20	1.20	1.20	1.20	1.20	1.20	0.90
B.G.3	Sneeuw	-	-	-	-	-	-	-	-
B.G.4	Sneeuwophoping	-	-	-	-	-	-	-	-
B.G.5	Wind van de Zijkant 1	-	-	-	-	-	-	-	1.50
B.G.6	Wind van de Zijkant 2	-	-	-	-	-	-	-	-
B.G.7	Wind van de Zijkant 3	1.50	-	-	-	-	-	-	-
B.G.8	Wind van de Zijkant 4	-	1.50	1.50	-	-	-	-	-
B.G.9	Wind op de Kop 1	-	-	-	1.50	1.50	-	-	-
B.G.10	Wind op de Kop 2	-	-	-	-	-	1.50	1.50	-
B.G.11	Wind Overdruk	-	1.50	-	1.50	-	1.50	-	1.50
B.G.12	Wind Onderdruk	1.50	-	1.50	-	1.50	-	1.50	-
B.G.	**Omschrijving**	**Fu.C.17**	**Fu.C.18**	**Fu.C.19**	**Fu.C.20**	**Fu.C.21**	**Fu.C.22**	**Fu.C.23**	**Fu.C.24**
B.G.1	Eigen Gewicht	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
B.G.2	Permanent	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
B.G.3	Sneeuw	-	-	-	-	-	-	-	-
B.G.4	Sneeuwophoping	-	-	-	-	-	-	-	-
B.G.5	Wind van de Zijkant 1	1.50	-	-	-	-	-	-	-
B.G.6	Wind van de Zijkant 2	-	1.50	1.50	-	-	-	-	-
B.G.7	Wind van de Zijkant 3	-	-	-	1.50	1.50	-	-	-
B.G.8	Wind van de Zijkant 4	-	-	-	-	-	1.50	1.50	-
B.G.9	Wind op de Kop 1	-	-	-	-	-	-	-	1.50
B.G.10	Wind op de Kop 2	-	-	-	-	-	-	-	-
B.G.11	Wind Overdruk	-	1.50	-	1.50	-	1.50	-	1.50
B.G.12	Wind Onderdruk	1.50	-	1.50	-	1.50	-	1.50	-
B.G.	**Omschrijving**	**Fu.C.25**	**Fu.C.26**	**Fu.C.27**					
B.G.1	Eigen Gewicht	0.90	0.90	0.90					

B.G.2	Permanent	0.90	0.90	0.90
B.G.3	Sneeuw	-	-	-
B.G.4	Sneeuwophoping	-	-	-
B.G.5	Wind van de Zijkant 1	-	-	-
B.G.6	Wind van de Zijkant 2	-	-	-
B.G.7	Wind van de Zijkant 3	-	-	-
B.G.8	Wind van de Zijkant 4	-	-	-
B.G.9	Wind op de Kop 1	1.50	-	-
B.G.10	Wind op de Kop 2	-	1.50	1.50
B.G.11	Wind Overdruk	-	1.50	-
B.G.12	Wind Onderdruk	1.50	-	1.50

FU.C. EXTREME OPLEGREACTIES

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O1	K1					Fu.C.16	0.00	**9.12**	0.00				
O1	K1					Fu.C.3	0.00	**-31.17**	0.00				
O2	K2					Fu.C.24	-90.00	**7.89**	0.00				
O2	K2	Fu.C.12	**-90.00**	6.03	0.00	Fu.C.3	0.00	**-31.17**	0.00				
O3	K3					Fu.C.16	0.00	**6.30**	0.00				
O3	K3					Fu.C.3	0.00	**-49.48**	0.00				
O4	K4					Fu.C.15	0.00	**-117.26**	0.00				
O5	K5					Fu.C.7	0.00	**-120.12**	0.00				
O6	K6					Fu.C.3	0.00	**-49.48**	0.00				
O7	K7					Fu.C.24	0.00	**47.58**	0.00				
O7	K7					Fu.C.3	0.00	**-135.45**	0.00				
O8	K8					Fu.C.24	0.00	**157.32**	0.00				
O8	K8					Fu.C.3	0.00	**-284.80**	0.00				
O9	K9					Fu.C.24	0.00	**157.32**	0.00				
O9	K9					Fu.C.3	0.00	**-284.80**	0.00				
O10	K10					Fu.C.24	0.00	**47.58**	0.00				
O10	K10	Fu.C.4	**-76.95**	-34.12	0.00	Fu.C.3	0.00	**-135.45**	0.00				
O11	K11					Fu.C.18	0.00	**99.85**	0.00				
O11	K11					Fu.C.3	0.00	**-406.59**	0.00				
O12	K12					Fu.C.3	0.00	**-719.85**	0.00				
O13	K13					Fu.C.3	0.00	**-719.85**	0.00				
O14	K14	Fu.C.12	**-75.30**	-55.41	0.00	Fu.C.3	0.00	**-406.59**	0.00				
O15	K15					Fu.C.24	0.00	**11.40**	0.00				
O15	K15					Fu.C.3	0.00	**-28.73**	0.00				
O16	K16					Fu.C.24	-90.00	**11.40**	0.00				
O16	K16	Fu.C.12	**-90.00**	8.19	0.00	Fu.C.3	0.00	**-28.73**	0.00				
Globale extreme waarden													
O16	K16	Fu.C.12	**-90.00**	8.19	0.00								
O9	K9					Fu.C.24	0.00	**157.32**	0.00				
O13	K13					Fu.C.3	0.00	**-719.85**	0.00				
-	-	-	**kN**	**kN**	**kNm**	-	**kN**	**kN**	**kNm**		**kN**	**kN**	**kNm**

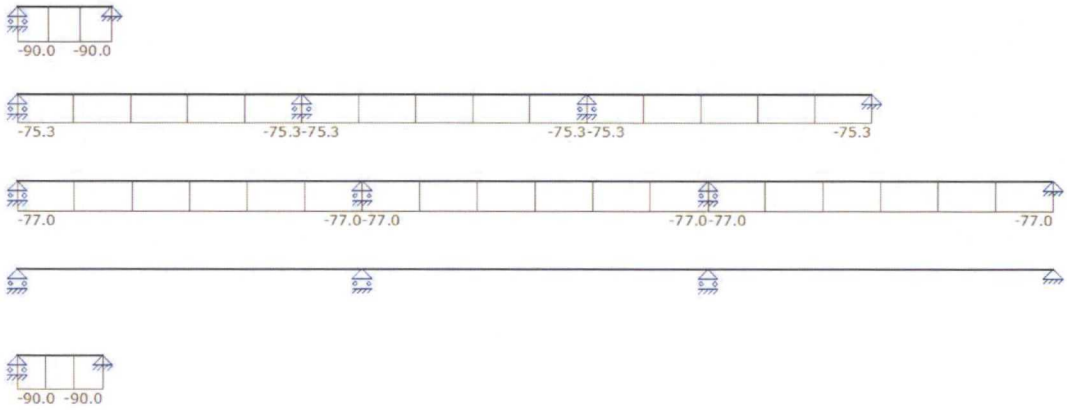


FU.C. EXTREME STAAFKRACHTEN

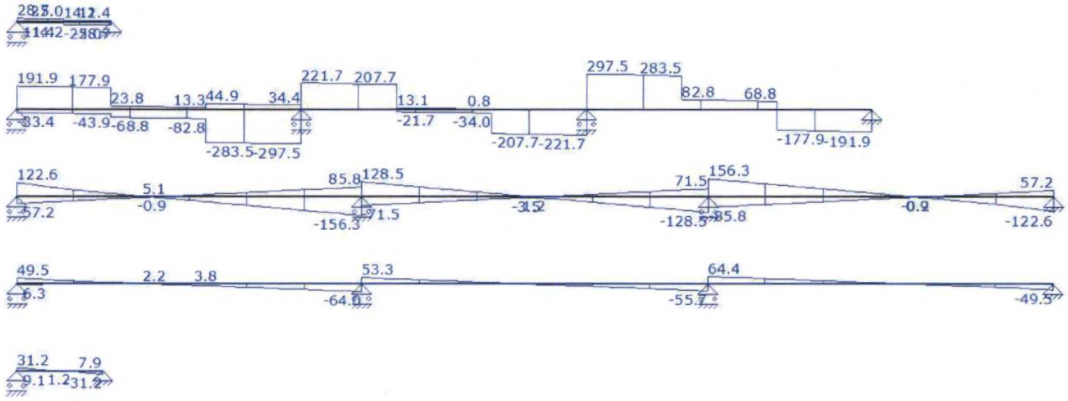
Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0 T/D	Nmax	Vb	Vmax	Ve
S1	Fu.C.3	0.00	**38.96**	2.500	0.00	0.000	0.000 -	0.00	**31.17**	**-31.17**	**-31.17**
	Fu.C.12	0.00	-7.54	2.500	0.00	0.000	0.000 D	**-90.00**	-6.03	-6.03	6.03
	Fu.C.16	0.00	-9.42	2.066	0.00	0.000	0.000 -	0.00	**-9.12**	-9.12	6.11
	Fu.C.24	0.00	**-9.86**	2.500	0.00	0.000	0.000 D	-90.00	-7.89	-7.89	**7.89**
S2	Fu.C.3	0.00	**174.33**	7.834	-211.24	16.015	0.000 -	0.00	**49.48**	-63.39	-63.39
	Fu.C.15	0.00	170.57	8.000	**-213.21**	16.000	0.000 -	0.00	42.64	**-63.96**	**-63.96**
	Fu.C.16	0.00	**-12.14**	5.627	-16.52	13.599	14.539 -	0.00	**-6.30**	-6.30	-5.61
S3	Fu.C.7	-175.08	**68.13**	9.553	**-222.74**	4.497	14.609 -	0.00	50.92	**-55.69**	**-55.69**
	Fu.C.15	**-213.21**	53.30	10.000	-213.21	5.528	14.472 -	0.00	**53.30**	**53.30**	-53.30
S4	Fu.C.3	-211.24	**174.33**	12.166	0.00	3.985	0.000 -	0.00	63.39	63.39	**-49.48**
	Fu.C.7	**-222.74**	166.78	12.089	0.00	4.179	0.000 -	0.00	**64.44**	**64.44**	-42.17
S5	Fu.C.3	0.00	**430.41**	7.829	**-521.03**	16.015	0.000 -	0.00	**122.61**	**-156.34**	**-156.34**
	Fu.C.4	0.00	-13.95	2.196	-61.27	9.380	15.570 D	**-76.95**	-12.70	-19.89	-19.89
	Fu.C.24	0.00	**-228.83**	8.000	**286.04**	16.000	0.000 -	0.00	**-57.21**	**85.81**	**85.81**
S6	Fu.C.3	**-521.03**	121.24	10.000	**-521.03**	5.655	14.345 -	0.00	**128.45**	**-128.45**	**-128.45**
	Fu.C.4	-61.27	47.06	8.900	-121.45	3.034	14.766 D	**-76.95**	24.34	-30.36	-30.36
	Fu.C.7	-267.49	**121.94**	9.394	-374.40	4.137	14.651 D	-76.95	82.91	-93.60	-93.60
	Fu.C.9	-262.51	54.06	10.192	-239.14	5.980	14.403 D	-76.95	62.12	**62.12**	-59.79
	Fu.C.24	**286.04**	**-71.51**	10.000	**286.04**	5.528	14.472 -	0.00	**-71.51**	-71.51	**71.51**
S7	Fu.C.3	**-521.03**	**430.41**	12.171	0.00	3.985	0.000 -	0.00	**156.34**	**156.34**	**-122.61**
	Fu.C.4	-121.45	82.78	12.220	0.00	4.440	0.000 D	**-76.95**	33.43	33.43	-21.28
	Fu.C.24	**286.04**	**-228.83**	12.000	0.00	4.000	0.000 -	0.00	**-85.81**	**-85.81**	**57.21**
S8	Fu.C.3	0.00	**1017.18**	5.500	**-997.34**	13.098	0.000 -	0.00	**191.93**	**-297.47**	**-297.47**
	Fu.C.12	0.00	81.82	11.000	-179.53	12.905	0.000 D	**-75.30**	11.00	-54.51	-54.51
	Fu.C.16	0.00	-186.10	5.500	**57.32**	14.906	0.000 -	0.00	-28.59	**44.93**	**34.44**
	Fu.C.18	0.00	**-214.33**	11.000	-22.76	0.000	0.000 -	0.00	**-33.44**	-43.93	29.59
S9	Fu.C.2	-952.31	238.08	8.250	-952.31	4.407	12.093 -	0.00	**221.68**	**-221.68**	**-221.68**
	Fu.C.3	**-997.34**	193.05	8.250	**-997.34**	4.622	11.878 -	0.00	221.68	-221.68	-221.68
	Fu.C.7	-444.65	**398.10**	5.500	-889.48	2.839	12.238 -	0.00	160.22	-214.14	-214.14
	Fu.C.9	-640.35	117.27	10.636	-540.25	4.833	12.029 -	0.00	138.65	**138.65**	-126.51
	Fu.C.12	-179.53	106.21	5.716	-285.86	3.278	12.191 D	**-75.30**	58.94	-71.82	-71.82
	Fu.C.16	**57.32**	141.54	5.500	-187.31	12.459	0.000 -	0.00	20.56	-50.21	-50.21
S10	Fu.C.3	**-997.34**	**1017.18**	11.000	0.00	3.402	0.000 -	0.00	**297.47**	**297.47**	**-191.93**
	Fu.C.12	-285.86	225.84	11.000	0.00	3.663	0.000 D	**-75.30**	82.70	82.70	-48.05
S11	Fu.C.3	0.00	**73.82**	2.750	0.00	0.000	0.000 -	0.00	**28.73**	**-28.73**	**-28.73**

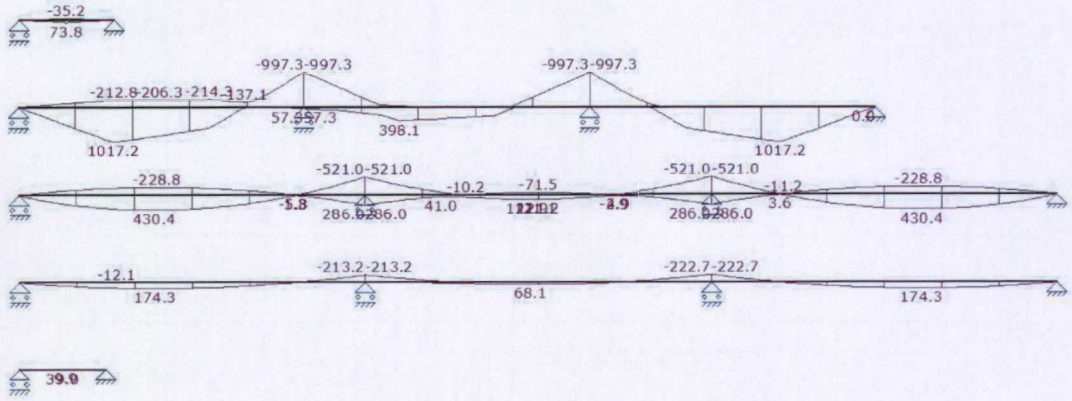
Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0 T/D	Nmax	Vb	Vmax	Ve
S11	Fu.C.12	0.00	-27.71	2.750	0.00	0.000	0.000 D	**-90.00**	-8.19	-11.96	8.19
	Fu.C.24	0.00	**-35.24**	2.750	0.00	0.000	0.000 D	-90.00	**-11.40**	-14.23	**11.40**
-	-	kNm	kNm	m	kNm	m	m -	kN	kN	kN	kN

AFB. FU.C. NORMAALKRACHT (NX) OMHULLENDE — Fundamenteel Belastingscombinaties



AFB. FU.C. DWARSKRACHT (VZ) OMHULLENDE — Fundamenteel Belastingscombinaties

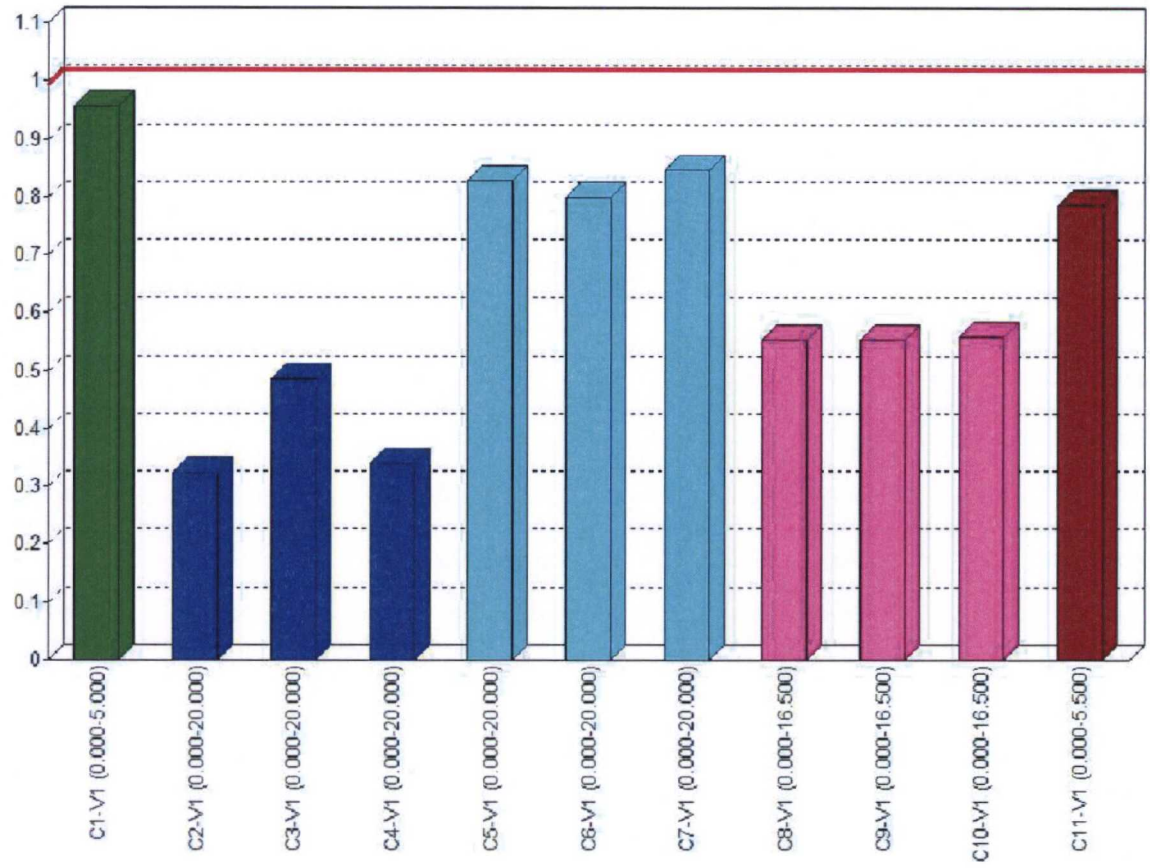




EXTREME UNITY CHECK NEN-EN1993-1-1:2016/NB:2016

Veld	Toetsing	Combinatie	Artikel	UC max
C1-V1 (0.000-5.000)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.96
C2-V1 (0.000-20.000)	Kiptoetsing	Fu.C.15	NEN-EN1993-1-1(6.54)	0.33
C3-V1 (0.000-20.000)	Kiptoetsing	Fu.C.3	NEN-EN1993-1-1(6.54)	0.49
C4-V1 (0.000-20.000)	Kiptoetsing	Fu.C.7	NEN-EN1993-1-1(6.54)	0.34
C5-V1 (0.000-20.000)	Stabiliteit	Fu.C.11	NEN-EN1993-1-1(6.61&6.62)	0.83
C6-V1 (0.000-20.000)	Stabiliteit	Fu.C.7	NEN-EN1993-1-1(6.61&6.62)	0.80
C7-V1 (0.000-20.000)	Stabiliteit	Fu.C.7	NEN-EN1993-1-1(6.61&6.62)	0.85
C8-V1 (0.000-16.500)	Kiptoetsing	Fu.C.3	NEN-EN1993-1-1(6.54)	0.55
C9-V1 (0.000-16.500)	Stabiliteit	Fu.C.15	NEN-EN1993-1-1(6.61&6.62)	0.55
C10-V1 (0.000-16.500)	Stabiliteit	Fu.C.15	NEN-EN1993-1-1(6.61&6.62)	0.56
C11-V1 (0.000-5.500)	Kiptoetsing	Fu.C.3	NEN-EN1993-1-1(6.54)	0.79

AFB. STAAL UC DIAGRAM



STAALTOETS RESULTATEN MET PROFIELGEGEVENS NEN-EN1993-1-1:2016/NB:2016

Uitgangspunten berekening voor staalcontrole

Alpha;cr = 9.52 < 10; GNL analyse vereist

Profielgegevens staaf C1-V1 (0.000-5.000)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C1-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.3 op 2.500 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 39.0 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.12): UC = 0.96 < 1

Kiptoetsing C1-V1 (0.000-5.000)

Equi. profiel: HE140A			
Maatgevende combinatie: Fu.C.24		Instab. curve Kip:a	
Aangrijphoogte van de last: 0.000 m vanaf hart profiel			
Kipsteun bovenflens: 1, 2, 3, 4m			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.008	b-eff(Eind) = 0.008
Tabel gebruikt NB 6.2	q = 3.2kN/m	= 0.0	
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 5.000 m	lst = 5.000 m

Lsys = 5.000 m | Lg = 5.000 m | S = 0.694 m | Iwa = 1.5064e-08 m6
C1 = 1.13 | C2 = 0.45 (tabel) | C2(toegepast) = 0.00 | C = 3.87
Mcr = 56.8 kNm | kred = 1.0 | Lam-rel = 0.85 | Profielklasse 1
Chi;LT(Fu.C.24) = 0.77 | M;Ed = 9.9 kNm | | UC(y) = 0.32
Chi;LT,Z = 1.00 | lkip = 5.000 m | | UC(z) = 0.00
My;begin = 0.0 kNm | My;eind = 0.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.32 < 1

Stabiliteitstoetsing C1-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.15
N;Ed = -90.0 kN | Nb;Rd;y = 474.6 kN | Nb;Rd;z = 229.3 kN
Methode Y = Cons. gesch. | Ca(y) = 0.000 | Cb(y) = 0.000 | Lknik Y = 5.000 m
Methode Z = Cons. gesch. | Ca(z) = N/B | Cb(z) = N/B | Lbuc Z = 5.000 m
Xy = 0.64 | Knikcurve: B
Xz = 0.31 | Knikcurve: C
NEN-EN1993-1-1(6.46): UC = 0.39 < 1

Buiging & Druk C1-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.15 | Kipgevoelig Ja | Profielklasse = 1
N;Ed = -90.0 kN | My;Ed = 9.9 kNm | Mz;Ed = 0.0 kNm
Delta;My;Ed = 0.0 kNm | Delta;Mz;Ed = 0.0 kNm
My = 0.0 kNm | My;Psi = 0.0 kNm | My;s = 14.1 kNm
Mz = 0.0 kNm | Mz;Psi = 0.0 kNm | Mz;s = 0.0 kNm
Cmy = 0.95 | Cmz = 1.00 | CmLT = 0.95
Kyy = 1.081 | Kyz = 0.930 | Kzy = 0.944 | Kzz = 1.550
Ksi;y = 0.64 | Ksi;z = 0.31 | Ksi;LT = 0.98
NEN-EN1993-1-1(6.61&6.62): UC = 0.72 < 1

Profielgegevens staaf C2-V1 (0.000-20.000)

IPE500 | Analyse | Staal S355 fyd(toegepast) = 355 N/mm2
h = 500.0 mm | A = 11.55e-03 m2 | Wy;el = 192.8e-05 m3 | Wy;pl = 219.4e-05 m3
b = 200.0 mm | Iy = 482.0e-06 m4 | Wz;el = 214.2e-06 m3 | Wz;pl = 335.9e-06 m3
tf = 16.0 mm | Iz = 214.2e-07 m4 | Aw;y;el = 6.78e-03 m2 | Aw;y;pl = 6.78e-03 m2
tw = 10.2 mm | Massa/m = 90.7 kg/m | Aw;z;el = 5.99e-03 m2 | Aw;z;pl = 5.99e-03 m2
r = 21.0 mm | It = 892.9e-09 m4 | Iwa = 124.9e-08 m6

Doorsnedetoetsing C2-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.15 op 20.000 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -213.2 kNm
Vz;Ed = -64.0 kN | Mz;Ed = 0.0 kNm
N;Rd = 4,101.0 kN | Vy;Rd = 1,389.3 kN | MyRd = 778.9 kNm
Vz;Rd = 1,227.2 kN | MzRd = 119.2 kNm
NEN-EN1993-1-1(6.12): UC = 0.27 < 1

Kiptoetsing C2-V1 (0.000-20.000)

Equi. profiel: IPE500
Maatgevende combinatie: Fu.C.15 | Instab. curve Kip:b
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: 2.5, 5, 7.5, 10, 12.5, 15, 17.5m
Kipsteun onderflens: 5, 10, 15m
Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.014 | b-eff(Eind) = 0.021
Tabel gebruikt Fig. NB.32 | M = -213.2kN/m | MBeta = -70.0 | q = 5.3
Onderflens maatgevend | Xb;lst = 17.500 m | Xe;lst = 20.000 m | lst = 2.500 m
Lsys = 20.000 m | Lg = 20.000 m | S = 1.907 m | Iwa = 1.2494e-06 m6
C1 = 1.52 | C2 = 0.01 (tabel) | C2(toegepast) = 0.00 | C = 78.31
Mcr = 2,230.0 kNm | kred = 1.0 | Lam-rel = 0.59 | Profielklasse 1
Chi;LT(Fu.C.15) = 0.84 | M;Ed = 213.2 kNm | UC(y) = 0.33
Chi;LT,Z = 1.00 | lkip = 2.844 m | UC(z) = 0.00
My;begin = -70.0 kNm | My;eind = -213.2 kNm
NEN-EN1993-1-1(6.54): UC = 0.33 < 1

Profielgegevens staaf C3-V1 (0.000-20.000)

IPE500	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 500.0 mm	A = 11.55e-03 m2	Wy;el = 192.8e-05 m3	Wy;pl = 219.4e-05 m3
b = 200.0 mm	Iy = 482.0e-06 m4	Wz;el = 214.2e-06 m3	Wz;pl = 335.9e-06 m3
tf = 16.0 mm	Iz = 214.2e-07 m4	Aw;y;el = 6.78e-03 m2	Aw;y;pl = 6.78e-03 m2
tw = 10.2 mm	Massa/m = 90.7 kg/m	Aw;z;el = 5.99e-03 m2	Aw;z;pl = 5.99e-03 m2
r = 21.0 mm		It = 892.9e-09 m4	Iwa = 124.9e-08 m6

Doorsnedetoetsing C3-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.7 op 20.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -222.7 kNm	
	Vz;Ed = -55.7 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,101.0 kN	Vy;Rd = 1,389.3 kN	MyRd = 778.9 kNm	
	Vz;Rd = 1,227.2 kN	MzRd = 119.2 kNm	

NEN-EN1993-1-1(6.12): UC = 0.29 < 1

Kiptoetsing C3-V1 (0.000-20.000)

Equi. profiel: IPE500
Maatgevende combinatie: Fu.C.3 — Instab. curve Kip:b
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: 2.5, 5, 7.5, 10, 12.5, 15, 17.5m
Kipsteun onderflens: 5, 10, 15m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.026	b-eff(Eind) = 0.026
Tabel gebruikt Fig. NB.32	M = -211.2kN/m	MBeta = -15.9	q = 5.2
Onderflens maatgevend	Xb;Ist = 15.000 m	Xe;Ist = 20.000 m	Ist = 5.000 m
Lsys = 20.000 m	Lg = 20.000 m	S = 1.907 m	Iwa = 1.2494e-06 m6
C1 = 1.93	C2 = 0.06 (tabel)	C2(toegepast) = 0.00	C = 24.27
Mcr = 691.2 kNm	kred = 1.0	Lam-rel = 1.06	Profielklasse 1
Chi;LT(Fu.C.3) = 0.56	M;Ed = 211.2 kNm		UC(y) = 0.49
Chi;LT,Z = 1.00	Ikip = 6.700 m		UC(z) = 0.00
My;begin = -15.9 kNm	My;eind = -211.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.49 < 1

Profielgegevens staaf C4-V1 (0.000-20.000)

IPE500	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 500.0 mm	A = 11.55e-03 m2	Wy;el = 192.8e-05 m3	Wy;pl = 219.4e-05 m3
b = 200.0 mm	Iy = 482.0e-06 m4	Wz;el = 214.2e-06 m3	Wz;pl = 335.9e-06 m3
tf = 16.0 mm	Iz = 214.2e-07 m4	Aw;y;el = 6.78e-03 m2	Aw;y;pl = 6.78e-03 m2
tw = 10.2 mm	Massa/m = 90.7 kg/m	Aw;z;el = 5.99e-03 m2	Aw;z;pl = 5.99e-03 m2
r = 21.0 mm		It = 892.9e-09 m4	Iwa = 124.9e-08 m6

Doorsnedetoetsing C4-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.7 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -222.7 kNm	
	Vz;Ed = 64.4 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,101.0 kN	Vy;Rd = 1,389.3 kN	MyRd = 778.9 kNm	
	Vz;Rd = 1,227.2 kN	MzRd = 119.2 kNm	

NEN-EN1993-1-1(6.12): UC = 0.29 < 1

Kiptoetsing C4-V1 (0.000-20.000)

Equi. profiel: IPE500
Maatgevende combinatie: Fu.C.7 — Instab. curve Kip:b
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: 2.5, 5, 7.5, 10, 12.5, 15, 17.5m
Kipsteun onderflens: 5, 10, 15m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.021	b-eff(Eind) = 0.014
Tabel gebruikt Fig. NB.32	M = -222.7kN/m	MBeta = -78.3	q = 5.3
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 2.500 m	Ist = 2.500 m
Lsys = 20.000 m	Lg = 20.000 m	S = 1.907 m	Iwa = 1.2494e-06 m6
C1 = 1.49	C2 = 0.01 (tabel)	C2(toegepast) = 0.00	C = 79.37
Mcr = 2,260.1 kNm	kred = 1.0	Lam-rel = 0.59	Profielklasse 1
Chi;LT(Fu.C.7) = 0.84	M;Ed = 222.7 kNm		UC(y) = 0.34

Chi;LT,Z = 1.00 lkip = 2.797 m UC(z) = 0.00
My;begin = -222.7 kNm My;eind = -78.3 kNm
NEN-EN1993-1-1(6.54): UC = 0.34 < 1

Profielgegevens staaf C5-V1 (0.000-20.000)

IPE600 Analyse Staal S355 fyd(toegepast) = 355 N/mm2
h = 600.0 mm A = 15.60e-03 m2 Wy;el = 306.9e-05 m3 Wy;pl = 351.2e-05 m3
b = 220.0 mm Iy = 920.8e-06 m4 Wz;el = 307.9e-06 m3 Wz;pl = 485.6e-06 m3
tf = 19.0 mm Iz = 338.7e-07 m4 Aw;y;el = 8.85e-03 m2 Aw;y;pl = 8.85e-03 m2
tw = 12.0 mm Massa/m = 122.4 kg/m Aw;z;el = 8.38e-03 m2 Aw;z;pl = 8.38e-03 m2
r = 24.0 mm It = 165.4e-08 m4 Iwa = 284.6e-08 m6

Doorsnedetoetsing C5-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.3 op 20.000 m Profielklasse = 1
N;Ed = 0.0 kN Vy;Ed = 0.0 kN My;Ed = -521.0 kNm
Vz;Ed = -156.3 kN Mz;Ed = 0.0 kNm
N;Rd = 5,537.4 kN Vy;Rd = 1,814.8 kN MyRd = 1,246.9 kNm
Vz;Rd = 1,717.2 kN MzRd = 172.4 kNm
NEN-EN1993-1-1(6.12): UC = 0.42 < 1

Kiptoetsing C5-V1 (0.000-20.000)

Equi. profiel: IPE600
Maatgevende combinatie: Fu.C.3 Instab. curve Kip:b
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: 2.5, 5, 7.5, 10, 12.5, 15, 17.5m
Kipsteun onderflens: 5, 10, 15m
Inklem. begin: Gesteund Beperk. eind: Gesteund b-eff(Begin) = 0.033 b-eff(Eind) = 0.043
Tabel gebruikt Fig. NB.32 M = -521.0kN/m MBeta = -170.3 q = 12.8
Onderflens maatgevend Xb;lst = 17.500 m Xe;lst = 20.000 m lst = 2.500 m
Lsys = 20.000 m Lg = 20.000 m S = 2.115 m Iwa = 2.8455e-06 m6
C1 = 1.52 C2 = 0.01 (tabel) C2(toegepast) = 0.00 C = 85.23
Mcr = 4,154.6 kNm kred = 1.0 Lam-rel = 0.55 Profielklasse 1
Chi;LT(Fu.C.3) = 0.86 M;Ed = 521.0 kNm UC(y) = 0.48
Chi;LT,Z = 1.00 lkip = 2.846 m UC(z) = 0.00
My;begin = -170.3 kNm My;eind = -521.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.48 < 1

Stabiliteitstoetsing C5-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.11
N;Ed = -77.0 kN Nb;Rd;y = 3,386.9 kN Nb;Rd;z = 165.6 kN
Methode Y = Cons. gesch. Ca(y) = 0.000 Cb(y) = 0.000 Lknik Y = 20.000 m
Methode Z = Cons. gesch. Ca(z) = N/B Cb(z) = N/B Lbuc Z = 20.000 m
Xy = 0.61 Knikcurve: A
Xz = 0.03 Knikcurve: B
NEN-EN1993-1-1(6.46): UC = 0.46 < 1

Buiging & Druk C5-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.11 Kipgevoelig Ja Profielklasse = 3
N;Ed = -77.0 kN My;Ed = 521.0 kNm Mz;Ed = 0.0 kNm
Delta;My;Ed = 0.0 kNm Delta;Mz;Ed = 0.0 kNm
My = -334.3 kNm My;Psi = 0.0 kNm My;s = 233.5 kNm
Mz = 0.0 kNm Mz;Psi = 0.0 kNm Mz;s = 0.0 kNm
Cmy = 0.66 Cmz = 1.00 CmLT = 0.66
Kyy = 0.668 Kyz = 1.279 Kzy = 0.943 Kzz = 1.279
Ksi;y = 0.61 Ksi;z = 0.03 Ksi;LT = 0.80
NEN-EN1993-1-1(6.61&6.62): UC = 0.83 < 1

Profielgegevens staaf C6-V1 (0.000-20.000)

IPE600 Analyse Staal S355 fyd(toegepast) = 355 N/mm2
h = 600.0 mm A = 15.60e-03 m2 Wy;el = 306.9e-05 m3 Wy;pl = 351.2e-05 m3
b = 220.0 mm Iy = 920.8e-06 m4 Wz;el = 307.9e-06 m3 Wz;pl = 485.6e-06 m3

tf = 19.0 mm	Iz = 338.7e-07 m4	Aw;y;el = 8.85e-03 m2	Aw;y;pl = 8.85e-03 m2
tw = 12.0 mm	Massa/m = 122.4 kg/m	Aw;z;el = 8.38e-03 m2	Aw;z;pl = 8.38e-03 m2
r = 24.0 mm		It = 165.4e-08 m4	Iwa = 284.6e-08 m6

Doorsnedetoetsing C6-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.3 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -521.0 kNm	
	Vz;Ed = 128.5 kN	Mz;Ed = 0.0 kNm	
N;Rd = 5,537.4 kN	Vy;Rd = 1,814.8 kN	MyRd = 1,246.9 kNm	
	Vz;Rd = 1,717.2 kN	MzRd = 172.4 kNm	

NEN-EN1993-1-1(6.12): UC = 0.42 < 1

Kiptoetsing C6-V1 (0.000-20.000)

Equi. profiel: IPE600			
Maatgevende combinatie: Fu.C.3		Instab. curve Kip:b	
Aangrijphoogte van de last: 0.000 m vanaf hart profiel			
Kipsteun bovenflens: 2.5, 5, 7.5, 10, 12.5, 15, 17.5m			
Kipsteun onderflens: 5, 10, 15m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.051	b-eff(Eind) = 0.051
Tabel gebruikt Fig. NB.32	M = -521.0kN/m	MBeta = -39.3	q = 12.8
Onderflens maatgevend	Xb;Ist = 15.000 m	Xe;Ist = 20.000 m	Ist = 5.000 m
Lsys = 20.000 m	Lg = 20.000 m	S = 2.115 m	Iwa = 2.8455e-06 m6
C1 = 1.93	C2 = 0.06 (tabel)	C2(toegepast) = 0.00	C = 25.48
Mcr = 1,242.1 kNm	kred = 1.0	Lam-rel = 1.00	Profielklasse 1
Chi;LT(Fu.C.3) = 0.60	M;Ed = 521.0 kNm		UC(y) = 0.70
Chi;LT,Z = 1.00	Ikip = 6.698 m		UC(z) = 0.00
My;begin = -39.3 kNm	My;eind = -521.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.70 < 1

Stabiliteitstoetsing C6-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.7			
N;Ed = -77.0 kN	Nb;Rd;y = 3,386.9 kN	Nb;Rd;z = 165.6 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 20.000 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 20.000 m
Xy = 0.61		Knikcurve: A	
Xz = 0.03		Knikcurve: B	

NEN-EN1993-1-1(6.46): UC = 0.46 < 1

Buiging & Druk C6-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.7	Kipgevoelig Ja	Profielklasse = 3	
N;Ed = -77.0 kN	My;Ed = 521.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -374.4 kNm	My;Psi = -267.5 kNm	My;s = 120.3 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.405	Kyz = 1.279	Kzy = 0.845	Kzz = 1.279
Ksi;y = 0.61	Ksi;z = 0.03	Ksi;LT = 0.86	

NEN-EN1993-1-1(6.61&6.62): UC = 0.80 < 1

Profielgegevens staaf C7-V1 (0.000-20.000)

IPE600	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 600.0 mm	A = 15.60e-03 m2	Wy;el = 306.9e-05 m3	Wy;pl = 351.2e-05 m3
b = 220.0 mm	Iy = 920.8e-06 m4	Wz;el = 307.9e-06 m3	Wz;pl = 485.6e-06 m3
tf = 19.0 mm	Iz = 338.7e-07 m4	Aw;y;el = 8.85e-03 m2	Aw;y;pl = 8.85e-03 m2
tw = 12.0 mm	Massa/m = 122.4 kg/m	Aw;z;el = 8.38e-03 m2	Aw;z;pl = 8.38e-03 m2
r = 24.0 mm		It = 165.4e-08 m4	Iwa = 284.6e-08 m6

Doorsnedetoetsing C7-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.3 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -521.0 kNm	
	Vz;Ed = 156.3 kN	Mz;Ed = 0.0 kNm	

N;Rd = 5,537.4 kN | Vy;Rd = 1,814.8 kN | MyRd = 1,246.9 kNm
Vz;Rd = 1,717.2 kN | MzRd = 172.4 kNm
NEN-EN1993-1-1(6.12): UC = 0.42 < 1

Kiptoetsing C7-V1 (0.000-20.000)
Equi. profiel: IPE600
Maatgevende combinatie: Fu.C.3 | Instab. curve Kip:b
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: 2.5, 5, 7.5, 10, 12.5, 15, 17.5m
Kipsteun onderflens: 5, 10, 15m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.043	b-eff(Eind) = 0.033
Tabel gebruikt Fig. NB.32	M = -521.0kN/m	MBeta = -170.3	q = 12.8
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 2.500 m	Ist = 2.500 m
Lsys = 20.000 m	Lg = 20.000 m	S = 2.115 m	Iwa = 2.8455e-06 m6
C1 = 1.52	C2 = 0.01 (tabel)	C2(toegepast) = 0.00	C = 85.23
Mcr = 4,154.6 kNm	kred = 1.0	Lam-rel = 0.55	Profielklasse 1
Chi;LT(Fu.C.3) = 0.86	M;Ed = 521.0 kNm		UC(y) = 0.48
Chi;LT,Z = 1.00	Ikip = 2.846 m		UC(z) = 0.00
My;begin = -521.0 kNm	My;eind = -170.3 kNm		

NEN-EN1993-1-1(6.54): UC = 0.48 < 1

Stabiliteitstoetsing C7-V1 (0.000-20.000)
Maatgevende combinatie: Fu.C.7

N;Ed = -77.0 kN	Nb;Rd;y = 3,386.9 kN	Nb;Rd;z = 165.6 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 20.000 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 20.000 m
Xy = 0.61		Knikcurve: A	
Xz = 0.03		Knikcurve: B	

NEN-EN1993-1-1(6.46): UC = 0.46 < 1

Buiging & Druk C7-V1 (0.000-20.000)

Maatgevende combinatie: Fu.C.7	Kipgevoelig Ja	Profielklasse = 3	
N;Ed = -77.0 kN	My;Ed = 521.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -374.4 kNm	My;Psi = 0.0 kNm	My;s = 254.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.64	Cmz = 1.00	CmLT = 0.64	
Kyy = 0.652	Kyz = 1.279	Kzy = 0.941	Kzz = 1.279
Ksi;y = 0.61	Ksi;z = 0.03	Ksi;LT = 0.84	

NEN-EN1993-1-1(6.61&6.62): UC = 0.85 < 1

Profielgegevens staaf C8-V1 (0.000-16.500)

HE600B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 600.0 mm	A = 27.00e-03 m2	Wy;el = 570.1e-05 m3	Wy;pl = 642.5e-05 m3
b = 300.0 mm	Iy = 171.0e-05 m4	Wz;el = 902.0e-06 m3	Wz;pl = 139.1e-05 m3
tf = 30.0 mm	Iz = 135.3e-06 m4	Aw;y;el = 1.86e-02 m2	Aw;y;pl = 1.86e-02 m2
tw = 15.5 mm	Massa/m = 211.9 kg/m	Aw;z;el = 1.11e-02 m2	Aw;z;pl = 1.11e-02 m2
r = 27.0 mm		It = 667.2e-08 m4	Iwa = 109.7e-07 m6

Doorsnedetoetsing C8-V1 (0.000-16.500)
Maatgevende combinatie: Fu.C.3 op 5.500 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = 1,017.2 kNm
Vz;Ed = 177.9 kN | Mz;Ed = 0.0 kNm
N;Rd = 9,583.5 kN | Vy;Rd = 3,817.5 kN | MyRd = 2,280.9 kNm
Vz;Rd = 2,271.1 kN | MzRd = 493.8 kNm
NEN-EN1993-1-1(6.12): UC = 0.45 < 1

Kiptoetsing C8-V1 (0.000-16.500)
Equi. profiel: HE600B
Maatgevende combinatie: Fu.C.3 | Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: 5.5, 11m
Kipsteun onderflens: 5.5, 11m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.043	b-eff(Eind) = 0.067
Tabel gebruikt Fig. NB.32	M = 1,017.2kN/m	MBeta = 0.0	q = 2.5
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 5.500 m	lst = 5.500 m
Lsys = 16.500 m	Lg = 16.500 m	S = 2.067 m	Iwa = 1.0965e-05 m6
C1 = 1.78	C2 = 0.01 (tabel)	C2(toegepast) = 0.00	C = 15.67
Mcr = 3,715.8 kNm	kred = 1.0	Lam-rel = 0.78	Profielklasse 1
Chi;LT(Fu.C.3) = 0.81	M;Ed = 1,017.2 kNm		UC(y) = 0.55
Chi;LT,Z = 1.00	lkip = 7.700 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 1,017.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.55 < 1

Stabiliteitstoetsing C8-V1 (0.000-16.500)

Maatgevende combinatie: Fu.C.15

N;Ed = -75.3 kN	Nb;Rd;y = 7,293.0 kN	Nb;Rd;z = 923.6 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 16.500 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 16.500 m
Xy = 0.76		Knikcurve: A	
Xz = 0.10		Knikcurve: B	

NEN-EN1993-1-1(6.46): UC = 0.08 < 1

Buiging & Druk C8-V1 (0.000-16.500)

Maatgevende combinatie: Fu.C.15	Kipgevoelig Ja	Profielklasse = 3	
N;Ed = -75.3 kN	My;Ed = 1,017.2 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -764.9 kNm	My;Psi = 0.0 kNm	My;s = 543.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.67	Cmz = 1.00	CmLT = 0.67	
Kyy = 0.672	Kyz = 1.049	Kzy = 0.990	Kzz = 1.049
Ksi;y = 0.76	Ksi;z = 0.10	Ksi;LT = 0.83	

NEN-EN1993-1-1(6.61&6.62): UC = 0.53 < 1

Profielgegevens staaf C9-V1 (0.000-16.500)

HE600B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 600.0 mm	A = 27.00e-03 m2	Wy;el = 570.1e-05 m3	Wy;pl = 642.5e-05 m3
b = 300.0 mm	Iy = 171.0e-05 m4	Wz;el = 902.0e-06 m3	Wz;pl = 139.1e-05 m3
tf = 30.0 mm	Iz = 135.3e-06 m4	Aw;y;el = 1.86e-02 m2	Aw;y;pl = 1.86e-02 m2
tw = 15.5 mm	Massa/m = 211.9 kg/m	Aw;z;el = 1.11e-02 m2	Aw;z;pl = 1.11e-02 m2
r = 27.0 mm		It = 667.2e-08 m4	Iwa = 109.7e-07 m6

Doorsnedetoetsing C9-V1 (0.000-16.500)

Maatgevende combinatie: Fu.C.3 op 0.000 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = 221.7 kN	My;Ed = -997.3 kNm
N;Rd = 9,583.5 kN	Vy;Rd = 3,817.5 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 2,271.1 kN	MyRd = 2,280.9 kNm
		MzRd = 493.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.44 < 1

Kiptoetsing C9-V1 (0.000-16.500)

Equi. profiel: HE600B
Maatgevende combinatie: Fu.C.3
Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: 5.5, 11m
Kipsteun onderflens: 5.5, 11m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.047	b-eff(Eind) = 0.047
Tabel gebruikt Fig. NB.32	M = -997.3kN/m	MBeta = 183.4	q = 2.5
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 5.500 m	lst = 5.500 m
Lsys = 16.500 m	Lg = 16.500 m	S = 2.067 m	Iwa = 1.0965e-05 m6
C1 = 2.00	C2 = 0.01 (tabel)	C2(toegepast) = 0.00	C = 20.69

Mcr = 4,905.7 kNm	kred = 1.0	Lam-rel = 0.68	Profielklasse 1
Chi;LT(Fu.C.3) = 0.86	M;Ed = 997.3 kNm		UC(y) = 0.51
Chi;LT,Z = 1.00	lkip = 6.891 m		UC(z) = 0.00
My;begin = -997.3 kNm	My;eind = 183.4 kNm		

NEN-EN1993-1-1(6.54): UC = 0.51 < 1

Stabiliteitstoetsing C9-V1 (0.000-16.500)

Maatgevende combinatie: Fu.C.15

N;Ed = -75.3 kN	Nb;Rd;y = 7,293.0 kN	Nb;Rd;z = 923.6 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 16.500 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 16.500 m
Xy = 0.76		Knikcurve: A	
Xz = 0.10		Knikcurve: B	

NEN-EN1993-1-1(6.46): UC = 0.08 < 1

Buiging & Druk C9-V1 (0.000-16.500)

Maatgevende combinatie: Fu.C.15	Kipgevoelig Ja	Profielklasse = 3	
N;Ed = -75.3 kN	My;Ed = 997.3 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -809.4 kNm	My;Psi = -764.9 kNm	My;s = 213.5 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.402	Kyz = 1.049	Kzy = 0.973	Kzz = 1.049
Ksi;y = 0.76	Ksi;z = 0.10	Ksi;LT = 0.82	

NEN-EN1993-1-1(6.61&6.62): UC = 0.55 < 1

Profielgegevens staaf C10-V1 (0.000-16.500)

HE600B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 600.0 mm	A = 27.00e-03 m2	Wy;el = 570.1e-05 m3	Wy;pl = 642.5e-05 m3
b = 300.0 mm	Iy = 171.0e-05 m4	Wz;el = 902.0e-06 m3	Wz;pl = 139.1e-05 m3
tf = 30.0 mm	Iz = 135.3e-06 m4	Aw;y;el = 1.86e-02 m2	Aw;y;pl = 1.86e-02 m2
tw = 15.5 mm	Massa/m = 211.9 kg/m	Aw;z;el = 1.11e-02 m2	Aw;z;pl = 1.11e-02 m2
r = 27.0 mm		It = 667.2e-08 m4	Iwa = 109.7e-07 m6

Doorsnedetoetsing C10-V1 (0.000-16.500)

Maatgevende combinatie: Fu.C.3 op 11.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 1,017.2 kNm	
	Vz;Ed = -177.9 kN	Mz;Ed = 0.0 kNm	
N;Rd = 9,583.5 kN	Vy;Rd = 3,817.5 kN	MyRd = 2,280.9 kNm	
	Vz;Rd = 2,271.1 kN	MzRd = 493.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.45 < 1

Kiptoetsing C10-V1 (0.000-16.500)

Equi. profiel: HE600B

Maatgevende combinatie: Fu.C.3

Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: 5.5, 11m

Kipsteun onderflens: 5.5, 11m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.067	b-eff(Eind) = 0.043
Tabel gebruikt Fig. NB.32	M = 1,017.2kN/m	MBeta = 0.0	q = 2.5
Bovenflens maatgevend	Xb;lst = 11.000 m	Xe;lst = 16.500 m	lst = 5.500 m
Lsys = 16.500 m	Lg = 16.500 m	S = 2.067 m	Iwa = 1.0965e-05 m6
C1 = 1.78	C2 = 0.01 (tabel)	C2(toegepast) = 0.00	C = 15.67
Mcr = 3,715.8 kNm	kred = 1.0	Lam-rel = 0.78	Profielklasse 1
Chi;LT(Fu.C.3) = 0.81	M;Ed = 1,017.2 kNm		UC(y) = 0.55
Chi;LT,Z = 1.00	lkip = 7.700 m		UC(z) = 0.00
My;begin = 1,017.2 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.55 < 1

Stabiliteitstoetsing C10-V1 (0.000-16.500)

Maatgevende combinatie: Fu.C.15

N;Ed = -75.3 kN	Nb;Rd;y = 7,293.0 kN	Nb;Rd;z = 923.6 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 16.500 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 16.500 m
Xy = 0.76		Knikcurve: A	
Xz = 0.10		Knikcurve: B	

NEN-EN1993-1-1(6.46): UC = 0.08 < 1

Buiging & Druk C10-V1 (0.000-16.500)

Maatgevende combinatie: Fu.C.15	Kipgevoelig Ja	Profielklasse = 3	
N;Ed = -75.3 kN	My;Ed = 1,017.2 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -809.4 kNm	My;Psi = 0.0 kNm	My;s = 595.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.69	Cmz = 1.00	CmLT = 0.69	
Kyy = 0.693	Kyz = 1.049	Kzy = 0.991	Kzz = 1.049
Ksi;y = 0.76	Ksi;z = 0.10	Ksi;LT = 0.83	

NEN-EN1993-1-1(6.61&6.62): UC = 0.56 < 1

Profielgegevens staaf C11-V1 (0.000-5.500)

HE200A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 190.0 mm	A = 5.38e-03 m2	Wy;el = 388.6e-06 m3	Wy;pl = 429.5e-06 m3
b = 200.0 mm	Iy = 369.2e-07 m4	Wz;el = 133.6e-06 m3	Wz;pl = 203.8e-06 m3
tf = 10.0 mm	Iz = 133.6e-07 m4	Aw;y;el = 4.28e-03 m2	Aw;y;pl = 4.28e-03 m2
tw = 6.5 mm	Massa/m = 42.3 kg/m	Aw;z;el = 1.81e-03 m2	Aw;z;pl = 1.81e-03 m2
r = 18.0 mm		It = 209.8e-09 m4	Iwa = 108.0e-09 m6

Doorsnedetoetsing C11-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.3 op 2.750 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 73.8 kNm	
	Vz;Ed = 25.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 1,265.0 kN	Vy;Rd = 580.4 kN	MyRd = 100.9 kNm	
	Vz;Rd = 245.3 kN	MzRd = 47.9 kNm	

NEN-EN1993-1-1(6.12): UC = 0.73 < 1

Kiptoetsing C11-V1 (0.000-5.500)

Equi. profiel: HE200A			
Maatgevende combinatie: Fu.C.3		Instab. curve Kip:a	
Aangrijphoogte van de last: 0.000 m vanaf hart profiel			
Kipsteun bovenflens: 2.75m			
Kipsteun onderflens: 2.75m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.020	b-eff(Eind) = 0.020
Tabel gebruikt Fig. NB.32	M = 73.8kN/m	MBeta = 0.0	q = 1.4
Bovenflens maatgevend	Xb;lst = 2.750 m	Xe;lst = 5.500 m	lst = 2.750 m
Lsys = 5.500 m	Lg = 5.500 m	S = 1.157 m	Iwa = 1.0800e-07 m6
C1 = 1.76	C2 = 0.01 (tabel)	C2(toegepast) = 0.00	C = 10.86
Mcr = 430.4 kNm	kred = 1.0	Lam-rel = 0.48	Profielklasse 1
Chi;LT(Fu.C.3) = 0.93	M;Ed = 73.8 kNm		UC(y) = 0.79
Chi;LT,Z = 1.00	lkip = 3.850 m		UC(z) = 0.00
My;begin = 73.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.79 < 1

Stabiliteitstoetsing C11-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.15			
N;Ed = -90.0 kN	Nb;Rd;y = 986.3 kN	Nb;Rd;z = 563.6 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 5.500 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 5.500 m
Xy = 0.78		Knikcurve: B	
Xz = 0.45		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.16 < 1

Buiging & Druk C11-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.15	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -90.0 kN	My;Ed = 73.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 51.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.95	Cmz = 1.00	CmLT = 0.95	
Kyy = 0.994	Kyz = 0.734	Kzy = 0.977	Kzz = 1.224
Ksi;y = 0.78	Ksi;z = 0.45	Ksi;LT = 0.93	

NEN-EN1993-1-1(6.61&6.62): UC = 0.69 < 1

Valkenburg aan de Geul	Ingenieursbureau A. Palte BV	043 - 601 36 37

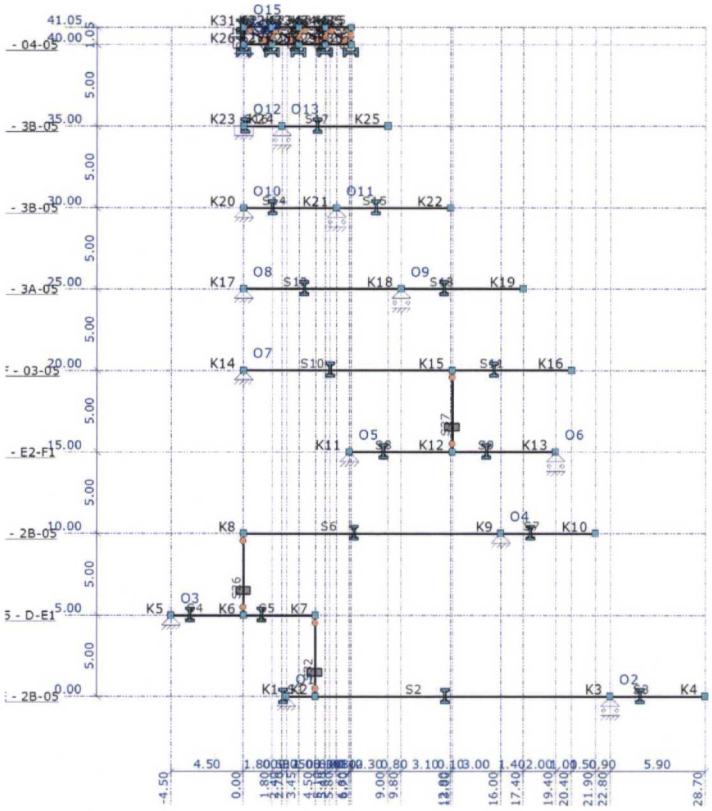
Computerberekening

Projectnaam	'De Schatberg' te Sevenum	Projectnummer	460518
Omschrijving	Stalen liggers luifel laag	Constructeur	DaKr
Opdrachtgever	Janssen Wuts Architecten BV	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Stalen liggers luifel laag.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	35	37	15	12	9	40

AFB. GEOMETRIE RAAMWERK



STAVEN

Staaf	Knoop B		Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S1	K1	NVM	NVM	K2	P1	2.700	0.000	4.500	0.000	1.800
S2	K2	NVM	NVM	K3	P1	4.500	0.000	22.800	0.000	18.300
S3	K3	NVM	NVM	K4	P1	22.800	0.000	28.700	0.000	5.900
S4	K5	NVM	NVM	K6	P2	-4.500	-5.000	0.000	-5.000	4.500
S5	K6	NVM	NVM	K7	P2	0.000	-5.000	4.500	-5.000	4.500
S6	K8	NVM	NVM	K9	P4	0.000	-10.000	16.000	-10.000	16.000
S7	K9	NVM	NVM	K10	P4	16.000	-10.000	21.900	-10.000	5.900
S8	K11	NVM	NVM	K12	P5	6.600	-15.000	13.000	-15.000	6.400
S9	K12	NVM	NVM	K13	P5	13.000	-15.000	19.400	-15.000	6.400
S10	K14	NVM	NVM	K15	P6	0.000	-20.000	13.000	-20.000	13.000
S11	K15	NVM	NVM	K16	P6	13.000	-20.000	20.400	-20.000	7.400
S12	K17	NVM	NVM	K18	P7	0.000	-25.000	9.800	-25.000	9.800
S13	K18	NVM	NVM	K19	P7	9.800	-25.000	17.400	-25.000	7.600
S14	K20	NVM	NVM	K21	P8	0.000	-30.000	5.800	-30.000	5.800
S15	K21	NVM	NVM	K22	P8	5.800	-30.000	12.900	-30.000	7.100
S16	K23	NVM	NVM	K24	P9	0.000	-35.000	2.400	-35.000	2.400
S17	K24	NVM	NVM	K25	P9	2.400	-35.000	9.000	-35.000	6.600
S18	K26	NVM	NVM	K27	P10	0.000	-40.000	1.800	-40.000	1.800
S19	K27	NVM	NVM	K28	P10	1.800	-40.000	3.450	-40.000	1.650
S20	K28	NVM	NVM	K29	P10	3.450	-40.000	5.100	-40.000	1.650
S21	K29	NVM	NVM	K30	P10	5.100	-40.000	6.700	-40.000	1.600

Staaf	Knoop B	B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S22	K31	NVM	NVM	K32	P10	0.000	-41.050	1.800	-41.050	1.800
S23	K32	NVM	NVM	K33	P10	1.800	-41.050	3.450	-41.050	1.650
S24	K33	NVM	NVM	K34	P10	3.450	-41.050	5.100	-41.050	1.650
S25	K34	NVM	NVM	K35	P10	5.100	-41.050	6.700	-41.050	1.600
S26	K6	NV-	NV-	K8	P13	0.000	-5.000	0.000	-10.000	5.000
S27	K26	NVM	NVM	K31	P12	0.000	-40.000	0.000	-41.050	1.050
S28	K31	NV-	NV-	K27	P11	0.000	-41.050	1.800	-40.000	2.084
S29	K27	NV-	NV-	K32	P11	1.800	-40.000	1.800	-41.050	1.050
S30	K28	NV-	NV-	K33	P11	3.450	-40.000	3.450	-41.050	1.050
S31	K32	NV-	NV-	K28	P11	1.800	-41.050	3.450	-40.000	1.956
S32	K2	NV-	NV-	K7	P13	4.500	0.000	4.500	-5.000	5.000
S33	K29	NV-	NV-	K34	P11	5.100	-40.000	5.100	-41.050	1.050
S34	K33	NV-	NV-	K29	P11	3.450	-41.050	5.100	-40.000	1.956
S35	K34	NV-	NV-	K30	P11	5.100	-41.050	6.700	-40.000	1.914
S36	K30	NV-	NV-	K35	P11	6.700	-40.000	6.700	-41.050	1.050
S37	K12	NV-	NV-	K15	P13	13.000	-15.000	13.000	-20.000	5.000
-	-	-	-	-	-	m	m	m	m	m

PROFIELEN

Profiel	Profielnaam	Oppervlakte	Iy	Materiaal	Hoek
P1	IPE550	1.3442e-02	6.7117e-04	S355	0.0
P2	HE260B	1.1844e-02	1.4919e-04	S355	0.0
P4	IPE550	1.3442e-02	6.7117e-04	S355	0.0
P5	HE320B	1.6134e-02	3.0824e-04	S355	0.0
P6	IPE550	1.3442e-02	6.7117e-04	S355	0.0
P7	IPE450	9.8821e-03	3.3743e-04	S235	0.0
P8	IPE450	9.8821e-03	3.3743e-04	S235	0.0
P9	IPE450	9.8821e-03	3.3743e-04	S235	0.0
P10	HE140A	3.1416e-03	1.0331e-05	S235	0.0
P11	HE120A	2.5336e-03	6.0615e-06	S235	0.0
P12	HE240A	7.6836e-03	7.7632e-05	S235	0.0
P13	R500x500	2.5000e-01	5.2083e-03	C50/60	0.0
-	-	m2	m4	-	°

PROFIELVORMEN

Profiel	Verl. h.	hB	hE	tf	tw	tf2	B	bL	bR	Raatl.	Hoogte
P13	Nee	0.500	0.500	0.000	0.000	0.000	0.500	0.000	0.000	Nee	0.000
-	-	m	m	m	m	m	m	m	m	-	m

MATERIALEN

Materiaal	Dichtheid	E-Modulus	Uitzettingcoeff
S235	78.50	2.1000e+08	12.0000e-06
C50/60	25.00	3.7000e+07	10.0000e-06
S355	78.50	2.1000e+08	12.0000e-06
-	kN/m3	kN/m2	C°m

OPLEGGINGEN

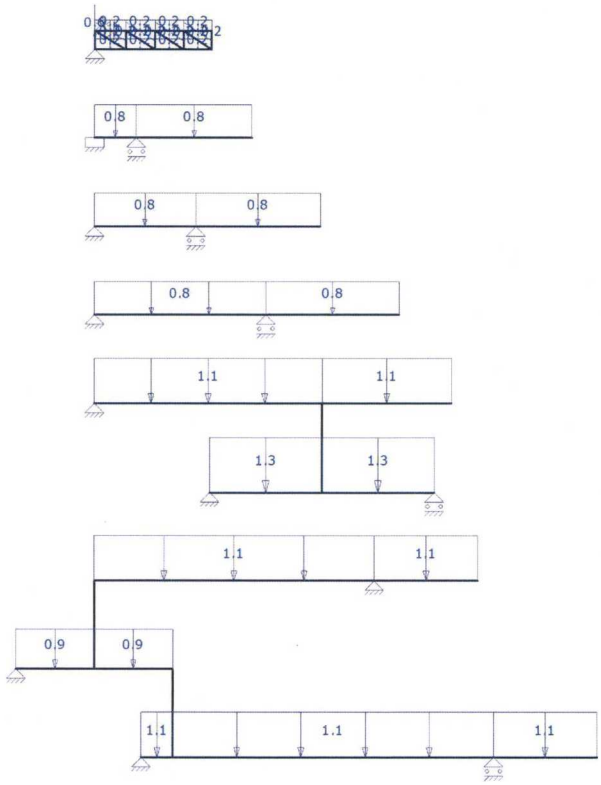
Oplegging	Knoop	X	Z	Yr	HoekYr
O1	K1	vast	vast	vrij	0
O2	K3	vrij	vast	vrij	0
O3	K5	vast	vast	vrij	0
O4	K9	vast	vast	vrij	0
O5	K11	vast	vast	vrij	0
O6	K13	vrij	vast	vrij	0
O7	K14	vast	vast	vrij	0
O8	K17	vast	vast	vrij	0
O9	K18	vrij	vast	vrij	0
O10	K20	vast	vast	vrij	0
O11	K21	vrij	vast	vrij	0
O12	K23	vast	vast	vast	0
O13	K24	vrij	vast	vrij	0
O14	K26	vast	vast	vrij	0
O15	K31	vast	0.00:0.00	vrij	0
-	-	kN/m	kN/m	kNm/rad	°

B.G.1: EIGEN GEWICHT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	1.06 (1.00x)	1.06 (1.00x)	0.000	1.800(L)	Z"	S1

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	1.06 (1.00x)	1.06 (1.00x)	0.000	18.300(L)	Z"	S2
qG	1.06 (1.00x)	1.06 (1.00x)	0.000	5.900(L)	Z"	S3,S7
qG	0.93 (1.00x)	0.93 (1.00x)	0.000	4.500(L)	Z"	S4-S5
qG	1.06 (1.00x)	1.06 (1.00x)	0.000	16.000(L)	Z"	S6
qG	1.27 (1.00x)	1.27 (1.00x)	0.000	6.400(L)	Z"	S8-S9
qG	1.06 (1.00x)	1.06 (1.00x)	0.000	13.000(L)	Z"	S10
qG	1.06 (1.00x)	1.06 (1.00x)	0.000	7.400(L)	Z"	S11
qG	0.78 (1.00x)	0.78 (1.00x)	0.000	9.800(L)	Z"	S12
qG	0.78 (1.00x)	0.78 (1.00x)	0.000	7.600(L)	Z"	S13
qG	0.78 (1.00x)	0.78 (1.00x)	0.000	5.800(L)	Z"	S14
qG	0.78 (1.00x)	0.78 (1.00x)	0.000	7.100(L)	Z"	S15
qG	0.78 (1.00x)	0.78 (1.00x)	0.000	2.400(L)	Z"	S16
qG	0.78 (1.00x)	0.78 (1.00x)	0.000	6.600(L)	Z"	S17
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	1.800(L)	Z"	S18,S22
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	1.650(L)	Z"	S19-S20,S23-S24
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	1.600(L)	Z"	S21,S25
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	1.050(L)	Z"	S27
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	2.084(L)	Z"	S28
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	1.050(L)	Z"	S29-S30,S33,S36
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	1.956(L)	Z"	S31,S34
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	1.914(L)	Z"	S35
Som lasten	**X: 0.00**	**kN Z: 133.48**	**kN**			
-	-	-	m	m	-	-

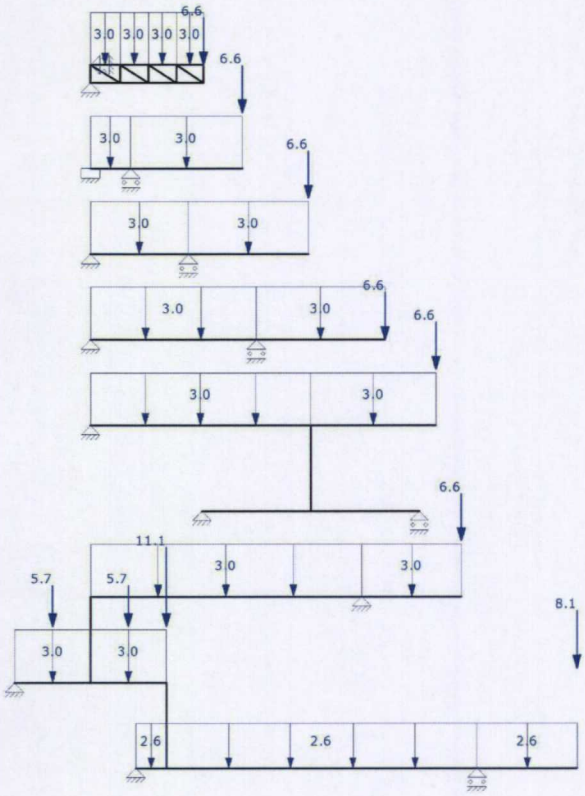
B.G.1: EIGEN GEWICHT



B.G.2: PERMANENT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent						
q	2.61	2.61	0.000	1.800(L)	Z'	S1-S3
N	8.08				Z	K4
q	3.03	3.03	0.000	4.500(L)	Z'	S4-S7,S23-S25
F	5.70		2.250		Z'	S4-S5
N	11.10				Z	K7
N	6.60				Z	K10,K16,K19,K22,K25,K35
q	3.03	3.03	0.000	13.000(L)	Z'	S10-S17,S22
Som lasten	**X: 0.00**	**kN Z: 432.86**	**kN**			
-	-	-	m	m	-	-

B.G.2: PERMANENT

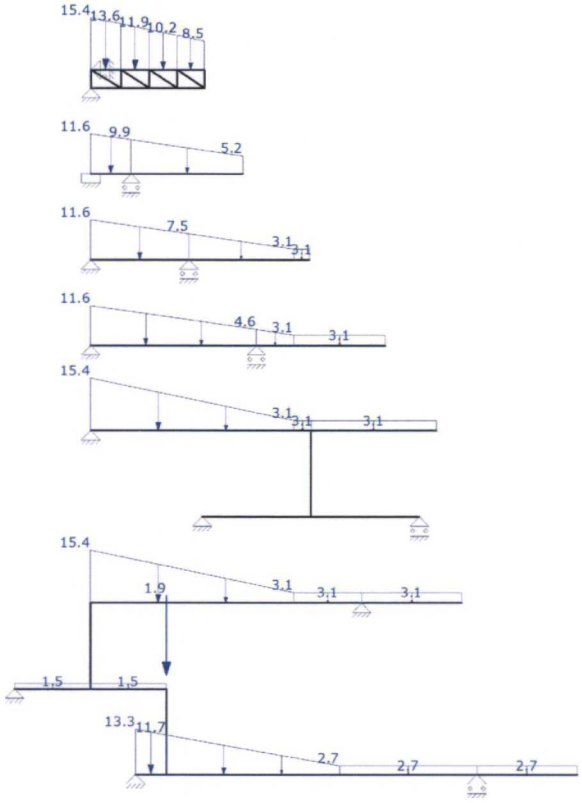


B.G.3: SNEEUW

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Sneeuw						
q	13.30	11.70	0.000	1.800(L)	Z'	S1
q	11.70	2.66	0.000	10.200	Z'	S2
q	2.66	2.66	10.200	18.300(L)	Z'	S2
q	2.66	2.66	0.000	5.900(L)	Z'	S3
q	1.54	1.54	0.000	4.500(L)	Z'	S4-S5
N	1.85				Z	K7
q	15.40	3.08	0.000	12.000	Z'	S6,S10
q	3.08	3.08	12.000	16.000(L)	Z'	S6,S10
q	3.08	3.08	0.000	5.900(L)	Z'	S7,S11
q	11.60	4.64	0.000	9.800(L)	Z'	S12
q	4.64	3.08	0.000	2.200	Z'	S13
q	3.08	3.08	2.200	7.600(L)	Z'	S13

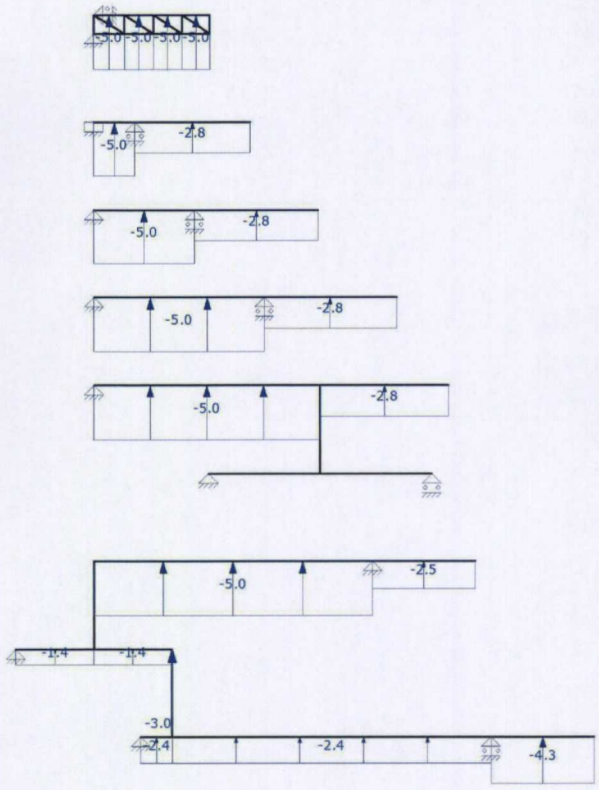
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Sneeuw						
q	11.60	7.48	0.000	5.800(L)	Z'	S14
q	7.48	3.08	0.000	6.200	Z'	S15
q	3.08	3.08	6.200	7.100(L)	Z'	S15
q	11.60	9.90	0.000	2.400(L)	Z'	S16
q	9.90	5.21	0.000	6.600(L)	Z'	S17
q	15.40	13.60	0.000	1.800(L)	Z'	S22
q	13.60	11.90	0.000	1.650(L)	Z'	S23
q	11.90	10.20	0.000	1.650(L)	Z'	S24
q	10.20	8.52	0.000	1.600(L)	Z'	S25
Som lasten	**X: 0.00**	**kN Z: 778.36**	**kN**			
-	-	-	m	m	- -	

B.G.3: SNEEUW



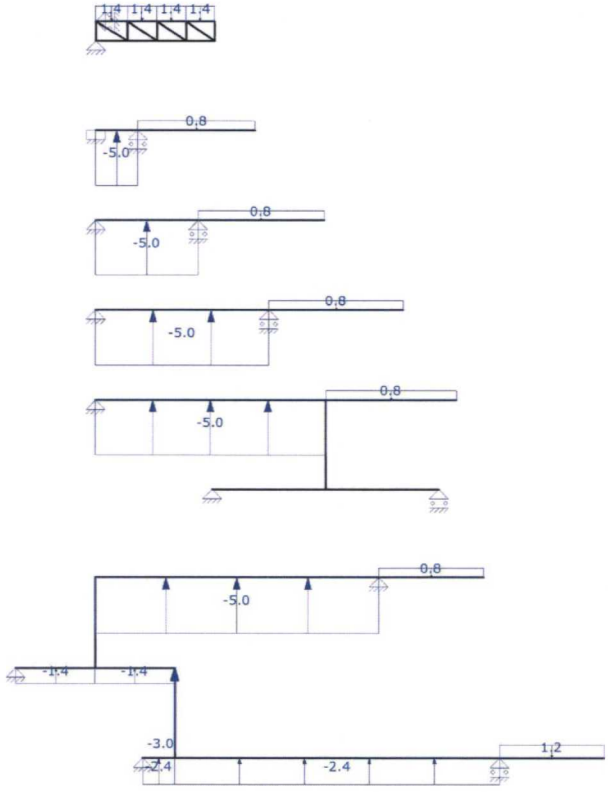
B.G.4: WIND 1

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.4: Wind 1						
q	-2.42	-2.42	0.000	1.800(L)	Z'	S1-S2
q	-4.28	-4.28	0.000	5.900(L)	Z'	S3
q	-1.40	-1.40	0.000	4.500(L)	Z'	S4-S5
N	-2.97				Z	K7
q	-4.95	-4.95	0.000	16.000(L)	Z'	S6,S22-S25
q	-2.48	-2.48	0.000	5.900(L)	Z'	S7
q	-4.95	-4.95	0.000	13.000(L)	Z'	S10,S12,S14,S16
q	-2.81	-2.81	0.000	7.400(L)	Z'	S11,S13,S15,S17
Som lasten	**X: 0.00**	**kN Z: -450.56**	**kN**			
-	-	-	m	m	- -	



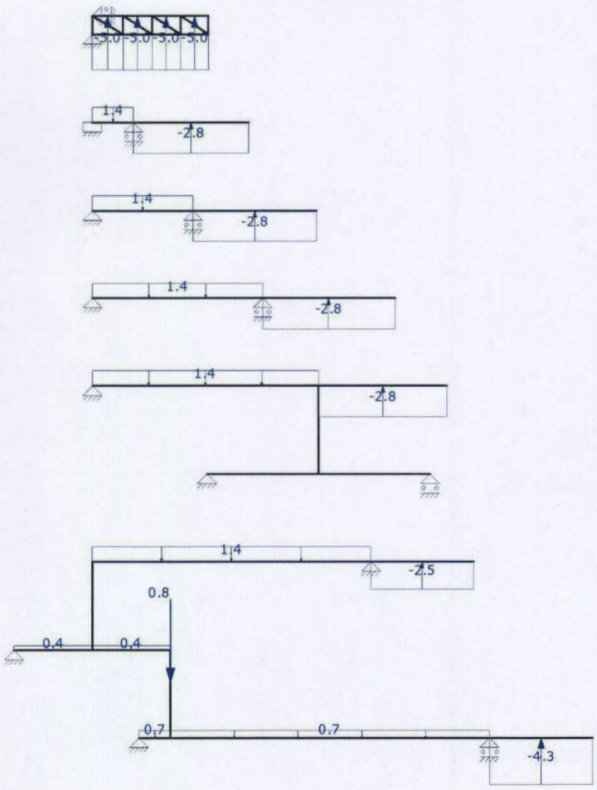
B.G.5: WIND 2

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Wind 2						
q	-2.42	-2.42	0.000	1.800(L)	Z'	S1-S2
q	1.19	1.19	0.000	5.900(L)	Z'	S3
q	-1.40	-1.40	0.000	4.500(L)	Z'	S4-S5
N	-2.97				Z	K7
q	-4.95	-4.95	0.000	16.000(L)	Z'	S6,S10,S12,S14,S16
q	0.83	0.83	0.000	5.900(L)	Z'	S7,S11,S13,S15,S17
q	1.38	1.38	0.000	1.800(L)	Z'	S22-S25
Som lasten	**X: 0.00**	**kN Z: -251.88**	**kN**			
-	-	-	m	m	-	-



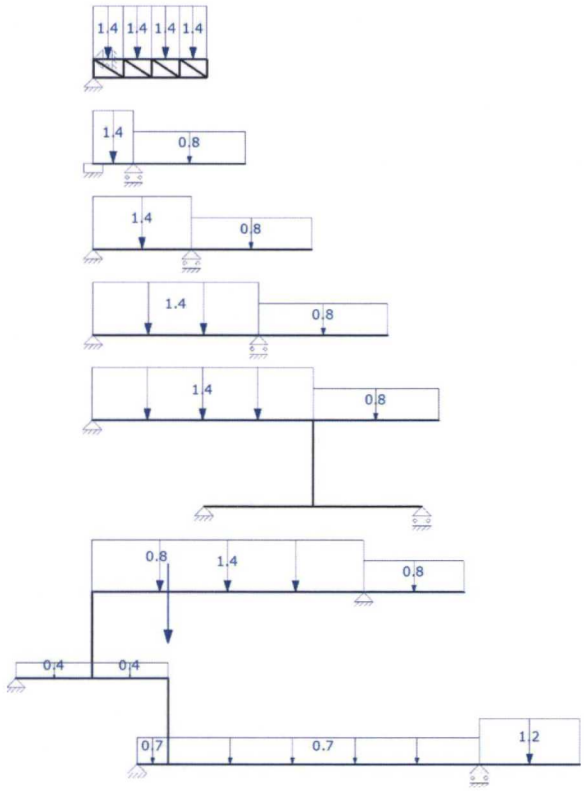
B.G.6: WIND 3

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.6: Wind 3						
q	0.71	0.71	0.000	1.800(L)	Z'	S1-S2
q	-4.28	-4.28	0.000	5.900(L)	Z'	S3
q	0.41	0.41	0.000	4.500(L)	Z'	S4-S5
N	0.83				Z	K7
q	1.38	1.38	0.000	16.000(L)	Z'	S6,S10,S12,S14,S16
q	-2.48	-2.48	0.000	5.900(L)	Z'	S7
q	-2.81	-2.81	0.000	7.400(L)	Z'	S11,S13,S15,S17
q	-4.95	-4.95	0.000	1.800(L)	Z'	S22-S25
Som lasten	**X: 0.00**	**kN Z: -70.04**	**kN**			
-	-	-	m	m	-	-



B.G.7: WIND 4

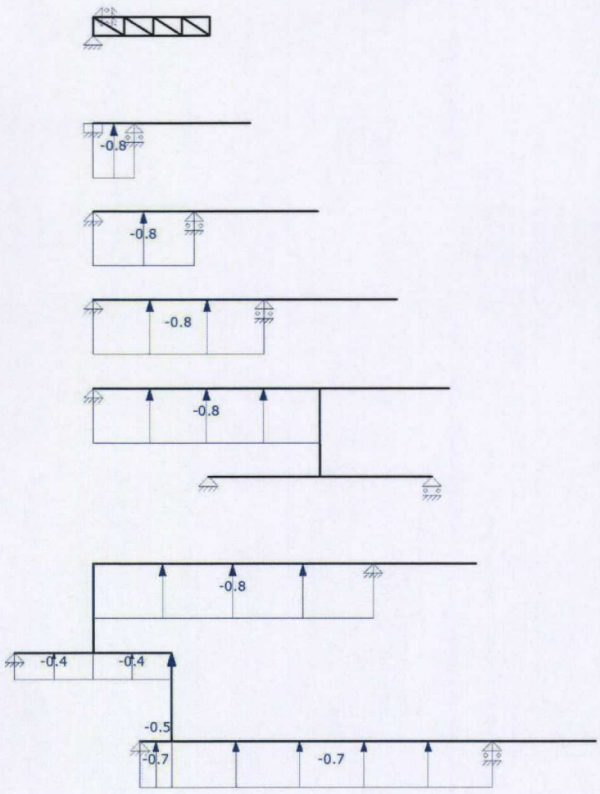
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.7: Wind 4						
q	0.71	0.71	0.000	1.800(L)	Z'	S1-S2
q	1.19	1.19	0.000	5.900(L)	Z'	S3
q	0.41	0.41	0.000	4.500(L)	Z'	S4-S5
N	0.83				Z	K7
q	1.38	1.38	0.000	16.000(L)	Z'	S6,S10,S12,S14,S16,S22-S25
q	0.83	0.83	0.000	5.900(L)	Z'	S7,S11,S13,S15,S17
Som lasten	**X: 0.00**	**kN Z: 128.64**	**kN**			
-	-	-	m	m	-	-



B.G.8: WIND OVERDRUK

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.8: Wind Overdruk						
q	-0.71	-0.71	0.000	1.800(L)	Z'	S1-S2
q	-0.41	-0.41	0.000	4.500(L)	Z'	S4-S5
N	-0.51				Z	K7
q	-0.83	-0.83	0.000	16.000(L)	Z'	S6,S10,S12,S14,S16
Som lasten	**X: 0.00**	**kN Z: -57.48**	**kN**			
-	-	-	m	m	-	-

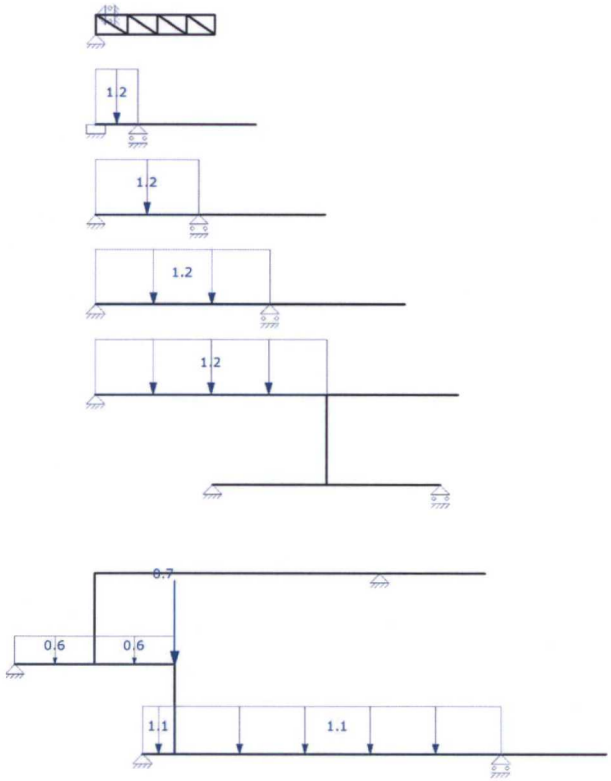
B.G.8: WIND OVERDRUK



B.G.9: WIND ONDERDRUK

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.9: Wind Onderdruk						
q	1.05	1.05	0.000	1.800(L)	Z'	S1-S2
q	0.61	0.61	0.000	4.500(L)	Z'	S4-S5
N	0.73				Z	K7
q	1.21	1.21	0.000	13.000(L)	Z'	S10,S12,S14,S16
Som lasten	**X: 0.00**	**kN Z: 64.84**	**kN**			
-	-	-	m	m	-	-

B.G.9: WIND ONDERDRUK



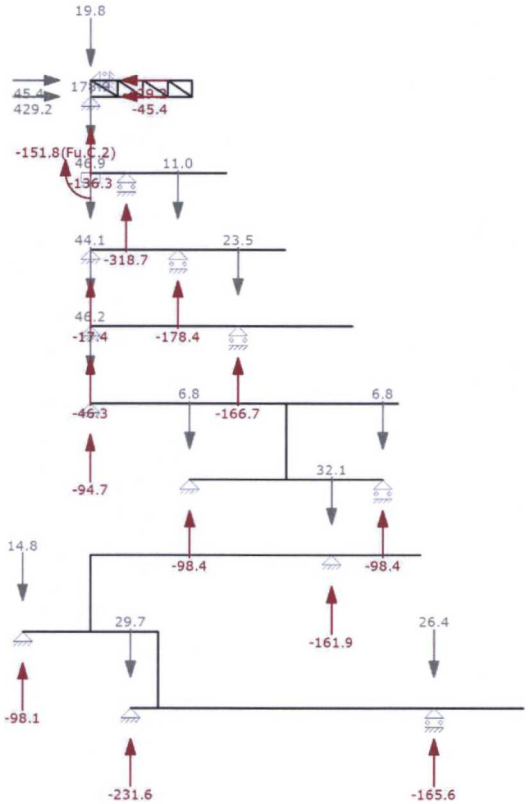
FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Fu.C.1	Fu.C.2	Fu.C.3	Fu.C.4	Fu.C.5	Fu.C.6	Fu.C.7	Fu.C.8
B.G.1	Eigen Gewicht	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.2	Permanent	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.3	Sneeuw	-	1.20	-	-	-	-	-	-
B.G.4	Wind 1	-	-	1.50	1.50	-	-	-	-
B.G.5	Wind 2	-	-	-	-	1.50	1.50	-	-
B.G.6	Wind 3	-	-	-	-	-	-	1.50	1.50
B.G.7	Wind 4	-	-	-	-	-	-	-	-
B.G.8	Wind Overdruk	-	-	1.50	-	1.50	-	1.50	-
B.G.9	Wind Onderdruk	-	-	-	1.50	-	1.50	-	1.50
B.G.	**Omschrijving**	**Fu.C.9**	**Fu.C.10**	**Fu.C.11**	**Fu.C.12**	**Fu.C.13**	**Fu.C.14**	**Fu.C.15**	**Fu.C.16**
B.G.1	Eigen Gewicht	1.20	1.20	0.90	0.90	0.90	0.90	0.90	0.90
B.G.2	Permanent	1.20	1.20	0.90	0.90	0.90	0.90	0.90	0.90
B.G.3	Sneeuw	-	-	1.20	-	-	-	-	-
B.G.4	Wind 1	-	-	-	1.50	1.50	-	-	-
B.G.5	Wind 2	-	-	-	-	-	1.50	1.50	-
B.G.6	Wind 3	-	-	-	-	-	-	-	1.50
B.G.7	Wind 4	1.50	1.50	-	-	-	-	-	-
B.G.8	Wind Overdruk	1.50	-	-	1.50	-	1.50	-	1.50
B.G.9	Wind Onderdruk	-	1.50	-	-	1.50	-	1.50	-
B.G.	**Omschrijving**	**Fu.C.17**	**Fu.C.18**	**Fu.C.19**					
B.G.1	Eigen Gewicht	0.90	0.90	0.90					
B.G.2	Permanent	0.90	0.90	0.90					
B.G.3	Sneeuw	-	-	-					
B.G.4	Wind 1	-	-	-					
B.G.5	Wind 2	-	-	-					
B.G.6	Wind 3	1.50	-	-					
B.G.7	Wind 4	-	1.50	1.50					
B.G.8	Wind Overdruk	-	1.50	-					

B.G.9	Wind Onderdruk	1.50	-	1.50	

FU.C. EXTREME OPLEGREACTIES

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O1	K1					Fu.C.14	0.00	**29.70**	0.00				
O1	K1					Fu.C.2	0.00	**-231.63**	0.00				
O2	K3					Fu.C.12	0.00	**26.40**	0.00				
O2	K3					Fu.C.2	0.00	**-165.59**	0.00				
O3	K5					Fu.C.14	0.00	**14.80**	0.00				
O3	K5					Fu.C.2	0.00	**-98.06**	0.00				
O4	K9					Fu.C.12	0.00	**32.12**	0.00				
O4	K9					Fu.C.2	0.00	**-161.88**	0.00				
O5	K11					Fu.C.12	0.00	**6.83**	0.00				
O5	K11					Fu.C.2	0.00	**-98.40**	0.00				
O6	K13					Fu.C.12	0.00	**6.83**	0.00				
O6	K13					Fu.C.2	0.00	**-98.40**	0.00				
O7	K14					Fu.C.14	0.00	**46.20**	0.00				
O7	K14					Fu.C.2	0.00	**-94.68**	0.00				
O8	K17					Fu.C.14	0.00	**44.07**	0.00				
O8	K17					Fu.C.2	0.00	**-46.30**	0.00				
O9	K18					Fu.C.12	0.00	**23.48**	0.00				
O9	K18					Fu.C.2	0.00	**-166.73**	0.00				
O10	K20					Fu.C.5	0.00	**46.85**	0.00				
O10	K20					Fu.C.17	0.00	**-17.36**	0.00				
O11	K21					Fu.C.12	0.00	**11.04**	0.00				
O11	K21					Fu.C.2	0.00	**-178.44**	0.00				
O12	K23					Fu.C.2	0.00	**178.85**	-151.76				
O12	K23									Fu.C.2	0.00	178.85	**-151.76**
O13	K24					Fu.C.2	0.00	**-318.67**	0.00				
O14	K26	Fu.C.2	**429.21**	-136.31	0.00	Fu.C.12	-45.44	**19.82**	0.00				
O14	K26	Fu.C.12	**-45.44**	19.82	0.00	Fu.C.2	429.21	**-136.31**	0.00				
O15	K31	Fu.C.12	**45.44**	0.00	0.00								
O15	K31	Fu.C.2	**-429.21**	0.00	0.00								
Globale extreme waarden													
O14	K26	Fu.C.2	**429.21**	-136.31	0.00								
O15	K31	Fu.C.2	**-429.21**	0.00	0.00								
O12	K23					Fu.C.2	0.00	**178.85**	-151.76				
O13	K24					Fu.C.2	0.00	**-318.67**	0.00				
O15	K31									-	0.00	0.00	**0.00**
-	-	-	**kN**	**kN**	**kNm**	-	**kN**	**kN**	**kNm**		**kN**	**kN**	**kNm**



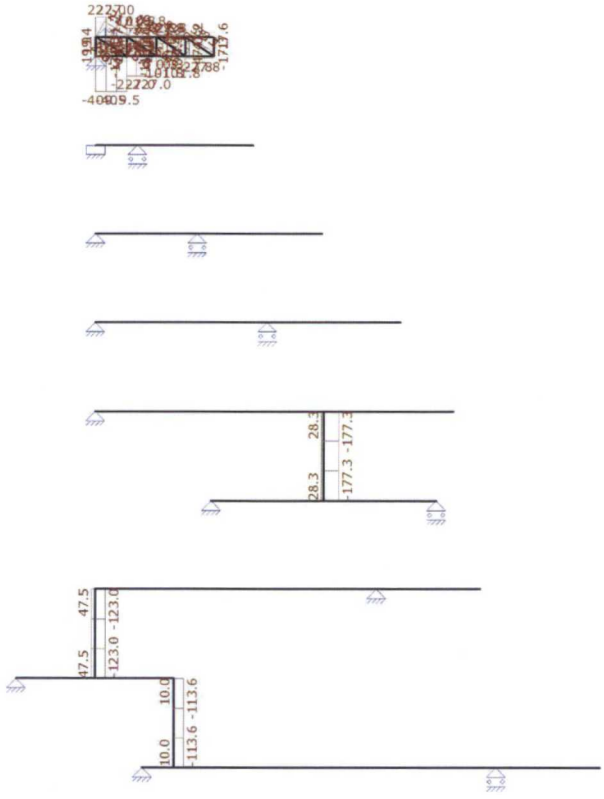
FU.C. EXTREME STAAFKRACHTEN

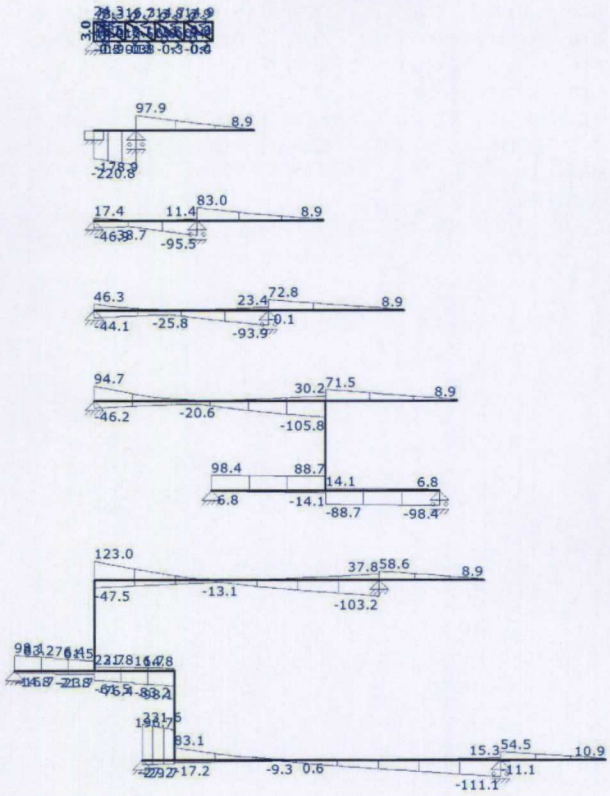
Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0 T/D	Nmax	Vb	Vmax	Ve
S1	Fu.C.2	0.00	0.00	0.000	**384.99**	0.000	0.000 -	0.00	**231.63**	**231.63**	**196.71**
	Fu.C.14	0.00	0.00	0.000	**-51.19**	0.000	0.000 -	0.00	**-29.70**	**-29.70**	**-27.18**
S2	Fu.C.2	**384.99**	**592.92**	5.326	**-189.31**	16.483	0.000 -	0.00	**83.11**	**-111.11**	**-111.11**
	Fu.C.12	-33.98	-71.94	7.373	**11.42**	17.524	0.000 -	0.00	-10.30	**15.26**	**15.26**
	Fu.C.14	**-51.19**	**-156.62**	12.288	-131.39	0.000	0.000 -	0.00	**-17.16**	-17.16	8.39
S3	Fu.C.1	-150.48	0.00	0.000	0.00	0.000	0.000 -	0.00	40.10	40.10	**10.91**
	Fu.C.2	**-189.31**	0.00	0.000	0.00	0.000	0.000 -	0.00	**54.48**	**54.48**	9.70
	Fu.C.3	-22.02	**-23.25**	1.104	0.00	0.000	0.000 -	0.00	-2.23	9.70	9.70
	Fu.C.12	**11.42**	-8.47	3.570	0.00	1.240	0.000 -	0.00	**-11.14**	**-11.14**	7.27
S4	Fu.C.2	0.00	0.00	0.000	**359.05**	0.000	0.000 -	0.00	**98.06**	**98.06**	**61.52**
	Fu.C.4	0.00	**15.04**	2.250	-3.37	4.211	0.000 -	0.00	10.70	-12.19	-12.19
	Fu.C.14	0.00	0.00	0.000	**-86.72**	0.000	0.000 -	0.00	**-14.80**	**-23.75**	**-23.75**
S5	Fu.C.2	**359.05**	0.00	0.000	0.00	0.000	0.000 -	0.00	**-61.52**	**-98.06**	**-98.06**
	Fu.C.4	-3.37	**15.04**	2.250	0.00	0.289	0.000 -	0.00	12.19	12.19	-10.70
	Fu.C.14	**-86.72**	0.00	0.000	0.00	0.000	0.000 -	0.00	**23.75**	**23.75**	**14.80**
S6	Fu.C.2	0.00	**362.48**	6.312	**-196.38**	13.917	0.000 -	0.00	**123.04**	**123.04**	**-103.24**
	Fu.C.10	0.00	152.87	6.622	-153.72	13.244	0.000 -	0.00	46.17	**-65.39**	-65.39
	Fu.C.12	0.00	-177.39	8.429	-34.29	0.000	0.000 -	0.00	-42.09	-42.09	**37.80**
	Fu.C.14	0.00	**-225.84**	9.511	-120.71	0.000	0.000 -	0.00	**-47.49**	-47.49	32.40
S7	Fu.C.1	-148.56	0.00	0.000	0.00	0.000	0.000 -	0.00	41.45	41.45	**8.91**
	Fu.C.2	**-196.38**	0.00	0.000	0.00	0.000	0.000 -	0.00	**58.65**	**58.65**	7.92
S8	Fu.C.2	0.00	0.00	0.000	**598.63**	0.000	0.000 -	0.00	**98.40**	**98.40**	**88.67**
	Fu.C.3	0.00	**15.95**	4.581	13.43	0.000	0.000 -	0.00	6.96	6.96	-2.76
	Fu.C.12	0.00	0.00	0.000	**-67.07**	0.000	0.000 -	0.00	**-6.83**	**-14.13**	**-14.13**
S9	Fu.C.2	**598.63**	0.00	0.000	0.00	0.000	0.000 -	0.00	**-88.67**	**-98.40**	**-98.40**
	Fu.C.3	13.43	**15.95**	1.819	0.00	0.000	0.000 -	0.00	2.76	-6.96	-6.96
	Fu.C.12	**-67.07**	0.00	0.000	0.00	0.000	0.000 -	0.00	**14.13**	**14.13**	**6.83**
S10	Fu.C.2	0.00	**208.14**	4.609	**-294.03**	9.778	0.000 -	0.00	**94.68**	**-105.80**	**-105.80**

Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0 T/D	Nmax	Vb	Vmax	Ve
S10	Fu.C.5	0.00	**-233.49**	11.133	-226.92	0.000	0.000 -	0.00	-41.95	-41.95	7.04
	Fu.C.12	0.00	-120.60	6.950	-29.22	0.000	0.000 -	0.00	-34.70	-34.70	**30.21**
	Fu.C.14	0.00	-213.76	9.253	-178.71	0.000	0.000 -	0.00	**-46.20**	-46.20	18.71
S11	Fu.C.1	-216.93	0.00	0.000	0.00	0.000	0.000 -	0.00	49.72	49.72	**8.91**
	Fu.C.2	**-294.03**	0.00	0.000	0.00	0.000	0.000 -	0.00	**71.55**	**71.55**	7.92
S12	Fu.C.2	0.00	60.42	2.668	**-300.33**	5.468	0.000 -	0.00	**46.30**	**-93.95**	**-93.95**
	Fu.C.12	0.00	-74.63	5.335	-22.33	0.000	0.000 -	0.00	-27.98	-27.98	**23.42**
	Fu.C.14	0.00	**-185.14**	8.402	-180.02	0.000	0.000 -	0.00	**-44.07**	-44.07	7.33
	Fu.C.17	0.00	**76.95**	4.588	-22.33	9.176	0.000 -	0.00	33.54	-38.10	-38.10
S13	Fu.C.1	-216.09	0.00	0.000	0.00	0.000	0.000 -	0.00	47.96	47.96	**8.91**
	Fu.C.2	**-300.33**	0.00	0.000	0.00	0.000	0.000 -	0.00	**72.78**	**72.78**	7.92
	Fu.C.12	-22.33	**-22.34**	0.079	0.00	0.000	0.000 -	0.00	**-0.06**	5.94	5.94
S14	Fu.C.2	0.00	0.00	0.000	**-298.33**	0.000	0.000 -	0.00	-2.60	**-95.49**	**-95.49**
	Fu.C.3	0.00	**-65.16**	5.636	-65.10	0.000	0.000 -	0.00	-23.12	-23.12	0.67
	Fu.C.5	0.00	0.00	0.000	-202.72	0.000	0.000 -	0.00	**-46.85**	-46.85	-23.05
	Fu.C.12	0.00	-34.59	3.632	-22.27	0.000	0.000 -	0.00	-19.05	-19.05	**11.37**
	Fu.C.17	0.00	**20.61**	2.375	-22.27	4.750	0.000 -	0.00	**17.36**	-25.04	-25.04
S15	Fu.C.1	-192.76	0.00	0.000	0.00	0.000	0.000 -	0.00	45.39	45.39	**8.91**
	Fu.C.2	**-298.33**	0.00	0.000	0.00	0.000	0.000 -	0.00	**82.95**	**82.95**	7.92
S16	Fu.C.2	**151.76**	0.00	0.000	**-328.77**	0.815	0.000 -	0.00	**-178.85**	**-220.77**	**-220.77**
S17	Fu.C.1	-170.71	0.00	0.000	0.00	0.000	0.000 -	0.00	42.82	42.82	**8.91**
	Fu.C.2	**-328.77**	0.00	0.000	0.00	0.000	0.000 -	0.00	**97.90**	**97.90**	7.92
S18	Fu.C.2	**-7.50**	0.00	0.000	0.26	1.735	0.000 D	**-409.51**	**4.58**	**4.58**	**4.05**
	Fu.C.3	0.34	0.00	0.000	**-0.28**	1.277	0.000 T	6.11	-0.08	-0.61	-0.61
	Fu.C.11	-6.90	0.00	0.000	**0.30**	1.720	0.000 D	-373.13	4.20	4.20	3.80
	Fu.C.12	**0.94**	0.00	0.000	-0.24	1.510	0.000 T	**42.48**	**-0.46**	**-0.86**	**-0.86**
S19	Fu.C.1	-0.18	**-0.15**	0.425	-0.40	0.000	0.000 D	-101.00	0.14	-0.41	-0.41
	Fu.C.2	0.26	0.00	0.000	**-0.63**	0.665	0.000 D	**-227.01**	-0.30	**-0.79**	**-0.79**
	Fu.C.3	**-0.28**	-0.11	1.066	-0.16	0.000	0.000 D	-6.39	**0.32**	**0.32**	-0.17
	Fu.C.11	**0.30**	0.00	0.000	-0.54	0.738	0.000 D	-204.57	**-0.33**	-0.70	-0.70
	Fu.C.12	-0.24	-0.06	1.279	-0.07	0.000	0.000 T	**16.06**	0.28	0.28	-0.08
S20	Fu.C.2	**-0.63**	0.00	0.000	0.33	0.915	0.000 D	**-101.83**	**0.83**	**0.83**	0.34
	Fu.C.3	-0.16	**-0.09**	0.687	**-0.23**	0.000	0.000 D	-11.48	0.20	**-0.28**	**-0.28**
	Fu.C.11	-0.54	0.00	0.000	**0.33**	0.881	0.000 D	-90.09	0.71	0.71	**0.35**
	Fu.C.12	-0.07	-0.05	0.412	-0.22	0.000	0.000 T	**0.26**	0.09	-0.27	-0.27
S21	Fu.C.2	0.33	**0.33**	0.106	0.00	0.000	0.000 D	**-27.77**	0.03	**-0.44**	**-0.44**
	Fu.C.3	**-0.23**	0.01	1.283	0.00	0.967	0.000 D	-9.46	**0.38**	**0.38**	-0.09
	Fu.C.11	**0.33**	0.00	0.000	0.00	0.000	0.000 D	-23.53	**-0.03**	-0.39	-0.39
S22	Fu.C.1	-3.84	**-0.45**	1.239	-1.14	0.000	0.000 T	101.00	5.48	5.48	-2.48
	Fu.C.2	**-13.19**	0.21	1.116	**-4.65**	0.975	1.258 T	**227.01**	**24.27**	**24.27**	**-14.13**
	Fu.C.11	-12.34	**0.32**	1.110	-4.40	0.933	1.288 T	204.57	23.05	23.05	-13.58
	Fu.C.12	**2.16**	-0.32	1.053	**0.93**	0.675	1.431 D	**-16.06**	**-4.71**	**-4.71**	**3.35**
S23	Fu.C.2	**-4.65**	**2.00**	0.825	**-4.43**	0.370	1.283 T	**101.83**	**16.28**	**16.28**	**-15.45**
	Fu.C.5	-1.49	0.49	0.812	-1.62	0.407	1.216 T	56.86	4.87	**-5.03**	-5.03
	Fu.C.12	**0.93**	**-0.60**	0.828	**0.91**	0.309	1.347 D	**-0.26**	**-3.71**	-3.71	**3.68**
S24	Fu.C.2	**-4.43**	**1.65**	0.833	**-3.97**	0.397	1.274 T	**27.77**	**14.75**	**14.75**	**-13.62**
	Fu.C.12	**0.91**	**-0.53**	0.803	**1.07**	0.315	1.290 T	5.22	**-3.59**	3.79	**3.79**
S25	Fu.C.2	**-3.97**	**3.05**	0.956	0.00	0.323	0.000 -	0.00	**14.88**	**14.88**	**-9.38**
	Fu.C.12	**1.07**	**-0.95**	0.950	0.00	0.300	0.000 -	0.00	**-4.25**	**-4.25**	**2.91**
S26	Fu.C.2	0.00	0.00	0.000	0.00	0.000	0.000 D	**-123.04**	0.00	0.00	0.00
	Fu.C.14	0.00	0.00	0.000	0.00	0.000	0.000 T	**47.49**	0.00	0.00	0.00
S27	Fu.C.2	**7.50**	0.00	0.000	**-13.19**	0.381	0.000 D	**-131.73**	**-19.71**	**-19.71**	**-19.71**
	Fu.C.12	**-0.94**	0.00	0.000	**2.16**	0.319	0.000 T	**19.94**	**2.95**	**2.95**	**2.95**
S28	Fu.C.1	0.00	**0.13**	1.042	0.00	0.000	0.000 T	72.70	**0.24**	**-0.24**	**-0.24**
	Fu.C.2	0.00	0.11	1.042	0.00	0.000	0.000 T	**211.40**	0.21	-0.21	-0.21
	Fu.C.12	0.00	0.08	1.042	0.00	0.000	0.000 D	**-30.68**	0.16	-0.16	-0.16
S29	Fu.C.2	0.00	0.00	0.000	0.00	0.350	0.700 D	**-110.55**	0.00	0.00	0.00
	Fu.C.12	0.00	0.00	0.000	0.00	0.350	0.700 T	**16.93**	0.00	0.00	0.00
S30	Fu.C.2	0.00	0.00	0.000	0.00	0.350	0.700 D	**-77.81**	0.00	0.00	0.00
	Fu.C.12	0.00	0.00	0.000	0.00	0.350	0.700 T	**10.59**	0.00	0.00	0.00
S31	Fu.C.1	0.00	**0.11**	0.978	0.00	0.000	0.000 T	57.23	**0.22**	**0.22**	**-0.22**
	Fu.C.2	0.00	0.10	0.978	0.00	0.000	0.000 T	**148.50**	0.20	0.20	-0.20
	Fu.C.12	0.00	0.07	0.978	0.00	0.000	0.000 D	**-18.82**	0.15	0.15	-0.15
S32	Fu.C.2	0.00	0.00	0.000	0.00	0.000	0.000 D	**-113.60**	0.00	0.00	0.00
	Fu.C.14	0.00	0.00	0.000	0.00	0.000	0.000 T	**10.03**	0.00	0.00	0.00
S33	Fu.C.2	0.00	0.00	0.000	0.00	0.350	0.700 D	**-47.20**	0.00	0.00	0.00

Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0 T/D	Nmax	Vb	Vmax	Ve
S33	Fu.C.12	0.00	0.00	0.000	0.00	0.350	0.700 T	**4.45**	0.00	0.00	0.00
S34	Fu.C.1	0.00	**0.11**	0.978	0.00	0.000	0.000 T	40.16	**0.22**	**0.22**	**-0.22**
	Fu.C.2	0.00	0.10	0.978	0.00	0.000	0.000 T	**87.91**	0.20	0.20	-0.20
	Fu.C.12	0.00	0.07	0.978	0.00	0.000	0.000 D	**-6.60**	0.15	0.15	-0.15
S35	Fu.C.1	0.00	**0.10**	0.957	0.00	0.000	0.000 T	22.96	**0.21**	**-0.21**	**-0.21**
	Fu.C.2	0.00	0.09	0.957	0.00	0.000	0.000 T	**33.34**	0.19	-0.19	-0.19
S36	Fu.C.2	0.00	0.00	0.000	0.00	0.350	0.700 D	**-17.55**	0.00	0.00	0.00
S37	Fu.C.2	0.00	0.00	0.000	0.00	0.000	0.000 D	**-177.35**	0.00	0.00	0.00
	Fu.C.12	0.00	0.00	0.000	0.00	0.000	0.000 T	**28.25**	0.00	0.00	0.00
-	-	kNm	kNm	m	kNm	m	m -	kN	kN	kN	kN

AFB. FU.C. NORMAALKRACHT (NX) OMHULLENDE — Fundamenteel Belastingscombinaties

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94.7
30.2
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8.9
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-20.6
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88.7
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6.8
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-88.7
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123.0
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58.6
8.9
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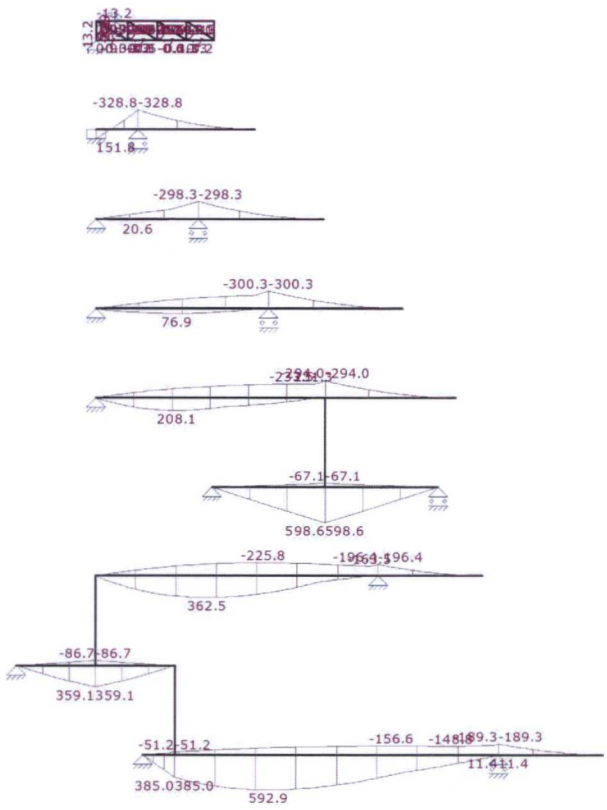
-111.1



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

Veld	Toetsing	Combinatie	Artikel	UC max
C1-V1 (0.000-1.800)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.39
C2-V1 (0.000-18.300)	Kiptoetsing	Fu.C.14	NEN-EN1993-1-1(6.54)	0.77
C3-V1 (0.000-5.900)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	0.24
C4-V1 (0.000-4.500)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	0.87
C5-V1 (0.000-4.500)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	0.87
C6-V1 (0.000-16.000)	Kiptoetsing	Fu.C.14	NEN-EN1993-1-1(6.54)	0.92
C7-V1 (0.000-5.900)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	0.25
C8-V1 (0.000-6.400)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	0.89
C9-V1 (0.000-6.400)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	0.89
C10-V1 (0.000-13.000)	Kiptoetsing	Fu.C.5	NEN-EN1993-1-1(6.54)	0.64
C11-V1 (0.000-7.400)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	0.46
C12-V1 (0.000-9.800)	Kiptoetsing	Fu.C.5	NEN-EN1993-1-1(6.54)	0.90
C13-V1 (0.000-7.600)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	1.00
C14-V1 (0.000-5.800)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.75
C15-V1 (0.000-7.100)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	0.94
C16-V1 (0.000-2.400)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.82
C17-V1 (0.000-6.600)	Kiptoetsing	Fu.C.2	NEN-EN1993-1-1(6.54)	0.99
C18-V1 (0.000-1.800)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.85
C19-V1 (0.000-1.650)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.38
C20-V1 (0.000-1.650)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.18
C21-V1 (0.000-1.600)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.05
C22-V1 (0.000-1.800)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.31)	0.41
C23-V1 (0.000-1.650)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.5)	0.14
C24-V1 (0.000-1.650)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.11
C25-V1 (0.000-1.600)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.17)	0.11

Veld	Toetsing	Combinatie	Artikel	UC max
C27-V1 (0.000-1.050)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.13
C28-V1 (0.000-2.084)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.5)	0.36
C29-V1 (0.000-1.050)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.20
C30-V1 (0.000-1.050)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.14
C31-V1 (0.000-1.956)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.5)	0.25
C33-V1 (0.000-1.050)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.09
C34-V1 (0.000-1.956)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.5)	0.15
C35-V1 (0.000-1.914)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.5)	0.06
C36-V1 (0.000-1.050)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.03

STAALTOETS RESULTATEN MET PROFIELGEGEVENS NEN-EN1993-1-1:2016/NB:2016

Uitgangspunten berekening voor staalcontrole

Alpha;cr = 36.03 > 10;

Profielgegevens staaf C1-V1 (0.000-1.800)

IPE550	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 550.0 mm	A = 13.44e-03 m2	Wy;el = 244.1e-05 m3	Wy;pl = 278.7e-05 m3
b = 210.0 mm	Iy = 671.2e-06 m4	Wz;el = 254.1e-06 m3	Wz;pl = 400.5e-06 m3
tf = 17.2 mm	Iz = 266.8e-07 m4	Aw;y;el = 7.72e-03 m2	Aw;y;pl = 7.72e-03 m2
tw = 11.1 mm	Massa/m = 105.5 kg/m	Aw;z;el = 7.23e-03 m2	Aw;z;pl = 7.23e-03 m2
r = 24.0 mm		It = 123.2e-08 m4	Iwa = 188.4e-08 m6

Doorsnedetoetsing C1-V1 (0.000-1.800)

Maatgevende combinatie: Fu.C.2 op 1.800 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 385.0 kNm	
	Vz;Ed = 196.7 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,771.8 kN	Vy;Rd = 1,582.0 kN	MyRd = 989.4 kNm	
	Vz;Rd = 1,482.7 kN	MzRd = 142.2 kNm	

NEN-EN1993-1-1(6.12): UC = 0.39 < 1

Kiptoetsing C1-V1 (0.000-1.800)

Equi. profiel: IPE550			
Maatgevende combinatie: Fu.C.19		Instab. curve Kip:b	
Aangrijphoogte van de last: -0.266 m vanaf hart profiel			
Kipsteun bovenflens: 1.2m			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.027	b-eff(Eind) = 0.025
Tabel gebruikt Fig. NB.32	M = 183.7kN/m	MBeta = 124.6	q = 6.6
Bovenflens maatgevend	Xb;Ist = 1.200 m	Xe;Ist = 1.800 m	Ist = 0.600 m
Lsys = 1.800 m	Lg = 1.800 m	S = 1.994 m	Iwa = 1.8841e-06 m6
C1 = 1.20	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 118.66
Mcr = 49,225.7 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.19) = 1.00	M;Ed = 183.7 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.600 m		UC(z) = 0.00
My;begin = 124.6 kNm	My;eind = 183.7 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Profielgegevens staaf C2-V1 (0.000-18.300)

IPE550	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 550.0 mm	A = 13.44e-03 m2	Wy;el = 244.1e-05 m3	Wy;pl = 278.7e-05 m3
b = 210.0 mm	Iy = 671.2e-06 m4	Wz;el = 254.1e-06 m3	Wz;pl = 400.5e-06 m3
tf = 17.2 mm	Iz = 266.8e-07 m4	Aw;y;el = 7.72e-03 m2	Aw;y;pl = 7.72e-03 m2
tw = 11.1 mm	Massa/m = 105.5 kg/m	Aw;z;el = 7.23e-03 m2	Aw;z;pl = 7.23e-03 m2
r = 24.0 mm		It = 123.2e-08 m4	Iwa = 188.4e-08 m6

Doorsnedetoetsing C2-V1 (0.000-18.300)

Maatgevende combinatie: Fu.C.2 op 5.368 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 592.9 kNm	
	Vz;Ed = -0.5 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,771.8 kN	Vy;Rd = 1,582.0 kN	MyRd = 989.4 kNm	
	Vz;Rd = 1,482.7 kN	MzRd = 142.2 kNm	

NEN-EN1993-1-1(6.12): UC = 0.60 < 1

Kiptoetsing C2-V1 (0.000-18.300)

Equi. profiel: IPE550
Maatgevende combinatie: Fu.C.14 — Instab. curve Kip:b
Aangrijphoogte van de last: -0.266 m vanaf hart profiel
Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8, 6, 7.2, 8.4, 9.6, 10.8, 12, 13.2, 14.4, 15.6, 16.8, 18m
Kipsteun onderflens: 6.6, 17.7m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.010
Tabel gebruikt Fig. NB.32	M = -136.2kN/m	MBeta = -134.0	q = 1.4
Onderflens maatgevend	Xb;Ist = 6.600 m	Xe;Ist = 17.700 m	Ist = 11.100 m
Lsys = 18.300 m	Lg = 18.300 m	S = 1.994 m	Iwa = 1.8841e-06 m6
C1 = 1.02	C2 = 0.06 (tabel)	C2(toegepast) = -0.06	C = 5.90
Mcr = 240.8 kNm	kred = 1.0	Lam-rel = 2.03	Profielklasse 1
Chi;LT(Fu.C.14) = 0.20	M;Ed = 156.6 kNm		UC(y) = 0.77
Chi;LT,Z = 1.00	Ikip = 11.100 m		UC(z) = 0.00
My;begin = -134.0 kNm	My;eind = -136.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.77 < 1

Profielgegevens staaf C3-V1 (0.000-5.900)

IPE550	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 550.0 mm	A = 13.44e-03 m2	Wy;el = 244.1e-05 m3	Wy;pl = 278.7e-05 m3
b = 210.0 mm	Iy = 671.2e-06 m4	Wz;el = 254.1e-06 m3	Wz;pl = 400.5e-06 m3
tf = 17.2 mm	Iz = 266.8e-07 m4	Aw;y;el = 7.72e-03 m2	Aw;y;pl = 7.72e-03 m2
tw = 11.1 mm	Massa/m = 105.5 kg/m	Aw;z;el = 7.23e-03 m2	Aw;z;pl = 7.23e-03 m2
r = 24.0 mm		It = 123.2e-08 m4	Iwa = 188.4e-08 m6

Doorsnedetoetsing C3-V1 (0.000-5.900)

Maatgevende combinatie: Fu.C.2 op 0.000 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -189.3 kNm
	Vz;Ed = 54.5 kN	Mz;Ed = 0.0 kNm
N;Rd = 4,771.8 kN	Vy;Rd = 1,582.0 kN	MyRd = 989.4 kNm
	Vz;Rd = 1,482.7 kN	MzRd = 142.2 kNm

NEN-EN1993-1-1(6.12): UC = 0.19 < 1

Kiptoetsing C3-V1 (0.000-5.900)

Equi. profiel: IPE550
Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:b
Aangrijphoogte van de last: -0.266 m vanaf hart profiel
Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8m
Kipsteun onderflens: 0.6, 5.8m

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -158.0kN/m	MBeta = -1.0	q = 7.6
Onderflens maatgevend	Xb;Ist = 0.600 m	Xe;Ist = 5.800 m	Ist = 5.200 m
Lsys = 5.900 m	Lg = 5.900 m	S = 1.994 m	Iwa = 1.8841e-06 m6
C1 = 2.29	C2 = 0.13 (tabel)	C2(toegepast) = -0.14	C = 9.49
Mcr = 1,200.6 kNm	kred = 1.0	Lam-rel = 0.91	Profielklasse 1
Chi;LT(Fu.C.2) = 0.66	M;Ed = 158.0 kNm		UC(y) = 0.24
Chi;LT,Z = 1.00	Ikip = 5.900 m		UC(z) = 0.00
My;begin = -158.0 kNm	My;eind = -1.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.24 < 1

Profielgegevens staaf C4-V1 (0.000-4.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C4-V1 (0.000-4.500)

Maatgevende combinatie: Fu.C.2 op 4.500 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 359.1 kNm

	Vz;Ed = 61.5 kN	Mz;Ed = 0.0 kNm
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.79 < 1

Kiptoetsing C4-V1 (0.000-4.500)

Equi. profiel: HE260B
Maatgevende combinatie: Fu.C.2
Instab. curve Kip:a
Aangrijphoogte van de last: -0.121 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.030	b-eff(Eind) = 0.019
Tabel gebruikt Fig. NB.32	M = 359.1kN/m	MBeta = 0.0	q = 9.4
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 4.500 m	lst = 4.500 m
Lsys = 4.500 m	Lg = 4.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.65	C2 = 0.04 (tabel)	C2(toegepast) = -0.04	C = 6.69
Mcr = 1,543.7 kNm	kred = 1.0	Lam-rel = 0.54	Profielklasse 1
Chi;LT(Fu.C.2) = 0.91	M;Ed = 359.1 kNm		UC(y) = 0.87
Chi;LT,Z = 1.00	lkip = 4.500 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 359.1 kNm		

NEN-EN1993-1-1(6.54): UC = 0.87 < 1

Profielgegevens staaf C5-V1 (0.000-4.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C5-V1 (0.000-4.500)

Maatgevende combinatie: Fu.C.2 op 0.000 m

		Profielklasse = 1
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 359.1 kNm
	Vz;Ed = -61.5 kN	Mz;Ed = 0.0 kNm
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.79 < 1

Kiptoetsing C5-V1 (0.000-4.500)

Equi. profiel: HE260B
Maatgevende combinatie: Fu.C.2
Instab. curve Kip:a
Aangrijphoogte van de last: -0.121 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.019	b-eff(Eind) = 0.030
Tabel gebruikt Fig. NB.32	M = 359.1kN/m	MBeta = 0.0	q = 9.4
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 4.500 m	lst = 4.500 m
Lsys = 4.500 m	Lg = 4.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.65	C2 = 0.04 (tabel)	C2(toegepast) = -0.04	C = 6.69
Mcr = 1,543.7 kNm	kred = 1.0	Lam-rel = 0.54	Profielklasse 1
Chi;LT(Fu.C.2) = 0.91	M;Ed = 359.1 kNm		UC(y) = 0.87
Chi;LT,Z = 1.00	lkip = 4.500 m		UC(z) = 0.00
My;begin = 359.1 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.87 < 1

Profielgegevens staaf C6-V1 (0.000-16.000)

IPE550	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 550.0 mm	A = 13.44e-03 m2	Wy;el = 244.1e-05 m3	Wy;pl = 278.7e-05 m3
b = 210.0 mm	Iy = 671.2e-06 m4	Wz;el = 254.1e-06 m3	Wz;pl = 400.5e-06 m3
tf = 17.2 mm	Iz = 266.8e-07 m4	Aw;y;el = 7.72e-03 m2	Aw;y;pl = 7.72e-03 m2
tw = 11.1 mm	Massa/m = 105.5 kg/m	Aw;z;el = 7.23e-03 m2	Aw;z;pl = 7.23e-03 m2
r = 24.0 mm		It = 123.2e-08 m4	Iwa = 188.4e-08 m6

Doorsnedetoetsing C6-V1 (0.000-16.000)

Maatgevende combinatie: Fu.C.2 op 6.303 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 362.5 kNm
	Vz;Ed = 0.1 kN	Mz;Ed = 0.0 kNm
N;Rd = 4,771.8 kN	Vy;Rd = 1,582.0 kN	MyRd = 989.4 kNm
	Vz;Rd = 1,482.7 kN	MzRd = 142.2 kNm

NEN-EN1993-1-1(6.12): UC = 0.37 < 1

Kiptoetsing C6-V1 (0.000-16.000)

Equi. profiel: IPE550

Maatgevende combinatie: Fu.C.14 — Instab. curve Kip:b

Aangrijphoogte van de last: -0.266 m vanaf hart profiel

Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8, 6, 7.2, 8.4, 9.6, 10.8, 12, 13.2, 14.4, 15.6m

Kipsteun onderflens: 6, 15.4m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.049	b-eff(Eind) = 0.033
Tabel gebruikt Fig. NB.32	M = -195.1kN/m	MBeta = -139.3	q = 5.0
Onderflens maatgevend	Xb;Ist = 6.000 m	Xe;Ist = 15.400 m	Ist = 9.400 m
Lsys = 16.000 m	Lg = 16.000 m	S = 1.994 m	Iwa = 1.8841e-06 m6
C1 = 1.06	C2 = 0.11 (tabel)	C2(toegepast) = -0.11	C = 6.41
Mcr = 299.3 kNm	kred = 1.0	Lam-rel = 1.82	Profielklasse 1
Chi;LT(Fu.C.14) = 0.25	M;Ed = 225.8 kNm		UC(y) = 0.92
Chi;LT,Z = 1.00	Ikip = 9.400 m		UC(z) = 0.00
My;begin = -195.1 kNm	My;eind = -139.3 kNm		

NEN-EN1993-1-1(6.54): UC = 0.92 < 1

Profielgegevens staaf C7-V1 (0.000-5.900)

IPE550	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 550.0 mm	A = 13.44e-03 m2	Wy;el = 244.1e-05 m3	Wy;pl = 278.7e-05 m3
b = 210.0 mm	Iy = 671.2e-06 m4	Wz;el = 254.1e-06 m3	Wz;pl = 400.5e-06 m3
tf = 17.2 mm	Iz = 266.8e-07 m4	Aw;y;el = 7.72e-03 m2	Aw;y;pl = 7.72e-03 m2
tw = 11.1 mm	Massa/m = 105.5 kg/m	Aw;z;el = 7.23e-03 m2	Aw;z;pl = 7.23e-03 m2
r = 24.0 mm		It = 123.2e-08 m4	Iwa = 188.4e-08 m6

Doorsnedetoetsing C7-V1 (0.000-5.900)

Maatgevende combinatie: Fu.C.2 op 0.000 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -196.4 kNm
	Vz;Ed = 58.6 kN	Mz;Ed = 0.0 kNm
N;Rd = 4,771.8 kN	Vy;Rd = 1,582.0 kN	MyRd = 989.4 kNm
	Vz;Rd = 1,482.7 kN	MzRd = 142.2 kNm

NEN-EN1993-1-1(6.12): UC = 0.20 < 1

Kiptoetsing C7-V1 (0.000-5.900)

Equi. profiel: IPE550

Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:b

Aangrijphoogte van de last: -0.266 m vanaf hart profiel

Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8m

Kipsteun onderflens: 0.6, 5.8m

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -162.7kN/m	MBeta = -0.8	q = 8.6
Onderflens maatgevend	Xb;Ist = 0.600 m	Xe;Ist = 5.800 m	Ist = 5.200 m
Lsys = 5.900 m	Lg = 5.900 m	S = 1.994 m	Iwa = 1.8841e-06 m6
C1 = 2.29	C2 = 0.15 (tabel)	C2(toegepast) = -0.16	C = 9.38
Mcr = 1,187.7 kNm	kred = 1.0	Lam-rel = 0.91	Profielklasse 1
Chi;LT(Fu.C.2) = 0.65	M;Ed = 162.7 kNm		UC(y) = 0.25
Chi;LT,Z = 1.00	Ikip = 5.900 m		UC(z) = 0.00
My;begin = -162.7 kNm	My;eind = -0.8 kNm		

NEN-EN1993-1-1(6.54): UC = 0.25 < 1

Profielgegevens staaf C8-V1 (0.000-6.400)

HE320B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 16.13e-03 m2	Wy;el = 192.6e-05 m3	Wy;pl = 214.9e-05 m3

b = 300.0 mm | Iy = 308.2e-06 m4 | Wz;el = 615.9e-06 m3 | Wz;pl = 939.1e-06 m3
tf = 20.5 mm | Iz = 923.9e-07 m4 | Aw;y;el = 1.29e-02 m2 | Aw;y;pl = 1.29e-02 m2
tw = 11.5 mm | Massa/m = 126.7 kg/m | Aw;z;el = 5.18e-03 m2 | Aw;z;pl = 5.18e-03 m2
r = 27.0 mm | | It = 225.1e-08 m4 | Iwa = 206.9e-08 m6

Doorsnedetoetsing C8-V1 (0.000-6.400)

Maatgevende combinatie: Fu.C.2 op 6.400 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = 598.6 kNm
Vz;Ed = 88.7 kN | Mz;Ed = 0.0 kNm
N;Rd = 5,727.7 kN | Vy;Rd = 2,649.3 kN | MyRd = 763.0 kNm
Vz;Rd = 1,061.1 kN | MzRd = 333.4 kNm

NEN-EN1993-1-1(6.12): UC = 0.78 < 1

Kiptoetsing C8-V1 (0.000-6.400)

Equi. profiel: HE320B
Maatgevende combinatie: Fu.C.2 | Instab. curve Kip:a
Aangrijphoogte van de last: -0.150 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.027 | b-eff(Eind) = 0.025
Tabel gebruikt Fig. NB.32 | M = 598.6kN/m | MBeta = 0.0 | q = 1.5
Bovenflens maatgevend | Xb;lst = 0.000 m | Xe;lst = 6.400 m | lst = 6.400 m
Lsys = 6.400 m | Lg = 6.400 m | S = 1.546 m | Iwa = 2.0687e-06 m6
C1 = 1.77 | C2 = 0.01 (tabel) | C2(toegepast) = -0.01 | C = 6.94
Mcr = 2,037.3 kNm | kred = 1.0 | Lam-rel = 0.61 | Profielklasse 1
Chi;LT(Fu.C.2) = 0.89 | M;Ed = 598.6 kNm | | UC(y) = 0.89
Chi;LT,Z = 1.00 | lkip = 6.400 m | | UC(z) = 0.00
My;begin = 0.0 kNm | My;eind = 598.6 kNm

NEN-EN1993-1-1(6.54): UC = 0.89 < 1

Profielgegevens staaf C9-V1 (0.000-6.400)

HE320B | Analyse | Staal S355 fyd(toegepast) = 355 N/mm2
h = 320.0 mm | A = 16.13e-03 m2 | Wy;el = 192.6e-05 m3 | Wy;pl = 214.9e-05 m3
b = 300.0 mm | Iy = 308.2e-06 m4 | Wz;el = 615.9e-06 m3 | Wz;pl = 939.1e-06 m3
tf = 20.5 mm | Iz = 923.9e-07 m4 | Aw;y;el = 1.29e-02 m2 | Aw;y;pl = 1.29e-02 m2
tw = 11.5 mm | Massa/m = 126.7 kg/m | Aw;z;el = 5.18e-03 m2 | Aw;z;pl = 5.18e-03 m2
r = 27.0 mm | | It = 225.1e-08 m4 | Iwa = 206.9e-08 m6

Doorsnedetoetsing C9-V1 (0.000-6.400)

Maatgevende combinatie: Fu.C.2 op 0.000 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = 598.6 kNm
Vz;Ed = -88.7 kN | Mz;Ed = 0.0 kNm
N;Rd = 5,727.7 kN | Vy;Rd = 2,649.3 kN | MyRd = 763.0 kNm
Vz;Rd = 1,061.1 kN | MzRd = 333.4 kNm

NEN-EN1993-1-1(6.12): UC = 0.78 < 1

Kiptoetsing C9-V1 (0.000-6.400)

Equi. profiel: HE320B
Maatgevende combinatie: Fu.C.2 | Instab. curve Kip:a
Aangrijphoogte van de last: -0.150 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.025 | b-eff(Eind) = 0.027
Tabel gebruikt Fig. NB.32 | M = 598.6kN/m | MBeta = 0.0 | q = 1.5
Bovenflens maatgevend | Xb;lst = 0.000 m | Xe;lst = 6.400 m | lst = 6.400 m
Lsys = 6.400 m | Lg = 6.400 m | S = 1.546 m | Iwa = 2.0687e-06 m6
C1 = 1.77 | C2 = 0.01 (tabel) | C2(toegepast) = -0.01 | C = 6.94
Mcr = 2,037.3 kNm | kred = 1.0 | Lam-rel = 0.61 | Profielklasse 1
Chi;LT(Fu.C.2) = 0.89 | M;Ed = 598.6 kNm | | UC(y) = 0.89
Chi;LT,Z = 1.00 | lkip = 6.400 m | | UC(z) = 0.00
My;begin = 598.6 kNm | My;eind = 0.0 kNm

NEN-EN1993-1-1(6.54): UC = 0.89 < 1

Profielgegevens staaf C10-V1 (0.000-13.000)

IPE550	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 550.0 mm	A = 13.44e-03 m2	Wy;el = 244.1e-05 m3	Wy;pl = 278.7e-05 m3
b = 210.0 mm	Iy = 671.2e-06 m4	Wz;el = 254.1e-06 m3	Wz;pl = 400.5e-06 m3
tf = 17.2 mm	Iz = 266.8e-07 m4	Aw;y;el = 7.72e-03 m2	Aw;y;pl = 7.72e-03 m2
tw = 11.1 mm	Massa/m = 105.5 kg/m	Aw;z;el = 7.23e-03 m2	Aw;z;pl = 7.23e-03 m2
r = 24.0 mm		It = 123.2e-08 m4	Iwa = 188.4e-08 m6

Doorsnedetoetsing C10-V1 (0.000-13.000)

Maatgevende combinatie: Fu.C.2 op 13.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -294.0 kNm	
	Vz;Ed = -105.8 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,771.8 kN	Vy;Rd = 1,582.0 kN	MyRd = 989.4 kNm	
	Vz;Rd = 1,482.7 kN	MzRd = 142.2 kNm	

NEN-EN1993-1-1(6.12): UC = 0.30 < 1

Kiptoetsing C10-V1 (0.000-13.000)

Equi. profiel: IPE550
Maatgevende combinatie: Fu.C.5 — Instab. curve Kip:b
Aangrijphoogte van de last: -0.266 m vanaf hart profiel
Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8, 6, 7.2, 8.4, 9.6, 10.8, 12m
Kipsteun onderflens: 5.4, 12.4m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.029	b-eff(Eind) = 0.005
Tabel gebruikt Fig. NB.32	M = -230.5kN/m	MBeta = -171.6	q = 3.8
Onderflens maatgevend	Xb;lst = 5.400 m	Xe;lst = 12.400 m	lst = 7.000 m
Lsys = 13.000 m	Lg = 13.000 m	S = 1.994 m	Iwa = 1.8841e-06 m6
C1 = 1.10	C2 = 0.04 (tabel)	C2(toegepast) = -0.04	C = 8.35
Mcr = 479.8 kNm	kred = 1.0	Lam-rel = 1.44	Profielklasse 1
Chi;LT(Fu.C.5) = 0.37	M;Ed = 233.5 kNm		UC(y) = 0.64
Chi;LT,Z = 1.00	lkip = 7.000 m		UC(z) = 0.00
My;begin = -171.6 kNm	My;eind = -230.5 kNm		

NEN-EN1993-1-1(6.54): UC = 0.64 < 1

Profielgegevens staaf C11-V1 (0.000-7.400)

IPE550	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 550.0 mm	A = 13.44e-03 m2	Wy;el = 244.1e-05 m3	Wy;pl = 278.7e-05 m3
b = 210.0 mm	Iy = 671.2e-06 m4	Wz;el = 254.1e-06 m3	Wz;pl = 400.5e-06 m3
tf = 17.2 mm	Iz = 266.8e-07 m4	Aw;y;el = 7.72e-03 m2	Aw;y;pl = 7.72e-03 m2
tw = 11.1 mm	Massa/m = 105.5 kg/m	Aw;z;el = 7.23e-03 m2	Aw;z;pl = 7.23e-03 m2
r = 24.0 mm		It = 123.2e-08 m4	Iwa = 188.4e-08 m6

Doorsnedetoetsing C11-V1 (0.000-7.400)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -294.0 kNm	
	Vz;Ed = 71.5 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,771.8 kN	Vy;Rd = 1,582.0 kN	MyRd = 989.4 kNm	
	Vz;Rd = 1,482.7 kN	MzRd = 142.2 kNm	

NEN-EN1993-1-1(6.12): UC = 0.30 < 1

Kiptoetsing C11-V1 (0.000-7.400)

Equi. profiel: IPE550
Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:b
Aangrijphoogte van de last: -0.266 m vanaf hart profiel
Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8, 6, 7.2m
Kipsteun onderflens: 0.6, 7.3m

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -252.6kN/m	MBeta = -0.8	q = 8.6
Onderflens maatgevend	Xb;lst = 0.600 m	Xe;lst = 7.300 m	lst = 6.700 m
Lsys = 7.400 m	Lg = 7.400 m	S = 1.994 m	Iwa = 1.8841e-06 m6
C1 = 2.30	C2 = 0.16 (tabel)	C2(toegepast) = -0.17	C = 8.47
Mcr = 855.1 kNm	kred = 1.0	Lam-rel = 1.08	Profielklasse 1

Chi;LT(Fu.C.2) = 0.55 | M;Ed = 252.6 kNm | UC(y) = 0.46
Chi;LT,Z = 1.00 | lkip = 7.400 m | UC(z) = 0.00
My;begin = -252.6 kNm | My;eind = -0.8 kNm
NEN-EN1993-1-1(6.54): UC = 0.46 < 1

Profielgegevens staaf C12-V1 (0.000-9.800)

IPE450 | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 450.0 mm | A = 9.88e-03 m2 | Wy;el = 150.0e-05 m3 | Wy;pl = 170.2e-05 m3
b = 190.0 mm | Iy = 337.4e-06 m4 | Wz;el = 176.4e-06 m3 | Wz;pl = 276.4e-06 m3
tf = 14.6 mm | Iz = 167.6e-07 m4 | Aw;y;el = 5.93e-03 m2 | Aw;y;pl = 5.93e-03 m2
tw = 9.4 mm | Massa/m = 77.6 kg/m | Aw;z;el = 5.08e-03 m2 | Aw;z;pl = 5.08e-03 m2
r = 21.0 mm | | It = 668.7e-09 m4 | Iwa = 791.0e-09 m6

Doorsnedetoetsing C12-V1 (0.000-9.800)

Maatgevende combinatie: Fu.C.2 op 9.800 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -300.3 kNm
Vz;Ed = -93.9 kN | Mz;Ed = 0.0 kNm
N;Rd = 2,322.3 kN | Vy;Rd = 804.1 kN | MyRd = 399.9 kNm
Vz;Rd = 689.9 kN | MzRd = 65.0 kNm
NEN-EN1993-1-1(6.12): UC = 0.75 < 1

Kiptoetsing C12-V1 (0.000-9.800)

Equi. profiel: IPE450
Maatgevende combinatie: Fu.C.5 | Instab. curve Kip:b
Aangrijphoogte van de last: -0.218 m vanaf hart profiel
Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8, 6, 7.2, 8.4, 9.6m
Kipsteun onderflens: 4, 9.2m
Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.031 | b-eff(Eind) = 0.002
Tabel gebruikt Fig. NB.32 | M = -225.4kN/m | MBeta = -140.7 | q = 4.1
Onderflens maatgevend | Xb;lst = 4.000 m | Xe;lst = 9.200 m | lst = 5.200 m
Lsys = 9.800 m | Lg = 9.800 m | S = 1.754 m | Iwa = 7.9100e-07 m6
C1 = 1.17 | C2 = 0.03 (tabel) | C2(toegepast) = -0.03 | C = 9.92
Mcr = 441.2 kNm | kred = 1.0 | Lam-rel = 0.95 | Profielklasse 1
Chi;LT(Fu.C.5) = 0.63 | M;Ed = 225.4 kNm | UC(y) = 0.90
Chi;LT,Z = 1.00 | lkip = 5.200 m | UC(z) = 0.00
My;begin = -140.7 kNm | My;eind = -225.4 kNm
NEN-EN1993-1-1(6.54): UC = 0.90 < 1

Profielgegevens staaf C13-V1 (0.000-7.600)

IPE450 | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 450.0 mm | A = 9.88e-03 m2 | Wy;el = 150.0e-05 m3 | Wy;pl = 170.2e-05 m3
b = 190.0 mm | Iy = 337.4e-06 m4 | Wz;el = 176.4e-06 m3 | Wz;pl = 276.4e-06 m3
tf = 14.6 mm | Iz = 167.6e-07 m4 | Aw;y;el = 5.93e-03 m2 | Aw;y;pl = 5.93e-03 m2
tw = 9.4 mm | Massa/m = 77.6 kg/m | Aw;z;el = 5.08e-03 m2 | Aw;z;pl = 5.08e-03 m2
r = 21.0 mm | | It = 668.7e-09 m4 | Iwa = 791.0e-09 m6

Doorsnedetoetsing C13-V1 (0.000-7.600)

Maatgevende combinatie: Fu.C.2 op 0.000 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -300.3 kNm
Vz;Ed = 72.8 kN | Mz;Ed = 0.0 kNm
N;Rd = 2,322.3 kN | Vy;Rd = 804.1 kN | MyRd = 399.9 kNm
Vz;Rd = 689.9 kN | MzRd = 65.0 kNm
NEN-EN1993-1-1(6.12): UC = 0.75 < 1

Kiptoetsing C13-V1 (0.000-7.600)

Equi. profiel: IPE450
Maatgevende combinatie: Fu.C.2 | Instab. curve Kip:b
Aangrijphoogte van de last: -0.218 m vanaf hart profiel
Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8, 6, 7.2m
Kipsteun onderflens: 0.63, 7.5m
Inklem. begin: Gesteund | Beperk. eind: Overstek | b-eff(Begin) = 0.000 | b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32 | M = -256.5kN/m | MBeta = -0.8 | q = 8.3

Onderflens maatgevend	Xb;lst = 0.630 m	Xe;lst = 7.500 m	lst = 6.870 m
Lsys = 7.600 m	Lg = 7.600 m	S = 1.754 m	Iwa = 7.9100e-07 m6
C1 = 2.30	C2 = 0.16 (tabel)	C2(toegepast) = -0.17	C = 8.07
Mcr = 462.8 kNm	kred = 1.0	Lam-rel = 0.93	Profielklasse 1
Chi;LT(Fu.C.2) = 0.64	M;Ed = 256.5 kNm		UC(y) = 1.00
Chi;LT,Z = 1.00	Ikip = 7.600 m		UC(z) = 0.00
My;begin = -256.5 kNm	My;eind = -0.8 kNm		

NEN-EN1993-1-1(6.54): UC = 1.00 < 1

Profielgegevens staaf C14-V1 (0.000-5.800)

IPE450	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 450.0 mm	A = 9.88e-03 m2	Wy;el = 150.0e-05 m3	Wy;pl = 170.2e-05 m3
b = 190.0 mm	Iy = 337.4e-06 m4	Wz;el = 176.4e-06 m3	Wz;pl = 276.4e-06 m3
tf = 14.6 mm	Iz = 167.6e-07 m4	Aw;y;el = 5.93e-03 m2	Aw;y;pl = 5.93e-03 m2
tw = 9.4 mm	Massa/m = 77.6 kg/m	Aw;z;el = 5.08e-03 m2	Aw;z;pl = 5.08e-03 m2
r = 21.0 mm		It = 668.7e-09 m4	Iwa = 791.0e-09 m6

Doorsnedetoetsing C14-V1 (0.000-5.800)

Maatgevende combinatie: Fu.C.2 op 5.800 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = -95.5 kN	My;Ed = -298.3 kNm
N;Rd = 2,322.3 kN	Vy;Rd = 804.1 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 689.9 kN	MyRd = 399.9 kNm
		MzRd = 65.0 kNm

NEN-EN1993-1-1(6.12): UC = 0.75 < 1

Kiptoetsing C14-V1 (0.000-5.800)

Equi. profiel: IPE450

Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:b

Aangrijphoogte van de last: -0.218 m vanaf hart profiel

Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8m

Kipsteun onderflens: 2.5, 5.2m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.001	b-eff(Eind) = 0.050
Tabel gebruikt Fig. NB.32	M = -243.5kN/m	MBeta = -62.1	q = 15.2
Onderflens maatgevend	Xb;lst = 2.500 m	Xe;lst = 5.200 m	lst = 2.700 m
Lsys = 5.800 m	Lg = 5.800 m	S = 1.754 m	Iwa = 7.9100e-07 m6
C1 = 1.68	C2 = 0.04 (tabel)	C2(toegepast) = -0.04	C = 18.09
Mcr = 1,359.9 kNm	kred = 1.0	Lam-rel = 0.54	Profielklasse 1
Chi;LT(Fu.C.2) = 0.86	M;Ed = 243.5 kNm		UC(y) = 0.70
Chi;LT,Z = 1.00	Ikip = 3.230 m		UC(z) = 0.00
My;begin = -62.1 kNm	My;eind = -243.5 kNm		

NEN-EN1993-1-1(6.54): UC = 0.70 < 1

Profielgegevens staaf C15-V1 (0.000-7.100)

IPE450	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 450.0 mm	A = 9.88e-03 m2	Wy;el = 150.0e-05 m3	Wy;pl = 170.2e-05 m3
b = 190.0 mm	Iy = 337.4e-06 m4	Wz;el = 176.4e-06 m3	Wz;pl = 276.4e-06 m3
tf = 14.6 mm	Iz = 167.6e-07 m4	Aw;y;el = 5.93e-03 m2	Aw;y;pl = 5.93e-03 m2
tw = 9.4 mm	Massa/m = 77.6 kg/m	Aw;z;el = 5.08e-03 m2	Aw;z;pl = 5.08e-03 m2
r = 21.0 mm		It = 668.7e-09 m4	Iwa = 791.0e-09 m6

Doorsnedetoetsing C15-V1 (0.000-7.100)

Maatgevende combinatie: Fu.C.2 op 0.000 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = 83.0 kN	My;Ed = -298.3 kNm
N;Rd = 2,322.3 kN	Vy;Rd = 804.1 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 689.9 kN	MyRd = 399.9 kNm
		MzRd = 65.0 kNm

NEN-EN1993-1-1(6.12): UC = 0.75 < 1

Kiptoetsing C15-V1 (0.000-7.100)

Equi. profiel: IPE450

Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:b

Aangrijphoogte van de last: -0.218 m vanaf hart profiel

Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8, 6m
Kipsteun onderflens: 0.6, 6.9m

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -251.0kN/m	MBeta = -1.7	q = 10.3
Onderflens maatgevend	Xb;Ist = 0.600 m	Xe;Ist = 6.900 m	Ist = 6.300 m
Lsys = 7.100 m	Lg = 7.100 m	S = 1.754 m	Iwa = 7.9100e-07 m6
C1 = 2.29	C2 = 0.18 (tabel)	C2(toegepast) = -0.18	C = 8.14
Mcr = 500.1 kNm	kred = 1.0	Lam-rel = 0.89	Profielklasse 1
Chi;LT(Fu.C.2) = 0.66	M;Ed = 251.0 kNm		UC(y) = 0.94
Chi;LT,Z = 1.00	Ikip = 7.100 m		UC(z) = 0.00
My;begin = -251.0 kNm	My;eind = -1.7 kNm		

NEN-EN1993-1-1(6.54): UC = 0.94 < 1

Profielgegevens staaf C16-V1 (0.000-2.400)

IPE450	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 450.0 mm	A = 9.88e-03 m2	Wy;el = 150.0e-05 m3	Wy;pl = 170.2e-05 m3
b = 190.0 mm	Iy = 337.4e-06 m4	Wz;el = 176.4e-06 m3	Wz;pl = 276.4e-06 m3
tf = 14.6 mm	Iz = 167.6e-07 m4	Aw;y;el = 5.93e-03 m2	Aw;y;pl = 5.93e-03 m2
tw = 9.4 mm	Massa/m = 77.6 kg/m	Aw;z;el = 5.08e-03 m2	Aw;z;pl = 5.08e-03 m2
r = 21.0 mm		It = 668.7e-09 m4	Iwa = 791.0e-09 m6

Doorsnedetoetsing C16-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2 op 2.400 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = -220.8 kN	My;Ed = -328.8 kNm
N;Rd = 2,322.3 kN	Vy;Rd = 804.1 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 689.9 kN	MyRd = 399.9 kNm
		MzRd = 65.0 kNm

NEN-EN1993-1-1(6.12): UC = 0.82 < 1

Kiptoetsing C16-V1 (0.000-2.400)

Equi. profiel: IPE450
Maatgevende combinatie: Fu.C.19
Instab. curve Kip:b
Aangrijphoogte van de last: -0.218 m vanaf hart profiel
Kipsteun bovenflens: 1.2, 2.4m
Kipsteun onderflens: 1.2, 2.4m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.044
Tabel gebruikt Fig. NB.32	M = -140.9kN/m	MBeta = -32.6	q = 7.3
Bovenflens maatgevend	Xb;Ist = 2.400 m	Xe;Ist = 2.400 m	Ist = 1.200 m
Lsys = 2.400 m	Lg = 2.400 m	S = 1.754 m	Iwa = 7.9100e-07 m6
C1 = 1.60	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 32.09
Mcr = 5,829.3 kNm	kred = 1.0	Lam-rel = 0.26	Profielklasse 1
Chi;LT(Fu.C.19) = 0.98	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 1.458 m		UC(z) = 0.00
My;begin = -140.9 kNm	My;eind = -140.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C17-V1 (0.000-6.600)

IPE450	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 450.0 mm	A = 9.88e-03 m2	Wy;el = 150.0e-05 m3	Wy;pl = 170.2e-05 m3
b = 190.0 mm	Iy = 337.4e-06 m4	Wz;el = 176.4e-06 m3	Wz;pl = 276.4e-06 m3
tf = 14.6 mm	Iz = 167.6e-07 m4	Aw;y;el = 5.93e-03 m2	Aw;y;pl = 5.93e-03 m2
tw = 9.4 mm	Massa/m = 77.6 kg/m	Aw;z;el = 5.08e-03 m2	Aw;z;pl = 5.08e-03 m2
r = 21.0 mm		It = 668.7e-09 m4	Iwa = 791.0e-09 m6

Doorsnedetoetsing C17-V1 (0.000-6.600)

Maatgevende combinatie: Fu.C.2 op 0.000 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = 97.9 kN	My;Ed = -328.8 kNm
N;Rd = 2,322.3 kN	Vy;Rd = 804.1 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 689.9 kN	MyRd = 399.9 kNm
		MzRd = 65.0 kNm

NEN-EN1993-1-1(6.12): UC = 0.82 < 1

Kiptoetsing C17-V1 (0.000-6.600)

Equi. profiel: IPE450
Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:b
Aangrijphoogte van de last: -0.218 m vanaf hart profiel
Kipsteun bovenflens: 1.2, 2.4, 3.6, 4.8, 6m
Kipsteun onderflens: 0.6, 6.3m

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -273.0kN/m	MBeta = -2.9	q = 13.5
Onderflens maatgevend	Xb;Ist = 0.600 m	Xe;Ist = 6.300 m	Ist = 5.700 m
Lsys = 6.600 m	Lg = 6.600 m	S = 1.754 m	Iwa = 7.9100e-07 m6
C1 = 2.29	C2 = 0.17 (tabel)	C2(toegepast) = -0.18	C = 8.34
Mcr = 551.2 kNm	kred = 1.0	Lam-rel = 0.85	Profielklasse 1
Chi;LT(Fu.C.2) = 0.69	M;Ed = 273.0 kNm		UC(y) = 0.99
Chi;LT,Z = 1.00	Ikip = 6.600 m		UC(z) = 0.00
My;begin = -273.0 kNm	My;eind = -2.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.99 < 1

Profielgegevens staaf C18-V1 (0.000-1.800)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C18-V1 (0.000-1.800)

Maatgevende combinatie: Fu.C.2 op 0.000 m — Profielklasse = 1

N;Ed = -409.5 kN	Vy;Ed = 0.0 kN	My;Ed = -7.5 kNm
	Vz;Ed = 4.6 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.55 < 1

Kiptoetsing C18-V1 (0.000-1.800)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.19 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.062 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -2.6kN/m	MBeta = -0.1	q = 0.2
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.800 m	Ist = 1.800 m
Lsys = 1.800 m	Lg = 1.800 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.86	C2 = 0.02 (tabel)	C2(toegepast) = -0.03	C = 8.99
Mcr = 365.9 kNm	kred = 1.0	Lam-rel = 0.33	Profielklasse 1
Chi;LT(Fu.C.19) = 0.97	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 1.800 m		UC(z) = 0.00
My;begin = -2.6 kNm	My;eind = -0.1 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Stabiliteitstoetsing C18-V1 (0.000-1.800)

Maatgevende combinatie: Fu.C.2

N;Ed = -409.5 kN	Nb;Rd;y = 702.4 kN	Nb;Rd;z = 603.8 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.800 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.800 m
Xy = 0.95		Knikcurve: B	
Xz = 0.82		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.68 < 1

Buiging & Druk C18-V1 (0.000-1.800)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1
N;Ed = -409.5 kN	My;Ed = 0.0 kNm	Mz;Ed = 0.0 kNm

	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -7.5 kNm	My;Psi = 0.3 kNm	My;s = -3.5 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.57	Cmz = 1.00	CmLT = 0.57	
Kyy = 0.618	Kyz = 0.799	Kzy = 0.886	Kzz = 1.332
Ksi;y = 0.95	Ksi;z = 0.82	Ksi;LT = 0.97	

NEN-EN1993-1-1(6.61&6.62): UC = 0.85 < 1

Profielgegevens staaf C19-V1 (0.000-1.650)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C19-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = -227.0 kN	Vy;Ed = 0.0 kN	My;Ed = 0.3 kNm	
	Vz;Ed = -0.3 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.9): UC = 0.31 < 1

Kiptoetsing C19-V1 (0.000-1.650)

Equi. profiel: HE140A			
Maatgevende combinatie: Fu.C.2		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.062 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 8.1	= 0.0kN/m	= 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.650 m	Ist = 1.650 m
Lsys = 1.650 m	Lg = 1.650 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 2.30	C2 = 1.55 (tabel)	C2(toegepast) = -1.66	C = 4.02
Mcr = 178.6 kNm	kred = 1.0	Lam-rel = 0.48	Profielklasse 1
Chi;LT(Fu.C.2) = 0.93	M;Ed = 0.6 kNm		UC(y) = 0.02
Chi;LT,Z = 1.00	Ikip = 1.650 m		UC(z) = 0.00
My;begin = 0.3 kNm	My;eind = -0.6 kNm		

NEN-EN1993-1-1(6.54): UC = 0.02 < 1

Stabiliteitstoetsing C19-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.2			
N;Ed = -227.0 kN	Nb;Rd;y = 710.0 kN	Nb;Rd;z = 622.7 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.650 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.650 m
Xy = 0.96		Knikcurve: B	
Xz = 0.84		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.36 < 1

Buiging & Druk C19-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -227.0 kN	My;Ed = 0.6 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -0.6 kNm	My;Psi = 0.3 kNm	My;s = -0.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.414	Kyz = 0.687	Kzy = 0.879	Kzz = 1.145
Ksi;y = 0.96	Ksi;z = 0.84	Ksi;LT = 0.93	

NEN-EN1993-1-1(6.61&6.62): UC = 0.38 < 1

Profielgegevens staaf C20-V1 (0.000-1.650)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C20-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = -101.8 kN	Vy;Ed = 0.0 kN	My;Ed = -0.6 kNm	
	Vz;Ed = 0.8 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.9): UC = 0.14 < 1

Kiptoetsing C20-V1 (0.000-1.650)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.062 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 8.1	= 0.0kN/m	= 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.650 m	Ist = 1.650 m
Lsys = 1.650 m	Lg = 1.650 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 2.30	C2 = 1.55 (tabel)	C2(toegepast) = -1.66	C = 4.02
Mcr = 178.6 kNm	kred = 1.0	Lam-rel = 0.48	Profielklasse 1
Chi;LT(Fu.C.2) = 0.93	M;Ed = 0.6 kNm		UC(y) = 0.02
Chi;LT,Z = 1.00	Ikip = 1.650 m		UC(z) = 0.00
My;begin = -0.6 kNm	My;eind = 0.3 kNm		

NEN-EN1993-1-1(6.54): UC = 0.02 < 1

Stabiliteitstoetsing C20-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.2

N;Ed = -101.8 kN	Nb;Rd;y = 710.0 kN	Nb;Rd;z = 622.7 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.650 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.650 m
Xy = 0.96		Knikcurve: B	
Xz = 0.84		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.16 < 1

Buiging & Druk C20-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -101.8 kN	My;Ed = 0.6 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -0.6 kNm	My;Psi = 0.3 kNm	My;s = -0.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.406	Kyz = 0.639	Kzy = 0.946	Kzz = 1.065
Ksi;y = 0.96	Ksi;z = 0.84	Ksi;LT = 0.93	

NEN-EN1993-1-1(6.61&6.62): UC = 0.18 < 1

Profielgegevens staaf C21-V1 (0.000-1.600)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C21-V1 (0.000-1.600)

Maatgevende combinatie: Fu.C.2 op 0.000 m — Profielklasse = 1

N;Ed = -27.8 kN	Vy;Ed = 0.0 kN	My;Ed = 0.3 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.04 < 1

Kiptoetsing C21-V1 (0.000-1.600)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.10 — Instab. curve Kip:a

Aangrijphoogte van de last: -0.062 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = 0.0kN/m	MBeta = 0.0	q = 0.3
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.600 m	Ist = 1.600 m
Lsys = 1.600 m	Lg = 1.600 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.11	C2 = 0.38 (tabel)	C2(toegepast) = -0.40	C = 4.30
Mcr = 196.9 kNm	kred = 1.0	Lam-rel = 0.46	Profielklasse 1
Chi;LT(Fu.C.10) = 0.94	M;Ed = 0.1 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 1.600 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1

Stabiliteitstoetsing C21-V1 (0.000-1.600)

Maatgevende combinatie: Fu.C.2

N;Ed = -27.8 kN	Nb;Rd;y = 712.6 kN	Nb;Rd;z = 628.9 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.600 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.600 m
Xy = 0.97		Knikcurve: B	
Xz = 0.85		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.04 < 1

Buiging & Druk C21-V1 (0.000-1.600)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -27.8 kN	My;Ed = 0.1 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.3 kNm	My;Psi = 0.0 kNm	My;s = 0.3 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.83	Cmz = 1.00	CmLT = 0.83	
Kyy = 0.834	Kyz = 0.610	Kzy = 0.996	Kzz = 1.016
Ksi;y = 0.97	Ksi;z = 0.85	Ksi;LT = 0.96	

NEN-EN1993-1-1(6.61&6.62): UC = 0.05 < 1

Profielgegevens staaf C22-V1 (0.000-1.800)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C22-V1 (0.000-1.800)

Maatgevende combinatie: Fu.C.2 op 0.000 m — Profielklasse = 1

N;Ed = 227.0 kN	Vy;Ed = 0.0 kN	My;Ed = -13.2 kNm
	Vz;Ed = 24.3 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MNyRd = 32.1 kNm
	Vz;Rd = 137.4 kN	MNzRd = 19.8 kNm

NEN-EN1993-1-1(6.31): UC = 0.41 < 1

Kiptoetsing C22-V1 (0.000-1.800)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.19
Instab. curve Kip:a
Aangrijphoogte van de last: -0.062 m vanaf hart profiel
Kipsteun bovenflens: 1.2m
Kipsteun onderflens: 0.6, 1.2, 1.8m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -1.2kN/m	MBeta = -0.3	q = 5.0
Bovenflens maatgevend	Xb;Ist = 1.800 m	Xe;Ist = 1.800 m	Ist = 0.600 m
Lsys = 1.800 m	Lg = 1.800 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.98	C2 = 0.14 (tabel)	C2(toegepast) = -0.15	C = 43.04
Mcr = 1,752.1 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.19) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.720 m		UC(z) = 0.00
My;begin = -1.2 kNm	My;eind = -1.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Stabiliteitstoetsing C22-V1 (0.000-1.800)

Maatgevende combinatie: Fu.C.12

N;Ed = -16.1 kN	Nb;Rd;y = 702.4 kN	Nb;Rd;z = 603.8 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.800 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.800 m
Xy = 0.95		Knikcurve: B	
Xz = 0.82		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.03 < 1

Buiging & Druk C22-V1 (0.000-1.800)

Maatgevende combinatie: Fu.C.12	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -16.1 kN	My;Ed = 0.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 2.2 kNm	My;Psi = 0.9 kNm	My;s = -0.3 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.401	Kyz = 0.608	Kzy = 0.990	Kzz = 1.013
Ksi;y = 0.95	Ksi;z = 0.82	Ksi;LT = 0.97	

NEN-EN1993-1-1(6.61&6.62): UC = 0.08 < 1

Profielgegevens staaf C23-V1 (0.000-1.650)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C23-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = 101.8 kN	Vy;Ed = 0.0 kN	My;Ed = -4.7 kNm	
	Vz;Ed = 16.3 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.5): UC = 0.14 < 1

Kiptoetsing C23-V1 (0.000-1.650)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.10
Instab. curve Kip:a
Aangrijphoogte van de last: -0.062 m vanaf hart profiel
Kipsteun bovenflens: 1.2m
Kipsteun onderflens: 0.6, 1.2m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -1.5kN/m	MBeta = 0.0	q = 6.0
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 1.200 m	lst = 1.200 m
Lsys = 1.650 m	Lg = 1.650 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 2.28	C2 = 1.07 (tabel)	C2(toegepast) = -1.15	C = 5.25
Mcr = 232.9 kNm	kred = 1.0	Lam-rel = 0.42	Profielklasse 1
Chi;LT(Fu.C.10) = 0.95	M;Ed = 1.5 kNm		UC(y) = 0.04
Chi;LT,Z = 1.00	Ikip = 1.650 m		UC(z) = 0.00
My;begin = -1.5 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.04 < 1

Stabiliteitstoetsing C23-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.12

N;Ed = -0.3 kN	Nb;Rd;y = 710.0 kN	Nb;Rd;z = 622.7 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.650 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.650 m
Xy = 0.96		Knikcurve: B	
Xz = 0.84		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.00 < 1

Buiging & Druk C23-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.12	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -0.3 kN	My;Ed = 1.5 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.9 kNm	My;Psi = 0.9 kNm	My;s = -0.6 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.62	Cmz = 1.00	CmLT = 0.62	
Kyy = 0.619	Kyz = 0.600	Kzy = 1.000	Kzz = 1.000
Ksi;y = 0.96	Ksi;z = 0.84	Ksi;LT = 1.00	

NEN-EN1993-1-1(6.61&6.62): UC = 0.02 < 1

Profielgegevens staaf C24-V1 (0.000-1.650)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C24-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.2 op 0.000 m

N;Ed = 27.8 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = 14.7 kN	My;Ed = -4.4 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 137.4 kN	MyRd = 40.8 kNm
		MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.11 < 1

Kiptoetsing C24-V1 (0.000-1.650)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.10

Instab. curve Kip:a

Aangrijphoogte van de last: -0.062 m vanaf hart profiel

Kipsteun bovenflens: 1.2m

Kipsteun onderflens: 0.6, 1.2m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -1.6kN/m	MBeta = 0.1	q = 6.0
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 1.200 m	lst = 1.200 m
Lsys = 1.650 m	Lg = 1.650 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 2.29	C2 = 1.06 (tabel)	C2(toegepast) = -1.13	C = 5.33
Mcr = 236.6 kNm	kred = 1.0	Lam-rel = 0.42	Profielklasse 1
Chi;LT(Fu.C.10) = 0.95	M;Ed = 1.6 kNm		UC(y) = 0.04
Chi;LT,Z = 1.00	Ikip = 1.644 m		UC(z) = 0.00

My;begin = -1.6 kNm My;eind = 0.1 kNm
NEN-EN1993-1-1(6.54): UC = 0.04 < 1

Profielgegevens staaf C25-V1 (0.000-1.600)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C25-V1 (0.000-1.600)

Maatgevende combinatie: Fu.C.2 op 0.000 m Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -4.0 kNm
	Vz;Ed = 14.9 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.17): UC = 0.11 < 1

Kiptoetsing C25-V1 (0.000-1.600)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.19 Instab. curve Kip:a
Aangrijphoogte van de last: -0.062 m vanaf hart profiel
Kipsteun bovenflens: 1.2m
Kipsteun onderflens: 0.6, 1.2m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.004	b-eff(Eind) = 0.002
Tabel gebruikt Fig. NB.32	M = 0.9kN/m	MBeta = 0.0	q = 5.0
Bovenflens maatgevend	Xb;Ist = 1.200 m	Xe;Ist = 1.600 m	Ist = 0.400 m
Lsys = 1.600 m	Lg = 1.600 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.55	C2 = 0.07 (tabel)	C2(toegepast) = -0.07	C = 52.16
Mcr = 2,388.5 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.19) = 1.00	M;Ed = 0.9 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.560 m		UC(z) = 0.00

My;begin = 0.9 kNm My;eind = 0.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Profielgegevens staaf C27-V1 (0.000-1.050)

HE240A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 230.0 mm	A = 7.68e-03 m2	Wy;el = 675.1e-06 m3	Wy;pl = 744.6e-06 m3
b = 240.0 mm	Iy = 776.3e-07 m4	Wz;el = 230.7e-06 m3	Wz;pl = 351.7e-06 m3
tf = 12.0 mm	Iz = 276.9e-07 m4	Aw;y;el = 6.14e-03 m2	Aw;y;pl = 6.14e-03 m2
tw = 7.5 mm	Massa/m = 60.3 kg/m	Aw;z;el = 2.52e-03 m2	Aw;z;pl = 2.52e-03 m2
r = 21.0 mm		It = 415.5e-09 m4	Iwa = 328.5e-09 m6

Doorsnedetoetsing C27-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2 op 1.050 m Profielklasse = 1

N;Ed = -131.0 kN	Vy;Ed = 0.0 kN	My;Ed = -13.2 kNm
	Vz;Ed = -19.7 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,805.6 kN	Vy;Rd = 832.9 kN	MyRd = 175.0 kNm
	Vz;Rd = 341.6 kN	MzRd = 82.6 kNm

NEN-EN1993-1-1(6.12): UC = 0.08 < 1

Kiptoetsing C27-V1 (0.000-1.050)

Equi. profiel: HE240A
Maatgevende combinatie: Fu.C.19 Instab. curve Kip:a
Aangrijphoogte van de last: -0.109 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.003	b-eff(Eind) = 0.003
Tabel gebruikt Fig. NB.32	M = -3.9kN/m	MBeta = 2.6	q = 0.0
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.050 m	Ist = 1.050 m
Lsys = 1.050 m	Lg = 1.050 m	S = 1.434 m	Iwa = 3.2849e-07 m6

C1 = 2.30 | C2 = 0.00 (tabel) | C2(toegepast) = 0.00 | C = 31.81
Mcr = 13,384.3 kNm | kred = 1.0 | Lam-rel = 0.20 | Profielklasse 1
Chi;LT(Fu.C.19) = 1.00 | M;Ed = 2.6 kNm | | UC(y) = 0.00
Chi;LT,Z = 1.00 | lkip = 1.050 m | | UC(z) = 0.00
My;begin = 2.6 kNm | My;eind = -3.9 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Stabiliteitstoetsing C27-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2
N;Ed = -131.7 kN | Nb;Rd;y = 1,805.6 kN | Nb;Rd;z = 1,805.6 kN
Methode Y = Cons. gesch. | Ca(y) = 0.000 | Cb(y) = 0.000 | Lknik Y = 1.050 m
Methode Z = Cons. gesch. | Ca(z) = N/B | Cb(z) = N/B | Lbuc Z = 1.050 m
Xy = 1.00 | Knikcurve: B
Xz = 1.00 | Knikcurve: C
NEN-EN1993-1-1(6.46): UC = 0.07 < 1

Buiging & Druk C27-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2 | Kipgevoelig Ja | Profielklasse = 1
N;Ed = -131.7 kN | My;Ed = 2.6 kNm | Mz;Ed = 0.0 kNm
Delta;My;Ed = 0.0 kNm | Delta;Mz;Ed = 0.0 kNm
My = -13.2 kNm | My;Psi = 7.5 kNm | My;s = -2.8 kNm
Mz = 0.0 kNm | Mz;Psi = 0.0 kNm | Mz;s = 0.0 kNm
Cmy = 0.40 | Cmz = 1.00 | CmLT = 0.40
Kyy = 0.397 | Kyz = 0.590 | Kzy = 0.786 | Kzz = 0.983
Ksi;y = 1.00 | Ksi;z = 1.00 | Ksi;LT = 1.00
NEN-EN1993-1-1(6.61&6.62): UC = 0.13 < 1

Profielgegevens staaf C28-V1 (0.000-2.084)

HE120A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 114.0 mm | A = 2.53e-03 m2 | Wy;el = 106.3e-06 m3 | Wy;pl = 119.5e-06 m3
b = 120.0 mm | Iy = 606.2e-08 m4 | Wz;el = 384.8e-07 m3 | Wz;pl = 588.5e-07 m3
tf = 8.0 mm | Iz = 230.9e-08 m4 | Aw;y;el = 2.04e-03 m2 | Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm | Massa/m = 19.9 kg/m | Aw;z;el = 8.46e-04 m2 | Aw;z;pl = 8.46e-04 m2
r = 12.0 mm | It = 599.4e-10 m4 | Iwa = 647.2e-11 m6

Doorsnedetoetsing C28-V1 (0.000-2.084)

Maatgevende combinatie: Fu.C.2 op 0.000 m | Profielklasse = 1
N;Ed = 211.4 kN | Vy;Ed = 0.0 kN | My;Ed = 0.0 kNm
Vz;Ed = 0.2 kN | Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN | Vy;Rd = 277.3 kN | MyRd = 28.1 kNm
Vz;Rd = 114.7 kN | MzRd = 13.8 kNm
NEN-EN1993-1-1(6.5): UC = 0.36 < 1

Kiptoetsing C28-V1 (0.000-2.084)

Equi. profiel: HE120A
Maatgevende combinatie: Fu.C.1 | Instab. curve Kip:a
Aangrijphoogte van de last: -0.053 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.
Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.000 | b-eff(Eind) = 0.000
Tabel gebruikt NB 6.2 | q = 0.2kN/m | = 0.0
Bovenflens maatgevend | Xb;lst = 0.000 m | Xe;lst = 2.084 m | lst = 2.084 m
Lsys = 2.084 m | Lg = 2.084 m | S = 0.530 m | Iwa = 6.4719e-09 m6
C1 = 1.13 | C2 = 0.45 (tabel) | C2(toegepast) = -0.48 | C = 3.37
Mcr = 78.4 kNm | kred = 1.0 | Lam-rel = 0.60 | Profielklasse 1
Chi;LT(Fu.C.1) = 0.89 | M;Ed = 0.1 kNm | UC(y) = 0.01
Chi;LT,Z = 1.00 | lkip = 2.084 m | UC(z) = 0.00
My;begin = 0.0 kNm | My;eind = 0.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.01 < 1

Stabiliteitstoetsing C28-V1 (0.000-2.084)

Maatgevende combinatie: Fu.C.12

N;Ed = -30.7 kN	Nb;Rd;y = 538.4 kN	Nb;Rd;z = 418.5 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.084 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.084 m
Xy = 0.90		Knikcurve: B	
Xz = 0.70		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.07 < 1

Buiging & Druk C28-V1 (0.000-2.084)

Maatgevende combinatie: Fu.C.12	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -30.7 kN	My;Ed = 0.1 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.95	Cmz = 1.00	CmLT = 0.95	
Kyy = 0.964	Kyz = 0.638	Kzy = 0.992	Kzz = 1.064
Ksi;y = 0.90	Ksi;z = 0.70	Ksi;LT = 0.89	

NEN-EN1993-1-1(6.61&6.62): UC = 0.08 < 1

Profielgegevens staaf C29-V1 (0.000-1.050)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C29-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2 op 0.000 m

N;Ed = -110.6 kN	Vy;Ed = 0.0 kN	Profielklasse = 1	
	Vz;Ed = 0.0 kN	My;Ed = 0.0 kNm	
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	Mz;Ed = 0.0 kNm	
	Vz;Rd = 114.7 kN	MyRd = 28.1 kNm	
		MzRd = 13.8 kNm	

NEN-EN1993-1-1(6.9): UC = 0.19 < 1

Kiptoetsing C29-V1 (0.000-1.050)

Equi. profiel: HE120A

Maatgevende combinatie: Fu.C.19 — Instab. curve Kip:a

Aangrijphoogte van de last: -0.053 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.1	M = 0.0kN/m	MBeta = 0.0	
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.050 m	Ist = 1.050 m
Lsys = 1.050 m	Lg = 1.050 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 10.30
Mcr = 475.5 kNm	kred = 1.0	Lam-rel = 0.24	Profielklasse 1
Chi;LT(Fu.C.19) = 0.99	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 1.050 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Stabiliteitstoetsing C29-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2

N;Ed = -110.6 kN	Nb;Rd;y = 589.4 kN	Nb;Rd;z = 543.5 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.050 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.050 m
Xy = 0.99		Knikcurve: B	
Xz = 0.91		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.20 < 1

Buiging & Druk C29-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -110.6 kN	My;Ed = 0.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.0 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 1.00	Cmz = 1.00	CmLT = 1.00	
Kyy = 1.005	Kyz = 0.617	Kzy = 0.970	Kzz = 1.029
Ksi;y = 0.99	Ksi;z = 0.91	Ksi;LT = 1.00	

NEN-EN1993-1-1(6.61&6.62): UC = 0.20 < 1

Profielgegevens staaf C30-V1 (0.000-1.050)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C30-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = -77.8 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm	
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm	

NEN-EN1993-1-1(6.9): UC = 0.13 < 1

Kiptoetsing C30-V1 (0.000-1.050)

Equi. profiel: HE120A			
Maatgevende combinatie: Fu.C.19		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.053 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.1	M = 0.0kN/m	MBeta = 0.0	
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.050 m	Ist = 1.050 m
Lsys = 1.050 m	Lg = 1.050 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 10.30
Mcr = 475.5 kNm	kred = 1.0	Lam-rel = 0.24	Profielklasse 1
Chi;LT(Fu.C.19) = 0.99	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 1.050 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Stabiliteitstoetsing C30-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2			
N;Ed = -77.8 kN	Nb;Rd;y = 589.4 kN	Nb;Rd;z = 543.5 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.050 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.050 m
Xy = 0.99		Knikcurve: B	
Xz = 0.91		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.14 < 1

Buiging & Druk C30-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -77.8 kN	My;Ed = 0.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.0 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 1.00	Cmz = 1.00	CmLT = 1.00	
Kyy = 1.004	Kyz = 0.612	Kzy = 0.970	Kzz = 1.020

Ksi;y = 0.99 Ksi;z = 0.91 Ksi;LT = 1.00
NEN-EN1993-1-1(6.61&6.62): UC = 0.14 < 1

Profielgegevens staaf C31-V1 (0.000-1.956)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C31-V1 (0.000-1.956)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = 148.5 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.2 kN	Mz;Ed = 0.0 kNm	
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm	
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm	

NEN-EN1993-1-1(6.5): UC = 0.25 < 1

Kiptoetsing C31-V1 (0.000-1.956)

Equi. profiel: HE120A			
Maatgevende combinatie: Fu.C.1		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.053 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.2	q = 0.2kN/m	= 0.0	
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.956 m	Ist = 1.956 m
Lsys = 1.956 m	Lg = 1.956 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.13	C2 = 0.45 (tabel)	C2(toegepast) = -0.48	C = 3.42
Mcr = 84.8 kNm	kred = 1.0	Lam-rel = 0.58	Profielklasse 1
Chi;LT(Fu.C.1) = 0.90	M;Ed = 0.1 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 1.956 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1

Stabiliteitstoetsing C31-V1 (0.000-1.956)

Maatgevende combinatie: Fu.C.12			
N;Ed = -18.8 kN	Nb;Rd;y = 545.2 kN	Nb;Rd;z = 435.2 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.956 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.956 m
Xy = 0.92		Knikcurve: B	
Xz = 0.73		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.04 < 1

Buiging & Druk C31-V1 (0.000-1.956)

Maatgevende combinatie: Fu.C.12	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -18.8 kN	My;Ed = 0.1 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.95	Cmz = 1.00	CmLT = 0.95	
Kyy = 0.957	Kyz = 0.620	Kzy = 0.996	Kzz = 1.034
Ksi;y = 0.92	Ksi;z = 0.73	Ksi;LT = 0.90	

NEN-EN1993-1-1(6.61&6.62): UC = 0.05 < 1

Profielgegevens staaf C33-V1 (0.000-1.050)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3

tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C33-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = -47.2 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm	
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm	

NEN-EN1993-1-1(6.9): UC = 0.08 < 1

Kiptoetsing C33-V1 (0.000-1.050)

Equi. profiel: HE120A			
Maatgevende combinatie: Fu.C.19		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.053 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.1	M = 0.0kN/m	MBeta = 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 1.050 m	lst = 1.050 m
Lsys = 1.050 m	Lg = 1.050 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 10.30
Mcr = 475.5 kNm	kred = 1.0	Lam-rel = 0.24	Profielklasse 1
Chi;LT(Fu.C.19) = 0.99	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 1.050 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Stabiliteitstoetsing C33-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2			
N;Ed = -47.2 kN	Nb;Rd;y = 589.4 kN	Nb;Rd;z = 543.5 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.050 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.050 m
Xy = 0.99		Knikcurve: B	
Xz = 0.91		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.09 < 1

Buiging & Druk C33-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -47.2 kN	My;Ed = 0.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.0 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 1.00	Cmz = 1.00	CmLT = 1.00	
Kyy = 1.002	Kyz = 0.607	Kzy = 0.970	Kzz = 1.012
Ksi;y = 0.99	Ksi;z = 0.91	Ksi;LT = 1.00	

NEN-EN1993-1-1(6.61&6.62): UC = 0.09 < 1

Profielgegevens staaf C34-V1 (0.000-1.956)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C34-V1 (0.000-1.956)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = 87.9 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.2 kN	Mz;Ed = 0.0 kNm	

N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm	
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm	

NEN-EN1993-1-1(6.5): UC = 0.15 < 1

Kiptoetsing C34-V1 (0.000-1.956)

Equi. profiel: HE120A
Maatgevende combinatie: Fu.C.1 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.053 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.2	q = 0.2kN/m	= 0.0	
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.956 m	Ist = 1.956 m
Lsys = 1.956 m	Lg = 1.956 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.13	C2 = 0.45 (tabel)	C2(toegepast) = -0.48	C = 3.42
Mcr = 84.8 kNm	kred = 1.0	Lam-rel = 0.58	Profielklasse 1
Chi;LT(Fu.C.1) = 0.90	M;Ed = 0.1 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 1.956 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1

Stabiliteitstoetsing C34-V1 (0.000-1.956)

Maatgevende combinatie: Fu.C.12

N;Ed = -6.6 kN	Nb;Rd;y = 545.2 kN	Nb;Rd;z = 435.2 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.956 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.956 m
Xy = 0.92		Knikcurve: B	
Xz = 0.73		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.02 < 1

Buiging & Druk C34-V1 (0.000-1.956)

Maatgevende combinatie: Fu.C.12	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -6.6 kN	My;Ed = 0.1 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.95	Cmz = 1.00	CmLT = 0.95	
Kyy = 0.953	Kyz = 0.607	Kzy = 0.999	Kzz = 1.012
Ksi;y = 0.92	Ksi;z = 0.73	Ksi;LT = 0.90	

NEN-EN1993-1-1(6.61&6.62): UC = 0.02 < 1

Profielgegevens staaf C35-V1 (0.000-1.914)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C35-V1 (0.000-1.914)

Maatgevende combinatie: Fu.C.2 op 0.000 m — Profielklasse = 1

N;Ed = 33.3 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.2 kN	Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm

NEN-EN1993-1-1(6.5): UC = 0.06 < 1

Kiptoetsing C35-V1 (0.000-1.914)

Equi. profiel: HE120A
Maatgevende combinatie: Fu.C.1 — Instab. curve Kip:a

Aangrijphoogte van de last: -0.053 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.2	q = 0.2kN/m	= 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 1.914 m	lst = 1.914 m
Lsys = 1.914 m	Lg = 1.914 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.13	C2 = 0.45 (tabel)	C2(toegepast) = -0.48	C = 3.44
Mcr = 87.1 kNm	kred = 1.0	Lam-rel = 0.57	Profielklasse 1
Chi;LT(Fu.C.1) = 0.90	M;Ed = 0.1 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 1.914 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1

Profielgegevens staaf C36-V1 (0.000-1.050)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C36-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2 op 0.000 m

N;Ed = -17.6 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = 0.0 kN	My;Ed = 0.0 kNm
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 114.7 kN	MyRd = 28.1 kNm
		MzRd = 13.8 kNm

NEN-EN1993-1-1(6.9): UC = 0.03 < 1

Kiptoetsing C36-V1 (0.000-1.050)

Equi. profiel: HE120A
Maatgevende combinatie: Fu.C.19
Instab. curve Kip:a
Aangrijphoogte van de last: -0.053 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.1	M = 0.0kN/m	MBeta = 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 1.050 m	lst = 1.050 m
Lsys = 1.050 m	Lg = 1.050 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 10.30
Mcr = 475.5 kNm	kred = 1.0	Lam-rel = 0.24	Profielklasse 1
Chi;LT(Fu.C.19) = 0.99	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 1.050 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Stabiliteitstoetsing C36-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2

N;Ed = -17.6 kN	Nb;Rd;y = 589.4 kN	Nb;Rd;z = 543.5 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 1.050 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 1.050 m
Xy = 0.99		Knikcurve: B	
Xz = 0.91		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.03 < 1

Buiging & Druk C36-V1 (0.000-1.050)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -17.6 kN	My;Ed = 0.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.0 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	

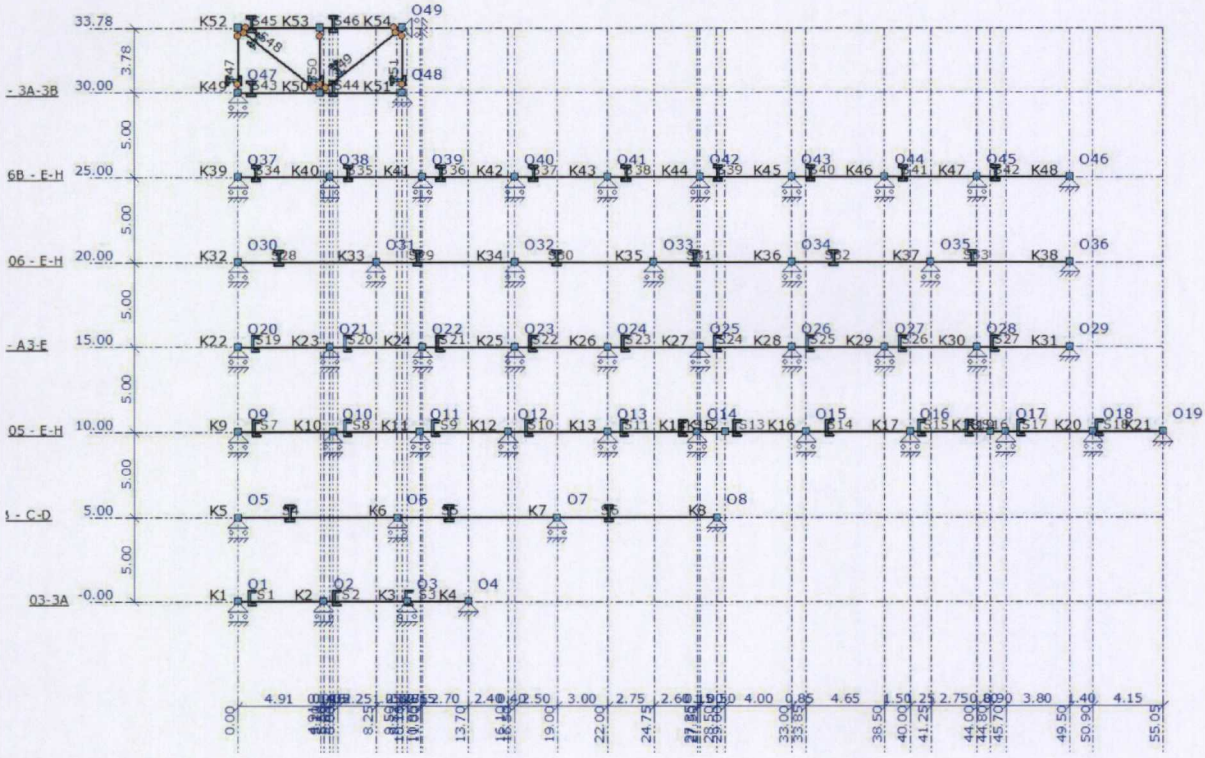
Cmy = 1.00	Cmz = 1.00	CmLT = 1.00	
Kyy = 1.001	Kyz = 0.603	Kzy = 0.970	Kzz = 1.005
Ksi;y = 0.99	Ksi;z = 0.91	Ksi;LT = 1.00	

NEN-EN1993-1-1(6.61&6.62): UC = 0.03 < 1

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	54	51	49	9	5	41

AFB. GEOMETRIE RAAMWERK



STAVEN

Staaf	Knoop B	B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S1	K1	NVM	NVM	K2	P1	0.000	0.000	5.100	0.000	5.100
S2	K2	NVM	NVM	K3	P1	5.100	0.000	10.100	0.000	5.000
S3	K3	NVM	NVM	K4	P1	10.100	0.000	13.700	0.000	3.600
S4	K5	NVM	NVM	K6	P2	0.000	-5.000	9.500	-5.000	9.500
S5	K6	NVM	NVM	K7	P2	9.500	-5.000	19.000	-5.000	9.500
S6	K7	NVM	NVM	K8	P2	19.000	-5.000	28.500	-5.000	9.500
S7	K9	NVM	NVM	K10	P4	0.000	-10.000	5.650	-10.000	5.650
S8	K10	NVM	NVM	K11	P4	5.650	-10.000	10.850	-10.000	5.200
S9	K11	NVM	NVM	K12	P4	10.850	-10.000	16.100	-10.000	5.250
S10	K12	NVM	NVM	K13	P4	16.100	-10.000	22.000	-10.000	5.900
S11	K13	NVM	NVM	K14	P4	22.000	-10.000	27.350	-10.000	5.350
S12	K14	NVM	NVM	K15	P4	27.350	-10.000	29.000	-10.000	1.650
S13	K15	NVM	NVM	K16	P4	29.000	-10.000	33.850	-10.000	4.850
S14	K16	NVM	NVM	K17	P4	33.850	-10.000	40.000	-10.000	6.150
S15	K17	NVM	NVM	K18	P4	40.000	-10.000	44.800	-10.000	4.800
S16	K18	NVM	NVM	K19	P4	44.800	-10.000	45.700	-10.000	0.900
S17	K19	NVM	NVM	K20	P4	45.700	-10.000	50.900	-10.000	5.200
S18	K20	NVM	NVM	K21	P4	50.900	-10.000	55.050	-10.000	4.150
S19	K22	NVM	NVM	K23	P3	0.000	-15.000	5.500	-15.000	5.500
S20	K23	NVM	NVM	K24	P3	5.500	-15.000	11.000	-15.000	5.500
S21	K24	NVM	NVM	K25	P3	11.000	-15.000	16.500	-15.000	5.500

Staaf	Knoop B	B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S22	K25	NVM	NVM	K26	P3	16.500	-15.000	22.000	-15.000	5.500
S23	K26	NVM	NVM	K27	P3	22.000	-15.000	27.500	-15.000	5.500
S24	K27	NVM	NVM	K28	P3	27.500	-15.000	33.000	-15.000	5.500
S25	K28	NVM	NVM	K29	P3	33.000	-15.000	38.500	-15.000	5.500
S26	K29	NVM	NVM	K30	P3	38.500	-15.000	44.000	-15.000	5.500
S27	K30	NVM	NVM	K31	P3	44.000	-15.000	49.500	-15.000	5.500
S28	K32	NVM	NVM	K33	P5	0.000	-20.000	8.250	-20.000	8.250
S29	K33	NVM	NVM	K34	P5	8.250	-20.000	16.500	-20.000	8.250
S30	K34	NVM	NVM	K35	P5	16.500	-20.000	24.750	-20.000	8.250
S31	K35	NVM	NVM	K36	P5	24.750	-20.000	33.000	-20.000	8.250
S32	K36	NVM	NVM	K37	P5	33.000	-20.000	41.250	-20.000	8.250
S33	K37	NVM	NVM	K38	P5	41.250	-20.000	49.500	-20.000	8.250
S34	K39	NVM	NVM	K40	P6	0.000	-25.000	5.500	-25.000	5.500
S35	K40	NVM	NVM	K41	P6	5.500	-25.000	11.000	-25.000	5.500
S36	K41	NVM	NVM	K42	P6	11.000	-25.000	16.500	-25.000	5.500
S37	K42	NVM	NVM	K43	P6	16.500	-25.000	22.000	-25.000	5.500
S38	K43	NVM	NVM	K44	P6	22.000	-25.000	27.500	-25.000	5.500
S39	K44	NVM	NVM	K45	P6	27.500	-25.000	33.000	-25.000	5.500
S40	K45	NVM	NVM	K46	P6	33.000	-25.000	38.500	-25.000	5.500
S41	K46	NVM	NVM	K47	P6	38.500	-25.000	44.000	-25.000	5.500
S42	K47	NVM	NVM	K48	P6	44.000	-25.000	49.500	-25.000	5.500
S43	K49	NVM	NVM	K50	P7	0.000	-30.000	4.910	-30.000	4.910
S44	K50	NVM	NVM	K51	P7	4.910	-30.000	9.820	-30.000	4.910
S45	K52	NV-	NVM	K53	P8	0.000	-33.780	4.910	-33.780	4.910
S46	K53	NVM	NV-	K54	P8	4.910	-33.780	9.820	-33.780	4.910
S47	K49	NV-	NV-	K52	P8	0.000	-30.000	0.000	-33.780	3.780
S48	K52	NV-	NV-	K50	P9	0.000	-33.780	4.910	-30.000	6.196
S49	K50	NV-	NV-	K54	P9	4.910	-30.000	9.820	-33.780	6.196
S50	K50	NV-	NV-	K53	P8	4.910	-30.000	4.910	-33.780	3.780
S51	K51	NV-	NV-	K54	P8	9.820	-30.000	9.820	-33.780	3.780
-	-	-	-	-	-	m	m	m	m	m

PROFIELEN

Profiel	Profielnaam	Oppervlakte	Iy	Materiaal	Hoek
P1	UNP320	7.5771e-03	1.0868e-04	S355	0.0
P2	HE450B	2.1798e-02	7.9888e-04	S355	0.0
P3	UNP320	7.5771e-03	1.0868e-04	S355	0.0
P4	UNP400	9.1481e-03	2.0351e-04	S355	0.0
P5	HE450B	2.1798e-02	7.9888e-04	S355	0.0
P6	HE260B	1.1844e-02	1.4919e-04	S355	0.0
P7	HE180A	4.5251e-03	2.5103e-05	S235	0.0
P8	HE140A	3.1416e-03	1.0331e-05	S235	0.0
P9	HE120A	2.5336e-03	6.0615e-06	S235	0.0
-	-	m2	m4	-	°

MATERIALEN

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

OPLEGGINGEN

Oplegging	Knoop	X	Z	Yr	HoekYr
O1	K1	vrij	vast	vrij	0
O2	K2	vrij	vast	vrij	0
O3	K3	vrij	vast	vrij	0
O4	K4	vast	vast	vrij	0
O5	K5	vrij	vast	vrij	0
O6	K6	vrij	vast	vrij	0
O7	K7	vrij	vast	vrij	0
O8	K8	vast	vast	vrij	0
O9	K9	vrij	vast	vrij	0
O10	K10	vrij	vast	vrij	0
O11	K11	vrij	vast	vrij	0
O12	K12	vrij	vast	vrij	0
O13	K13	vrij	vast	vrij	0
O14	K14	vrij	vast	vrij	0
O15	K16	vrij	vast	vrij	0
O16	K17	vrij	vast	vrij	0
O17	K19	vrij	vast	vrij	0
O18	K20	vrij	vast	vrij	0

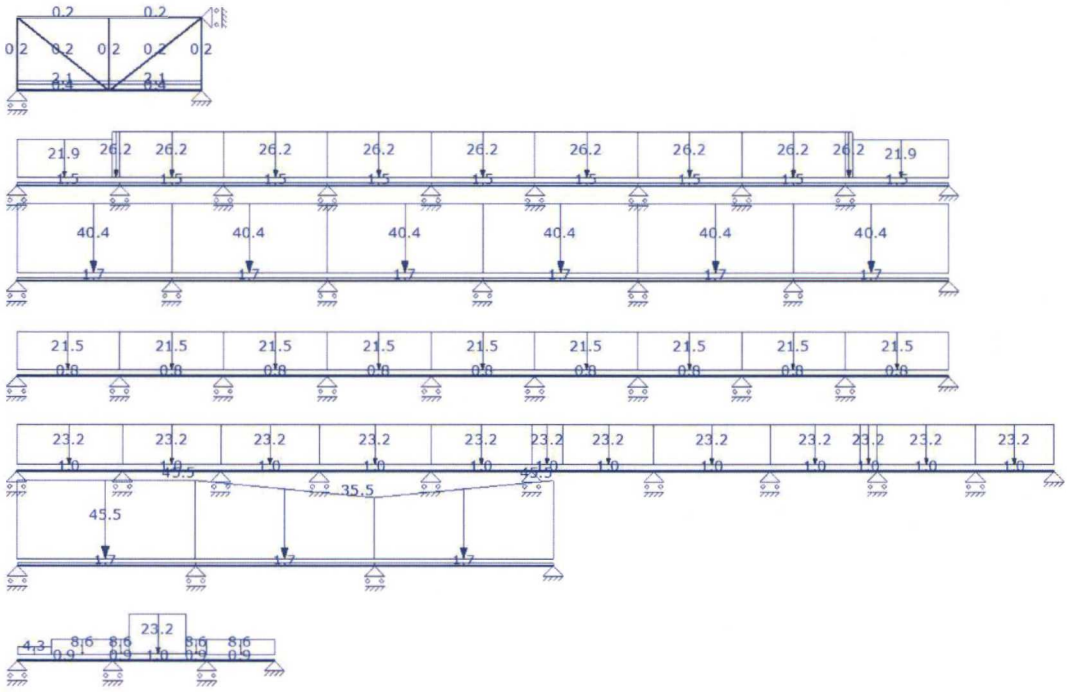
Oplegging	Knoop	X	Z	Yr	HoekYr
O19	K21	vast	vast	vrij	0
O20	K22	vrij	vast	vrij	0
O21	K23	vrij	vast	vrij	0
O22	K24	vrij	vast	vrij	0
O23	K25	vrij	vast	vrij	0
O24	K26	vrij	vast	vrij	0
O25	K27	vrij	vast	vrij	0
O26	K28	vrij	vast	vrij	0
O27	K29	vrij	vast	vrij	0
O28	K30	vrij	vast	vrij	0
O29	K31	vast	vast	vrij	0
O30	K32	vrij	vast	vrij	0
O31	K33	vrij	vast	vrij	0
O32	K34	vrij	vast	vrij	0
O33	K35	vrij	vast	vrij	0
O34	K36	vrij	vast	vrij	0
O35	K37	vrij	vast	vrij	0
O36	K38	vast	vast	vrij	0
O37	K39	vrij	vast	vrij	0
O38	K40	vrij	vast	vrij	0
O39	K41	vrij	vast	vrij	0
O40	K42	vrij	vast	vrij	0
O41	K43	vrij	vast	vrij	0
O42	K44	vrij	vast	vrij	0
O43	K45	vrij	vast	vrij	0
O44	K46	vrij	vast	vrij	0
O45	K47	vrij	vast	vrij	0
O46	K48	vast	vast	vrij	0
O47	K49	vrij	vast	vrij	0
O48	K51	vast	vast	vrij	0
O49	K54	vast	0.00:0.00	vrij	0
-	-	kN/m	kN/m	kNm/rad	°

B.G.1: EIGEN GEWICHT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.59 (1.45x)	0.59 (1.45x)	0.000	5.100(L)	Z"	S1
qG	0.59 (1.45x)	0.59 (1.45x)	0.000	0.900	Z"	S2
qG	0.59 (1.68x)	0.59 (1.68x)	0.900	3.900	Z"	S2
qG	0.59 (1.45x)	0.59 (1.45x)	3.900	5.000(L)	Z"	S2
qG	0.59 (1.45x)	0.59 (1.45x)	0.000	3.600(L)	Z"	S3
q	4.30	4.30	0.000	1.860	Z'	S1
q	8.60	8.60	1.860	5.100(L)	Z'	S1
q	8.60	8.60	0.000	0.900	Z'	S2
q	23.20	23.20	0.900	3.900	Z'	S2
q	8.60	8.60	3.900	5.000(L)	Z'	S2
q	8.60	8.60	0.000	3.600(L)	Z'	S3
qG	1.71 (1.00x)	1.71 (1.00x)	0.000	9.500(L)	Z"	S4-S6
q	45.50	45.50	0.000	9.500(L)	Z'	S4
q	45.50	35.50	0.000	9.500(L)	Z'	S5
q	35.50	45.50	0.000	9.500(L)	Z'	S6
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	5.650(L)	Z"	S7
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	5.200(L)	Z"	S8,S17
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	5.250(L)	Z"	S9
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	5.900(L)	Z"	S10
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	5.350(L)	Z"	S11
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	1.650(L)	Z"	S12
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	4.850(L)	Z"	S13
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	6.150(L)	Z"	S14
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	4.800(L)	Z"	S15
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	0.900(L)	Z"	S16
qG	0.72 (1.45x)	0.72 (1.45x)	0.000	4.150(L)	Z"	S18
q	23.20	23.20	0.000	5.650(L)	Z'	S7-S18

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.59 (1.39x)	0.59 (1.39x)	0.000	5.500(L)	Z"	S19-S27
q	21.50	21.50	0.000	5.500(L)	Z'	S19-S27
qG	1.71 (1.00x)	1.71 (1.00x)	0.000	8.250(L)	Z"	S28-S33
q	40.40	40.40	0.000	8.250(L)	Z'	S28-S33
qG	0.93 (1.62x)	0.93 (1.62x)	0.000	5.500(L)	Z"	S34-S42
q	21.90	21.90	0.000	5.110	Z'	S34
q	26.20	26.20	5.110	5.500(L)	Z'	S34
q	26.20	26.20	0.000	5.500(L)	Z'	S35-S41
q	26.20	26.20	0.000	0.390	Z'	S42
q	21.90	21.90	0.390	5.500(L)	Z'	S42
qG	0.36 (1.00x)	0.36 (1.00x)	0.000	4.910(L)	Z"	S43-S44
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	4.910(L)	Z"	S45-S46
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	3.780(L)	Z"	S47,S50-S51
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	6.196(L)	Z"	S48-S49
q	2.15	2.15	0.000	4.910(L)	Z'	S43-S44
Som lasten	**X: 0.00**	**kN**	**Z: 7,300.32**	**kN**		
-	-	-	m	m	-	-

B.G.1: EIGEN GEWICHT

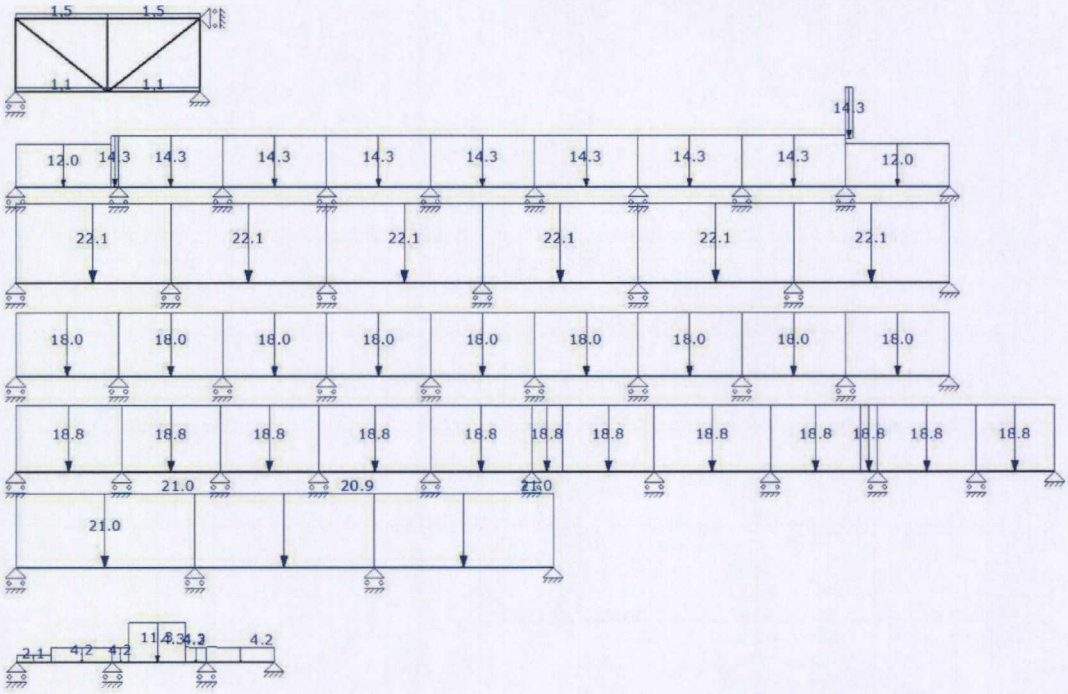


B.G.2: PERMANENT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent						
q	2.10	2.10	0.000	1.860	Z"	S1
q	4.20	4.20	1.860	5.100(L)	Z"	S1
q	4.20	4.20	0.000	0.900	Z"	S2
q	11.30	11.30	0.900	3.900	Z"	S2
q	4.30	4.20	3.900	5.000(L)	Z"	S2
q	4.30	4.20	0.000	3.600(L)	Z"	S3

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent						
q	21.00	21.00	0.000	9.500(L)	Z'	S4
q	21.00	20.90	0.000	9.500(L)	Z'	S5
q	20.90	21.00	0.000	9.500(L)	Z'	S6
q	18.80	18.80	0.000	5.650(L)	Z'	S7-S18
q	18.00	18.00	0.000	5.500(L)	Z'	S19-S27
q	22.10	22.10	0.000	8.250(L)	Z'	S28-S33
q	12.00	12.00	0.000	5.110	Z'	S34
q	14.30	14.30	5.110	5.500(L)	Z'	S34
q	14.30	14.30	0.000	5.500(L)	Z'	S35-S41
q	14.30	14.30	0.000	0.390	Z'	S42
q	12.00	12.00	0.000	5.500(L)	Z'	S42
q	1.51	1.51	0.000	4.910(L)	Z'	S45-S46
q	1.05	1.05	0.000	4.910(L)	Z'	S43-S44
Som lasten	**X: 0.00**	**kN Z: 4,406.77**	**kN**			
-	-	-	m	m	-	-

B.G.2: PERMANENT

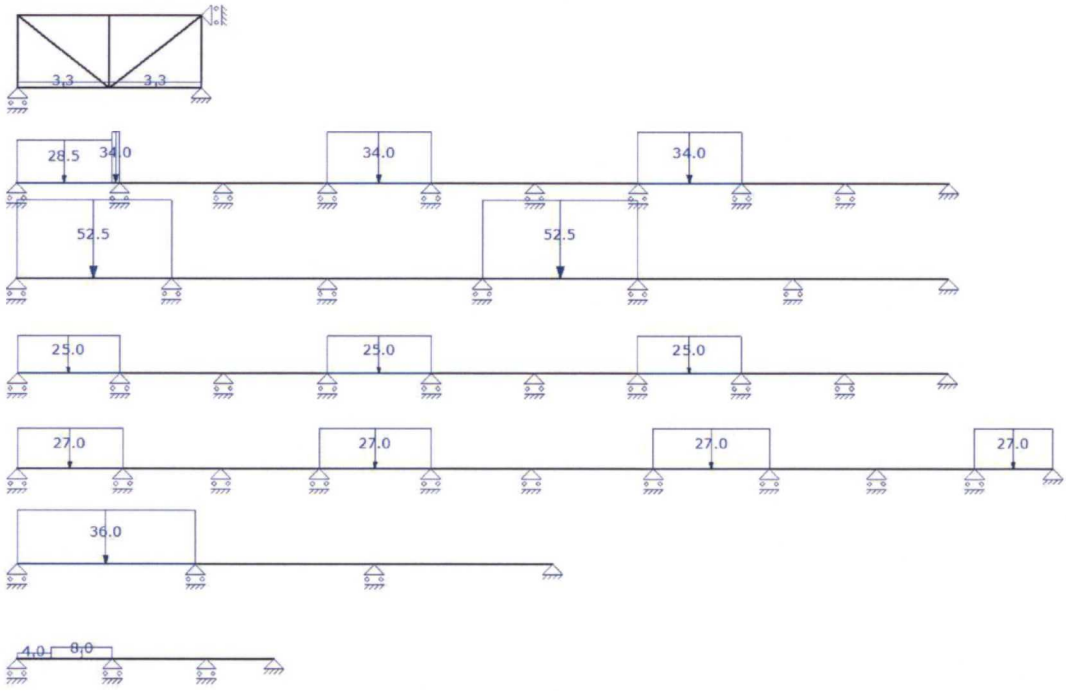


B.G.3: VERANDERLIJK LINKS

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Veranderlijk Links						
q	4.00	4.00	0.000	1.860	Z"	S1
q	8.00	8.00	1.860	5.100(L)	Z"	S1
q	36.00	36.00	0.000	9.500(L)	Z'	S4
q	27.00	27.00	0.000	5.650(L)	Z'	S7,S10,S14,S18
q	25.00	25.00	0.000	5.500(L)	Z'	S19,S22,S25
q	52.50	52.50	0.000	8.250(L)	Z'	S28,S31
q	28.50	28.50	0.000	5.110	Z"	S34
q	34.00	34.00	5.110	5.500(L)	Z"	S34

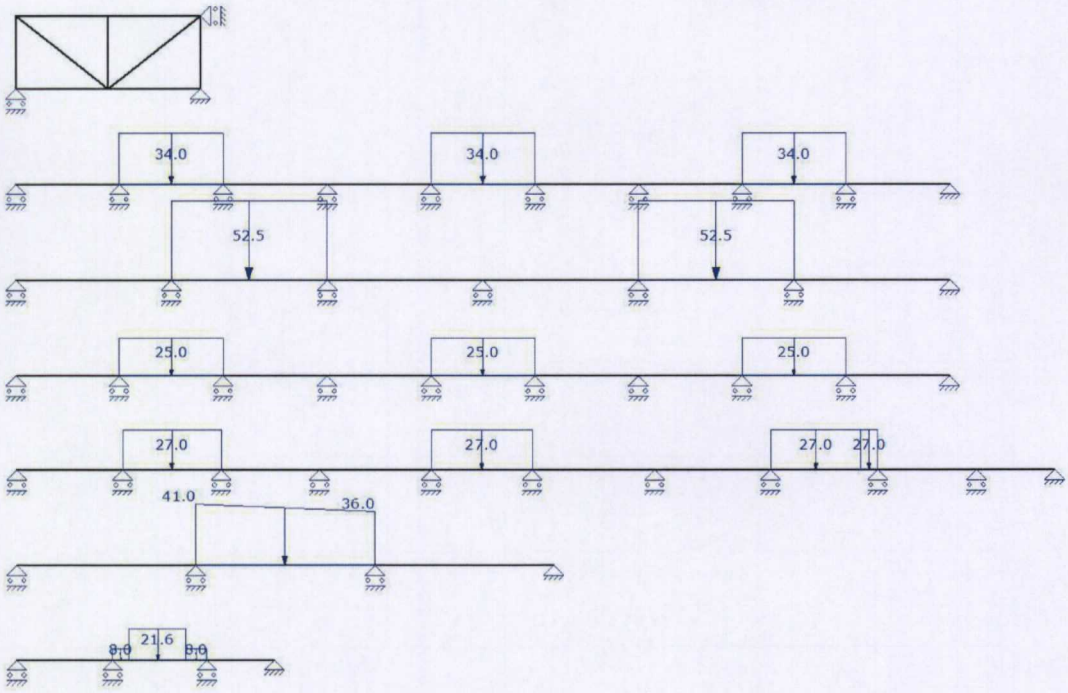
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Veranderlijk Links						
q	34.00	34.00	0.000	5.500(L)	Z'	S37,S40
q	3.33	3.33	0.000	4.910(L)	Z'	S43-S44
Som lasten	**X: 0.00**	**kN Z: 2,809.66**	**kN**			
-	-	-	m	m	-	-

B.G.3: VERANDERLIJK LINKS



B.G.4: VERANDERLIJK MIDDEN

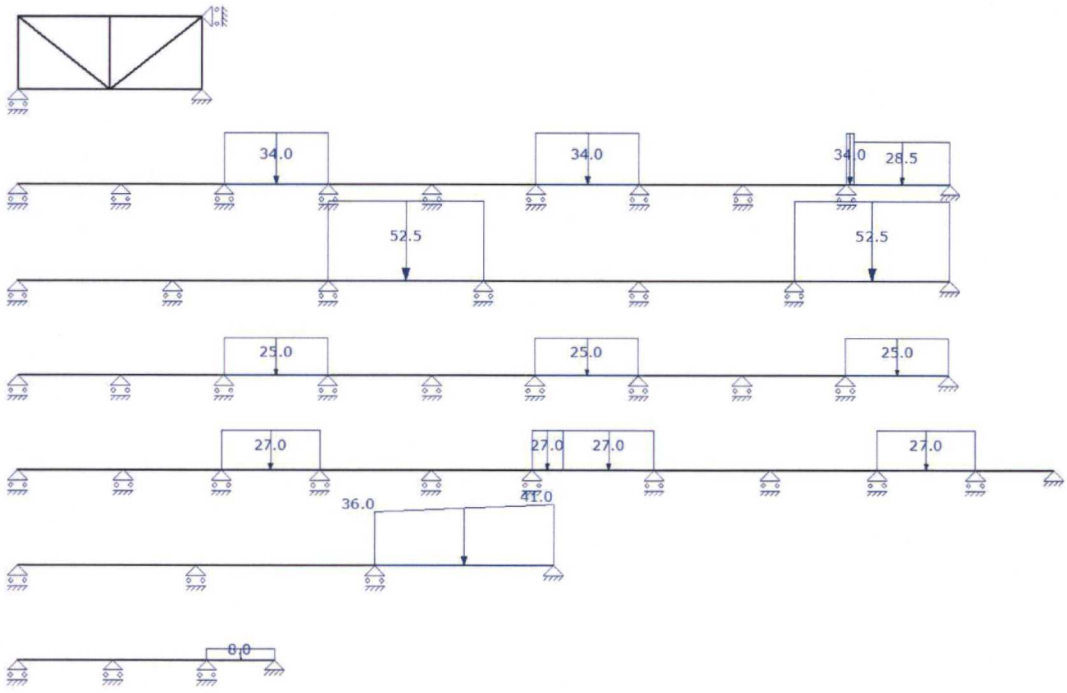
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.4: Veranderlijk Midden						
q	8.00	8.00	0.000	0.900	Z"	S2
q	21.60	21.60	0.900	3.900	Z"	S2
q	8.00	8.00	3.900	5.000(L)	Z"	S2
q	41.00	36.00	0.000	9.500(L)	Z"	S5
q	27.00	27.00	0.000	5.200(L)	Z"	S8,S11,S15-S16
q	25.00	25.00	0.000	5.500(L)	Z'	S20,S23,S26
q	52.50	52.50	0.000	8.250(L)	Z'	S29,S32
q	34.00	34.00	0.000	5.500(L)	Z'	S35,S38,S41
Som lasten	**X: 0.00**	**kN Z: 2,725.05**	**kN**			
-	-	-	m	m	-	-



B.G.5: VERANDERLIJK RECHTS

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Veranderlijk Rechts						
q	8.00	8.00	0.000	3.600(L)	Z"	S3
q	36.00	41.00	0.000	9.500(L)	Z"	S6
q	27.00	27.00	0.000	5.250(L)	Z"	S9,S12-S13,S17
q	25.00	25.00	0.000	5.500(L)	Z"	S21,S24,S27
q	52.50	52.50	0.000	8.250(L)	Z"	S30,S33
q	34.00	34.00	0.000	5.500(L)	Z"	S36,S39
q	34.00	34.00	0.000	0.390	Z'	S42
q	28.50	28.50	0.390	5.500(L)	Z'	S42
Som lasten	**X: 0.00**	**kN Z:**	**2,663.84**	**kN**		
-	-	-	m	m	-	-

B.G.5: VERANDERLIJK RECHTS



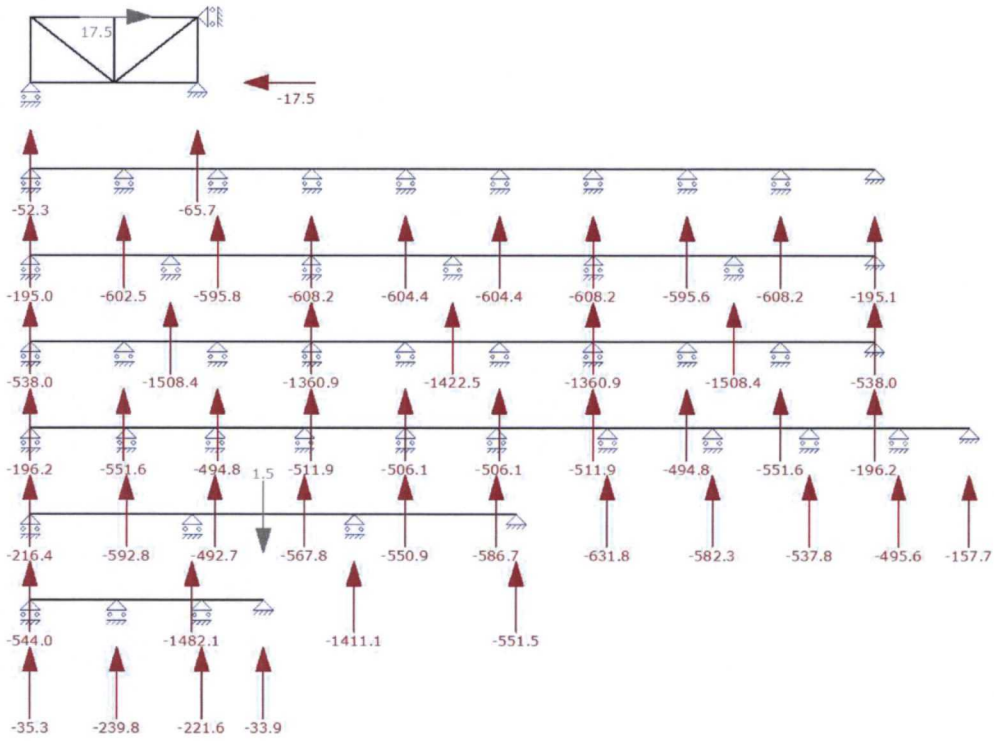
FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Fu.C.1	Fu.C.2	Fu.C.3	Fu.C.4	Fu.C.5	Fu.C.6	Fu.C.7	Fu.C.8
B.G.1	Eigen Gewicht	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.2	Permanent	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.3	Veranderlijk Links	-	1.50	-	-	1.50	1.50	-	1.50
B.G.4	Veranderlijk Midden	-	-	1.50	-	1.50	-	1.50	1.50
B.G.5	Veranderlijk Rechts	-	-	-	1.50	-	1.50	1.50	1.50
B.G.	**Omschrijving**	**Fu.C.9**	**Fu.C.10**	**Fu.C.11**	**Fu.C.12**	**Fu.C.13**	**Fu.C.14**	**Fu.C.15**	
B.G.1	Eigen Gewicht	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
B.G.2	Permanent	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
B.G.3	Veranderlijk Links	1.50	-	-	1.50	1.50	-	1.50	
B.G.4	Veranderlijk Midden	-	1.50	-	1.50	-	1.50	1.50	
B.G.5	Veranderlijk Rechts	-	-	1.50	-	1.50	1.50	1.50	

FU.C. EXTREME OPLEGREACTIES

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O1	K1					Fu.C.6	0.00	**-35.25**	0.00				
O2	K2					Fu.C.5	0.00	**-239.78**	0.00				
O3	K3					Fu.C.7	0.00	**-221.62**	0.00				
O4	K4					Fu.C.10	0.00	**1.46**	0.00				
O4	K4					Fu.C.6	0.00	**-33.92**	0.00				
O5	K5					Fu.C.6	0.00	**-543.98**	0.00				
O6	K6					Fu.C.5	0.00	**-1482.12**	0.00				
O7	K7					Fu.C.7	0.00	**-1411.08**	0.00				
O8	K8					Fu.C.6	0.00	**-551.53**	0.00				
O9	K9					Fu.C.6	0.00	**-216.36**	0.00				
O10	K10					Fu.C.5	0.00	**-592.76**	0.00				
O11	K11					Fu.C.7	0.00	**-492.75**	0.00				
O12	K12					Fu.C.6	0.00	**-567.78**	0.00				
O13	K13					Fu.C.5	0.00	**-550.89**	0.00				
O14	K14					Fu.C.7	0.00	**-586.70**	0.00				
O15	K16					Fu.C.6	0.00	**-631.82**	0.00				

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O16	K17					Fu.C.5	0.00	**-582.26**	0.00				
O17	K19					Fu.C.7	0.00	**-537.82**	0.00				
O18	K20					Fu.C.6	0.00	**-495.57**	0.00				
O19	K21					Fu.C.5	0.00	**-157.71**	0.00				
O20	K22					Fu.C.6	0.00	**-196.21**	0.00				
O21	K23					Fu.C.5	0.00	**-551.65**	0.00				
O22	K24					Fu.C.7	0.00	**-494.78**	0.00				
O23	K25					Fu.C.6	0.00	**-511.89**	0.00				
O24	K26					Fu.C.5	0.00	**-506.15**	0.00				
O25	K27					Fu.C.7	0.00	**-506.15**	0.00				
O26	K28					Fu.C.6	0.00	**-511.89**	0.00				
O27	K29					Fu.C.5	0.00	**-494.78**	0.00				
O28	K30					Fu.C.7	0.00	**-551.65**	0.00				
O29	K31					Fu.C.6	0.00	**-196.21**	0.00				
O30	K32					Fu.C.6	0.00	**-537.97**	0.00				
O31	K33					Fu.C.5	0.00	**-1508.39**	0.00				
O32	K34					Fu.C.7	0.00	**-1360.88**	0.00				
O33	K35					Fu.C.6	0.00	**-1422.54**	0.00				
O34	K36					Fu.C.5	0.00	**-1360.88**	0.00				
O35	K37					Fu.C.7	0.00	**-1508.39**	0.00				
O36	K38					Fu.C.6	0.00	**-537.97**	0.00				
O37	K39					Fu.C.6	0.00	**-195.04**	0.00				
O38	K40					Fu.C.5	0.00	**-602.51**	0.00				
O39	K41					Fu.C.7	0.00	**-595.79**	0.00				
O40	K42					Fu.C.6	0.00	**-608.16**	0.00				
O41	K43					Fu.C.5	0.00	**-604.38**	0.00				
O42	K44					Fu.C.7	0.00	**-604.37**	0.00				
O43	K45					Fu.C.6	0.00	**-608.21**	0.00				
O44	K46					Fu.C.5	0.00	**-595.63**	0.00				
O45	K47					Fu.C.7	0.00	**-608.16**	0.00				
O46	K48					Fu.C.6	0.00	**-195.14**	0.00				
O47	K49					Fu.C.2	0.00	**-52.26**	0.00				
O48	K51	Fu.C.2	**-17.46**	-65.70	0.00	Fu.C.2	-17.46	**-65.70**	0.00				
O49	K54	Fu.C.2	**17.46**	0.00	0.00								
Globale extreme waarden													
O49	K54	Fu.C.2	**17.46**	0.00	0.00								
O48	K51	Fu.C.2	**-17.46**	-65.70	0.00								
O4	K4					Fu.C.10	0.00	**1.46**	0.00				
O35	K37					Fu.C.7	0.00	**-1508.39**	0.00				
-	-	-	**kN**	**kN**	**kNm**	-	**kN**	**kN**	**kNm**		**kN**	**kN**	**kNm**



FU.C. EXTREME STAAFKRACHTEN

Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0 T/D	Nmax	Vb	Vmax	Ve
S1	Fu.C.5	0.00	27.08	1.891	**-119.16**	3.272	0.000 -	0.00	28.24	**-91.13**	**-91.13**
	Fu.C.6	0.00	**41.21**	2.138	-83.39	3.841	0.000 -	0.00	**35.25**	-84.12	-84.12
S2	Fu.C.3	-100.56	**110.68**	2.477	-99.83	0.755	4.213 -	0.00	143.85	143.85	-138.01
	Fu.C.5	**-119.16**	104.13	2.541	-94.42	0.875	4.227 -	0.00	**148.65**	**148.65**	-133.21
	Fu.C.7	-98.39	107.47	2.448	**-108.60**	0.751	4.153 -	0.00	141.66	141.66	**-140.19**
	Fu.C.14	-81.65	93.23	2.437	-93.90	0.730	4.151 -	0.00	120.78	**-120.91**	-120.91
S3	Fu.C.6	-62.14	**20.25**	2.406	0.00	1.213	0.000 -	0.00	68.52	68.52	**-33.92**
	Fu.C.7	**-108.60**	7.78	2.860	0.00	2.121	0.000 -	0.00	**81.42**	**81.42**	-21.02
	Fu.C.10	-85.14	0.00	0.000	0.00	0.000	0.000 -	0.00	45.89	45.89	**1.46**
S4	Fu.C.5	0.00	946.98	3.734	**-1311.52**	7.468	0.000 -	0.00	507.25	**-783.36**	**-783.36**
	Fu.C.6	0.00	**1089.10**	4.004	-962.55	8.008	0.000 -	0.00	**543.98**	-746.62	-746.62
S5	Fu.C.3	-986.62	**549.15**	4.738	-928.17	1.891	7.627 -	0.00	656.02	656.02	-612.65
	Fu.C.5	**-1311.52**	433.65	5.059	-846.94	2.521	7.631 -	0.00	**698.77**	**698.77**	-569.90
	Fu.C.7	-900.13	427.71	4.398	**-1274.13**	1.890	6.939 -	0.00	610.50	**-658.17**	**-658.17**
	Fu.C.13	-781.52	**-132.85**	4.714	-766.82	0.000	0.000 -	0.00	278.76	278.76	-261.27
S6	Fu.C.6	-934.18	**1081.42**	5.540	0.00	1.498	0.000 -	0.00	717.13	717.13	**-551.53**
	Fu.C.7	**-1274.13**	944.44	5.804	0.00	2.037	0.000 -	0.00	**752.92**	**752.92**	-515.74
S7	Fu.C.5	0.00	228.01	2.225	**-312.60**	4.449	0.000 -	0.00	204.99	**-315.65**	**-315.65**
	Fu.C.6	0.00	**254.01**	2.348	-248.37	4.696	0.000 -	0.00	**216.36**	-304.28	-304.28
S8	Fu.C.3	-217.84	**122.31**	2.717	-161.74	1.088	4.346 -	0.00	250.38	250.38	-228.80
	Fu.C.5	**-312.60**	104.07	3.007	-117.48	1.504	4.510 -	0.00	**277.11**	**277.11**	-202.07
	Fu.C.7	-203.99	99.76	2.568	**-219.51**	1.096	4.039 -	0.00	236.60	**-242.57**	**-242.57**
	Fu.C.13	-206.51	**-9.11**	3.192	-87.17	0.000	0.000 -	0.00	123.67	123.67	-77.77
S9	Fu.C.4	-156.00	**136.19**	2.518	-207.63	0.799	4.238 -	0.00	232.06	-251.73	-251.73
	Fu.C.6	-111.73	122.88	2.257	**-289.99**	0.623	3.890 -	0.00	207.94	**-275.85**	**-275.85**
	Fu.C.7	**-219.51**	120.08	2.715	-176.04	1.100	4.329 -	0.00	**250.17**	**250.17**	-233.61
S10	Fu.C.2	-227.20	**181.46**	2.978	-211.88	0.994	4.963 -	0.00	274.44	274.44	-269.25
	Fu.C.5	-195.60	166.75	2.804	**-274.78**	0.902	4.707 -	0.00	258.42	**-285.26**	**-285.26**

Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0 T/D	Nmax	Vb	Vmax	Ve
S10	Fu.C.6	**-289.99**	172.44	3.168	-171.45	1.233	5.103 -	0.00	**291.93**	**291.93**	-251.75
S11	Fu.C.3	-194.24	**126.00**	2.636	-213.29	0.983	4.290 -	0.00	242.94	-250.06	-250.06
	Fu.C.5	**-274.78**	108.07	2.883	-172.44	1.351	4.414 -	0.00	**265.63**	**265.63**	-227.37
	Fu.C.7	-153.80	100.61	2.350	**-314.10**	0.872	3.828 -	0.00	216.54	**-276.46**	**-276.46**
	Fu.C.13	-138.61	**-17.53**	2.500	-174.83	0.000	0.000 -	0.00	96.85	-110.39	-110.39
S12	Fu.C.6	-213.12	0.00	0.000	**118.47**	0.906	0.000 -	0.00	276.99	276.99	124.94
	Fu.C.7	**-314.10**	0.00	0.000	72.36	1.241	0.000 -	0.00	**310.24**	**310.24**	**158.19**
	Fu.C.10	-175.00	0.00	0.000	**-2.21**	0.000	0.000 -	0.00	136.68	136.68	72.76
S13	Fu.C.4	108.98	**221.40**	1.562	-276.69	3.754	0.000 -	0.00	143.94	-302.98	-302.98
	Fu.C.6	**118.47**	203.18	1.356	**-359.35**	3.456	0.000 -	0.00	124.94	**-321.98**	**-321.98**
	Fu.C.7	72.36	208.14	1.717	-244.20	3.842	0.000 -	0.00	**158.19**	-288.73	-288.73
	Fu.C.10	**-2.21**	66.13	1.878	-104.91	0.031	3.726 -	0.00	72.76	-115.11	-115.11
S14	Fu.C.2	-265.86	**185.10**	3.128	-235.55	1.124	5.133 -	0.00	288.29	288.29	-278.43
	Fu.C.5	-233.36	166.90	2.947	**-305.66**	1.044	4.851 -	0.00	271.60	**-295.12**	**-295.12**
	Fu.C.6	**-359.35**	161.54	3.362	-196.51	1.490	5.235 -	0.00	**309.84**	**309.84**	-256.88
S15	Fu.C.3	-219.56	**164.57**	2.887	-3.97	0.997	4.777 -	0.00	266.07	266.07	-176.24
	Fu.C.4	-110.41	61.97	2.584	**-64.90**	1.035	4.133 -	0.00	133.44	133.44	-114.48
	Fu.C.5	**-305.66**	141.72	3.116	11.07	1.362	0.000 -	0.00	**287.14**	**287.14**	-155.17
	Fu.C.7	-180.53	154.40	2.696	-49.53	0.866	4.527 -	0.00	248.45	248.45	**-193.87**
	Fu.C.12	-268.30	124.12	3.147	**15.90**	1.377	0.000 -	0.00	249.38	249.38	-130.96
S16	Fu.C.4	**-64.90**	0.00	0.000	-188.85	0.000	0.000 -	0.00	-114.48	-160.96	-160.96
	Fu.C.7	-49.53	0.00	0.000	**-261.34**	0.000	0.000 -	0.00	**-193.87**	**-276.80**	**-276.80**
	Fu.C.12	**15.90**	0.00	0.000	-134.05	0.117	0.000 -	0.00	-130.96	-202.27	-202.27
S17	Fu.C.4	-188.85	**132.08**	2.639	-170.06	0.946	4.332 -	0.00	243.20	243.20	-235.98
	Fu.C.6	-154.85	125.74	2.468	**-218.21**	0.816	4.120 -	0.00	227.40	**-251.77**	**-251.77**
	Fu.C.7	**-261.34**	108.34	2.833	-149.90	1.299	4.366 -	0.00	**261.02**	**261.02**	-218.16
S18	Fu.C.5	-139.01	**134.97**	2.438	0.00	0.727	0.000 -	0.00	224.71	224.71	**-157.71**
	Fu.C.6	**-218.21**	104.28	2.646	0.00	1.141	0.000 -	0.00	**243.79**	**243.79**	-138.63
S19	Fu.C.5	0.00	196.29	2.138	**-289.16**	4.276	0.000 -	0.00	183.63	**-288.78**	**-288.78**
	Fu.C.6	0.00	**224.11**	2.284	-219.95	4.569	0.000 -	0.00	**196.21**	-276.19	-276.19
S20	Fu.C.3	-209.25	**131.07**	2.815	-178.52	1.068	4.562 -	0.00	241.79	241.79	-230.62
	Fu.C.5	**-289.16**	113.09	3.060	-142.49	1.438	4.683 -	0.00	**262.87**	**262.87**	-209.54
	Fu.C.7	-194.63	109.30	2.660	**-237.02**	1.065	4.256 -	0.00	228.49	**-243.91**	**-243.91**
	Fu.C.13	-181.28	**-4.62**	3.120	-107.41	0.000	0.000 -	0.00	113.24	113.24	-86.38
S21	Fu.C.4	-171.74	**144.71**	2.715	-188.50	0.879	4.550 -	0.00	233.16	-239.25	-239.25
	Fu.C.6	-135.72	133.20	2.502	**-252.71**	0.741	4.263 -	0.00	214.93	**-257.48**	**-257.48**
	Fu.C.7	**-237.02**	129.32	2.921	-156.40	1.185	4.656 -	0.00	**250.86**	**250.86**	-221.54
S22	Fu.C.2	-188.50	**138.38**	2.759	-184.31	0.964	4.554 -	0.00	236.96	236.96	-235.44
	Fu.C.5	-156.40	124.45	2.557	**-247.45**	0.855	4.260 -	0.00	219.65	**-252.76**	**-252.76**
	Fu.C.6	**-252.71**	124.07	2.962	-152.56	1.262	4.662 -	0.00	**254.41**	**254.41**	-217.99
S23	Fu.C.3	-184.67	**140.11**	2.750	-184.67	0.944	4.556 -	0.00	236.20	236.20	-236.20
	Fu.C.5	**-247.45**	126.31	2.950	-152.92	1.235	4.665 -	0.00	**253.39**	**253.39**	-219.02
	Fu.C.7	-152.92	126.31	2.550	**-247.45**	0.835	4.265 -	0.00	219.02	**-253.39**	**-253.39**
S24	Fu.C.4	-184.31	**138.38**	2.741	-188.50	0.946	4.536 -	0.00	235.44	-236.96	-236.96
	Fu.C.6	-152.56	124.07	2.538	**-252.71**	0.838	4.238 -	0.00	217.99	**-254.41**	**-254.41**
	Fu.C.7	**-247.45**	124.45	2.943	-156.40	1.240	4.645 -	0.00	**252.76**	**252.76**	-219.65
S25	Fu.C.2	-188.50	**144.71**	2.785	-171.74	0.950	4.621 -	0.00	239.25	239.25	-233.16
	Fu.C.5	-156.40	129.32	2.579	**-237.02**	0.844	4.315 -	0.00	221.54	**-250.86**	**-250.86**
	Fu.C.6	**-252.71**	133.20	2.998	-135.72	1.237	4.759 -	0.00	**257.48**	**257.48**	-214.93
S26	Fu.C.3	-178.52	**131.07**	2.685	-209.25	0.938	4.432 -	0.00	230.62	-241.79	-241.79
	Fu.C.5	**-237.02**	109.30	2.840	-194.63	1.244	4.435 -	0.00	**243.91**	**243.91**	-228.49
	Fu.C.7	-142.49	113.09	2.440	**-289.16**	0.817	4.062 -	0.00	209.54	**-262.87**	**-262.87**
	Fu.C.13	-107.41	**-4.62**	2.380	-181.28	0.000	0.000 -	0.00	86.38	-113.24	-113.24
S27	Fu.C.6	-219.95	**224.11**	3.216	0.00	0.931	0.000 -	0.00	276.19	276.19	**-196.21**
	Fu.C.7	**-289.16**	196.29	3.362	0.00	1.224	0.000 -	0.00	**288.78**	**288.78**	-183.63
S28	Fu.C.5	0.00	797.19	3.199	**-1190.33**	6.398	0.000 -	0.00	498.41	**-786.97**	**-786.97**
	Fu.C.6	0.00	**928.77**	3.453	-863.93	6.906	0.000 -	0.00	**537.97**	-747.41	-747.41
S29	Fu.C.3	-812.39	**563.50**	4.203	-712.65	1.513	6.892 -	0.00	654.78	654.78	-630.60
	Fu.C.5	**-1190.33**	479.84	4.630	-540.85	2.148	7.112 -	0.00	**721.41**	**721.41**	-563.96
	Fu.C.7	-743.67	462.76	3.935	**-987.51**	1.498	6.373 -	0.00	613.13	**-672.25**	**-672.25**
	Fu.C.13	-725.25	**-60.79**	4.795	-405.64	0.000	0.000 -	0.00	277.12	277.12	-199.64
S30	Fu.C.4	-678.29	**605.21**	4.059	-763.07	1.272	6.846 -	0.00	632.41	-652.97	-652.97
	Fu.C.6	-506.49	551.24	3.685	**-1072.30**	1.025	6.345 -	0.00	574.11	**-711.27**	**-711.27**
	Fu.C.7	**-987.51**	534.33	4.420	-608.46	1.801	7.039 -	0.00	**688.63**	**688.63**	-596.74
S31	Fu.C.2	-763.07	**605.21**	4.191	-678.29	1.404	6.978 -	0.00	652.97	652.97	-632.41
	Fu.C.5	-608.46	534.33	3.830	**-987.51**	1.211	6.449 -	0.00	596.74	**-688.63**	**-688.63**

Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0 T/D	Nmax	Vb	Vmax	Ve
S31	Fu.C.6	**-1072.30**	551.24	4.565	-506.49	1.905	7.225 -	0.00	**711.27**	**711.27**	-574.11
S32	Fu.C.3	-712.65	**563.50**	4.047	-812.39	1.358	6.737 -	0.00	630.60	-654.78	-654.78
	Fu.C.5	**-987.51**	462.76	4.315	-743.67	1.877	6.752 -	0.00	**672.25**	**672.25**	-613.13
	Fu.C.7	-540.85	479.84	3.620	**-1190.33**	1.138	6.102 -	0.00	563.96	**-721.41**	**-721.41**
	Fu.C.13	-405.64	**-60.79**	3.455	-725.25	0.000	0.000 -	0.00	199.64	-277.12	-277.12
S33	Fu.C.6	-863.93	**928.77**	4.797	0.00	1.344	0.000 -	0.00	747.41	747.41	**-537.97**
	Fu.C.7	**-1190.33**	797.19	5.051	0.00	1.852	0.000 -	0.00	**786.97**	**786.97**	-498.41
S34	Fu.C.5	0.00	185.70	2.087	**-311.86**	4.175	0.000 -	0.00	177.92	**-297.19**	**-297.19**
	Fu.C.6	0.00	**223.14**	2.288	-217.74	4.576	0.000 -	0.00	**195.04**	-280.08	-280.08
S35	Fu.C.3	-219.59	**168.19**	2.765	-210.95	0.944	4.587 -	0.00	280.44	280.44	-277.30
	Fu.C.5	**-311.86**	147.79	3.011	-166.35	1.304	4.718 -	0.00	**305.33**	**305.33**	-252.41
	Fu.C.7	-199.70	139.68	2.587	**-290.51**	0.927	4.247 -	0.00	262.36	**-295.38**	**-295.38**
	Fu.C.13	-181.40	**-9.73**	3.014	-126.58	0.000	0.000 -	0.00	113.93	113.93	-94.00
S36	Fu.C.4	-201.73	**174.76**	2.725	-215.70	0.868	4.581 -	0.00	276.33	-281.41	-281.41
	Fu.C.6	-157.13	157.37	2.491	**-301.85**	0.729	4.252 -	0.00	252.56	**-305.18**	**-305.18**
	Fu.C.7	**-290.51**	154.46	2.962	-172.04	1.217	4.708 -	0.00	**300.41**	**300.41**	-257.33
S37	Fu.C.2	-214.50	**169.94**	2.754	-212.51	0.923	4.584 -	0.00	279.23	279.23	-278.51
	Fu.C.5	-170.84	151.49	2.521	**-298.38**	0.793	4.250 -	0.00	255.68	**-302.06**	**-302.06**
	Fu.C.6	**-301.85**	150.76	2.988	-169.25	1.263	4.712 -	0.00	**302.98**	**302.98**	-254.76
S38	Fu.C.3	-212.68	**170.77**	2.750	-212.67	0.915	4.585 -	0.00	278.87	278.87	-278.87
	Fu.C.5	**-298.38**	152.26	2.981	-169.41	1.248	4.714 -	0.00	**302.32**	**302.32**	-255.42
	Fu.C.7	-169.42	152.26	2.519	**-298.37**	0.786	4.252 -	0.00	255.43	**-302.32**	**-302.32**
S39	Fu.C.4	-212.50	**169.93**	2.746	-214.54	0.916	4.577 -	0.00	278.50	-279.24	-279.24
	Fu.C.6	-169.24	150.75	2.512	**-301.89**	0.788	4.236 -	0.00	254.75	**-302.99**	**-302.99**
	Fu.C.7	**-298.37**	151.47	2.979	-170.88	1.250	4.707 -	0.00	**302.05**	**302.05**	-255.69
S40	Fu.C.2	-215.74	**174.82**	2.775	-201.58	0.919	4.632 -	0.00	281.45	281.45	-276.30
	Fu.C.5	-172.08	154.50	2.538	**-290.36**	0.792	4.284 -	0.00	257.36	**-300.38**	**-300.38**
	Fu.C.6	**-301.89**	157.43	3.010	-156.98	1.248	4.772 -	0.00	**305.22**	**305.22**	-252.52
S41	Fu.C.3	-210.81	**167.99**	2.733	-220.14	0.913	4.553 -	0.00	277.17	-280.57	-280.57
	Fu.C.5	**-290.36**	139.46	2.912	-200.25	1.253	4.570 -	0.00	**295.26**	**295.26**	-262.49
	Fu.C.7	-166.20	147.63	2.488	**-312.41**	0.782	4.194 -	0.00	252.29	**-305.45**	**-305.45**
	Fu.C.13	-126.47	**-9.85**	2.484	-181.81	0.000	0.000 -	0.00	93.90	-114.03	-114.03
S42	Fu.C.6	-218.29	**223.37**	3.211	0.00	0.921	0.000 -	0.00	285.59	285.59	**-195.14**
	Fu.C.7	**-312.41**	185.91	3.411	0.00	1.323	0.000 -	0.00	**302.70**	**302.70**	-178.02
S43	Fu.C.2	0.00	**16.13**	1.866	**-26.78**	3.732	0.000 -	0.00	**17.28**	**-28.19**	**-28.19**
S44	Fu.C.2	**-26.78**	**16.13**	3.044	0.00	1.178	0.000 D	**-17.46**	**28.19**	**28.19**	**-17.28**
S45	Fu.C.1	0.00	**4.13**	1.866	**-6.86**	3.731	0.000 D	-24.55	**4.42**	**-7.22**	**-7.22**
	Fu.C.2	0.00	3.73	1.882	-5.93	3.764	0.000 D	**-37.86**	3.97	-6.38	-6.38
S46	Fu.C.1	**-6.86**	**4.13**	3.044	0.00	1.179	0.000 D	-24.55	**7.22**	**7.22**	**-4.42**
	Fu.C.2	-5.93	3.73	3.028	0.00	1.146	0.000 D	**-37.86**	6.38	6.38	-3.97
S47	Fu.C.2	0.00	0.00	0.000	0.00	1.260	2.520 D	**-34.98**	0.00	0.00	0.00
S48	Fu.C.1	0.00	**1.02**	3.098	0.00	0.000	0.000 T	31.49	**0.66**	**0.66**	**-0.66**
	Fu.C.2	0.00	0.91	3.098	0.00	0.000	0.000 T	**48.24**	0.59	0.59	-0.59
S49	Fu.C.1	0.00	**1.02**	3.098	0.00	0.000	0.000 T	45.78	**0.66**	**0.66**	**-0.66**
	Fu.C.2	0.00	0.91	3.098	0.00	0.000	0.000 T	**70.27**	0.59	0.59	-0.59
S50	Fu.C.1	0.00	0.00	0.000	0.00	1.260	2.520 D	**-15.70**	0.00	0.00	0.00
S51	Fu.C.2	0.00	0.00	0.000	0.00	0.000	0.000 D	**-48.42**	0.00	0.00	0.00
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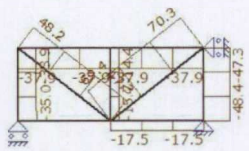
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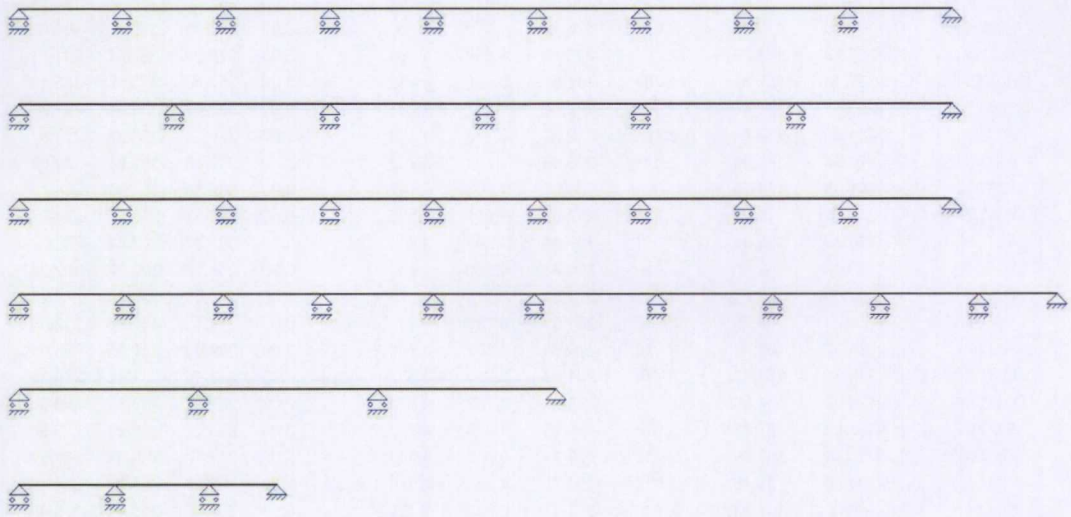

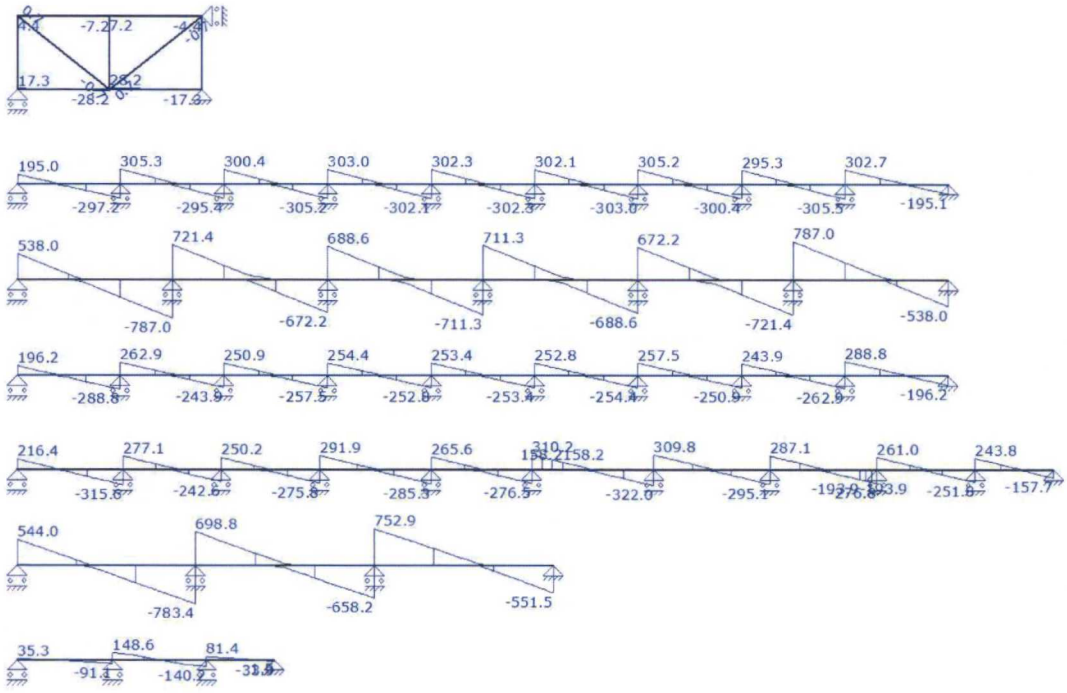
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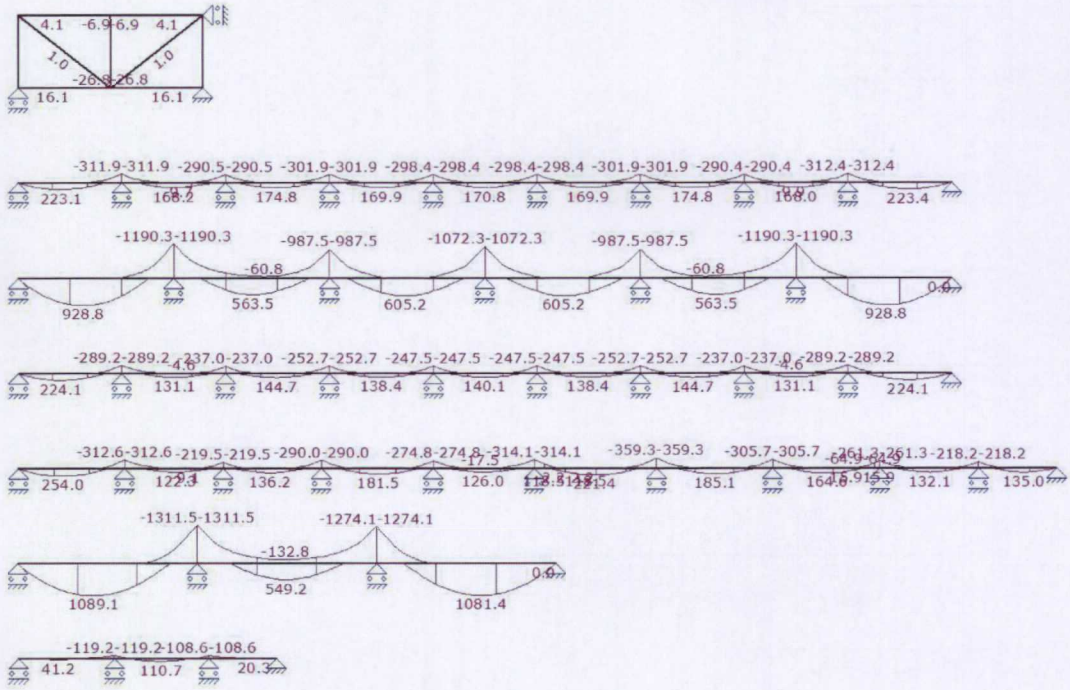


FREQUENT BELASTINGSCOMBINATIES (TABEL)

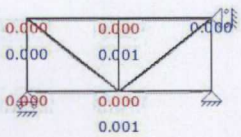
B.G.	Omschrijving	Fr.C.(w1)	Fr.C.1	Fr.C.2	Fr.C.3	Fr.C.4	Fr.C.5	Fr.C.6	Fr.C.7
B.G.1	Eigen Gewicht	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B.G.2	Permanent	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B.G.3	Veranderlijk Links	-	-	0.70	-	-	0.70	0.70	-
B.G.4	Veranderlijk Midden	-	-	-	0.70	-	0.70	-	0.70
B.G.5	Veranderlijk Rechts	-	-	-	-	0.70	-	0.70	0.70

B.G.	Omschrijving	Fr.C.8
B.G.1	Eigen Gewicht	1.00
B.G.2	Permanent	1.00
B.G.3	Veranderlijk Links	0.70
B.G.4	Veranderlijk Midden	0.70
B.G.5	Veranderlijk Rechts	0.70

FR.C. EXTREME DOORBUIGINGEN

Staaf	B.C.	Knoop Begin		Staaf		Knoop Eind	
		X	Z	Z'afst	Z'	X	Z
S1	Fr.C.3	0.000	0.000	3.950	**-0.0012**	0.000	0.000
S1	Fr.C.6	0.000	0.000	2.099	**0.0020**	0.000	0.000
S2	Fr.C.3	0.000	0.000	2.495	**0.0064**	0.000	0.000
S3	Fr.C.3	0.000	0.000	1.232	**-0.0012**	0.000	0.000
S4	Fr.C.6	0.000	0.000	4.351	**0.0354**	0.000	0.000
S5	Fr.C.3	0.000	0.000	4.765	**0.0097**	0.000	0.000
S5	Fr.C.6	0.000	0.000	3.487	**-0.0071**	0.000	0.000
S6	Fr.C.6	0.000	0.000	5.162	**0.0344**	0.000	0.000
S7	Fr.C.6	0.000	0.000	2.567	**0.0111**	0.000	0.000
S8	Fr.C.2	0.000	0.000	0.947	**-0.0011**	0.000	0.000
S8	Fr.C.3	0.000	0.000	2.754	**0.0030**	0.000	0.000
S9	Fr.C.4	0.000	0.000	2.518	**0.0039**	0.000	0.000
S10	Fr.C.2	0.000	0.000	2.976	**0.0073**	0.000	0.000

Staaf	B.C.	Knoop Begin		Staaf		Knoop Eind	
		X	Z	Z'afst	Z'	X	Z
S11	Fr.C.3	0.000	0.000	2.624	**0.0031**	0.000	0.000
S11	Fr.C.6	0.000	0.000	4.029	**-0.0014**	0.000	0.000
S12	Fr.C.7	0.000	0.000	0.589	**-0.0005**	0.000	0.006
S13	Fr.C.4	0.000	0.007	2.006	**0.0063**	0.000	0.000
S14	Fr.C.2	0.000	0.000	3.134	**0.0073**	0.000	0.000
S15	Fr.C.3	0.000	0.000	2.700	**0.0045**	0.000	0.002
S16	Fr.C.7	0.000	0.002	0.503	**-0.0002**	0.000	0.000
S17	Fr.C.4	0.000	0.000	2.639	**0.0037**	0.000	0.000
S18	Fr.C.5	0.000	0.000	2.295	**0.0030**	0.000	0.000
S19	Fr.C.6	0.000	0.000	2.493	**0.0172**	0.000	0.000
S20	Fr.C.3	0.000	0.000	2.835	**0.0071**	0.000	0.000
S20	Fr.C.6	0.000	0.000	1.054	**-0.0021**	0.000	0.000
S21	Fr.C.4	0.000	0.000	2.720	**0.0090**	0.000	0.000
S22	Fr.C.2	0.000	0.000	2.758	**0.0083**	0.000	0.000
S23	Fr.C.3	0.000	0.000	2.750	**0.0085**	0.000	0.000
S24	Fr.C.4	0.000	0.000	2.742	**0.0083**	0.000	0.000
S25	Fr.C.2	0.000	0.000	2.780	**0.0090**	0.000	0.000
S26	Fr.C.3	0.000	0.000	2.665	**0.0071**	0.000	0.000
S26	Fr.C.6	0.000	0.000	4.446	**-0.0021**	0.000	0.000
S27	Fr.C.6	0.000	0.000	3.007	**0.0172**	0.000	0.000
S28	Fr.C.6	0.000	0.000	3.757	**0.0212**	0.000	0.000
S29	Fr.C.2	0.000	0.000	1.354	**-0.0021**	0.000	0.000
S29	Fr.C.3	0.000	0.000	4.232	**0.0094**	0.000	0.000
S30	Fr.C.4	0.000	0.000	4.070	**0.0113**	0.000	0.000
S31	Fr.C.2	0.000	0.000	4.180	**0.0113**	0.000	0.000
S32	Fr.C.3	0.000	0.000	4.018	**0.0094**	0.000	0.000
S32	Fr.C.6	0.000	0.000	6.380	**-0.0031**	0.000	0.000
S33	Fr.C.6	0.000	0.000	4.493	**0.0212**	0.000	0.000
S34	Fr.C.6	0.000	0.000	2.489	**0.0119**	0.000	0.000
S35	Fr.C.3	0.000	0.000	2.779	**0.0070**	0.000	0.000
S35	Fr.C.6	0.000	0.000	1.005	**-0.0013**	0.000	0.000
S36	Fr.C.4	0.000	0.000	2.731	**0.0077**	0.000	0.000
S37	Fr.C.2	0.000	0.000	2.753	**0.0074**	0.000	0.000
S38	Fr.C.3	0.000	0.000	2.750	**0.0074**	0.000	0.000
S39	Fr.C.4	0.000	0.000	2.747	**0.0074**	0.000	0.000
S40	Fr.C.2	0.000	0.000	2.769	**0.0077**	0.000	0.000
S41	Fr.C.3	0.000	0.000	2.720	**0.0070**	0.000	0.000
S41	Fr.C.6	0.000	0.000	4.489	**-0.0014**	0.000	0.000
S42	Fr.C.6	0.000	0.000	3.010	**0.0119**	0.000	0.000
S43	Fr.C.2	0.000	0.000	2.099	**0.0037**	0.000	0.001
S43	Fr.C.5	0.000	0.000	2.099	**0.0037**	0.000	0.001
S43	Fr.C.6	0.000	0.000	2.099	**0.0037**	0.000	0.001
S43	Fr.C.8	0.000	0.000	2.099	**0.0037**	0.000	0.001
S44	Fr.C.2	0.000	0.001	2.811	**0.0037**	0.000	0.000
S44	Fr.C.5	0.000	0.001	2.811	**0.0037**	0.000	0.000
S44	Fr.C.6	0.000	0.001	2.811	**0.0037**	0.000	0.000
S44	Fr.C.8	0.000	0.001	2.811	**0.0037**	0.000	0.000
S45	Fr.C.2	0.000	0.000	2.106	**0.0027**	0.000	0.001
S45	Fr.C.5	0.000	0.000	2.106	**0.0027**	0.000	0.001
S45	Fr.C.6	0.000	0.000	2.106	**0.0027**	0.000	0.001
S45	Fr.C.8	0.000	0.000	2.106	**0.0027**	0.000	0.001
S46	Fr.C.2	0.000	0.001	2.804	**0.0027**	0.000	0.000
S46	Fr.C.5	0.000	0.001	2.804	**0.0027**	0.000	0.000
S46	Fr.C.6	0.000	0.001	2.804	**0.0027**	0.000	0.000
S46	Fr.C.8	0.000	0.001	2.804	**0.0027**	0.000	0.000
S48	Fr.C.2	0.000	0.000	3.098	**0.0024**	0.000	0.001
S48	Fr.C.5	0.000	0.000	3.098	**0.0024**	0.000	0.001
S48	Fr.C.6	0.000	0.000	3.098	**0.0024**	0.000	0.001
S48	Fr.C.8	0.000	0.000	3.098	**0.0024**	0.000	0.001
S49	Fr.C.(w1)	0.000	0.000	3.098	**0.0024**	0.000	0.000
-	-	m	m	m	m	m	m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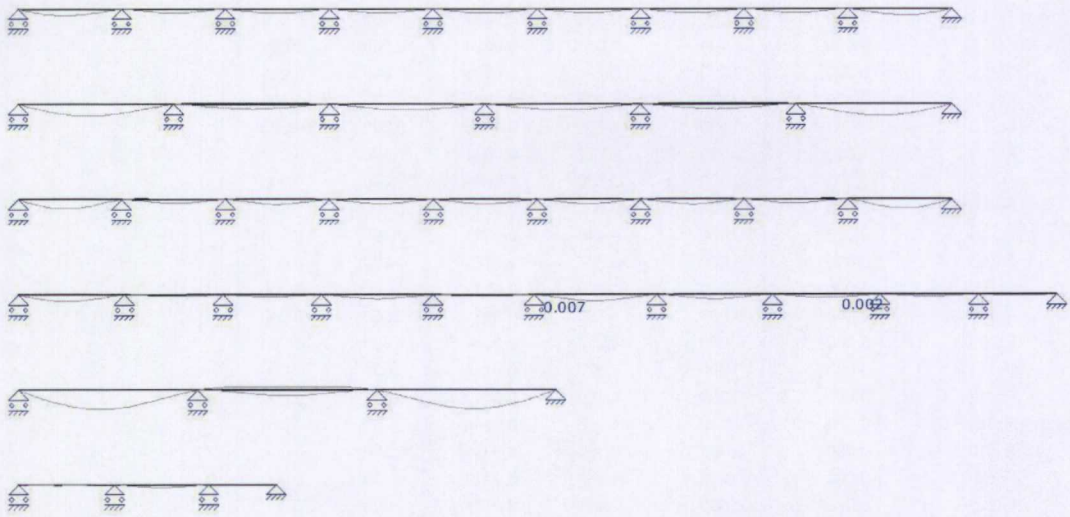
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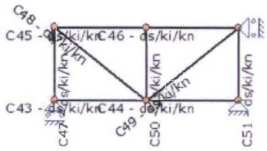
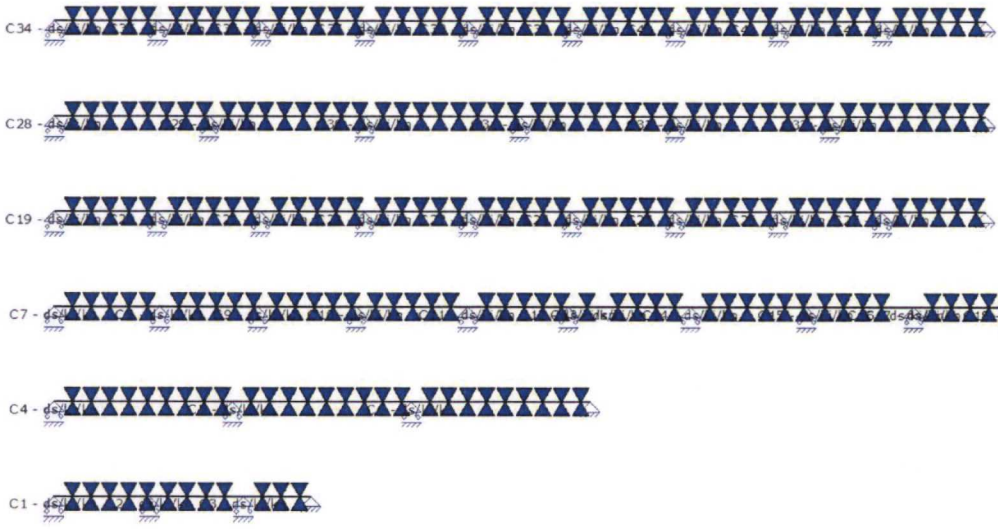




SAMENSTELLING CONSTRUCTIEDELEN

Constructiedeel	Staaf/staven
C1	S1
C2	S2
C3	S3
C4	S4
C5	S5
C6	S6
C7	S7
C8	S8
C9	S9
C10	S10
C11	S11
C12	S12
C13	S13
C14	S14
C15	S15
C16	S16
C17	S17
C18	S18
C19	S19
C20	S20
C21	S21
C22	S22
C23	S23
C24	S24
C25	S25
C26	S26
C27	S27

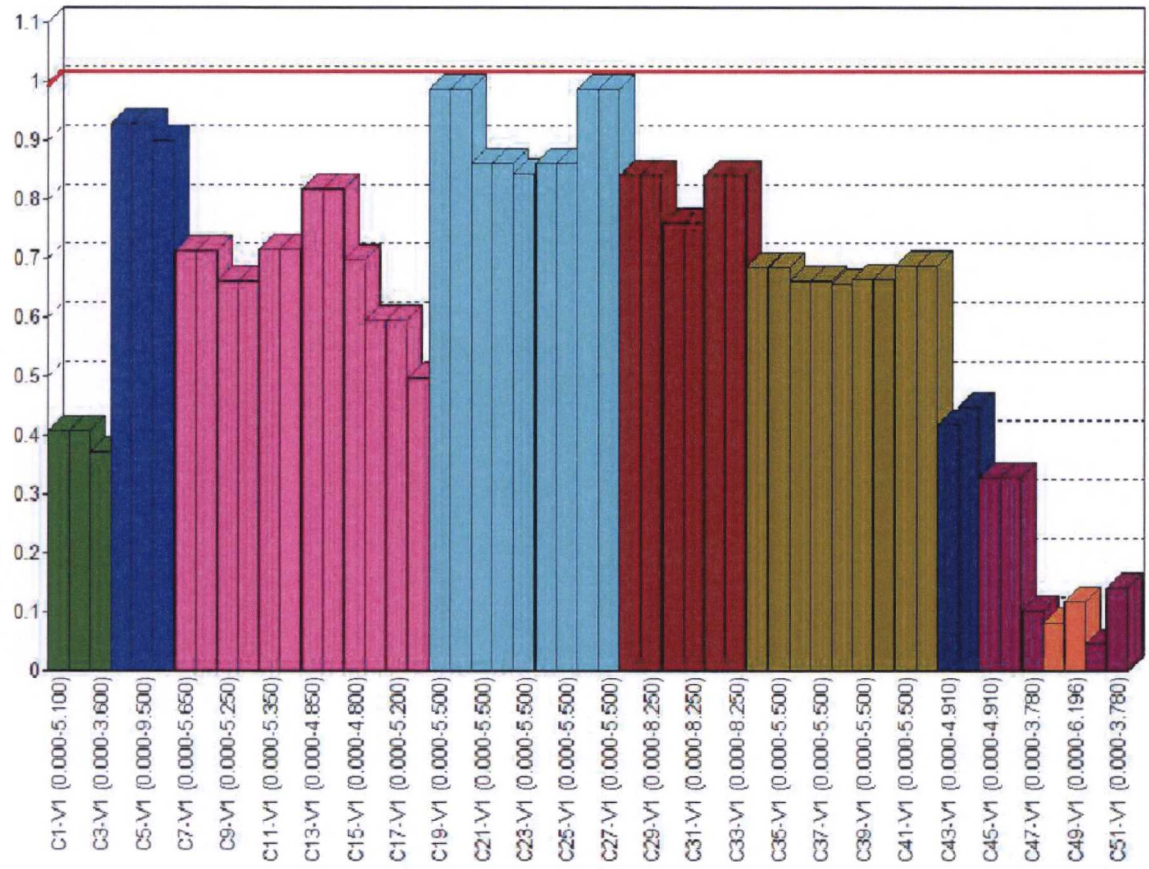
C28	S28
C29	S29
C30	S30
C31	S31
C32	S32
C33	S33
C34	S34
C35	S35
C36	S36
C37	S37
C38	S38
C39	S39
C40	S40
C41	S41
C42	S42
C43	S43
C44	S44
C45	S45
C46	S46
C47	S47
C48	S48
C49	S49
C50	S50
C51	S51

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

Veld	Toetsing	Combinatie	Artikel	UC max
C1-V1 (0.000-5.100)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.1)	0.41
C2-V1 (0.000-5.000)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.1)	0.41
C3-V1 (0.000-3.600)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.1)	0.37
C4-V1 (0.000-9.500)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.12)	0.93
C5-V1 (0.000-9.500)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.12)	0.93
C6-V1 (0.000-9.500)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.12)	0.90
C7-V1 (0.000-5.650)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.1)	0.71
C8-V1 (0.000-5.200)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.1)	0.71
C9-V1 (0.000-5.250)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.1)	0.66
C10-V1 (0.000-5.900)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.1)	0.66
C11-V1 (0.000-5.350)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.1)	0.72
C12-V1 (0.000-1.650)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.1)	0.72
C13-V1 (0.000-4.850)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.1)	0.82
C14-V1 (0.000-6.150)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.1)	0.82
C15-V1 (0.000-4.800)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.1)	0.70
C16-V1 (0.000-0.900)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.1)	0.60
C17-V1 (0.000-5.200)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.1)	0.60
C18-V1 (0.000-4.150)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.1)	0.50
C19-V1 (0.000-5.500)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.1)	0.99
C20-V1 (0.000-5.500)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.1)	0.99
C21-V1 (0.000-5.500)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.1)	0.86
C22-V1 (0.000-5.500)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.1)	0.86
C23-V1 (0.000-5.500)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.1)	0.84
C24-V1 (0.000-5.500)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.1)	0.86
C25-V1 (0.000-5.500)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.1)	0.86
C26-V1 (0.000-5.500)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.1)	0.99
C27-V1 (0.000-5.500)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.1)	0.99
C28-V1 (0.000-8.250)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.12)	0.84
C29-V1 (0.000-8.250)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.12)	0.84
C30-V1 (0.000-8.250)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.12)	0.76
C31-V1 (0.000-8.250)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.12)	0.76
C32-V1 (0.000-8.250)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.12)	0.84
C33-V1 (0.000-8.250)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.12)	0.84
C34-V1 (0.000-5.500)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.12)	0.68
C35-V1 (0.000-5.500)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.12)	0.68

Veld	Toetsing	Combinatie	Artikel	UC max
C36-V1 (0.000-5.500)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.12)	0.66
C37-V1 (0.000-5.500)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.12)	0.66
C38-V1 (0.000-5.500)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.12)	0.66
C39-V1 (0.000-5.500)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.12)	0.66
C40-V1 (0.000-5.500)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.12)	0.66
C41-V1 (0.000-5.500)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.12)	0.69
C42-V1 (0.000-5.500)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.12)	0.69
C43-V1 (0.000-4.910)	Kiptoetsing	Fu.C.8	NEN-EN1993-1-1(6.54)	0.42
C44-V1 (0.000-4.910)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.45
C45-V1 (0.000-4.910)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.33
C46-V1 (0.000-4.910)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.33
C47-V1 (0.000-3.780)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.61&6.62)	0.10
C48-V1 (0.000-6.196)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.5)	0.08
C49-V1 (0.000-6.196)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.5)	0.12
C50-V1 (0.000-3.780)	Stabiliteit	Fu.C.1	NEN-EN1993-1-1(6.61&6.62)	0.05
C51-V1 (0.000-3.780)	Stabiliteit	Fu.C.2	NEN-EN1993-1-1(6.46)	0.14

AFB. STAAL UC DIAGRAM



STAALTOETS RESULTATEN MET PROFIELGEGEVENS NEN-EN1993-1-1:2016/NB:2016

Uitgangspunten berekening voor staalcontrole

Alpha;cr = 0.00 < 10; GNL analyse vereist

Profielgegevens staaf C1-V1 (0.000-5.100)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2

r = 17.5 mm | It = 647.8e-09 m4 | Iwa = 102.4e-09 m6

Doorsnedetoetsing C1-V1 (0.000-5.100)

Maatgevende combinatie: Fu.C.5 op 5.100 m | Profielklasse = 1

N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -119.2 kNm

Vz;Ed = -91.1 kN | Mz;Ed = 0.0 kNm

N;Rd = 2,689.9 kN | Vy;Rd = 735.2 kN | MyRd = 292.9 kNm

Vz;Rd = 948.6 kN | MzRd = 54.0 kNm

NEN-EN1993-1-1(6.1): UC = 0.41 < 1

Kiptoetsing C1-V1 (0.000-5.100)

Equi. profiel: UNP320

Maatgevende combinatie: Fu.C.10 | Instab. curve Kip:d

Aangrijphoogte van de last: -0.151 m vanaf hart profiel

Kipsteun bovenflens: 1,2,3,4,5m

Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.003 | b-eff(Eind) = 0.020

Tabel gebruikt Fig. NB.32 | M = 2.9kN/m | MBeta = 0.0 | q = 6.5

Bovenflens maatgevend | Xb;lst = 0.000 m | Xe;lst = 1.000 m | lst = 1.000 m

Lsys = 5.100 m | Lg = 5.100 m | S = 0.641 m | Iwa = 1.0237e-07 m6

C1 = 1.28 | C2 = 0.14 (tabel) | C2(toegepast) = -0.15 | C = 22.69

Mcr = 1,139.0 kNm | kred = 1.0 | Profielklasse 1

Lamda;M = 0.51 | Lamda;T = 0.49 | Lamda;MT = 1.00

Chi;LT(Fu.C.10) = 0.47 | M;Ed = 2.9 kNm | UC(y) = 0.02

Chi;LT,Z = 1.00 | lkip = 1.400 m | UC(z) = 0.00

My;begin = 0.0 kNm | My;eind = 2.9 kNm

NEN-EN1993-1-1(6.54): UC = 0.02 < 1

Profielgegevens staaf C2-V1 (0.000-5.000)

UNP320 | Analyse | Staal S355 fyd(toegepast) = 355 N/mm2

h = 320.0 mm | A = 7.58e-03 m2 | Wy;el = 679.3e-06 m3 | Wy;pl = 825.2e-06 m3

b = 100.0 mm | Iy = 108.7e-06 m4 | Wz;el = 806.2e-07 m3 | Wz;pl = 152.0e-06 m3

tf = 17.5 mm | Iz = 596.7e-08 m4 | Aw;y;el = 3.59e-03 m2 | Aw;y;pl = 3.59e-03 m2

tw = 14.0 mm | Massa/m = 59.5 kg/m | Aw;z;el = 4.63e-03 m2 | Aw;z;pl = 4.63e-03 m2

r = 17.5 mm | It = 647.8e-09 m4 | Iwa = 102.4e-09 m6

Doorsnedetoetsing C2-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.5 op 0.000 m | Profielklasse = 1

N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -119.2 kNm

Vz;Ed = 148.6 kN | Mz;Ed = 0.0 kNm

N;Rd = 2,689.9 kN | Vy;Rd = 735.2 kN | MyRd = 292.9 kNm

Vz;Rd = 948.6 kN | MzRd = 54.0 kNm

NEN-EN1993-1-1(6.1): UC = 0.41 < 1

Kiptoetsing C2-V1 (0.000-5.000)

Equi. profiel: UNP320

Maatgevende combinatie: Fu.C.15 | Instab. curve Kip:d

Aangrijphoogte van de last: -0.151 m vanaf hart profiel

Kipsteun bovenflens: 1,2,3,4m

Kipsteun onderflens: 1,2,3,4m

Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.054 | b-eff(Eind) = 0.050

Tabel gebruikt Fig. NB.32 | M = -88.5kN/m | MBeta = 15.4 | q = 23.9

Bovenflens maatgevend | Xb;lst = 4.000 m | Xe;lst = 5.000 m | lst = 1.000 m

Lsys = 5.000 m | Lg = 5.000 m | S = 0.641 m | Iwa = 1.0237e-07 m6

C1 = 2.03 | C2 = 0.03 (tabel) | C2(toegepast) = -0.03 | C = 46.70

Mcr = 2,391.5 kNm | kred = 1.0 | Profielklasse 1

Lamda;M = 0.35 | Lamda;T = 0.65 | Lamda;MT = 1.00

Chi;LT(Fu.C.15) = 0.47 | M;Ed = 15.4 kNm | UC(y) = 0.00

Chi;LT,Z = 1.00 | lkip = 1.260 m | UC(z) = 0.00

My;begin = 15.4 kNm | My;eind = -88.5 kNm

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.5

Profielgegevens staaf C3-V1 (0.000-3.600)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C3-V1 (0.000-3.600)

Maatgevende combinatie: Fu.C.7 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -108.6 kNm	
	Vz;Ed = 81.4 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm	
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm	

NEN-EN1993-1-1(6.1): UC = 0.37 < 1

Kiptoetsing C3-V1 (0.000-3.600)

Equi. profiel: UNP320
Maatgevende combinatie: Fu.C.8 — Instab. curve Kip:d
Aangrijphoogte van de last: -0.151 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3m
Kipsteun onderflens: 1,2,3m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.034	b-eff(Eind) = 0.010
Tabel gebruikt Fig. NB.32	M = 8.4kN/m	MBeta = -0.3	q = 28.5
Bovenflens maatgevend	Xb;Ist = 2.000 m	Xe;Ist = 3.000 m	Ist = 1.000 m
Lsys = 3.600 m	Lg = 3.600 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.21	C2 = 0.19 (tabel)	C2(toegepast) = -0.20	C = 15.03
Mcr = 1,069.4 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.52	Lamda;T = 0.48	Lamda;MT = 1.00	
Chi;LT(Fu.C.8) = 0.47	M;Ed = 8.9 kNm		UC(y) = 0.07
Chi;LT,Z = 1.00	Ikip = 1.368 m		UC(z) = 0.00
My;begin = -0.3 kNm	My;eind = 8.4 kNm		

NEN-EN1993-1-1(6.54): UC = 0.07 < 1

Profielgegevens staaf C4-V1 (0.000-9.500)

HE450B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 450.0 mm	A = 21.80e-03 m2	Wy;el = 355.1e-05 m3	Wy;pl = 398.2e-05 m3
b = 300.0 mm	Iy = 798.9e-06 m4	Wz;el = 781.4e-06 m3	Wz;pl = 119.8e-05 m3
tf = 26.0 mm	Iz = 117.2e-06 m4	Aw;y;el = 1.62e-02 m2	Aw;y;pl = 1.62e-02 m2
tw = 14.0 mm	Massa/m = 171.1 kg/m	Aw;z;el = 7.97e-03 m2	Aw;z;pl = 7.97e-03 m2
r = 27.0 mm		It = 440.5e-08 m4	Iwa = 525.8e-08 m6

Doorsnedetoetsing C4-V1 (0.000-9.500)

Maatgevende combinatie: Fu.C.5 op 9.500 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -1,311.5 kNm	
	Vz;Ed = -783.4 kN	Mz;Ed = 0.0 kNm	
N;Rd = 7,738.2 kN	Vy;Rd = 3,325.6 kN	MyRd = 1,413.7 kNm	
	Vz;Rd = 1,632.7 kN	MzRd = 425.2 kNm	

NEN-EN1993-1-1(6.12): UC = 0.93 < 1

Kiptoetsing C4-V1 (0.000-9.500)

Equi. profiel: HE450B
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.212 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5,6,7,8,9m
Kipsteun onderflens: 1,2,3,4,5,6,7,8,9m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.088	b-eff(Eind) = 0.132
Tabel gebruikt Fig. NB.32	M = -1,044.0kN/m	MBeta = -729.4	q = 89.6
Bovenflens maatgevend	Xb;Ist = 9.000 m	Xe;Ist = 9.500 m	Ist = 0.500 m
Lsys = 9.500 m	Lg = 9.500 m	S = 1.762 m	Iwa = 5.2584e-06 m6
C1 = 1.19	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 790.71
Mcr = 246,304.9 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1

Chi;LT(Fu.C.15) = 1.00 M;Ed = 0.0 kNm UC(y) = 0.00
Chi;LT,Z = 1.00 lkip = 0.500 m UC(z) = 0.00
My;begin = -729.4 kNm My;eind = -1,044.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C5-V1 (0.000-9.500)

HE450B Analyse Staal S355 fyd(toegepast) = 355 N/mm2
h = 450.0 mm A = 21.80e-03 m2 Wy;el = 355.1e-05 m3 Wy;pl = 398.2e-05 m3
b = 300.0 mm Iy = 798.9e-06 m4 Wz;el = 781.4e-06 m3 Wz;pl = 119.8e-05 m3
tf = 26.0 mm Iz = 117.2e-06 m4 Aw;y;el = 1.62e-02 m2 Aw;y;pl = 1.62e-02 m2
tw = 14.0 mm Massa/m = 171.1 kg/m Aw;z;el = 7.97e-03 m2 Aw;z;pl = 7.97e-03 m2
r = 27.0 mm It = 440.5e-08 m4 Iwa = 525.8e-08 m6

Doorsnedetoetsing C5-V1 (0.000-9.500)

Maatgevende combinatie: Fu.C.5 op 0.000 m Profielklasse = 1
N;Ed = 0.0 kN Vy;Ed = 0.0 kN My;Ed = -1,311.5 kNm
Vz;Ed = 698.8 kN Mz;Ed = 0.0 kNm
N;Rd = 7,738.2 kN Vy;Rd = 3,325.6 kN MyRd = 1,413.7 kNm
Vz;Rd = 1,632.7 kN MzRd = 425.2 kNm
NEN-EN1993-1-1(6.12): UC = 0.93 < 1

Kiptoetsing C5-V1 (0.000-9.500)

Equi. profiel: HE450B
Maatgevende combinatie: Fu.C.15 Instab. curve Kip:a
Aangrijphoogte van de last: -0.212 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5,6,7,8,9m
Kipsteun onderflens: 1,2,3,4,5,6,7,8,9m
Inklem. begin: Gesteund Beperk. eind: Gesteund b-eff(Begin) = 0.113 b-eff(Eind) = 0.106
Tabel gebruikt Fig. NB.32 M = -1,025.5kN/m MBeta = -774.2 q = 86.1
Bovenflens maatgevend Xb;lst = 9.000 m Xe;lst = 9.500 m lst = 0.500 m
Lsys = 9.500 m Lg = 9.500 m S = 1.762 m Iwa = 5.2584e-06 m6
C1 = 1.16 C2 = 0.00 (tabel) C2(toegepast) = 0.00 C = 767.07
Mcr = 238,941.0 kNm kred = 1.0 Lam-rel = 0.20 Profielklasse 1
Chi;LT(Fu.C.15) = 1.00 M;Ed = 0.0 kNm UC(y) = 0.00
Chi;LT,Z = 1.00 lkip = 0.500 m UC(z) = 0.00
My;begin = -774.2 kNm My;eind = -1,025.5 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C6-V1 (0.000-9.500)

HE450B Analyse Staal S355 fyd(toegepast) = 355 N/mm2
h = 450.0 mm A = 21.80e-03 m2 Wy;el = 355.1e-05 m3 Wy;pl = 398.2e-05 m3
b = 300.0 mm Iy = 798.9e-06 m4 Wz;el = 781.4e-06 m3 Wz;pl = 119.8e-05 m3
tf = 26.0 mm Iz = 117.2e-06 m4 Aw;y;el = 1.62e-02 m2 Aw;y;pl = 1.62e-02 m2
tw = 14.0 mm Massa/m = 171.1 kg/m Aw;z;el = 7.97e-03 m2 Aw;z;pl = 7.97e-03 m2
r = 27.0 mm It = 440.5e-08 m4 Iwa = 525.8e-08 m6

Doorsnedetoetsing C6-V1 (0.000-9.500)

Maatgevende combinatie: Fu.C.7 op 0.000 m Profielklasse = 1
N;Ed = 0.0 kN Vy;Ed = 0.0 kN My;Ed = -1,274.1 kNm
Vz;Ed = 752.9 kN Mz;Ed = 0.0 kNm
N;Rd = 7,738.2 kN Vy;Rd = 3,325.6 kN MyRd = 1,413.7 kNm
Vz;Rd = 1,632.7 kN MzRd = 425.2 kNm
NEN-EN1993-1-1(6.12): UC = 0.90 < 1

Kiptoetsing C6-V1 (0.000-9.500)

Equi. profiel: HE450B
Maatgevende combinatie: Fu.C.15 Instab. curve Kip:a
Aangrijphoogte van de last: -0.212 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5,6,7,8,9m
Kipsteun onderflens: 1,2,3,4,5,6,7,8,9m
Inklem. begin: Gesteund Beperk. eind: Gesteund b-eff(Begin) = 0.129 b-eff(Eind) = 0.090
Tabel gebruikt Fig. NB.32 M = 209.4kN/m MBeta = 0.0 q = 122.5

Bovenflens maatgevend	Xb;lst = 9.000 m	Xe;lst = 9.500 m	lst = 0.500 m
Lsys = 9.500 m	Lg = 9.500 m	S = 1.762 m	Iwa = 5.2584e-06 m6
C1 = 1.76	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 589.65
Mcr = 183,674.7 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 209.4 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.700 m		UC(z) = 0.00
My;begin = 209.4 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Profielgegevens staaf C7-V1 (0.000-5.650)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C7-V1 (0.000-5.650)

Maatgevende combinatie: Fu.C.5 op 5.650 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -312.6 kNm
	Vz;Ed = -315.6 kN	Mz;Ed = 0.0 kNm
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm
	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm

NEN-EN1993-1-1(6.1): UC = 0.71 < 1

Kiptoetsing C7-V1 (0.000-5.650)

Equi. profiel: UNP400

Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d

Aangrijphoogte van de last: -0.191 m vanaf hart profiel

Kipsteun bovenflens: 1,2,3,4,5m

Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.077	b-eff(Eind) = 0.116
Tabel gebruikt Fig. NB.32	M = -256.9kN/m	MBeta = -98.6	q = 77.8
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.650 m	lst = 0.650 m
Lsys = 5.650 m	Lg = 5.650 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 1.46	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 144.05
Mcr = 8,677.4 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.22	Lamda;T = 0.78	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.710 m		UC(z) = 0.00
My;begin = -98.6 kNm	My;eind = -256.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C8-V1 (0.000-5.200)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C8-V1 (0.000-5.200)

Maatgevende combinatie: Fu.C.5 op 0.000 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -312.6 kNm
	Vz;Ed = 277.1 kN	Mz;Ed = 0.0 kNm
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm
	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm

NEN-EN1993-1-1(6.1): UC = 0.71 < 1

Kiptoetsing C8-V1 (0.000-5.200)

Equi. profiel: UNP400

Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d

Aangrijphoogte van de last: -0.191 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.098	b-eff(Eind) = 0.080
Tabel gebruikt Fig. NB.35	M = -150.7kN/m	MBeta = -115.2	F = 8.4
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.200 m	lst = 0.200 m
Lsys = 5.200 m	Lg = 5.200 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 1.15	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 1,293.82
Mcr = 84,681.1 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.200 m		UC(z) = 0.00
My;begin = -115.2 kNm	My;eind = -150.7 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C9-V1 (0.000-5.250)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C9-V1 (0.000-5.250)

Maatgevende combinatie: Fu.C.6 op 5.250 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -290.0 kNm
	Vz;Ed = -275.8 kN	Mz;Ed = 0.0 kNm
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm
	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm

NEN-EN1993-1-1(6.1): UC = 0.66 < 1

Kiptoetsing C9-V1 (0.000-5.250)

Equi. profiel: UNP400
Maatgevende combinatie: Fu.C.12 — Instab. curve Kip:d
Aangrijphoogte van de last: -0.191 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.038	b-eff(Eind) = 0.049
Tabel gebruikt Fig. NB.32	M = 7.7kN/m	MBeta = -0.2	q = 38.7
Bovenflens maatgevend	Xb;lst = 2.000 m	Xe;lst = 3.000 m	lst = 1.000 m
Lsys = 5.250 m	Lg = 5.250 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 1.15	C2 = 0.24 (tabel)	C2(toegepast) = -0.25	C = 24.37
Mcr = 1,580.0 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.53	Lamda;T = 0.47	Lamda;MT = 1.00	
Chi;LT(Fu.C.12) = 0.47	M;Ed = 9.4 kNm		UC(y) = 0.05
Chi;LT,Z = 1.00	Ikip = 1.383 m		UC(z) = 0.00
My;begin = 7.7 kNm	My;eind = -0.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.05 < 1

Profielgegevens staaf C10-V1 (0.000-5.900)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C10-V1 (0.000-5.900)

Maatgevende combinatie: Fu.C.6 op 0.000 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -290.0 kNm
	Vz;Ed = 291.9 kN	Mz;Ed = 0.0 kNm
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm

	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm	

NEN-EN1993-1-1(6.1): UC = 0.66 < 1

Kiptoetsing C10-V1 (0.000-5.900)

Equi. profiel: UNP400
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d
Aangrijphoogte van de last: -0.191 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.102	b-eff(Eind) = 0.099
Tabel gebruikt Fig. NB.32	M = -201.5kN/m	MBeta = -26.4	q = 78.4
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.900 m	Ist = 0.900 m
Lsys = 5.900 m	Lg = 5.900 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 1.77	C2 = 0.03 (tabel)	C2(toegepast) = -0.03	C = 70.16
Mcr = 4,047.5 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.33	Lamda;T = 0.67	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 1.166 m		UC(z) = 0.00
My;begin = -26.4 kNm	My;eind = -201.5 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C11-V1 (0.000-5.350)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C11-V1 (0.000-5.350)

Maatgevende combinatie: Fu.C.7 op 5.350 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -314.1 kNm
	Vz;Ed = -276.5 kN	Mz;Ed = 0.0 kNm
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm
	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm

NEN-EN1993-1-1(6.1): UC = 0.72 < 1

Kiptoetsing C11-V1 (0.000-5.350)

Equi. profiel: UNP400
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d
Aangrijphoogte van de last: -0.191 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.089	b-eff(Eind) = 0.094
Tabel gebruikt Fig. NB.32	M = -235.0kN/m	MBeta = -163.4	q = 62.3
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.350 m	Ist = 0.350 m
Lsys = 5.350 m	Lg = 5.350 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 1.20	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 454.06
Mcr = 28,885.5 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.350 m		UC(z) = 0.00
My;begin = -163.4 kNm	My;eind = -235.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C12-V1 (0.000-1.650)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C12-V1 (0.000-1.650)

Maatgevende combinatie: Fu.C.7 op 0.000 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -314.1 kNm
	Vz;Ed = 310.2 kN	Mz;Ed = 0.0 kNm
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm
	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm

NEN-EN1993-1-1(6.1): UC = 0.72 < 1

Kiptoetsing C12-V1 (0.000-1.650)

Equi. profiel: UNP400

Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d

Aangrijphoogte van de last: -0.191 m vanaf hart profiel

Kipsteun bovenflens: 1m

Kipsteun onderflens: 1m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = 70.4kN/m	MBeta = -24.2	q = 80.1
Bovenflens maatgevend	Xb;Ist = 1.000 m	Xe;Ist = 1.650 m	Ist = 0.650 m
Lsys = 1.650 m	Lg = 1.650 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 2.06	C2 = 0.04 (tabel)	C2(toegepast) = -0.05	C = 54.26
Mcr = 11,191.4 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 70.4 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.732 m		UC(z) = 0.00
My;begin = -24.2 kNm	My;eind = 70.4 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.5

Profielgegevens staaf C13-V1 (0.000-4.850)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C13-V1 (0.000-4.850)

Maatgevende combinatie: Fu.C.6 op 4.850 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -359.3 kNm
	Vz;Ed = -322.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm
	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm

NEN-EN1993-1-1(6.1): UC = 0.82 < 1

Kiptoetsing C13-V1 (0.000-4.850)

Equi. profiel: UNP400

Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d

Aangrijphoogte van de last: -0.191 m vanaf hart profiel

Kipsteun bovenflens: 1,2,3,4m

Kipsteun onderflens: 1,2,3,4m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.114
Tabel gebruikt Fig. NB.32	M = -281.1kN/m	MBeta = -84.8	q = 78.2
Bovenflens maatgevend	Xb;Ist = 4.000 m	Xe;Ist = 4.850 m	Ist = 0.850 m
Lsys = 4.850 m	Lg = 4.850 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 1.56	C2 = 0.02 (tabel)	C2(toegepast) = -0.02	C = 70.36
Mcr = 4,937.1 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.30	Lamda;T = 0.70	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.985 m		UC(z) = 0.00
My;begin = -84.8 kNm	My;eind = -281.1 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C14-V1 (0.000-6.150)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C14-V1 (0.000-6.150)

Maatgevende combinatie: Fu.C.6 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -359.3 kNm	
	Vz;Ed = 309.8 kN	Mz;Ed = 0.0 kNm	
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm	
	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm	

NEN-EN1993-1-1(6.1): UC = 0.82 < 1

Kiptoetsing C14-V1 (0.000-6.150)

Equi. profiel: UNP400			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:d	
Aangrijphoogte van de last: -0.191 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5,6m			
Kipsteun onderflens: 1,2,3,4,5,6m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.109	b-eff(Eind) = 0.101
Tabel gebruikt Fig. NB.35	M = -229.3kN/m	MBeta = -194.9	F = 6.5
Bovenflens maatgevend	Xb;Ist = 6.000 m	Xe;Ist = 6.150 m	Ist = 0.150 m
Lsys = 6.150 m	Lg = 6.150 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 1.10	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 2,587.66
Mcr = 143,202.3 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.150 m		UC(z) = 0.00
My;begin = -194.9 kNm	My;eind = -229.3 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C15-V1 (0.000-4.800)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C15-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.5 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -305.7 kNm	
	Vz;Ed = 287.1 kN	Mz;Ed = 0.0 kNm	
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm	
	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm	

NEN-EN1993-1-1(6.1): UC = 0.70 < 1

Kiptoetsing C15-V1 (0.000-4.800)

Equi. profiel: UNP400			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:d	
Aangrijphoogte van de last: -0.191 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4m			
Kipsteun onderflens: 1,2,3,4m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = 63.8kN/m	MBeta = -29.7	q = 78.9
Bovenflens maatgevend	Xb;Ist = 4.000 m	Xe;Ist = 4.800 m	Ist = 0.800 m
Lsys = 4.800 m	Lg = 4.800 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 2.08	C2 = 0.07 (tabel)	C2(toegepast) = -0.08	C = 123.82
Mcr = 8,779.5 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.22	Lamda;T = 0.78	Lamda;MT = 1.00	

Chi;LT(Fu.C.15) = 0.47 M;Ed = 63.8 kNm UC(y) = 0.00
Chi;LT,Z = 1.00 lkip = 0.823 m UC(z) = 0.00
My;begin = 63.8 kNm My;eind = -29.7 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.5

Profielgegevens staaf C16-V1 (0.000-0.900)

UNP400 Analyse Staal S355 fyd(toegepast) = 355 N/mm2
h = 400.0 mm A = 9.15e-03 m2 Wy;el = 101.8e-05 m3 Wy;pl = 123.6e-05 m3
b = 110.0 mm Iy = 203.5e-06 m4 Wz;el = 102.3e-06 m3 Wz;pl = 192.7e-06 m3
tf = 18.0 mm Iz = 851.2e-08 m4 Aw;y;el = 4.05e-03 m2 Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm Massa/m = 71.8 kg/m Aw;z;el = 5.76e-03 m2 Aw;z;pl = 5.76e-03 m2
r = 18.0 mm It = 802.3e-09 m4 Iwa = 236.1e-09 m6

Doorsnedetoetsing C16-V1 (0.000-0.900)

Maatgevende combinatie: Fu.C.7 op 0.900 m Profielklasse = 1
N;Ed = 0.0 kN Vy;Ed = 0.0 kN My;Ed = -261.3 kNm
Vz;Ed = -276.8 kN Mz;Ed = 0.0 kNm
N;Rd = 3,247.6 kN Vy;Rd = 830.5 kN MyRd = 438.7 kNm
Vz;Rd = 1,181.4 kN MzRd = 68.4 kNm
NEN-EN1993-1-1(6.1): UC = 0.60 < 1

Kiptoetsing C16-V1 (0.000-0.900)

Equi. profiel: UNP400
Maatgevende combinatie: Fu.C.15 Instab. curve Kip:d
Aangrijphoogte van de last: -0.191 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.
Inklem. begin: Gesteund Beperk. eind: Gesteund b-eff(Begin) = 0.000 b-eff(Eind) = 0.095
Tabel gebruikt Fig. NB.32 M = -195.5kN/m MBeta = -29.7 q = 78.5
Bovenflens maatgevend Xb;lst = 0.000 m Xe;lst = 0.900 m lst = 0.900 m
Lsys = 0.900 m Lg = 0.900 m S = 0.875 m Iwa = 2.3608e-07 m6
C1 = 1.75 C2 = 0.03 (tabel) C2(toegepast) = -0.03 C = 17.18
Mcr = 6,497.6 kNm kred = 1.0 Profielklasse 1
Lamda;M = 0.26 Lamda;T = 0.74 Lamda;MT = 1.00
Chi;LT(Fu.C.15) = 0.47 M;Ed = 0.0 kNm UC(y) = 0.00
Chi;LT,Z = 1.00 lkip = 0.900 m UC(z) = 0.00
My;begin = -29.7 kNm My;eind = -195.5 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C17-V1 (0.000-5.200)

UNP400 Analyse Staal S355 fyd(toegepast) = 355 N/mm2
h = 400.0 mm A = 9.15e-03 m2 Wy;el = 101.8e-05 m3 Wy;pl = 123.6e-05 m3
b = 110.0 mm Iy = 203.5e-06 m4 Wz;el = 102.3e-06 m3 Wz;pl = 192.7e-06 m3
tf = 18.0 mm Iz = 851.2e-08 m4 Aw;y;el = 4.05e-03 m2 Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm Massa/m = 71.8 kg/m Aw;z;el = 5.76e-03 m2 Aw;z;pl = 5.76e-03 m2
r = 18.0 mm It = 802.3e-09 m4 Iwa = 236.1e-09 m6

Doorsnedetoetsing C17-V1 (0.000-5.200)

Maatgevende combinatie: Fu.C.7 op 0.000 m Profielklasse = 1
N;Ed = 0.0 kN Vy;Ed = 0.0 kN My;Ed = -261.3 kNm
Vz;Ed = 261.0 kN Mz;Ed = 0.0 kNm
N;Rd = 3,247.6 kN Vy;Rd = 830.5 kN MyRd = 438.7 kNm
Vz;Rd = 1,181.4 kN MzRd = 68.4 kNm
NEN-EN1993-1-1(6.1): UC = 0.60 < 1

Kiptoetsing C17-V1 (0.000-5.200)

Equi. profiel: UNP400
Maatgevende combinatie: Fu.C.15 Instab. curve Kip:d
Aangrijphoogte van de last: -0.191 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m
Inklem. begin: Gesteund Beperk. eind: Gesteund b-eff(Begin) = 0.091 b-eff(Eind) = 0.087

Tabel gebruikt Fig. NB.35	M = -170.3kN/m	MBeta = -131.7	F = 8.4
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.200 m	lst = 0.200 m
Lsys = 5.200 m	Lg = 5.200 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 1.15	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 1,287.38
Mcr = 84,260.3 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.200 m		UC(z) = 0.00
My;begin = -131.7 kNm	My;eind = -170.3 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C18-V1 (0.000-4.150)

UNP400	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 400.0 mm	A = 9.15e-03 m2	Wy;el = 101.8e-05 m3	Wy;pl = 123.6e-05 m3
b = 110.0 mm	Iy = 203.5e-06 m4	Wz;el = 102.3e-06 m3	Wz;pl = 192.7e-06 m3
tf = 18.0 mm	Iz = 851.2e-08 m4	Aw;y;el = 4.05e-03 m2	Aw;y;pl = 4.05e-03 m2
tw = 14.0 mm	Massa/m = 71.8 kg/m	Aw;z;el = 5.76e-03 m2	Aw;z;pl = 5.76e-03 m2
r = 18.0 mm		It = 802.3e-09 m4	Iwa = 236.1e-09 m6

Doorsnedetoetsing C18-V1 (0.000-4.150)

Maatgevende combinatie: Fu.C.6 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -218.2 kNm	
	Vz;Ed = 243.8 kN	Mz;Ed = 0.0 kNm	
N;Rd = 3,247.6 kN	Vy;Rd = 830.5 kN	MyRd = 438.7 kNm	
	Vz;Rd = 1,181.4 kN	MzRd = 68.4 kNm	

NEN-EN1993-1-1(6.1): UC = 0.50 < 1

Kiptoetsing C18-V1 (0.000-4.150)

Equi. profiel: UNP400			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:d	
Aangrijphoogte van de last: -0.191 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4m			
Kipsteun onderflens: 1,2,3,4m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.089	b-eff(Eind) = 0.053
Tabel gebruikt Fig. NB.32	M = 17.6kN/m	MBeta = 0.0	q = 79.2
Bovenflens maatgevend	Xb;lst = 4.000 m	Xe;lst = 4.150 m	lst = 0.150 m
Lsys = 4.150 m	Lg = 4.150 m	S = 0.875 m	Iwa = 2.3608e-07 m6
C1 = 1.77	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 1,430.43
Mcr = 117,310.3 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 17.6 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.210 m		UC(z) = 0.00
My;begin = 17.6 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.5

Profielgegevens staaf C19-V1 (0.000-5.500)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C19-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.5 op 5.500 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -289.2 kNm	
	Vz;Ed = -288.8 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm	
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm	

NEN-EN1993-1-1(6.1): UC = 0.99 < 1

Kiptoetsing C19-V1 (0.000-5.500)

Equi. profiel: UNP320
Maatgevende combinatie: Fu.C.15
Instab. curve Kip:d
Aangrijphoogte van de last: -0.151 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.069	b-eff(Eind) = 0.106
Tabel gebruikt Fig. NB.32	M = -235.9kN/m	MBeta = -122.2	q = 64.5
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.500 m	lst = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.32	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 187.94
Mcr = 8,750.1 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.500 m		UC(z) = 0.00
My;begin = -122.2 kNm	My;eind = -235.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C20-V1 (0.000-5.500)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C20-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.5 op 0.000 m
Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -289.2 kNm
	Vz;Ed = 262.9 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm

NEN-EN1993-1-1(6.1): UC = 0.99 < 1

Kiptoetsing C20-V1 (0.000-5.500)

Equi. profiel: UNP320
Maatgevende combinatie: Fu.C.15
Instab. curve Kip:d
Aangrijphoogte van de last: -0.151 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.092	b-eff(Eind) = 0.082
Tabel gebruikt Fig. NB.32	M = -172.7kN/m	MBeta = -86.2	q = 66.7
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.500 m	lst = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.33	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 189.83
Mcr = 8,838.1 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.500 m		UC(z) = 0.00
My;begin = -86.2 kNm	My;eind = -172.7 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C21-V1 (0.000-5.500)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C21-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.6 op 5.500 m
Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -252.7 kNm

	Vz;Ed = -257.5 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm	
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm	

NEN-EN1993-1-1(6.1): UC = 0.86 < 1

Kiptoetsing C21-V1 (0.000-5.500)

Equi. profiel: UNP320
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d
Aangrijphoogte van de last: -0.151 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.086	b-eff(Eind) = 0.089
Tabel gebruikt Fig. NB.32	M = -189.5kN/m	MBeta = -95.8	q = 66.1
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.500 m	Ist = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.33	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 189.36
Mcr = 8,816.3 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.500 m		UC(z) = 0.00
My;begin = -95.8 kNm	My;eind = -189.5 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C22-V1 (0.000-5.500)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C22-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.6 op 0.000 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -252.7 kNm	
	Vz;Ed = 254.4 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm	
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm	

NEN-EN1993-1-1(6.1): UC = 0.86 < 1

Kiptoetsing C22-V1 (0.000-5.500)

Equi. profiel: UNP320
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d
Aangrijphoogte van de last: -0.151 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.088	b-eff(Eind) = 0.087
Tabel gebruikt Fig. NB.32	M = -185.3kN/m	MBeta = -93.5	q = 66.3
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.500 m	Ist = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.33	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 189.48
Mcr = 8,821.6 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.500 m		UC(z) = 0.00
My;begin = -93.5 kNm	My;eind = -185.3 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C23-V1 (0.000-5.500)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2

tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C23-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.5 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -247.5 kNm	
	Vz;Ed = 253.4 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm	
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm	

NEN-EN1993-1-1(6.1): UC = 0.84 < 1

Kiptoetsing C23-V1 (0.000-5.500)

Equi. profiel: UNP320			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:d	
Aangrijphoogte van de last: -0.151 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5m			
Kipsteun onderflens: 1,2,3,4,5m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.087	b-eff(Eind) = 0.087
Tabel gebruikt Fig. NB.32	M = -185.3kN/m	MBeta = -93.1	q = 66.2
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.500 m	Ist = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.33	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 189.66
Mcr = 8,830.3 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.500 m		UC(z) = 0.00
My;begin = -93.1 kNm	My;eind = -185.3 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C24-V1 (0.000-5.500)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C24-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.6 op 5.500 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -252.7 kNm	
	Vz;Ed = -254.4 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm	
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm	

NEN-EN1993-1-1(6.1): UC = 0.86 < 1

Kiptoetsing C24-V1 (0.000-5.500)

Equi. profiel: UNP320			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:d	
Aangrijphoogte van de last: -0.151 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5m			
Kipsteun onderflens: 1,2,3,4,5m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.087	b-eff(Eind) = 0.088
Tabel gebruikt Fig. NB.32	M = -189.5kN/m	MBeta = -96.9	q = 66.2
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.500 m	Ist = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.32	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 188.81
Mcr = 8,790.6 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.500 m		UC(z) = 0.00
My;begin = -96.9 kNm	My;eind = -189.5 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C25-V1 (0.000-5.500)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C25-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.6 op 0.000 m

		Profielklasse = 1
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -252.7 kNm
	Vz;Ed = 257.5 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm

NEN-EN1993-1-1(6.1): UC = 0.86 < 1

Kiptoetsing C25-V1 (0.000-5.500)

Equi. profiel: UNP320

Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d

Aangrijphoogte van de last: -0.151 m vanaf hart profiel

Kipsteun bovenflens: 1,2,3,4,5m

Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.089	b-eff(Eind) = 0.086
Tabel gebruikt Fig. NB.32	M = -172.7kN/m	MBeta = -82.0	q = 66.4
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.500 m	Ist = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.36	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 186.17
Mcr = 8,667.6 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.510 m		UC(z) = 0.00
My;begin = -82.0 kNm	My;eind = -172.7 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C26-V1 (0.000-5.500)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C26-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.7 op 5.500 m

		Profielklasse = 1
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -289.2 kNm
	Vz;Ed = -262.9 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm

NEN-EN1993-1-1(6.1): UC = 0.99 < 1

Kiptoetsing C26-V1 (0.000-5.500)

Equi. profiel: UNP320

Maatgevende combinatie: Fu.C.6 — Instab. curve Kip:d

Aangrijphoogte van de last: -0.151 m vanaf hart profiel

Kipsteun bovenflens: 1,2,3,4,5m

Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.051	b-eff(Eind) = 0.064
Tabel gebruikt Fig. NB.32	M = 3.0kN/m	MBeta = -0.2	q = 48.4
Bovenflens maatgevend	Xb;Ist = 2.000 m	Xe;Ist = 3.000 m	Ist = 1.000 m
Lsys = 5.500 m	Lg = 5.500 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.12	C2 = 0.36 (tabel)	C2(toegepast) = -0.38	C = 18.74

Mcr = 872.7 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.58	Lamda;T = 0.42	Lamda;MT = 1.00	
Chi;LT(Fu.C.6) = 0.47	M;Ed = 7.6 kNm		UC(y) = 0.06
Chi;LT,Z = 1.00	lkip = 1.349 m		UC(z) = 0.00
My;begin = 3.0 kNm	My;eind = -0.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.06 < 1

Profielgegevens staaf C27-V1 (0.000-5.500)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C27-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.7 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -289.2 kNm	
	Vz;Ed = 288.8 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm	
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm	

NEN-EN1993-1-1(6.1): UC = 0.99 < 1

Kiptoetsing C27-V1 (0.000-5.500)

Equi. profiel: UNP320
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:d
Aangrijphoogte van de last: -0.151 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.106	b-eff(Eind) = 0.069
Tabel gebruikt Fig. NB.32	M = 70.8kN/m	MBeta = 0.0	q = 73.8
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.500 m	lst = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.72	C2 = 0.02 (tabel)	C2(toegepast) = -0.02	C = 126.85
Mcr = 5,906.0 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.22	Lamda;T = 0.78	Lamda;MT = 1.00	
Chi;LT(Fu.C.15) = 0.47	M;Ed = 70.8 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.700 m		UC(z) = 0.00
My;begin = 70.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.5

Profielgegevens staaf C28-V1 (0.000-8.250)

HE450B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 450.0 mm	A = 21.80e-03 m2	Wy;el = 355.1e-05 m3	Wy;pl = 398.2e-05 m3
b = 300.0 mm	Iy = 798.9e-06 m4	Wz;el = 781.4e-06 m3	Wz;pl = 119.8e-05 m3
tf = 26.0 mm	Iz = 117.2e-06 m4	Aw;y;el = 1.62e-02 m2	Aw;y;pl = 1.62e-02 m2
tw = 14.0 mm	Massa/m = 171.1 kg/m	Aw;z;el = 7.97e-03 m2	Aw;z;pl = 7.97e-03 m2
r = 27.0 mm		It = 440.5e-08 m4	Iwa = 525.8e-08 m6

Doorsnedetoetsing C28-V1 (0.000-8.250)

Maatgevende combinatie: Fu.C.5 op 8.250 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -1,190.3 kNm	
	Vz;Ed = -787.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 7,738.2 kN	Vy;Rd = 3,325.6 kN	MyRd = 1,413.7 kNm	
	Vz;Rd = 1,632.7 kN	MzRd = 425.2 kNm	

NEN-EN1993-1-1(6.12): UC = 0.84 < 1

Kiptoetsing C28-V1 (0.000-8.250)

Equi. profiel: HE450B
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.212 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5,6,7,8m

Kipsteun onderflens: 1,2,3,4,5,6,7,8m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.089	b-eff(Eind) = 0.137
Tabel gebruikt Fig. NB.32	M = -982.9kN/m	MBeta = -816.6	q = 7.7
Bovenflens maatgevend	Xb;lst = 8.000 m	Xe;lst = 8.250 m	lst = 0.250 m
Lsys = 8.250 m	Lg = 8.250 m	S = 1.762 m	Iwa = 5.2584e-06 m6
C1 = 1.11	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 2,542.74
Mcr = 912,074.1 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.250 m		UC(z) = 0.00
My;begin = -816.6 kNm	My;eind = -982.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C29-V1 (0.000-8.250)

HE450B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 450.0 mm	A = 21.80e-03 m2	Wy;el = 355.1e-05 m3	Wy;pl = 398.2e-05 m3
b = 300.0 mm	Iy = 798.9e-06 m4	Wz;el = 781.4e-06 m3	Wz;pl = 119.8e-05 m3
tf = 26.0 mm	Iz = 117.2e-06 m4	Aw;y;el = 1.62e-02 m2	Aw;y;pl = 1.62e-02 m2
tw = 14.0 mm	Massa/m = 171.1 kg/m	Aw;z;el = 7.97e-03 m2	Aw;z;pl = 7.97e-03 m2
r = 27.0 mm		It = 440.5e-08 m4	Iwa = 525.8e-08 m6

Doorsnedetoetsing C29-V1 (0.000-8.250)

Maatgevende combinatie: Fu.C.5 op 0.000 m

		Profielklasse = 1
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -1,190.3 kNm
	Vz;Ed = 721.4 kN	Mz;Ed = 0.0 kNm
N;Rd = 7,738.2 kN	Vy;Rd = 3,325.6 kN	MyRd = 1,413.7 kNm
	Vz;Rd = 1,632.7 kN	MzRd = 425.2 kNm

NEN-EN1993-1-1(6.12): UC = 0.84 < 1

Kiptoetsing C29-V1 (0.000-8.250)

Equi. profiel: HE450B

Maatgevende combinatie: Fu.C.15 Instab. curve Kip:a

Aangrijphoogte van de last: -0.212 m vanaf hart profiel

Kipsteun bovenflens: 1,2,3,4,5,6,7,8m

Kipsteun onderflens: 1,2,3,4,5,6,7,8m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.120	b-eff(Eind) = 0.107
Tabel gebruikt Fig. NB.32	M = -714.9kN/m	MBeta = -586.4	q = 23.7
Bovenflens maatgevend	Xb;lst = 8.000 m	Xe;lst = 8.250 m	lst = 0.250 m
Lsys = 8.250 m	Lg = 8.250 m	S = 1.762 m	Iwa = 5.2584e-06 m6
C1 = 1.11	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 2,558.32
Mcr = 917,662.4 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.250 m		UC(z) = 0.00
My;begin = -586.4 kNm	My;eind = -714.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C30-V1 (0.000-8.250)

HE450B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 450.0 mm	A = 21.80e-03 m2	Wy;el = 355.1e-05 m3	Wy;pl = 398.2e-05 m3
b = 300.0 mm	Iy = 798.9e-06 m4	Wz;el = 781.4e-06 m3	Wz;pl = 119.8e-05 m3
tf = 26.0 mm	Iz = 117.2e-06 m4	Aw;y;el = 1.62e-02 m2	Aw;y;pl = 1.62e-02 m2
tw = 14.0 mm	Massa/m = 171.1 kg/m	Aw;z;el = 7.97e-03 m2	Aw;z;pl = 7.97e-03 m2
r = 27.0 mm		It = 440.5e-08 m4	Iwa = 525.8e-08 m6

Doorsnedetoetsing C30-V1 (0.000-8.250)

Maatgevende combinatie: Fu.C.6 op 8.250 m

		Profielklasse = 1
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -1,072.3 kNm
	Vz;Ed = -711.3 kN	Mz;Ed = 0.0 kNm
N;Rd = 7,738.2 kN	Vy;Rd = 3,325.6 kN	MyRd = 1,413.7 kNm
	Vz;Rd = 1,632.7 kN	MzRd = 425.2 kNm

NEN-EN1993-1-1(6.12): UC = 0.76 < 1

Kiptoetsing C30-V1 (0.000-8.250)

Equi. profiel: HE450B
Maatgevende combinatie: Fu.C.15
Instab. curve Kip:a
Aangrijphoogte van de last: -0.212 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5,6,7,8m
Kipsteun onderflens: 1,2,3,4,5,6,7,8m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.111	b-eff(Eind) = 0.116
Tabel gebruikt Fig. NB.32	M = -804.2kN/m	MBeta = -665.0	q = 14.7
Bovenflens maatgevend	Xb;lst = 8.000 m	Xe;lst = 8.250 m	lst = 0.250 m
Lsys = 8.250 m	Lg = 8.250 m	S = 1.762 m	Iwa = 5.2584e-06 m6
C1 = 1.11	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 2,548.76
Mcr = 914,232.6 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.250 m		UC(z) = 0.00
My;begin = -665.0 kNm	My;eind = -804.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C31-V1 (0.000-8.250)

HE450B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 450.0 mm	A = 21.80e-03 m2	Wy;el = 355.1e-05 m3	Wy;pl = 398.2e-05 m3
b = 300.0 mm	Iy = 798.9e-06 m4	Wz;el = 781.4e-06 m3	Wz;pl = 119.8e-05 m3
tf = 26.0 mm	Iz = 117.2e-06 m4	Aw;y;el = 1.62e-02 m2	Aw;y;pl = 1.62e-02 m2
tw = 14.0 mm	Massa/m = 171.1 kg/m	Aw;z;el = 7.97e-03 m2	Aw;z;pl = 7.97e-03 m2
r = 27.0 mm		It = 440.5e-08 m4	Iwa = 525.8e-08 m6

Doorsnedetoetsing C31-V1 (0.000-8.250)

Maatgevende combinatie: Fu.C.6 op 0.000 m
Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -1,072.3 kNm
	Vz;Ed = 711.3 kN	Mz;Ed = 0.0 kNm
N;Rd = 7,738.2 kN	Vy;Rd = 3,325.6 kN	MyRd = 1,413.7 kNm
	Vz;Rd = 1,632.7 kN	MzRd = 425.2 kNm

NEN-EN1993-1-1(6.12): UC = 0.76 < 1

Kiptoetsing C31-V1 (0.000-8.250)

Equi. profiel: HE450B
Maatgevende combinatie: Fu.C.15
Instab. curve Kip:a
Aangrijphoogte van de last: -0.212 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5,6,7,8m
Kipsteun onderflens: 1,2,3,4,5,6,7,8m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.116	b-eff(Eind) = 0.111
Tabel gebruikt Fig. NB.32	M = -714.9kN/m	MBeta = -581.0	q = 19.2
Bovenflens maatgevend	Xb;lst = 8.000 m	Xe;lst = 8.250 m	lst = 0.250 m
Lsys = 8.250 m	Lg = 8.250 m	S = 1.762 m	Iwa = 5.2584e-06 m6
C1 = 1.12	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 2,569.24
Mcr = 921,579.7 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.250 m		UC(z) = 0.00
My;begin = -581.0 kNm	My;eind = -714.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C32-V1 (0.000-8.250)

HE450B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 450.0 mm	A = 21.80e-03 m2	Wy;el = 355.1e-05 m3	Wy;pl = 398.2e-05 m3
b = 300.0 mm	Iy = 798.9e-06 m4	Wz;el = 781.4e-06 m3	Wz;pl = 119.8e-05 m3
tf = 26.0 mm	Iz = 117.2e-06 m4	Aw;y;el = 1.62e-02 m2	Aw;y;pl = 1.62e-02 m2
tw = 14.0 mm	Massa/m = 171.1 kg/m	Aw;z;el = 7.97e-03 m2	Aw;z;pl = 7.97e-03 m2
r = 27.0 mm		It = 440.5e-08 m4	Iwa = 525.8e-08 m6

Doorsnedetoetsing C32-V1 (0.000-8.250)

Maatgevende combinatie: Fu.C.7 op 8.250 m
Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -1,190.3 kNm
	Vz;Ed = -721.4 kN	Mz;Ed = 0.0 kNm
N;Rd = 7,738.2 kN	Vy;Rd = 3,325.6 kN	MyRd = 1,413.7 kNm

	Vz;Rd = 1,632.7 kN	MzRd = 425.2 kNm	

NEN-EN1993-1-1(6.12): UC = 0.84 < 1

Kiptoetsing C32-V1 (0.000-8.250)

Equi. profiel: HE450B
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.212 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5,6,7,8m
Kipsteun onderflens: 1,2,3,4,5,6,7,8m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.107	b-eff(Eind) = 0.120
Tabel gebruikt Fig. NB.32	M = -982.9kN/m	MBeta = -838.3	q = 10.2
Bovenflens maatgevend	Xb;lst = 8.000 m	Xe;lst = 8.250 m	lst = 0.250 m
Lsys = 8.250 m	Lg = 8.250 m	S = 1.762 m	Iwa = 5.2584e-06 m6
C1 = 1.09	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 2,511.03
Mcr = 900,698.6 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.250 m		UC(z) = 0.00
My;begin = -838.3 kNm	My;eind = -982.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C33-V1 (0.000-8.250)

HE450B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 450.0 mm	A = 21.80e-03 m2	Wy;el = 355.1e-05 m3	Wy;pl = 398.2e-05 m3
b = 300.0 mm	Iy = 798.9e-06 m4	Wz;el = 781.4e-06 m3	Wz;pl = 119.8e-05 m3
tf = 26.0 mm	Iz = 117.2e-06 m4	Aw;y;el = 1.62e-02 m2	Aw;y;pl = 1.62e-02 m2
tw = 14.0 mm	Massa/m = 171.1 kg/m	Aw;z;el = 7.97e-03 m2	Aw;z;pl = 7.97e-03 m2
r = 27.0 mm		It = 440.5e-08 m4	Iwa = 525.8e-08 m6

Doorsnedetoetsing C33-V1 (0.000-8.250)

Maatgevende combinatie: Fu.C.7 op 0.000 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -1,190.3 kNm
	Vz;Ed = 787.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 7,738.2 kN	Vy;Rd = 3,325.6 kN	MyRd = 1,413.7 kNm
	Vz;Rd = 1,632.7 kN	MzRd = 425.2 kNm

NEN-EN1993-1-1(6.12): UC = 0.84 < 1

Kiptoetsing C33-V1 (0.000-8.250)

Equi. profiel: HE450B
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.212 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5,6,7,8m
Kipsteun onderflens: 1,2,3,4,5,6,7,8m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.137	b-eff(Eind) = 0.089
Tabel gebruikt Fig. NB.32	M = 106.8kN/m	MBeta = 0.0	q = 136.5
Bovenflens maatgevend	Xb;lst = 8.000 m	Xe;lst = 8.250 m	lst = 0.250 m
Lsys = 8.250 m	Lg = 8.250 m	S = 1.762 m	Iwa = 5.2584e-06 m6
C1 = 1.78	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 2,071.24
Mcr = 742,948.5 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 106.8 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.350 m		UC(z) = 0.00
My;begin = 106.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Profielgegevens staaf C34-V1 (0.000-5.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C34-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.5 op 5.500 m
Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -311.9 kNm
	Vz;Ed = -297.2 kN	Mz;Ed = 0.0 kNm
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.68 < 1

Kiptoetsing C34-V1 (0.000-5.500)

Equi. profiel: HE260B
Maatgevende combinatie: Fu.C.15
Instab. curve Kip:a
Aangrijphoogte van de last: -0.121 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.045	b-eff(Eind) = 0.072
Tabel gebruikt Fig. NB.32	M = -255.6kN/m	MBeta = -138.1	q = 78.0
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.500 m	Ist = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.30	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 357.10
Mcr = 67,411.8 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.500 m		UC(z) = 0.00
My;begin = -138.1 kNm	My;eind = -255.6 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C35-V1 (0.000-5.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C35-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.5 op 0.000 m
Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -311.9 kNm
	Vz;Ed = 305.3 kN	Mz;Ed = 0.0 kNm
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.68 < 1

Kiptoetsing C35-V1 (0.000-5.500)

Equi. profiel: HE260B
Maatgevende combinatie: Fu.C.15
Instab. curve Kip:a
Aangrijphoogte van de last: -0.121 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.071	b-eff(Eind) = 0.067
Tabel gebruikt Fig. NB.32	M = -215.4kN/m	MBeta = -108.0	q = 80.0
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.500 m	Ist = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.33	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 364.33
Mcr = 68,775.7 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.500 m		UC(z) = 0.00
My;begin = -108.0 kNm	My;eind = -215.4 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C36-V1 (0.000-5.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2

tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C36-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.6 op 5.500 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -301.9 kNm	
	Vz;Ed = -305.2 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm	
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.66 < 1

Kiptoetsing C36-V1 (0.000-5.500)

Equi. profiel: HE260B			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.121 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5m			
Kipsteun onderflens: 1,2,3,4,5m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.068	b-eff(Eind) = 0.069
Tabel gebruikt Fig. NB.32	M = -226.1kN/m	MBeta = -114.1	q = 79.6
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.500 m	lst = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.33	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 363.65
Mcr = 68,647.5 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.500 m		UC(z) = 0.00
My;begin = -114.1 kNm	My;eind = -226.1 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C37-V1 (0.000-5.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C37-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.6 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -301.9 kNm	
	Vz;Ed = 303.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm	
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.66 < 1

Kiptoetsing C37-V1 (0.000-5.500)

Equi. profiel: HE260B			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.121 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5m			
Kipsteun onderflens: 1,2,3,4,5m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.069	b-eff(Eind) = 0.069
Tabel gebruikt Fig. NB.32	M = -223.4kN/m	MBeta = -112.7	q = 79.7
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.500 m	lst = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.33	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 363.76
Mcr = 68,669.2 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.500 m		UC(z) = 0.00
My;begin = -112.7 kNm	My;eind = -223.4 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C38-V1 (0.000-5.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C38-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.5 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -298.4 kNm	
	Vz;Ed = 302.3 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm	
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.66 < 1

Kiptoetsing C38-V1 (0.000-5.500)

Equi. profiel: HE260B			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.121 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5m			
Kipsteun onderflens: 1,2,3,4,5m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.069	b-eff(Eind) = 0.069
Tabel gebruikt Fig. NB.32	M = -223.4kN/m	MBeta = -112.4	q = 79.7
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.500 m	Ist = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.33	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 363.96
Mcr = 68,705.8 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.500 m		UC(z) = 0.00
My;begin = -112.4 kNm	My;eind = -223.4 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C39-V1 (0.000-5.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C39-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.6 op 5.500 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -301.9 kNm	
	Vz;Ed = -303.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm	
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.66 < 1

Kiptoetsing C39-V1 (0.000-5.500)

Equi. profiel: HE260B			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.121 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5m			
Kipsteun onderflens: 1,2,3,4,5m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.069	b-eff(Eind) = 0.069
Tabel gebruikt Fig. NB.32	M = -226.1kN/m	MBeta = -114.9	q = 79.7
Bovenflens maatgevend	Xb;Ist = 5.000 m	Xe;Ist = 5.500 m	Ist = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.33	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 363.07
Mcr = 68,538.9 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.500 m		UC(z) = 0.00

My;begin = -114.9 kNm My;eind = -226.1 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C40-V1 (0.000-5.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C40-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.6 op 0.000 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -301.9 kNm	
	Vz;Ed = 305.2 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm	
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.66 < 1

Kiptoetsing C40-V1 (0.000-5.500)

Equi. profiel: HE260B			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.121 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5m			
Kipsteun onderflens: 1,2,3,4,5m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.069	b-eff(Eind) = 0.068
Tabel gebruikt Fig. NB.32	M = -215.3kN/m	MBeta = -105.2	q = 79.8
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.500 m	lst = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.34	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 361.22
Mcr = 68,188.8 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.15) = 1.00	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.504 m		UC(z) = 0.00
My;begin = -105.2 kNm	My;eind = -215.3 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C41-V1 (0.000-5.500)

HE260B	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C41-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.7 op 5.500 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -312.4 kNm	
	Vz;Ed = -305.5 kN	Mz;Ed = 0.0 kNm	
N;Rd = 4,204.8 kN	Vy;Rd = 1,966.5 kN	MyRd = 455.4 kNm	
	Vz;Rd = 770.5 kN	MzRd = 213.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.69 < 1

Kiptoetsing C41-V1 (0.000-5.500)

Equi. profiel: HE260B			
Maatgevende combinatie: Fu.C.15		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.121 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5m			
Kipsteun onderflens: 1,2,3,4,5m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.067	b-eff(Eind) = 0.071
Tabel gebruikt Fig. NB.32	M = -256.0kN/m	MBeta = -141.3	q = 79.4
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.500 m	lst = 0.500 m
Lsys = 5.500 m	Lg = 5.500 m	S = 1.258 m	Iwa = 7.5365e-07 m6

C1 = 1.30 | C2 = 0.01 (tabel) | C2(toegepast) = -0.01 | C = 355.11
Mcr = 67,034.7 kNm | kred = 1.0 | Lam-rel = 0.20 | Profielklasse 1
Chi;LT(Fu.C.15) = 1.00 | M;Ed = 0.0 kNm | | UC(y) = 0.00
Chi;LT,Z = 1.00 | lkip = 0.500 m | | UC(z) = 0.00
My;begin = -141.3 kNm | My;eind = -256.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C42-V1 (0.000-5.500)

HE260B | Analyse | Staal S355 fyd(toegepast) = 355 N/mm2
h = 260.0 mm | A = 11.84e-03 m2 | Wy;el = 114.8e-05 m3 | Wy;pl = 128.3e-05 m3
b = 260.0 mm | Iy = 149.2e-06 m4 | Wz;el = 395.0e-06 m3 | Wz;pl = 602.2e-06 m3
tf = 17.5 mm | Iz = 513.5e-07 m4 | Aw;y;el = 9.59e-03 m2 | Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm | Massa/m = 93.0 kg/m | Aw;z;el = 3.76e-03 m2 | Aw;z;pl = 3.76e-03 m2
r = 24.0 mm | | It = 123.8e-08 m4 | Iwa = 753.7e-09 m6

Doorsnedetoetsing C42-V1 (0.000-5.500)

Maatgevende combinatie: Fu.C.7 op 0.000 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -312.4 kNm
Vz;Ed = 302.7 kN | Mz;Ed = 0.0 kNm
N;Rd = 4,204.8 kN | Vy;Rd = 1,966.5 kN | MyRd = 455.4 kNm
Vz;Rd = 770.5 kN | MzRd = 213.8 kNm
NEN-EN1993-1-1(6.12): UC = 0.69 < 1

Kiptoetsing C42-V1 (0.000-5.500)

Equi. profiel: HE260B
Maatgevende combinatie: Fu.C.15 | Instab. curve Kip:a
Aangrijphoogte van de last: -0.121 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.074 | b-eff(Eind) = 0.045
Tabel gebruikt Fig. NB.32 | M = 70.2kN/m | MBeta = 0.0 | q = 74.6
Bovenflens maatgevend | Xb;Ist = 5.000 m | Xe;Ist = 5.500 m | Ist = 0.500 m
Lsys = 5.500 m | Lg = 5.500 m | S = 1.258 m | Iwa = 7.5365e-07 m6
C1 = 1.72 | C2 = 0.02 (tabel) | C2(toegepast) = -0.02 | C = 238.25
Mcr = 44,974.6 kNm | kred = 1.0 | Lam-rel = 0.20 | Profielklasse 1
Chi;LT(Fu.C.15) = 1.00 | M;Ed = 70.2 kNm | | UC(y) = 0.00
Chi;LT,Z = 1.00 | lkip = 0.700 m | | UC(z) = 0.00
My;begin = 70.2 kNm | My;eind = 0.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Profielgegevens staaf C43-V1 (0.000-4.910)

HE180A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 171.0 mm | A = 4.53e-03 m2 | Wy;el = 293.6e-06 m3 | Wy;pl = 324.9e-06 m3
b = 180.0 mm | Iy = 251.0e-07 m4 | Wz;el = 102.7e-06 m3 | Wz;pl = 156.5e-06 m3
tf = 9.5 mm | Iz = 924.6e-08 m4 | Aw;y;el = 3.61e-03 m2 | Aw;y;pl = 3.61e-03 m2
tw = 6.0 mm | Massa/m = 35.5 kg/m | Aw;z;el = 1.45e-03 m2 | Aw;z;pl = 1.45e-03 m2
r = 15.0 mm | | It = 148.0e-09 m4 | Iwa = 602.1e-10 m6

Doorsnedetoetsing C43-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.2 op 4.910 m | Profielklasse = 1
N;Ed = 0.0 kN | Vy;Ed = 0.0 kN | My;Ed = -26.8 kNm
Vz;Ed = -28.2 kN | Mz;Ed = 0.0 kNm
N;Rd = 1,063.4 kN | Vy;Rd = 490.2 kN | MyRd = 76.3 kNm
Vz;Rd = 196.3 kN | MzRd = 36.8 kNm
NEN-EN1993-1-1(6.12): UC = 0.35 < 1

Kiptoetsing C43-V1 (0.000-4.910)

Equi. profiel: HE180A
Maatgevende combinatie: Fu.C.8 | Instab. curve Kip:a
Aangrijphoogte van de last: -0.081 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -26.8kN/m	MBeta = 0.0	q = 9.3
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 4.910 m	lst = 4.910 m
Lsys = 4.910 m	Lg = 4.910 m	S = 1.029 m	Iwa = 6.0211e-08 m6
C1 = 2.08	C2 = 0.87 (tabel)	C2(toegepast) = -0.92	C = 4.80
Mcr = 148.9 kNm	kred = 1.0	Lam-rel = 0.72	Profielklasse 1
Chi;LT(Fu.C.8) = 0.84	M;Ed = 26.8 kNm		UC(y) = 0.42
Chi;LT,Z = 1.00	lkip = 4.910 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -26.8 kNm		

NEN-EN1993-1-1(6.54): UC = 0.42 < 1

Profielgegevens staaf C44-V1 (0.000-4.910)

HE180A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 171.0 mm	A = 4.53e-03 m2	Wy;el = 293.6e-06 m3	Wy;pl = 324.9e-06 m3
b = 180.0 mm	Iy = 251.0e-07 m4	Wz;el = 102.7e-06 m3	Wz;pl = 156.5e-06 m3
tf = 9.5 mm	Iz = 924.6e-08 m4	Aw;y;el = 3.61e-03 m2	Aw;y;pl = 3.61e-03 m2
tw = 6.0 mm	Massa/m = 35.5 kg/m	Aw;z;el = 1.45e-03 m2	Aw;z;pl = 1.45e-03 m2
r = 15.0 mm		It = 148.0e-09 m4	Iwa = 602.1e-10 m6

Doorsnedetoetsing C44-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = -17.5 kN	Vy;Ed = 0.0 kN	My;Ed = -26.8 kNm	
	Vz;Ed = 28.2 kN	Mz;Ed = 0.0 kNm	
N;Rd = 1,063.4 kN	Vy;Rd = 490.2 kN	MyRd = 76.3 kNm	
	Vz;Rd = 196.3 kN	MzRd = 36.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.35 < 1

Kiptoetsing C44-V1 (0.000-4.910)

Equi. profiel: HE180A			
Maatgevende combinatie: Fu.C.8		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.081 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.024	b-eff(Eind) = 0.015
Tabel gebruikt Fig. NB.32	M = -26.8kN/m	MBeta = 0.0	q = 9.3
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 4.910 m	lst = 4.910 m
Lsys = 4.910 m	Lg = 4.910 m	S = 1.029 m	Iwa = 6.0211e-08 m6
C1 = 2.08	C2 = 0.87 (tabel)	C2(toegepast) = -0.92	C = 4.80
Mcr = 148.9 kNm	kred = 1.0	Lam-rel = 0.72	Profielklasse 1
Chi;LT(Fu.C.8) = 0.84	M;Ed = 26.8 kNm		UC(y) = 0.42
Chi;LT,Z = 1.00	lkip = 4.910 m		UC(z) = 0.00
My;begin = -26.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.42 < 1

Stabiliteitstoetsing C44-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.2			
N;Ed = -17.5 kN	Nb;Rd;y = 832.2 kN	Nb;Rd;z = 483.8 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 4.910 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 4.910 m
Xy = 0.78		Knikcurve: B	
Xz = 0.45		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.04 < 1

Buiging & Druk C44-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -17.5 kN	My;Ed = 26.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -26.8 kNm	My;Psi = 0.0 kNm	My;s = 14.5 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.53	Cmz = 1.00	CmLT = 0.53	
Kyy = 0.539	Kyz = 0.630	Kzy = 0.987	Kzz = 1.051
Ksi;y = 0.78	Ksi;z = 0.45	Ksi;LT = 0.84	

NEN-EN1993-1-1(6.61&6.62): UC = 0.45 < 1

Profielgegevens staaf C45-V1 (0.000-4.910)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C45-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.1 op 4.910 m		Profielklasse = 1	
N;Ed = -24.6 kN	Vy;Ed = 0.0 kN	My;Ed = -6.9 kNm	
	Vz;Ed = -7.2 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.12): UC = 0.17 < 1

Kiptoetsing C45-V1 (0.000-4.910)

Equi. profiel: HE140A			
Maatgevende combinatie: Fu.C.1		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.062 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = -6.9kN/m	MBeta = 0.0	q = 2.4
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 4.910 m	Ist = 4.910 m
Lsys = 4.910 m	Lg = 4.910 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 2.08	C2 = 0.87 (tabel)	C2(toegepast) = -0.93	C = 4.94
Mcr = 73.8 kNm	kred = 1.0	Lam-rel = 0.74	Profielklasse 1
Chi;LT(Fu.C.1) = 0.83	M;Ed = 6.9 kNm		UC(y) = 0.20
Chi;LT,Z = 1.00	Ikip = 4.910 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -6.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.20 < 1

Stabiliteitstoetsing C45-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.2			
N;Ed = -37.9 kN	Nb;Rd;y = 482.6 kN	Nb;Rd;z = 235.8 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 4.910 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 4.910 m
Xy = 0.65		Knikcurve: B	
Xz = 0.32		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.16 < 1

Buiging & Druk C45-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -37.9 kN	My;Ed = 6.9 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -5.9 kNm	My;Psi = 0.0 kNm	My;s = 3.4 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.56	Cmz = 1.00	CmLT = 0.56	
Kyy = 0.588	Kyz = 0.735	Kzy = 0.948	Kzz = 1.225
Ksi;y = 0.65	Ksi;z = 0.32	Ksi;LT = 0.82	

NEN-EN1993-1-1(6.61&6.62): UC = 0.33 < 1

Profielgegevens staaf C46-V1 (0.000-4.910)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2

tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C46-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.1 op 0.000 m		Profielklasse = 1	
N;Ed = -24.6 kN	Vy;Ed = 0.0 kN	My;Ed = -6.9 kNm	
	Vz;Ed = 7.2 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.12): UC = 0.17 < 1

Kiptoetsing C46-V1 (0.000-4.910)

Equi. profiel: HE140A			
Maatgevende combinatie: Fu.C.1		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.062 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.004
Tabel gebruikt Fig. NB.32	M = -6.9kN/m	MBeta = 0.0	q = 2.4
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 4.910 m	Ist = 4.910 m
Lsys = 4.910 m	Lg = 4.910 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 2.08	C2 = 0.87 (tabel)	C2(toegepast) = -0.93	C = 4.94
Mcr = 73.8 kNm	kred = 1.0	Lam-rel = 0.74	Profielklasse 1
Chi;LT(Fu.C.1) = 0.83	M;Ed = 6.9 kNm		UC(y) = 0.20
Chi;LT,Z = 1.00	Ikip = 4.910 m		UC(z) = 0.00
My;begin = -6.9 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.20 < 1

Stabiliteitstoetsing C46-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.2			
N;Ed = -37.9 kN	Nb;Rd;y = 482.6 kN	Nb;Rd;z = 235.8 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 4.910 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 4.910 m
Xy = 0.65		Knikcurve: B	
Xz = 0.32		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.16 < 1

Buiging & Druk C46-V1 (0.000-4.910)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -37.9 kN	My;Ed = 6.9 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -5.9 kNm	My;Psi = 0.0 kNm	My;s = 3.4 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.56	Cmz = 1.00	CmLT = 0.56	
Kyy = 0.588	Kyz = 0.735	Kzy = 0.948	Kzz = 1.225
Ksi;y = 0.65	Ksi;z = 0.32	Ksi;LT = 0.82	

NEN-EN1993-1-1(6.61&6.62): UC = 0.33 < 1

Profielgegevens staaf C47-V1 (0.000-3.780)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C47-V1 (0.000-3.780)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = -35.0 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	

Vz;Rd = 137.4 kN MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.05 < 1

Kiptoetsing C47-V1 (0.000-3.780)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.15 Instab. curve Kip:a

Aangrijphoogte van de last: -0.062 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.1	M = 0.0kN/m	MBeta = 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 3.780 m	lst = 3.780 m
Lsys = 3.780 m	Lg = 3.780 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 6.35
Mcr = 123.0 kNm	kred = 1.0	Lam-rel = 0.58	Profielklasse 1
Chi;LT(Fu.C.15) = 0.90	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 3.780 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Stabiliteitstoetsing C47-V1 (0.000-3.780)

Maatgevende combinatie: Fu.C.2

N;Ed = -35.0 kN	Nb;Rd;y = 577.8 kN	Nb;Rd;z = 340.8 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 3.780 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 3.780 m
Xy = 0.78		Knikcurve: B	
Xz = 0.46		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.10 < 1

Buiging & Druk C47-V1 (0.000-3.780)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -35.0 kN	My;Ed = 0.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.0 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 1.00	Cmz = 1.00	CmLT = 1.00	
Kyy = 1.030	Kyz = 0.686	Kzy = 0.986	Kzz = 1.144
Ksi;y = 0.78	Ksi;z = 0.46	Ksi;LT = 1.00	

NEN-EN1993-1-1(6.61&6.62): UC = 0.10 < 1

Profielgegevens staaf C48-V1 (0.000-6.196)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C48-V1 (0.000-6.196)

Maatgevende combinatie: Fu.C.2 op 0.000 m Profielklasse = 1

N;Ed = 48.2 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.6 kN	Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm

NEN-EN1993-1-1(6.5): UC = 0.08 < 1

Kiptoetsing C48-V1 (0.000-6.196)

Equi. profiel: HE120A

Maatgevende combinatie: Fu.C.1 Instab. curve Kip:a

Aangrijphoogte van de last: -0.053 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.001	b-eff(Eind) = 0.001
Tabel gebruikt NB 6.2	q = 0.2kN/m	= 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 6.196 m	lst = 6.196 m
Lsys = 6.196 m	Lg = 6.196 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.13	C2 = 0.45 (tabel)	C2(toegepast) = -0.48	C = 3.24
Mcr = 25.4 kNm	kred = 1.0	Lam-rel = 1.05	Profielklasse 1
Chi;LT(Fu.C.1) = 0.63	M;Ed = 1.0 kNm		UC(y) = 0.06
Chi;LT,Z = 1.00	lkip = 6.196 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.06 < 1

Profielgegevens staaf C49-V1 (0.000-6.196)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C49-V1 (0.000-6.196)

Maatgevende combinatie: Fu.C.2 op 5.967 m

N;Ed = 70.2 kN	Vy;Ed = 0.0 kN	Profielklasse = 1	
	Vz;Ed = -0.5 kN	My;Ed = 0.1 kNm	
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	Mz;Ed = 0.0 kNm	
	Vz;Rd = 114.7 kN	MyRd = 28.1 kNm	
		MzRd = 13.8 kNm	

NEN-EN1993-1-1(6.5): UC = 0.12 < 1

Kiptoetsing C49-V1 (0.000-6.196)

Equi. profiel: HE120A

Maatgevende combinatie: Fu.C.1 Instab. curve Kip:a

Aangrijphoogte van de last: -0.053 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.001	b-eff(Eind) = 0.001
Tabel gebruikt NB 6.2	q = 0.2kN/m	= 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 6.196 m	lst = 6.196 m
Lsys = 6.196 m	Lg = 6.196 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.13	C2 = 0.45 (tabel)	C2(toegepast) = -0.48	C = 3.24
Mcr = 25.4 kNm	kred = 1.0	Lam-rel = 1.05	Profielklasse 1
Chi;LT(Fu.C.1) = 0.63	M;Ed = 1.0 kNm		UC(y) = 0.06
Chi;LT,Z = 1.00	lkip = 6.196 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.06 < 1

Profielgegevens staaf C50-V1 (0.000-3.780)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C50-V1 (0.000-3.780)

Maatgevende combinatie: Fu.C.1 op 0.000 m

N;Ed = -15.7 kN	Vy;Ed = 0.0 kN	Profielklasse = 1	
	Vz;Ed = 0.0 kN	My;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	Mz;Ed = 0.0 kNm	
	Vz;Rd = 137.4 kN	MyRd = 40.8 kNm	
		MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.9): UC = 0.02 < 1

Kiptoetsing C50-V1 (0.000-3.780)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.062 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.1	M = 0.0kN/m	MBeta = 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 3.780 m	lst = 3.780 m
Lsys = 3.780 m	Lg = 3.780 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 6.35
Mcr = 123.0 kNm	kred = 1.0	Lam-rel = 0.58	Profielklasse 1
Chi;LT(Fu.C.15) = 0.90	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 3.780 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Stabiliteitstoetsing C50-V1 (0.000-3.780)

Maatgevende combinatie: Fu.C.1

N;Ed = -15.7 kN	Nb;Rd;y = 577.8 kN	Nb;Rd;z = 340.8 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 3.780 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 3.780 m
Xy = 0.78		Knikcurve: B	
Xz = 0.46		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.05 < 1

Buiging & Druk C50-V1 (0.000-3.780)

Maatgevende combinatie: Fu.C.1	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -15.7 kN	My;Ed = 0.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.0 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 1.00	Cmz = 1.00	CmLT = 1.00	
Kyy = 1.014	Kyz = 0.639	Kzy = 0.994	Kzz = 1.064
Ksi;y = 0.78	Ksi;z = 0.46	Ksi;LT = 1.00	

NEN-EN1993-1-1(6.61&6.62): UC = 0.05 < 1

Profielgegevens staaf C51-V1 (0.000-3.780)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C51-V1 (0.000-3.780)

Maatgevende combinatie: Fu.C.2 op 0.000 m — Profielklasse = 1

N;Ed = -48.4 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.07 < 1

Kiptoetsing C51-V1 (0.000-3.780)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.15 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.062 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.4	F = 0.0kN/m	= 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 3.780 m	lst = 3.780 m

Lsys = 3.780 m	Lg = 3.780 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.04	C2 = 0.42 (tabel)	C2(toegepast) = -0.45	C = 3.02
Mcr = 58.5 kNm	kred = 1.0	Lam-rel = 0.83	Profielklasse 1
Chi;LT(Fu.C.15) = 0.78	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 3.780 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Stabiliteitstoetsing C51-V1 (0.000-3.780)

Maatgevende combinatie: Fu.C.2

N;Ed = -48.4 kN	Nb;Rd;y = 577.8 kN	Nb;Rd;z = 340.8 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 3.780 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 3.780 m
Xy = 0.78		Knikcurve: B	
Xz = 0.46		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.14 < 1

Buiging & Druk C51-V1 (0.000-3.780)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -48.4 kN	My;Ed = 0.0 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.0 kNm	My;Psi = 0.0 kNm	My;s = 0.0 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 1.00	Cmz = 1.00	CmLT = 1.00	
Kyy = 1.042	Kyz = 0.719	Kzy = 0.981	Kzz = 1.199
Ksi;y = 0.78	Ksi;z = 0.46	Ksi;LT = 1.00	

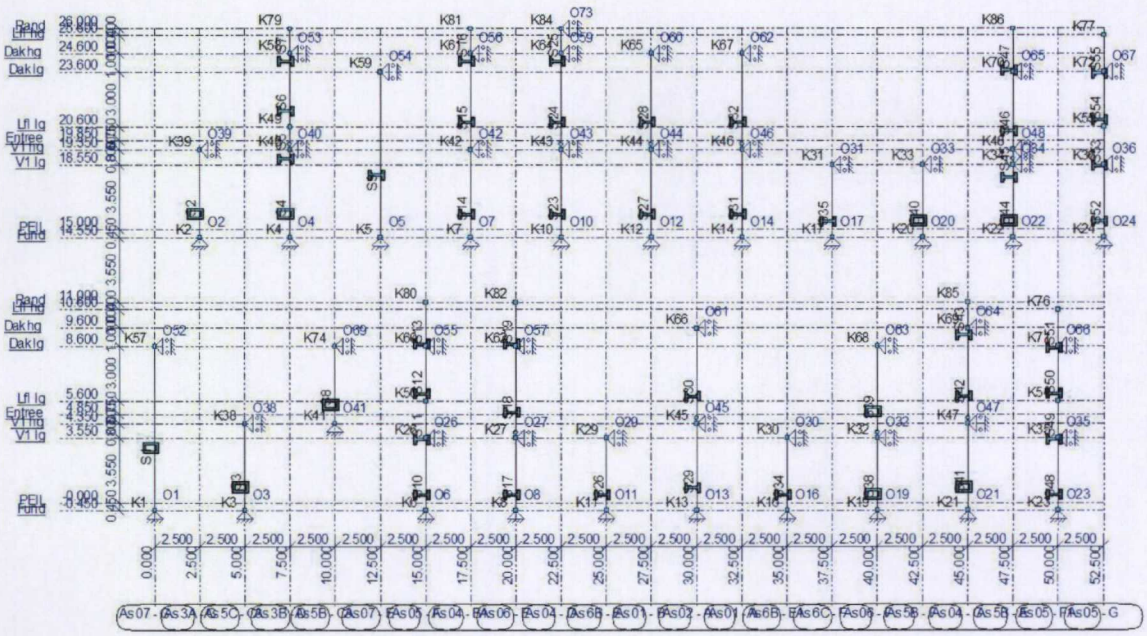
NEN-EN1993-1-1(6.61&6.62): UC = 0.14 < 1

Valkenburg aan de Geul	Ingenieursbureau A. Palte BV	043 - 601 36 37
Computerberekening		
Projectnaam	'De Schatberg' te Sevenum	Projectnummer	460518
Omschrijving	Stalen kolommen	Constructeur	DaKr
Opdrachtgever	Janssen Wuts Architecten BV	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Stalen kolommen.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	71	49	59	21	13	54

AFB. GEOMETRIE RAAMWERK

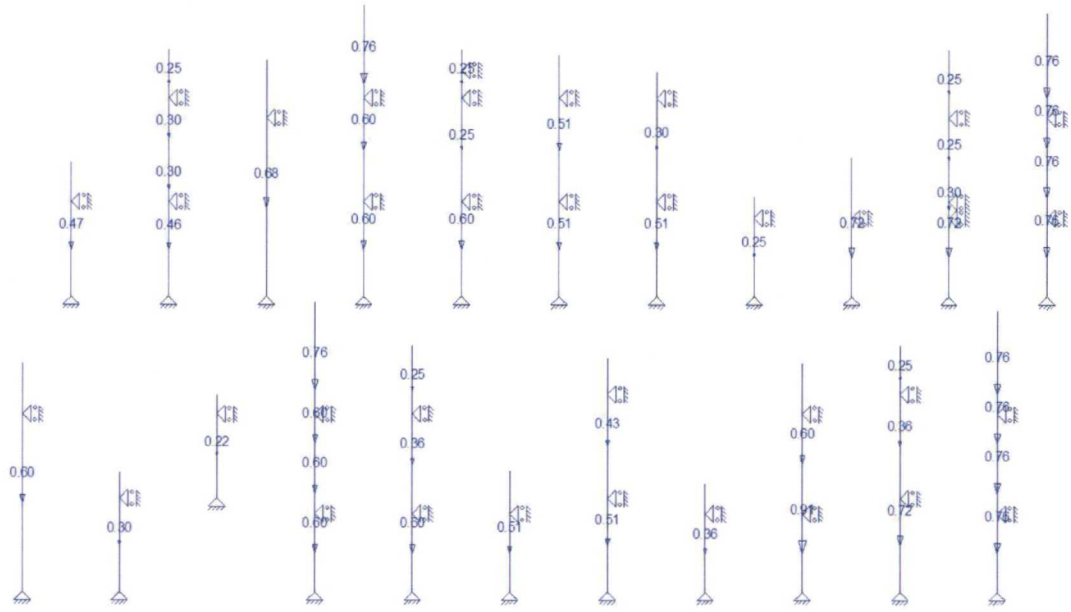


B.G.1: EIGEN GEWICHT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	9.050(L)	Z"	S1
qG	0.47 (1.00x)	0.47 (1.00x)	0.000	4.800(L)	Z"	S2
qG	0.30 (1.00x)	0.30 (1.00x)	0.000	4.800(L)	Z"	S3
qG	0.46 (1.00x)	0.46 (1.00x)	0.000	4.800(L)	Z"	S4
qG	0.30 (1.00x)	0.30 (1.00x)	0.000	1.250(L)	Z"	S5
qG	0.30 (1.00x)	0.30 (1.00x)	0.000	4.000(L)	Z"	S6
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	1.400(L)	Z"	S7,S25,S43
qG	0.22 (1.00x)	0.22 (1.00x)	0.000	4.250(L)	Z"	S8
qG	0.68 (1.00x)	0.68 (1.00x)	0.000	9.050(L)	Z"	S9
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	4.000(L)	Z"	S10,S17
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	2.050(L)	Z"	S11
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	3.000(L)	Z"	S12
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	2.400(L)	Z"	S13
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	4.800(L)	Z"	S14,S23
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	5.250(L)	Z"	S15
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	1.400(L)	Z"	S16
qG	0.36 (1.00x)	0.36 (1.00x)	0.000	5.050(L)	Z"	S18
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	2.400(L)	Z"	S19,S47
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	5.250(L)	Z"	S24
qG	0.51 (1.00x)	0.51 (1.00x)	0.000	4.000(L)	Z"	S26

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.51 (1.00x)	0.51 (1.00x)	0.000	4.800(L)	Z"	S27,S29,S31
qG	0.51 (1.00x)	0.51 (1.00x)	0.000	5.250(L)	Z"	S28
qG	0.43 (1.00x)	0.43 (1.00x)	0.000	5.250(L)	Z"	S30
qG	0.30 (1.00x)	0.30 (1.00x)	0.000	5.250(L)	Z"	S32
qG	0.36 (1.00x)	0.36 (1.00x)	0.000	4.000(L)	Z"	S34
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	4.000(L)	Z"	S35
qG	0.91 (1.00x)	0.91 (1.00x)	0.000	4.000(L)	Z"	S38
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	5.050(L)	Z"	S39
qG	0.72 (1.00x)	0.72 (1.00x)	0.000	4.000(L)	Z"	S40,S44
qG	0.72 (1.00x)	0.72 (1.00x)	0.000	4.800(L)	Z"	S41
qG	0.36 (1.00x)	0.36 (1.00x)	0.000	5.250(L)	Z"	S42
qG	0.30 (1.00x)	0.30 (1.00x)	0.000	0.800(L)	Z"	S45
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	4.250(L)	Z"	S46
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	4.000(L)	Z"	S48,S52
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	2.050(L)	Z"	S49,S53
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	3.000(L)	Z"	S50,S54
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	2.000(L)	Z"	S51,S55
Som lasten	**X: 0.00**	**kN Z: 99.23**	**kN**			
-	-	-	m	m	-	-

B.G.1: EIGEN GEWICHT

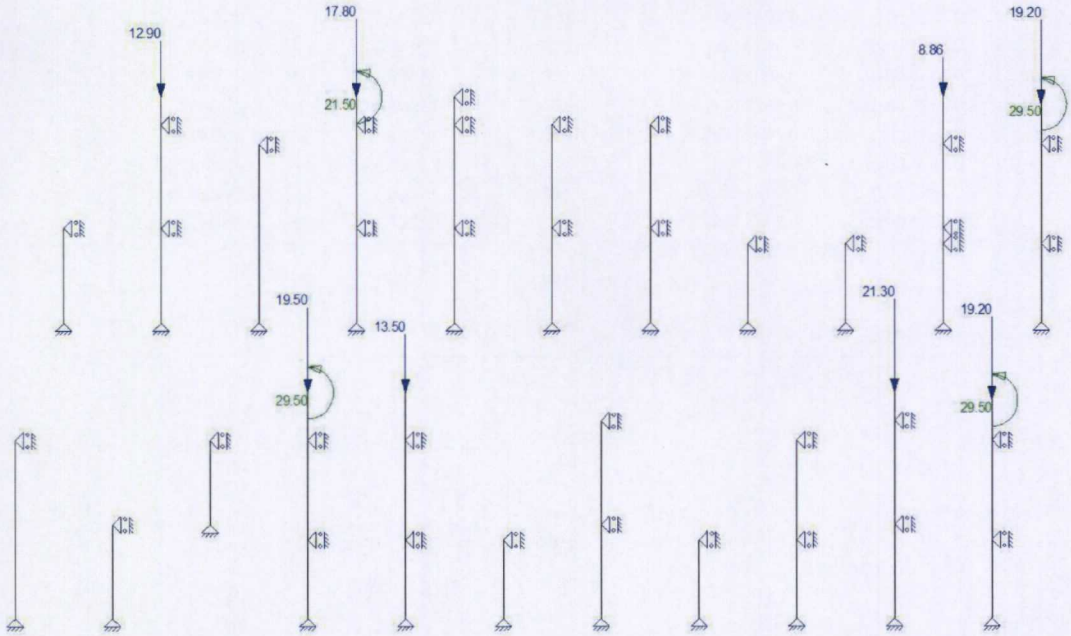


B.G.2: PERMANENT LUIFEL HOOG

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent Luifel hoog						
N	12.90				Z	K79
N	19.50				Z	K80
N	17.80				Z	K81
N	13.50				Z	K82
N	21.30				Z	K85
N	8.86				Z	K86
N	19.20				Z	K76-K77

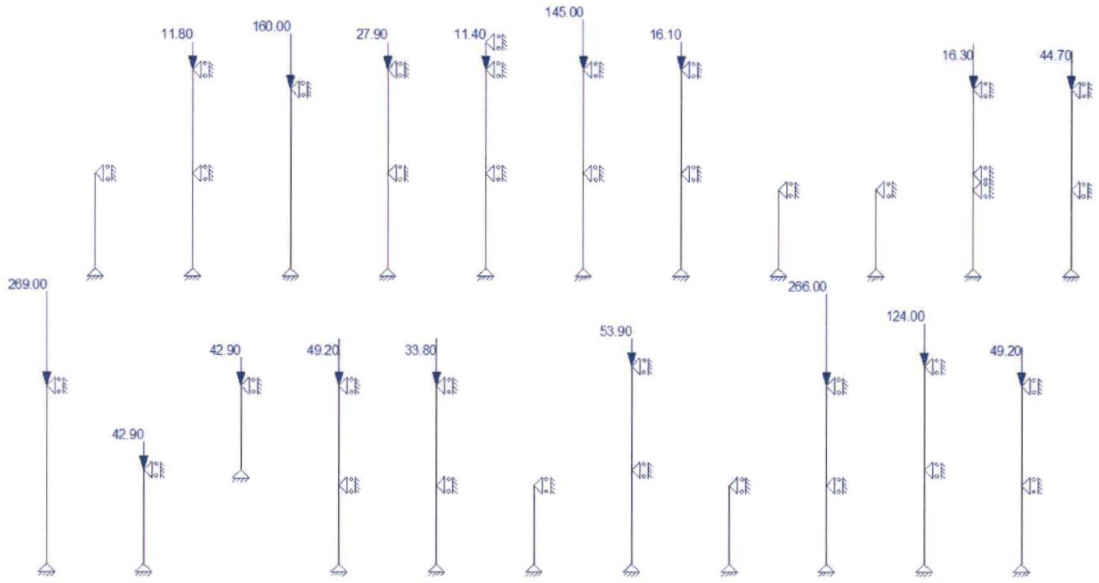
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent Luifel hoog						
N	29.50				Yr	K76-K77,K80
N	21.50				Yr	K81
Som lasten	**X: 0.00**	**kN Z: 132.26**	**kN**			
-	-	-	m	m	-	-

B.G.2: PERMANENT LUIFEL HOOG



B.G.3: PERMANENT DAK

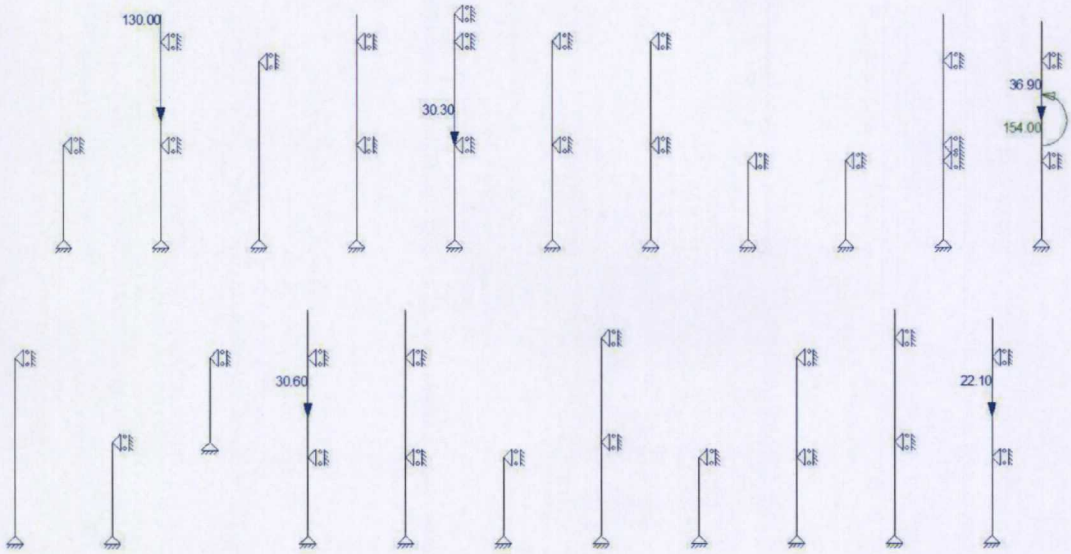
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Permanent Dak						
N	269.00				Z	K57
N	42.90				Z	K38,K74
N	11.80				Z	K58
N	160.00				Z	K59
N	49.20				Z	K60,K71
N	27.90				Z	K61
N	33.80				Z	K62
N	11.40				Z	K64
N	145.00				Z	K65
N	53.90				Z	K66
N	16.10				Z	K67
N	266.00				Z	K68
N	124.00				Z	K69
N	16.30				Z	K70
N	44.70				Z	K72
Som lasten	**X: 0.00**	**kN Z: 1,364.10**	**kN**			
-	-	-	m	m	-	-



B.G.4: PERMANENT LUIFEL LAAG

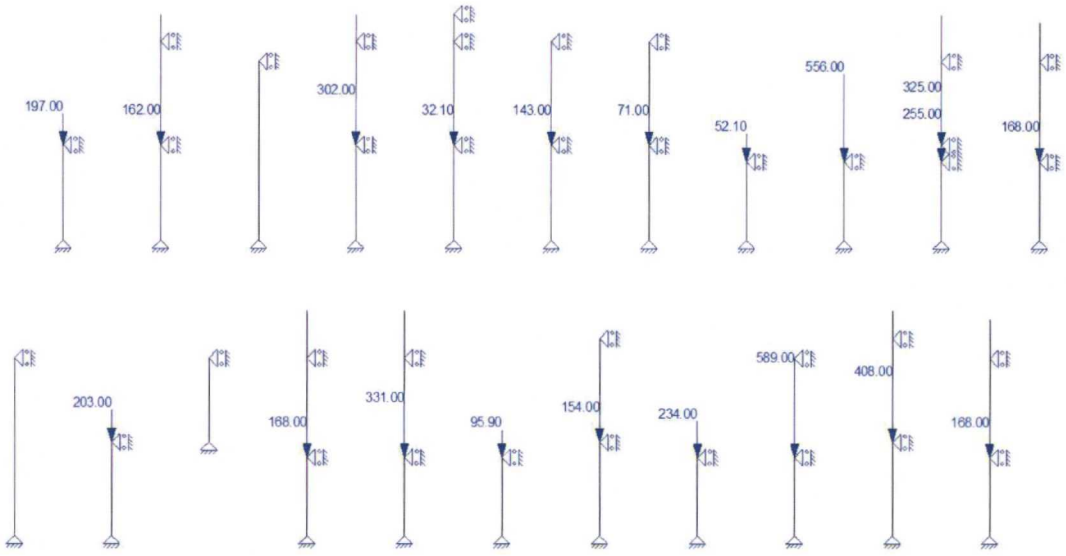
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.4: Permanent Luifel laag						
N	130.00					Z K49
N	22.10					Z K54
N	36.90					Z K55
N	154.00					Yr K55
N	30.60					Z K50
N	30.30					Z K43
Som lasten	**X: 0.00**	**kN Z: 249.90**	**kN**			
-	-	-	m	m	-	-

B.G.4: PERMANENT LUIFEL LAAG



B.G.5: PERMANENT 1E VERDIEPING

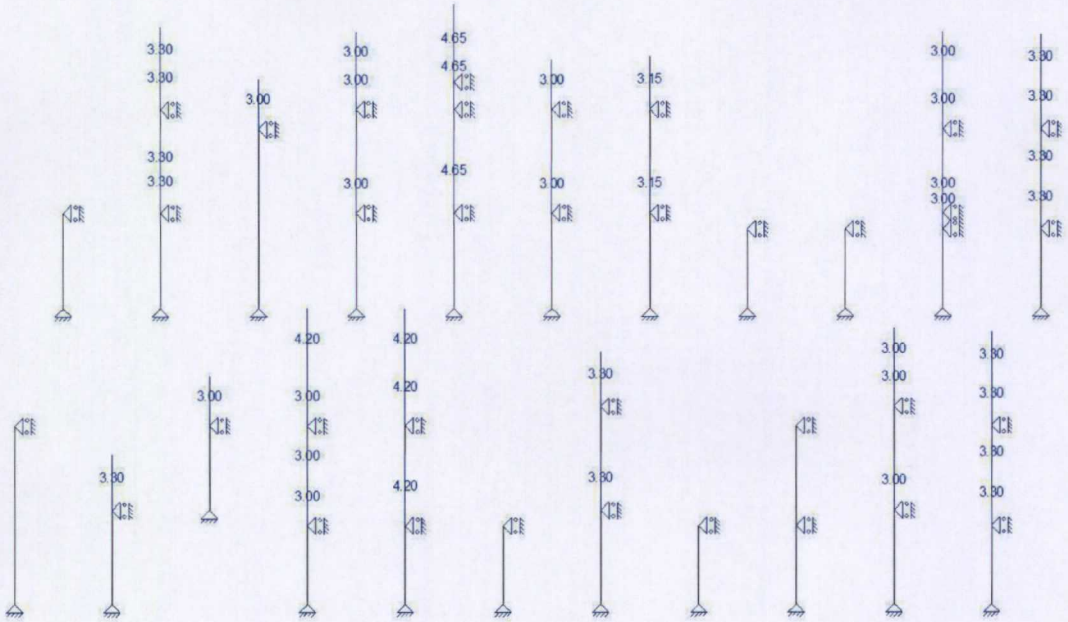
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Permanent 1e verdieping						
N	197.00					Z K39
N	203.00					Z K38
N	162.00					Z K40
N	168.00					Z K26,K35-K36
N	302.00					Z K42
N	331.00					Z K27
N	32.10					Z K43
N	95.90					Z K29
N	143.00					Z K44
N	154.00					Z K45
N	71.00					Z K46
N	234.00					Z K30
N	52.10					Z K31
N	589.00					Z K32
N	556.00					Z K33
N	408.00					Z K47
N	325.00					Z K48
N	255.00					Z K34
Som lasten	**X: 0.00**	**kN**	**Z: 4,614.10**	**kN**		
-	-	-	m	m	-	-



B.G.6: PERMANENT GEVEL

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.6: Permanent Gevel						
q	3.30	3.30	0.000	4.800(L)	Z	S3,S29-S30,S48-S55
q	3.30	3.30	0.000	4.800(L)	Z	S4-S7
q	3.00	3.00	0.000	4.250(L)	Z	S8-S12
q	4.20	4.20	0.000	2.400(L)	Z	S13
q	3.00	3.00	0.000	1.400(L)	Z	S14-S16,S27-S28,S41-S47
q	4.20	4.20	0.000	2.400(L)	Z	S17-S19
q	4.65	4.65	0.000	1.400(L)	Z	S23-S25
q	3.15	3.15	0.000	4.800(L)	Z	S31-S32
Som lasten	**X: 0.00**	**kN Z: 0.00**	**kN**			
-	-	-	m	m	-	-

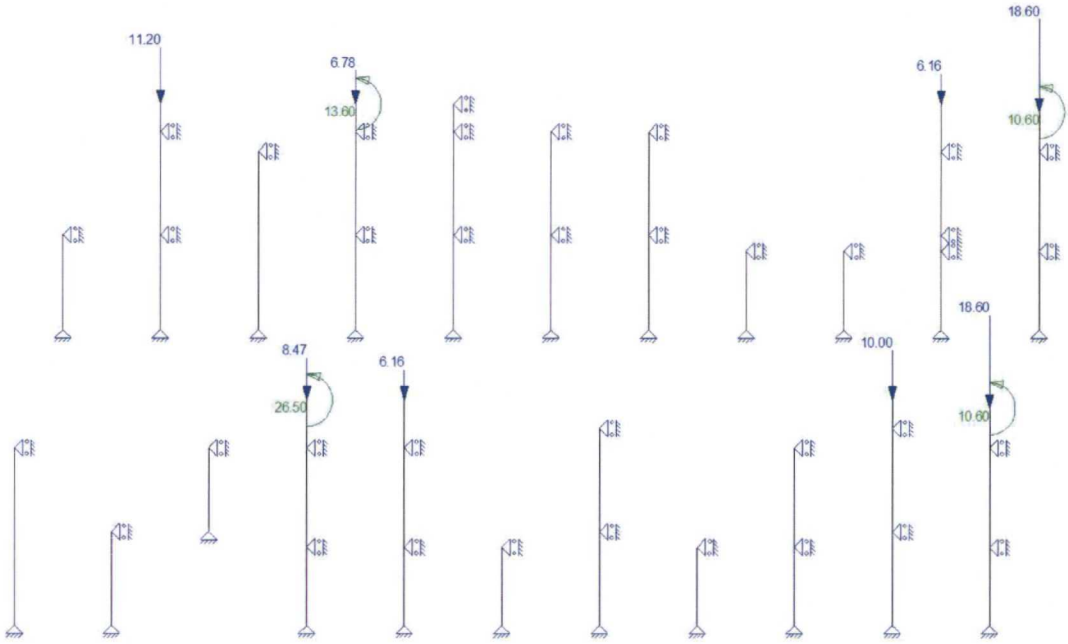
B.G.6: PERMANENT GEVEL



B.G.7: SNEEUW LUIFEL HOOG

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.7: Sneeuw Luifel hoog						
N	11.20				Z	K79
N	8.47				Z	K80
N	6.78				Z	K81
N	6.16				Z	K82,K86
N	10.00				Z	K85
N	18.60				Z	K76-K77
N	10.60				Yr	K76-K77
N	26.50				Yr	K80
N	13.60				Yr	K81
Som lasten	**X: 0.00**	**kN Z: 85.97**	**kN**			
-	-	-	m	m	-	-

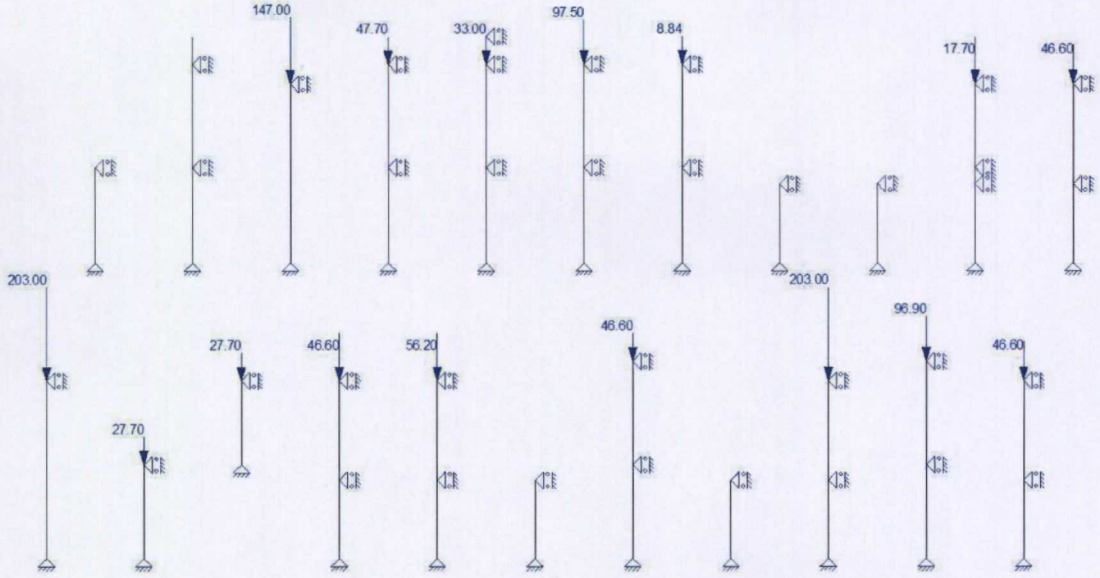
B.G.7: SNEEUW LUIFEL HOOG



B.G.8: SNEEUW DAK

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.8: Sneeuw Dak						
N	203.00				Z	K57,K68
N	27.70				Z	K38,K74
N	147.00				Z	K59
N	46.60				Z	K60,K66,K71-K72
N	47.70				Z	K61
N	56.20				Z	K62
N	33.00				Z	K64
N	97.50				Z	K65
N	8.84				Z	K67
N	96.90				Z	K69
N	17.70				Z	K70
Som lasten	**X: 0.00**	**kN**	**Z: 1,152.64**	**kN**		
-	-	-	m	m	-	-

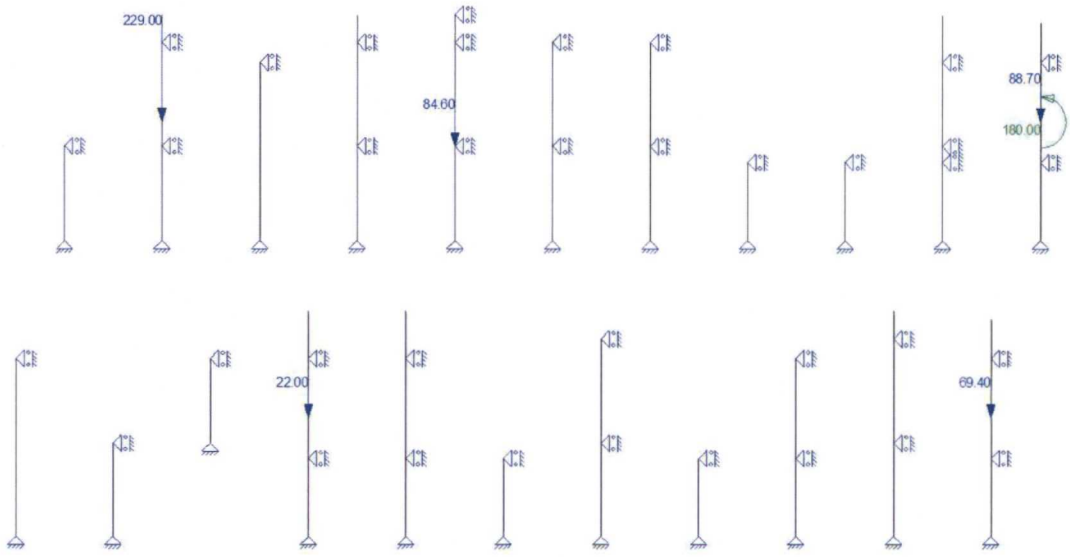
B.G.8: SNEEUW DAK



B.G.9: SNEEUW LUIFEL LAAG

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.9: Sneeuw Luifel laag						
N	229.00				Z	K49
N	69.40				Z	K54
N	88.70				Z	K55
N	180.00				Yr	K55
N	22.00				Z	K50
N	84.60				Z	K43
Som lasten	**X: 0.00**	**kN Z: 493.70**	**kN**			
-	-	-	m	m	-	-

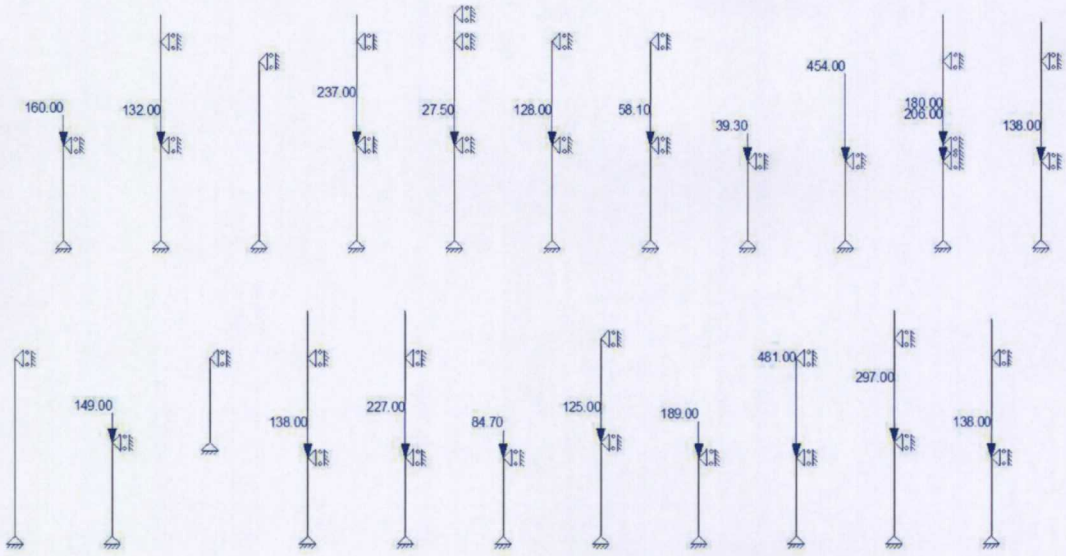
B.G.9: SNEEUW LUIFEL LAAG



B.G.10: VERANDERLIJK 1E VERDIEPING

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.10: Veranderlijk 1e verdieping						
N	160.00					Z K39
N	149.00					Z K38
N	132.00					Z K40
N	138.00					Z K26
N	237.00					Z K42
N	227.00					Z K27
N	27.50					Z K43
N	84.70					Z K29
N	128.00					Z K44
N	125.00					Z K45
N	58.10					Z K46
N	189.00					Z K30
N	39.30					Z K31
N	481.00					Z K32
N	454.00					Z K33
N	297.00					Z K47
N	180.00					Z K48
N	206.00					Z K34
N	138.00					Z K35-K36
Som lasten	**X: 0.00**	**kN Z: 3,588.60**	**kN**			
-	-	-	m	m		- -

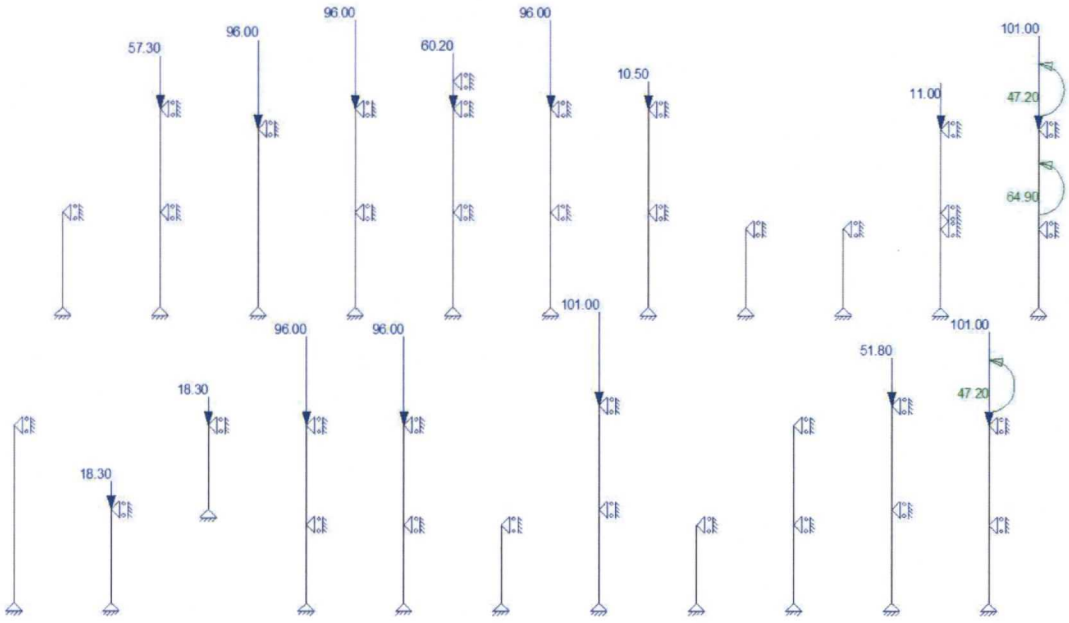
B.G.10: VERANDERLIJK 1E VERDIEPING



B.G.11: WIND VERTICAAL

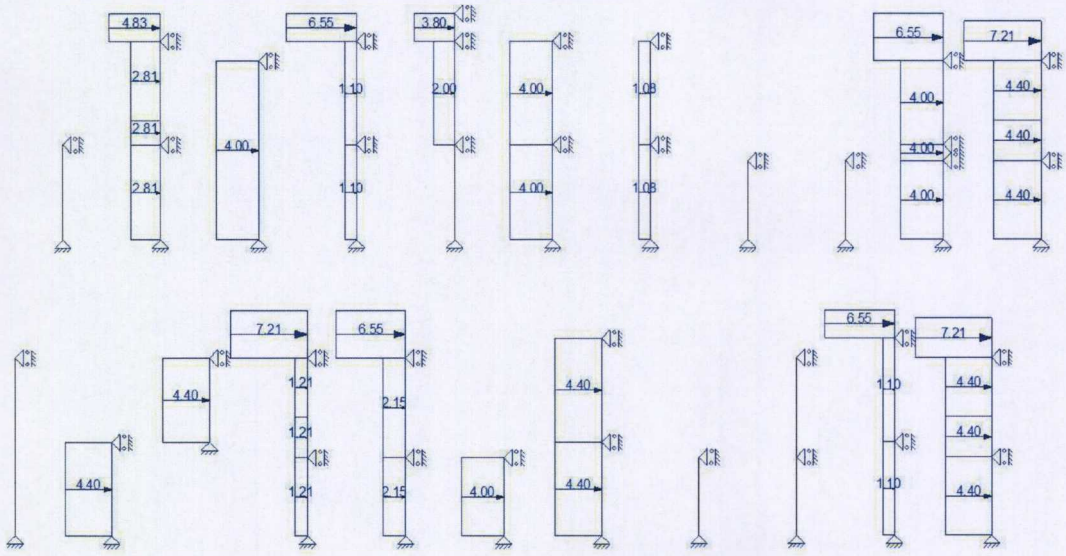
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.11: Wind Verticaal						
N	18.30				Z	K38,K74
N	57.30				Z	K58
N	96.00				Z	K59-K62,K65
N	60.20				Z	K64
N	101.00				Z	K66,K71-K72
N	10.50				Z	K67
N	51.80				Z	K69
N	11.00				Z	K70
N	47.20				Yr	K76-K77
N	64.90				Yr	K55
Som lasten	**X: 0.00**	**kN Z: 1,010.40**	**kN**			
-	-	-	m	m	-	-

B.G.11: WIND VERTICAAL



B.G.12: WIND HORIZONTAAL

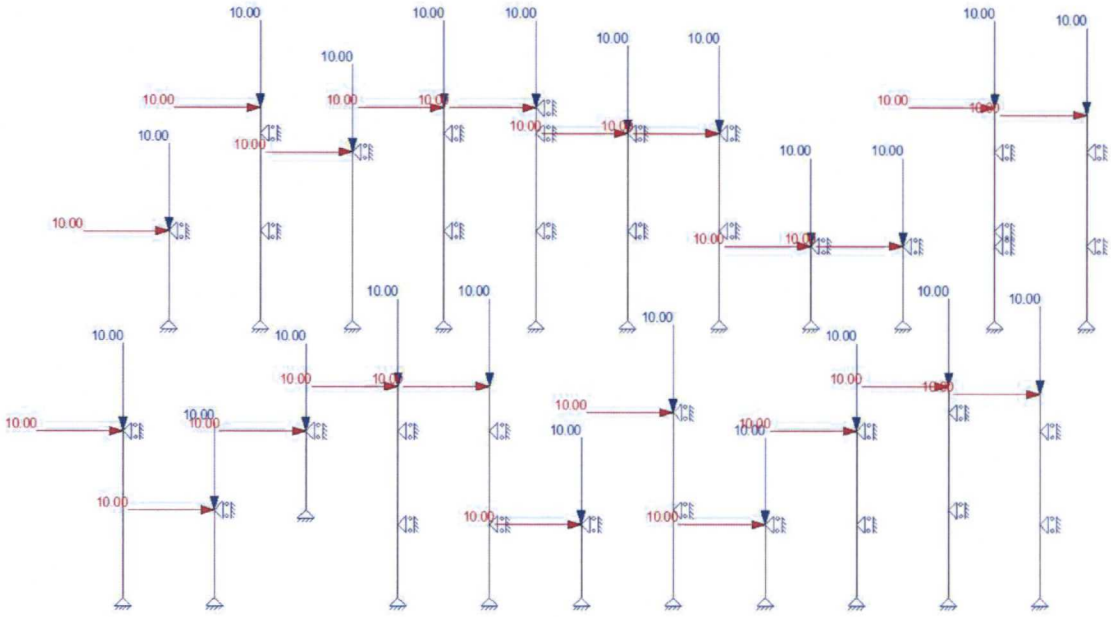
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.12: Wind Horizontaal						
q	4.40	4.40	0.000	4.800(L)	Z'	S3,S8,S29-S30,S48-S50,S52-S54
q	4.83	4.83	0.000	1.400(L)	Z'	S7
q	2.81	2.81	0.000	4.000(L)	Z'	S4-S6
q	4.00	4.00	0.000	9.050(L)	Z'	S9
q	7.21	7.21	0.000	2.400(L)	Z'	S13,S51,S55
q	1.21	1.21	0.000	3.000(L)	Z'	S10-S12
q	6.55	6.55	0.000	1.400(L)	Z'	S16,S19,S43,S47
q	1.10	1.10	0.000	5.250(L)	Z'	S14-S15,S41-S42
q	2.15	2.15	0.000	5.050(L)	Z'	S17-S18
q	3.80	3.80	0.000	1.400(L)	Z'	S25
q	2.00	2.00	0.000	5.250(L)	Z'	S24
q	4.00	4.00	0.000	4.000(L)	Z'	S26-S28,S44-S46
q	1.08	1.08	0.000	4.800(L)	Z'	S31-S32
Som lasten	**X: 502.40**	**kN Z: 0.00**	**kN**			
-	-	-	m	m	-	-



B.G.13: KNIKLENGTE

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.13: Kniklengte						
N	10.00				Z	K57,K76-K77,K85-K86
N	10.00				Z	K29-K31,K33,K38-K39, K59,K65-K68,K74,K79-K82,K84
N	10.00				X	K29-K31,K33,K38-K39, K57,K59,K65-K68, K74,K76-K77,K79-K82,K84-K86
Som lasten	**X: 220.00**	**kN Z: 220.00**	**kN**			
-	-	-	m	m	-	-

B.G.13: KNIKLENGTE



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Fu.C.1	Fu.C.2	Fu.C.3	Fu.C.4	Fu.C.5	Fu.C.6	Fu.C.7	Fu.C.8
B.G.1	Eigen Gewicht	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.2	Permanent Luifel hoog	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.3	Permanent Dak	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.4	Permanent Luifel laag	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.5	Permanent 1e verdieping	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.6	Permanent Gevel	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.7	Sneeuw Luifel hoog	-	1.50	-	-	1.50	1.50	-	1.50
B.G.8	Sneeuw Dak	-	-	1.50	-	1.50	-	1.50	1.50
B.G.9	Sneeuw Luifel laag	-	-	-	1.50	-	1.50	1.50	1.50
B.G.10	Veranderlijk 1e verdieping	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
B.G.11	Wind Verticaal	-	-	-	-	-	-	-	-
B.G.12	Wind Horizontaal	-	-	-	-	-	-	-	-
B.G.13	Kniklengte	-	-	-	-	-	-	-	-

B.G.	Omschrijving	Fu.C.9	Fu.C.10	Fu.C.11	Fu.C.12	Fu.C.13	Fu.C.14	Fu.C.15	Fu.C.16
B.G.1	Eigen Gewicht	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.2	Permanent Luifel hoog	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.3	Permanent Dak	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.4	Permanent Luifel laag	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.5	Permanent 1e verdieping	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.6	Permanent Gevel	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.7	Sneeuw Luifel hoog	-	-	-	1.50	-	-	1.50	1.50
B.G.8	Sneeuw Dak	-	-	-	-	1.50	-	1.50	-
B.G.9	Sneeuw Luifel laag	-	-	-	-	-	1.50	-	1.50
B.G.10	Veranderlijk 1e verdieping	1.50	-	0.90	0.90	0.90	0.90	0.90	0.90
B.G.11	Wind Verticaal	-	1.50	1.50	-	-	-	-	-
B.G.12	Wind Horizontaal	-	1.50	1.50	-	-	-	-	-
B.G.13	Kniklengte	-	-	-	-	-	-	-	-

B.G.	Omschrijving	Fu.C.17	Fu.C.18	Fu.C.19	Fu.C.20	Fu.C.21
B.G.1	Eigen Gewicht	0.90	0.90	0.90	0.90	0.90
B.G.2	Permanent Luifel hoog	0.90	0.90	0.90	0.90	0.90
B.G.3	Permanent Dak	0.90	0.90	0.90	0.90	0.90
B.G.4	Permanent Luifel laag	0.90	0.90	0.90	0.90	0.90
B.G.5	Permanent 1e verdieping	0.90	0.90	0.90	0.90	0.90
B.G.6	Permanent Gevel	0.90	0.90	0.90	0.90	0.90

B.G.7	Sneeuw Luifel hoog	-	1.50	-	-	-
B.G.8	Sneeuw Dak	1.50	1.50	-	-	-
B.G.9	Sneeuw Luifel laag	1.50	1.50	-	-	-
B.G.10	Veranderlijk 1e verdieping	0.90	0.90	1.50	-	0.90
B.G.11	Wind Verticaal	-	-	-	1.50	1.50
B.G.12	Wind Horizontaal	-	-	-	1.50	1.50
B.G.13	Kniklengte	-	-	-	-	-

KNIK BELASTINGSCOMBINATIES (TABEL)

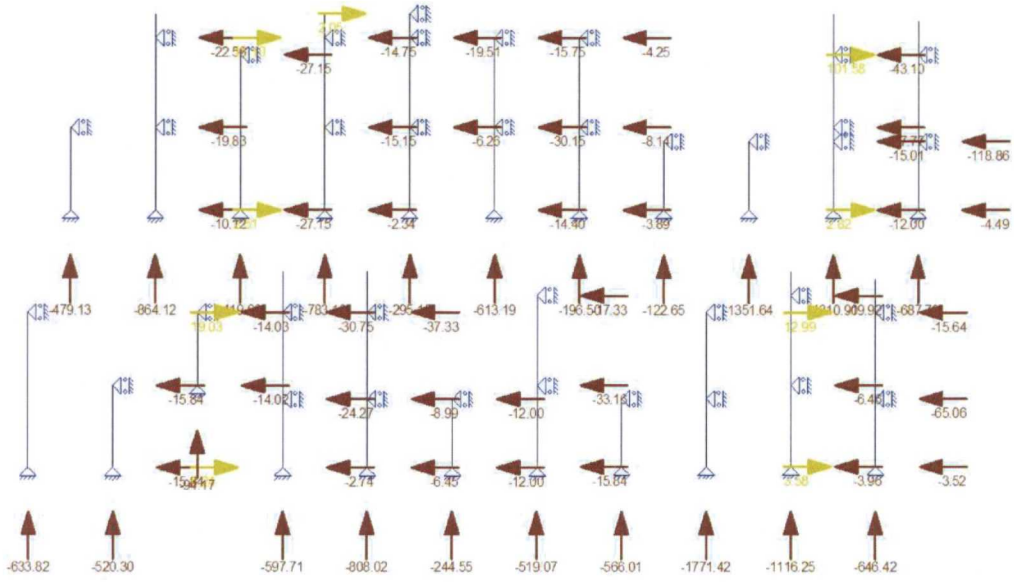
B.G.	Omschrijving	Kn.C.1
B.G.1	Eigen Gewicht	-
B.G.2	Permanent Luifel hoog	-
B.G.3	Permanent Dak	-
B.G.4	Permanent Luifel laag	-
B.G.5	Permanent 1e verdieping	-
B.G.6	Permanent Gevel	-
B.G.7	Sneeuw Luifel hoog	-
B.G.8	Sneeuw Dak	-
B.G.9	Sneeuw Luifel laag	-
B.G.10	Veranderlijk 1e verdieping	-
B.G.11	Wind Verticaal	-
B.G.12	Wind Horizontaal	-
B.G.13	Kniklengte	1.00

FU.C. EXTREME OPLEGREACTIES

Oplegging	Knoop	B.C.	Xmax	Z	My B.C.	X	Zmax	My B.C.	X	Z Mymax
O1	K1				Fu.C.3	0.00	**-633.82**	0.00		
O2	K2				Fu.C.9	0.00	**-479.13**	0.00		
O3	K3	Fu.C.10	**-15.84**	-324.25	0.00Fu.C.9	0.00	**-520.30**	0.00		
O4	K4	Fu.C.10	**-10.12**	-470.97	0.00Fu.C.6	0.00	**-864.12**	0.00		
O5	K5	Fu.C.10	**-27.15**	-343.40	0.00Fu.C.3	0.00	**-419.90**	0.00		
O6	K6	Fu.C.2	**5.24**	-466.41	0.00					
O6	K6	Fu.C.20	**-2.74**	-391.13	0.00Fu.C.11	-2.13	**-597.71**	0.00		
O7	K7	Fu.C.2	**2.51**	-649.27	0.00					
O7	K7	Fu.C.20	**-2.34**	-463.35	0.00Fu.C.11	-1.99	**-783.10**	0.00		
O8	K8	Fu.C.10	**-6.45**	-603.72	0.00Fu.C.11	-6.45	**-808.02**	0.00		
O10	K10				Fu.C.7	0.00	**-295.15**	0.00		
O11	K11	Fu.C.10	**-12.00**	-117.50	0.00Fu.C.9	0.00	**-244.55**	0.00		
O12	K12	Fu.C.10	**-14.40**	-495.74	0.00Fu.C.3	0.00	**-613.19**	0.00		
O13	K13	Fu.C.10	**-15.84**	-406.57	0.00Fu.C.11	-15.84	**-519.07**	0.00		
O14	K14	Fu.C.10	**-3.89**	-125.10	0.00Fu.C.9	0.00	**-196.50**	0.00		
O16	K16				Fu.C.9	0.00	**-566.01**	0.00		
O17	K17				Fu.C.9	0.00	**-122.65**	0.00		
O19	K19				Fu.C.3	0.00	**-1771.42**	0.00		
O20	K20				Fu.C.9	0.00	**-1351.64**	0.00		
O21	K21	Fu.C.10	**-3.96**	-748.45	0.00Fu.C.9	0.00	**-1116.25**	0.00		
O22	K22	Fu.C.10	**-12.00**	-748.40	0.00Fu.C.9	0.00	**-1310.90**	0.00		
O23	K23	Fu.C.2	**3.58**	-472.42	0.00					
O23	K23	Fu.C.20	**-3.52**	-391.74	0.00Fu.C.8	3.58	**-646.42**	0.00		
O24	K24	Fu.C.2	**2.82**	-484.78	0.00					
O24	K24	Fu.C.20	**-4.49**	-401.01	0.00Fu.C.8	1.72	**-687.73**	0.00		
O26	K26	Fu.C.2	**-24.27**	0.00	0.00					
O27	K27	Fu.C.10	**-8.99**	0.00	0.00					
O29	K29	Fu.C.10	**-12.00**	0.00	0.00					
O34	K34	Fu.C.10	**-15.01**	0.00	0.00					
O35	K35	Fu.C.10	**-65.06**	0.00	0.00					
O36	K36	Fu.C.10	**-118.86**	0.00	0.00					
O38	K38	Fu.C.10	**-15.84**	0.00	0.00					
O40	K40	Fu.C.10	**-19.83**	0.00	0.00					
O41	K41	Fu.C.10	**-14.03**	-80.07	0.00Fu.C.3	0.00	**-94.17**	0.00		
O42	K42	Fu.C.10	**-15.15**	0.00	0.00					
O43	K43	Fu.C.10	**-6.26**	0.00	0.00					
O44	K44	Fu.C.10	**-30.15**	0.00	0.00					
O45	K45	Fu.C.10	**-33.17**	0.00	0.00					
O46	K46	Fu.C.10	**-8.14**	0.00	0.00					
O47	K47	Fu.C.10	**-6.46**	0.00	0.00					
O48	K48	Fu.C.10	**-7.77**	0.00	0.00					
O53	K58	Fu.C.10	**-22.56**	0.00	0.00					
O54	K59	Fu.C.10	**-27.15**	0.00	0.00					
O55	K60	Fu.C.2	**19.03**	0.00	0.00					

Oplegging	Knoop	B.C.	Xmax	Z	My B.C.	X	Zmax	My B.C.	X	Z Mymax
O55	K60	Fu.C.20	**-30.75**	0.00	0.00					
O56	K61	Fu.C.2	**11.10**	0.00	0.00					
O56	K61	Fu.C.20	**-14.75**	0.00	0.00					
O57	K62	Fu.C.10	**-37.33**	0.00	0.00					
O59	K64	Fu.C.10	**-19.51**	0.00	0.00					
O60	K65	Fu.C.10	**-15.75**	0.00	0.00					
O61	K66	Fu.C.10	**-17.33**	0.00	0.00					
O62	K67	Fu.C.10	**-4.25**	0.00	0.00					
O64	K69	Fu.C.10	**-19.92**	0.00	0.00					
O65	K70	Fu.C.10	**-43.10**	0.00	0.00					
O66	K71	Fu.C.2	**12.99**	0.00	0.00					
O66	K71	Fu.C.20	**-15.64**	0.00	0.00					
O67	K72	Fu.C.6	**101.58**	0.00	0.00					
O69	K74	Fu.C.10	**-14.03**	0.00	0.00					
O73	K84	Fu.C.10	**2.05**	0.00	0.00					
Globale extreme waarden										
O67	K72	Fu.C.6	**101.58**	0.00	0.00					
O36	K36	Fu.C.10	**-118.86**	0.00	0.00					
O19	K19				Fu.C.3	0.00	**-1771.42**	0.00		
-	-	-	**kN**	**kN**	**kNm** -		**kN**	**kN**	**kNm**	**kN** **kN** **kNm**

AFB. FU.C. OPLEGREACTIES OMHULLENDE — Fundamenteel Belastingscombinaties

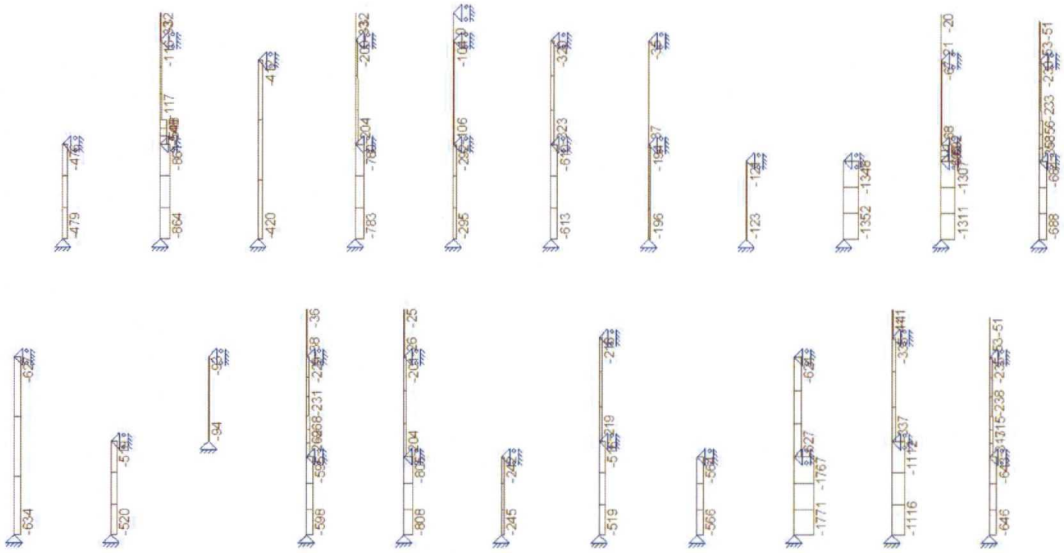


FU.C. OMHULLENDE

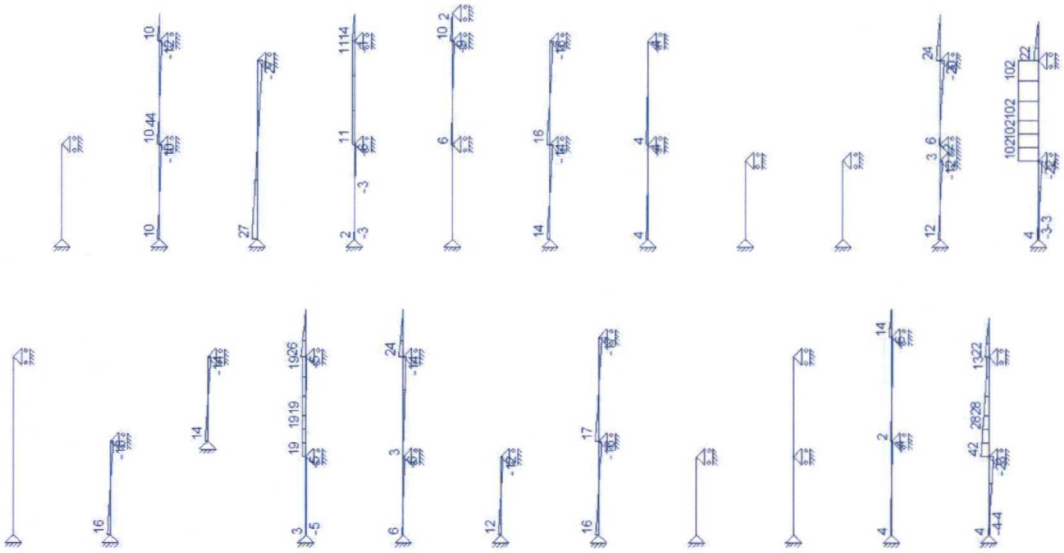
Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S1	-633.82	0.00	-242.10	0.00	0.00	0.00	0.00	0.00
S2	-479.13	0.00	-177.30	0.00	0.00	0.00	0.00	0.00
S3	-520.30	0.00	-248.76	0.00	-15.84	15.84	0.00	19.01
S4	-864.12	0.00	-372.73	0.00	-10.12	10.12	0.00	12.14
S5	-548.27	0.00	-140.64	0.00	0.00	9.71	0.00	8.85
S6	-117.47	0.00	-22.54	0.00	-12.42	4.44	-7.10	11.19
S7	-32.69	0.00	-11.61	0.00	0.00	10.14	-7.10	0.00
S8	-94.17	0.00	-38.61	0.00	-14.03	14.03	0.00	14.90
S9	-419.90	0.00	-144.00	0.00	-27.15	27.15	0.00	61.43
S10	-597.71	0.00	-381.87	0.00	-5.24	2.74	-20.97	2.07
S11	-269.01	0.00	-92.65	0.00	0.00	19.03	-20.97	18.05
S12	-230.81	0.00	-63.48	0.00	-4.79	19.03	-4.60	75.15
S13	-38.30	0.00	-17.55	0.00	0.00	25.96	-4.60	75.15

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S14	-783.10	0.00	-460.74	0.00	-5.93	2.34	-12.07	1.66
S15	-203.92	0.00	-42.09	0.00	-1.00	11.10	-12.07	46.20
S16	-32.81	0.00	-16.02	0.00	0.00	13.75	0.00	46.20
S17	-808.02	0.00	-486.62	0.00	-6.45	6.45	0.00	6.45
S18	-203.62	0.00	-43.10	0.00	-13.75	2.54	-28.30	1.00
S19	-26.15	0.00	-12.15	0.00	0.00	23.58	-28.30	0.00
S23	-295.15	0.00	-92.65	0.00	0.00	0.00	0.00	0.00
S24	-105.95	0.00	-10.57	0.00	-9.49	6.26	-8.45	6.54
S25	-0.47	0.00	-0.31	0.00	0.00	10.03	-8.45	0.00
S26	-244.55	0.00	-86.31	0.00	-12.00	12.00	0.00	12.00
S27	-613.19	0.00	-376.82	0.00	-14.40	14.40	0.00	17.28
S28	-323.48	0.00	-130.50	0.00	-15.75	15.75	0.00	20.67
S29	-519.07	0.00	-301.62	0.00	-15.84	15.84	0.00	19.01
S30	-218.86	0.00	-48.51	0.00	-17.33	17.33	0.00	22.74
S31	-196.50	0.00	-95.58	0.00	-3.89	3.89	0.00	4.67
S32	-36.99	0.00	-14.49	0.00	-4.25	4.25	0.00	5.58
S34	-566.01	0.00	-210.60	0.00	0.00	0.00	0.00	0.00
S35	-122.65	0.00	-46.89	0.00	0.00	0.00	0.00	0.00
S38	-1771.42	0.00	-772.23	0.00	0.00	0.00	0.00	0.00
S39	-627.34	0.00	-239.40	0.00	0.00	0.00	0.00	0.00
S40	-1351.64	0.00	-500.40	0.00	0.00	0.00	0.00	0.00
S41	-1116.25	0.00	-577.66	0.00	-3.96	3.96	0.00	4.75
S42	-337.36	0.00	-131.08	0.00	-6.17	2.50	-9.63	1.89
S43	-40.97	0.00	-19.17	0.00	0.00	13.76	-9.63	0.00
S44	-1310.90	0.00	-562.84	0.00	-12.00	12.00	0.00	12.00
S45	-692.45	0.00	-333.12	0.00	-1.79	3.01	0.00	0.76
S46	-67.95	0.00	-23.18	0.00	-19.52	5.98	-28.30	3.47
S47	-20.58	0.00	-7.97	0.00	0.00	23.58	-28.30	0.00
S48	-646.42	0.00	-388.99	0.00	-23.49	3.52	-41.17	0.94
S49	-316.96	0.00	-84.89	0.00	0.00	41.56	-41.17	30.17
S50	-238.16	0.00	-62.93	0.00	0.00	28.03	0.00	84.57
S51	-52.77	0.00	-17.28	0.00	0.00	21.63	0.00	106.20
S52	-687.73	0.00	-398.26	0.00	-22.34	4.49	-36.55	1.53
S53	-358.27	0.00	-94.16	0.00	0.00	101.58	-36.55	201.37
S54	-232.76	0.00	-58.88	0.00	0.00	101.58	-257.25	84.57
S55	-52.77	0.00	-17.28	0.00	0.00	21.63	0.00	106.20
-	kN	kN	kN	kN	kN	kN	kNm	kNm

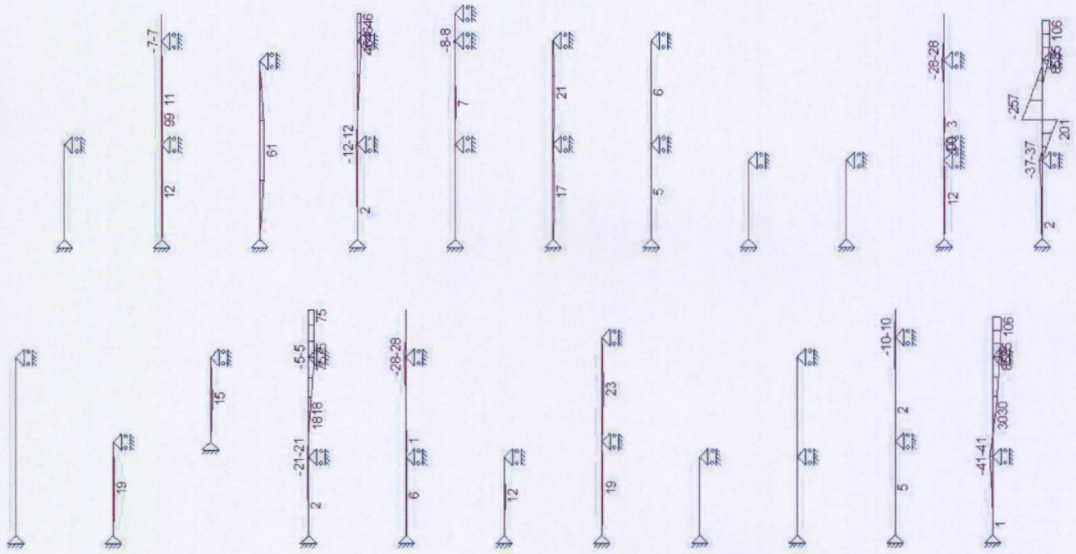
AFB. FU.C. NORMAALKRACHT (NX) OMHULLENDE — Fundamenteel Belastingscombinaties



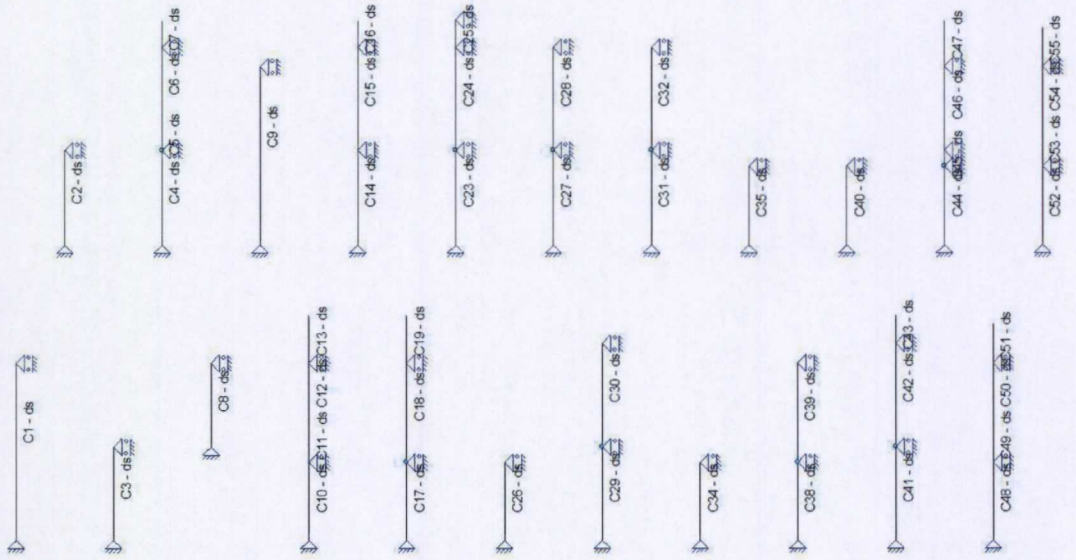
AFB. FU.C. DWARSKRACHT (VZ) OMHULLENDE — Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE — Fundamenteel Belastingscombinaties



AFB. STAALCONTROLE



SAMENSTELLING CONSTRUCTIEDELEN

Constructiedeel	Staaf/staven
C1	S1
C2	S2
C3	S3
C4	S4

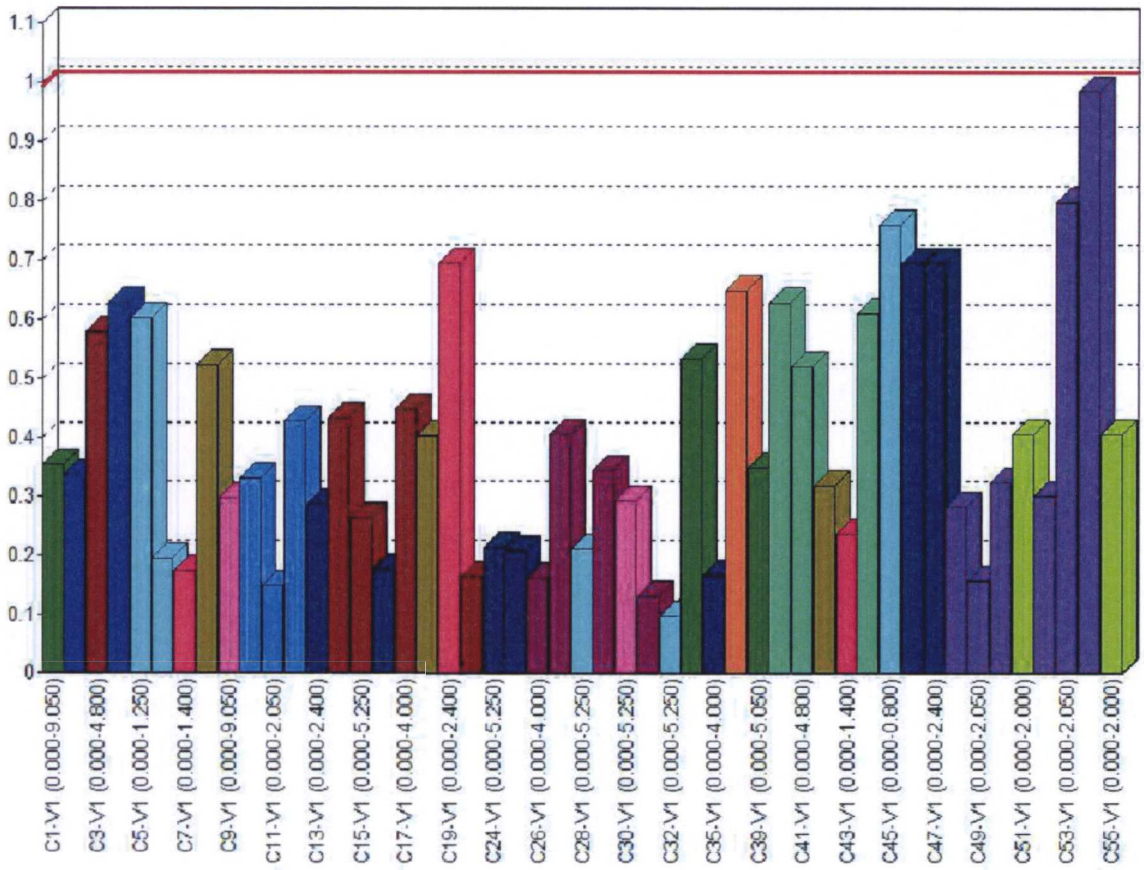
C5	S5
C6	S6
C7	S7
C8	S8
C9	S9
C10	S10
C11	S11
C12	S12
C13	S13
C14	S14
C15	S15
C16	S16
C17	S17
C18	S18
C19	S19
C23	S23
C24	S24
C25	S25
C26	S26
C27	S27
C28	S28
C29	S29
C30	S30
C31	S31
C32	S32
C34	S34
C35	S35
C38	S38
C39	S39
C40	S40
C41	S41
C42	S42
C43	S43
C44	S44
C45	S45
C46	S46
C47	S47
C48	S48
C49	S49
C50	S50
C51	S51
C52	S52
C53	S53
C54	S54
C55	S55

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

Veld	Toetsing	Combinatie	Artikel	UC max
C1-V1 (0.000-9.050)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.35
C2-V1 (0.000-4.800)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.34
C3-V1 (0.000-4.800)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.58
C4-V1 (0.000-4.800)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.9)	0.63
C5-V1 (0.000-1.250)	Doorsnede	Fu.C.6	NEN-EN1993-1-1(6.9)	0.60
C6-V1 (0.000-4.000)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.19
C7-V1 (0.000-1.400)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.17
C8-V1 (0.000-4.250)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.52
C9-V1 (0.000-9.050)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.31)	0.30
C10-V1 (0.000-4.000)	Doorsnede	Fu.C.11	NEN-EN1993-1-1(6.9)	0.33
C11-V1 (0.000-2.050)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.9)	0.15
C12-V1 (0.000-3.000)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.43
C13-V1 (0.000-2.400)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.29
C14-V1 (0.000-4.800)	Doorsnede	Fu.C.11	NEN-EN1993-1-1(6.9)	0.43
C15-V1 (0.000-5.250)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.26

Veld	Toetsing	Combinatie	Artikel	UC max
C16-V1 (0.000-1.400)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.18
C17-V1 (0.000-4.000)	Doorsnede	Fu.C.11	NEN-EN1993-1-1(6.9)	0.45
C18-V1 (0.000-5.050)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.31)	0.40
C19-V1 (0.000-2.400)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.69
C23-V1 (0.000-4.800)	Doorsnede	Fu.C.7	NEN-EN1993-1-1(6.9)	0.16
C24-V1 (0.000-5.250)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.31)	0.21
C25-V1 (0.000-1.400)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.21
C26-V1 (0.000-4.000)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.16
C27-V1 (0.000-4.800)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.41
C28-V1 (0.000-5.250)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.21
C29-V1 (0.000-4.800)	Doorsnede	Fu.C.11	NEN-EN1993-1-1(6.9)	0.34
C30-V1 (0.000-5.250)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.31)	0.29
C31-V1 (0.000-4.800)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.13
C32-V1 (0.000-5.250)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.10
C34-V1 (0.000-4.000)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.53
C35-V1 (0.000-4.000)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.17
C38-V1 (0.000-4.000)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.65
C39-V1 (0.000-5.050)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.9)	0.35
C40-V1 (0.000-4.000)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.63
C41-V1 (0.000-4.800)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.52
C42-V1 (0.000-5.250)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.9)	0.32
C43-V1 (0.000-1.400)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.24
C44-V1 (0.000-4.000)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.61
C45-V1 (0.000-0.800)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.76
C46-V1 (0.000-4.250)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.69
C47-V1 (0.000-2.400)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.69
C48-V1 (0.000-4.000)	Doorsnede	Fu.C.8	NEN-EN1993-1-1(6.9)	0.28
C49-V1 (0.000-2.050)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.16
C50-V1 (0.000-3.000)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.32
C51-V1 (0.000-2.000)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.41
C52-V1 (0.000-4.000)	Doorsnede	Fu.C.8	NEN-EN1993-1-1(6.9)	0.30
C53-V1 (0.000-2.050)	Doorsnede	Fu.C.8	NEN-EN1993-1-1(6.31)	0.80
C54-V1 (0.000-3.000)	Doorsnede	Fu.C.4	NEN-EN1993-1-1(6.12)	0.98
C55-V1 (0.000-2.000)	Doorsnede	Fu.C.10	NEN-EN1993-1-1(6.12)	0.41

AFB. STAAL UC DIAGRAM



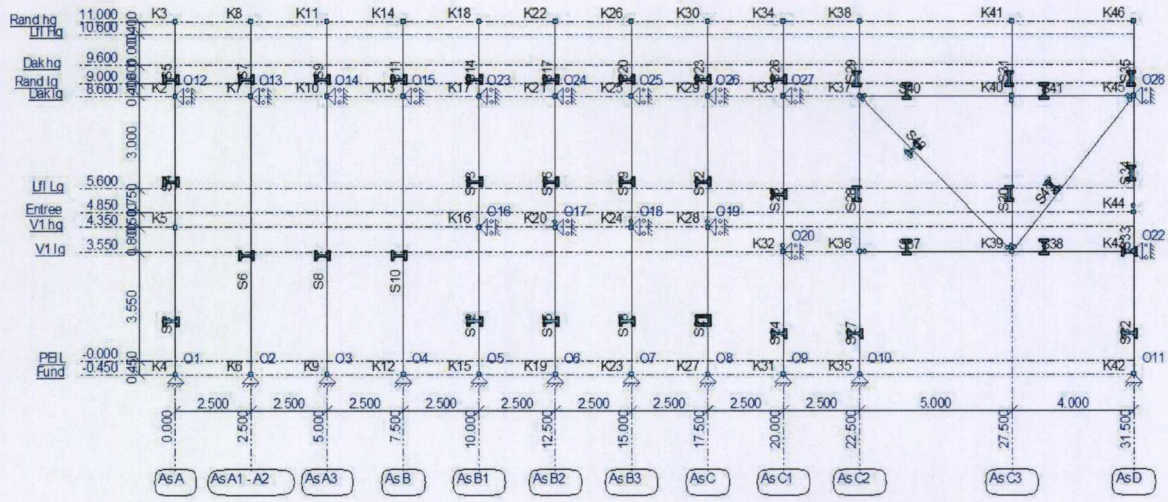
Valkenburg aan de Geul	Ingenieursbureau A. Palte BV	043 - 601 36 37
Computerberekening		

Projectnaam	'De Schatberg' te Sevenum	Projectnummer	460518
Omschrijving	Stalen kolommen	Constructeur	DaKr
Opdrachtgever	Janssen Wuts Architecten BV	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Stalen kolommen As 04.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	45	39	27	14	12	55

AFB. GEOMETRIE RAAMWERK

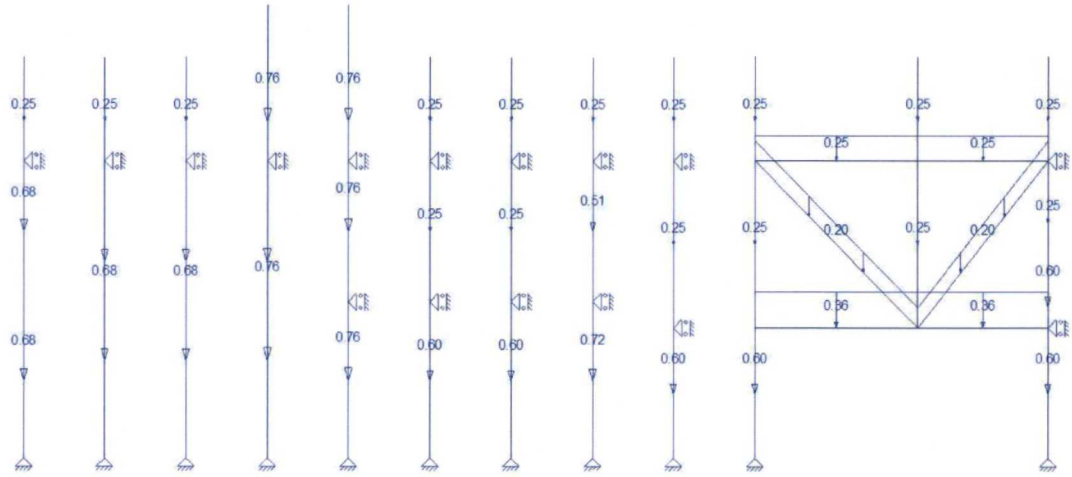


B.G.1: EIGEN GEWICHT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.68 (1.00x)	0.68 (1.00x)	0.000	4.800(L)	Z"	S3
qG	0.68 (1.00x)	0.68 (1.00x)	0.000	4.250(L)	Z"	S4
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	2.400(L)	Z"	S5,S7,S9,S17,S20,S23,S26
qG	0.68 (1.00x)	0.68 (1.00x)	0.000	9.050(L)	Z"	S6,S8
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	9.050(L)	Z"	S10
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	2.400(L)	Z"	S11,S14
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	4.800(L)	Z"	S12
qG	0.76 (1.00x)	0.76 (1.00x)	0.000	4.250(L)	Z"	S13
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	4.800(L)	Z"	S15,S18
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	4.250(L)	Z"	S16,S19
qG	0.72 (1.00x)	0.72 (1.00x)	0.000	4.800(L)	Z"	S21
qG	0.51 (1.00x)	0.51 (1.00x)	0.000	4.250(L)	Z"	S22
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	4.000(L)	Z"	S24
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	5.050(L)	Z"	S25
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	4.000(L)	Z"	S27,S32
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	5.050(L)	Z"	S28,S30
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	2.400(L)	Z"	S29,S31,S35
qG	0.60 (1.00x)	0.60 (1.00x)	0.000	1.300(L)	Z"	S33
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	3.750(L)	Z"	S34
qG	0.36 (1.00x)	0.36 (1.00x)	0.000	5.000(L)	Z"	S37
qG	0.36 (1.00x)	0.36 (1.00x)	0.000	4.000(L)	Z"	S38
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	5.000(L)	Z"	S40
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	4.000(L)	Z"	S41
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	7.107(L)	Z"	S42
qG	0.20 (1.00x)	0.20 (1.00x)	0.000	6.442(L)	Z"	S43

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
Som lasten	X: 0.00	kN Z: 76.21	kN			
-	-	-	m	m	- -	

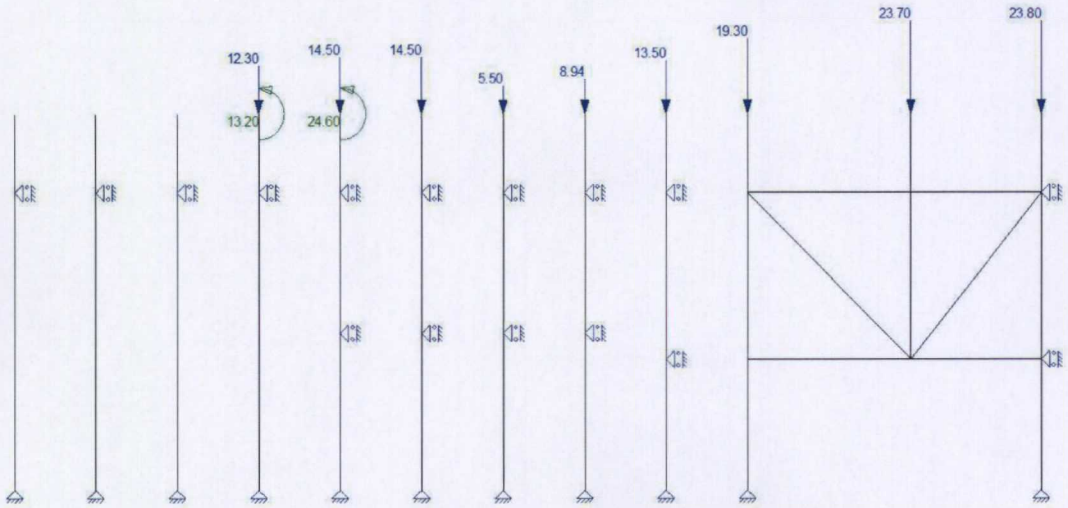
B.G.1: EIGEN GEWICHT



B.G.2: PERMANENT LHG

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent LHg						
N	12.30				Z	K14
N	13.20				Yr	K14
N	14.50				Z	K18,K22
N	24.60				Yr	K18
N	5.50				Z	K26
N	8.94				Z	K30
N	13.50				Z	K34
N	19.30				Z	K38
N	23.70				Z	K41
N	23.80				Z	K46
Som lasten	X: 0.00	kN Z: 136.04	kN			
-	-	-	m	m	- -	

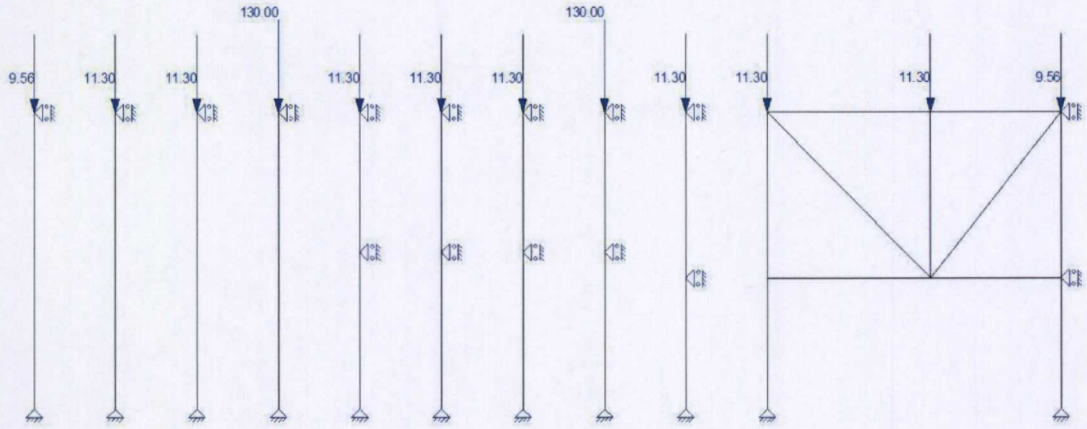
B.G.2: PERMANENT LHG



B.G.3: PERMANENT DAK

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Permanent Dak						
N	9.56				Z	K2,K45
N	11.30				Z	K7,K10,K17,K21,K25,K33,K37,K40
N	130.00				Z	K13,K29
Som lasten	**X: 0.00**	**kN Z: 369.52**	**kN**			
-	-	-	m	m	-	-

B.G.3: PERMANENT DAK

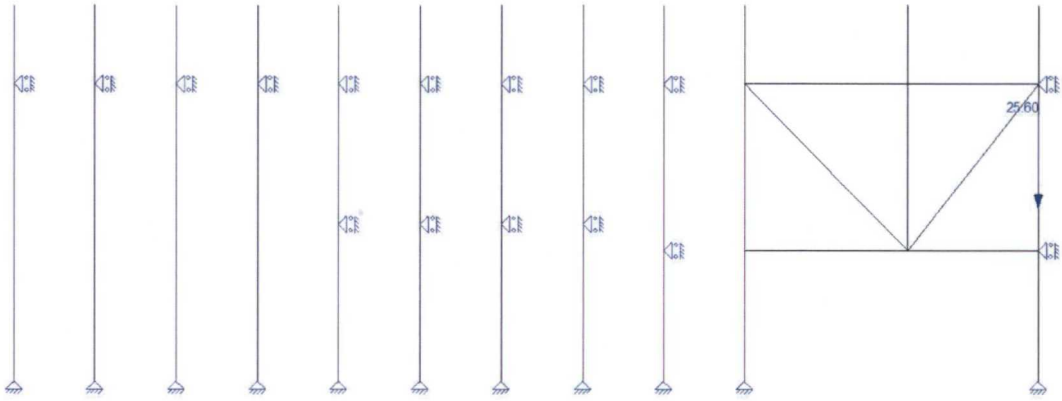


B.G.4: PERMANENT LLG

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.4: Permanent LLg						
N	25.60				Z	K44
Som lasten	**X: 0.00**	**kN Z: 25.60**	**kN**			

-	-	-	m	m	- -

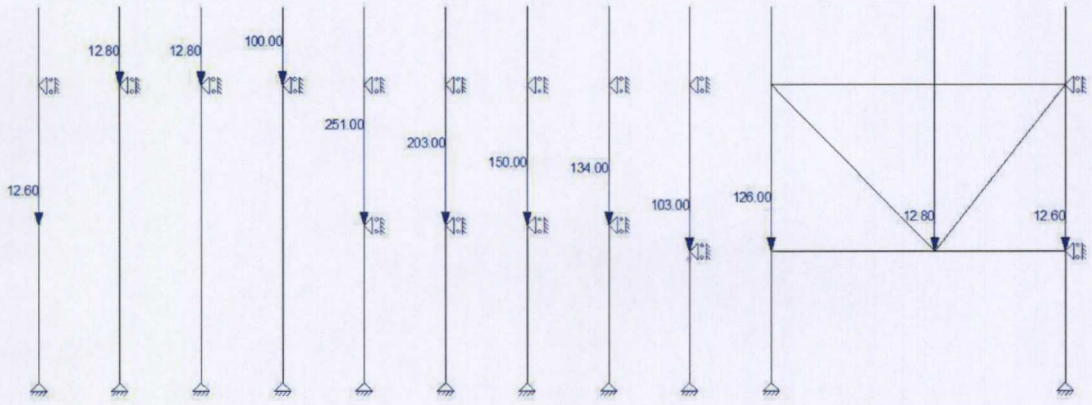
B.G.4: PERMANENT LLG



B.G.5: PERMANENT V+1

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Permanent V+1						
N	12.60				Z	K5
F	12.80		4.800		Z	S6,S8
F	100.00		4.800		Z	S10
N	251.00				Z	K16
N	203.00				Z	K20
N	150.00				Z	K24
N	134.00				Z	K28
N	103.00				Z	K32
N	126.00				Z	K36
N	12.80				Z	K39
N	12.60				Z	K43
Som lasten	**X: 0.00**	**kN Z: 1,130.60**	**kN**			
-	-	-	m	m	- -	

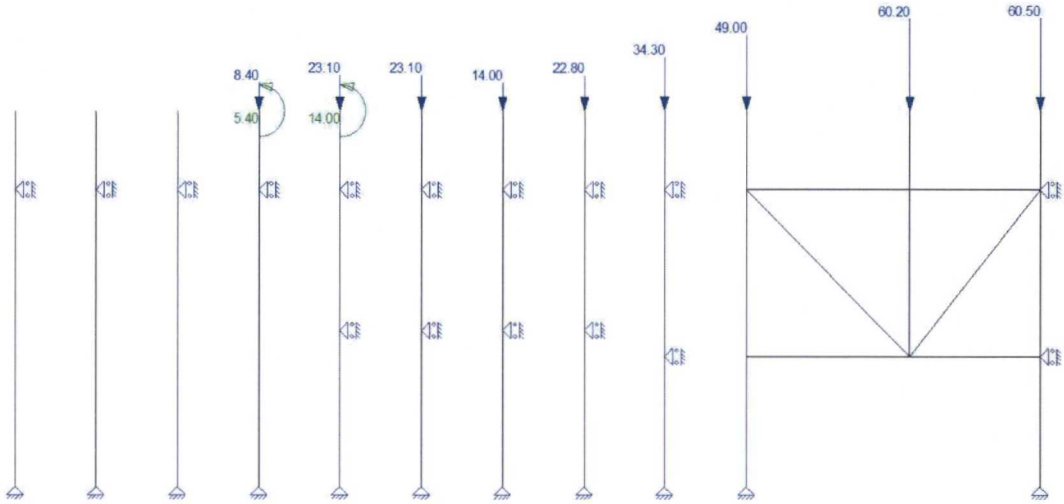
B.G.5: PERMANENT V+1



B.G.6: SNEEUW LHG

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.6: Sneeuw LHg						
N	8.40				Z	K14
N	5.40				Yr	K14
N	23.10				Z	K18,K22
N	14.00				Yr	K18
N	14.00				Z	K26
N	22.80				Z	K30
N	34.30				Z	K34
N	49.00				Z	K38
N	60.20				Z	K41
N	60.50				Z	K46
Som lasten	**X: 0.00**	**kN Z: 295.40**	**kN**			
-	-	-	m	m	-	-

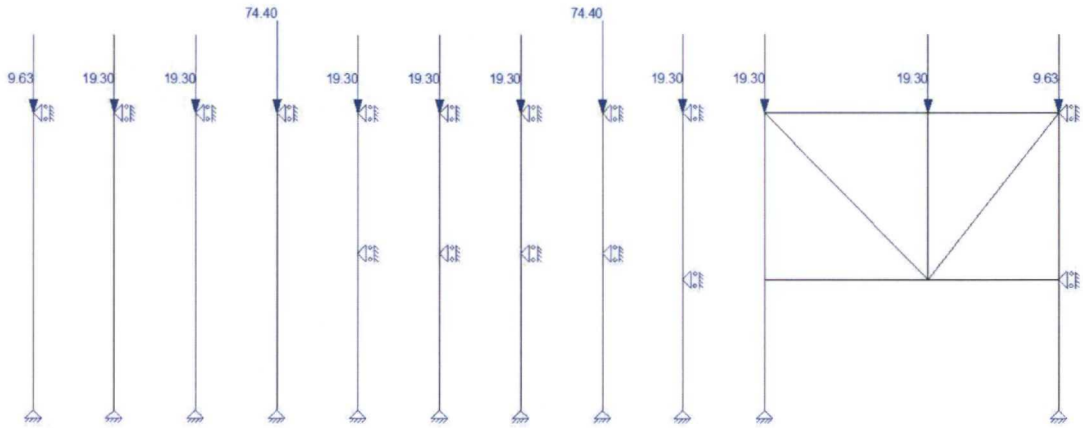
B.G.6: SNEEUW LHG



B.G.7: SNEEUW DAK

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.7: Sneeuw Dak						
N	9.63				Z	K2,K45
N	19.30				Z	K7,K10,K21,K25,K33,K37,K40
N	74.40				Z	K13
N	19.30				Z	K17
N	74.40				Z	K29
Som lasten	**X: 0.00**	**kN Z: 322.46**	**kN**			
-	-	-	m	m	-	-

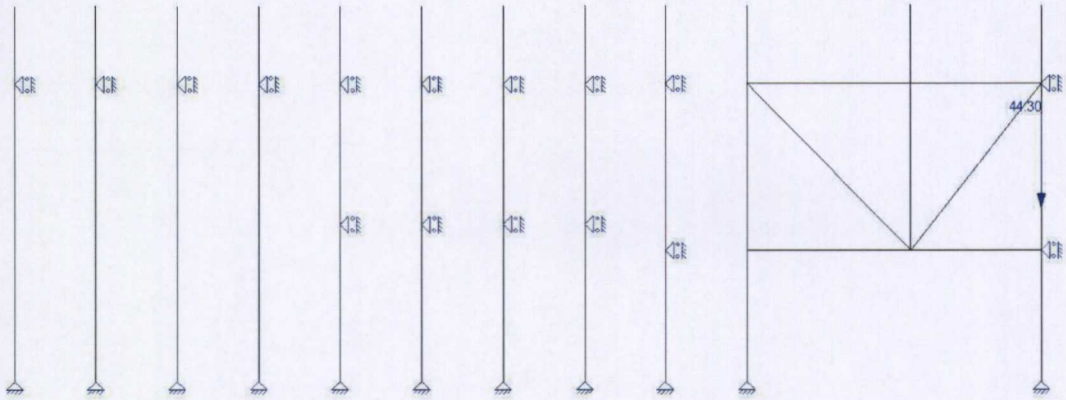
B.G.7: SNEEUW DAK



B.G.8: SNEEUW LLG

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.8: Sneeuw LLg						
N	44.30				Z	K44
Som lasten	**X: 0.00**	**kN Z: 44.30**	**kN**			
-	-	-	m	m	-	-

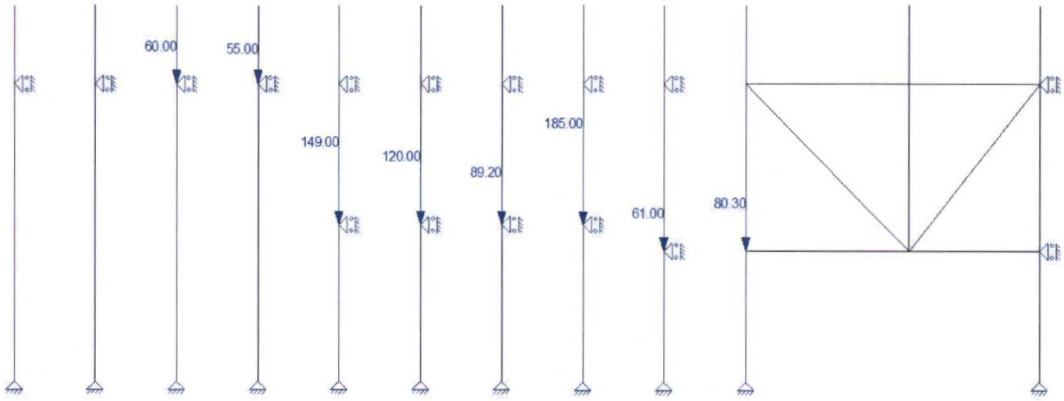
B.G.8: SNEEUW LLG



B.G.9: VERANDERLIJK V+1

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.9: Veranderlijk V+1						
F	60.00		4.800		Z	S8
F	55.00		4.800		Z	S10
N	149.00				Z	K16
N	120.00				Z	K20
N	89.20				Z	K24
N	185.00				Z	K28
N	61.00				Z	K32
N	80.30				Z	K36
Som lasten	**X: 0.00**	**kN Z: 799.50**	**kN**			
-	-	-	m	m	-	-

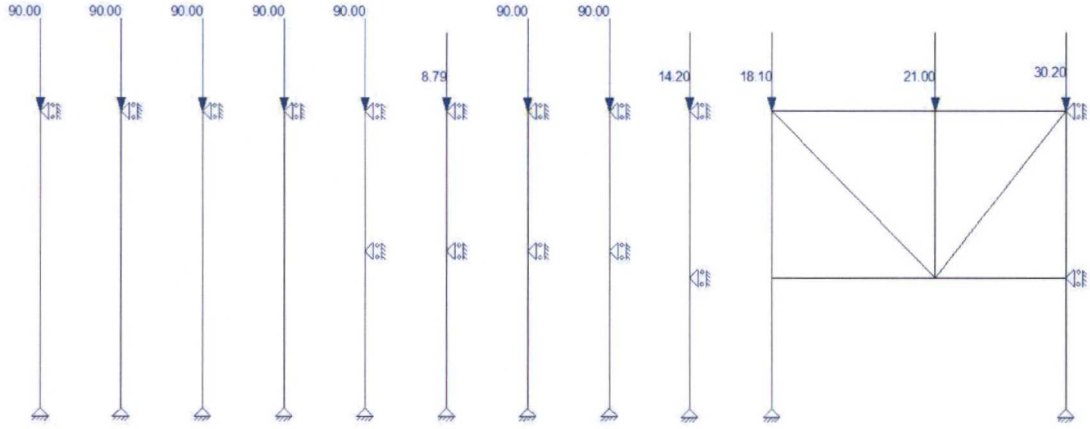
B.G.9: VERANDERLIJK V+1



B.G.10: WIND VERTICAAL

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.10: Wind verticaal						
N	90.00				Z	K2,K7,K10,K13,K17,K25,K29
N	8.79				Z	K21
N	14.20				Z	K33
N	18.10				Z	K37
N	21.00				Z	K40
N	30.20				Z	K45
Som lasten	**X: 0.00**	**kN Z: 722.29**	**kN**			
-	-	-	m	m	-	-

B.G.10: WIND VERTICAAL

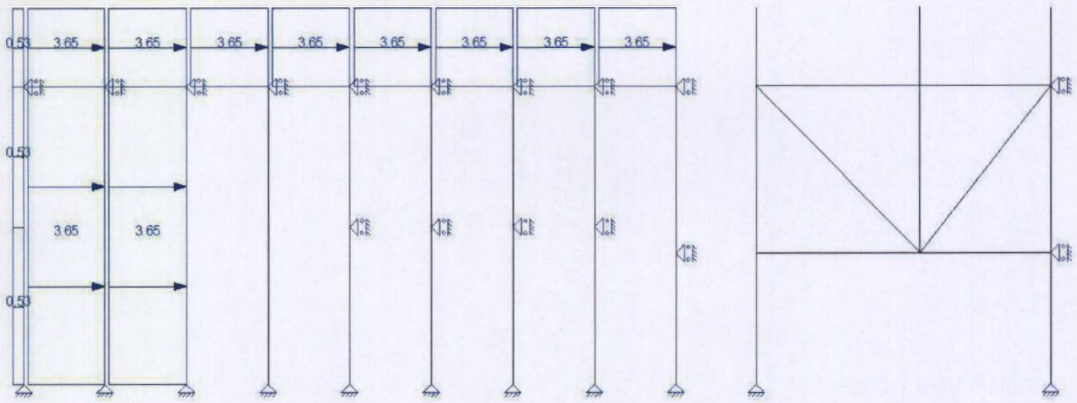


B.G.11: WIND HORIZONTAAL

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.11: Wind horizontaal						
q	0.53	0.53	0.000	4.800(L)	Z'	S3-S5

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.11: Wind horizontaal						
q	3.65	3.65	0.000	9.050(L)	Z'	S6-S9,S11,S14,S17,S20,S23,S26
Som lasten	**X: 142.21**	**kN Z: 0.00**	**kN**			
-	-	-	m	m	- -	

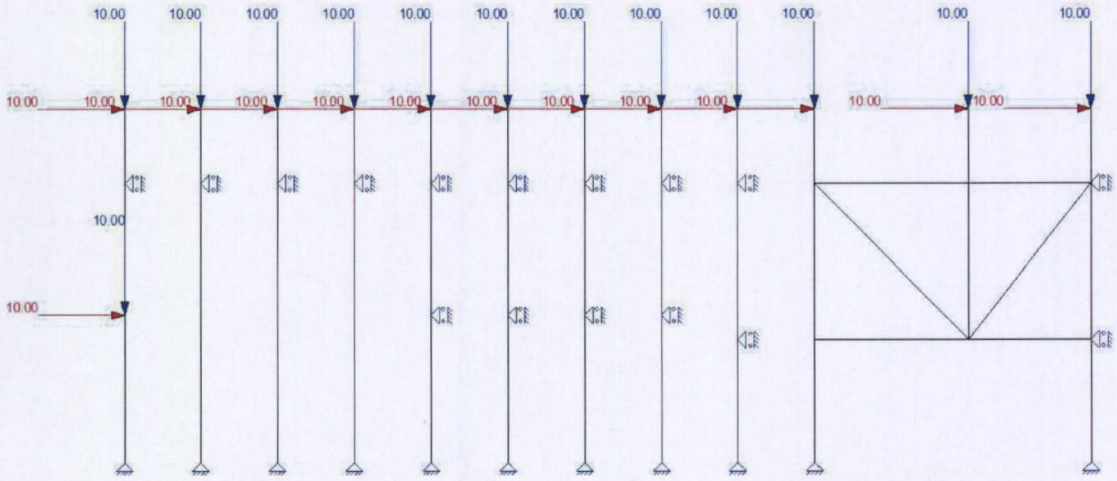
B.G.11: WIND HORIZONTAAL



B.G.12: KNIKLENGTE

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.12: Kniklengte						
N	10.00				Z	K3,K5,K8,K11,K14, K18,K22,K26,K30,K34,K38,K41,K46
N	10.00				X	K3,K5,K8,K11,K14, K18,K22,K26,K30,K34,K38,K41,K46
Som lasten	**X: 130.00**	**kN Z: 130.00**	**kN**			
-	-	-	m	m	- -	

B.G.12: KNIKLENGTE


10.00
10.00
10.00

FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Fu.C.1	Fu.C.2	Fu.C.3	Fu.C.4	Fu.C.5	Fu.C.6	Fu.C.7	Fu.C.8
B.G.1	Eigen Gewicht	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.2	Permanent LHg	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.3	Permanent Dak	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.4	Permanent LLg	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.5	Permanent V+1	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.6	Sneeuw LHg	-	1.50	-	-	1.50	1.50	-	1.50
B.G.7	Sneeuw Dak	-	-	1.50	-	1.50	-	1.50	1.50
B.G.8	Sneeuw LLg	-	-	-	1.50	-	1.50	1.50	1.50
B.G.9	Veranderlijk V+1	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
B.G.10	Wind verticaal	-	-	-	-	-	-	-	-
B.G.11	Wind horizontaal	-	-	-	-	-	-	-	-
B.G.12	Kniklengte	-	-	-	-	-	-	-	-

B.G.	Omschrijving	Fu.C.9	Fu.C.10	Fu.C.11	Fu.C.12	Fu.C.13	Fu.C.14	Fu.C.15	Fu.C.16
B.G.1	Eigen Gewicht	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.2	Permanent LHg	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.3	Permanent Dak	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.4	Permanent LLg	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.5	Permanent V+1	1.20	1.20	1.20	0.90	0.90	0.90	0.90	0.90
B.G.6	Sneeuw LHg	-	-	-	1.50	-	-	1.50	1.50
B.G.7	Sneeuw Dak	-	-	-	-	1.50	-	1.50	-
B.G.8	Sneeuw LLg	-	-	-	-	-	1.50	-	1.50
B.G.9	Veranderlijk V+1	1.50	-	0.90	0.90	0.90	0.90	-	-
B.G.10	Wind verticaal	-	1.50	1.50	-	-	-	-	-
B.G.11	Wind horizontaal	-	1.50	1.50	-	-	-	-	-
B.G.12	Kniklengte	-	-	-	-	-	-	-	-

B.G.	Omschrijving	Fu.C.17	Fu.C.18	Fu.C.19	Fu.C.20	Fu.C.21
B.G.1	Eigen Gewicht	0.90	0.90	0.90	0.90	0.90
B.G.2	Permanent LHg	0.90	0.90	0.90	0.90	0.90
B.G.3	Permanent Dak	0.90	0.90	0.90	0.90	0.90
B.G.4	Permanent LLg	0.90	0.90	0.90	0.90	0.90
B.G.5	Permanent V+1	0.90	0.90	0.90	0.90	0.90
B.G.6	Sneeuw LHg	-	1.50	-	-	-
B.G.7	Sneeuw Dak	1.50	1.50	-	-	-
B.G.8	Sneeuw LLg	1.50	1.50	-	-	-
B.G.9	Veranderlijk V+1	-	-	1.50	-	0.90
B.G.10	Wind verticaal	-	-	-	1.50	1.50
B.G.11	Wind horizontaal	-	-	-	1.50	1.50
B.G.12	Kniklengte	-	-	-	-	-

KNIK BELASTINGSCOMBINATIES (TABEL)

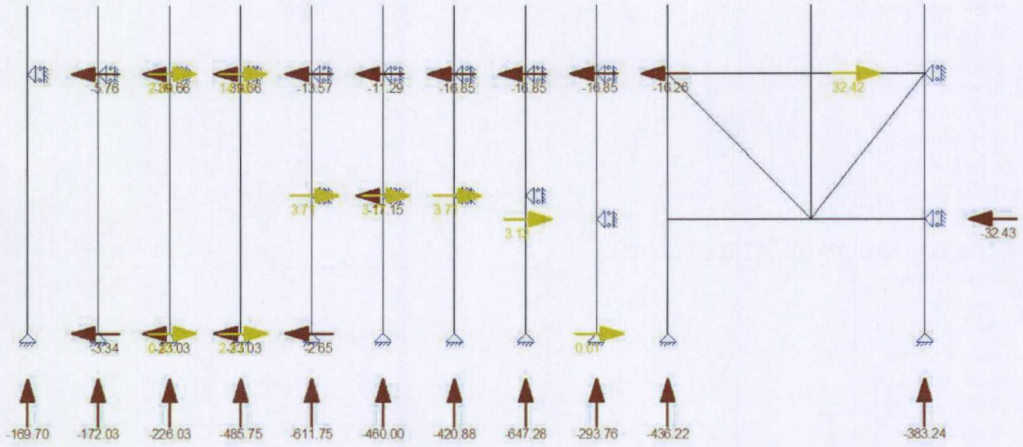
B.G.	Omschrijving	Kn.C.1
B.G.1	Eigen Gewicht	-
B.G.2	Permanent LHg	-
B.G.3	Permanent Dak	-
B.G.4	Permanent LLg	-
B.G.5	Permanent V+1	-
B.G.6	Sneeuw LHg	-
B.G.7	Sneeuw Dak	-
B.G.8	Sneeuw LLg	-
B.G.9	Veranderlijk V+1	-
B.G.10	Wind verticaal	-
B.G.11	Wind horizontaal	-
B.G.12	Kniklengte	1.00

FU.C. EXTREME OPLEGREACTIES

Oplegging	Knoop	B.C.	Xmax	Z	My B.C.	X	Zmax	My B.C.	X	Z Mymax
O1	K4	Fu.C.10	**-3.34**	-169.70	0.00Fu.C.10	-3.34	**-169.70**	0.00		
O2	K6	Fu.C.10	**-23.03**	-172.03	0.00Fu.C.10	-23.03	**-172.03**	0.00		
O3	K9	Fu.C.10	**-23.03**	-172.03	0.00Fu.C.11	-23.03	**-226.03**	0.00		
O4	K12	Fu.C.20	**0.43**	-360.94	0.00					
O4	K12	Fu.C.2	**-2.65**	-363.35	0.00Fu.C.11	-0.01	**-485.75**	0.00		
O5	K15	Fu.C.2	**2.47**	-511.40	0.00					
O5	K15				Fu.C.11	0.67	**-611.75**	0.00		
O6	K19				Fu.C.9	0.00	**-460.00**	0.00		
O7	K23				Fu.C.11	0.00	**-420.88**	0.00		
O8	K27				Fu.C.5	0.00	**-647.28**	0.00		

Oplegging	Knoop	B.C.	Xmax	Z	My B.C.	X	Zmax	My B.C.	X	Z Mymax
O9	K31				Fu.C.5	0.00	**-293.76**	0.00		
O10	K35	Fu.C.18	**0.01**	-311.61	0.00					
O10	K35				Fu.C.8	0.01	**-436.22**	0.00		
O11	K42				Fu.C.8	0.00	**-383.24**	0.00		
O12	K2	Fu.C.10	**-5.76**	0.00	0.00					
O13	K7	Fu.C.10	**-39.66**	0.00	0.00					
O14	K10	Fu.C.10	**-39.66**	0.00	0.00					
O15	K13	Fu.C.2	**2.65**	0.00	0.00					
O15	K13	Fu.C.20	**-13.57**	0.00	0.00					
O16	K16	Fu.C.2	**-17.15**	0.00	0.00					
O17	K20	Fu.C.10	**3.71**	0.00	0.00					
O18	K24	Fu.C.10	**3.71**	0.00	0.00					
O19	K28	Fu.C.10	**3.71**	0.00	0.00					
O20	K32	Fu.C.10	**3.12**	0.00	0.00					
O22	K43	Fu.C.5	**-32.43**	0.00	0.00					
O23	K17	Fu.C.2	**14.68**	0.00	0.00					
O23	K17	Fu.C.20	**-11.29**	0.00	0.00					
O24	K21	Fu.C.10	**-16.85**	0.00	0.00					
O25	K25	Fu.C.10	**-16.85**	0.00	0.00					
O26	K29	Fu.C.10	**-16.85**	0.00	0.00					
O27	K33	Fu.C.10	**-16.26**	0.00	0.00					
O28	K45	Fu.C.5	**32.42**	0.00	0.00					
Globale extreme waarden										
O28	K45	Fu.C.5	**32.42**	0.00	0.00					
O14	K10	Fu.C.10	**-39.66**	0.00	0.00					
O8	K27				Fu.C.5	0.00	**-647.28**	0.00		
-	-	-	**kN**	**kN**	**kNm** -	**kN**	**kN**	**kNm**	**kN**	**kN** **kNm**

AFB. FU.C. OPLEGREACTIES OMHULLENDE — Fundamenteel Belastingscombinaties

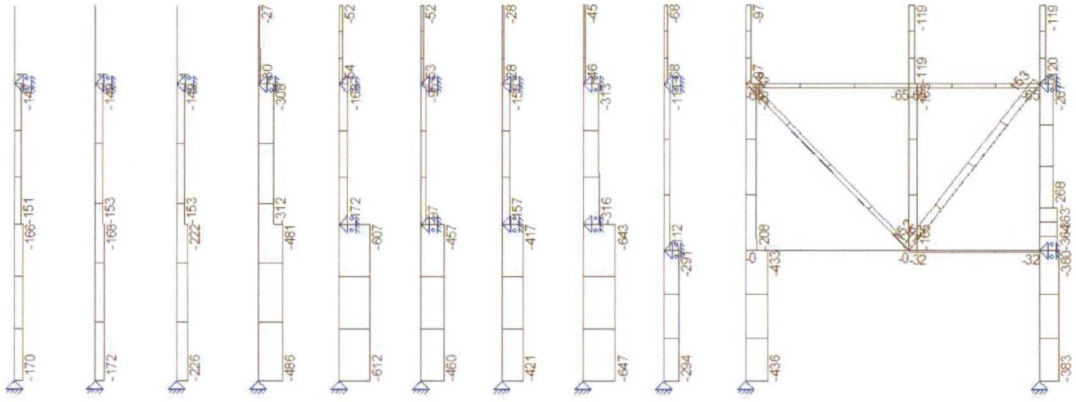


FU.C. OMHULLENDE

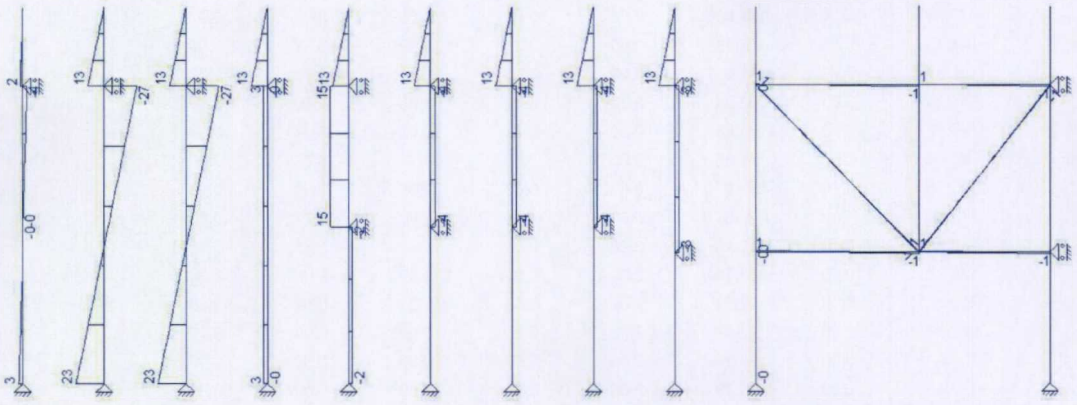
Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S3	-169.70	0.00	-23.08	0.00	-0.47	3.34	0.00	7.03
S4	-150.66	0.00	-9.14	0.00	-3.85	0.00	-2.29	6.89
S5	-0.80	0.00	-0.53	0.00	0.00	1.91	-2.29	0.00
S6	-172.03	0.00	-10.70	0.00	-26.52	23.03	-15.77	48.45
S7	-0.80	0.00	-0.53	0.00	0.00	13.14	-15.77	0.00
S8	-226.03	0.00	-10.70	0.00	-26.52	23.03	-15.77	48.45
S9	-0.80	0.00	-0.53	0.00	0.00	13.14	-15.77	0.00
S10	-485.75	0.00	-129.72	0.00	-0.43	2.65	-3.89	23.94
S11	-29.56	0.00	-11.07	0.00	0.00	13.14	-3.89	23.94
S12	-611.75	0.00	-282.64	0.00	-2.47	0.00	-11.86	0.00
S13	-172.05	0.00	-24.87	0.00	0.00	14.68	-11.86	50.52

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S14	-54.25	0.00	-13.05	0.00	0.00	13.14	0.00	50.52
S15	-460.00	0.00	-220.58	0.00	0.00	0.00	0.00	0.00
S16	-96.53	0.00	-23.75	0.00	-3.71	0.00	-15.77	0.00
S17	-52.76	0.00	-13.05	0.00	0.00	13.14	-15.77	0.00
S18	-420.88	0.00	-172.60	0.00	0.00	0.00	0.00	0.00
S19	-157.13	0.00	-15.65	0.00	-3.71	0.00	-15.77	0.00
S20	-28.31	0.00	-4.95	0.00	0.00	13.14	-15.77	0.00
S21	-647.28	0.00	-282.34	0.00	0.00	0.00	0.00	0.00
S22	-315.85	0.00	-125.58	0.00	-3.71	0.00	-15.77	0.00
S23	-45.64	0.00	-8.05	0.00	0.00	13.14	-15.77	0.00
S24	-293.76	0.00	-137.97	0.00	0.00	0.00	0.00	0.00
S25	-112.36	0.00	-22.85	0.00	-3.12	0.00	-15.77	0.00
S26	-68.36	0.00	-12.15	0.00	0.00	13.14	-15.77	0.00
S27	-436.22	0.00	-201.14	0.00	-0.01	0.00	-0.06	0.00
S28	-208.36	0.00	-42.12	0.00	0.00	0.01	-0.06	0.00
S29	-97.37	0.00	-17.37	0.00	0.00	0.00	0.00	0.00
S30	-164.60	0.00	-33.16	0.00	0.00	0.00	0.00	0.00
S31	-119.45	0.00	-21.33	0.00	0.00	0.00	0.00	0.00
S32	-383.24	0.00	-103.61	0.00	0.00	0.00	0.00	0.00
S33	-363.83	0.00	-90.93	0.00	0.00	0.00	0.00	0.00
S34	-268.11	0.00	-63.38	0.00	0.00	0.00	0.00	0.00
S35	-120.02	0.00	-21.42	0.00	0.00	0.00	0.00	0.00
S37	-0.03	0.00	0.00	0.00	-1.21	1.50	-0.04	2.63
S38	-32.43	0.00	-8.84	0.00	-1.39	0.97	-0.04	2.27
S40	-64.65	0.00	-12.79	0.00	-0.92	0.82	-0.44	1.15
S41	-64.65	0.00	-12.79	0.00	-0.70	0.78	-0.44	0.82
S42	0.00	92.51	0.00	17.72	-0.67	0.67	0.00	1.19
S43	0.00	153.17	0.00	40.21	-0.54	0.54	0.00	0.86
-	kN	kN	kN	kN	kN	kN	kNm	kNm

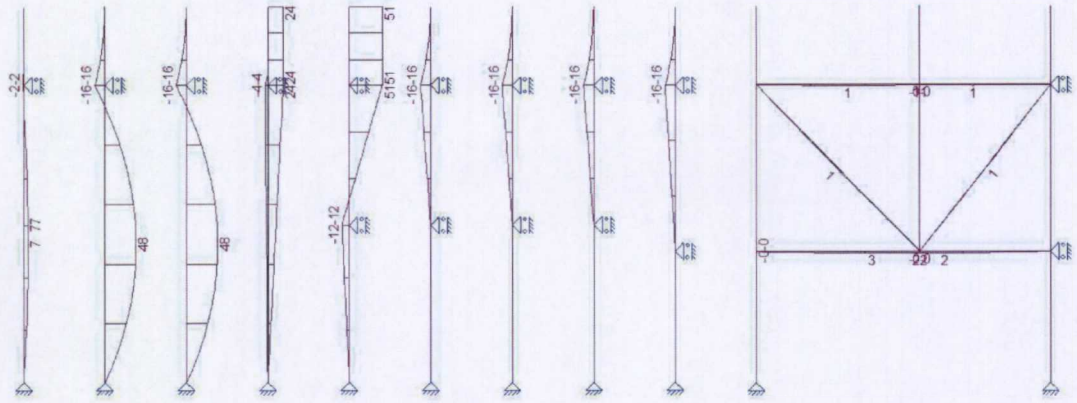
AFB. FU.C. NORMAALKRACHT (NX) OMHULLENDE — Fundamenteel Belastingscombinaties

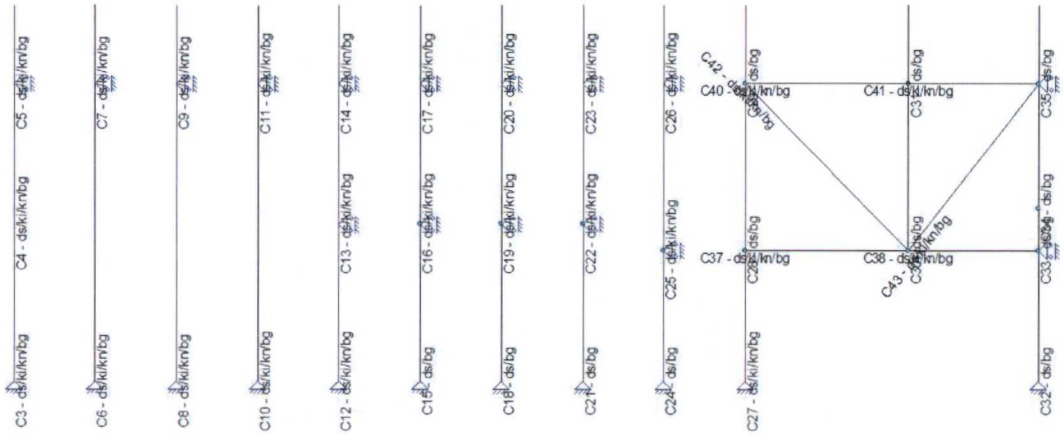


AFB. FU.C. DWARSKRACHT (VZ) OMHULLENDE — Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE — Fundamenteel Belastingscombinaties





SAMENSTELLING CONSTRUCTIEDELEN

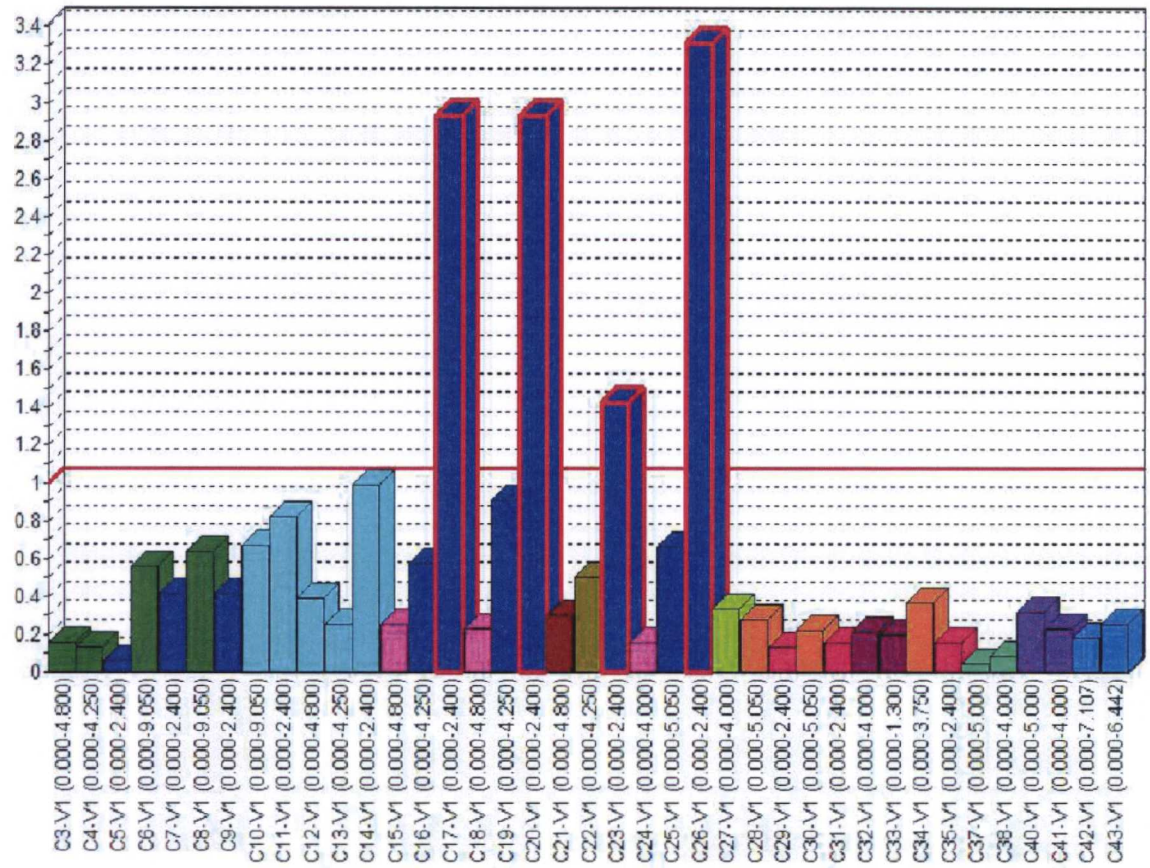
Constructiedeel	Staaf/staven
C3	S3
C4	S4
C5	S5
C6	S6
C7	S7
C8	S8
C9	S9
C10	S10
C11	S11
C12	S12
C13	S13
C14	S14
C15	S15
C16	S16
C17	S17
C18	S18
C19	S19
C20	S20
C21	S21
C22	S22
C23	S23
C24	S24
C25	S25
C26	S26
C27	S27
C28	S28
C29	S29
C30	S30
C31	S31
C32	S32
C33	S33
C34	S34
C35	S35
C37	S37
C38	S38
C40	S40
C41	S41
C42	S42

C43 S43

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

Veld	Toetsing	Combinatie	Artikel	UC max
C3-V1 (0.000-4.800)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.16
C4-V1 (0.000-4.250)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.14
C5-V1 (0.000-2.400)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.06
C6-V1 (0.000-9.050)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.56
C7-V1 (0.000-2.400)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.41
C8-V1 (0.000-9.050)	Stabiliteit	Fu.C.11	NEN-EN1993-1-1(6.61&6.62)	0.64
C9-V1 (0.000-2.400)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.41
C10-V1 (0.000-9.050)	Stabiliteit	Fu.C.5	NEN-EN1993-1-1(6.61&6.62)	0.67
C11-V1 (0.000-2.400)	Doorbuigingstoetsing	Ka.C.1	NEN-EN|NEN-EN1990/NB A1.4.2	0.82
C12-V1 (0.000-4.800)	Stabiliteit	Fu.C.11	NEN-EN1993-1-1(6.61&6.62)	0.39
C13-V1 (0.000-4.250)	Stabiliteit	Fu.C.5	NEN-EN1993-1-1(6.61&6.62)	0.26
C14-V1 (0.000-2.400)	Doorbuigingstoetsing	Ka.C.1	NEN-EN|NEN-EN1990/NB A1.4.2	0.99
C15-V1 (0.000-4.800)	Doorsnede	Fu.C.9	NEN-EN1993-1-1(6.9)	0.25
C16-V1 (0.000-4.250)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.58
C17-V1 (0.000-2.400)	Doorbuigingstoetsing	Ka.C.9	NEN-EN|NEN-EN1990/NB A1.4.2	**2.93**
C18-V1 (0.000-4.800)	Doorsnede	Fu.C.11	NEN-EN1993-1-1(6.9)	0.23
C19-V1 (0.000-4.250)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.91
C20-V1 (0.000-2.400)	Doorbuigingstoetsing	Ka.C.9	NEN-EN|NEN-EN1990/NB A1.4.2	**2.93**
C21-V1 (0.000-4.800)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.9)	0.30
C22-V1 (0.000-4.250)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.50
C23-V1 (0.000-2.400)	Doorbuigingstoetsing	Ka.C.9	NEN-EN|NEN-EN1990/NB A1.4.2	**1.43**
C24-V1 (0.000-4.000)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.9)	0.16
C25-V1 (0.000-5.050)	Stabiliteit	Fu.C.10	NEN-EN1993-1-1(6.61&6.62)	0.66
C26-V1 (0.000-2.400)	Doorbuigingstoetsing	Ka.C.9	NEN-EN|NEN-EN1990/NB A1.4.2	**3.32**
C27-V1 (0.000-4.000)	Stabiliteit	Fu.C.8	NEN-EN1993-1-1(6.61&6.62)	0.34
C28-V1 (0.000-5.050)	Doorsnede	Fu.C.8	NEN-EN1993-1-1(6.9)	0.28
C29-V1 (0.000-2.400)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.9)	0.13
C30-V1 (0.000-5.050)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.9)	0.22
C31-V1 (0.000-2.400)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.9)	0.16
C32-V1 (0.000-4.000)	Doorsnede	Fu.C.8	NEN-EN1993-1-1(6.9)	0.21
C33-V1 (0.000-1.300)	Doorsnede	Fu.C.8	NEN-EN1993-1-1(6.9)	0.20
C34-V1 (0.000-3.750)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.9)	0.36
C35-V1 (0.000-2.400)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.9)	0.16
C37-V1 (0.000-5.000)	Doorbuigingstoetsing	Qu.C.7	NEN-EN|NEN-EN1990/NB A1.4.2	0.05
C38-V1 (0.000-4.000)	Stabiliteit	Fu.C.5	NEN-EN1993-1-1(6.61&6.62)	0.09
C40-V1 (0.000-5.000)	Stabiliteit	Fu.C.8	NEN-EN1993-1-1(6.61&6.62)	0.32
C41-V1 (0.000-4.000)	Stabiliteit	Fu.C.8	NEN-EN1993-1-1(6.61&6.62)	0.23
C42-V1 (0.000-7.107)	Doorbuigingstoetsing	Ka.C.7	NEN-EN|NEN-EN1990/NB A1.4.2	0.18
C43-V1 (0.000-6.442)	Doorsnede	Fu.C.5	NEN-EN1993-1-1(6.5)	0.26

AFB. STAAL UC DIAGRAM



STAALTOETS RESULTATEN MET PROFIELGEGEVENS NEN-EN1993-1-1:2016/NB:2016

Uitgangspunten berekening voor staalcontrole

Alpha;cr = 1.01 < 10; GNL analyse vereist

Profielgegevens staaf C3-V1 (0.000-4.800)

HE260A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 250.0 mm	A = 8.68e-03 m2	Wy;el = 836.4e-06 m3	Wy;pl = 919.8e-06 m3
b = 260.0 mm	Iy = 104.5e-06 m4	Wz;el = 282.1e-06 m3	Wz;pl = 430.2e-06 m3
tf = 12.5 mm	Iz = 366.8e-07 m4	Aw;y;el = 6.99e-03 m2	Aw;y;pl = 6.99e-03 m2
tw = 7.5 mm	Massa/m = 68.2 kg/m	Aw;z;el = 2.88e-03 m2	Aw;z;pl = 2.88e-03 m2
r = 24.0 mm		It = 523.7e-09 m4	Iwa = 516.4e-09 m6

Doorsnedetoetsing C3-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.10 op 0.000 m		Profielklasse = 1	
N;Ed = -169.7 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 3.3 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,040.3 kN	Vy;Rd = 949.0 kN	MyRd = 216.1 kNm	
	Vz;Rd = 390.2 kN	MzRd = 101.1 kNm	

NEN-EN1993-1-1(6.9): UC = 0.08 < 1

Kiptoetsing C3-V1 (0.000-4.800)

Equi. profiel: HE260A			
Maatgevende combinatie: Fu.C.21		Instab. curve Kip:a	
Aangrijphoogte van de last: 0.000 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt Fig. NB.32	M = 6.9kN/m	MBeta = 0.0	q = 0.8
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 4.800 m	lst = 4.800 m

Lsys = 4.800 m | Lg = 4.800 m | S = 1.601 m | Iwa = 5.1635e-07 m6
C1 = 1.24 | C2 = 0.16 (tabel) | C2(toegepast) = 0.00 | C = 5.63
Mcr = 669.5 kNm | kred = 1.0 | Lam-rel = 0.57 | Profielklasse 1
Chi;LT(Fu.C.21) = 0.90 | M;Ed = 7.0 kNm | | UC(y) = 0.04
Chi;LT,Z = 1.00 | lkip = 4.800 m | | UC(z) = 0.00
My;begin = 0.0 kNm | My;eind = 6.9 kNm
NEN-EN1993-1-1(6.54): UC = 0.04 < 1

Stabiliteitstoetsing C3-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.10
N;Ed = -169.7 kN | Nb;Rd;y = 1,834.3 kN | Nb;Rd;z = 1,368.4 kN
Methode Y = Cons. gesch. | Ca(y) = 0.000 | Cb(y) = 0.000 | Lknik Y = 4.800 m
Methode Z = Cons. gesch. | Ca(z) = N/B | Cb(z) = N/B | Lbuc Z = 4.800 m
Xy = 0.90 | Knikcurve: B
Xz = 0.67 | Knikcurve: C
NEN-EN1993-1-1(6.46): UC = 0.12 < 1

Buiging & Druk C3-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.10 | Kipgevoelig Ja | Profielklasse = 1
N;Ed = -169.7 kN | My;Ed = 7.0 kNm | Mz;Ed = 0.0 kNm
Delta;My;Ed = 0.0 kNm | Delta;Mz;Ed = 0.0 kNm
My = 6.9 kNm | My;Psi = 0.0 kNm | My;s = 5.7 kNm
Mz = 0.0 kNm | Mz;Psi = 0.0 kNm | Mz;s = 0.0 kNm
Cmy = 0.87 | Cmz = 1.00 | CmLT = 0.87
Kyy = 0.887 | Kyz = 0.672 | Kzy = 0.984 | Kzz = 1.121
Ksi;y = 0.90 | Ksi;z = 0.67 | Ksi;LT = 0.90
NEN-EN1993-1-1(6.61&6.62): UC = 0.16 < 1

Doorbuigingstoetsing X C3-V1 (0.000-4.800)

Constructietype : Kolom | Toets type: 1 bouwlaag
u;i;3 = 1.7 mm (Ka.C.9)
Limiet u;i;max = H/300 = 16.0 mm
UC(u;i;max) = 0.1
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.11<1

Profielgegevens staaf C4-V1 (0.000-4.250)

HE260A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 250.0 mm | A = 8.68e-03 m2 | Wy;el = 836.4e-06 m3 | Wy;pl = 919.8e-06 m3
b = 260.0 mm | Iy = 104.5e-06 m4 | Wz;el = 282.1e-06 m3 | Wz;pl = 430.2e-06 m3
tf = 12.5 mm | Iz = 366.8e-07 m4 | Aw;y;el = 6.99e-03 m2 | Aw;y;pl = 6.99e-03 m2
tw = 7.5 mm | Massa/m = 68.2 kg/m | Aw;z;el = 2.88e-03 m2 | Aw;z;pl = 2.88e-03 m2
r = 24.0 mm | It = 523.7e-09 m4 | Iwa = 516.4e-09 m6

Doorsnedetoetsing C4-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10 op 0.000 m | Profielklasse = 1
N;Ed = -150.7 kN | Vy;Ed = 0.0 kN | My;Ed = 6.9 kNm
Vz;Ed = -0.5 kN | Mz;Ed = 0.0 kNm
N;Rd = 2,040.3 kN | Vy;Rd = 949.0 kN | MyRd = 216.1 kNm
Vz;Rd = 390.2 kN | MzRd = 101.1 kNm
NEN-EN1993-1-1(6.9): UC = 0.07 < 1

Kiptoetsing C4-V1 (0.000-4.250)

Equi. profiel: HE260A
Maatgevende combinatie: Fu.C.21 | Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.
Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.000 | b-eff(Eind) = 0.002
Tabel gebruikt Fig. NB.32 | M = 6.9kN/m | MBeta = -2.3 | q = 0.8
Bovenflens maatgevend | Xb;lst = 0.000 m | Xe;lst = 4.250 m | lst = 4.250 m
Lsys = 4.250 m | Lg = 4.250 m | S = 1.601 m | Iwa = 5.1635e-07 m6

C1 = 1.58	C2 = 0.16 (tabel)	C2(toegepast) = 0.00	C = 7.68
Mcr = 1,031.7 kNm	kred = 1.0	Lam-rel = 0.46	Profielklasse 1
Chi;LT(Fu.C.21) = 0.94	M;Ed = 6.9 kNm		UC(y) = 0.03
Chi;LT,Z = 1.00	lkip = 4.250 m		UC(z) = 0.00
My;begin = 6.9 kNm	My;eind = -2.3 kNm		

NEN-EN1993-1-1(6.54): UC = 0.03 < 1

Stabiliteitstoetsing C4-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10

N;Ed = -150.7 kN	Nb;Rd;y = 1,879.3 kN	Nb;Rd;z = 1,483.2 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 4.250 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 4.250 m
Xy = 0.92		Knikcurve: B	
Xz = 0.73		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.10 < 1

Buiging & Druk C4-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -150.7 kN	My;Ed = 6.9 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 6.9 kNm	My;Psi = -2.3 kNm	My;s = 4.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.68	Cmz = 1.00	CmLT = 0.68	
Kyy = 0.687	Kyz = 0.648	Kzy = 0.983	Kzz = 1.081
Ksi;y = 0.92	Ksi;z = 0.73	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.14 < 1

Doorbuigingstoetsing X C4-V1 (0.000-4.250)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = -1.7 mm (Ka.C.9)

Limiet u;i;max = H/300 = 14.2 mm

UC(u;i;max) = 0.1

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.12<1

Profielgegevens staaf C5-V1 (0.000-2.400)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C5-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10 op 0.000 m — Profielklasse = 1

N;Ed = -0.7 kN	Vy;Ed = 0.0 kN	My;Ed = -2.3 kNm
	Vz;Ed = 1.9 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.06 < 1

Kiptoetsing C5-V1 (0.000-2.400)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.21 — Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 0.8kN/m	= 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 2.400 m	Ist = 1.968 m
Lsys = 2.400 m	Lg = 2.400 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = 0.00	C = 7.13

Mcr = 217.7 kNm	kred = 1.0	Lam-rel = 0.43	Profielklasse 1
Chi;LT(Fu.C.21) = 0.94	M;Ed = 2.3 kNm		UC(y) = 0.06
Chi;LT,Z = 1.00	lkip = 2.400 m		UC(z) = 0.00
My;begin = -2.3 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.06 < 1

Stabiliteitstoetsing C5-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10

N;Ed = -0.7 kN	Nb;Rd;y = 670.0 kN	Nb;Rd;z = 523.1 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.400 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.400 m
Xy = 0.91		Knikcurve: B	
Xz = 0.71		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.00 < 1

Buiging & Druk C5-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -0.7 kN	My;Ed = 2.3 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -2.3 kNm	My;Psi = 0.0 kNm	My;s = -0.6 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.400	Kyz = 0.601	Kzy = 0.999	Kzz = 1.001
Ksi;y = 0.91	Ksi;z = 0.71	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.06 < 1

Doorbuigingstoetsing X C5-V1 (0.000-2.400)

Constructietype : Kolom

Toets type: 1 bouwlaag

u;i;3 = -0.3 mm (Ka.C.9)

Limiet u;i;max = H/300 = 8.0 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.03<1

Profielgegevens staaf C6-V1 (0.000-9.050)

HE260A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 250.0 mm	A = 8.68e-03 m2	Wy;el = 836.4e-06 m3	Wy;pl = 919.8e-06 m3
b = 260.0 mm	Iy = 104.5e-06 m4	Wz;el = 282.1e-06 m3	Wz;pl = 430.2e-06 m3
tf = 12.5 mm	Iz = 366.8e-07 m4	Aw;y;el = 6.99e-03 m2	Aw;y;pl = 6.99e-03 m2
tw = 7.5 mm	Massa/m = 68.2 kg/m	Aw;z;el = 2.88e-03 m2	Aw;z;pl = 2.88e-03 m2
r = 24.0 mm		It = 523.7e-09 m4	Iwa = 516.4e-09 m6

Doorsnedetoetsing C6-V1 (0.000-9.050)

Maatgevende combinatie: Fu.C.10 op 4.207 m

Profielklasse = 1

N;Ed = -168.6 kN	Vy;Ed = 0.0 kN	My;Ed = 48.4 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,040.3 kN	Vy;Rd = 949.0 kN	MyRd = 216.1 kNm
	Vz;Rd = 390.2 kN	MzRd = 101.1 kNm

NEN-EN1993-1-1(6.12): UC = 0.22 < 1

Kiptoetsing C6-V1 (0.000-9.050)

Equi. profiel: HE260A

Maatgevende combinatie: Fu.C.21

Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.018	b-eff(Eind) = 0.021
Tabel gebruikt Fig. NB.32	M = -15.8kN/m	MBeta = 0.0	q = 5.5
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 9.050 m	lst = 9.050 m
Lsys = 9.050 m	Lg = 9.050 m	S = 1.601 m	Iwa = 5.1635e-07 m6
C1 = 1.15	C2 = 0.54 (tabel)	C2(toegepast) = 0.00	C = 4.14
Mcr = 261.3 kNm	kred = 1.0	Lam-rel = 0.91	Profielklasse 1

Chi;LT(Fu.C.21) = 0.73	M;Ed = 48.4 kNm	UC(y) = 0.31
Chi;LT,Z = 1.00	lkip = 9.050 m	UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -15.8 kNm	

NEN-EN1993-1-1(6.54): UC = 0.31 < 1

Stabiliteitstoetsing C6-V1 (0.000-9.050)

Maatgevende combinatie: Fu.C.10

N;Ed = -172.0 kN	Nb;Rd;y = 1,377.6 kN	Nb;Rd;z = 653.3 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 9.050 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 9.050 m
Xy = 0.68		Knikcurve: B	
Xz = 0.32		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.26 < 1

Buiging & Druk C6-V1 (0.000-9.050)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -172.0 kN	My;Ed = 48.4 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = 48.2 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.93	Cmz = 1.00	CmLT = 0.93	
Kyy = 1.013	Kyz = 0.821	Kzy = 0.961	Kzz = 1.369
Ksi;y = 0.68	Ksi;z = 0.32	Ksi;LT = 0.73	

NEN-EN1993-1-1(6.61&6.62): UC = 0.56 < 1

Doorbuigingstoetsing X C6-V1 (0.000-9.050)

Constructietype : Kolom	Toets type: 1 bouwlaag
u;i;3 = 0.0 mm (Ka.C.1)	
Limiet u;i;max = H/300 = 30.2 mm	
UC(u;i;max) = 0.0	

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C7-V1 (0.000-2.400)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C7-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10 op 0.000 m		Profielklasse = 1	
N;Ed = -0.7 kN	Vy;Ed = 0.0 kN	My;Ed = -15.8 kNm	
	Vz;Ed = 13.1 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.12): UC = 0.39 < 1

Kiptoetsing C7-V1 (0.000-2.400)

Equi. profiel: HE140A			
Maatgevende combinatie: Fu.C.21		Instab. curve Kip:a	
Aangrijphoogte van de last: 0.000 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 5.5kN/m	= 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 2.400 m	Ist = 1.968 m
Lsys = 2.400 m	Lg = 2.400 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = 0.00	C = 7.13
Mcr = 217.7 kNm	kred = 1.0	Lam-rel = 0.43	Profielklasse 1
Chi;LT(Fu.C.21) = 0.94	M;Ed = 15.8 kNm		UC(y) = 0.41

Chi;LT,Z = 1.00 | lkip = 2.400 m | UC(z) = 0.00
My;begin = -15.8 kNm | My;eind = 0.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.41 < 1

Stabiliteitstoetsing C7-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10

N;Ed = -0.7 kN	Nb;Rd;y = 670.0 kN	Nb;Rd;z = 523.1 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.400 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.400 m
Xy = 0.91		Knikcurve: B	
Xz = 0.71		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.00 < 1

Buiging & Druk C7-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -0.7 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -3.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.400	Kyz = 0.601	Kzy = 0.999	Kzz = 1.001
Ksi;y = 0.91	Ksi;z = 0.71	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.41 < 1

Doorbuigingstoetsing X C7-V1 (0.000-2.400)

Constructietype : Kolom | Toets type: 1 bouwlaag
u;i;3 = -1.9 mm (Ka.C.9)
Limiet u;i;max = H/300 = 8.0 mm
UC(u;i;max) = 0.2
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.23<1

Profielgegevens staaf C8-V1 (0.000-9.050)

HE260A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 250.0 mm	A = 8.68e-03 m2	Wy;el = 836.4e-06 m3	Wy;pl = 919.8e-06 m3
b = 260.0 mm	Iy = 104.5e-06 m4	Wz;el = 282.1e-06 m3	Wz;pl = 430.2e-06 m3
tf = 12.5 mm	Iz = 366.8e-07 m4	Aw;y;el = 6.99e-03 m2	Aw;y;pl = 6.99e-03 m2
tw = 7.5 mm	Massa/m = 68.2 kg/m	Aw;z;el = 2.88e-03 m2	Aw;z;pl = 2.88e-03 m2
r = 24.0 mm		It = 523.7e-09 m4	Iwa = 516.4e-09 m6

Doorsnedetoetsing C8-V1 (0.000-9.050)

Maatgevende combinatie: Fu.C.11 op 4.207 m		Profielklasse = 1	
N;Ed = -222.6 kN	Vy;Ed = 0.0 kN	My;Ed = 48.4 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,040.3 kN	Vy;Rd = 949.0 kN	MyRd = 216.1 kNm	
	Vz;Rd = 390.2 kN	MzRd = 101.1 kNm	

NEN-EN1993-1-1(6.12): UC = 0.22 < 1

Kiptoetsing C8-V1 (0.000-9.050)

Equi. profiel: HE260A
Maatgevende combinatie: Fu.C.21 | Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.018	b-eff(Eind) = 0.021
Tabel gebruikt Fig. NB.32	M = -15.8kN/m	MBeta = 0.0	q = 5.5
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 9.050 m	lst = 9.050 m
Lsys = 9.050 m	Lg = 9.050 m	S = 1.601 m	Iwa = 5.1635e-07 m6
C1 = 1.15	C2 = 0.54 (tabel)	C2(toegepast) = 0.00	C = 4.14
Mcr = 261.3 kNm	kred = 1.0	Lam-rel = 0.91	Profielklasse 1
Chi;LT(Fu.C.21) = 0.73	M;Ed = 48.4 kNm		UC(y) = 0.31
Chi;LT,Z = 1.00	lkip = 9.050 m		UC(z) = 0.00

My;begin = 0.0 kNm My;eind = -15.8 kNm
NEN-EN1993-1-1(6.54): UC = 0.31 < 1

Stabiliteitstoetsing C8-V1 (0.000-9.050)
Maatgevende combinatie: Fu.C.11

N;Ed = -226.0 kN	Nb;Rd;y = 1,377.6 kN	Nb;Rd;z = 653.3 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 9.050 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 9.050 m
Xy = 0.68		Knikcurve: B	
Xz = 0.32		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.35 < 1

Buiging & Druk C8-V1 (0.000-9.050)

Maatgevende combinatie: Fu.C.11	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -226.0 kN	My;Ed = 48.4 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = 48.2 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.93	Cmz = 1.00	CmLT = 0.93	
Kyy = 1.038	Kyz = 0.891	Kzy = 0.949	Kzz = 1.484
Ksi;y = 0.68	Ksi;z = 0.32	Ksi;LT = 0.73	

NEN-EN1993-1-1(6.61&6.62): UC = 0.64 < 1

Doorbuigingstoetsing X C8-V1 (0.000-9.050)

Constructietype : Kolom	Toets type: 1 bouwlaag
u;i;3 = 0.0 mm (Ka.C.1)	
Limiet u;i;max = H/300 = 30.2 mm	
UC(u;i;max) = 0.0	

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C9-V1 (0.000-2.400)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C9-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10 op 0.000 m		Profielklasse = 1	
N;Ed = -0.7 kN	Vy;Ed = 0.0 kN	My;Ed = -15.8 kNm	
	Vz;Ed = 13.1 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.12): UC = 0.39 < 1

Kiptoetsing C9-V1 (0.000-2.400)

Equi. profiel: HE140A			
Maatgevende combinatie: Fu.C.21		Instab. curve Kip:a	
Aangrijphoogte van de last: 0.000 m vanaf hart profiel			
Kipsteun bovenflens: N.v.t.			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 5.5kN/m	= 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 2.400 m	Ist = 1.968 m
Lsys = 2.400 m	Lg = 2.400 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = 0.00	C = 7.13
Mcr = 217.7 kNm	kred = 1.0	Lam-rel = 0.43	Profielklasse 1
Chi;LT(Fu.C.21) = 0.94	M;Ed = 15.8 kNm		UC(y) = 0.41
Chi;LT,Z = 1.00	Ikip = 2.400 m		UC(z) = 0.00
My;begin = -15.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.41 < 1

Stabiliteitstoetsing C9-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10

N;Ed = -0.7 kN	Nb;Rd;y = 670.0 kN	Nb;Rd;z = 523.1 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.400 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.400 m
Xy = 0.91		Knikcurve: B	
Xz = 0.71		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.00 < 1

Buiging & Druk C9-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -0.7 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -3.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.400	Kyz = 0.601	Kzy = 0.999	Kzz = 1.001
Ksi;y = 0.91	Ksi;z = 0.71	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.41 < 1

Doorbuigingstoetsing X C9-V1 (0.000-2.400)

Constructietype : Kolom

Toets type: 1 bouwlaag

u;i;3 = -1.9 mm (Ka.C.9)

Limiet u;i;max = H/300 = 8.0 mm

UC(u;i;max) = 0.2

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.23<1

Profielgegevens staaf C10-V1 (0.000-9.050)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C10-V1 (0.000-9.050)

Maatgevende combinatie: Fu.C.11 op 0.000 m		Profielklasse = 1
N;Ed = -485.8 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm

NEN-EN1993-1-1(6.9): UC = 0.21 < 1

Kiptoetsing C10-V1 (0.000-9.050)

Equi. profiel: HE280A

Maatgevende combinatie: Fu.C.8

Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.002	b-eff(Eind) = 0.002
Tabel gebruikt NB 6.1	M = 23.9kN/m	MBeta = 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 9.050 m	lst = 9.050 m
Lsys = 9.050 m	Lg = 9.050 m	S = 1.813 m	Iwa = 7.8537e-07 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 6.50
Mcr = 508.4 kNm	kred = 1.0	Lam-rel = 0.72	Profielklasse 1
Chi;LT(Fu.C.8) = 0.84	M;Ed = 23.9 kNm		UC(y) = 0.11
Chi;LT,Z = 1.00	lkip = 9.050 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 23.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.11 < 1

Stabiliteitstoetsing C10-V1 (0.000-9.050)

Maatgevende combinatie: Fu.C.5

N;Ed = -475.0 kN	Nb;Rd;y = 1,637.8 kN	Nb;Rd;z = 817.9 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 9.050 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 9.050 m
Xy = 0.72		Knikcurve: B	
Xz = 0.36		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.58 < 1

Buiging & Druk C10-V1 (0.000-9.050)

Maatgevende combinatie: Fu.C.5	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -475.0 kN	My;Ed = 23.9 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 23.9 kNm	My;Psi = 0.0 kNm	My;s = 12.0 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.60	Cmz = 1.00	CmLT = 0.60	
Kyy = 0.707	Kyz = 1.088	Kzy = 0.834	Kzz = 1.813
Ksi;y = 0.72	Ksi;z = 0.36	Ksi;LT = 0.84	

NEN-EN1993-1-1(6.61&6.62): UC = 0.67 < 1

Doorbuigingstoetsing X C10-V1 (0.000-9.050)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 30.2 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C11-V1 (0.000-2.400)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C11-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1	
N;Ed = -29.6 kN	Vy;Ed = 0.0 kN	My;Ed = 23.9 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm	
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.09 < 1

Kiptoetsing C11-V1 (0.000-2.400)

Equi. profiel: HE280A

Maatgevende combinatie: Fu.C.21 — Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 18.8kN/m	= 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 2.400 m	lst = 1.968 m
Lsys = 2.400 m	Lg = 2.400 m	S = 1.813 m	Iwa = 7.8537e-07 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = 0.00	C = 13.59
Mcr = 4,011.8 kNm	kred = 1.0	Lam-rel = 0.26	Profielklasse 1
Chi;LT(Fu.C.21) = 0.99	M;Ed = 11.9 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 2.400 m		UC(z) = 0.00
My;begin = -3.9 kNm	My;eind = 11.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Stabiliteitstoetsing C11-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2

N;Ed = -29.6 kN	Nb;Rd;y = 2,273.1 kN	Nb;Rd;z = 2,092.7 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.400 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.400 m
Xy = 0.99		Knikcurve: B	
Xz = 0.92		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.01 < 1

Buiging & Druk C11-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -29.6 kN	My;Ed = 11.9 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 23.9 kNm	My;Psi = 23.9 kNm	My;s = 23.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 1.00	Cmz = 1.00	CmLT = 1.00	
Kyy = 1.000	Kyz = 0.601	Kzy = 0.965	Kzz = 1.002
Ksi;y = 0.99	Ksi;z = 0.92	Ksi;LT = 0.97	

NEN-EN1993-1-1(6.61&6.62): UC = 0.11 < 1

Doorbuigingstoetsing X C11-V1 (0.000-2.400)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = -6.6 mm (Ka.C.1)

Limiet u;i;max = H/300 = 8.0 mm

UC(u;i;max) = 0.8

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.82<1

Profielgegevens staaf C12-V1 (0.000-4.800)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C12-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.11 op 0.000 m		Profielklasse = 1	
N;Ed = -611.8 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = -0.7 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm	
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm	

NEN-EN1993-1-1(6.9): UC = 0.27 < 1

Kiptoetsing C12-V1 (0.000-4.800)

Equi. profiel: HE280A

Maatgevende combinatie: Fu.C.8 — Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.001	b-eff(Eind) = 0.001
Tabel gebruikt NB 6.1	M = -11.9kN/m	MBeta = 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 4.800 m	Ist = 4.800 m
Lsys = 4.800 m	Lg = 4.800 m	S = 1.813 m	Iwa = 7.8537e-07 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 8.53
Mcr = 1,259.0 kNm	kred = 1.0	Lam-rel = 0.46	Profielklasse 1
Chi;LT(Fu.C.8) = 0.94	M;Ed = 11.9 kNm		UC(y) = 0.05
Chi;LT,Z = 1.00	Ikip = 4.800 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -11.9 kNm		

NEN-EN1993-1-1(6.54): UC = 0.05 < 1

Stabiliteitstoetsing C12-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.11

N;Ed = -611.8 kN	Nb;Rd;y = 2,088.1 kN	Nb;Rd;z = 1,613.2 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 4.800 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 4.800 m
Xy = 0.91		Knikcurve: B	
Xz = 0.71		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.38 < 1

Buiging & Druk C12-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.11	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -611.8 kN	My;Ed = 11.9 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -3.2 kNm	My;Psi = 0.0 kNm	My;s = -1.6 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.60	Cmz = 1.00	CmLT = 0.60	
Kyy = 0.641	Kyz = 0.796	Kzy = 0.921	Kzz = 1.326
Ksi;y = 0.91	Ksi;z = 0.71	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.39 < 1

Doorbuigingstoetsing X C12-V1 (0.000-4.800)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 16.0 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C13-V1 (0.000-4.250)

HE280A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 9.73e-03 m2	Wy;el = 101.3e-05 m3	Wy;pl = 111.2e-05 m3
b = 280.0 mm	Iy = 136.7e-06 m4	Wz;el = 340.2e-06 m3	Wz;pl = 518.1e-06 m3
tf = 13.0 mm	Iz = 476.3e-07 m4	Aw;y;el = 7.77e-03 m2	Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm	Massa/m = 76.4 kg/m	Aw;z;el = 3.17e-03 m2	Aw;z;pl = 3.17e-03 m2
r = 24.0 mm		It = 621.0e-09 m4	Iwa = 785.4e-09 m6

Doorsnedetoetsing C13-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.2 op 4.250 m		Profielklasse = 1	
N;Ed = -67.8 kN	Vy;Ed = 0.0 kN	My;Ed = 50.5 kNm	
	Vz;Ed = 14.7 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,285.7 kN	Vy;Rd = 1,054.8 kN	MyRd = 261.4 kNm	
	Vz;Rd = 430.7 kN	MzRd = 121.8 kNm	

NEN-EN1993-1-1(6.12): UC = 0.19 < 1

Kiptoetsing C13-V1 (0.000-4.250)

Equi. profiel: HE280A

Maatgevende combinatie: Fu.C.21 — Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.001	b-eff(Eind) = 0.001
Tabel gebruikt NB 6.1	M = 6.4kN/m	MBeta = -1.5	
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 4.250 m	Ist = 4.250 m
Lsys = 4.250 m	Lg = 4.250 m	S = 1.813 m	Iwa = 7.8537e-07 m6
C1 = 2.01	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 10.58
Mcr = 1,762.6 kNm	kred = 1.0	Lam-rel = 0.39	Profielklasse 1
Chi;LT(Fu.C.21) = 0.96	M;Ed = 6.4 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 4.250 m		UC(z) = 0.00
My;begin = -1.5 kNm	My;eind = 6.4 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Stabiliteitstoetsing C13-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.5

N;Ed = -100.7 kN | Nb;Rd;y = 2,133.2 kN | Nb;Rd;z = 1,731.1 kN
Methode Y = Cons. gesch. | Ca(y) = 0.000 | Cb(y) = 0.000 | Lknik Y = 4.250 m
Methode Z = Cons. gesch. | Ca(z) = N/B | Cb(z) = N/B | Lbuc Z = 4.250 m
Xy = 0.93 | Knikcurve: B
Xz = 0.76 | Knikcurve: C
NEN-EN1993-1-1(6.46): UC = 0.06 < 1

Buiging & Druk C13-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.5 | Kipgevoelig Ja | Profielklasse = 1
N;Ed = -100.7 kN | My;Ed = 6.4 kNm | Mz;Ed = 0.0 kNm
Delta;My;Ed = 0.0 kNm | Delta;Mz;Ed = 0.0 kNm
My = 50.5 kNm | My;Psi = -11.9 kNm | My;s = 19.3 kNm
Mz = 0.0 kNm | Mz;Psi = 0.0 kNm | Mz;s = 0.0 kNm
Cmy = 0.51 | Cmz = 1.00 | CmLT = 0.51
Kyy = 0.510 | Kyz = 0.624 | Kzy = 0.985 | Kzz = 1.040
Ksi;y = 0.93 | Ksi;z = 0.76 | Ksi;LT = 0.96
NEN-EN1993-1-1(6.61&6.62): UC = 0.26 < 1

Doorbuigingstoetsing X C13-V1 (0.000-4.250)

Constructietype : Kolom | Toets type: 1 bouwlaag
u;i;3 = 0.0 mm (Ka.C.1)
Limiet u;i;max = H/300 = 14.2 mm
UC(u;i;max) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C14-V1 (0.000-2.400)

HE280A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 270.0 mm | A = 9.73e-03 m2 | Wy;el = 101.3e-05 m3 | Wy;pl = 111.2e-05 m3
b = 280.0 mm | Iy = 136.7e-06 m4 | Wz;el = 340.2e-06 m3 | Wz;pl = 518.1e-06 m3
tf = 13.0 mm | Iz = 476.3e-07 m4 | Aw;y;el = 7.77e-03 m2 | Aw;y;pl = 7.77e-03 m2
tw = 8.0 mm | Massa/m = 76.4 kg/m | Aw;z;el = 3.17e-03 m2 | Aw;z;pl = 3.17e-03 m2
r = 24.0 mm | It = 621.0e-09 m4 | Iwa = 785.4e-09 m6

Doorsnedetoetsing C14-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2 op 0.000 m | Profielklasse = 1
N;Ed = -54.2 kN | Vy;Ed = 0.0 kN | My;Ed = 50.5 kNm
Vz;Ed = 0.0 kN | Mz;Ed = 0.0 kNm
N;Rd = 2,285.7 kN | Vy;Rd = 1,054.8 kN | MyRd = 261.4 kNm
Vz;Rd = 430.7 kN | MzRd = 121.8 kNm
NEN-EN1993-1-1(6.12): UC = 0.19 < 1

Kiptoetsing C14-V1 (0.000-2.400)

Equi. profiel: HE280A
Maatgevende combinatie: Fu.C.21 | Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.
Inklem. begin: Gesteund | Beperk. eind: Overstek | b-eff(Begin) = 0.000 | b-eff(Eind) = 0.000
Tabel gebruikt NB 6.5 | M = 16.9kN/m | = 0.0
Bovenflens maatgevend | Xb;lst = 0.000 m | Xe;lst = 2.400 m | lst = 4.800 m
Lsys = 2.400 m | Lg = 2.400 m | S = 1.813 m | Iwa = 7.8537e-07 m6
C1 = 1.00 | C2 = 0.00 (tabel) | C2(toegepast) = 0.00 | C = 8.09
Mcr = 2,388.0 kNm | kred = 1.0 | Lam-rel = 0.33 | Profielklasse 1
Chi;LT(Fu.C.21) = 0.97 | M;Ed = 22.1 kNm | UC(y) = 0.00
Chi;LT,Z = 1.00 | lkip = 2.400 m | UC(z) = 0.00
My;begin = 6.4 kNm | My;eind = 22.1 kNm
NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Stabiliteitstoetsing C14-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2
N;Ed = -54.2 kN | Nb;Rd;y = 2,273.1 kN | Nb;Rd;z = 2,092.7 kN

Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.400 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.400 m
Xy = 0.99		Knikcurve: B	
Xz = 0.92		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.03 < 1

Buiging & Druk C14-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -54.2 kN	My;Ed = 22.1 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 50.5 kNm	My;Psi = 50.5 kNm	My;s = 50.5 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 1.00	Cmz = 1.00	CmLT = 1.00	
Kyy = 1.000	Kyz = 0.602	Kzy = 0.965	Kzz = 1.003
Ksi;y = 0.99	Ksi;z = 0.92	Ksi;LT = 0.97	

NEN-EN1993-1-1(6.61&6.62): UC = 0.22 < 1

Doorbuigingstoetsing X C14-V1 (0.000-2.400)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = -7.9 mm (Ka.C.1)

Limiet u;i;max = H/300 = 8.0 mm

UC(u;i;max) = 1.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.99<1

Profielgegevens staaf C15-V1 (0.000-4.800)

HE240A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 230.0 mm	A = 7.68e-03 m2	Wy;el = 675.1e-06 m3	Wy;pl = 744.6e-06 m3
b = 240.0 mm	Iy = 776.3e-07 m4	Wz;el = 230.7e-06 m3	Wz;pl = 351.7e-06 m3
tf = 12.0 mm	Iz = 276.9e-07 m4	Aw;y;el = 6.14e-03 m2	Aw;y;pl = 6.14e-03 m2
tw = 7.5 mm	Massa/m = 60.3 kg/m	Aw;z;el = 2.52e-03 m2	Aw;z;pl = 2.52e-03 m2
r = 21.0 mm		It = 415.5e-09 m4	Iwa = 328.5e-09 m6

Doorsnedetoetsing C15-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.9 op 0.000 m		Profielklasse = 1	
N;Ed = -460.0 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 1,805.6 kN	Vy;Rd = 832.9 kN	MyRd = 175.0 kNm	
	Vz;Rd = 341.6 kN	MzRd = 82.6 kNm	

NEN-EN1993-1-1(6.9): UC = 0.25 < 1

Doorbuigingstoetsing X C15-V1 (0.000-4.800)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 16.0 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C16-V1 (0.000-4.250)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C16-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10 op 4.250 m		Profielklasse = 1	
N;Ed = -44.9 kN	Vy;Ed = 0.0 kN	My;Ed = -15.8 kNm	
	Vz;Ed = -3.7 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	

Vz;Rd = 137.4 kN MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.39 < 1

Kiptoetsing C16-V1 (0.000-4.250)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.21 Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.003	b-eff(Eind) = 0.003
Tabel gebruikt NB 6.1	M = -15.8kN/m	MBeta = 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 4.250 m	Ist = 4.250 m
Lsys = 4.250 m	Lg = 4.250 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 6.18
Mcr = 106.5 kNm	kred = 1.0	Lam-rel = 0.62	Profielklasse 1
Chi;LT(Fu.C.21) = 0.88	M;Ed = 15.8 kNm		UC(y) = 0.44
Chi;LT,Z = 1.00	Ikip = 4.250 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -15.8 kNm		

NEN-EN1993-1-1(6.54): UC = 0.44 < 1

Stabiliteitstoetsing C16-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10

N;Ed = -46.1 kN	Nb;Rd;y = 539.8 kN	Nb;Rd;z = 291.6 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 4.250 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 4.250 m
Xy = 0.73		Knikcurve: B	
Xz = 0.39		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.16 < 1

Buiging & Druk C16-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -46.1 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -7.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.60	Cmz = 1.00	CmLT = 0.60	
Kyy = 0.630	Kyz = 0.733	Kzy = 0.955	Kzz = 1.221
Ksi;y = 0.73	Ksi;z = 0.39	Ksi;LT = 0.88	

NEN-EN1993-1-1(6.61&6.62): UC = 0.58 < 1

Doorbuigingstoetsing X C16-V1 (0.000-4.250)

Constructietype : Kolom Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 14.2 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C17-V1 (0.000-2.400)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C17-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10 op 0.000 m		Profielklasse = 1	
N;Ed = -18.1 kN	Vy;Ed = 0.0 kN	My;Ed = -15.8 kNm	
	Vz;Ed = 13.1 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.12): UC = 0.39 < 1

Kiptoetsing C17-V1 (0.000-2.400)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.21 — Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 5.5kN/m	= 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 2.400 m	Ist = 1.968 m
Lsys = 2.400 m	Lg = 2.400 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = 0.00	C = 7.13
Mcr = 217.7 kNm	kred = 1.0	Lam-rel = 0.43	Profielklasse 1
Chi;LT(Fu.C.21) = 0.94	M;Ed = 15.8 kNm		UC(y) = 0.41
Chi;LT,Z = 1.00	Ikip = 2.400 m		UC(z) = 0.00
My;begin = -15.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.41 < 1

Stabiliteitstoetsing C17-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10

N;Ed = -18.1 kN	Nb;Rd;y = 670.0 kN	Nb;Rd;z = 523.1 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.400 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.400 m
Xy = 0.91		Knikcurve: B	
Xz = 0.71		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.03 < 1

Buiging & Druk C17-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -18.1 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -3.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.403	Kyz = 0.618	Kzy = 0.983	Kzz = 1.029
Ksi;y = 0.91	Ksi;z = 0.71	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.44 < 1

Doorbuigingstoetsing X C17-V1 (0.000-2.400)

Constructietype : Kolom — Toets type: 1 bouwlaag
u;i;3 = 23.5 mm (Ka.C.9)
Limiet u;i;max = H/300 = 8.0 mm
UC(u;i;max) = 2.9
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 2.93>1

Profielgegevens staaf C18-V1 (0.000-4.800)

HE240A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 230.0 mm	A = 7.68e-03 m2	Wy;el = 675.1e-06 m3	Wy;pl = 744.6e-06 m3
b = 240.0 mm	Iy = 776.3e-07 m4	Wz;el = 230.7e-06 m3	Wz;pl = 351.7e-06 m3
tf = 12.0 mm	Iz = 276.9e-07 m4	Aw;y;el = 6.14e-03 m2	Aw;y;pl = 6.14e-03 m2
tw = 7.5 mm	Massa/m = 60.3 kg/m	Aw;z;el = 2.52e-03 m2	Aw;z;pl = 2.52e-03 m2
r = 21.0 mm		It = 415.5e-09 m4	Iwa = 328.5e-09 m6

Doorsnedetoetsing C18-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.11 op 0.000 m		Profielklasse = 1	
N;Ed = -420.9 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 1,805.6 kN	Vy;Rd = 832.9 kN	MyRd = 175.0 kNm	
	Vz;Rd = 341.6 kN	MzRd = 82.6 kNm	

NEN-EN1993-1-1(6.9): UC = 0.23 < 1

Doorbuigingstoetsing X C18-V1 (0.000-4.800)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 16.0 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C19-V1 (0.000-4.250)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C19-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10 op 4.250 m — Profielklasse = 1

N;Ed = -155.9 kN	Vy;Ed = 0.0 kN	My;Ed = -15.8 kNm
	Vz;Ed = -3.7 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MNyRd = 36.6 kNm
	Vz;Rd = 137.4 kN	MNzRd = 19.9 kNm

NEN-EN1993-1-1(6.31): UC = 0.43 < 1

Kiptoetsing C19-V1 (0.000-4.250)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.21 — Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.003	b-eff(Eind) = 0.003
Tabel gebruikt NB 6.1	M = -15.8kN/m	MBeta = 0.0	
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 4.250 m	lst = 4.250 m
Lsys = 4.250 m	Lg = 4.250 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 6.18
Mcr = 106.5 kNm	kred = 1.0	Lam-rel = 0.62	Profielklasse 1
Chi;LT(Fu.C.21) = 0.88	M;Ed = 15.8 kNm		UC(y) = 0.44
Chi;LT,Z = 1.00	lkip = 4.250 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -15.8 kNm		

NEN-EN1993-1-1(6.54): UC = 0.44 < 1

Stabiliteitstoetsing C19-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10

N;Ed = -157.1 kN	Nb;Rd;y = 539.8 kN	Nb;Rd;z = 291.6 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 4.250 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 4.250 m
Xy = 0.73		Knikcurve: B	
Xz = 0.39		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.54 < 1

Buiging & Druk C19-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -157.1 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -7.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.60	Cmz = 1.00	CmLT = 0.60	
Kyy = 0.703	Kyz = 1.053	Kzy = 0.846	Kzz = 1.754
Ksi;y = 0.73	Ksi;z = 0.39	Ksi;LT = 0.88	

NEN-EN1993-1-1(6.61&6.62): UC = 0.91 < 1

Doorbuigingstoetsing X C19-V1 (0.000-4.250)

Constructietype : Kolom — Toets type: 1 bouwlaag
u;i;3 = 0.0 mm (Ka.C.1)
Limiet u;i;max = H/300 = 14.2 mm
UC(u;i;max) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C20-V1 (0.000-2.400)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C20-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10 op 0.000 m — Profielklasse = 1

N;Ed = -7.3 kN	Vy;Ed = 0.0 kN	My;Ed = -15.8 kNm
	Vz;Ed = 13.1 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.39 < 1

Kiptoetsing C20-V1 (0.000-2.400)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.21 — Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 5.5kN/m	= 0.0	
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 2.400 m	lst = 1.968 m
Lsys = 2.400 m	Lg = 2.400 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = 0.00	C = 7.13
Mcr = 217.7 kNm	kred = 1.0	Lam-rel = 0.43	Profielklasse 1
Chi;LT(Fu.C.21) = 0.94	M;Ed = 15.8 kNm		UC(y) = 0.41
Chi;LT,Z = 1.00	lkip = 2.400 m		UC(z) = 0.00
My;begin = -15.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.41 < 1

Stabiliteitstoetsing C20-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10

N;Ed = -7.3 kN	Nb;Rd;y = 670.0 kN	Nb;Rd;z = 523.1 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.400 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.400 m
Xy = 0.91		Knikcurve: B	
Xz = 0.71		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.01 < 1

Buiging & Druk C20-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -7.3 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -3.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.401	Kyz = 0.607	Kzy = 0.993	Kzz = 1.012
Ksi;y = 0.91	Ksi;z = 0.71	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.42 < 1

Doorbuigingstoetsing X C20-V1 (0.000-2.400)

Constructietype : Kolom
Toets type: 1 bouwlaag
u;i;3 = 23.5 mm (Ka.C.9)
Limiet u;i;max = H/300 = 8.0 mm
UC(u;i;max) = 2.9
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 2.93>1

Profielgegevens staaf C21-V1 (0.000-4.800)

KW200/12.5	Analyse	Staal S235H(EN 10210-1)	fyd(toegepast) = 235 N/mm2
h = 200.0 mm	A = 9.14e-03 m2	Wy;el = 524.8e-06 m3	Wy;pl = 634.6e-06 m3
b = 200.0 mm	Iy = 524.8e-07 m4	Wz;el = 524.8e-06 m3	Wz;pl = 634.6e-06 m3
tf = 12.5 mm	Iz = 524.8e-07 m4	Aw;y;el = 4.57e-03 m2	Aw;y;pl = 4.57e-03 m2
tw = 12.5 mm	Massa/m = 71.8 kg/m	Aw;z;el = 4.57e-03 m2	Aw;z;pl = 4.57e-03 m2
r = 18.8 mm		It = 824.0e-07 m4	Iwa = 461.2e-09 m6

Doorsnedetoetsing C21-V1 (0.000-4.800)

Maatgevende combinatie: Fu.C.5 op 0.000 m
Profielklasse = 1

N;Ed = -647.3 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,148.0 kN	Vy;Rd = 620.1 kN	MyRd = 149.1 kNm
	Vz;Rd = 620.1 kN	MzRd = 149.1 kNm

NEN-EN1993-1-1(6.9): UC = 0.30 < 1

Doorbuigingstoetsing X C21-V1 (0.000-4.800)

Constructietype : Kolom
Toets type: 1 bouwlaag
u;i;3 = 0.0 mm (Ka.C.1)
Limiet u;i;max = H/300 = 16.0 mm
UC(u;i;max) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C22-V1 (0.000-4.250)

HE180B	Analyse	Staal S235	fyd(toegepast) = 235 N/mm2
h = 180.0 mm	A = 6.53e-03 m2	Wy;el = 425.7e-06 m3	Wy;pl = 481.4e-06 m3
b = 180.0 mm	Iy = 383.1e-07 m4	Wz;el = 151.4e-06 m3	Wz;pl = 231.0e-06 m3
tf = 14.0 mm	Iz = 136.3e-07 m4	Aw;y;el = 5.23e-03 m2	Aw;y;pl = 5.23e-03 m2
tw = 8.5 mm	Massa/m = 51.2 kg/m	Aw;z;el = 2.02e-03 m2	Aw;z;pl = 2.02e-03 m2
r = 15.0 mm		It = 421.6e-09 m4	Iwa = 937.5e-10 m6

Doorsnedetoetsing C22-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.5 op 0.000 m
Profielklasse = 1

N;Ed = -315.9 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,533.4 kN	Vy;Rd = 710.0 kN	MyRd = 113.1 kNm
	Vz;Rd = 274.6 kN	MzRd = 54.3 kNm

NEN-EN1993-1-1(6.9): UC = 0.21 < 1

Kiptoetsing C22-V1 (0.000-4.250)

Equi. profiel: HE180B
Maatgevende combinatie: Fu.C.21
Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.002	b-eff(Eind) = 0.002
Tabel gebruikt NB 6.1	M = -15.8kN/m	MBeta = 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 4.250 m	Ist = 4.250 m
Lsys = 4.250 m	Lg = 4.250 m	S = 0.760 m	Iwa = 9.3746e-08 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 6.31
Mcr = 463.3 kNm	kred = 1.0	Lam-rel = 0.49	Profielklasse 1
Chi;LT(Fu.C.21) = 0.93	M;Ed = 15.8 kNm		UC(y) = 0.15
Chi;LT,Z = 1.00	Ikip = 4.250 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -15.8 kNm		

NEN-EN1993-1-1(6.54): UC = 0.15 < 1

Stabiliteitstoetsing C22-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10

N;Ed = -305.1 kN	Nb;Rd;y = 1,290.7 kN	Nb;Rd;z = 836.7 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 4.250 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 4.250 m
Xy = 0.84		Knikcurve: B	
Xz = 0.55		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.36 < 1

Buiging & Druk C22-V1 (0.000-4.250)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -305.1 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -7.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.60	Cmz = 1.00	CmLT = 0.60	
Kyy = 0.655	Kyz = 0.902	Kzy = 0.897	Kzz = 1.503
Ksi;y = 0.84	Ksi;z = 0.55	Ksi;LT = 0.93	

NEN-EN1993-1-1(6.61&6.62): UC = 0.50 < 1

Doorbuigingstoetsing X C22-V1 (0.000-4.250)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 14.2 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C23-V1 (0.000-2.400)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C23-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10 op 0.000 m		Profielklasse = 1	
N;Ed = -11.4 kN	Vy;Ed = 0.0 kN	My;Ed = -15.8 kNm	
	Vz;Ed = 13.1 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.12): UC = 0.39 < 1

Kiptoetsing C23-V1 (0.000-2.400)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.21 — Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 5.5kN/m	= 0.0	
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 2.400 m	lst = 1.968 m
Lsys = 2.400 m	Lg = 2.400 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = 0.00	C = 7.13
Mcr = 217.7 kNm	kred = 1.0	Lam-rel = 0.43	Profielklasse 1
Chi;LT(Fu.C.21) = 0.94	M;Ed = 15.8 kNm		UC(y) = 0.41
Chi;LT,Z = 1.00	lkip = 2.400 m		UC(z) = 0.00
My;begin = -15.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.41 < 1

Stabiliteitstoetsing C23-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10

N;Ed = -11.4 kN	Nb;Rd;y = 670.0 kN	Nb;Rd;z = 523.1 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.400 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.400 m
Xy = 0.91		Knikcurve: B	
Xz = 0.71		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.02 < 1

Buiging & Druk C23-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -11.4 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -3.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.402	Kyz = 0.611	Kzy = 0.989	Kzz = 1.019
Ksi;y = 0.91	Ksi;z = 0.71	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.43 < 1

Doorbuigingstoetsing X C23-V1 (0.000-2.400)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 11.4 mm (Ka.C.9)

Limiet u;i;max = H/300 = 8.0 mm

UC(u;i;max) = 1.4

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 1.43>1

Profielgegevens staaf C24-V1 (0.000-4.000)

HE240A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 230.0 mm	A = 7.68e-03 m2	Wy;el = 675.1e-06 m3	Wy;pl = 744.6e-06 m3
b = 240.0 mm	Iy = 776.3e-07 m4	Wz;el = 230.7e-06 m3	Wz;pl = 351.7e-06 m3
tf = 12.0 mm	Iz = 276.9e-07 m4	Aw;y;el = 6.14e-03 m2	Aw;y;pl = 6.14e-03 m2
tw = 7.5 mm	Massa/m = 60.3 kg/m	Aw;z;el = 2.52e-03 m2	Aw;z;pl = 2.52e-03 m2
r = 21.0 mm		It = 415.5e-09 m4	Iwa = 328.5e-09 m6

Doorsnedetoetsing C24-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.5 op 0.000 m		Profielklasse = 1
N;Ed = -293.8 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,805.6 kN	Vy;Rd = 832.9 kN	MyRd = 175.0 kNm
	Vz;Rd = 341.6 kN	MzRd = 82.6 kNm

NEN-EN1993-1-1(6.9): UC = 0.16 < 1

Doorbuigingstoetsing X C24-V1 (0.000-4.000)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 13.3 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C25-V1 (0.000-5.050)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C25-V1 (0.000-5.050)

Maatgevende combinatie: Fu.C.10 op 5.050 m		Profielklasse = 1
N;Ed = -51.8 kN	Vy;Ed = 0.0 kN	My;Ed = -15.8 kNm
	Vz;Ed = -3.1 kN	Mz;Ed = 0.0 kNm

N;Rd = 738.3 kN | Vy;Rd = 339.7 kN | MyRd = 40.8 kNm
Vz;Rd = 137.4 kN | MzRd = 19.9 kNm
NEN-EN1993-1-1(6.12): UC = 0.39 < 1

Kiptoetsing C25-V1 (0.000-5.050)
Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.21 | Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.003	b-eff(Eind) = 0.003
Tabel gebruikt NB 6.1	M = -15.8kN/m	MBeta = 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 5.050 m	Ist = 5.050 m
Lsys = 5.050 m	Lg = 5.050 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 5.99
Mcr = 86.9 kNm	kred = 1.0	Lam-rel = 0.69	Profielklasse 1
Chi;LT(Fu.C.21) = 0.85	M;Ed = 15.8 kNm		UC(y) = 0.45
Chi;LT,Z = 1.00	Ikip = 5.050 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -15.8 kNm		

NEN-EN1993-1-1(6.54): UC = 0.45 < 1

Stabiliteitstoetsing C25-V1 (0.000-5.050)
Maatgevende combinatie: Fu.C.10

N;Ed = -53.3 kN	Nb;Rd;y = 470.2 kN	Nb;Rd;z = 225.8 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 5.050 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 5.050 m
Xy = 0.64		Knikcurve: B	
Xz = 0.31		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.24 < 1

Buiging & Druk C25-V1 (0.000-5.050)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -53.3 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -7.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.60	Cmz = 1.00	CmLT = 0.60	
Kyy = 0.650	Kyz = 0.798	Kzy = 0.933	Kzz = 1.330
Ksi;y = 0.64	Ksi;z = 0.31	Ksi;LT = 0.85	

NEN-EN1993-1-1(6.61&6.62): UC = 0.66 < 1

Doorbuigingstoetsing X C25-V1 (0.000-5.050)
Constructietype : Kolom | Toets type: 1 bouwlaag
u;i;3 = 0.0 mm (Ka.C.1)
Limiet u;i;max = H/300 = 16.8 mm
UC(u;i;max) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C26-V1 (0.000-2.400)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C26-V1 (0.000-2.400)
Maatgevende combinatie: Fu.C.10 op 0.000 m | Profielklasse = 1
N;Ed = -16.9 kN | Vy;Ed = 0.0 kN | My;Ed = -15.8 kNm
Vz;Ed = 13.1 kN | Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN | Vy;Rd = 339.7 kN | MyRd = 40.8 kNm

Vz;Rd = 137.4 kN MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.39 < 1

Kiptoetsing C26-V1 (0.000-2.400)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.21 Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 5.5kN/m	= 0.0	
Onderflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 2.400 m	Ist = 1.968 m
Lsys = 2.400 m	Lg = 2.400 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = 0.00	C = 7.13
Mcr = 217.7 kNm	kred = 1.0	Lam-rel = 0.43	Profielklasse 1
Chi;LT(Fu.C.21) = 0.94	M;Ed = 15.8 kNm		UC(y) = 0.41
Chi;LT,Z = 1.00	Ikip = 2.400 m		UC(z) = 0.00
My;begin = -15.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.41 < 1

Stabiliteitstoetsing C26-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10

N;Ed = -16.9 kN	Nb;Rd;y = 670.0 kN	Nb;Rd;z = 523.1 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 2.400 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 2.400 m
Xy = 0.91		Knikcurve: B	
Xz = 0.71		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.03 < 1

Buiging & Druk C26-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.10	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -16.9 kN	My;Ed = 15.8 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -15.8 kNm	My;Psi = 0.0 kNm	My;s = -3.9 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.40	Cmz = 1.00	CmLT = 0.40	
Kyy = 0.402	Kyz = 0.617	Kzy = 0.984	Kzz = 1.028
Ksi;y = 0.91	Ksi;z = 0.71	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.44 < 1

Doorbuigingstoetsing X C26-V1 (0.000-2.400)

Constructietype : Kolom Toets type: 1 bouwlaag

u;i;3 = 26.6 mm (Ka.C.9)

Limiet u;i;max = H/300 = 8.0 mm

UC(u;i;max) = 3.3

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 3.32>1

Profielgegevens staaf C27-V1 (0.000-4.000)

HE240A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 230.0 mm	A = 7.68e-03 m2	Wy;el = 675.1e-06 m3	Wy;pl = 744.6e-06 m3
b = 240.0 mm	Iy = 776.3e-07 m4	Wz;el = 230.7e-06 m3	Wz;pl = 351.7e-06 m3
tf = 12.0 mm	Iz = 276.9e-07 m4	Aw;y;el = 6.14e-03 m2	Aw;y;pl = 6.14e-03 m2
tw = 7.5 mm	Massa/m = 60.3 kg/m	Aw;z;el = 2.52e-03 m2	Aw;z;pl = 2.52e-03 m2
r = 21.0 mm		It = 415.5e-09 m4	Iwa = 328.5e-09 m6

Doorsnedetoetsing C27-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.8 op 0.000 m		Profielklasse = 1	
N;Ed = -436.2 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm	
N;Rd = 1,805.6 kN	Vy;Rd = 832.9 kN	MyRd = 175.0 kNm	
	Vz;Rd = 341.6 kN	MzRd = 82.6 kNm	

NEN-EN1993-1-1(6.9): UC = 0.24 < 1

Kiptoetsing C27-V1 (0.000-4.000)

Equi. profiel: HE240A
Maatgevende combinatie: Fu.C.18 — Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.1	M = -0.1kN/m	MBeta = 0.0	
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 4.000 m	lst = 4.000 m
Lsys = 4.000 m	Lg = 4.000 m	S = 1.434 m	Iwa = 3.2849e-07 m6
C1 = 1.75	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 8.28
Mcr = 914.4 kNm	kred = 1.0	Lam-rel = 0.44	Profielklasse 1
Chi;LT(Fu.C.18) = 0.94	M;Ed = 0.1 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 4.000 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -0.1 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1

Stabiliteitstoetsing C27-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.8

N;Ed = -436.2 kN	Nb;Rd;y = 1,654.9 kN	Nb;Rd;z = 1,297.9 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 4.000 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 4.000 m
Xy = 0.92		Knikcurve: B	
Xz = 0.72		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.34 < 1

Buiging & Druk C27-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.8	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -436.2 kN	My;Ed = 0.1 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = -0.1 kNm	My;Psi = 0.0 kNm	My;s = 0.0 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.60	Cmz = 1.00	CmLT = 0.60	
Kyy = 0.635	Kyz = 0.765	Kzy = 0.932	Kzz = 1.275
Ksi;y = 0.92	Ksi;z = 0.72	Ksi;LT = 0.94	

NEN-EN1993-1-1(6.61&6.62): UC = 0.34 < 1

Doorbuigingstoetsing X C27-V1 (0.000-4.000)

Constructietype : Kolom — Toets type: 1 bouwlaag
u;i;3 = 0.1 mm (Ka.C.4)
Limiet u;i;max = H/300 = 13.3 mm
UC(u;i;max) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.01<1

Profielgegevens staaf C28-V1 (0.000-5.050)

HE140A (90 grad.)	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C28-V1 (0.000-5.050)

Maatgevende combinatie: Fu.C.8 op 0.000 m		Profielklasse = 1	
N;Ed = -208.4 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm	
	Vz;Ed = 0.0 kN	Mz;Ed = -0.1 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.9): UC = 0.28 < 1

Doorbuigingstoetsing X C28-V1 (0.000-5.050)

Constructietype : Kolom — Toets type: 1 bouwlaag
u;i;3 = 0.5 mm (Ka.C.7)
Limiet u;i;max = H/300 = 16.8 mm
UC(u;i;max) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.03<1

Profielgegevens staaf C29-V1 (0.000-2.400)

HE140A (90 grad.)	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C29-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2 op 0.000 m — Profielklasse = 1

N;Ed = -97.4 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.13 < 1

Doorbuigingstoetsing X C29-V1 (0.000-2.400)

Constructietype : Kolom — Toets type: 1 bouwlaag
u;i;3 = 0.4 mm (Ka.C.7)
Limiet u;i;max = H/300 = 8.0 mm
UC(u;i;max) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.05<1

Profielgegevens staaf C30-V1 (0.000-5.050)

HE140A (90 grad.)	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C30-V1 (0.000-5.050)

Maatgevende combinatie: Fu.C.5 op 0.000 m — Profielklasse = 1

N;Ed = -164.6 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.22 < 1

Doorbuigingstoetsing X C30-V1 (0.000-5.050)

Constructietype : Kolom — Toets type: 1 bouwlaag
u;i;3 = 0.2 mm (Ka.C.7)
Limiet u;i;max = H/300 = 16.8 mm
UC(u;i;max) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.01<1

Profielgegevens staaf C31-V1 (0.000-2.400)

HE140A (90 grad.)	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C31-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2 op 0.000 m

		Profielklasse = 1
N;Ed = -119.5 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.16 < 1

Doorbuigingstoetsing X C31-V1 (0.000-2.400)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = -0.6 mm (Ka.C.4)

Limiet u;i;max = H/300 = 8.0 mm

UC(u;i;max) = 0.1

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.07<1

Profielgegevens staaf C32-V1 (0.000-4.000)

HE240A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 230.0 mm	A = 7.68e-03 m2	Wy;el = 675.1e-06 m3	Wy;pl = 744.6e-06 m3
b = 240.0 mm	Iy = 776.3e-07 m4	Wz;el = 230.7e-06 m3	Wz;pl = 351.7e-06 m3
tf = 12.0 mm	Iz = 276.9e-07 m4	Aw;y;el = 6.14e-03 m2	Aw;y;pl = 6.14e-03 m2
tw = 7.5 mm	Massa/m = 60.3 kg/m	Aw;z;el = 2.52e-03 m2	Aw;z;pl = 2.52e-03 m2
r = 21.0 mm		It = 415.5e-09 m4	Iwa = 328.5e-09 m6

Doorsnedetoetsing C32-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.8 op 0.000 m

		Profielklasse = 1
N;Ed = -383.2 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,805.6 kN	Vy;Rd = 832.9 kN	MyRd = 175.0 kNm
	Vz;Rd = 341.6 kN	MzRd = 82.6 kNm

NEN-EN1993-1-1(6.9): UC = 0.21 < 1

Doorbuigingstoetsing X C32-V1 (0.000-4.000)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 13.3 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C33-V1 (0.000-1.300)

HE240A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 230.0 mm	A = 7.68e-03 m2	Wy;el = 675.1e-06 m3	Wy;pl = 744.6e-06 m3
b = 240.0 mm	Iy = 776.3e-07 m4	Wz;el = 230.7e-06 m3	Wz;pl = 351.7e-06 m3
tf = 12.0 mm	Iz = 276.9e-07 m4	Aw;y;el = 6.14e-03 m2	Aw;y;pl = 6.14e-03 m2
tw = 7.5 mm	Massa/m = 60.3 kg/m	Aw;z;el = 2.52e-03 m2	Aw;z;pl = 2.52e-03 m2
r = 21.0 mm		It = 415.5e-09 m4	Iwa = 328.5e-09 m6

Doorsnedetoetsing C33-V1 (0.000-1.300)

Maatgevende combinatie: Fu.C.8 op 0.000 m

		Profielklasse = 1
N;Ed = -363.8 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,805.6 kN	Vy;Rd = 832.9 kN	MyRd = 175.0 kNm
	Vz;Rd = 341.6 kN	MzRd = 82.6 kNm

NEN-EN1993-1-1(6.9): UC = 0.20 < 1

Doorbuigingstoetsing X C33-V1 (0.000-1.300)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 4.3 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C34-V1 (0.000-3.750)

HE140A (90 grad.)	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C34-V1 (0.000-3.750)

Maatgevende combinatie: Fu.C.5 op 0.000 m		Profielklasse = 1
N;Ed = -268.1 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.36 < 1

Doorbuigingstoetsing X C34-V1 (0.000-3.750)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 12.5 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C35-V1 (0.000-2.400)

HE140A (90 grad.)	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C35-V1 (0.000-2.400)

Maatgevende combinatie: Fu.C.2 op 0.000 m		Profielklasse = 1
N;Ed = -120.0 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.16 < 1

Doorbuigingstoetsing X C35-V1 (0.000-2.400)

Constructietype : Kolom — Toets type: 1 bouwlaag

u;i;3 = 0.0 mm (Ka.C.1)

Limiet u;i;max = H/300 = 8.0 mm

UC(u;i;max) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.00<1

Profielgegevens staaf C37-V1 (0.000-5.000)

HE180A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 171.0 mm	A = 4.53e-03 m2	Wy;el = 293.6e-06 m3	Wy;pl = 324.9e-06 m3
b = 180.0 mm	Iy = 251.0e-07 m4	Wz;el = 102.7e-06 m3	Wz;pl = 156.5e-06 m3
tf = 9.5 mm	Iz = 924.6e-08 m4	Aw;y;el = 3.61e-03 m2	Aw;y;pl = 3.61e-03 m2
tw = 6.0 mm	Massa/m = 35.5 kg/m	Aw;z;el = 1.45e-03 m2	Aw;z;pl = 1.45e-03 m2
r = 15.0 mm		It = 148.0e-09 m4	Iwa = 602.1e-10 m6

Doorsnedetoetsing C37-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.8 op 3.333 m		Profielklasse = 1
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 2.6 kNm
	Vz;Ed = 0.1 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,063.4 kN	Vy;Rd = 490.2 kN	MyRd = 76.3 kNm
	Vz;Rd = 196.3 kN	MzRd = 36.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.03 < 1

Kiptoetsing C37-V1 (0.000-5.000)

Equi. profiel: HE180A
Maatgevende combinatie: Fu.C.8
Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.001	b-eff(Eind) = 0.001
Tabel gebruikt Fig. NB.32	M = 2.2kN/m	MBeta = 0.0	q = 0.4
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 5.000 m	Ist = 5.000 m
Lsys = 5.000 m	Lg = 5.000 m	S = 1.029 m	Iwa = 6.0211e-08 m6
C1 = 1.14	C2 = 0.23 (tabel)	C2(toegepast) = 0.00	C = 4.27
Mcr = 130.1 kNm	kred = 1.0	Lam-rel = 0.77	Profielklasse 1
Chi;LT(Fu.C.8) = 0.81	M;Ed = 2.6 kNm		UC(y) = 0.04
Chi;LT,Z = 1.00	Ikip = 5.000 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 2.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.04 < 1

Stabiliteitstoetsing C37-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.8

N;Ed = 0.0 kN	Nb;Rd;y = 824.4 kN	Nb;Rd;z = 472.7 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 5.000 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 5.000 m
Xy = 0.78		Knikcurve: B	
Xz = 0.44		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.00 < 1

Buiging & Druk C37-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.8	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = 0.0 kN	My;Ed = 2.6 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 2.2 kNm	My;Psi = 0.0 kNm	My;s = 2.4 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.99	Cmz = 1.00	CmLT = 0.99	
Kyy = 0.995	Kyz = 0.600	Kzy = 1.000	Kzz = 1.000
Ksi;y = 0.78	Ksi;z = 0.44	Ksi;LT = 0.81	

NEN-EN1993-1-1(6.61&6.62): UC = 0.04 < 1

Doorbuigingstoetsing Z' C37-V1 (0.000-5.000)

Constructietype : Vloer	Toets type: Algemeen
w;c = 0.0 mm	Zeegvorm 3-Punt
w;1 = 0.5 mm (x = 2.662 mm; Fr.C.(w1))	w;2 = 0.0 mm
w;3 = 0.4 mm (x = 2.662 mm; Qu.C.7)	w;3 = 0.4 mm (x = 2.857 mm; Fr.C.8)
w;tot; = 1.0 mm	
w;max = 1.0 mm	(w;2+w;3) = 0.4 mm
Limiet w;max = L/250 = 20.0 mm	Limiet (w;2+w;3) = L/333 = 15.0 mm
UC(w;max) = 0.0	UC(w;2+w;3) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.05<1

Doorbuigingstoetsing Z'' C37-V1 (0.000-5.000)

Constructietype : Vloer	Toets type: Algemeen
w;c = 0.0 mm	Zeegvorm 3-Punt
w;1 = 0.5 mm (x = 2.662 mm; Fr.C.(w1))	w;2 = 0.0 mm
w;3 = 0.4 mm (x = 2.662 mm; Qu.C.7)	w;3 = 0.4 mm (x = 2.857 mm; Fr.C.8)
w;tot; = 1.0 mm	
w;max = 1.0 mm	(w;2+w;3) = 0.4 mm
Limiet w;max = L/250 = 20.0 mm	Limiet (w;2+w;3) = L/333 = 15.0 mm
UC(w;max) = 0.0	UC(w;2+w;3) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.05<1

Profielgegevens staaf C38-V1 (0.000-4.000)

HE180A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2

h = 171.0 mm | A = 4.53e-03 m2 | Wy;el = 293.6e-06 m3 | Wy;pl = 324.9e-06 m3
b = 180.0 mm | Iy = 251.0e-07 m4 | Wz;el = 102.7e-06 m3 | Wz;pl = 156.5e-06 m3
tf = 9.5 mm | Iz = 924.6e-08 m4 | Aw;y;el = 3.61e-03 m2 | Aw;y;pl = 3.61e-03 m2
tw = 6.0 mm | Massa/m = 35.5 kg/m | Aw;z;el = 1.45e-03 m2 | Aw;z;pl = 1.45e-03 m2
r = 15.0 mm | | It = 148.0e-09 m4 | Iwa = 602.1e-10 m6

Doorsnedetoetsing C38-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.5 op 0.000 m | Profielklasse = 1

N;Ed = -32.4 kN | Vy;Ed = 0.0 kN | My;Ed = 2.1 kNm
Vz;Ed = 0.3 kN | Mz;Ed = 0.0 kNm
N;Rd = 1,063.4 kN | Vy;Rd = 490.2 kN | MyRd = 76.3 kNm
Vz;Rd = 196.3 kN | MzRd = 36.8 kNm

NEN-EN1993-1-1(6.9): UC = 0.03 < 1

Kiptoetsing C38-V1 (0.000-4.000)

Equi. profiel: HE180A
Maatgevende combinatie: Fu.C.8 | Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund | Beperk. eind: Gesteund | b-eff(Begin) = 0.000 | b-eff(Eind) = 0.001
Tabel gebruikt Fig. NB.32 | M = 2.2kN/m | MBeta = 0.0 | q = 0.4
Bovenflens maatgevend | Xb;Ist = 0.000 m | Xe;Ist = 4.000 m | Ist = 4.000 m
Lsys = 4.000 m | Lg = 4.000 m | S = 1.029 m | Iwa = 6.0211e-08 m6
C1 = 1.20 | C2 = 0.18 (tabel) | C2(toegepast) = 0.00 | C = 4.85
Mcr = 184.6 kNm | kred = 1.0 | Lam-rel = 0.64 | Profielklasse 1
Chi;LT(Fu.C.8) = 0.87 | M;Ed = 2.3 kNm | | UC(y) = 0.03
Chi;LT,Z = 1.00 | Ikip = 4.000 m | | UC(z) = 0.00
My;begin = 2.2 kNm | My;eind = 0.0 kNm

NEN-EN1993-1-1(6.54): UC = 0.03 < 1

Stabiliteitstoetsing C38-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.5

N;Ed = -32.4 kN | Nb;Rd;y = 904.9 kN | Nb;Rd;z = 610.5 kN
Methode Y = Cons. gesch. | Ca(y) = 0.000 | Cb(y) = 0.000 | Lknik Y = 4.000 m
Methode Z = Cons. gesch. | Ca(z) = N/B | Cb(z) = N/B | Lbuc Z = 4.000 m
Xy = 0.85 | Knikcurve: B
Xz = 0.57 | Knikcurve: C

NEN-EN1993-1-1(6.46): UC = 0.05 < 1

Buiging & Druk C38-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.5 | Kipgevoelig Ja | Profielklasse = 1
N;Ed = -32.4 kN | My;Ed = 2.3 kNm | Mz;Ed = 0.0 kNm
Delta;My;Ed = 0.0 kNm | Delta;Mz;Ed = 0.0 kNm

My = 2.1 kNm | My;Psi = 0.0 kNm | My;s = 1.9 kNm
Mz = 0.0 kNm | Mz;Psi = 0.0 kNm | Mz;s = 0.0 kNm
Cmy = 0.92 | Cmz = 1.00 | CmLT = 0.92
Kyy = 0.933 | Kyz = 0.641 | Kzy = 0.993 | Kzz = 1.068
Ksi;y = 0.85 | Ksi;z = 0.57 | Ksi;LT = 0.87

NEN-EN1993-1-1(6.61&6.62): UC = 0.09 < 1

Doorbuigingstoetsing Z' C38-V1 (0.000-4.000)

Constructietype : Vloer | Toets type: Algemeen
w;c = 0.0 mm | Zeegvorm 3-Punt
w;1 = 0.2 mm (x = 1.836 mm; Fr.C.(w1)) | w;2 = 0.0 mm
w;3 = 0.3 mm (x = 1.836 mm; Qu.C.7) | w;3 = 0.3 mm (x = 1.778 mm; Fr.C.8)
w;tot; = 0.5 mm
w;max = 0.5 mm | (w;2+w;3) = 0.3 mm
Limiet w;max = L/250 = 16.0 mm | Limiet (w;2+w;3) = L/333 = 12.0 mm
UC(w;max) = 0.0 | UC(w;2+w;3) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.03<1

Doorbuigingstoetsing Z" C38-V1 (0.000-4.000)

Constructietype : Vloer
Toets type: Algemeen
w;c = 0.0 mm
Zeegvorm 3-Punt
w;1 = 0.2 mm (x = 1.836 mm; Fr.C.(w1))
w;2 = 0.0 mm
w;3 = 0.3 mm (x = 1.836 mm; Qu.C.7)
w;3 = 0.3 mm (x = 1.778 mm; Fr.C.8)
w;tot; = 0.5 mm
w;max = 0.5 mm
(w;2+w;3) = 0.3 mm
Limiet w;max = L/250 = 16.0 mm
Limiet (w;2+w;3) = L/333 = 12.0 mm
UC(w;max) = 0.0
UC(w;2+w;3) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.03<1

Profielgegevens staaf C40-V1 (0.000-5.000)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C40-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.8 op 0.000 m
Profielklasse = 1

N;Ed = -64.7 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = 0.8 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.9): UC = 0.09 < 1

Kiptoetsing C40-V1 (0.000-5.000)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.8
Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.001	b-eff(Eind) = 0.001
Tabel gebruikt Fig. NB.32	M = 0.4kN/m	MBeta = 0.0	q = 0.3
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 5.000 m	lst = 5.000 m
Lsys = 5.000 m	Lg = 5.000 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.11	C2 = 0.37 (tabel)	C2(toegepast) = 0.00	C = 3.81
Mcr = 55.9 kNm	kred = 1.0	Lam-rel = 0.85	Profielklasse 1
Chi;LT(Fu.C.8) = 0.76	M;Ed = 1.1 kNm		UC(y) = 0.04
Chi;LT,Z = 1.00	lkip = 5.000 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.4 kNm		

NEN-EN1993-1-1(6.54): UC = 0.04 < 1

Stabiliteitstoetsing C40-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.8

N;Ed = -64.7 kN	Nb;Rd;y = 474.6 kN	Nb;Rd;z = 229.3 kN	
Methode Y = Cons. gesch.	Ca(y) = 0.000	Cb(y) = 0.000	Lknik Y = 5.000 m
Methode Z = Cons. gesch.	Ca(z) = N/B	Cb(z) = N/B	Lbuc Z = 5.000 m
Xy = 0.64		Knikcurve: B	
Xz = 0.31		Knikcurve: C	

NEN-EN1993-1-1(6.46): UC = 0.28 < 1

Buiging & Druk C40-V1 (0.000-5.000)

Maatgevende combinatie: Fu.C.8	Kipgevoelig Ja	Profielklasse = 1	
N;Ed = -64.7 kN	My;Ed = 1.1 kNm	Mz;Ed = 0.0 kNm	
	Delta;My;Ed = 0.0 kNm	Delta;Mz;Ed = 0.0 kNm	
My = 0.4 kNm	My;Psi = 0.0 kNm	My;s = 1.1 kNm	
Mz = 0.0 kNm	Mz;Psi = 0.0 kNm	Mz;s = 0.0 kNm	
Cmy = 0.97	Cmz = 1.00	CmLT = 0.97	

Kyy = 1.065 Kyz = 0.837 Kzy = 0.961 Kzz = 1.395
Ksi;y = 0.64 Ksi;z = 0.31 Ksi;LT = 0.76
NEN-EN1993-1-1(6.61&6.62): UC = 0.32 < 1

Doorbuigingstoetsing Z' C40-V1 (0.000-5.000)

Constructietype : Vloer
Toets type: Algemeen
w;c = 0.0 mm
Zeegvorm 3-Punt
w;1 = 0.7 mm (x = 2.552 mm; Fr.C.(w1))
w;2 = 0.0 mm
w;3 = 0.4 mm (x = 2.552 mm; Qu.C.7)
w;3 = 0.4 mm (x = 2.857 mm; Fr.C.8)
w;tot; = 1.1 mm
w;max = 1.1 mm
(w;2+w;3) = 0.4 mm
Limiet w;max = L/250 = 20.0 mm
Limiet (w;2+w;3) = L/333 = 15.0 mm
UC(w;max) = 0.1
UC(w;2+w;3) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.05<1

Doorbuigingstoetsing Z'' C40-V1 (0.000-5.000)

Constructietype : Vloer
Toets type: Algemeen
w;c = 0.0 mm
Zeegvorm 3-Punt
w;1 = 0.7 mm (x = 2.552 mm; Fr.C.(w1))
w;2 = 0.0 mm
w;3 = 0.4 mm (x = 2.552 mm; Qu.C.7)
w;3 = 0.4 mm (x = 2.857 mm; Fr.C.8)
w;tot; = 1.1 mm
w;max = 1.1 mm
(w;2+w;3) = 0.4 mm
Limiet w;max = L/250 = 20.0 mm
Limiet (w;2+w;3) = L/333 = 15.0 mm
UC(w;max) = 0.1
UC(w;2+w;3) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.05<1

Profielgegevens staaf C41-V1 (0.000-4.000)

HE140A Analyse Staal S235 fyd(toegepast) = 235 N/mm2
h = 133.0 mm A = 3.14e-03 m2 Wy;el = 155.4e-06 m3 Wy;pl = 173.5e-06 m3
b = 140.0 mm Iy = 103.3e-07 m4 Wz;el = 556.2e-07 m3 Wz;pl = 848.5e-07 m3
tf = 8.5 mm Iz = 389.3e-08 m4 Aw;y;el = 2.50e-03 m2 Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm Massa/m = 24.7 kg/m Aw;z;el = 1.01e-03 m2 Aw;z;pl = 1.01e-03 m2
r = 12.0 mm It = 813.0e-10 m4 Iwa = 150.6e-10 m6

Doorsnedetoetsing C41-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.8 op 0.000 m
Profielklasse = 1
N;Ed = -64.7 kN Vy;Ed = 0.0 kN My;Ed = 0.4 kNm
Vz;Ed = 0.5 kN Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN Vy;Rd = 339.7 kN MyRd = 40.8 kNm
Vz;Rd = 137.4 kN MzRd = 19.9 kNm
NEN-EN1993-1-1(6.9): UC = 0.09 < 1

Kiptoetsing C41-V1 (0.000-4.000)

Equi. profiel: HE140A
Maatgevende combinatie: Fu.C.8
Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.
Kipsteun onderflens: N.v.t.
Inklem. begin: Gesteund Beperk. eind: Gesteund b-eff(Begin) = 0.000 b-eff(Eind) = 0.001
Tabel gebruikt Fig. NB.32 M = 0.4kN/m MBeta = 0.0 q = 0.3
Bovenflens maatgevend Xb;lst = 0.000 m Xe;lst = 4.000 m lst = 4.000 m
Lsys = 4.000 m Lg = 4.000 m S = 0.694 m Iwa = 1.5064e-08 m6
C1 = 1.11 C2 = 0.33 (tabel) C2(toegepast) = 0.00 C = 3.98
Mcr = 72.9 kNm kred = 1.0 Lam-rel = 0.75 Profielklasse 1
Chi;LT(Fu.C.8) = 0.82 M;Ed = 0.8 kNm UC(y) = 0.02
Chi;LT,Z = 1.00 lkip = 4.000 m UC(z) = 0.00
My;begin = 0.4 kNm My;eind = 0.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.02 < 1

Stabiliteitstoetsing C41-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.8

N;Ed = -64.7 kN | Nb;Rd;y = 560.4 kN | Nb;Rd;z = 316.8 kN
Methode Y = Cons. gesch. | Ca(y) = 0.000 | Cb(y) = 0.000 | Lknik Y = 4.000 m
Methode Z = Cons. gesch. | Ca(z) = N/B | Cb(z) = N/B | Lbuc Z = 4.000 m
Xy = 0.76 | Knikcurve: B
Xz = 0.43 | Knikcurve: C
NEN-EN1993-1-1(6.46): UC = 0.20 < 1

Buiging & Druk C41-V1 (0.000-4.000)

Maatgevende combinatie: Fu.C.8 | Kipgevoelig Ja | Profielklasse = 1
N;Ed = -64.7 kN | My;Ed = 0.8 kNm | Mz;Ed = 0.0 kNm
Delta;My;Ed = 0.0 kNm | Delta;Mz;Ed = 0.0 kNm
My = 0.4 kNm | My;Psi = 0.0 kNm | My;s = 0.8 kNm
Mz = 0.0 kNm | Mz;Psi = 0.0 kNm | Mz;s = 0.0 kNm
Cmy = 0.98 | Cmz = 1.00 | CmLT = 0.98
Kyy = 1.038 | Kyz = 0.771 | Kzy = 0.972 | Kzz = 1.286
Ksi;y = 0.76 | Ksi;z = 0.43 | Ksi;LT = 0.82
NEN-EN1993-1-1(6.61&6.62): UC = 0.23 < 1

Doorbuigingstoetsing Z' C41-V1 (0.000-4.000)

Constructietype : Vloer | Toets type: Algemeen
w;c = 0.0 mm | Zeegvorm 3-Punt
w;1 = 0.2 mm (x = 1.940 mm; Fr.C.(w1)) | w;2 = 0.0 mm
w;3 = 0.3 mm (x = 1.940 mm; Qu.C.7) | w;3 = 0.3 mm (x = 1.779 mm; Fr.C.8)
w;tot; = 0.5 mm
w;max = 0.5 mm | (w;2+w;3) = 0.3 mm
Limiet w;max = L/250 = 16.0 mm | Limiet (w;2+w;3) = L/333 = 12.0 mm
UC(w;max) = 0.0 | UC(w;2+w;3) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.03<1

Doorbuigingstoetsing Z'' C41-V1 (0.000-4.000)

Constructietype : Vloer | Toets type: Algemeen
w;c = 0.0 mm | Zeegvorm 3-Punt
w;1 = 0.2 mm (x = 1.940 mm; Fr.C.(w1)) | w;2 = 0.0 mm
w;3 = 0.3 mm (x = 1.940 mm; Qu.C.7) | w;3 = 0.3 mm (x = 1.778 mm; Fr.C.8)
w;tot; = 0.5 mm
w;max = 0.5 mm | (w;2+w;3) = 0.3 mm
Limiet w;max = L/250 = 16.0 mm | Limiet (w;2+w;3) = L/333 = 12.0 mm
UC(w;max) = 0.0 | UC(w;2+w;3) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.03<1

Profielgegevens staaf C42-V1 (0.000-7.107)

HE120A | Analyse | Staal S235 fyd(toegepast) = 235 N/mm2
h = 114.0 mm | A = 2.53e-03 m2 | Wy;el = 106.3e-06 m3 | Wy;pl = 119.5e-06 m3
b = 120.0 mm | Iy = 606.2e-08 m4 | Wz;el = 384.8e-07 m3 | Wz;pl = 588.5e-07 m3
tf = 8.0 mm | Iz = 230.9e-08 m4 | Aw;y;el = 2.04e-03 m2 | Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm | Massa/m = 19.9 kg/m | Aw;z;el = 8.46e-04 m2 | Aw;z;pl = 8.46e-04 m2
r = 12.0 mm | It = 599.4e-10 m4 | Iwa = 647.2e-11 m6

Doorsnedetoetsing C42-V1 (0.000-7.107)

Maatgevende combinatie: Fu.C.8 op 0.000 m | Profielklasse = 1
N;Ed = 92.5 kN | Vy;Ed = 0.0 kN | My;Ed = 0.0 kNm
Vz;Ed = 0.6 kN | Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN | Vy;Rd = 277.3 kN | MyRd = 28.1 kNm
Vz;Rd = 114.7 kN | MzRd = 13.8 kNm
NEN-EN1993-1-1(6.5): UC = 0.16 < 1

Kiptoetsing C42-V1 (0.000-7.107)

Equi. profiel: HE120A
Maatgevende combinatie: Fu.C.1 | Instab. curve Kip:a
Aangrijphoogte van de last: 0.000 m vanaf hart profiel
Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.001	b-eff(Eind) = 0.001
Tabel gebruikt NB 6.2	q = 0.2kN/m	= 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 7.107 m	lst = 7.107 m
Lsys = 7.107 m	Lg = 7.107 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.13	C2 = 0.45 (tabel)	C2(toegepast) = 0.00	C = 3.65
Mcr = 24.9 kNm	kred = 1.0	Lam-rel = 1.06	Profielklasse 1
Chi;LT(Fu.C.1) = 0.62	M;Ed = 1.2 kNm		UC(y) = 0.07
Chi;LT,Z = 1.00	lkip = 7.107 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.07 < 1

Doorbuigingstoetsing Z' C42-V1 (0.000-7.107)

Constructietype : Dak	Toets type: Algemeen
w;c = 0.0 mm	Zeegvorm 3-Punt
w;1 = 3.7 mm (x = 3.553 mm; Ka.C.(w1))	w;2 = 0.0 mm
w;3 = 0.0 mm (x = 3.553 mm; Ka.C.5)	
w;tot; = 3.7 mm	
w;max = 3.7 mm	(w;2+w;3) = 0.0 mm
Limiet w;max = L/250 = 28.4 mm	Limiet (w;2+w;3) = L/250 = 28.4 mm
UC(w;max) = 0.1	UC(w;2+w;3) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.13<1

Doorbuigingstoetsing Z'' C42-V1 (0.000-7.107)

Constructietype : Dak	Toets type: Algemeen
w;c = 0.0 mm	Zeegvorm 3-Punt
w;1 = 5.2 mm (x = 3.553 mm; Ka.C.(w1))	w;2 = 0.0 mm
w;3 = 0.0 mm (x = 3.553 mm; Ka.C.7)	
w;tot; = 5.2 mm	
w;max = 5.2 mm	(w;2+w;3) = 0.0 mm
Limiet w;max = L/250 = 28.4 mm	Limiet (w;2+w;3) = L/250 = 28.4 mm
UC(w;max) = 0.2	UC(w;2+w;3) = 0.0

NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.18<1

Profielgegevens staaf C43-V1 (0.000-6.442)

HE120A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 114.0 mm	A = 2.53e-03 m2	Wy;el = 106.3e-06 m3	Wy;pl = 119.5e-06 m3
b = 120.0 mm	Iy = 606.2e-08 m4	Wz;el = 384.8e-07 m3	Wz;pl = 588.5e-07 m3
tf = 8.0 mm	Iz = 230.9e-08 m4	Aw;y;el = 2.04e-03 m2	Aw;y;pl = 2.04e-03 m2
tw = 5.0 mm	Massa/m = 19.9 kg/m	Aw;z;el = 8.46e-04 m2	Aw;z;pl = 8.46e-04 m2
r = 12.0 mm		It = 599.4e-10 m4	Iwa = 647.2e-11 m6

Doorsnedetoetsing C43-V1 (0.000-6.442)

Maatgevende combinatie: Fu.C.5 op 6.442 m

		Profielklasse = 1
N;Ed = 153.2 kN	Vy;Ed = 0.0 kN	My;Ed = 0.0 kNm
	Vz;Ed = -0.5 kN	Mz;Ed = 0.0 kNm
N;Rd = 595.4 kN	Vy;Rd = 277.3 kN	MyRd = 28.1 kNm
	Vz;Rd = 114.7 kN	MzRd = 13.8 kNm

NEN-EN1993-1-1(6.5): UC = 0.26 < 1

Kiptoetsing C43-V1 (0.000-6.442)

Equi. profiel: HE120A

Maatgevende combinatie: Fu.C.1 — Instab. curve Kip:a

Aangrijphoogte van de last: 0.000 m vanaf hart profiel

Kipsteun bovenflens: N.v.t.

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.001	b-eff(Eind) = 0.001
Tabel gebruikt NB 6.2	q = 0.2kN/m	= 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 6.442 m	lst = 6.442 m
Lsys = 6.442 m	Lg = 6.442 m	S = 0.530 m	Iwa = 6.4719e-09 m6
C1 = 1.13	C2 = 0.45 (tabel)	C2(toegepast) = 0.00	C = 3.67
Mcr = 27.6 kNm	kred = 1.0	Lam-rel = 1.01	Profielklasse 1

Chi;LT(Fu.C.1) = 0.66 M;Ed = 0.9 kNm UC(y) = 0.05
Chi;LT,Z = 1.00 lkip = 6.442 m UC(z) = 0.00
My;begin = 0.0 kNm My;eind = 0.0 kNm
NEN-EN1993-1-1(6.54): UC = 0.05 < 1

Doorbuigingstoetsing Z' C43-V1 (0.000-6.442)

Constructietype : Dak Toets type: Algemeen
w;c = 0.0 mm Zeegvorm 3-Punt
w;1 = 2.2 mm (x = 3.221 mm; Ka.C.(w1)) w;2 = 0.0 mm
w;3 = 0.0 mm (x = 3.221 mm; Ka.C.6)
w;tot; = 2.2 mm
w;max = 2.2 mm (w;2+w;3) = 0.0 mm
Limiet w;max = L/250 = 25.8 mm Limiet (w;2+w;3) = L/250 = 25.8 mm
UC(w;max) = 0.1 UC(w;2+w;3) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.08<1

Doorbuigingstoetsing Z'' C43-V1 (0.000-6.442)

Constructietype : Dak Toets type: Algemeen
w;c = 0.0 mm Zeegvorm 3-Punt
w;1 = 3.5 mm (x = 3.221 mm; Ka.C.(w1)) w;2 = 0.0 mm
w;3 = 0.0 mm (x = 3.221 mm; Ka.C.4)
w;tot; = 3.5 mm
w;max = 3.5 mm (w;2+w;3) = 0.0 mm
Limiet w;max = L/250 = 25.8 mm Limiet (w;2+w;3) = L/250 = 25.8 mm
UC(w;max) = 0.1 UC(w;2+w;3) = 0.0
NEN-EN|NEN-EN1990/NB A1.4.2: UC = 0.14<1

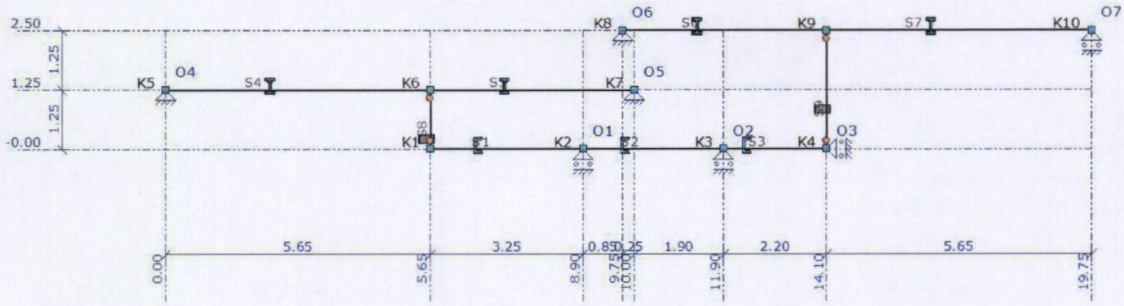
Valkenburg aan de Geul	Ingenieursbureau A. Palte BV	043 - 601 36 37
Computerberekening		

Projectnaam	Schatberg Sevenum	Projectnummer	460518
Omschrijving	Stalen liggers As 05a-F2 - 05b-G1	Constructeur	DaKr
Opdrachtgever	Hoopzak Sevenum Holding B.V.	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Stalen liggers As 05a-F2 - 05b-G1.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	10	9	7	3	2	7

AFB. GEOMETRIE RAAMWERK



STAVEN

Staaf	Knoop B		Scharnier B	Scharnier E	Knoop E	Profiel	X-B	Z-B	X-E	Z-E	Lengte
S1	K1	NVM	NVM	NVM	K2	P1	5.650	0.000	8.900	0.000	3.250
S2	K2	NVM	NVM	NVM	K3	P1	8.900	0.000	11.900	0.000	3.000
S3	K3	NVM	NVM	NVM	K4	P1	11.900	0.000	14.100	0.000	2.200
S4	K5	NVM	NVM	NVM	K6	P3	0.000	-1.250	5.650	-1.250	5.650
S5	K6	NVM	NVM	NVM	K7	P3	5.650	-1.250	10.000	-1.250	4.350
S6	K8	NVM	NVM	NVM	K9	P3	9.750	-2.500	14.100	-2.500	4.350
S7	K9	NVM	NVM	NVM	K10	P3	14.100	-2.500	19.750	-2.500	5.650
S8	K1	NV-	NV-	NV-	K6	P2	5.650	0.000	5.650	-1.250	1.250
S9	K4	NV-	NV-	NV-	K9	P2	14.100	0.000	14.100	-2.500	2.500
-	-	-	-	-	-	-	m	m	m	m	m

PROFIELEN

Profiel	Profielnaam	Oppervlakte	Iy	Materiaal	Hoek
P1	UNP320	7.5771e-03	1.0868e-04	S355	0.0
P2	R500x500	2.5000e-01	5.2083e-03	C50/60	0.0
P3	HE260B	1.1844e-02	1.4919e-04	S235	0.0
-	-	m2	m4	-	°

PROFIELVORMEN

Profiel	Verl. h.	hB	hE	tf	tw	tf2	B	bL	bR	Raatl.	Hoogte
P2	Nee	0.500	0.500	0.000	0.000	0.000	0.500	0.000	0.000	Nee	0.000
-	-	m	m	m	m	m	m	m	m	-	m

MATERIALEN

Materiaal	Dichtheid	E-Modulus	Uitzettingcoeff
S355	78.50	2.1000e+08	12.0000e-06
C50/60	25.00	3.7000e+07	10.0000e-06
S235	78.50	2.1000e+08	12.0000e-06
-	kN/m3	kN/m2	C°m

OPLEGGINGEN

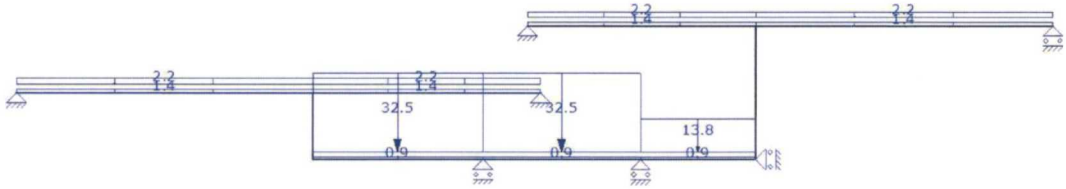
Oplegging	Knoop	X	Z	Yr	HoekYr
O1	K2	vrij	vast	vrij	0
O2	K3	vrij	vast	vrij	0
O3	K4	vast	0.00:0.00	vrij	0
O4	K5	vast	vast	vrij	0

Oplegging	Knoop	X	Z	Yr	HoekYr
O5	K7	vast	vast	vrij	0
O6	K8	vast	vast	vrij	0
O7	K10	vrij	vast	vrij	0
-	-	kN/m	kN/m	kNm/rad	°

B.G.1: EIGEN GEWICHT + PERMANENT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht + Permanent						
qG	0.59 (1.50x)	0.59 (1.50x)	0.000	3.250(L)	Z"	S1
qG	0.59 (1.50x)	0.59 (1.50x)	0.000	3.000(L)	Z"	S2
qG	0.59 (1.50x)	0.59 (1.50x)	0.000	2.200(L)	Z"	S3
qG	0.93 (1.50x)	0.93 (1.50x)	0.000	5.650(L)	Z"	S4,S7
qG	0.93 (1.50x)	0.93 (1.50x)	0.000	4.350(L)	Z"	S5-S6
q	32.50	32.50	0.000	3.250(L)	Z'	S1-S2
q	13.80	13.80	0.000	2.200(L)	Z'	S3
q	2.24	2.24	0.000	5.650(L)	Z'	S4-S7
Som lasten	**X: 0.00**	**kN Z: 313.72**	**kN**			
-	-	-	m	m	-	-

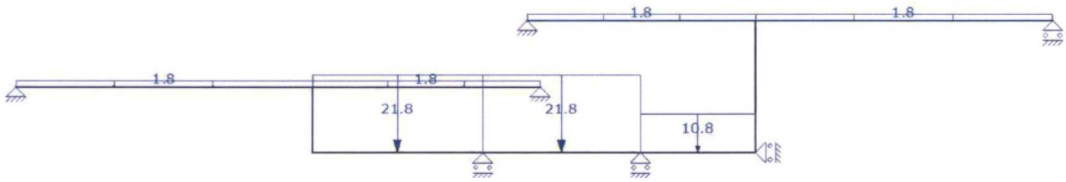
B.G.1: EIGEN GEWICHT + PERMANENT



B.G.2: VERDEELDE VERANDERLIJKE BELASTING

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Verdeelde veranderlijke belasting						
q	21.80	21.80	0.000	3.250(L)	Z'	S1-S2
q	10.80	10.80	0.000	2.200(L)	Z'	S3
q	1.75	1.75	0.000	5.650(L)	Z'	S4-S7
Som lasten	**X: 0.00**	**kN Z: 195.01**	**kN**			
-	-	-	m	m	-	-

B.G.2: VERDEELDE VERANDERLIJKE BELASTING



FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

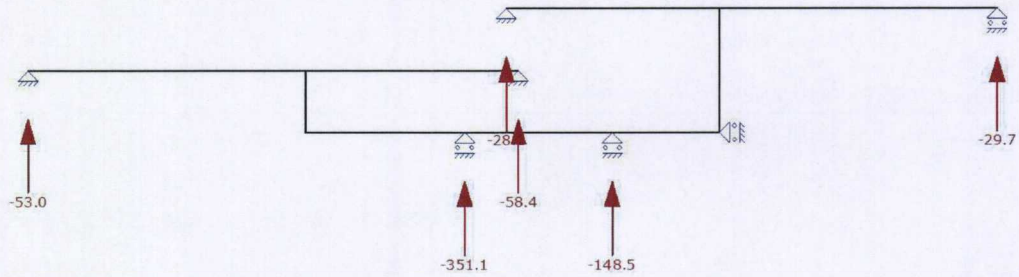
B.G.	Omschrijving	Fu.C.1	Fu.C.2
B.G.1	Eigen Gewicht + Permanent	1.35	1.20

B.G.2 Verdeelde veranderlijke belasting - 1.50

FU.C. EXTREME OPLEGREACTIES

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O1	K2					Fu.C.2	0.00	**-351.11**	0.00				
O2	K3					Fu.C.2	0.00	**-148.54**	0.00				
O4	K5					Fu.C.2	0.00	**-53.01**	0.00				
O5	K7					Fu.C.2	0.00	**-58.42**	0.00				
O6	K8					Fu.C.2	0.00	**-28.17**	0.00				
O7	K10					Fu.C.2	0.00	**-29.73**	0.00				
Globale extreme waarden													
O1	K2					Fu.C.2	0.00	**-351.11**	0.00				
-	-	-	kN	kN	kNm	-	kN	kN	kNm		kN	kN	kNm

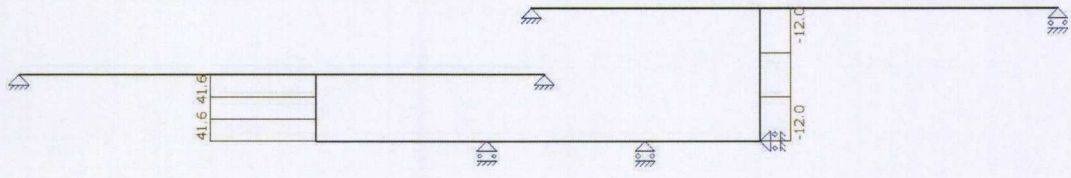
AFB. FU.C. OPLEGREACTIES OMHULLENDE — Fundamenteel Belastingscombinaties



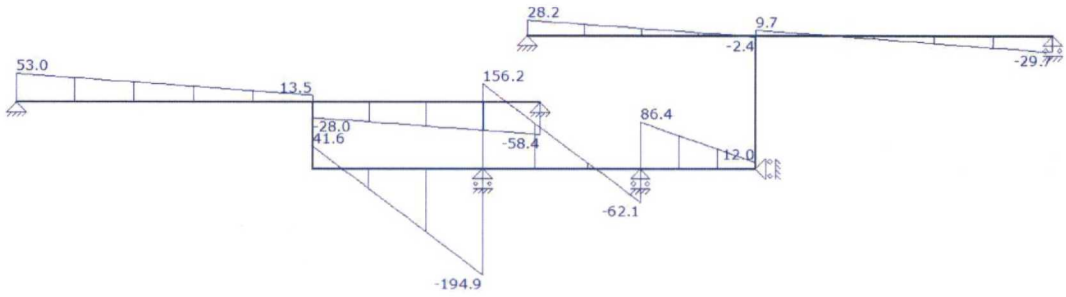
FU.C. EXTREME STAAFKRACHTEN

Staaf	B.C.	Mb	Mmax	xMmax	Me	x-M0	x-M0	T/D	Nmax	Vb	Vmax	Ve
S1	Fu.C.2	0.00	**11.87**	0.571	**-249.24**	1.142	0.000	-	0.00	**41.56**	**-194.94**	**-194.94**
S2	Fu.C.2	**-249.24**	**-81.67**	2.146	**-108.20**	0.000	0.000	-	0.00	**156.17**	**156.17**	**-62.14**
S3	Fu.C.2	**-108.20**	0.00	0.000	0.00	0.000	0.000	-	0.00	**86.40**	**86.40**	**11.97**
S4	Fu.C.2	0.00	0.00	0.000	**188.01**	0.000	0.000	-	0.00	**53.01**	**53.01**	**13.54**
S5	Fu.C.2	**188.01**	0.00	0.000	0.00	0.000	0.000	-	0.00	**-28.02**	**-58.42**	**-58.42**
S6	Fu.C.1	0.00	36.47	3.855	35.87	0.000	0.000	-	0.00	18.92	18.92	**-2.43**
	Fu.C.2	0.00	**56.79**	4.032	**56.44**	0.000	0.000	-	0.00	**28.17**	**28.17**	-2.22
S7	Fu.C.2	**56.44**	**63.24**	1.395	0.00	0.000	0.000	-	0.00	**9.75**	**-29.73**	**-29.73**
S8	Fu.C.2	0.00	0.00	0.000	0.00	0.000	0.000	T	**41.56**	0.00	0.00	0.00
S9	Fu.C.2	0.00	0.00	0.000	0.00	0.000	0.000	D	**-11.97**	0.00	0.00	0.00
-	-	kNm	kNm	m	kNm	m	m	-	kN	kN	kN	kN

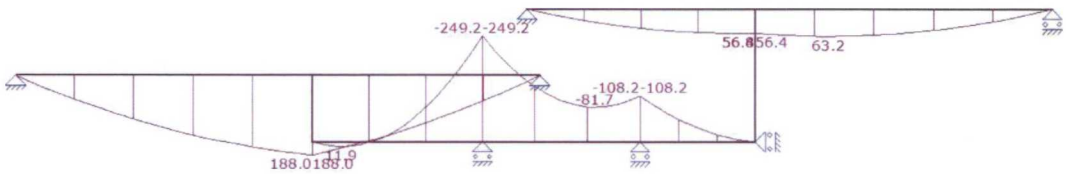
AFB. FU.C. NORMAALKRACHT (NX) OMHULLENDE — Fundamenteel Belastingscombinaties



AFB. FU.C. DWARSKRACHT (VZ) OMHULLENDE — Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE — Fundamenteel Belastingscombinaties



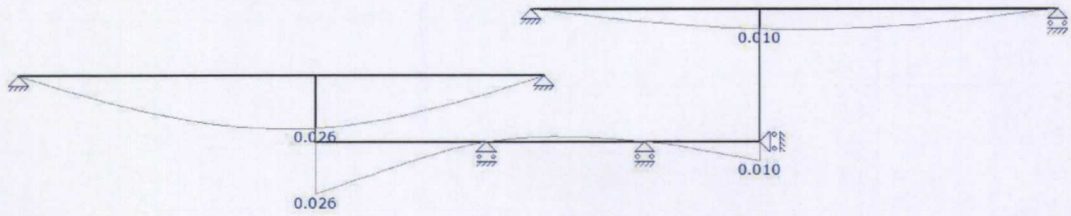
KARAKTERISTIEK BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Ka.C.(w1)	Ka.C.1
B.G.1	Eigen Gewicht + Permanent	1.00	1.00
B.G.2	Verdeelde veranderlijke belasting	-	1.00

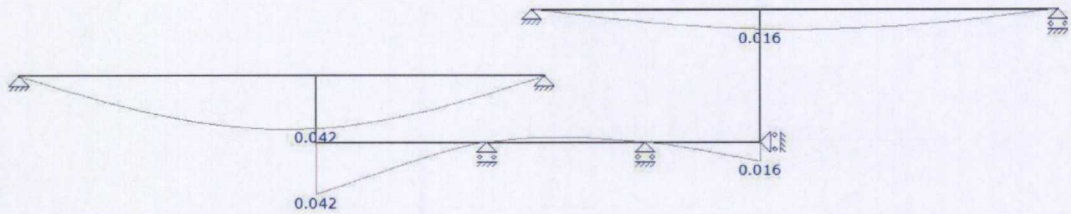
KA.C. EXTREME KNOOPVERPLAATSINGEN

Knoop	B.C.	X	Z	Ry
K1	Ka.C.1	0.0000	**0.0421**	**13.985e-03**
K2	Ka.C.1	0.0000	0.0000	**7.397e-03**
K3	Ka.C.1	0.0000	0.0000	**-5.049e-03**
K4	Ka.C.1	0.0000	**0.0158**	**-8.034e-03**
K5	Ka.C.1	0.0000	0.0000	**-13.038e-03**
K6	Ka.C.1	0.0000	**0.0421**	**2.453e-03**
K7	Ka.C.1	0.0000	0.0000	**13.570e-03**
K8	Ka.C.1	0.0000	0.0000	**-5.227e-03**
K9	Ka.C.1	0.0000	**0.0159**	**-1.067e-03**
K10	Ka.C.1	0.0000	0.0000	**5.388e-03**
-	-	m	m	rad

AFB. KA.C.(W1) VERPLAATSINGEN — Ka.C.(w1) Belastingscombinaties

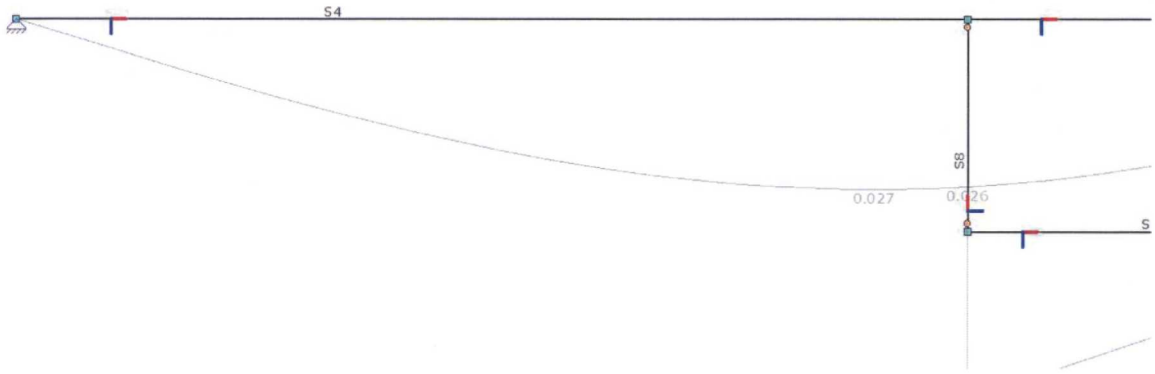


AFB. KA.C. VERPLAATSINGEN OMHULLENDE — Karakteristiek Belastingscombinaties

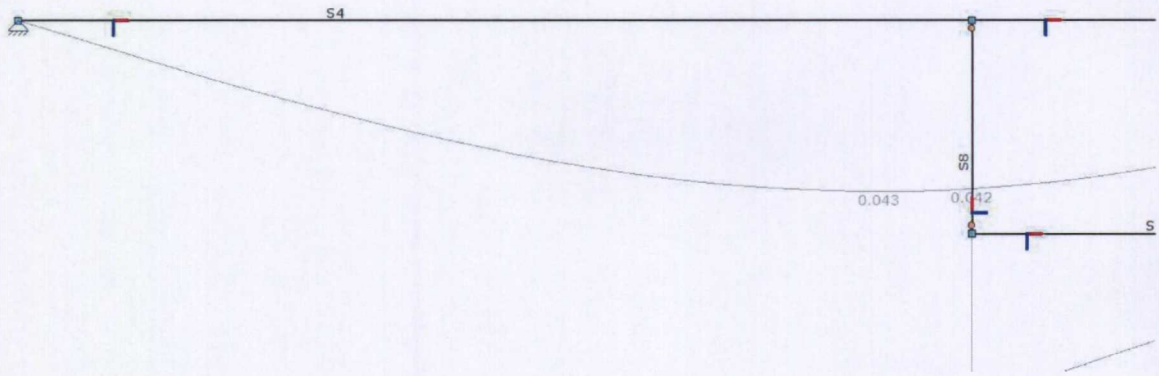


KA.C. EXTREME DOORBUIGINGEN

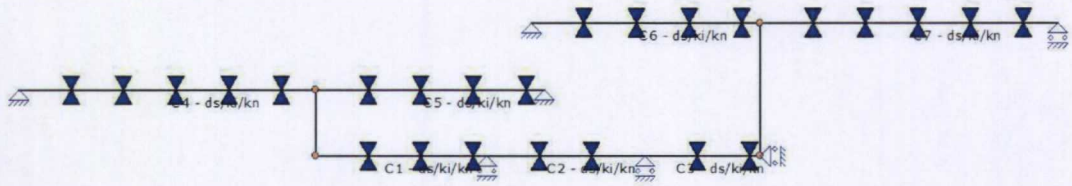
Staaf	B.C.	Knoop Begin		Staaf		Knoop Eind	
		X	Z	Z'afst	Z'	X	Z
S1	Ka.C.1	0.000	0.042	2.225	**-0.0024**	0.000	0.000
S2	Ka.C.1	0.000	0.000	1.327	**-0.0042**	0.000	0.000
S4	Ka.C.1	0.000	0.000	3.171	**0.0116**	0.000	0.042
S5	Ka.C.1	0.000	0.042	1.884	**0.0063**	0.000	0.000
S6	Ka.C.1	0.000	0.000	2.396	**0.0024**	0.000	0.016
S7	Ka.C.1	0.000	0.016	2.594	**0.0051**	0.000	0.000
-	-	m	m	m	m	m	m


S4
S3
0.027
0.026
S

AFB. CONSTRUCTIE RESULTATEN (KA.C. OMHULLENDE)



AFB. STAALCONTROLE



SAMENSTELLING CONSTRUCTIEDELEN

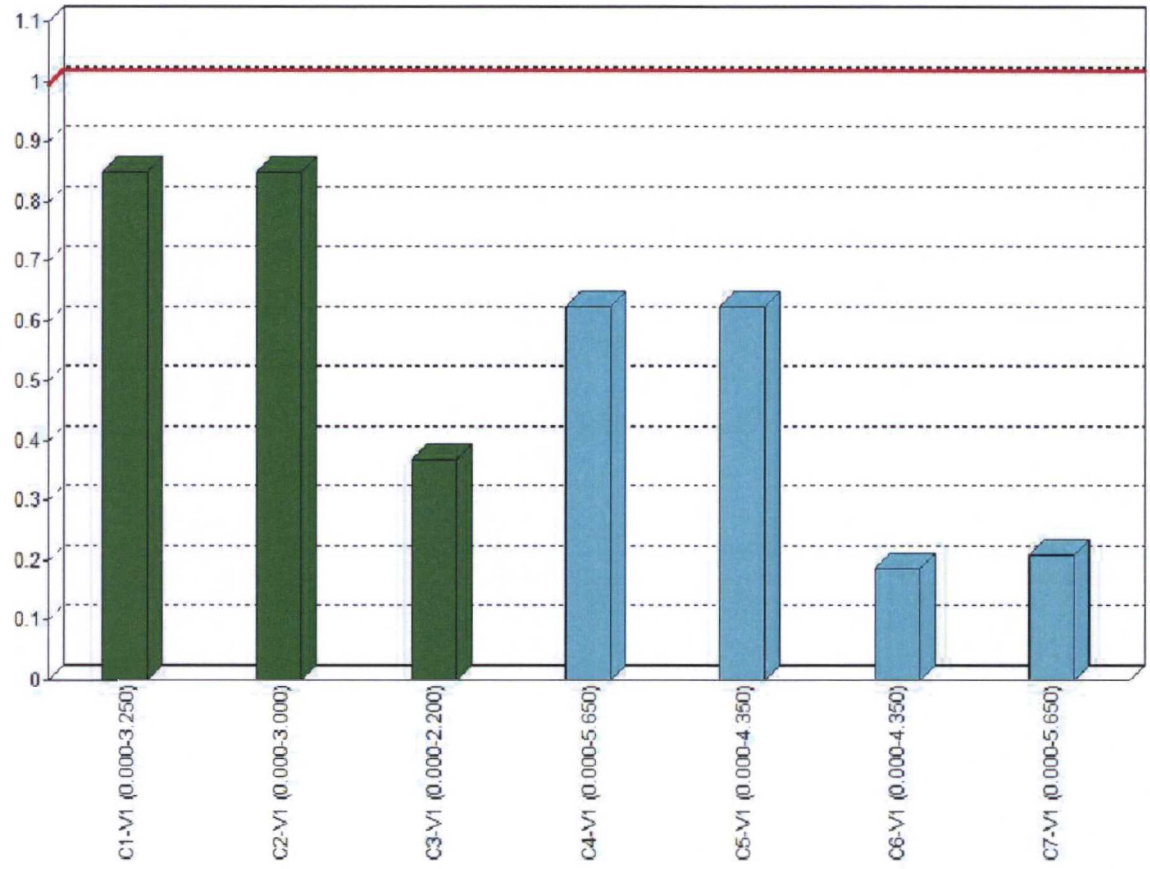
Constructiedeel	Staaf/staven
C1	S1
C2	S2
C3	S3
C4	S4
C5	S5
C6	S6
C7	S7

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

Veld	Toetsing	Combinatie	Artikel	UC max
C1-V1 (0.000-3.250)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.1)	0.85
C2-V1 (0.000-3.000)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.1)	0.85
C3-V1 (0.000-2.200)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.1)	0.37

Veld	Toetsing	Combinatie	Artikel	UC max
C4-V1 (0.000-5.650)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.62
C5-V1 (0.000-4.350)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.62
C6-V1 (0.000-4.350)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.19
C7-V1 (0.000-5.650)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.21

AFB. STAAL UC DIAGRAM



STAALTOETS RESULTATEN MET PROFIELGEGEVENS NEN-EN1993-1-1:2016/NB:2016

Uitgangspunten berekening voor staalcontrole

Alpha;cr = 1000.00 > 10;

Profielgegevens staaf C1-V1 (0.000-3.250)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C1-V1 (0.000-3.250)

Maatgevende combinatie: Fu.C.2 op 3.250 m

Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -249.2 kNm
	Vz;Ed = -194.9 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm

NEN-EN1993-1-1(6.1): UC = 0.85 < 1

Kiptoetsing C1-V1 (0.000-3.250)

Equi. profiel: UNP320

Maatgevende combinatie: Fu.C.2
Instab. curve Kip:d
Aangrijphoogte van de last: -0.151 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3m
Kipsteun onderflens: 1,2,3m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.018	b-eff(Eind) = 0.084
Tabel gebruikt Fig. NB.32	M = 5.2kN/m	MBeta = 0.0	q = 72.8
Bovenflens maatgevend	Xb;Ist = 0.000 m	Xe;Ist = 1.000 m	Ist = 1.000 m
Lsys = 3.250 m	Lg = 3.250 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.11	C2 = 0.35 (tabel)	C2(toegepast) = -0.37	C = 10.55
Mcr = 831.5 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.59	Lamda;T = 0.41	Lamda;MT = 1.00	
Chi;LT(Fu.C.2) = 0.47	M;Ed = 11.9 kNm		UC(y) = 0.09
Chi;LT,Z = 1.00	Ikip = 1.400 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = 5.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.09 < 1

Profielgegevens staaf C2-V1 (0.000-3.000)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C2-V1 (0.000-3.000)

Maatgevende combinatie: Fu.C.2 op 0.000 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = 156.2 kN	My;Ed = -249.2 kNm
N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 948.6 kN	MyRd = 292.9 kNm
		MzRd = 54.0 kNm

NEN-EN1993-1-1(6.1): UC = 0.85 < 1

Kiptoetsing C2-V1 (0.000-3.000)

Equi. profiel: UNP320
Maatgevende combinatie: Fu.C.2
Instab. curve Kip:d
Aangrijphoogte van de last: -0.151 m vanaf hart profiel
Kipsteun bovenflens: 1,2m
Kipsteun onderflens: 1,2m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.067	b-eff(Eind) = 0.027
Tabel gebruikt Fig. NB.32	M = -108.2kN/m	MBeta = -82.4	q = 72.7
Bovenflens maatgevend	Xb;Ist = 2.000 m	Xe;Ist = 3.000 m	Ist = 1.000 m
Lsys = 3.000 m	Lg = 3.000 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.26	C2 = 0.04 (tabel)	C2(toegepast) = -0.05	C = 25.57
Mcr = 2,182.7 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.37	Lamda;T = 0.63	Lamda;MT = 1.00	
Chi;LT(Fu.C.2) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 1.000 m		UC(z) = 0.00
My;begin = -82.4 kNm	My;eind = -108.2 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C3-V1 (0.000-2.200)

UNP320	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 320.0 mm	A = 7.58e-03 m2	Wy;el = 679.3e-06 m3	Wy;pl = 825.2e-06 m3
b = 100.0 mm	Iy = 108.7e-06 m4	Wz;el = 806.2e-07 m3	Wz;pl = 152.0e-06 m3
tf = 17.5 mm	Iz = 596.7e-08 m4	Aw;y;el = 3.59e-03 m2	Aw;y;pl = 3.59e-03 m2
tw = 14.0 mm	Massa/m = 59.5 kg/m	Aw;z;el = 4.63e-03 m2	Aw;z;pl = 4.63e-03 m2
r = 17.5 mm		It = 647.8e-09 m4	Iwa = 102.4e-09 m6

Doorsnedetoetsing C3-V1 (0.000-2.200)

Maatgevende combinatie: Fu.C.2 op 0.000 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = 86.4 kN	My;Ed = -108.2 kNm
		Mz;Ed = 0.0 kNm

N;Rd = 2,689.9 kN	Vy;Rd = 735.2 kN	MyRd = 292.9 kNm	
	Vz;Rd = 948.6 kN	MzRd = 54.0 kNm	

NEN-EN1993-1-1(6.1): UC = 0.37 < 1

Kiptoetsing C3-V1 (0.000-2.200)

Equi. profiel: UNP320
Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:d
Aangrijphoogte van de last: -0.151 m vanaf hart profiel
Kipsteun bovenflens: 1,2m
Kipsteun onderflens: 1,2m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.037	b-eff(Eind) = 0.005
Tabel gebruikt Fig. NB.32	M = -3.1kN/m	MBeta = 0.0	q = 33.8
Bovenflens maatgevend	Xb;lst = 2.000 m	Xe;lst = 2.200 m	lst = 0.200 m
Lsys = 2.200 m	Lg = 2.200 m	S = 0.641 m	Iwa = 1.0237e-07 m6
C1 = 1.95	C2 = 0.04 (tabel)	C2(toegepast) = -0.04	C = 335.37
Mcr = 39,035.0 kNm	kred = 1.0		Profielklasse 1
Lamda;M = 0.20	Lamda;T = 0.80	Lamda;MT = 1.00	
Chi;LT(Fu.C.2) = 0.47	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.280 m		UC(z) = 0.00
My;begin = -3.1 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C4-V1 (0.000-5.650)

HE260B	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C4-V1 (0.000-5.650)

Maatgevende combinatie: Fu.C.2 op 5.650 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 188.0 kNm
	Vz;Ed = 13.5 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,783.4 kN	Vy;Rd = 1,301.7 kN	MyRd = 301.5 kNm
	Vz;Rd = 510.1 kN	MzRd = 141.5 kNm

NEN-EN1993-1-1(6.12): UC = 0.62 < 1

Kiptoetsing C4-V1 (0.000-5.650)

Equi. profiel: HE260B
Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:a
Aangrijphoogte van de last: -0.121 m vanaf hart profiel
Kipsteun bovenflens: 1,2,3,4,5m
Kipsteun onderflens: 1,2,3,4,5m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.023	b-eff(Eind) = 0.006
Tabel gebruikt Fig. NB.32	M = 188.0kN/m	MBeta = 177.7	q = 7.1
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.650 m	lst = 0.650 m
Lsys = 5.650 m	Lg = 5.650 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.03	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 173.93
Mcr = 31,961.1 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.2) = 1.00	M;Ed = 188.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	Ikip = 0.650 m		UC(z) = 0.00
My;begin = 177.7 kNm	My;eind = 188.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Profielgegevens staaf C5-V1 (0.000-4.350)

HE260B	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C5-V1 (0.000-4.350)

Maatgevende combinatie: Fu.C.2 op 0.000 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 188.0 kNm
	Vz;Ed = -28.0 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,783.4 kN	Vy;Rd = 1,301.7 kN	MyRd = 301.5 kNm
	Vz;Rd = 510.1 kN	MzRd = 141.5 kNm

NEN-EN1993-1-1(6.12): UC = 0.62 < 1

Kiptoetsing C5-V1 (0.000-4.350)

Equi. profiel: HE260B

Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:a

Aangrijphoogte van de last: -0.121 m vanaf hart profiel

Kipsteun bovenflens: 1,2,3,4m

Kipsteun onderflens: 1,2,3,4m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.012	b-eff(Eind) = 0.025
Tabel gebruikt Fig. NB.32	M = 20.0kN/m	MBeta = 0.0	q = 7.0
Bovenflens maatgevend	Xb;lst = 4.000 m	Xe;lst = 4.350 m	lst = 0.350 m
Lsys = 4.350 m	Lg = 4.350 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.79	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 404.09
Mcr = 96,447.8 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.2) = 1.00	M;Ed = 20.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.490 m		UC(z) = 0.00
My;begin = 20.0 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Profielgegevens staaf C6-V1 (0.000-4.350)

HE260B	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3
b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C6-V1 (0.000-4.350)

Maatgevende combinatie: Fu.C.2 op 4.108 m — Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 56.8 kNm
	Vz;Ed = -0.5 kN	Mz;Ed = 0.0 kNm
N;Rd = 2,783.4 kN	Vy;Rd = 1,301.7 kN	MyRd = 301.5 kNm
	Vz;Rd = 510.1 kN	MzRd = 141.5 kNm

NEN-EN1993-1-1(6.12): UC = 0.19 < 1

Kiptoetsing C6-V1 (0.000-4.350)

Equi. profiel: HE260B

Maatgevende combinatie: Fu.C.2 — Instab. curve Kip:a

Aangrijphoogte van de last: -0.121 m vanaf hart profiel

Kipsteun bovenflens: 1,2,3,4m

Kipsteun onderflens: 1,2,3,4m

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.012	b-eff(Eind) = 0.001
Tabel gebruikt Fig. NB.32	M = 56.8kN/m	MBeta = 56.4	q = 7.0
Bovenflens maatgevend	Xb;lst = 4.000 m	Xe;lst = 4.350 m	lst = 0.350 m
Lsys = 4.350 m	Lg = 4.350 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.00	C2 = 0.00 (tabel)	C2(toegepast) = 0.00	C = 444.13
Mcr = 106,005.5 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.2) = 1.00	M;Ed = 56.8 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.350 m		UC(z) = 0.00
My;begin = 56.8 kNm	My;eind = 56.4 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

Profielgegevens staaf C7-V1 (0.000-5.650)

HE260B	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 260.0 mm	A = 11.84e-03 m2	Wy;el = 114.8e-05 m3	Wy;pl = 128.3e-05 m3

b = 260.0 mm	Iy = 149.2e-06 m4	Wz;el = 395.0e-06 m3	Wz;pl = 602.2e-06 m3
tf = 17.5 mm	Iz = 513.5e-07 m4	Aw;y;el = 9.59e-03 m2	Aw;y;pl = 9.59e-03 m2
tw = 10.0 mm	Massa/m = 93.0 kg/m	Aw;z;el = 3.76e-03 m2	Aw;z;pl = 3.76e-03 m2
r = 24.0 mm		It = 123.8e-08 m4	Iwa = 753.7e-09 m6

Doorsnedetoetsing C7-V1 (0.000-5.650)

Maatgevende combinatie: Fu.C.2 op 1.413 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 63.2 kNm	
	Vz;Ed = -0.1 kN	Mz;Ed = 0.0 kNm	
N;Rd = 2,783.4 kN	Vy;Rd = 1,301.7 kN	MyRd = 301.5 kNm	
	Vz;Rd = 510.1 kN	MzRd = 141.5 kNm	

NEN-EN1993-1-1(6.12): UC = 0.21 < 1

Kiptoetsing C7-V1 (0.000-5.650)

Equi. profiel: HE260B			
Maatgevende combinatie: Fu.C.2		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.121 m vanaf hart profiel			
Kipsteun bovenflens: 1,2,3,4,5m			
Kipsteun onderflens: 1,2,3,4,5m			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.004	b-eff(Eind) = 0.013
Tabel gebruikt Fig. NB.32	M = 17.8kN/m	MBeta = 0.0	q = 7.0
Bovenflens maatgevend	Xb;lst = 5.000 m	Xe;lst = 5.650 m	lst = 0.650 m
Lsys = 5.650 m	Lg = 5.650 m	S = 1.258 m	Iwa = 7.5365e-07 m6
C1 = 1.75	C2 = 0.01 (tabel)	C2(toegepast) = -0.01	C = 150.14
Mcr = 27,589.8 kNm	kred = 1.0	Lam-rel = 0.20	Profielklasse 1
Chi;LT(Fu.C.2) = 1.00	M;Ed = 17.8 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 0.910 m		UC(z) = 0.00
My;begin = 17.8 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip N/B, ivm Lambda;LT <= 0.4

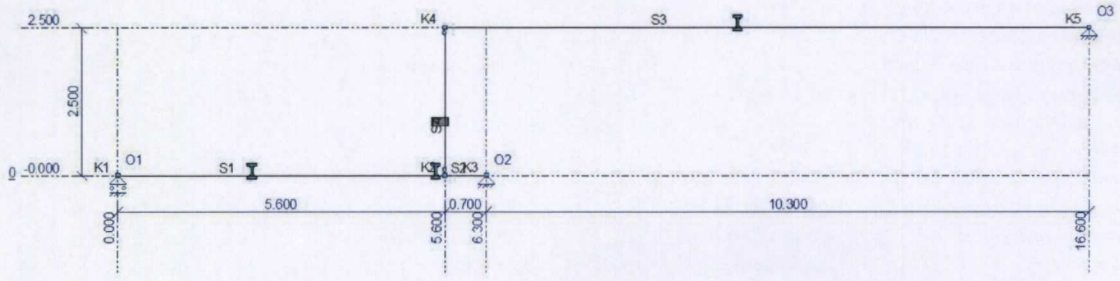
Valkenburg aan de Geul	Ingenieursbureau A. Palte BV	043 - 601 36 37
Computerberekening		

Projectnaam	'De Schatberg' te Sevenum	Projectnummer	460518
Omschrijving	Stalen liggers As 04-5A - B1-B3	Constructeur	DaKr
Opdrachtgever	Janssen Wuts Architecten BV	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Stalen liggers As 04-05 - B1-B3.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	5	4	3	3	5	11

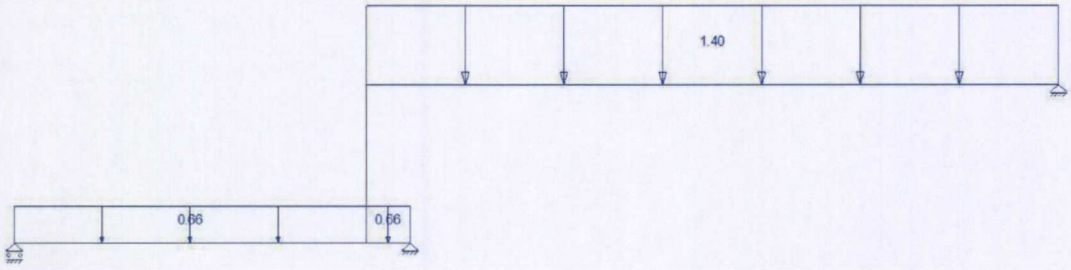
AFB. GEOMETRIE RAAMWERK



B.G.1: EIGEN GEWICHT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.66 (1.00x)	0.66 (1.00x)	0.000	5.600(L)	Z"	S1
qG	0.66 (1.00x)	0.66 (1.00x)	0.000	0.700(L)	Z"	S2
qG	1.40 (1.00x)	1.40 (1.00x)	0.000	11.000(L)	Z"	S3
Som lasten	**X: 0.00**	**kN Z: 19.55**	**kN**			
-	-	-	m	m	-	-

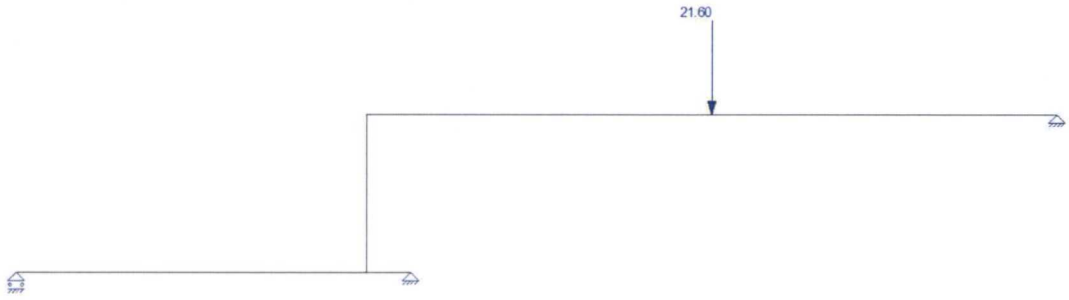
B.G.1: EIGEN GEWICHT



B.G.2: PERMANENT LHG

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent LHg						
F	21.60		5.500		Z'	S3
Som lasten	**X: 0.00**	**kN Z: 21.60**	**kN**			
-	-	-	m	m	-	-

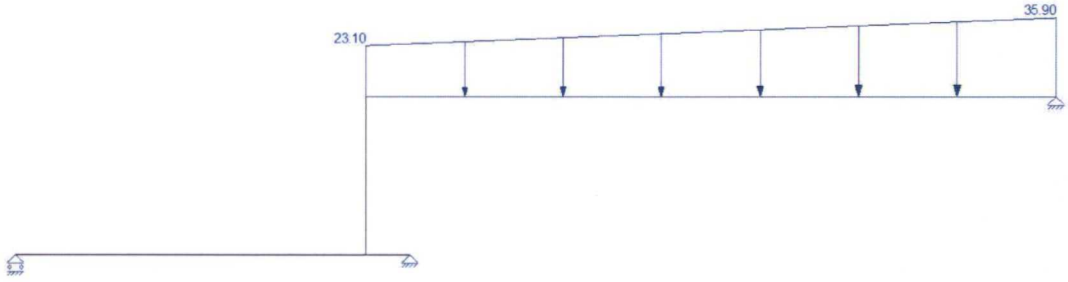
B.G.2: PERMANENT LHG



B.G.3: PERMANENT V+1

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Permanent V+1						
q	23.10	35.90	0.000	11.000(L)	Z'	S3
Som lasten	**X: 0.00**	**kN Z: 324.50**	**kN**			
-	-	-	m	m	-	-

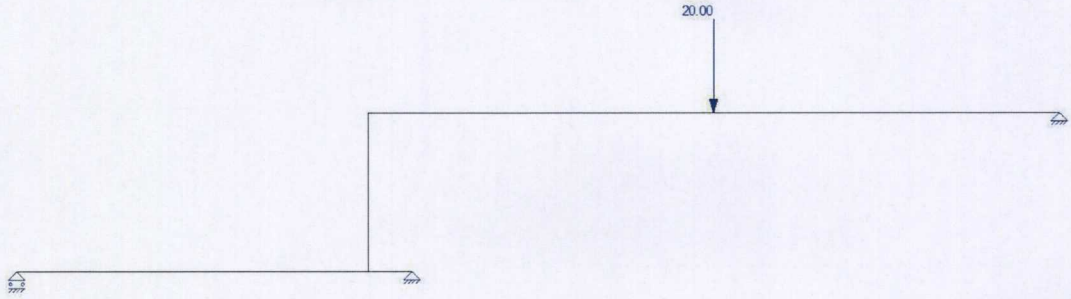
B.G.3: PERMANENT V+1



B.G.4: SNEEUW LHG

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.4: Sneeuw LHg						
F	20.00		5.500		Z'	S3
Som lasten	**X: 0.00**	**kN Z: 20.00**	**kN**			
-	-	-	m	m	-	-

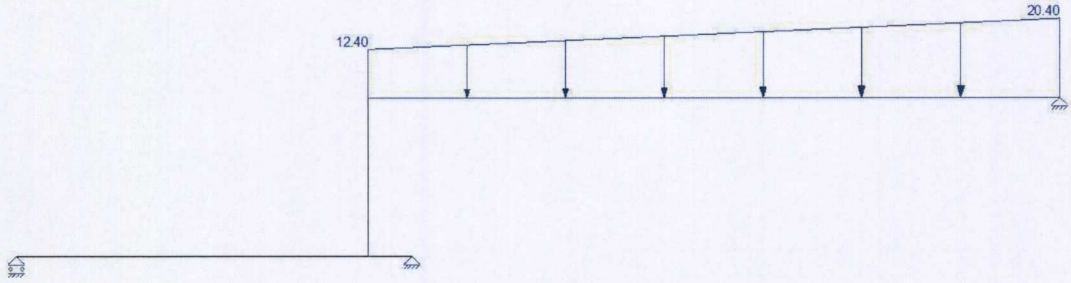
B.G.4: SNEEUW LHG



B.G.5: VERANDERLIJK V+1

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Veranderlijk V+1						
q	12.40	20.40	0.000	11.000(L)	Z'	S3
Som lasten	**X: 0.00**	**kN Z: 180.40**	**kN**			
-	-	-	m	m	-	-

B.G.5: VERANDERLIJK V+1



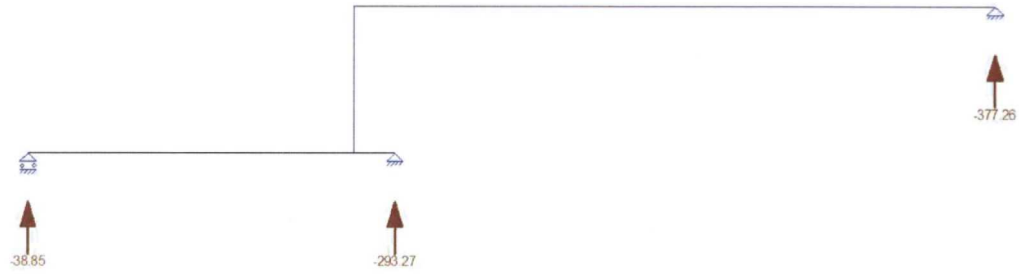
FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Fu.C.1	Fu.C.2	Fu.C.3	Fu.C.4	Fu.C.5
B.G.1	Eigen Gewicht	1.35	1.20	1.20	0.90	0.90
B.G.2	Permanent LHg	1.35	1.20	1.20	0.90	0.90
B.G.3	Permanent V+1	1.35	1.20	1.20	0.90	0.90
B.G.4	Sneeuw LHg	-	1.50	-	1.50	-
B.G.5	Veranderlijk V+1	0.90	0.90	1.50	0.90	1.50

FU.C. EXTREME OPLEGREACTIES

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O1	K1					Fu.C.3	0.00	**-38.85**	0.00				
O2	K3					Fu.C.3	0.00	**-293.27**	0.00				
O3	K5					Fu.C.3	0.00	**-377.26**	0.00				
Globale extreme waarden													
O3	K5					Fu.C.3	0.00	**-377.26**	0.00				
-	-	-	kN	kN	kNm	-	kN	kN	kNm		kN	kN	kNm

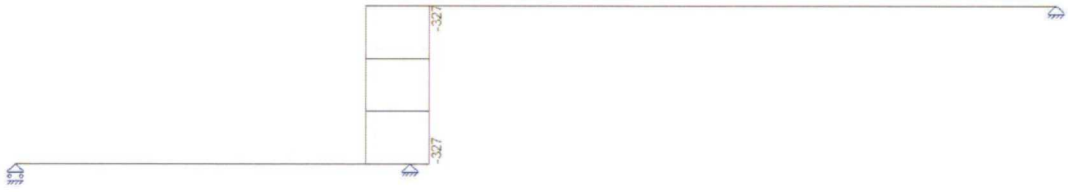
AFB. FU.C. OPLEGREACTIES OMHULLENDE — Fundamenteel Belastingscombinaties



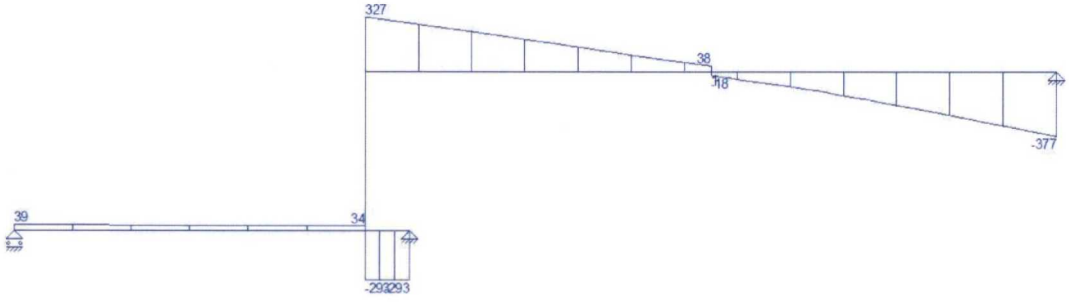
FU.C. OMHULLENDE

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S1	0.00	0.00	0.00	0.00	0.00	38.85	0.00	205.09
S2	0.00	0.00	0.00	0.00	-293.27	0.00	0.00	205.09
S3	0.00	0.00	0.00	0.00	-377.26	327.10	0.00	1004.14
S4	-327.10	0.00	-241.68	0.00	0.00	0.00	0.00	0.00
-	kN	kN	kN	kN	kN	kN	kNm	kNm

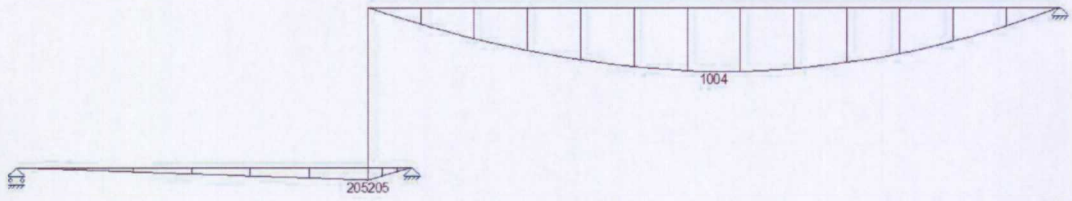
AFB. FU.C. NORMAALKRACHT (NX) OMHULLENDE — Fundamenteel Belastingscombinaties



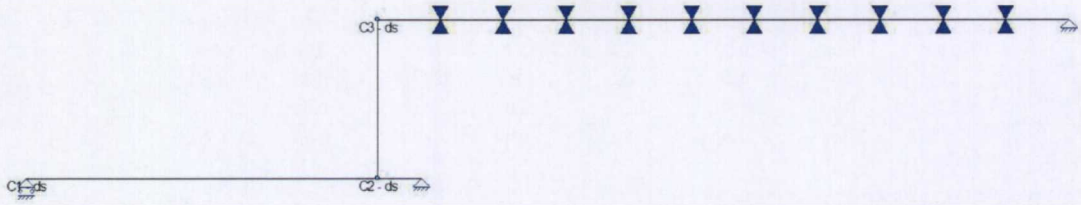
AFB. FU.C. DWARSKRACHT (VZ) OMHULLENDE — Fundamenteel Belastingscombinaties



AFB. FU.C. MOMENT (MY) OMHULLENDE — Fundamenteel Belastingscombinaties



AFB. STAALCONTROLE



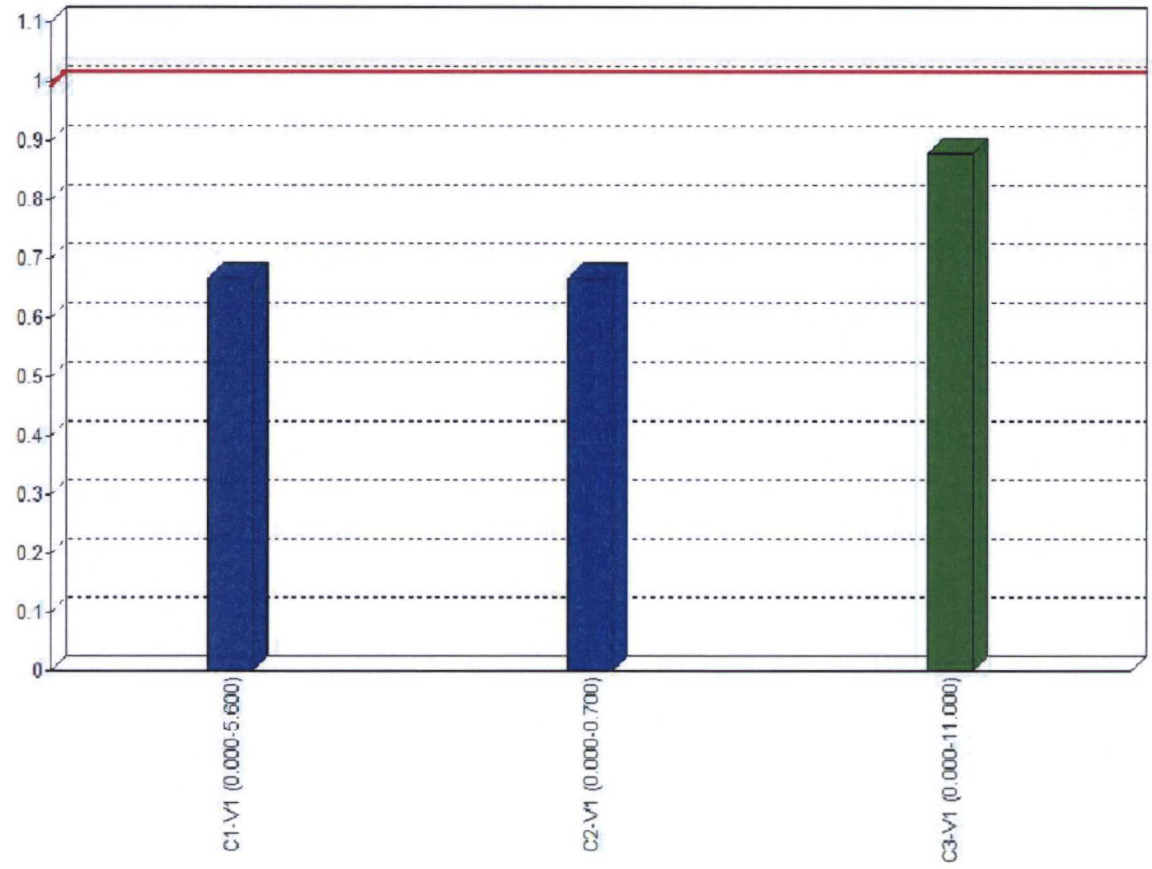
SAMENSTELLING CONSTRUCTIEDELEN

Constructiedeel	Staaf/staven
C1	S1
C2	S2
C3	S3

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

Veld	Toetsing	Combinatie	Artikel	UC max
C1-V1 (0.000-5.600)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.67
C2-V1 (0.000-0.700)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.30)	0.67
C3-V1 (0.000-11.000)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.88

AFB. STAAL UC DIAGRAM



STAALTOETS RESULTATEN MET PROFIELGEGEVENS NEN-EN1993-1-1:2016/NB:2016

Uitgangspunten berekening voor staalcontrole

Alpha;cr = 930.32 > 10;

Profielgegevens staaf C1-V1 (0.000-5.600)

IPE400	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 400.0 mm	A = 8.45e-03 m2	Wy;el = 115.6e-05 m3	Wy;pl = 130.7e-05 m3
b = 180.0 mm	Iy = 231.3e-06 m4	Wz;el = 146.4e-06 m3	Wz;pl = 229.0e-06 m3
tf = 13.5 mm	Iz = 131.8e-07 m4	Aw;y;el = 5.24e-03 m2	Aw;y;pl = 5.24e-03 m2
tw = 8.6 mm	Massa/m = 66.3 kg/m	Aw;z;el = 4.27e-03 m2	Aw;z;pl = 4.27e-03 m2
r = 21.0 mm		It = 510.8e-09 m4	Iwa = 490.0e-09 m6

Doorsnedetoetsing C1-V1 (0.000-5.600)

Maatgevende combinatie: Fu.C.3 op 5.600 m		Profielklasse = 1
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 205.1 kNm
	Vz;Ed = 34.4 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,984.9 kN	Vy;Rd = 710.8 kN	MyRd = 307.2 kNm
	Vz;Rd = 579.3 kN	MzRd = 53.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.67 < 1

Profielgegevens staaf C2-V1 (0.000-0.700)

IPE400	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 400.0 mm	A = 8.45e-03 m2	Wy;el = 115.6e-05 m3	Wy;pl = 130.7e-05 m3
b = 180.0 mm	Iy = 231.3e-06 m4	Wz;el = 146.4e-06 m3	Wz;pl = 229.0e-06 m3
tf = 13.5 mm	Iz = 131.8e-07 m4	Aw;y;el = 5.24e-03 m2	Aw;y;pl = 5.24e-03 m2
tw = 8.6 mm	Massa/m = 66.3 kg/m	Aw;z;el = 4.27e-03 m2	Aw;z;pl = 4.27e-03 m2
r = 21.0 mm		It = 510.8e-09 m4	Iwa = 490.0e-09 m6

Doorsnedetoetsing C2-V1 (0.000-0.700)

Maatgevende combinatie: Fu.C.3 op 0.000 m

Profielklasse = 1

Nx;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 205.1 kNm	a1 = 0.425
	Vz;Ed = -292.7 kN	Mz;Ed = 0.0 kNm	a2 = 0.425
Nc;Rd = 1,984.9 kN	Vy;Rd = 710.8 kN	My;Rd = 307.2 kNm	p = 0.000
	Vz;Rd = 579.3 kN	Mz;Rd = 53.8 kNm	q = 0.889
NVy;Rd = 1,984.8 kN	NVz;Rd = 1,984.9 kN	MV;y;Rd = 307.2 kNm	MV;z;Rd = 53.8 kNm

NEN-EN1993-1-1(6.30): UC = 0.67 < 1

Profielgegevens staaf C3-V1 (0.000-11.000)

HE450A	Analyse	Staal S355 fyd(toegepast) = 355 N/mm2	
h = 440.0 mm	A = 17.80e-03 m2	Wy;el = 289.6e-05 m3	Wy;pl = 321.6e-05 m3
b = 300.0 mm	Iy = 637.2e-06 m4	Wz;el = 631.0e-06 m3	Wz;pl = 965.5e-06 m3
tf = 21.0 mm	Iz = 946.5e-07 m4	Aw;y;el = 1.32e-02 m2	Aw;y;pl = 1.32e-02 m2
tw = 11.5 mm	Massa/m = 139.8 kg/m	Aw;z;el = 6.58e-03 m2	Aw;z;pl = 6.58e-03 m2
r = 27.0 mm		It = 243.8e-08 m4	Iwa = 414.8e-08 m6

Doorsnedetoetsing C3-V1 (0.000-11.000)

Maatgevende combinatie: Fu.C.3 op 5.500 m

Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 1,004.1 kNm	
	Vz;Ed = 25.5 kN	Mz;Ed = 0.0 kNm	
N;Rd = 6,320.0 kN	Vy;Rd = 2,710.7 kN	MyRd = 1,141.6 kNm	
	Vz;Rd = 1,348.3 kN	MzRd = 342.8 kNm	

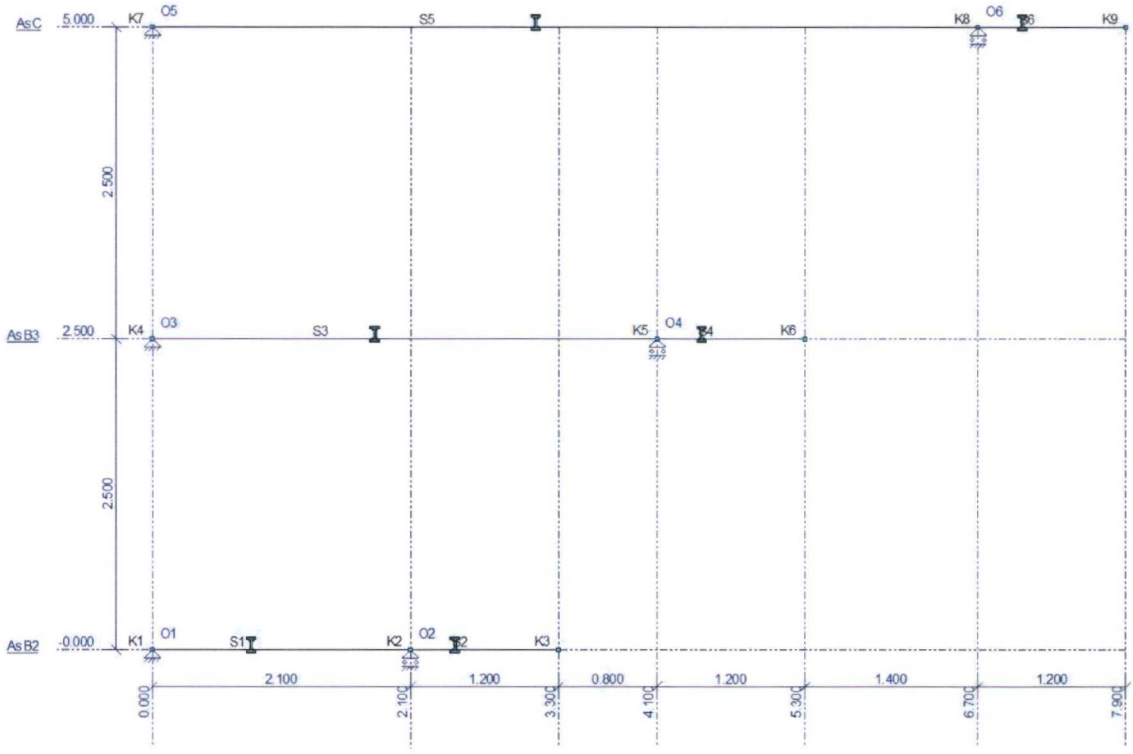
NEN-EN1993-1-1(6.12): UC = 0.88 < 1

Projectnaam	'De Schatberg' te Sevenum	Projectnummer	460518
Omschrijving		Constructeur	DaKr
Opdrachtgever	Janssen Wuts Architecten BV	Eenheden	m, kN, kNm
Bestand	P:\460518\ber\460518-B - Gewicht- en Stabiliteitsberekening\460518-B-B - Ligger LHg As B2 - C.mxf		

CONSTRUCTIEGEGEVENS

Projecttype	Knopen	Staven	Opleggingen	Profielen	Bel.gev.	Bel.comb.
2D-Raamwerk	9	6	6	3	8	32

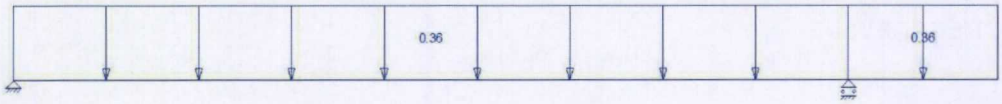
AFB. GEOMETRIE RAAMWERK

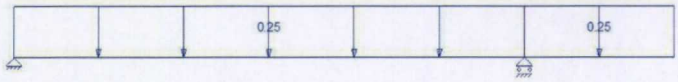


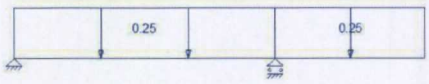
B.G.1: EIGEN GEWICHT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.1: Eigen Gewicht						
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	2.100(L)	Z"	S1
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	1.200(L)	Z"	S2,S4
qG	0.25 (1.00x)	0.25 (1.00x)	0.000	4.100(L)	Z"	S3
qG	0.36 (1.00x)	0.36 (1.00x)	0.000	6.700(L)	Z"	S5
qG	0.36 (1.00x)	0.36 (1.00x)	0.000	1.200(L)	Z"	S6
Som lasten	**X: 0.00**	**kN Z: 4.97**	**kN**			
-	-	-	m	m	-	-

B.G.1: EIGEN GEWICHT



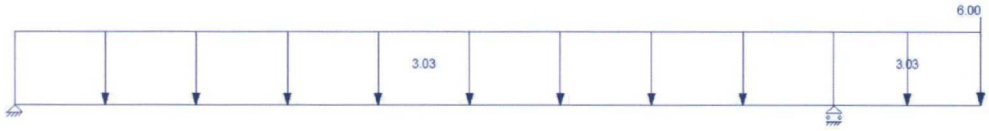


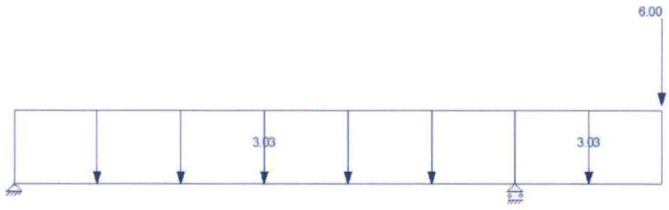


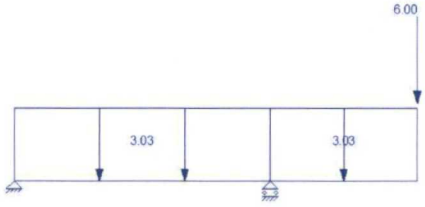
B.G.2: PERMANENT

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.2: Permanent						
q	3.03	3.03	0.000	2.100(L)	Z'	S1-S6
N	6.00				Z	K3,K6,K9
Som lasten	**X: 0.00**	**kN Z: 68.00**	**kN**			
-	-	-	m	m	-	-

B.G.2: PERMANENT

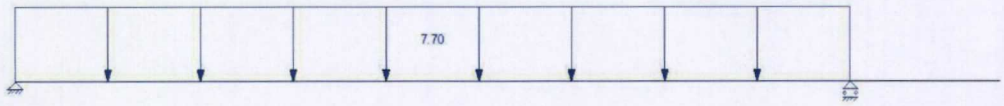


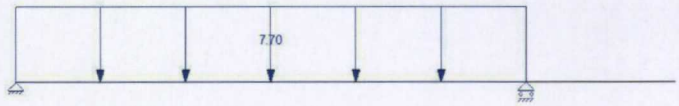


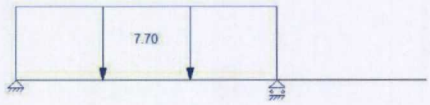


B.G.3: SNEEUW GEBOUW

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.3: Sneeuw gebouw						
q	7.70	7.70	0.000	2.100(L)	Z'	S1,S3,S5
Som lasten	**X: 0.00 kN**	**Z: 99.33 kN**				
-	-	-	m	m	-	-







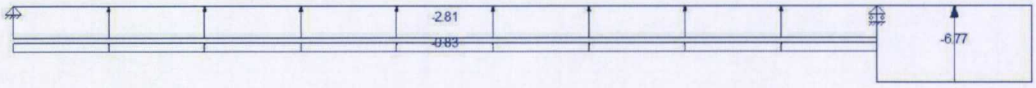
B.G.4: SNEEUW LUIFEL

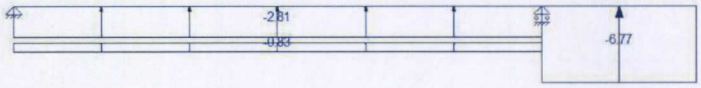
Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.4: Sneeuw luifel						
q	7.70	7.70	0.000	1.200(L)	Z'	S2,S4,S6
Som lasten	**X: 0.00**	**kN Z: 27.72**	**kN**			
-	-	-	m	m	-	-

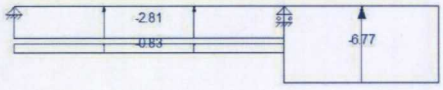
B.G.5: WIND I

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.5: Wind I						
q	-2.81	-2.81	0.000	2.100(L)	Z'	S1,S3,S5
q	-0.83	-0.83	0.000	2.100(L)	Z'	S1,S3,S5
q	-6.77	-6.77	0.000	1.200(L)	Z'	S2,S4,S6
Som lasten	**X: 0.00**	**kN Z: -71.33**	**kN**			
-	-	-	m	m	-	-

B.G.5: WIND I

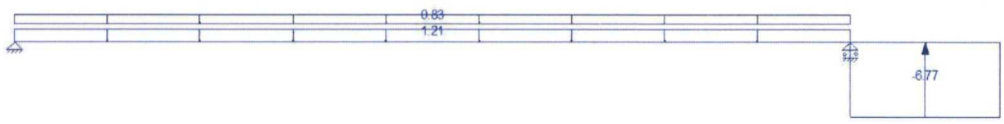


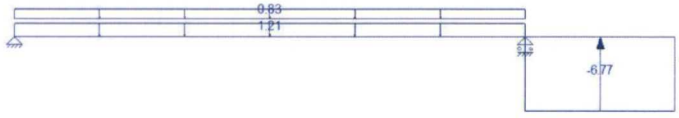


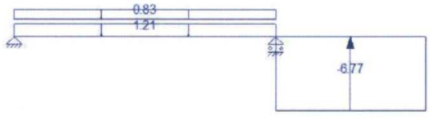


B.G.6: WIND II

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.6: Wind II						
q	0.83	0.83	0.000	2.100(L)	Z'	S1,S3,S5
q	1.21	1.21	0.000	2.100(L)	Z'	S1,S3,S5
q	-6.77	-6.77	0.000	1.200(L)	Z'	S2,S4,S6
Som lasten	**X: 0.00**	**kN Z: 1.94**	**kN**			
-	-	-	m	m	-	-



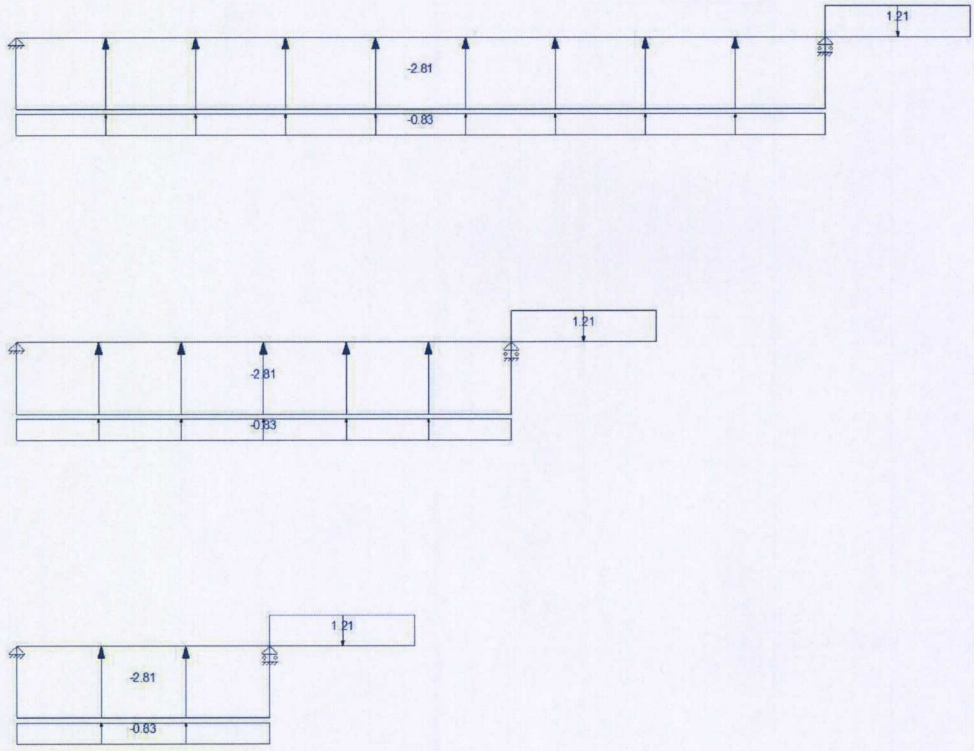




B.G.7: WIND III

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.7: Wind III						
q	-2.81	-2.81	0.000	2.100(L)	Z'	S1,S3,S5
q	-0.83	-0.83	0.000	2.100(L)	Z'	S1,S3,S5
q	1.21	1.21	0.000	1.200(L)	Z'	S2,S4,S6
Som lasten	**X: 0.00**	**kN Z: -42.60**	**kN**			
-	-	-	m	m	-	-

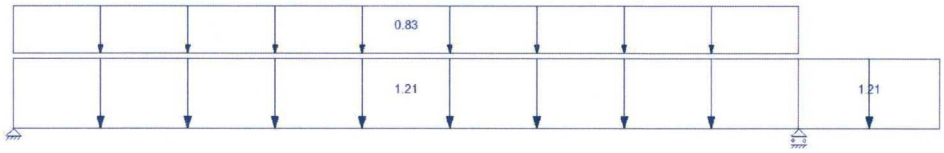
B.G.7: WIND III

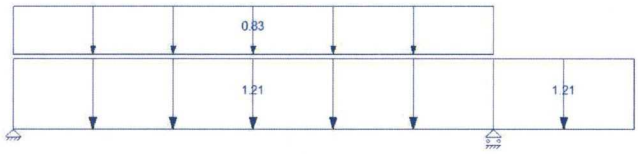


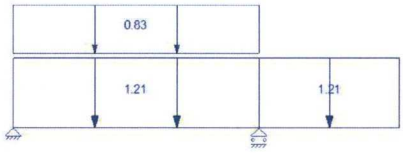
B.G.8: WIND IV

Type	Beginwaarde	Eindwaarde	Beginafstand	Eindafstand	Richting	Staaf of knoop
B.G.8: Wind IV						
q	0.83	0.83	0.000	2.100(L)	Z'	S1,S3,S5
q	1.21	1.21	0.000	2.100(L)	Z'	S1-S6
Som lasten	**X: 0.00**	**kN Z: 30.67**	**kN**			
-	-	-	m	m	-	-

B.G.8: WIND IV







FUNDAMENTEEL BELASTINGSCOMBINATIES (TABEL)

B.G.	Omschrijving	Fu.C.1	Fu.C.2	Fu.C.3	Fu.C.4	Fu.C.5	Fu.C.6	Fu.C.7	Fu.C.8
B.G.1	Eigen Gewicht	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.2	Permanent	1.35	1.20	1.20	1.20	1.20	1.20	1.20	1.20
B.G.3	Sneeuw gebouw	-	1.50	-	1.50	-	-	-	-
B.G.4	Sneeuw luifel	-	-	1.50	1.50	-	-	-	-
B.G.5	Wind I	-	-	-	-	1.50	-	-	-
B.G.6	Wind II	-	-	-	-	-	1.50	-	-
B.G.7	Wind III	-	-	-	-	-	-	1.50	-
B.G.8	Wind IV	-	-	-	-	-	-	-	1.50

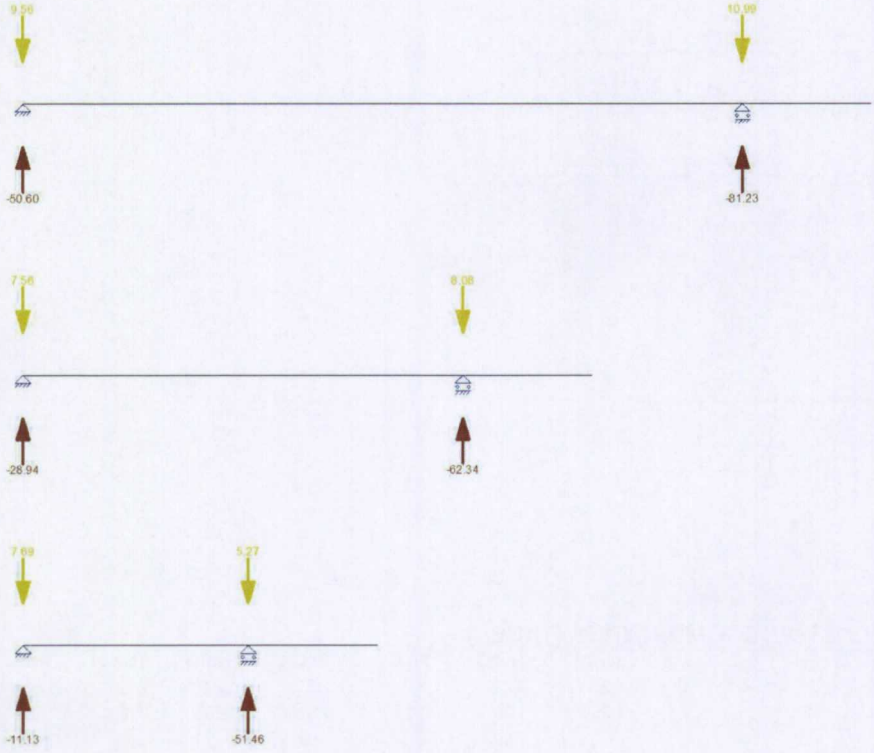
B.G.	Omschrijving	Fu.C.9	Fu.C.10	Fu.C.11	Fu.C.12	Fu.C.13	Fu.C.14	Fu.C.15
B.G.1	Eigen Gewicht	0.90	0.90	0.90	0.90	0.90	0.90	0.90
B.G.2	Permanent	0.90	0.90	0.90	0.90	0.90	0.90	0.90
B.G.3	Sneeuw gebouw	1.50	-	1.50	-	-	-	-
B.G.4	Sneeuw luifel	-	1.50	1.50	-	-	-	-
B.G.5	Wind I	-	-	-	1.50	-	-	-
B.G.6	Wind II	-	-	-	-	1.50	-	-
B.G.7	Wind III	-	-	-	-	-	1.50	-
B.G.8	Wind IV	-	-	-	-	-	-	1.50

FU.C. EXTREME OPLEGREACTIES

Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O1	K1					Fu.C.7	0.00	**7.69**	0.00				
O1	K1					Fu.C.9	0.00	**-11.13**	0.00				
O2	K2					Fu.C.12	0.00	**5.27**	0.00				
O2	K2					Fu.C.4	0.00	**-51.46**	0.00				
O3	K4					Fu.C.14	0.00	**7.56**	0.00				
O3	K4					Fu.C.2	0.00	**-28.94**	0.00				
O4	K5					Fu.C.12	0.00	**8.08**	0.00				
O4	K5					Fu.C.4	0.00	**-62.34**	0.00				

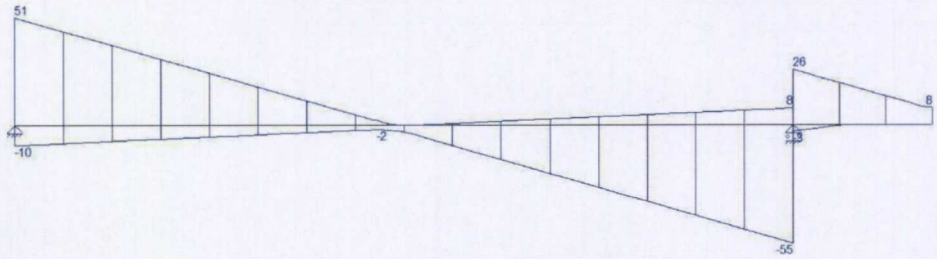
Oplegging	Knoop	B.C.	Xmax	Z	My	B.C.	X	Zmax	My	B.C.	X	Z	Mymax
O5	K7					Fu.C.14	0.00	**9.56**	0.00				
O5	K7					Fu.C.2	0.00	**-50.60**	0.00				
O6	K8					Fu.C.12	0.00	**10.99**	0.00				
O6	K8					Fu.C.4	0.00	**-81.23**	0.00				
Globale extreme waarden													
O6	K8					Fu.C.12	0.00	**10.99**	0.00				
O6	K8					Fu.C.4	0.00	**-81.23**	0.00				
-	-	-	kN	kN	kNm	-	kN	kN	kNm		kN	kN	kNm

AFB. FU.C. OPLEGREACTIES OMHULLENDE — Fundamenteel Belastingscombinaties



FU.C. OMHULLENDE

Staaf	Nx Minus	Nx Plus	Nx NegMax	Nx PosMin	Vz Minus	Vz Plus	My Minus	My Plus
S1	0.00	0.00	0.00	0.00	-25.68	11.13	-19.79	4.27
S2	0.00	0.00	0.00	0.00	-3.25	25.78	-19.79	0.00
S3	0.00	0.00	0.00	0.00	-36.56	28.94	-19.79	27.05
S4	0.00	0.00	0.00	0.00	-3.25	25.78	-19.79	0.00
S5	0.00	0.00	0.00	0.00	-55.29	50.60	-19.89	81.95
S6	0.00	0.00	0.00	0.00	-3.12	25.94	-19.89	0.00
-	kN	kN	kN	kN	kN	kN	kNm	kNm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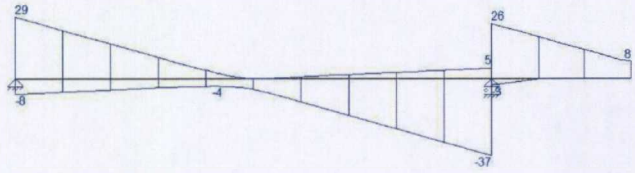
8
8
-10
-2
-55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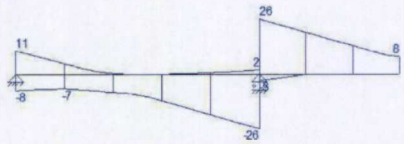
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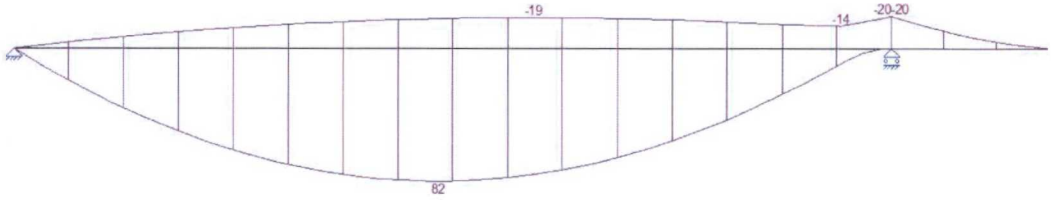
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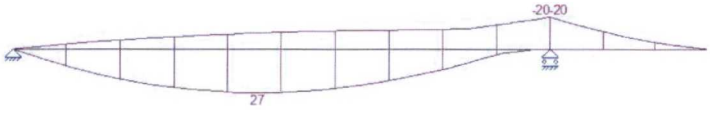
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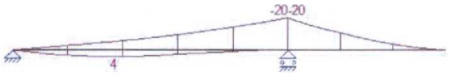
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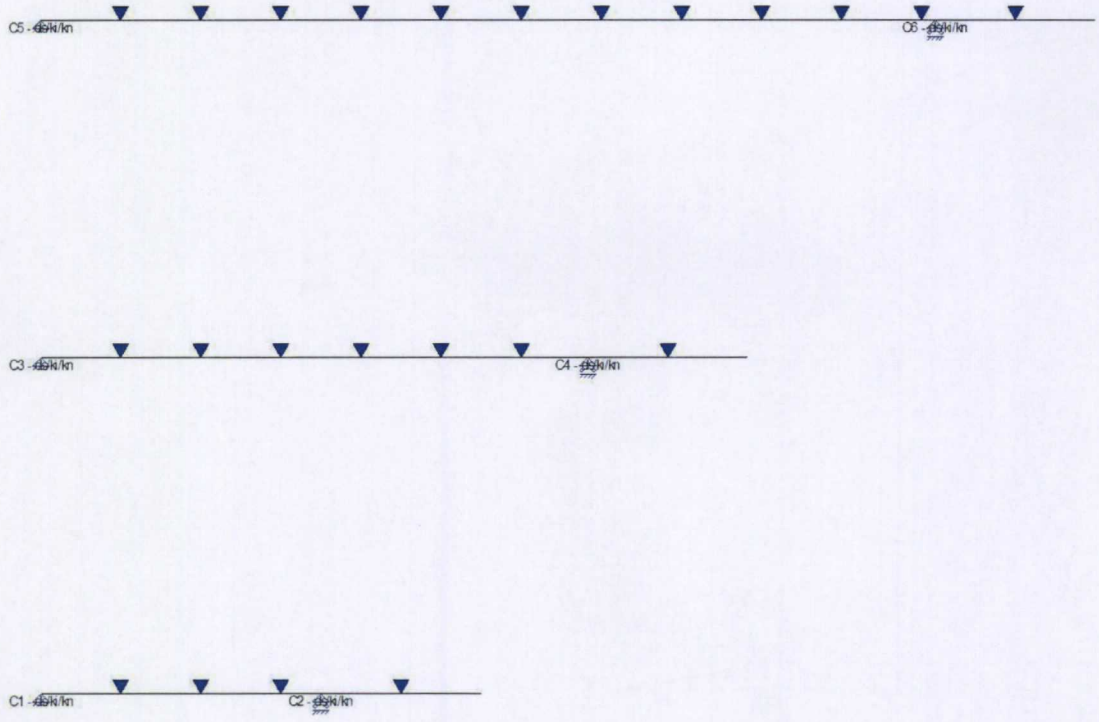


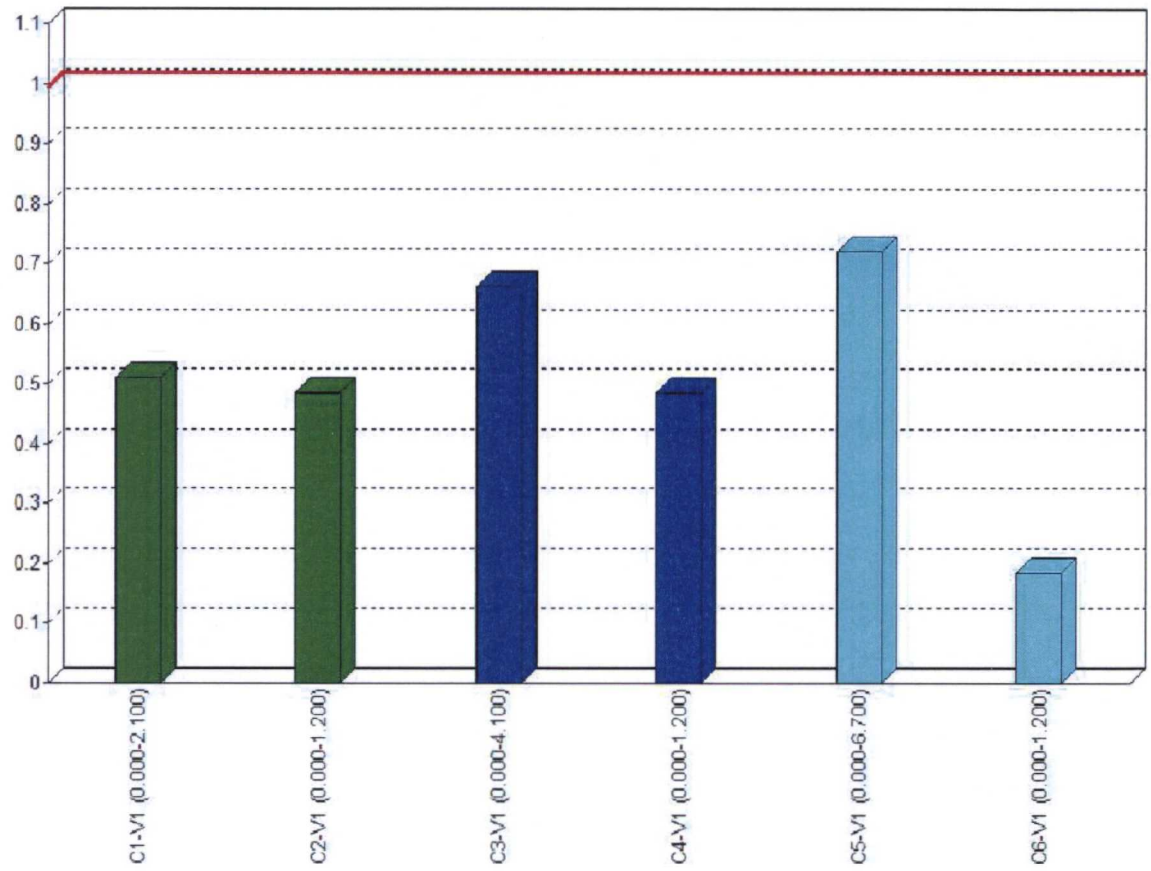
SAMENSTELLING CONSTRUCTIEDELEN

Constructiedeel	Staaf/staven
C1	S1
C2	S2
C3	S3
C4	S4
C5	S5
C6	S6

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

Veld	Toetsing	Combinatie	Artikel	UC max
C1-V1 (0.000-2.100)	Kiptoetsing	Fu.C.4	NEN-EN1993-1-1(6.54)	0.51
C2-V1 (0.000-1.200)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.49
C3-V1 (0.000-4.100)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.66
C4-V1 (0.000-1.200)	Doorsnede	Fu.C.3	NEN-EN1993-1-1(6.12)	0.49
C5-V1 (0.000-6.700)	Doorsnede	Fu.C.2	NEN-EN1993-1-1(6.12)	0.72
C6-V1 (0.000-1.200)	Kiptoetsing	Fu.C.4	NEN-EN1993-1-1(6.54)	0.18

AFB. STAAL UC DIAGRAM



STAALTOETS RESULTATEN MET PROFIELGEGEVENS NEN-EN1993-1-1:2016/NB:2016

Uitgangspunten berekening voor staalcontrole

Alpha;cr = 1000.00 > 10;

Profielgegevens staaf C1-V1 (0.000-2.100)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C1-V1 (0.000-2.100)

Maatgevende combinatie: Fu.C.3 op 2.100 m		Profielklasse = 1	
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -19.8 kNm	
	Vz;Ed = -13.6 kN	Mz;Ed = 0.0 kNm	
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm	
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm	

NEN-EN1993-1-1(6.12): UC = 0.49 < 1

Kiptoetsing C1-V1 (0.000-2.100)

Equi. profiel: HE140A			
Maatgevende combinatie: Fu.C.4		Instab. curve Kip:a	
Aangrijphoogte van de last: -0.062 m vanaf hart profiel			
Kipsteun bovenflens: 0.6, 1.2, 1.8m			
Kipsteun onderflens: N.v.t.			
Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.006	b-eff(Eind) = 0.021
Tabel gebruikt Fig. NB.32	M = -19.8kN/m	MBeta = 0.0	q = 15.5
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 2.100 m	lst = 2.100 m

Lsys = 2.100 m	Lg = 2.100 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 2.30	C2 = 0.50 (tabel)	C2(toegepast) = -0.54	C = 7.14
Mcr = 249.0 kNm	kred = 1.0	Lam-rel = 0.40	Profielklasse 1
Chi;LT(Fu.C.4) = 0.95	M;Ed = 19.8 kNm		UC(y) = 0.51
Chi;LT,Z = 1.00	lkip = 2.100 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -19.8 kNm		

NEN-EN1993-1-1(6.54): UC = 0.51 < 1

Profielgegevens staaf C2-V1 (0.000-1.200)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C2-V1 (0.000-1.200)

Maatgevende combinatie: Fu.C.3 op 0.000 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = 25.8 kN	My;Ed = -19.8 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 137.4 kN	MyRd = 40.8 kNm
		MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.49 < 1

Kiptoetsing C2-V1 (0.000-1.200)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.15

Instab. curve Kip:a

Aangrijphoogte van de last: -0.062 m vanaf hart profiel

Kipsteun bovenflens: 0.6m

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 4.8kN/m	= 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 1.200 m	lst = 0.984 m
Lsys = 1.200 m	Lg = 1.200 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = -0.83	C = 5.56
Mcr = 339.6 kNm	kred = 1.0	Lam-rel = 0.35	Profielklasse 1
Chi;LT(Fu.C.15) = 0.97	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 1.200 m		UC(z) = 0.00
My;begin = -9.9 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C3-V1 (0.000-4.100)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C3-V1 (0.000-4.100)

Maatgevende combinatie: Fu.C.2 op 1.869 m

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	Profielklasse = 1
	Vz;Ed = 0.0 kN	My;Ed = 27.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	Mz;Ed = 0.0 kNm
	Vz;Rd = 137.4 kN	MyRd = 40.8 kNm
		MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.66 < 1

Kiptoetsing C3-V1 (0.000-4.100)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.3

Instab. curve Kip:a

Aangrijphoogte van de last: -0.062 m vanaf hart profiel

Kipsteun bovenflens: 0.6, 1.2, 1.8, 2.4, 3, 3.6m

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.003	b-eff(Eind) = 0.011
Tabel gebruikt Fig. NB.32	M = -19.8kN/m	MBeta = 0.0	q = 3.9
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 4.100 m	lst = 4.100 m
Lsys = 4.100 m	Lg = 4.100 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 2.30	C2 = 0.48 (tabel)	C2(toegepast) = -0.51	C = 6.45
Mcr = 115.3 kNm	kred = 1.0	Lam-rel = 0.59	Profielklasse 1
Chi;LT(Fu.C.3) = 0.89	M;Ed = 19.8 kNm		UC(y) = 0.54
Chi;LT,Z = 1.00	lkip = 4.100 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -19.8 kNm		

NEN-EN1993-1-1(6.54): UC = 0.54 < 1

Profielgegevens staaf C4-V1 (0.000-1.200)

HE140A	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 133.0 mm	A = 3.14e-03 m2	Wy;el = 155.4e-06 m3	Wy;pl = 173.5e-06 m3
b = 140.0 mm	Iy = 103.3e-07 m4	Wz;el = 556.2e-07 m3	Wz;pl = 848.5e-07 m3
tf = 8.5 mm	Iz = 389.3e-08 m4	Aw;y;el = 2.50e-03 m2	Aw;y;pl = 2.50e-03 m2
tw = 5.5 mm	Massa/m = 24.7 kg/m	Aw;z;el = 1.01e-03 m2	Aw;z;pl = 1.01e-03 m2
r = 12.0 mm		It = 813.0e-10 m4	Iwa = 150.6e-10 m6

Doorsnedetoetsing C4-V1 (0.000-1.200)

Maatgevende combinatie: Fu.C.3 op 0.000 m

		Profielklasse = 1
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -19.8 kNm
	Vz;Ed = 25.8 kN	Mz;Ed = 0.0 kNm
N;Rd = 738.3 kN	Vy;Rd = 339.7 kN	MyRd = 40.8 kNm
	Vz;Rd = 137.4 kN	MzRd = 19.9 kNm

NEN-EN1993-1-1(6.12): UC = 0.49 < 1

Kiptoetsing C4-V1 (0.000-1.200)

Equi. profiel: HE140A

Maatgevende combinatie: Fu.C.15 Instab. curve Kip:a

Aangrijphoogte van de last: -0.062 m vanaf hart profiel

Kipsteun bovenflens: 0.6m

Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 4.8kN/m	= 0.0	
Bovenflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 1.200 m	lst = 0.984 m
Lsys = 1.200 m	Lg = 1.200 m	S = 0.694 m	Iwa = 1.5064e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = -0.83	C = 5.56
Mcr = 339.6 kNm	kred = 1.0	Lam-rel = 0.35	Profielklasse 1
Chi;LT(Fu.C.15) = 0.97	M;Ed = 0.0 kNm		UC(y) = 0.00
Chi;LT,Z = 1.00	lkip = 1.200 m		UC(z) = 0.00
My;begin = -9.9 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.00 < 1 Kip NVT, i.v.m. geen buiging

Profielgegevens staaf C5-V1 (0.000-6.700)

IPE270	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 4.59e-03 m2	Wy;el = 428.9e-06 m3	Wy;pl = 484.0e-06 m3
b = 135.0 mm	Iy = 579.0e-07 m4	Wz;el = 622.0e-07 m3	Wz;pl = 969.5e-07 m3
tf = 10.2 mm	Iz = 419.9e-08 m4	Aw;y;el = 2.95e-03 m2	Aw;y;pl = 2.95e-03 m2
tw = 6.6 mm	Massa/m = 36.1 kg/m	Aw;z;el = 2.21e-03 m2	Aw;z;pl = 2.21e-03 m2
r = 15.0 mm		It = 159.4e-09 m4	Iwa = 705.8e-10 m6

Doorsnedetoetsing C5-V1 (0.000-6.700)

Maatgevende combinatie: Fu.C.2 op 3.226 m

		Profielklasse = 1
N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = 82.0 kNm
	Vz;Ed = 0.2 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,079.7 kN	Vy;Rd = 399.9 kN	MyRd = 113.7 kNm
	Vz;Rd = 300.4 kN	MzRd = 22.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.72 < 1

Kiptoetsing C5-V1 (0.000-6.700)

Equi. profiel: IPE270
Maatgevende combinatie: Fu.C.14
Instab. curve Kip:a
Aangrijphoogte van de last: -0.130 m vanaf hart profiel
Kipsteun bovenflens: 0.6, 1.2, 1.8, 2.4, 3, 3.6, 4.2, 4.8, 5.4, 6, 6.6m
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Gesteund	b-eff(Begin) = 0.016	b-eff(Eind) = 0.011
Tabel gebruikt Fig. NB.32	M = -10.0kN/m	MBeta = 0.0	q = 2.4
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 6.700 m	lst = 6.700 m
Lsys = 6.700 m	Lg = 6.700 m	S = 1.073 m	Iwa = 7.0578e-08 m6
C1 = 1.11	C2 = 0.32 (tabel)	C2(toegepast) = -0.34	C = 3.37
Mcr = 53.6 kNm	kred = 1.0	Lam-rel = 1.46	Profielklasse 1
Chi;LT(Fu.C.14) = 0.39	M;Ed = 19.0 kNm		UC(y) = 0.43
Chi;LT,Z = 1.00	lkip = 6.700 m		UC(z) = 0.00
My;begin = 0.0 kNm	My;eind = -10.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.43 < 1

Profielgegevens staaf C6-V1 (0.000-1.200)

IPE270	Analyse	Staal S235 fyd(toegepast) = 235 N/mm2	
h = 270.0 mm	A = 4.59e-03 m2	Wy;el = 428.9e-06 m3	Wy;pl = 484.0e-06 m3
b = 135.0 mm	Iy = 579.0e-07 m4	Wz;el = 622.0e-07 m3	Wz;pl = 969.5e-07 m3
tf = 10.2 mm	Iz = 419.9e-08 m4	Aw;y;el = 2.95e-03 m2	Aw;y;pl = 2.95e-03 m2
tw = 6.6 mm	Massa/m = 36.1 kg/m	Aw;z;el = 2.21e-03 m2	Aw;z;pl = 2.21e-03 m2
r = 15.0 mm		It = 159.4e-09 m4	Iwa = 705.8e-10 m6

Doorsnedetoetsing C6-V1 (0.000-1.200)

Maatgevende combinatie: Fu.C.3 op 0.000 m
Profielklasse = 1

N;Ed = 0.0 kN	Vy;Ed = 0.0 kN	My;Ed = -19.9 kNm
	Vz;Ed = 25.9 kN	Mz;Ed = 0.0 kNm
N;Rd = 1,079.7 kN	Vy;Rd = 399.9 kN	MyRd = 113.7 kNm
	Vz;Rd = 300.4 kN	MzRd = 22.8 kNm

NEN-EN1993-1-1(6.12): UC = 0.17 < 1

Kiptoetsing C6-V1 (0.000-1.200)

Equi. profiel: IPE270
Maatgevende combinatie: Fu.C.4
Instab. curve Kip:a
Aangrijphoogte van de last: -0.130 m vanaf hart profiel
Kipsteun bovenflens: 0.6m
Kipsteun onderflens: N.v.t.

Inklem. begin: Gesteund	Beperk. eind: Overstek	b-eff(Begin) = 0.000	b-eff(Eind) = 0.000
Tabel gebruikt NB 6.6	q = 15.6kN/m	= 0.0	
Onderflens maatgevend	Xb;lst = 0.000 m	Xe;lst = 1.200 m	lst = 0.984 m
Lsys = 1.200 m	Lg = 1.200 m	S = 1.073 m	Iwa = 7.0578e-08 m6
C1 = 1.68	C2 = 0.78 (tabel)	C2(toegepast) = -0.81	C = 7.78
Mcr = 691.1 kNm	kred = 1.0	Lam-rel = 0.41	Profielklasse 1
Chi;LT(Fu.C.4) = 0.95	M;Ed = 19.9 kNm		UC(y) = 0.18
Chi;LT,Z = 1.00	lkip = 1.200 m		UC(z) = 0.00
My;begin = -19.9 kNm	My;eind = 0.0 kNm		

NEN-EN1993-1-1(6.54): UC = 0.18 < 1