

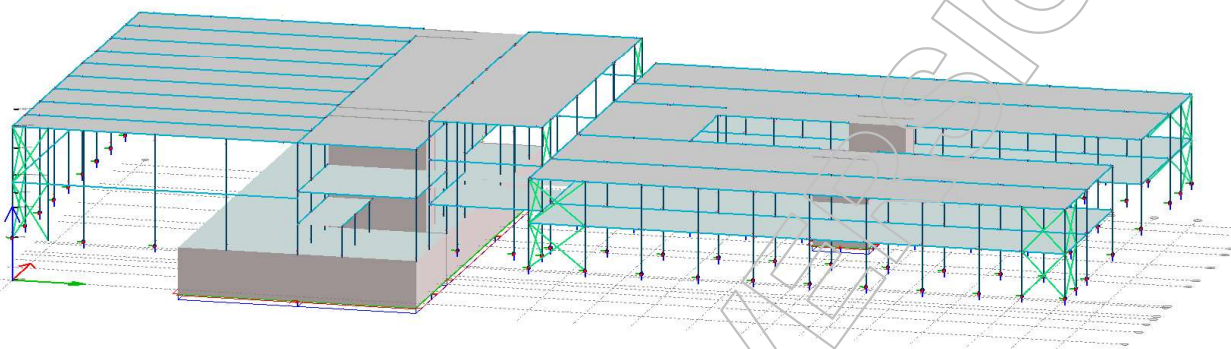
Vedlegg 4

FEM-Design rapporter

Vedlegg 4.1

FEM-Design hovedrapport

Eurocode (NA: Norwegian)



Project:

Kolvikbakken Ungdomsskule

Customer:

Norconsult AS / NTNU

Description:

Bachelor oppgave

FEM-Design © StruSoft

Designed: Martin Eikrem, Fredrik Honningsvåg og Sondre Aarseth

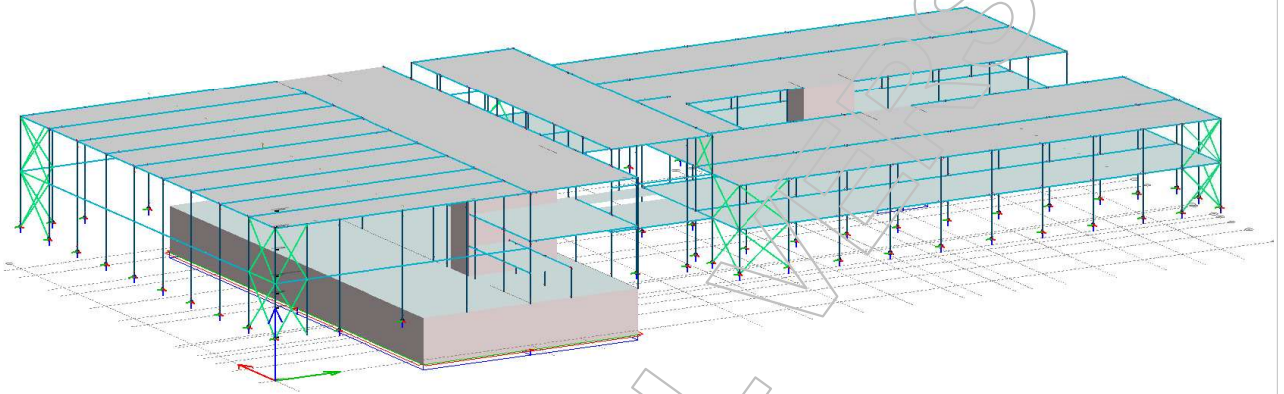
Date: 15.04.2020

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1.1 3D-view

Eurocode (NA: Norwegian)



1.2 Materialer

1.2.1 Betong

Concrete materials

No.	Name	Fck	Fck,cube	Fctm	Fctk	Ecm	Yield strain
[-]	[-]	[N/mm ²]	[N/mm ²]	[N/mm ²]	[N/mm ²]	[N/mm ²]	[-]
1	HD 265	35.000	45.000	3.200	2.200	120000.000	0.00175
2	HD 265_1	35.000	45.000	3.200	2.200	120000.000	0.00175
3	C30/37	30.000	37.000	2.900	2.000	33000.000	0.00175
4	C30/37_1	30.000	37.000	2.900	2.000	33000.000	0.00175

Ultimate strain	Gamma c	Gamma c, Acc	Gamma cE	Gamma s	Gamma s, Acc	Alfa cc	Alfa ct	Density
[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[t/m ³]
0.00350	1.50	1.20	1.20	1.15	1.15	1.00	1.00	1.464
0.00350	1.50	1.20	1.20	1.15	1.00	0.85	0.85	1.464
0.00350	1.50	1.20	1.20	1.15	1.15	1.00	1.00	2.548
0.00350	1.50	1.20	1.20	1.15	1.00	0.85	0.85	2.548

Therm. coeff.	Poisson's ratio	Creep coefficient, SLS	Creep coefficient, ULS	Shrinkage
[1/°C]	[-]	[-]	[-]	[-]
0.000010	0.200	1.505	1.505	0.259
0.000010	0.200	1.505	1.505	0.259
0.000010	0.200	0.000	0.000	0.000
0.000010	0.200	0.000	0.000	0.000

Dyna r.	Stab r.
[-]	[-]
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000

1.2.2 Stål

Steel materials

No.	Name	$f_{yk}(t < 16)$	$f_{yk}(16 \leq t \leq 40)$	$f_{yk}(40 < t \leq 63)$	$f_{yk}(63 < t \leq 80)$
[-]	[-]	[N/mm ²]	[N/mm ²]	[N/mm ²]	[N/mm ²]
1	S 355	355.000	355.000	335.000	335.000

$f_{yk}(80 < t \leq 100)$	$f_{yk}(100 < t \leq 150)$	$f_{yk}(150 < t \leq 200)$	$f_{yk}(200 < t \leq 250)$
[N/mm ²]	[N/mm ²]	[N/mm ²]	[N/mm ²]
335.000	335.000	335.000	335.000

$f_{yk}(250 < t \leq 400)$	$f_{uk}(t < 3)$	$f_{uk}(3 \leq t \leq 40)$	$f_{uk}(40 < t \leq 100)$	$f_{uk}(100 < t \leq 150)$
[N/mm ²]	[N/mm ²]	[N/mm ²]	[N/mm ²]	[N/mm ²]
335.000	510.000	510.000	470.000	470.000

$f_{uk}(150 < t \leq 250)$	$f_{uk}(250 < t \leq 400)$	Gamma M0	Gamma M0, Acc	Gamma M1
[N/mm ²]	[N/mm ²]	[-]	[-]	[-]
470.000	470.000	1.050	1.000	1.050

Gamma M1, Acc	Gamma M2	Gamma M2, Acc	Gamma M5	Gamma M5, Acc	Gamma Mfi	Ek
[-]	[-]	[-]	[-]	[-]	[-]	[N/mm ²]
1.000	1.250	1.000	1.000	1.000	1.000	210000.000

Poisson's ratio	G	Therm. coeff.	Density
[-]	[N/mm ²]	[1/°C]	[t/m ³]
0.300	80769.000	1.2000e-05	7.850000

1.2.3 Dimensjoner søyler

Columns

[illegible]

ID	Material	Section, start	Section, end	Ecc. mode.	Ecc. crack.
[-]	[-]	[-]	[-]	[-]	[-]
C.50.1	S 355	KKR 180x180x6	KKR 180x180x6	Release at END	No
C.51.1	S 355	KKR 180x180x6	KKR 180x180x6	Release at END	No
C.52.1	S 355	KKR 180x180x6	KKR 180x180x6	Release at END	No
C.53.1	S 355	KKR 180x180x6	KKR 180x180x6	Release at END	No
C.54.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.55.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.56.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.57.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.58.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.59.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.60.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.61.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.62.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.63.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.64.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.65.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.66.1	S 355	KKR 70x70x5	KKR 70x70x5	Release at END	No
C.67.1	S 355	KKR 70x70x5	KKR 70x70x5	Release at END	No
C.68.1	S 355	KKR 60x60x5	KKR 60x60x5	Release at END	No
C.69.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.70.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.71.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.72.1	S 355	KKR 70x70x5	KKR 70x70x5	Release at END	No
C.73.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.74.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.75.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.76.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.77.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.78.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.79.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.80.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.81.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.82.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.83.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.84.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.85.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.86.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.87.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.88.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.89.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.90.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.91.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.92.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.93.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.94.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.95.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.96.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.97.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.98.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.99.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.100.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.101.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No

ID	Material	Section, start	Section, end	Ecc. mode.	Ecc. crack.
[-]	[-]	[-]	[-]	[-]	[-]
C.102.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.103.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.104.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.105.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.106.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.107.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.108.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.109.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.110.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.111.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.112.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.113.1	S 355	KKR 120x120x10	KKR 120x120x10	Release at END	No
C.114.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.115.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.116.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.117.1	S 355	KKR 70x70x5	KKR 70x70x5	Release at END	No
C.118.1	S 355	KKR 70x70x5	KKR 70x70x5	Release at END	No
C.119.1	S 355	KKR 60x60x5	KKR 60x60x5	Release at END	No
C.120.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.121.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.122.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.123.1	S 355	KKR 70x70x5	KKR 70x70x5	Release at END	No
C.124.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.125.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.126.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.127.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.128.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.129.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.130.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.131.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.132.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.133.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.134.1	S 355	KKR 220x220x10	KKR 220x220x10	Release at END	No
C.135.1	S 355	KKR 220x220x10	KKR 220x220x10	Release at END	No
C.136.1	S 355	KKR 220x220x10	KKR 220x220x10	Release at END	No
C.137.1	S 355	KKR 220x220x10	KKR 220x220x10	Release at END	No
C.138.1	S 355	KKR 220x220x10	KKR 220x220x10	Release at END	No
C.139.1	S 355	KKR 220x220x10	KKR 220x220x10	Release at END	No
C.140.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.141.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.142.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.143.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.144.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.145.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.146.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.147.1	S 355	KKR 220x220x10	KKR 220x220x10	Release at END	No
C.148.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.149.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.150.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.151.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.152.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.153.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No

ID	Material	Section, start	Section, end	Ecc. mode.	Ecc. crack.
[-]	[-]	[-]	[-]	[-]	[-]
C.154.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.155.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.156.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.157.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.158.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.159.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.160.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.161.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.162.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.163.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.164.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.165.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.166.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.167.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.168.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.169.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.170.1	S 355	KKR 60x60x5	KKR 60x60x5	Release at END	No
C.171.1	S 355	KKR 60x60x5	KKR 60x60x5	Release at END	No
C.172.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.173.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.174.1	S 355	KKR 90x90x5	KKR 90x90x5	Release at END	No
C.175.1	S 355	KKR 90x90x5	KKR 90x90x5	Release at END	No
C.176.1	S 355	KKR 90x90x5	KKR 90x90x5	Release at END	No
C.177.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.178.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.179.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.180.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.181.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.182.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.183.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.184.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.185.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.186.1	S 355	KKR 180x180x5	KKR 180x180x5	Release at END	No
C.187.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.188.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.189.1	S 355	KKR 90x90x5	KKR 90x90x5	Release at END	No
C.190.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.191.1	S 355	KKR 140x140x5	KKR 140x140x5	Release at END	No
C.192.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.193.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.194.1	S 355	KKR 100x100x5	KKR 100x100x5	Release at END	No
C.195.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.196.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.197.1	S 355	KKR 50x50x5	KKR 50x50x5	Release at END	No
C.198.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.199.1	S 355	KKR 80x80x5	KKR 80x80x5	Release at END	No
C.200.1	S 355	KKR 120x120x5	KKR 120x120x5	Release at END	No
C.201.1	S 355	KKR 220x220x10	KKR 220x220x10	Release at END	No
C.202.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.203.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.204.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.205.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No

ID	Material	Section, start	Section, end	Ecc. mode.	Ecc. crack.
[-]	[-]	[-]	[-]	[-]	[-]
C.206.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.207.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.208.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.209.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.210.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.211.1	S 355	KKR 200x200x8	KKR 200x200x8	Release at END	No
C.212.1	S 355	KKR 90x90x5	KKR 90x90x5	Release at END	No
C.213.1	S 355	KKR 220x220x10	KKR 220x220x10	Release at END	No
C.214.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No
C.215.1	S 355	KKR 200x200x6	KKR 200x200x6	Release at END	No

1.2.4 Dimensjoner bjelker

Beams

ID	Material	Section, start	Section, end	Ecc. mode.	Ecc. crack.
[-]	[-]	[-]	[-]	[-]	[-]
B.1.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.2.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.3.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.4.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.5.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.6.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.7.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.8.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.9.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.10.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.11.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.12.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.13.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.14.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.15.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.16.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.17.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.18.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.19.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.20.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.21.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.22.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.23.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.24.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.25.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.26.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.27.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.28.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.29.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.30.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.31.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.32.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.33.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.34.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.35.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.36.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.37.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.38.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.39.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.40.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.41.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.42.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.43.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.44.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.45.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.46.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.47.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.48.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.49.1	S 355	HE-B 140	HE-B 140	Release at END	No

ID	Material	Section, start	Section, end	Ecc. mode.	Ecc. crack.
[-]	[-]	[-]	[-]	[-]	[-]
B.50.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.51.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.52.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.53.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.54.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.55.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.56.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.57.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.58.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.59.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.60.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.61.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.62.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.63.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.64.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.65.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.66.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.67.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.68.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.69.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.70.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.71.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.72.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.73.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.74.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.75.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.76.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.77.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.78.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.79.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.80.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.81.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.82.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.83.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.84.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.85.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.86.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.87.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.88.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.89.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.90.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.91.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.92.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.93.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.94.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.95.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.96.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.97.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.98.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.99.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.100.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.101.1	S 355	HE-B 200	HE-B 200	Release at END	No

ID	Material	Section, start	Section, end	Ecc. mode.	Ecc. crack.
[-]	[-]	[-]	[-]	[-]	[-]
B.102.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.103.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.104.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.105.1	S 355	HE-B 200	HE-B 200	Release at END	No
B.106.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.107.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.108.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.109.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.110.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.111.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.112.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.113.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.114.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.115.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.116.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.117.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.118.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.119.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.120.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.121.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.122.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.123.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.124.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.125.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.126.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.127.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.128.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.129.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.130.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.131.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.132.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.133.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.134.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.135.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.136.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.137.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.138.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.139.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.140.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.141.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.142.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.143.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.144.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.145.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.146.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.147.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.148.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.149.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.150.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.151.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.152.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.153.1	S 355	HE-B 120	HE-B 120	Release at END	No

ID	Material	Section, start	Section, end	Ecc. mode.	Ecc. crack.
[-]	[-]	[-]	[-]	[-]	[-]
B.154.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.155.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.156.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.157.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.158.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.159.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.160.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.161.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.162.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.163.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.164.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.165.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.166.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.167.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.168.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.169.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.170.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.171.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.172.1	S 355	HE-B 600	HE-B 600	Release at END	No
B.173.1	S 355	HE-B 800	HE-B 800	Release at END	No
B.174.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.175.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.176.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.177.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.178.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.179.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.180.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.181.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.182.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.183.1	S 355	UKB 914x419x343	UKB 914x419x343	Release at END	No
B.184.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.185.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.186.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.187.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.188.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.189.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.190.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.191.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.192.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.193.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.194.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.195.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.196.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.197.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.198.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.199.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.200.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.201.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.202.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.203.1	S 355	HE-B 300	HE-B 300	Release at END	No
B.204.1	S 355	HE-B 220	HE-B 220	Release at END	No
B.205.1	S 355	HE-B 220	HE-B 220	Release at END	No

ID	Material	Section, start	Section, end	Ecc. mode.	Ecc. crack.
[-]	[-]	[-]	[-]	[-]	[-]
B.206.1	S 355	HE-B 140	HE-B 140	Release at END	No
B.207.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.208.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.209.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.210.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.211.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.212.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.213.1	S 355	HE-B 160	HE-B 160	Release at END	No
B.214.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.215.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.216.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.217.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.218.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.219.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.220.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.221.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.222.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.223.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.224.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.225.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.226.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.227.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.228.1	S 355	HE-B 180	HE-B 180	Release at END	No
B.229.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.230.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.231.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.232.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.233.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.234.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.235.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.236.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.237.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.238.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.239.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.240.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.241.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.242.1	S 355	HE-B 120	HE-B 120	Release at END	No
B.243.1	S 355	HE-B 120	HE-B 120	Release at END	No

ID	Dxx	Dxy	Dyy	Dzz	Kxx	Kxy	Kyy	Kzz	Hyy
[-]	[kN/m]	[kN/m]	[kN/m]	[kN/m]	[kNm]	[kNm]	[kNm]	[kNm]	[kN/m]
Lett-tak 31/1,8.1	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.2	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.3	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.4	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.5	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.6	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.7	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.8	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.9	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.10	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.11	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.12	102000	0	26800	5400	13000	0.51	2.54	0.17	79200
Lett-tak 31/1,8.13	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.14	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.15	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.16	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.17	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.18	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.19	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.20	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.21	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.22	102000	0	26800	5400	13000	0.50	2.50	0.20	79200
Lett-tak 31/1,8.23	102000	0	26800	5400	13000	0.50	2.50	0.20	79200

[illegible]

[illegible][illegible]

Plates

ID	Material	t1	t2	t3	E2 / E1	Alpha	Ecc.	Ecc. calc	Ecc. crack.
[-]	[-]	[m]	[m]	[m]	[-]	[rad]	[m]	[-]	[-]
P.1.1	HD 265	0.265	0.265	0.265	0.300	0.000	0.000	No	No
P.2.1	HD 265	0.265	0.265	0.265	0.300	0.000	0.000	No	No
P.3.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
P.4.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
P.5.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
P.6.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
P.7.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
P.8.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Midt.1.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Midt.2.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Midt.3.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Vest.1.1	HD 265	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Vest.2.1	HD 265	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Øst.1.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Øst.2.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Øst.3.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Øst.4.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Øst.5.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Øst.6.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Øst.7.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Øst.8.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No
Plate 2 Etg. Øst.9.1	HD 265_1	0.265	0.265	0.265	0.300	0.000	0.000	No	No

2.1 Lasttilfeller

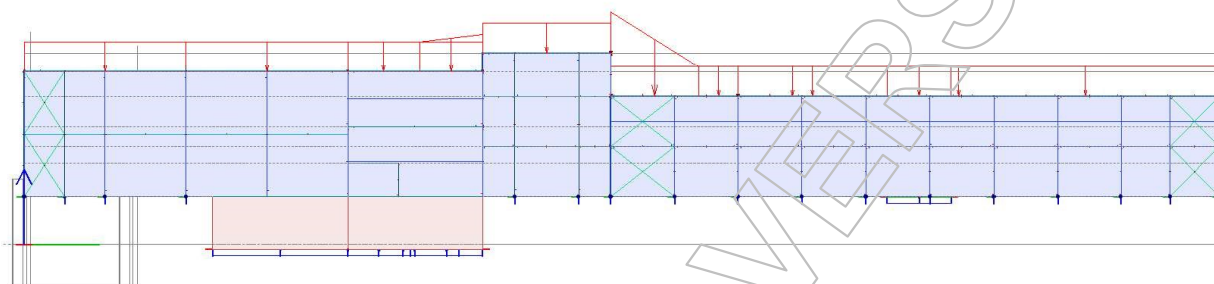
Load cases

No.	Name	Type	Duration class
1	Nyttelast	Ordinary	Permanent
2	Snø	Ordinary	Short-term
3	Egenlast	+Struc. dead load	Permanent
4	Påført egenlast	Ordinary	Permanent
5	Vindlast fra Nord	Ordinary	Short-term
6	Vindlast fra Sør	Ordinary	Short-term
7	Vindlast fra Øst	Ordinary	Short-term
8	Vindlast fra Vest	Ordinary	Short-term

2.2 Påførte laster

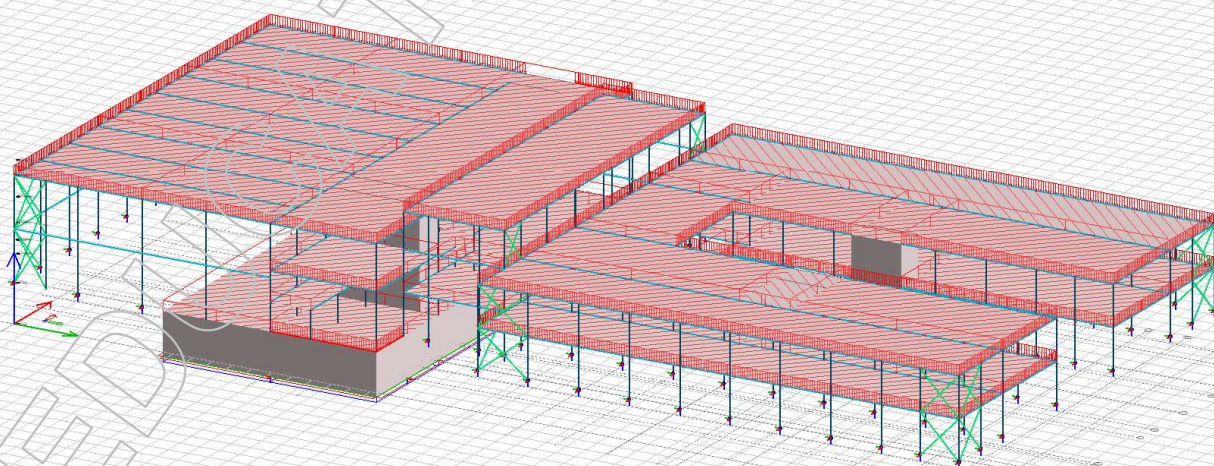
2.2.1 Snølast

Eurocode (NA: Norwegian)

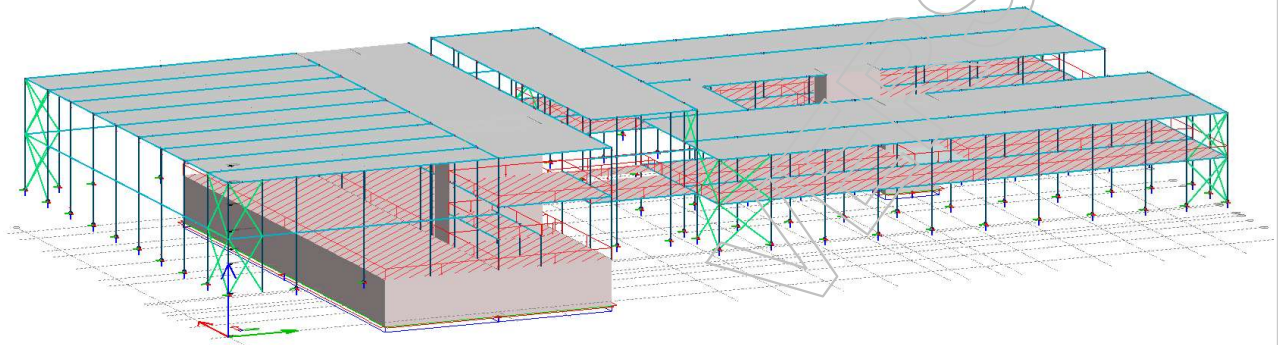


2.2.2 Påført egenlast

Eurocode (NA: Norwegian)

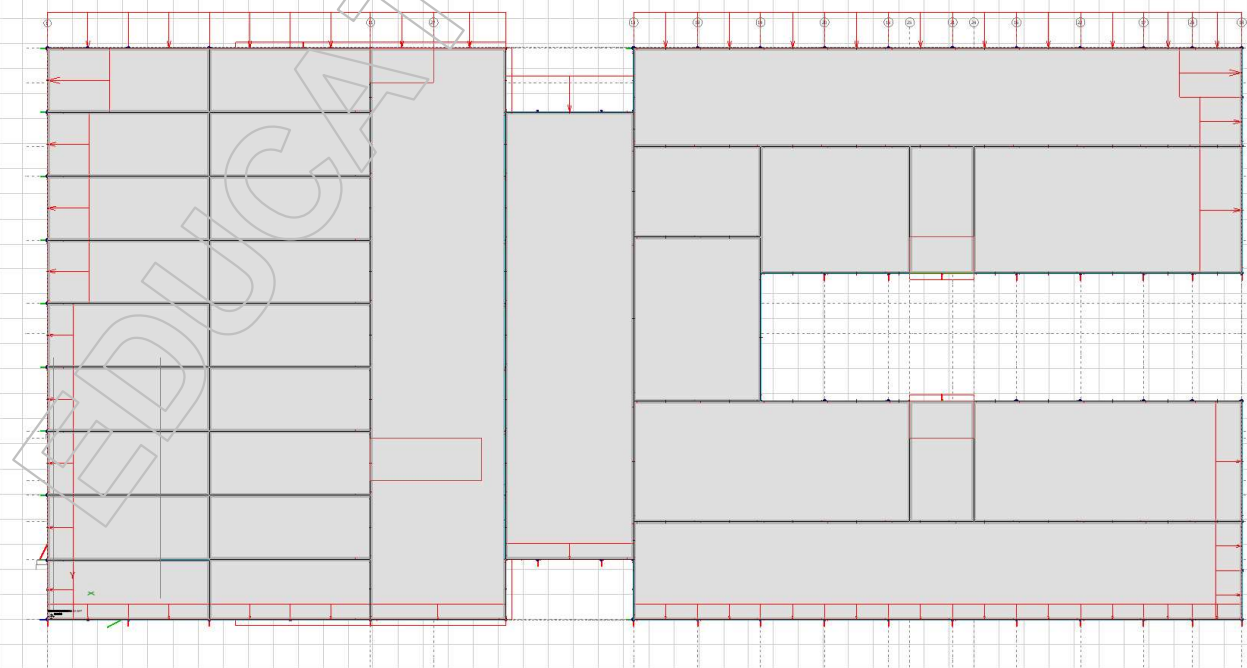


Eurocode (NA: Norwegian)

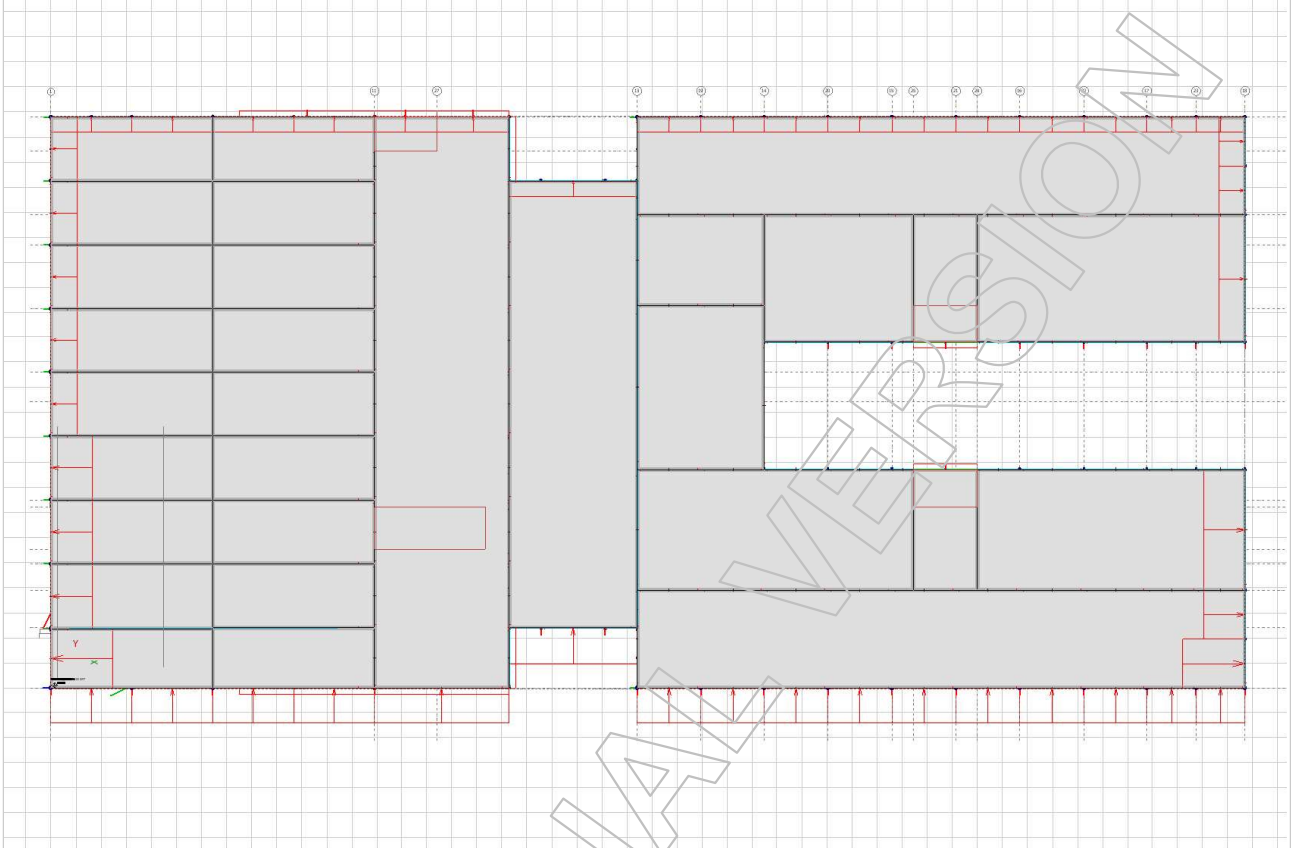


2.2.4 Vindlast fra Nord

Eurocode (NA: Norwegian)

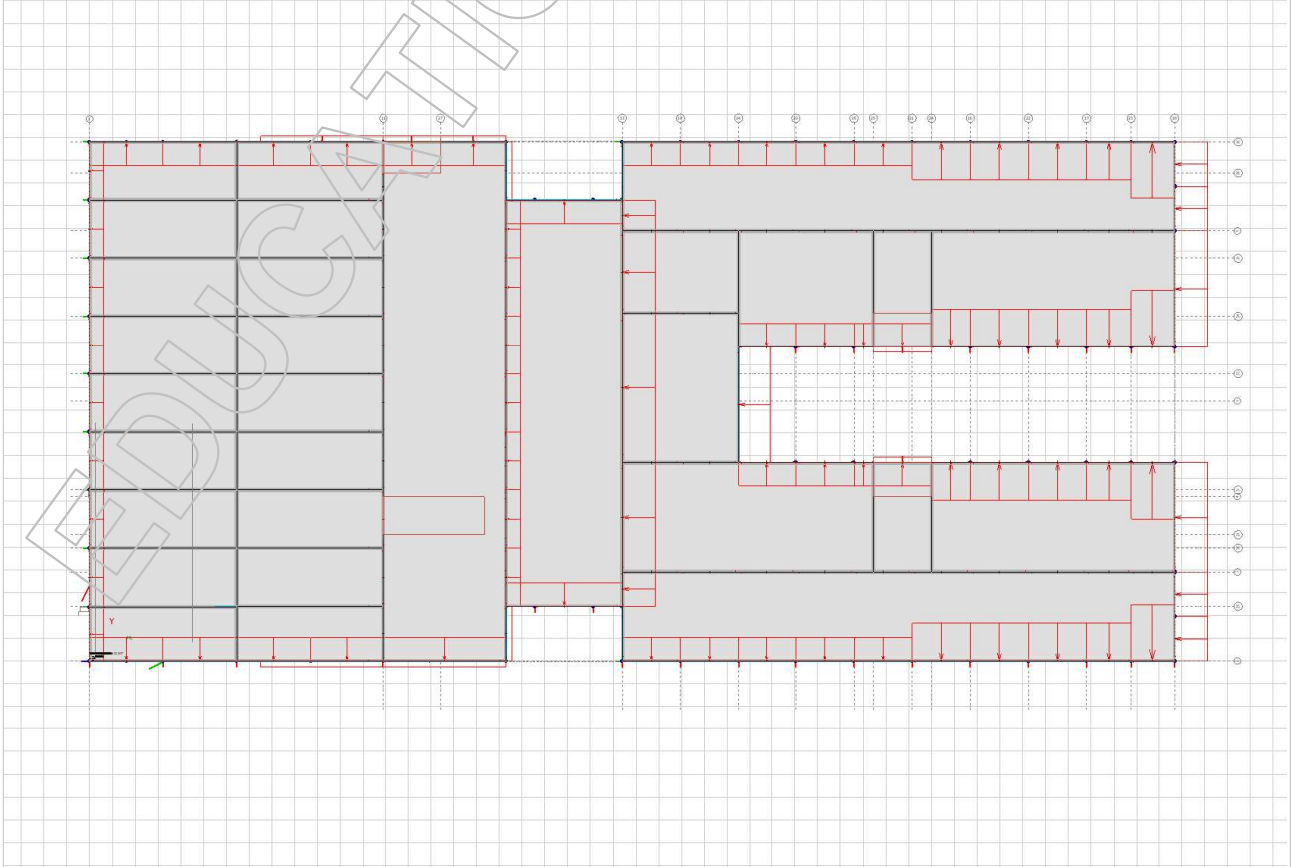


Eurocode (NA: Norwegian)

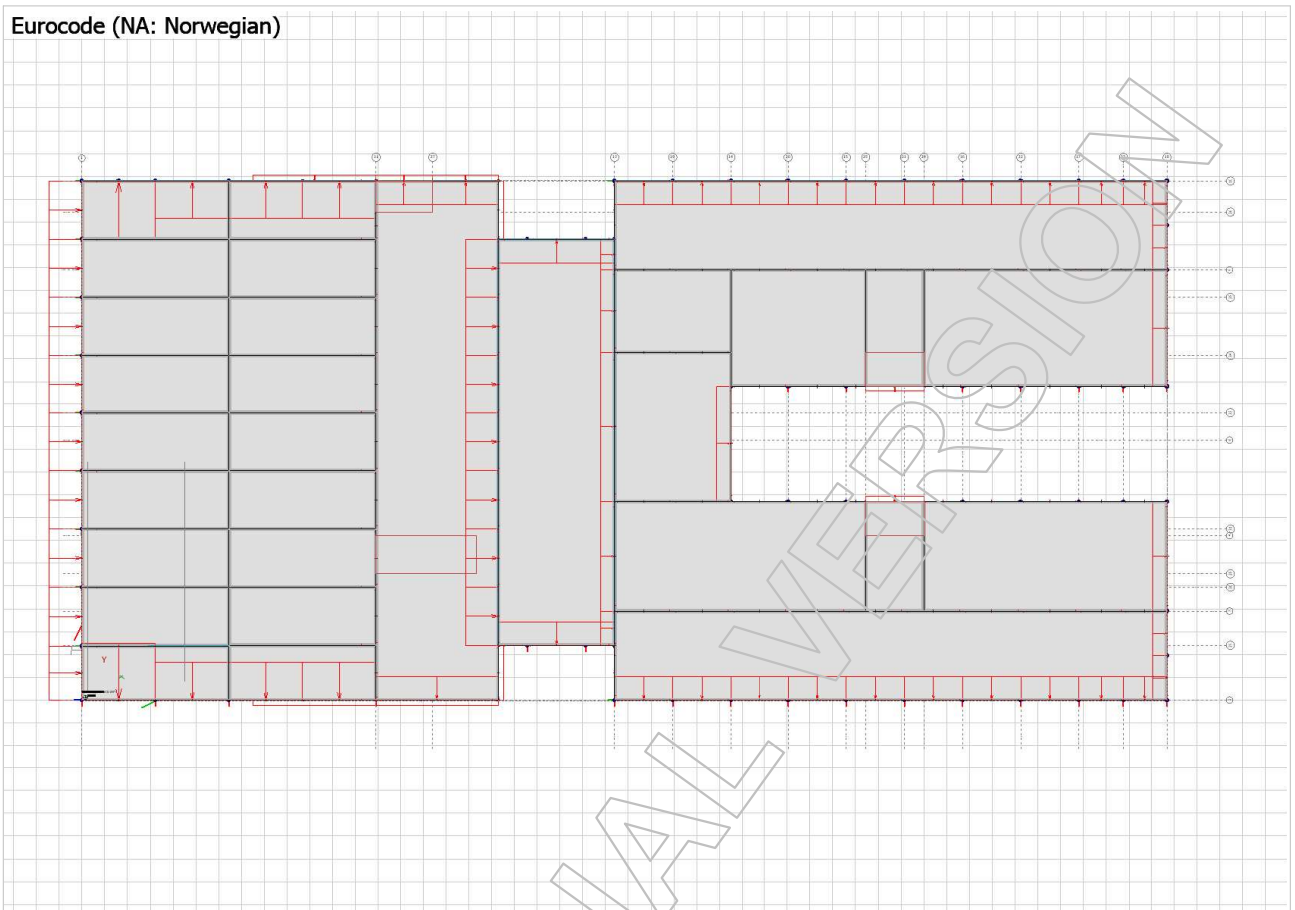


2.2.6 Vindlast fra Øst

Eurocode (NA: Norwegian)



Eurocode (NA: Norwegian)



2.2.8 Flatelaster

Surface loads (Ordinary)

No.	q1	q2	q3	Load case	Comment	Applied on Ecc.	Intensity
[-]	[kN/m2]	[kN/m2]	[kN/m2]	[-]	[-]	[-]	[-]
1	2.40	2.40	2.40	Snø		No	Action
2	2.40	4.60	4.60	Snø		No	Action
3	2.40	2.40	2.40	Snø		No	Action
4	2.40	2.40	2.40	Snø		No	Action
5	2.40	2.40	2.40	Snø		No	Action
6	2.40	2.40	2.40	Snø		No	Action
7	2.40	2.40	2.40	Snø		No	Action
8	2.40	2.40	2.40	Snø		No	Action
9	2.40	2.40	2.40	Snø		No	Action
10	2.40	2.40	2.40	Snø		No	Action
11	2.40	2.40	2.40	Snø		No	Action
12	2.40	2.40	2.40	Snø		No	Action
13	2.40	2.40	2.40	Snø		No	Action
14	2.40	2.40	2.40	Snø		No	Action
15	2.40	3.00	3.00	Snø		No	Action
16	2.40	2.40	2.40	Snø		No	Action
17	2.40	2.40	2.40	Snø		No	Action
18	2.40	2.40	2.40	Snø		No	Action
19	0.96	0.96	0.96	Vindlast fra Nord		No	Action
20	0.96	0.96	0.96	Vindlast fra Nord		No	Action
21	0.96	0.96	0.96	Vindlast fra Nord		No	Action
22	0.96	0.96	0.96	Vindlast fra Nord		No	Action
23	0.96	0.96	0.96	Vindlast fra Nord		No	Action
24	0.96	0.96	0.96	Vindlast fra Nord		No	Action
25	0.96	0.96	0.96	Vindlast fra Nord		No	Action
26	0.96	0.96	0.96	Vindlast fra Nord		No	Action
27	0.96	0.96	0.96	Vindlast fra Nord		No	Action
28	0.96	0.96	0.96	Vindlast fra Nord		No	Action
29	0.96	0.96	0.96	Vindlast fra Nord		No	Action
30	0.96	0.96	0.96	Vindlast fra Nord		No	Action
31	0.96	0.96	0.96	Vindlast fra Nord		No	Action
32	0.96	0.96	0.96	Vindlast fra Nord		No	Action
33	0.96	0.96	0.96	Vindlast fra Nord		No	Action
34	0.96	0.96	0.96	Vindlast fra Nord		No	Action
35	0.96	0.96	0.96	Vindlast fra Nord		No	Action
36	0.96	0.96	0.96	Vindlast fra Nord		No	Action
37	0.96	0.96	0.96	Vindlast fra Nord		No	Action
38	0.96	0.96	0.96	Vindlast fra Nord		No	Action
39	0.96	0.96	0.96	Vindlast fra Nord		No	Action
40	0.96	0.96	0.96	Vindlast fra Nord		No	Action
41	0.96	0.96	0.96	Vindlast fra Nord		No	Action
42	0.96	0.96	0.96	Vindlast fra Nord		No	Action
43	1.65	1.65	1.65	Vindlast fra Nord		No	Action
44	1.10	1.10	1.10	Vindlast fra Nord		No	Action
45	1.10	1.10	1.10	Vindlast fra Nord		No	Action
46	1.10	1.10	1.10	Vindlast fra Nord		No	Action
47	0.69	0.69	0.69	Vindlast fra Nord		No	Action
48	0.69	0.69	0.69	Vindlast fra Nord		No	Action
49	0.69	0.69	0.69	Vindlast fra Nord		No	Action

No.	q1	q2	q3	Load case	Comment	Applied on Ecc.	Intensity
[-]	[kN/m2]	[kN/m2]	[kN/m2]	[-]	[-]	[-]	[-]
50	0.41	0.41	0.41	Vindlast fra Nord		No	Action
51	0.41	0.41	0.41	Vindlast fra Nord		No	Action
52	0.41	0.41	0.41	Vindlast fra Nord		No	Action
53	0.41	0.41	0.41	Vindlast fra Nord		No	Action
54	0.41	0.41	0.41	Vindlast fra Nord		No	Action
55	0.41	0.41	0.41	Vindlast fra Nord		No	Action
56	0.41	0.41	0.41	Vindlast fra Nord		No	Action
57	0.41	0.41	0.41	Vindlast fra Nord		No	Action
58	0.41	0.41	0.41	Vindlast fra Nord		No	Action
59	0.41	0.41	0.41	Vindlast fra Nord		No	Action
60	0.41	0.41	0.41	Vindlast fra Nord		No	Action
61	0.41	0.41	0.41	Vindlast fra Nord		No	Action
62	0.41	0.41	0.41	Vindlast fra Nord		No	Action
63	0.41	0.41	0.41	Vindlast fra Nord		No	Action
64	0.41	0.41	0.41	Vindlast fra Nord		No	Action
65	0.41	0.41	0.41	Vindlast fra Nord		No	Action
66	0.41	0.41	0.41	Vindlast fra Nord		No	Action
67	0.41	0.41	0.41	Vindlast fra Nord		No	Action
68	0.41	0.41	0.41	Vindlast fra Nord		No	Action
69	0.41	0.41	0.41	Vindlast fra Nord		No	Action
70	0.41	0.41	0.41	Vindlast fra Nord		No	Action
71	0.41	0.41	0.41	Vindlast fra Nord		No	Action
72	0.41	0.41	0.41	Vindlast fra Nord		No	Action
73	1.65	1.65	1.65	Vindlast fra Nord		No	Action
74	1.65	1.65	1.65	Vindlast fra Nord		No	Action
75	1.10	1.10	1.10	Vindlast fra Nord		No	Action
76	1.10	1.10	1.10	Vindlast fra Nord		No	Action
77	1.10	1.10	1.10	Vindlast fra Nord		No	Action
78	1.10	1.10	1.10	Vindlast fra Nord		No	Action
79	0.69	0.69	0.69	Vindlast fra Nord		No	Action
80	0.69	0.69	0.69	Vindlast fra Nord		No	Action
81	0.69	0.69	0.69	Vindlast fra Nord		No	Action
82	0.69	0.69	0.69	Vindlast fra Nord		No	Action
83	0.69	0.69	0.69	Vindlast fra Nord		No	Action
84	0.69	0.69	0.69	Vindlast fra Nord		No	Action
85	0.96	0.96	0.96	Vindlast fra Sør		No	Action
86	0.96	0.96	0.96	Vindlast fra Sør		No	Action
87	0.96	0.96	0.96	Vindlast fra Sør		No	Action
88	0.96	0.96	0.96	Vindlast fra Sør		No	Action
89	0.96	0.96	0.96	Vindlast fra Sør		No	Action
90	0.96	0.96	0.96	Vindlast fra Sør		No	Action
91	0.96	0.96	0.96	Vindlast fra Sør		No	Action
92	0.96	0.96	0.96	Vindlast fra Sør		No	Action
93	0.96	0.96	0.96	Vindlast fra Sør		No	Action
94	0.96	0.96	0.96	Vindlast fra Sør		No	Action
95	0.96	0.96	0.96	Vindlast fra Sør		No	Action
96	0.96	0.96	0.96	Vindlast fra Sør		No	Action
97	0.96	0.96	0.96	Vindlast fra Sør		No	Action
98	0.96	0.96	0.96	Vindlast fra Sør		No	Action
99	0.96	0.96	0.96	Vindlast fra Sør		No	Action
100	0.96	0.96	0.96	Vindlast fra Sør		No	Action
101	0.96	0.96	0.96	Vindlast fra Sør		No	Action

No.	q1	q2	q3	Load case	Comment	Applied on Ecc.	Intensity
[-]	[kN/m2]	[kN/m2]	[kN/m2]	[-]	[-]	[-]	[-]
102	0.96	0.96	0.96	Vindlast fra Sør		No	Action
103	0.96	0.96	0.96	Vindlast fra Sør		No	Action
104	0.96	0.96	0.96	Vindlast fra Sør		No	Action
105	0.96	0.96	0.96	Vindlast fra Sør		No	Action
106	0.96	0.96	0.96	Vindlast fra Sør		No	Action
107	0.96	0.96	0.96	Vindlast fra Sør		No	Action
108	0.41	0.41	0.41	Vindlast fra Sør		No	Action
109	0.41	0.41	0.41	Vindlast fra Sør		No	Action
110	0.41	0.41	0.41	Vindlast fra Sør		No	Action
111	0.41	0.41	0.41	Vindlast fra Sør		No	Action
112	0.41	0.41	0.41	Vindlast fra Sør		No	Action
113	0.41	0.41	0.41	Vindlast fra Sør		No	Action
114	0.41	0.41	0.41	Vindlast fra Sør		No	Action
115	0.41	0.41	0.41	Vindlast fra Sør		No	Action
116	0.41	0.41	0.41	Vindlast fra Sør		No	Action
117	0.41	0.41	0.41	Vindlast fra Sør		No	Action
118	0.41	0.41	0.41	Vindlast fra Sør		No	Action
119	0.41	0.41	0.41	Vindlast fra Sør		No	Action
120	0.41	0.41	0.41	Vindlast fra Sør		No	Action
121	0.41	0.41	0.41	Vindlast fra Sør		No	Action
122	0.41	0.41	0.41	Vindlast fra Sør		No	Action
123	0.41	0.41	0.41	Vindlast fra Sør		No	Action
124	0.41	0.41	0.41	Vindlast fra Sør		No	Action
125	0.41	0.41	0.41	Vindlast fra Sør		No	Action
126	0.41	0.41	0.41	Vindlast fra Sør		No	Action
127	0.41	0.41	0.41	Vindlast fra Sør		No	Action
128	0.41	0.41	0.41	Vindlast fra Sør		No	Action
129	0.41	0.41	0.41	Vindlast fra Sør		No	Action
130	0.41	0.41	0.41	Vindlast fra Sør		No	Action
131	0.41	0.41	0.41	Vindlast fra Sør		No	Action
132	1.10	1.10	1.10	Vindlast fra Sør		No	Action
133	1.10	1.10	1.10	Vindlast fra Sør		No	Action
134	0.69	0.69	0.69	Vindlast fra Sør		No	Action
135	0.69	0.69	0.69	Vindlast fra Sør		No	Action
136	0.69	0.69	0.69	Vindlast fra Sør		No	Action
137	0.69	0.69	0.69	Vindlast fra Sør		No	Action
138	0.69	0.69	0.69	Vindlast fra Sør		No	Action
139	1.65	1.65	1.65	Vindlast fra Sør		No	Action
140	1.65	1.65	1.65	Vindlast fra Sør		No	Action
141	1.10	1.10	1.10	Vindlast fra Sør		No	Action
142	1.10	1.10	1.10	Vindlast fra Sør		No	Action
143	1.10	1.10	1.10	Vindlast fra Sør		No	Action
144	1.10	1.10	1.10	Vindlast fra Sør		No	Action
145	0.69	0.69	0.69	Vindlast fra Sør		No	Action
146	0.69	0.69	0.69	Vindlast fra Sør		No	Action
147	0.69	0.69	0.69	Vindlast fra Sør		No	Action
148	0.69	0.69	0.69	Vindlast fra Sør		No	Action
149	0.69	0.69	0.69	Vindlast fra Sør		No	Action
150	0.69	0.69	0.69	Vindlast fra Sør		No	Action
151	0.96	0.96	0.96	Vindlast fra Øst		No	Action
152	0.96	0.96	0.96	Vindlast fra Øst		No	Action
153	0.96	0.96	0.96	Vindlast fra Øst		No	Action

No.	q1	q2	q3	Load case	Comment	Applied on Ecc.	Intensity
[-]	[kN/m2]	[kN/m2]	[kN/m2]	[-]	[-]	[-]	[-]
154	0.96	0.96	0.96	Vindlast fra Øst		No	Action
155	0.96	0.96	0.96	Vindlast fra Øst		No	Action
156	0.96	0.96	0.96	Vindlast fra Øst		No	Action
157	0.96	0.96	0.96	Vindlast fra Øst		No	Action
158	0.96	0.96	0.96	Vindlast fra Øst		No	Action
159	0.96	0.96	0.96	Vindlast fra Øst		No	Action
160	0.96	0.96	0.96	Vindlast fra Øst		No	Action
161	0.96	0.96	0.96	Vindlast fra Øst		No	Action
162	0.96	0.96	0.96	Vindlast fra Øst		No	Action
163	0.96	0.96	0.96	Vindlast fra Øst		No	Action
164	0.96	0.96	0.96	Vindlast fra Øst		No	Action
165	0.96	0.96	0.96	Vindlast fra Øst		No	Action
166	0.96	0.96	0.96	Vindlast fra Øst		No	Action
167	0.96	0.96	0.96	Vindlast fra Øst		No	Action
168	0.41	0.41	0.41	Vindlast fra Øst		No	Action
169	0.41	0.41	0.41	Vindlast fra Øst		No	Action
170	0.41	0.41	0.41	Vindlast fra Øst		No	Action
171	0.41	0.41	0.41	Vindlast fra Øst		No	Action
172	0.41	0.41	0.41	Vindlast fra Øst		No	Action
173	0.41	0.41	0.41	Vindlast fra Øst		No	Action
174	0.41	0.41	0.41	Vindlast fra Øst		No	Action
175	0.41	0.41	0.41	Vindlast fra Øst		No	Action
176	0.41	0.41	0.41	Vindlast fra Øst		No	Action
177	0.41	0.41	0.41	Vindlast fra Øst		No	Action
178	0.41	0.41	0.41	Vindlast fra Øst		No	Action
179	0.41	0.41	0.41	Vindlast fra Øst		No	Action
180	0.41	0.41	0.41	Vindlast fra Øst		No	Action
181	0.41	0.41	0.41	Vindlast fra Øst		No	Action
182	1.65	1.65	1.65	Vindlast fra Øst		No	Action
183	1.65	1.65	1.65	Vindlast fra Øst		No	Action
184	1.10	1.10	1.10	Vindlast fra Øst		No	Action
185	1.10	1.10	1.10	Vindlast fra Øst		No	Action
186	1.10	1.10	1.10	Vindlast fra Øst		No	Action
187	1.10	1.10	1.10	Vindlast fra Øst		No	Action
188	1.10	1.10	1.10	Vindlast fra Øst		No	Action
189	1.10	1.10	1.10	Vindlast fra Øst		No	Action
190	1.10	1.10	1.10	Vindlast fra Øst		No	Action
191	1.10	1.10	1.10	Vindlast fra Øst		No	Action
192	0.69	0.69	0.69	Vindlast fra Øst		No	Action
193	0.69	0.69	0.69	Vindlast fra Øst		No	Action
194	0.69	0.69	0.69	Vindlast fra Øst		No	Action
195	0.69	0.69	0.69	Vindlast fra Øst		No	Action
196	0.69	0.69	0.69	Vindlast fra Øst		No	Action
197	0.69	0.69	0.69	Vindlast fra Øst		No	Action
198	0.69	0.69	0.69	Vindlast fra Øst		No	Action
199	0.69	0.69	0.69	Vindlast fra Øst		No	Action
200	0.69	0.69	0.69	Vindlast fra Øst		No	Action
201	0.69	0.69	0.69	Vindlast fra Øst		No	Action
202	0.69	0.69	0.69	Vindlast fra Øst		No	Action
203	0.69	0.69	0.69	Vindlast fra Øst		No	Action
204	0.69	0.69	0.69	Vindlast fra Øst		No	Action
205	0.69	0.69	0.69	Vindlast fra Øst		No	Action

No.	q1	q2	q3	Load case	Comment	Applied on Ecc.	Intensity
[-]	[kN/m2]	[kN/m2]	[kN/m2]	[-]	[-]	[-]	[-]
206	0.69	0.69	0.69	Vindlast fra Øst		No	Action
207	0.69	0.69	0.69	Vindlast fra Øst		No	Action
208	0.69	0.69	0.69	Vindlast fra Øst		No	Action
209	0.69	0.69	0.69	Vindlast fra Øst		No	Action
210	0.69	0.69	0.69	Vindlast fra Øst		No	Action
211	0.69	0.69	0.69	Vindlast fra Øst		No	Action
212	0.69	0.69	0.69	Vindlast fra Øst		No	Action
213	0.69	0.69	0.69	Vindlast fra Øst		No	Action
214	0.69	0.69	0.69	Vindlast fra Øst		No	Action
215	0.69	0.69	0.69	Vindlast fra Øst		No	Action
216	0.69	0.69	0.69	Vindlast fra Øst		No	Action
217	0.69	0.69	0.69	Vindlast fra Øst		No	Action
218	0.69	0.69	0.69	Vindlast fra Øst		No	Action
219	1.10	1.10	1.10	Vindlast fra Øst		No	Action
220	1.10	1.10	1.10	Vindlast fra Øst		No	Action
221	1.10	1.10	1.10	Vindlast fra Øst		No	Action
222	1.10	1.10	1.10	Vindlast fra Øst		No	Action
223	1.10	1.10	1.10	Vindlast fra Øst		No	Action
224	1.10	1.10	1.10	Vindlast fra Øst		No	Action
225	1.10	1.10	1.10	Vindlast fra Øst		No	Action
226	1.10	1.10	1.10	Vindlast fra Øst		No	Action
227	1.65	1.65	1.65	Vindlast fra Øst		No	Action
228	1.65	1.65	1.65	Vindlast fra Øst		No	Action
229	1.65	1.65	1.65	Vindlast fra Øst		No	Action
230	1.65	1.65	1.65	Vindlast fra Øst		No	Action
231	1.10	1.10	1.10	Vindlast fra Øst		No	Action
232	1.10	1.10	1.10	Vindlast fra Øst		No	Action
233	1.10	1.10	1.10	Vindlast fra Øst		No	Action
234	1.10	1.10	1.10	Vindlast fra Øst		No	Action
235	1.10	1.10	1.10	Vindlast fra Øst		No	Action
236	1.10	1.10	1.10	Vindlast fra Øst		No	Action
237	1.10	1.10	1.10	Vindlast fra Øst		No	Action
238	1.10	1.10	1.10	Vindlast fra Øst		No	Action
239	0.69	0.69	0.69	Vindlast fra Øst		No	Action
240	0.69	0.69	0.69	Vindlast fra Øst		No	Action
241	0.69	0.69	0.69	Vindlast fra Øst		No	Action
242	0.69	0.69	0.69	Vindlast fra Øst		No	Action
243	0.69	0.69	0.69	Vindlast fra Øst		No	Action
244	0.69	0.69	0.69	Vindlast fra Øst		No	Action
245	0.69	0.69	0.69	Vindlast fra Øst		No	Action
246	0.69	0.69	0.69	Vindlast fra Øst		No	Action
247	0.69	0.69	0.69	Vindlast fra Øst		No	Action
248	0.69	0.69	0.69	Vindlast fra Øst		No	Action
249	0.69	0.69	0.69	Vindlast fra Øst		No	Action
250	0.69	0.69	0.69	Vindlast fra Øst		No	Action
251	0.69	0.69	0.69	Vindlast fra Øst		No	Action
252	0.69	0.69	0.69	Vindlast fra Øst		No	Action
253	1.10	1.10	1.10	Vindlast fra Øst		No	Action
254	1.10	1.10	1.10	Vindlast fra Øst		No	Action
255	1.10	1.10	1.10	Vindlast fra Øst		No	Action
256	1.10	1.10	1.10	Vindlast fra Øst		No	Action
257	1.10	1.10	1.10	Vindlast fra Øst		No	Action

No.	q1	q2	q3	Load case	Comment	Applied on Ecc.	Intensity
[-]	[kN/m2]	[kN/m2]	[kN/m2]	[-]	[-]	[-]	[-]
258	1.10	1.10	1.10	Vindlast fra Øst		No	Action
259	1.10	1.10	1.10	Vindlast fra Øst		No	Action
260	1.10	1.10	1.10	Vindlast fra Øst		No	Action
261	1.65	1.65	1.65	Vindlast fra Øst		No	Action
262	1.65	1.65	1.65	Vindlast fra Øst		No	Action
263	0.96	0.96	0.96	Vindlast fra Øst		No	Action
264	0.96	0.96	0.96	Vindlast fra Øst		No	Action
265	0.96	0.96	0.96	Vindlast fra Vest		No	Action
266	0.96	0.96	0.96	Vindlast fra Vest		No	Action
267	0.96	0.96	0.96	Vindlast fra Vest		No	Action
268	0.96	0.96	0.96	Vindlast fra Vest		No	Action
269	0.96	0.96	0.96	Vindlast fra Vest		No	Action
270	0.96	0.96	0.96	Vindlast fra Vest		No	Action
271	0.96	0.96	0.96	Vindlast fra Vest		No	Action
272	0.96	0.96	0.96	Vindlast fra Vest		No	Action
273	0.96	0.96	0.96	Vindlast fra Vest		No	Action
274	0.96	0.96	0.96	Vindlast fra Vest		No	Action
275	0.96	0.96	0.96	Vindlast fra Vest		No	Action
276	0.96	0.96	0.96	Vindlast fra Vest		No	Action
277	0.96	0.96	0.96	Vindlast fra Vest		No	Action
278	0.96	0.96	0.96	Vindlast fra Vest		No	Action
279	0.41	0.41	0.41	Vindlast fra Vest		No	Action
280	0.41	0.41	0.41	Vindlast fra Vest		No	Action
281	0.41	0.41	0.41	Vindlast fra Vest		No	Action
282	0.41	0.41	0.41	Vindlast fra Vest		No	Action
283	0.41	0.41	0.41	Vindlast fra Vest		No	Action
284	0.41	0.41	0.41	Vindlast fra Vest		No	Action
285	0.41	0.41	0.41	Vindlast fra Vest		No	Action
286	0.41	0.41	0.41	Vindlast fra Vest		No	Action
287	0.41	0.41	0.41	Vindlast fra Vest		No	Action
288	0.41	0.41	0.41	Vindlast fra Vest		No	Action
289	0.41	0.41	0.41	Vindlast fra Vest		No	Action
290	0.41	0.41	0.41	Vindlast fra Vest		No	Action
291	0.41	0.41	0.41	Vindlast fra Vest		No	Action
292	0.41	0.41	0.41	Vindlast fra Vest		No	Action
293	0.69	0.69	0.69	Vindlast fra Vest		No	Action
294	0.69	0.69	0.69	Vindlast fra Vest		No	Action
295	0.69	0.69	0.69	Vindlast fra Vest		No	Action
296	0.69	0.69	0.69	Vindlast fra Vest		No	Action
297	0.69	0.69	0.69	Vindlast fra Vest		No	Action
298	0.69	0.69	0.69	Vindlast fra Vest		No	Action
299	0.69	0.69	0.69	Vindlast fra Vest		No	Action
300	0.69	0.69	0.69	Vindlast fra Vest		No	Action
301	0.69	0.69	0.69	Vindlast fra Vest		No	Action
302	0.69	0.69	0.69	Vindlast fra Vest		No	Action
303	0.69	0.69	0.69	Vindlast fra Vest		No	Action
304	0.69	0.69	0.69	Vindlast fra Vest		No	Action
305	0.69	0.69	0.69	Vindlast fra Vest		No	Action
306	0.69	0.69	0.69	Vindlast fra Vest		No	Action
307	0.69	0.69	0.69	Vindlast fra Vest		No	Action
308	0.69	0.69	0.69	Vindlast fra Vest		No	Action
309	0.69	0.69	0.69	Vindlast fra Vest		No	Action

No.	q1	q2	q3	Load case	Comment	Applied on Ecc.	Intensity
[-]	[kN/m2]	[kN/m2]	[kN/m2]	[-]	[-]	[-]	[-]
310	0.69	0.69	0.69	Vindlast fra Vest		No	Action
311	0.69	0.69	0.69	Vindlast fra Vest		No	Action
312	0.69	0.69	0.69	Vindlast fra Vest		No	Action
313	0.69	0.69	0.69	Vindlast fra Vest		No	Action
314	0.69	0.69	0.69	Vindlast fra Vest		No	Action
315	0.69	0.69	0.69	Vindlast fra Vest		No	Action
316	0.69	0.69	0.69	Vindlast fra Vest		No	Action
317	0.69	0.69	0.69	Vindlast fra Vest		No	Action
318	0.69	0.69	0.69	Vindlast fra Vest		No	Action
319	0.69	0.69	0.69	Vindlast fra Vest		No	Action
320	0.69	0.69	0.69	Vindlast fra Vest		No	Action
321	0.69	0.69	0.69	Vindlast fra Vest		No	Action
322	0.69	0.69	0.69	Vindlast fra Vest		No	Action
323	0.69	0.69	0.69	Vindlast fra Vest		No	Action
324	0.69	0.69	0.69	Vindlast fra Vest		No	Action
325	0.69	0.69	0.69	Vindlast fra Vest		No	Action
326	0.69	0.69	0.69	Vindlast fra Vest		No	Action
327	0.69	0.69	0.69	Vindlast fra Vest		No	Action
328	0.69	0.69	0.69	Vindlast fra Vest		No	Action
329	0.69	0.69	0.69	Vindlast fra Vest		No	Action
330	0.69	0.69	0.69	Vindlast fra Vest		No	Action
331	0.69	0.69	0.69	Vindlast fra Vest		No	Action
332	0.69	0.69	0.69	Vindlast fra Vest		No	Action
333	0.69	0.69	0.69	Vindlast fra Vest		No	Action
334	0.69	0.69	0.69	Vindlast fra Vest		No	Action
335	0.69	0.69	0.69	Vindlast fra Vest		No	Action
336	0.69	0.69	0.69	Vindlast fra Vest		No	Action
337	0.69	0.69	0.69	Vindlast fra Vest		No	Action
338	0.69	0.69	0.69	Vindlast fra Vest		No	Action
339	0.69	0.69	0.69	Vindlast fra Vest		No	Action
340	0.69	0.69	0.69	Vindlast fra Vest		No	Action
341	0.41	0.41	0.41	Vindlast fra Vest		No	Action
342	0.41	0.41	0.41	Vindlast fra Vest		No	Action
343	0.41	0.41	0.41	Vindlast fra Vest		No	Action
344	0.41	0.41	0.41	Vindlast fra Vest		No	Action
345	0.41	0.41	0.41	Vindlast fra Vest		No	Action
346	3.00	3.00	3.00	Nyttelast		No	Action
347	3.00	3.00	3.00	Nyttelast		No	Action
348	3.00	3.00	3.00	Nyttelast		No	Action
349	3.00	3.00	3.00	Nyttelast		No	Action
350	3.00	3.00	3.00	Nyttelast		No	Action
351	3.00	3.00	3.00	Nyttelast		No	Action
352	3.00	3.00	3.00	Nyttelast		No	Action
353	3.00	3.00	3.00	Nyttelast		No	Action
354	3.00	3.00	3.00	Nyttelast		No	Action
355	3.00	3.00	3.00	Nyttelast		No	Action
356	3.00	3.00	3.00	Nyttelast		No	Action
357	3.00	3.00	3.00	Nyttelast		No	Action
358	3.00	3.00	3.00	Nyttelast		No	Action
359	3.00	3.00	3.00	Nyttelast		No	Action
360	3.00	3.00	3.00	Nyttelast		No	Action
361	3.00	3.00	3.00	Nyttelast		No	Action

No.	q1	q2	q3	Load case	Comment	Applied on Ecc.	Intensity
[-]	[kN/m2]	[kN/m2]	[kN/m2]	[-]	[-]	[-]	[-]
362	3.00	3.00	3.00	Nyttelast		No	Action
363	3.00	3.00	3.00	Nyttelast		No	Action
364	3.00	3.00	3.00	Nyttelast		No	Action
365	3.00	3.00	3.00	Nyttelast		No	Action
366	3.00	3.00	3.00	Nyttelast		No	Action
367	0.03	0.03	0.03	Påført egenlast		No	Action
368	0.03	0.03	0.03	Påført egenlast		No	Action
369	0.03	0.03	0.03	Påført egenlast		No	Action
370	0.03	0.03	0.03	Påført egenlast		No	Action
371	0.03	0.03	0.03	Påført egenlast		No	Action
372	0.03	0.03	0.03	Påført egenlast		No	Action
373	0.03	0.03	0.03	Påført egenlast		No	Action
374	0.03	0.03	0.03	Påført egenlast		No	Action
375	0.03	0.03	0.03	Påført egenlast		No	Action
376	0.03	0.03	0.03	Påført egenlast		No	Action
377	0.03	0.03	0.03	Påført egenlast		No	Action
378	0.03	0.03	0.03	Påført egenlast		No	Action
379	0.03	0.03	0.03	Påført egenlast		No	Action
380	0.03	0.03	0.03	Påført egenlast		No	Action
381	0.03	0.03	0.03	Påført egenlast		No	Action
382	0.03	0.03	0.03	Påført egenlast		No	Action
383	0.03	0.03	0.03	Påført egenlast		No	Action
384	0.03	0.03	0.03	Påført egenlast		No	Action
385	0.96	0.96	0.96	Vindlast fra Nord		No	Action
386	0.96	0.96	0.96	Vindlast fra Nord		No	Action
387	0.41	0.41	0.41	Vindlast fra Nord		No	Action
388	0.96	0.96	0.96	Vindlast fra Sør		No	Action
389	0.96	0.96	0.96	Vindlast fra Sør		No	Action
390	0.41	0.41	0.41	Vindlast fra Sør		No	Action
391	0.41	0.41	0.41	Vindlast fra Sør		No	Action
392	0.69	0.69	0.69	Vindlast fra Øst		No	Action
393	0.69	0.69	0.69	Vindlast fra Øst		No	Action
394	0.69	0.69	0.69	Vindlast fra Øst		No	Action
395	0.69	0.69	0.69	Vindlast fra Øst		No	Action
396	1.10	1.10	1.10	Vindlast fra Vest		No	Action
397	1.10	1.10	1.10	Vindlast fra Vest		No	Action
398	1.10	1.10	1.10	Vindlast fra Vest		No	Action
399	1.10	1.10	1.10	Vindlast fra Vest		No	Action
400	0.69	0.69	0.69	Vindlast fra Nord		No	Action
401	0.69	0.69	0.69	Vindlast fra Nord		No	Action
402	1.65	1.65	1.65	Vindlast fra Sør		No	Action
403	1.10	1.10	1.10	Vindlast fra Sør		No	Action
404	0.41	0.41	0.41	Vindlast fra Øst		No	Action
405	0.41	0.41	0.41	Vindlast fra Øst		No	Action
406	0.96	0.96	0.96	Vindlast fra Vest		No	Action
407	0.96	0.96	0.96	Vindlast fra Vest		No	Action
408	1.20	1.20	1.20	Påført egenlast		No	Action
409	1.20	1.20	1.20	Påført egenlast		No	Action
410	1.20	1.20	1.20	Påført egenlast		No	Action
411	1.20	1.20	1.20	Påført egenlast		No	Action
412	1.20	1.20	1.20	Påført egenlast		No	Action
413	1.20	1.20	1.20	Påført egenlast		No	Action

No.	q1	q2	q3	Load case	Comment	Applied on Ecc.	Intensity
[-]	[kN/m2]	[kN/m2]	[kN/m2]	[-]	[-]	[-]	[-]
414	1.20	1.20	1.20	Påført egenlast		No	Action
415	1.20	1.20	1.20	Påført egenlast		No	Action
416	1.20	1.20	1.20	Påført egenlast		No	Action
417	1.20	1.20	1.20	Påført egenlast		No	Action
418	1.20	1.20	1.20	Påført egenlast		No	Action
419	1.20	1.20	1.20	Påført egenlast		No	Action
420	1.20	1.20	1.20	Påført egenlast		No	Action
421	1.20	1.20	1.20	Påført egenlast		No	Action
422	1.20	1.20	1.20	Påført egenlast		No	Action
423	1.20	1.20	1.20	Påført egenlast		No	Action
424	1.20	1.20	1.20	Påført egenlast		No	Action
425	1.20	1.20	1.20	Påført egenlast		No	Action
426	1.20	1.20	1.20	Påført egenlast		No	Action
427	1.20	1.20	1.20	Påført egenlast		No	Action
428	1.20	1.20	1.20	Påført egenlast		No	Action
429	1.20	1.20	1.20	Påført egenlast		No	Action
430	2.40	2.40	2.40	Snø		No	Action
431	2.40	2.40	2.40	Snø		No	Action
432	2.40	2.40	2.40	Snø		No	Action
433	2.40	2.40	2.40	Snø		No	Action
434	2.40	2.40	2.40	Snø		No	Action
435	2.40	2.40	2.40	Snø		No	Action
436	2.40	2.40	2.40	Snø		No	Action
437	2.40	2.40	2.40	Snø		No	Action
438	2.40	2.40	2.40	Snø		No	Action
439	2.40	2.40	2.40	Snø		No	Action
440	2.40	2.40	2.40	Snø		No	Action
441	2.40	2.40	2.40	Snø		No	Action
442	2.40	2.40	2.40	Snø		No	Action
443	2.40	2.40	2.40	Snø		No	Action
444	2.40	2.40	2.40	Snø		No	Action
445	2.40	2.40	2.40	Snø		No	Action
446	2.40	2.40	2.40	Snø		No	Action
447	2.40	2.40	2.40	Snø		No	Action
448	0.41	0.41	0.41	Vindlast fra Nord		No	Action
449	0.41	0.41	0.41	Vindlast fra Nord		No	Action
450	0.41	0.41	0.41	Vindlast fra Nord		No	Action
451	0.96	0.96	0.96	Vindlast fra Nord		No	Action
452	0.96	0.96	0.96	Vindlast fra Nord		No	Action
453	0.41	0.41	0.41	Vindlast fra Sør		No	Action
454	0.41	0.41	0.41	Vindlast fra Sør		No	Action
455	0.96	0.96	0.96	Vindlast fra Sør		No	Action
456	0.96	0.96	0.96	Vindlast fra Sør		No	Action
457	0.69	0.69	0.69	Vindlast fra Øst		No	Action
458	0.69	0.69	0.69	Vindlast fra Øst		No	Action
459	0.69	0.69	0.69	Vindlast fra Øst		No	Action
460	0.69	0.69	0.69	Vindlast fra Øst		No	Action
461	1.65	1.65	1.65	Vindlast fra Vest		No	Action
462	1.65	1.65	1.65	Vindlast fra Vest		No	Action
463	1.10	1.10	1.10	Vindlast fra Vest		No	Action
464	1.10	1.10	1.10	Vindlast fra Vest		No	Action

Line loads

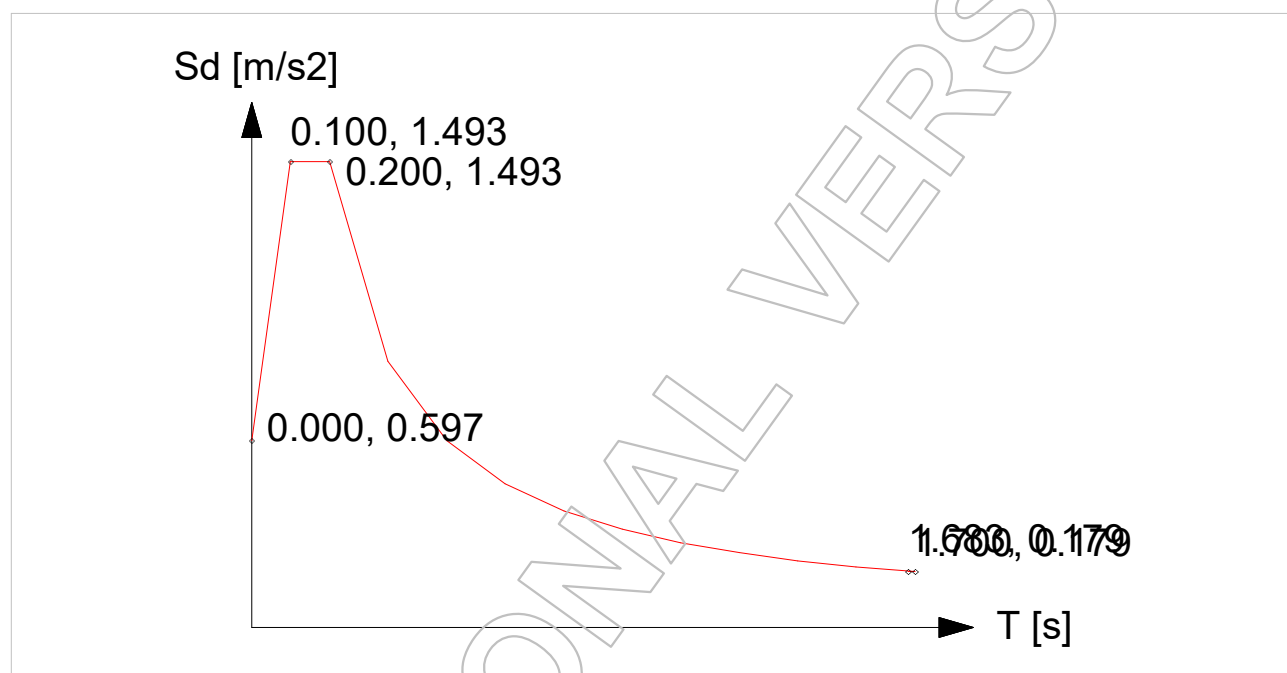
No.	q1	q2	Load case	Comment	Applied on Ecc.	Assigned	Intensity	Direction
[-]	[kN/m]	[kN/m]	[-]	[-]	[-]	[-]	[-]	[-]
1	1.20	1.20	Påført egenlast		No	-	Action	Constant
2	1.20	1.20	Påført egenlast		No	-	Action	Constant
3	1.20	1.20	Påført egenlast		No	-	Action	Constant
4	1.20	1.20	Påført egenlast		No	-	Action	Constant
5	1.20	1.20	Påført egenlast		No	-	Action	Constant
6	1.20	1.20	Påført egenlast		No	-	Action	Constant
7	1.20	1.20	Påført egenlast		No	-	Action	Constant
8	1.20	1.20	Påført egenlast		No	-	Action	Constant
9	1.20	1.20	Påført egenlast		No	-	Action	Constant
10	1.20	1.20	Påført egenlast		No	-	Action	Constant
11	1.20	1.20	Påført egenlast		No	-	Action	Constant
12	2.40	2.40	Påført egenlast		No	-	Action	Constant
13	2.40	2.40	Påført egenlast		No	-	Action	Constant
14	2.40	2.40	Påført egenlast		No	-	Action	Constant
15	2.40	2.40	Påført egenlast		No	-	Action	Constant
16	2.40	2.40	Påført egenlast		No	-	Action	Constant
17	2.40	2.40	Påført egenlast		No	-	Action	Constant
18	2.40	2.40	Påført egenlast		No	-	Action	Constant
19	2.40	2.40	Påført egenlast		No	-	Action	Constant
20	2.40	2.40	Påført egenlast		No	-	Action	Constant
21	2.40	2.40	Påført egenlast		No	-	Action	Constant
22	2.40	2.40	Påført egenlast		No	-	Action	Constant
23	2.40	2.40	Påført egenlast		No	-	Action	Constant
24	1.44	1.44	Påført egenlast		No	-	Action	Constant
25	1.44	1.44	Påført egenlast		No	-	Action	Constant
26	1.44	1.44	Påført egenlast		No	-	Action	Constant
27	1.44	1.44	Påført egenlast		No	-	Action	Constant
28	3.12	3.12	Påført egenlast		No	-	Action	Constant
29	3.12	3.12	Påført egenlast		No	-	Action	Constant
30	3.12	3.12	Påført egenlast		No	-	Action	Constant
31	3.12	3.12	Påført egenlast		No	-	Action	Constant
32	1.68	1.68	Påført egenlast		No	-	Action	Constant
33	1.68	1.68	Påført egenlast		No	-	Action	Constant
34	3.00	3.00	Påført egenlast		No	-	Action	Constant
35	3.00	3.00	Påført egenlast		No	-	Action	Constant
36	3.00	3.00	Påført egenlast		No	-	Action	Constant
37	3.00	3.00	Påført egenlast		No	-	Action	Constant
38	4.00	4.00	Påført egenlast		No	-	Action	Constant
39	4.00	4.00	Påført egenlast		No	-	Action	Constant
40	0.45	0.45	Påført egenlast		No	-	Action	Constant
41	0.45	0.45	Påført egenlast		No	-	Action	Constant
42	0.45	0.45	Påført egenlast		No	-	Action	Constant
43	0.45	0.45	Påført egenlast		No	-	Action	Constant

2.3.1 Parameter

Seismic load, structure information

Value	Quantity
Structure type	Building structure
xi (damping factor) [%]	5.000
qd (behaviour factor for displacements)	1.500

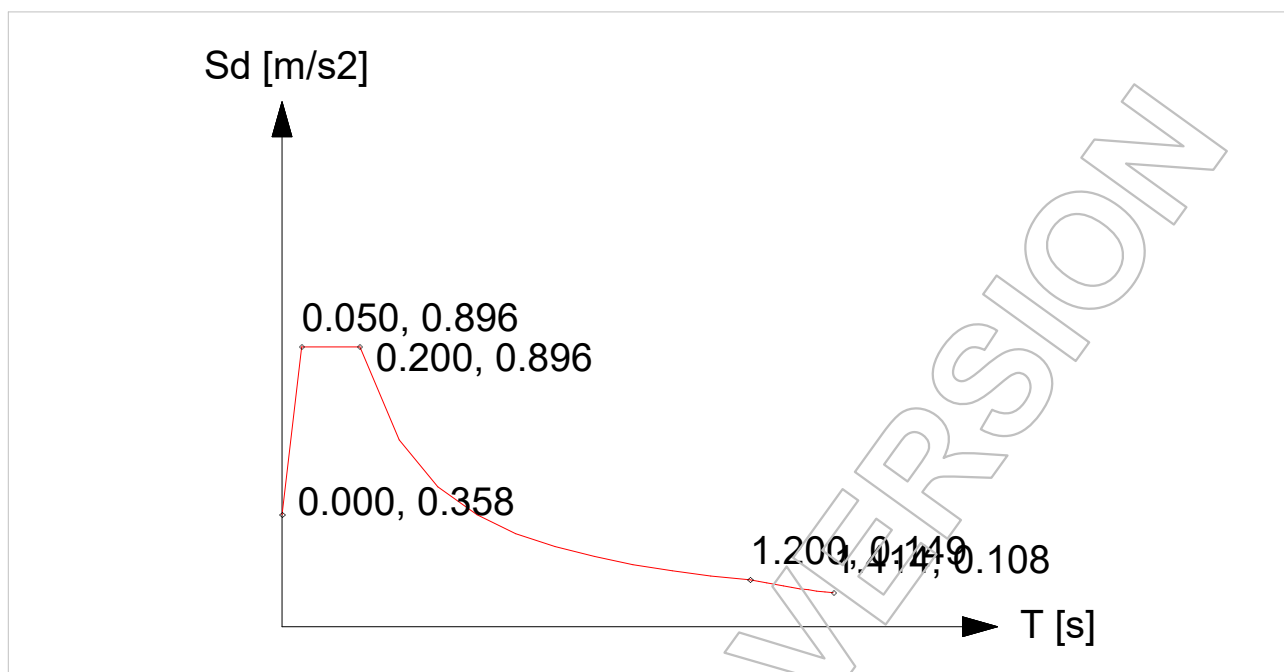
2.3.2 Horisontalt spekter



Seismic load, horizontal sp., standard

Value	Quantity
Type	1
Ground	A
ag [m/s ²]	0.896
S	1.000
TB [s]	0.100

Value	Quantity
TC [s]	0.200
TD [s]	1.700
q	1.500
beta	0.200



Seismic load, vertical sp., standard

Value	Quantity
Type	1
agv/ag	0.600
S	1.000
TB [s]	0.050

Value	Quantity
TC [s]	0.200
TD [s]	1.200
q	1.500
beta	0.200

2.3.4 Andel av masser

Load case - mass conversions

No.	Factor	Load case
1	0.300	Nyttelast
2	0.200	Snø
3	1.000	Egenlast

No.	Factor	Load case
4	1.000	Påført e...
5	0.000	Vindlast...
6	0.000	Vindlast...

No.	Factor	Load case
7	0.000	Vindlast...
8	0.000	Vindlast...

2.3.5 Egenfrevens

Eigenfrequencies

Shape	Frequency	Period	Shape	Frequency	Period	Shape	Frequency	Period
[-]	[Hz]	[s]	[-]	[Hz]	[s]	[-]	[Hz]	[s]
1	0.586	1.705	50	8.857	0.113	99	13.252	0.075
2	0.799	1.252	51	8.922	0.112	100	13.261	0.075
3	2.447	0.409	52	8.939	0.112	101	13.263	0.075
4	2.586	0.387	53	9.118	0.110	102	13.269	0.075
5	2.858	0.350	54	9.118	0.110	103	13.274	0.075
6	3.099	0.323	55	9.130	0.110	104	13.274	0.075
7	3.331	0.300	56	9.130	0.110	105	13.276	0.075
8	3.491	0.286	57	9.169	0.109	106	13.280	0.075
9	3.559	0.281	58	9.622	0.104	107	13.287	0.075
10	3.654	0.274	59	9.796	0.102	108	13.332	0.075
11	3.787	0.264	60	9.828	0.102	109	13.364	0.075
12	4.145	0.241	61	9.933	0.101	110	13.548	0.074
13	4.296	0.233	62	9.990	0.100	111	13.752	0.073
14	4.402	0.227	63	10.036	0.100	112	14.231	0.070
15	4.489	0.223	64	10.107	0.099	113	14.245	0.070
16	4.504	0.222	65	10.180	0.098	114	14.355	0.070
17	4.618	0.217	66	10.249	0.098	115	14.513	0.069
18	4.704	0.213	67	10.500	0.095	116	14.684	0.068
19	4.761	0.210	68	10.521	0.095	117	14.916	0.067
20	4.792	0.209	69	10.715	0.093	118	15.019	0.067
21	4.828	0.207	70	10.791	0.093	119	15.192	0.066
22	4.926	0.203	71	10.827	0.092	120	15.227	0.066
23	4.932	0.203	72	10.923	0.092	121	15.265	0.066
24	4.961	0.202	73	11.123	0.090	122	15.282	0.065
25	5.148	0.194	74	11.176	0.089	123	15.285	0.065
26	5.259	0.190	75	11.202	0.089	124	15.290	0.065
27	5.263	0.190	76	11.206	0.089	125	15.295	0.065
28	5.549	0.180	77	11.206	0.089	126	15.300	0.065
29	5.578	0.179	78	11.356	0.088	127	15.309	0.065
30	5.592	0.179	79	11.410	0.088	128	15.310	0.065
31	5.674	0.176	80	11.411	0.088	129	15.311	0.065
32	5.849	0.171	81	11.666	0.086	130	15.311	0.065
33	5.865	0.171	82	11.749	0.085	131	15.316	0.065
34	6.031	0.166	83	11.831	0.085	132	15.327	0.065
35	6.492	0.154	84	11.896	0.084	133	15.332	0.065
36	6.713	0.149	85	12.129	0.082	134	15.332	0.065
37	6.734	0.148	86	12.193	0.082	135	15.334	0.065
38	6.981	0.143	87	12.262	0.082	136	15.338	0.065
39	7.178	0.139	88	12.530	0.080	137	15.338	0.065
40	7.196	0.139	89	12.580	0.079	138	15.340	0.065
41	7.296	0.137	90	12.784	0.078	139	15.340	0.065
42	7.298	0.137	91	12.964	0.077	140	15.340	0.065
43	7.362	0.136	92	12.994	0.077	141	15.340	0.065
44	7.447	0.134	93	13.022	0.077	142	15.340	0.065
45	7.528	0.133	94	13.088	0.076	143	15.343	0.065
46	8.034	0.124	95	13.208	0.076	144	15.344	0.065
47	8.099	0.123	96	13.240	0.076	145	15.349	0.065
48	8.236	0.121	97	13.251	0.075	146	15.364	0.065
49	8.840	0.113	98	13.252	0.075	147	15.375	0.065

Shape	Frequency	Period
[-]	[Hz]	[s]
148	15.408	0.065
149	15.425	0.065
150	15.459	0.065
151	15.537	0.064
152	15.560	0.064
153	15.592	0.064
154	15.674	0.064
155	15.722	0.064
156	15.943	0.063
157	16.054	0.062
158	16.265	0.061
159	16.550	0.060
160	16.672	0.060
161	16.756	0.060
162	17.067	0.059
163	17.097	0.058
164	17.225	0.058
165	17.265	0.058

Shape	Frequency	Period
[-]	[Hz]	[s]
166	17.343	0.058
167	17.404	0.057
168	17.613	0.057
169	17.744	0.056
170	17.803	0.056
171	17.895	0.056
172	18.063	0.055
173	18.099	0.055
174	18.229	0.055
175	18.289	0.055
176	18.326	0.055
177	18.445	0.054
178	18.511	0.054
179	18.536	0.054
180	18.565	0.054
181	18.571	0.054
182	18.635	0.054
183	18.708	0.053

Shape	Frequency	Period
[-]	[Hz]	[s]
184	18.812	0.053
185	18.892	0.053
186	19.092	0.052
187	19.131	0.052
188	19.212	0.052
189	19.407	0.052
190	19.453	0.051
191	19.463	0.051
192	19.775	0.051
193	19.875	0.050
194	19.934	0.050
195	19.947	0.050
196	19.967	0.050
197	19.972	0.050
198	19.974	0.050
199	19.978	0.050
200	19.980	0.050

2.4 Lastkombinasjoner

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Load combinations

No.	Name	Type	Factor	Load cases
1	B1: Dominerende snølast, Vindretning fra Nord	Ultimate	1.350 1.350 1.050 0.900 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Nord Nyttelast
2	B1: Dominerende snølast, Vindretning fra Sør	Ultimate	1.350 1.350 1.050 0.900 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Sør Nyttelast
3	B1: Dominerende snølast, vindretning fra Øst	Ultimate	1.350 1.350 1.050 0.900 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Øst Nyttelast
4	B1: Dominerende snølast, vindretning fra Vest	Ultimate	1.350 1.350 1.050 0.900 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Vest Nyttelast
5	B1: Dominerende vindlast, vindretning fra Nord	Ultimate	1.350 1.350 1.050 1.050 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Nord Nyttelast
6	B1: Dominerende vindlast, vindretning fra Sør	Ultimate	1.350 1.350 1.050 1.050 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Sør Nyttelast
7	B1: Dominerende vindlast, vindretning fra Øst	Ultimate	1.350 1.350 1.050 1.050 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Øst Nyttelast
8	B1: Dominerende vindlast, vindretning fra Vest	Ultimate	1.350 1.350 1.050 1.050 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Vest Nyttelast
9	B2: Dominerende snølast, vindretning fra Nord	Ultimate	1.200 1.200 1.500 0.900 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Nord Nyttelast
10	B2: Dominerende snølast, vindretning fra Sør	Ultimate	1.200 1.200 1.500 0.900 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Sør Nyttelast

No.	Name	Type	Factor	Load cases
11	B2: Dominerende snølast, vindretning fra Øst	Ultimate	1.200 1.200 1.500 0.900 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Øst Nyttelast
12	B2: Dominerende snølast, vindretning fra Vest	Ultimate	1.200 1.200 1.500 0.900 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Vest Nyttelast
13	B2: Dominerende vindlast, vindretning fra Nord	Ultimate	1.200 1.200 1.050 1.500 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Nord Nyttelast
14	B2: Dominerende vindlast, vindretning fra Sør	Ultimate	1.200 1.200 1.050 1.500 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Sør Nyttelast
15	B2: Dominerende vindlast, vindretning fra Øst	Ultimate	1.200 1.200 1.050 1.500 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Øst Nyttelast
16	B2: Dominerende vindlast, vindretning fra Vest	Ultimate	1.200 1.200 1.050 1.500 1.050	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Vest Nyttelast
17	Bruksgrense, vindretning fra Nord	Quasi-perm...	1.000 1.000 0.600 0.600 0.600	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Nord Nyttelast
18	Bruksgrense, vindretning fra Sør	Quasi-perm...	1.000 1.000 0.600 0.600 0.600	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Sør Nyttelast
19	Bruksgrense, vindretning fra Øst	Quasi-perm...	1.000 1.000 0.600 0.600 0.600	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Øst Nyttelast
20	Bruksgrense, vindretning fra Vest	Quasi-perm...	1.000 1.000 0.600 0.600 0.600	Egenlast (+Struc. dead load) Påført egenlast Snø Vindlast fra Vest Nyttelast
21	Seis res, Fx+Mx + 0.30*Seis res, Fy+My	Seismic	1.000 0.300	Seis res, Fx+Mx Seis res, Fy+My
22	Seis res, Fx+Mx - 0.30*Seis res, Fy+My	Seismic	1.000	Seis res, Fx+Mx

No.	Name	Type	Factor	Load cases
23	Seis res, Fx+Mx + 0.30*Seis res, Fy-My	Seismic	-0.300 1.000 0.300	Seis res, Fy+My Seis res, Fx+Mx Seis res, Fy-My
24	Seis res, Fx+Mx - 0.30*Seis res, Fy-My	Seismic	1.000 -0.300	Seis res, Fx+Mx Seis res, Fy-My
25	-Seis res, Fx+Mx + 0.30*Seis res, Fy+My	Seismic	-1.000 0.300	Seis res, Fx+Mx Seis res, Fy+My
26	-Seis res, Fx+Mx - 0.30*Seis res, Fy+My	Seismic	-1.000 -0.300	Seis res, Fx+Mx Seis res, Fy+My
27	-Seis res, Fx+Mx + 0.30*Seis res, Fy-My	Seismic	-1.000 0.300	Seis res, Fx+Mx Seis res, Fy-My
28	-Seis res, Fx+Mx - 0.30*Seis res, Fy-My	Seismic	-1.000 -0.300	Seis res, Fx+Mx Seis res, Fy-My
29	Seis res, Fx-Mx + 0.30*Seis res, Fy+My	Seismic	1.000 0.300	Seis res, Fx-Mx Seis res, Fy+My
30	Seis res, Fx-Mx - 0.30*Seis res, Fy+My	Seismic	1.000 -0.300	Seis res, Fx-Mx Seis res, Fy+My
31	Seis res, Fx-Mx + 0.30*Seis res, Fy-My	Seismic	1.000 0.300	Seis res, Fx-Mx Seis res, Fy-My
32	Seis res, Fx-Mx - 0.30*Seis res, Fy-My	Seismic	1.000 -0.300	Seis res, Fx-Mx Seis res, Fy-My
33	-Seis res, Fx-Mx + 0.30*Seis res, Fy+My	Seismic	-1.000 0.300	Seis res, Fx-Mx Seis res, Fy+My
34	-Seis res, Fx-Mx - 0.30*Seis res, Fy+My	Seismic	-1.000 -0.300	Seis res, Fx-Mx Seis res, Fy+My
35	-Seis res, Fx-Mx + 0.30*Seis res, Fy-My	Seismic	-1.000 0.300	Seis res, Fx-Mx Seis res, Fy-My
36	-Seis res, Fx-Mx - 0.30*Seis res, Fy-My	Seismic	-1.000 -0.300	Seis res, Fx-Mx Seis res, Fy-My
37	0.30*Seis res, Fx+Mx + Seis res, Fy+My	Seismic	0.300 1.000	Seis res, Fx+Mx Seis res, Fy+My
38	0.30*Seis res, Fx+Mx - Seis res, Fy+My	Seismic	0.300 -1.000	Seis res, Fx+Mx Seis res, Fy+My
39	0.30*Seis res, Fx+Mx + Seis res, Fy-My	Seismic	0.300 1.000	Seis res, Fx+Mx Seis res, Fy-My
40	0.30*Seis res, Fx+Mx - Seis res, Fy-My	Seismic	0.300 -1.000	Seis res, Fx+Mx Seis res, Fy-My
41	-0.30*Seis res, Fx+Mx + Seis res, Fy+My	Seismic	-0.300 1.000	Seis res, Fx+Mx Seis res, Fy+My
42	-0.30*Seis res, Fx+Mx - Seis res, Fy+My	Seismic	-0.300 -1.000	Seis res, Fx+Mx Seis res, Fy+My
43	-0.30*Seis res, Fx+Mx + Seis res, Fy-My	Seismic	-0.300 1.000	Seis res, Fx+Mx Seis res, Fy-My
44	-0.30*Seis res, Fx+Mx - Seis res, Fy-My	Seismic	-0.300 -1.000	Seis res, Fx+Mx Seis res, Fy-My
45	0.30*Seis res, Fx-Mx + Seis res, Fy+My	Seismic	0.300 1.000	Seis res, Fx-Mx Seis res, Fy+My
46	0.30*Seis res, Fx-Mx - Seis res, Fy+My	Seismic	0.300 -1.000	Seis res, Fx-Mx Seis res, Fy+My
47	0.30*Seis res, Fx-Mx + Seis res, Fy-My	Seismic	0.300 1.000	Seis res, Fx-Mx Seis res, Fy-My
48	0.30*Seis res, Fx-Mx - Seis res, Fy-My	Seismic	0.300 -1.000	Seis res, Fx-Mx Seis res, Fy-My

No.	Name	Type	Factor	Load cases
49	-0.30*Seis res, Fx-Mx + Seis res, Fy+My	Seismic	-0.300	Seis res, Fx-Mx
			1.000	Seis res, Fy+My
50	-0.30*Seis res, Fx-Mx - Seis res, Fy+My	Seismic	-0.300	Seis res, Fx-Mx
			-1.000	Seis res, Fy+My
51	-0.30*Seis res, Fx-Mx + Seis res, Fy-My	Seismic	-0.300	Seis res, Fx-Mx
			1.000	Seis res, Fy-My
52	-0.30*Seis res, Fx-Mx - Seis res, Fy-My	Seismic	-0.300	Seis res, Fx-Mx
			-1.000	Seis res, Fy-My

3.1 Likevekt

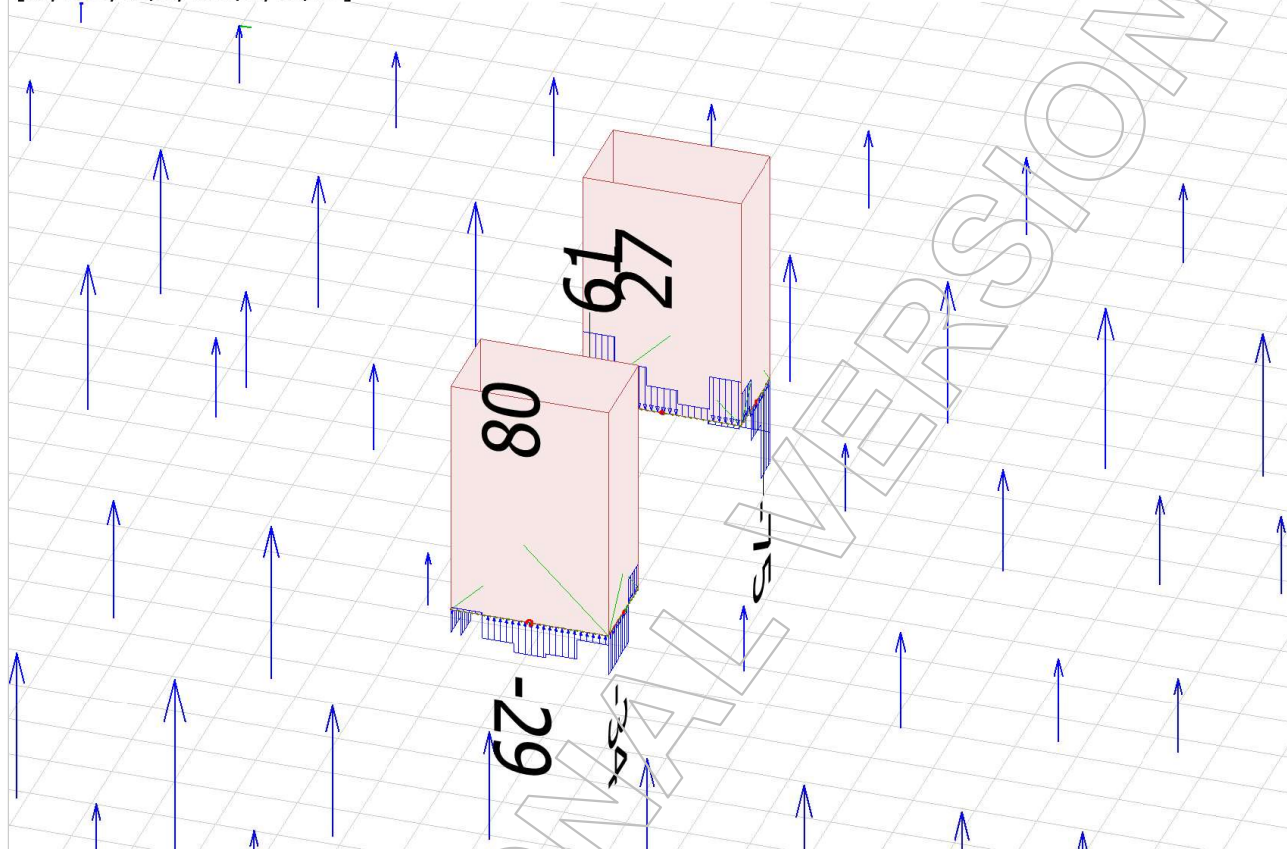
Equilibrium, Ultimate - Load case

Case	Component	Loads	Reactions	Error
[-]	[-]	kN(m)	kN(m)	[%]
Nyttelast	Fx'	0.0	0.0	-
	Fy'	0.0	0.0	-
	Fz'	-9601.6	9601.6	0.00
	Mx'	-213867.2	213867.2	0.00
	My'	485813.7	-485813.7	0.00
	Mz'	0.0	0.0	-
Snø	Fx'	0.0	-0.0	-
	Fy'	0.0	-0.0	-
	Fz'	-9856.4	9856.4	0.00
	Mx'	-224718.1	224718.0	0.00
	My'	449284.1	-449284.1	0.00
	Mz'	0.0	0.0	-
Egenlast	Fx'	0.0	0.0	-
	Fy'	0.0	0.0	-
	Fz'	-23896.7	23896.7	0.00
	Mx'	-538965.1	538964.2	0.00
	My'	1052989.3	-1052988.8	0.00
	Mz'	0.0	0.0	-
Påført egen...	Fx'	0.0	0.0	-
	Fy'	0.0	-0.0	-
	Fz'	-5370.7	5370.7	0.00
	Mx'	-118805.5	118805.5	0.00
	My'	274712.6	-274712.6	0.00
	Mz'	0.0	0.0	-
Vindlast fra...	Fx'	-154.7	154.7	0.00
	Fy'	-1194.8	1194.8	0.00
	Fz'	0.0	0.0	-
	Mx'	13568.3	-13568.3	0.00
	My'	-3493.1	3493.1	0.00
	Mz'	-49773.4	49772.6	0.00
Vindlast fra...	Fx'	-153.4	153.4	0.00
	Fy'	1194.8	-1194.8	0.00
	Fz'	0.0	-0.0	-
	Mx'	-13429.4	13429.4	0.00
	My'	-3465.2	3465.2	0.00
	Mz'	56803.3	-56805.5	0.00
Vindlast fra...	Fx'	-679.1	679.1	0.00
	Fy'	-0.0	0.0	3.78
	Fz'	0.0	0.0	-
	Mx'	-174.2	174.2	0.00
	My'	-7606.7	7606.7	0.00
	Mz'	15450.2	-15450.5	0.00
Vindlast fra...	Fx'	690.0	-690.0	0.00
	Fy'	-31.3	31.3	0.00
	Fz'	0.0	0.0	-
	Mx'	29.0	-29.0	0.00
	My'	8799.4	-8799.4	0.00
	Mz'	-16597.9	16599.5	0.01

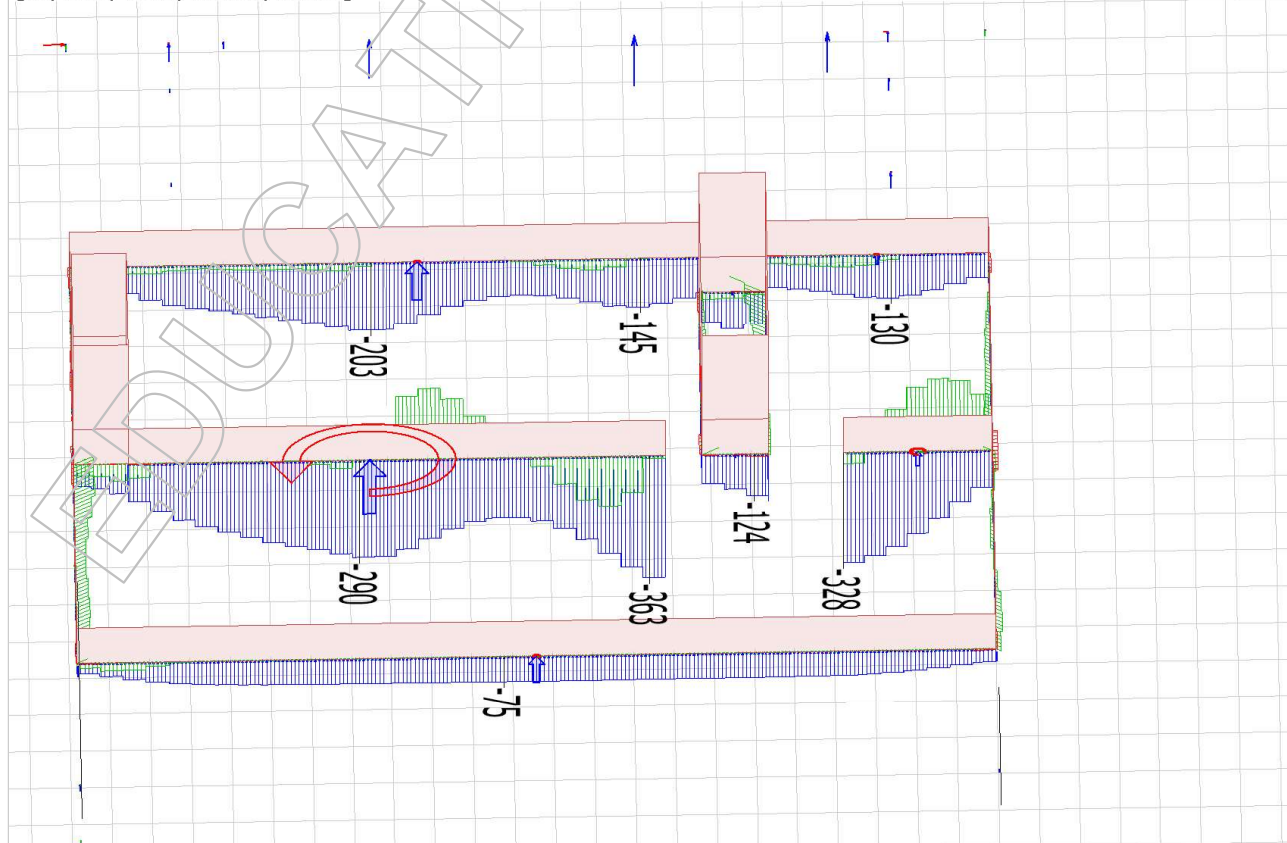
3.2 Maks verdi av alle lastkombinasjoner

3.2.1 Opplagerkrefter stripefundament

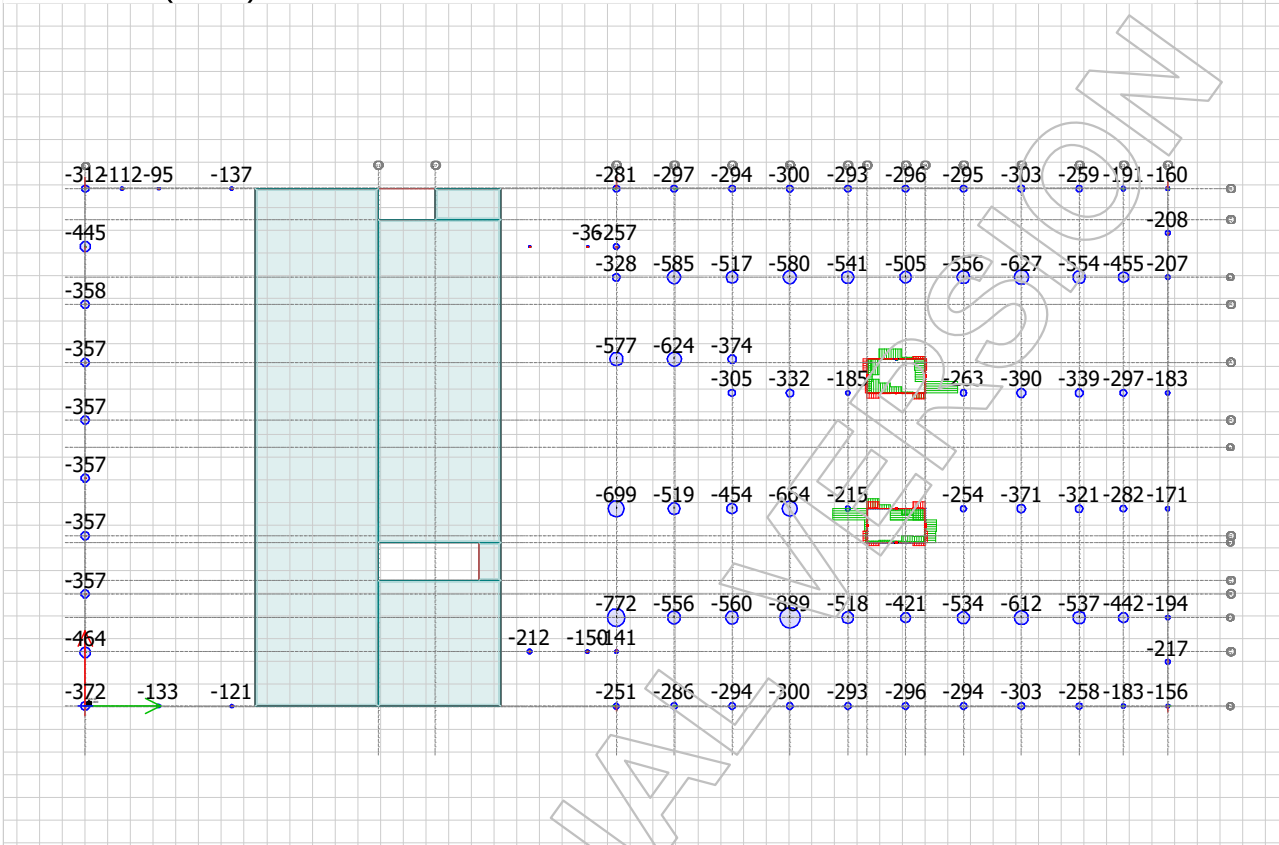
Eurocode (NA: Norwegian) code: Max. of combinations, Ultimate - Reactions - All components+ - [kN, kNm, kN/m, kNm/m, kN/m2]



Eurocode (NA: Norwegian) code: Max. of combinations, Ultimate - Reactions - All components+ - [kN, kNm, kN/m, kNm/m, kN/m2]

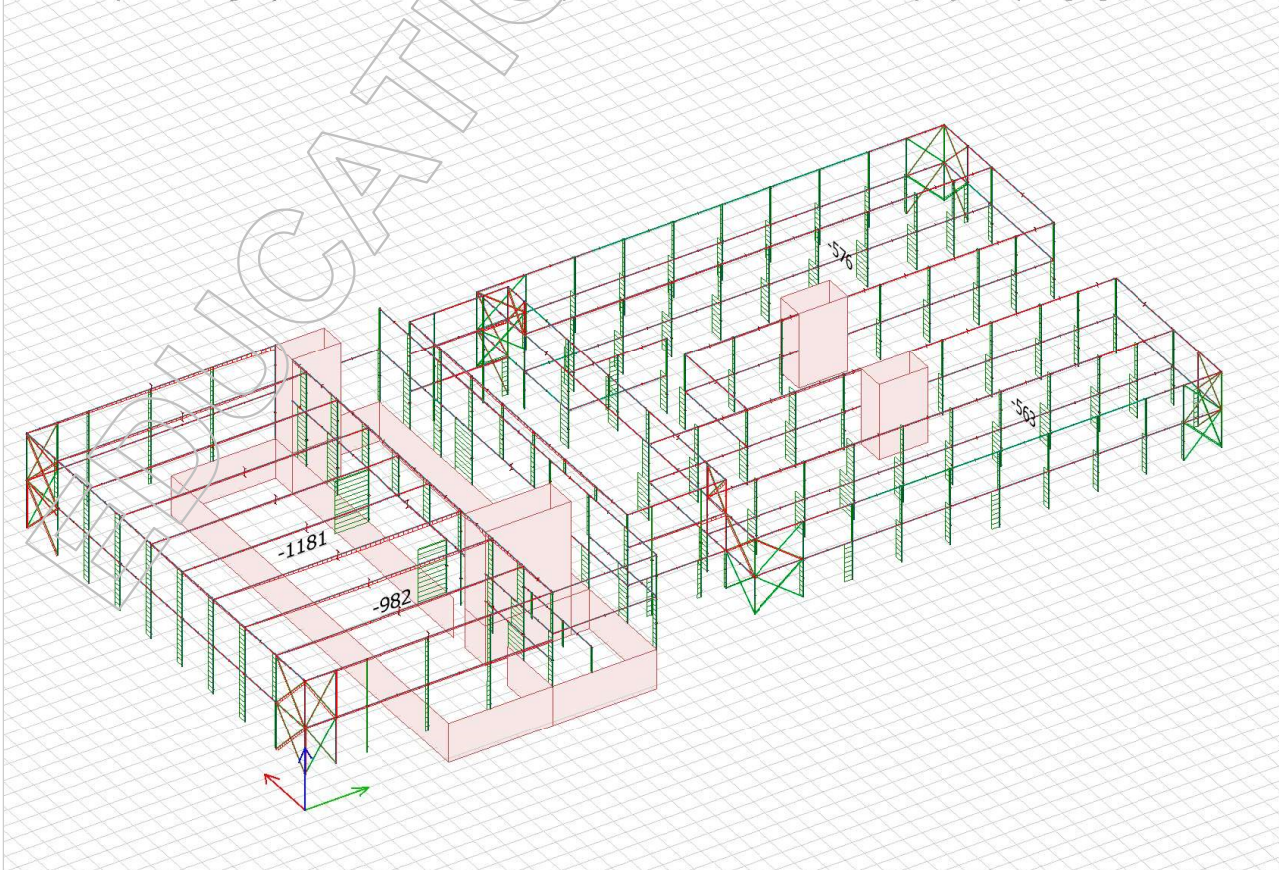


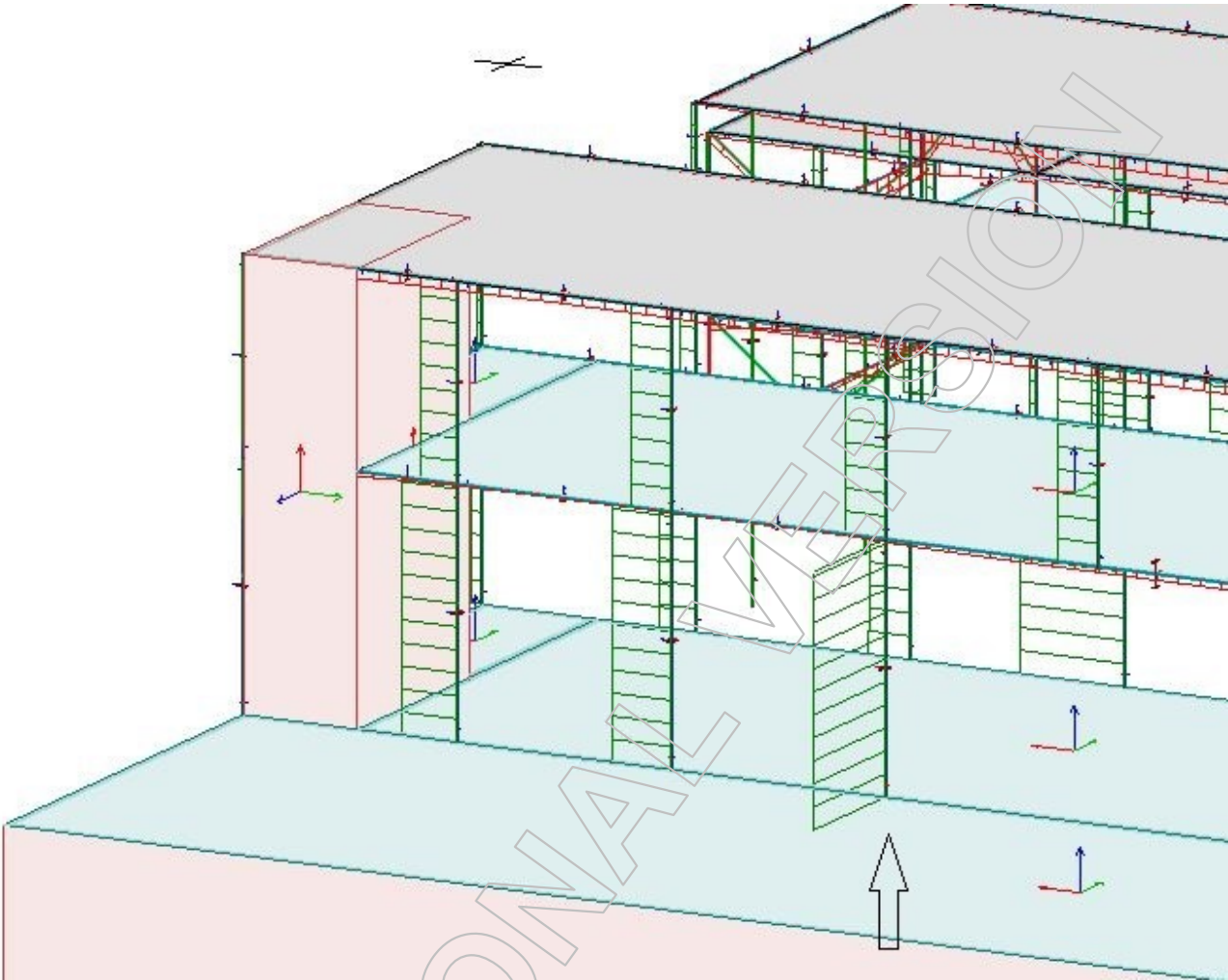
Eurocode (NA: Norwegian) code: Max. of combinations, Ultimate - Reactions - Fz'- - [kN, kNm, kN/m, kNm/m, kN/m²]
View: PLAN 01 (+3.800)



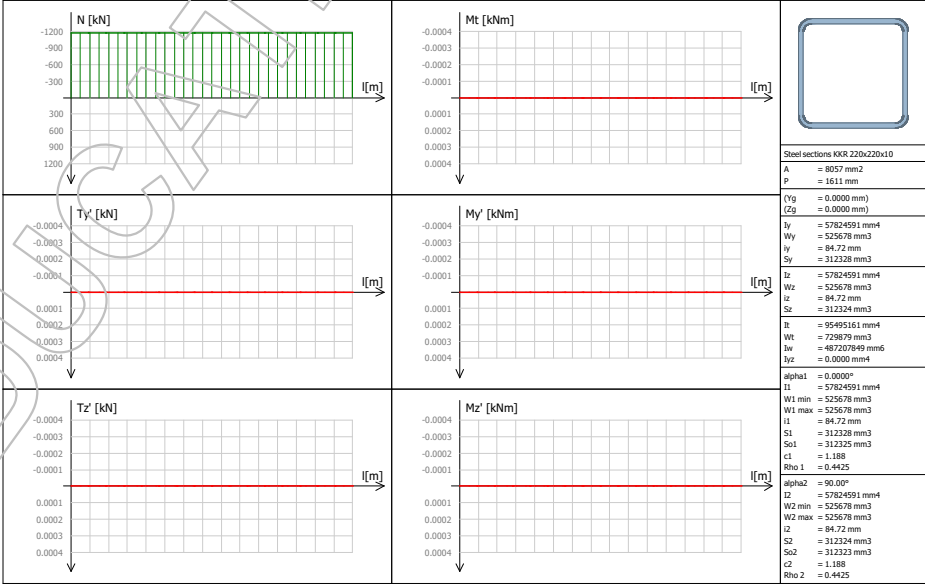
3.2.3 Søyler

Eurocode (NA: Norwegian) code: Max. of combinations, Ultimate - Bar internal forces - N (N+) - Graph - [kN]





C.213.1 - Internal forces - Max. of load combinations: U (H+) - (5.60 m)



Group S P1V 8, C.213.1

Maximum of load combinations

S 355

$$E = 210000 \text{ N/mm}^2$$

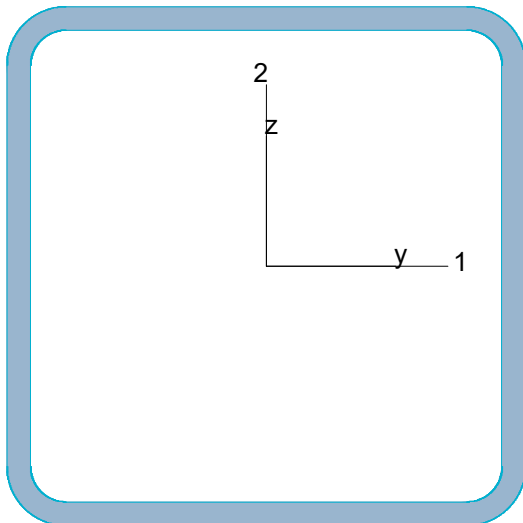
$$G = 80769 \text{ N/mm}^2$$

$$V_{M0,ult} = 1.05 \quad V_{M0,acc/seis} = 1.00$$

$$V_{M1,ult} = 1.05 \quad V_{M1,acc/seis} = 1.00$$

$$V_{M2,ult} = 1.25 \quad V_{M2,acc/seis} = 1.00$$

KKR 220x220x10



$$P = 837 \text{ mm} \quad f_y = 355 \text{ N/mm}^2$$

$$A = 8057 \text{ mm}^2 \quad \epsilon = 0.81$$

$$I_y = 5.782e+07 \text{ mm}^4 \quad \lambda_1 = 76.40$$

$$I_z = 5.782e+07 \text{ mm}^4$$

$$I_1 = 5.782e+07 \text{ mm}^4$$

$$I_2 = 5.782e+07 \text{ mm}^4$$

$$W_{pl,1} = 6.247e+05 \text{ mm}^3$$

$$W_{pl,2} = 6.246e+05 \text{ mm}^3$$

$$W_{el,min,1} = 5.257e+05 \text{ mm}^3$$

$$W_{el,min,2} = 5.257e+05 \text{ mm}^3$$

$$i_1 = 85 \text{ mm}$$

$$i_2 = 85 \text{ mm}$$

$$I_t = 9.550e+07 \text{ mm}^4$$

$$I_w = 4.872e+08 \text{ mm}^6$$

Shear resistance, 1-1 - Part 1-1: 6.2.6, 6.2.8

LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0 \text{ mm}$

$$\text{Class}_N = 1, \text{Class}_{M1} = 1, \text{Class}_{M2} = 1$$

$$V_{1,pl,Rd} = \frac{A_{1,v} \cdot f_y}{\sqrt{3} \cdot V_{M0}} = \frac{4028 \cdot 355}{\sqrt{3} \cdot 1.05} = 786.33 \text{ kN} \quad (6.18)$$

$$V_{1,pl,T,Rd} = 1 - \frac{T_{t,Ed}}{(f_y / \sqrt{3}) / V_{M0}} \cdot V_{1,pl,Rd} = 1 - \frac{0.00}{(355 / \sqrt{3}) / 1.05} \cdot 786.33 = 786.33 \text{ kN} \quad (6.28)$$

$$\frac{V_{1,Ed}}{V_{1,pl,T,Rd}} = \frac{0.00}{786.33} = 0.00 \leq 1.00 \quad (6.25) - \text{OK}$$

Shear resistance, 2-2 - Part 1-1: 6.2.6, 6.2.8

LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0 \text{ mm}$

$$\text{Class}_N = 1, \text{Class}_{M1} = 1, \text{Class}_{M2} = 1$$

$$V_{2,pl,Rd} = \frac{A_{2,v} \cdot f_y}{\sqrt{3} \cdot V_{M0}} = \frac{4028 \cdot 355}{\sqrt{3} \cdot 1.05} = 786.33 \text{ kN} \quad (6.18)$$

$$V_{2,pl,T,Rd} = 1 - \frac{T_{t,Ed}}{(f_y / \sqrt{3}) / V_{M0}} \cdot V_{2,pl,Rd} = 1 - \frac{0.00}{(355 / \sqrt{3}) / 1.05} \cdot 786.33 = 786.33 \text{ kN} \quad (6.28)$$

$$\frac{V_{2,Ed}}{V_{2,pl,T,Rd}} = \frac{0.00}{786.33} = 0.00 \leq 1.00 \quad (6.25) - \text{OK}$$

Torsional resistance - Part 1-1: 6.2.7LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1 $T_{\max, \text{unit}} = 1.37 \frac{\text{N/mm}^2}{\text{kNm}}$ is calculated by FEM analysis.

$$T_{Rd} = \frac{f_y}{\sqrt{3} \cdot T_{\max, \text{unit}} \cdot Y_{M0}} = \frac{355}{\sqrt{3} \cdot 1.37 \cdot 1.05} = 142.47 \text{ kNm}$$

$$\frac{T_{Ed}}{T_{Rd}} = \frac{0.00}{142.47} = 0.00 \leq 1.00 \quad (6.23) - \text{OK}$$

Shear stress - Part 1-1: 6.2.6

Not relevant

Normal stress - Part 1-1: 6.2.1

Not relevant

Normal capacity - Part 1-1: 6.2LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$V_{1,Ed} = 0.00 \text{ kN} \leq 0.5 \cdot V_{1,pl,T,Rd} = 0.5 \cdot 786.33 = 393.16 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$V_{2,Ed} = 0.00 \text{ kN} \leq 0.5 \cdot V_{2,pl,T,Rd} = 0.5 \cdot 786.33 = 393.16 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$\frac{N_{Ed}}{N_{Rd}} + \frac{M_{1,Ed}}{M_{1,Rd}} + \frac{M_{2,Ed}}{M_{2,Rd}} = \frac{1373.63}{2723.91} + \frac{0.00}{211.19} + \frac{0.00}{211.19} = 0.50 \leq 1.00 \quad (6.2) - \text{OK}$$

Flexural buckling, 1-1 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_1 = \frac{L_{cr,1}}{i_1 \cdot \lambda_1} = \frac{5600}{85 \cdot 76.40} = 0.87 \quad (6.50)$$

 $\alpha_1 = 0.49$ (Buckling curve: c)

$$\phi_1 = 0.5 \left[1 + \alpha_1 \cdot (\bar{\lambda}_1 - 0.2) + \bar{\lambda}_1^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.87 - 0.2) + 0.87^2 \right] = 1.04$$

$$\chi_1 = \min \left(\frac{1}{\phi_1 + \sqrt{\phi_1^2 - \bar{\lambda}_1^2}}, 1.0 \right) = \min \left(\frac{1}{1.04 + \sqrt{1.04^2 - 0.87^2}}, 1.0 \right) = 0.62 \quad (6.49)$$

$$N_{b,Rd,1} = \frac{\chi_1 \cdot A \cdot f_y}{Y_{M1}} = \frac{0.62 \cdot 8057 \cdot 355}{1.05} = 1692.49 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,1}} = \frac{1373.63}{1692.49} = 0.81 \leq 1.00 \quad (6.46) - \text{OK}$$

Flexural buckling, 2-2 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_2 = \frac{L_{cr,2}}{i_2 \cdot \lambda_1} = \frac{5600}{85 \cdot 76.40} = 0.87 \quad (6.50)$$

 $\alpha_2 = 0.49$ (Buckling curve: c)

$$\varphi_2 = 0.5 \left[1 + \alpha_2 \cdot (\bar{\lambda}_2 - 0.2) + \bar{\lambda}_2^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.87 - 0.2) + 0.87^2 \right] = 1.04$$

$$\chi_2 = \min \left(\frac{1}{\varphi_2 + \sqrt{\varphi_2^2 - \bar{\lambda}_2^2}}, 1.0 \right) = \min \left(\frac{1}{1.04 + \sqrt{1.04^2 - 0.87^2}}, 1.0 \right) = 0.62 \quad (6.49)$$

$$N_{b,Rd,2} = \frac{\chi_2 \cdot A \cdot f_y}{Y_{M1}} = \frac{0.62 \cdot 8057 \cdot 355}{1.05} = 1692.49 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,2}} = \frac{1373.63}{1692.49} = 0.81 \leq 1.00 \quad (6.46) - \text{OK}$$

Torsional-flexural buckling - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$i_0 = \sqrt{i_1^2 + i_2^2 + y_0^2 + z_0^2} = \sqrt{85^2 + 85^2 + 0^2 + 0^2} = 120 \text{ mm}$$

$$N_{cr,1} = \frac{\pi^2 \cdot E \cdot I_1}{L_{cr,1}^2} = \frac{\pi^2 \cdot 210000 \cdot 57824591}{5600^2} = 3821.69 \text{ kN}$$

$$N_{cr,2} = \frac{\pi^2 \cdot E \cdot I_2}{L_{cr,2}^2} = \frac{\pi^2 \cdot 210000 \cdot 57824591}{5600^2} = 3821.69 \text{ kN}$$

$$N_{cr,T} = \frac{1}{i_0^2} \left(G \cdot I_t + \frac{\pi^2 \cdot E \cdot I_w}{L_t^2} \right) = \frac{1}{120^2} \left(80769 \cdot 9.550e+07 + \frac{\pi^2 \cdot 210000 \cdot 4.872e+08}{5600^2} \right) = 537329.26 \text{ kN}$$

$$i_0^2 (N - N_{cr,1}) (N - N_{cr,2}) (N - N_{cr,T}) - N^2 y_0^2 (N - N_{cr,2}) - N^2 z_0^2 (N - N_{cr,1}) = 120^2 (N - 3821.69) (N - 3821.69) (N - 537329.26) - N^2 0^2 (N - 3821.69) - N^2 0^2 (N - 3821.69) = 0$$

Smallest root of the above equation related to the torsional-flexural buckling:

$$N_{cr,TF} = 537329.26 \text{ kN}$$

$$N_{cr} = \min(N_{cr,T}, N_{cr,TF}) = \min(537329.26, 537329.26) = 537329.26 \text{ kN}$$

$$\bar{\lambda}_T = \sqrt{\frac{A \cdot f_y}{N_{cr}}} = \sqrt{\frac{8057 \cdot 355}{537329.26}} = 0.07 \quad (6.53)$$

 $\alpha_T = 0.49$ (Buckling curve: c)

$$\varphi_T = 0.5 \left[1 + \alpha_T \cdot (\bar{\lambda}_T - 0.2) + \bar{\lambda}_T^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.07 - 0.2) + 0.07^2 \right] = 0.47$$

$$\chi_T = \min \left(\frac{1}{\varphi_T + \sqrt{\varphi_T^2 - \bar{\lambda}_T^2}}, 1.0 \right) = \min \left(\frac{1}{0.47 + \sqrt{0.47^2 - 0.07^2}}, 1.0 \right) = 1.00 \quad (6.49)$$

$$N_{b,Rd,T} = \frac{\chi_T \cdot A \cdot f_y}{Y_{M1}} = \frac{1.00 \cdot 8057 \cdot 355}{1.05} = 2723.91 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,T}} = \frac{1373.63}{2723.91} = 0.50 \leq 1.00 - \text{OK}$$

Lateral torsional buckling, top flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 5.782e+07}{(1.00 \cdot 5600)^2} = 3821.69 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -110 - 0.49 \cdot 0) = -49.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 3.822e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{4.872e+08}{5.782e+07} + \frac{8.077e+04 \cdot 9.550e+07}{3.822e+06} + (-49.50)^2 \right]^{0.5} - (-49.50) \right\} =$$

$$= 6352.58 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{624651 \cdot 355}{6.353e+09}} = 0.19$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.76 \cdot (0.19 - 0.2) + 0.19^2 \right] = 0.51$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.51 + \sqrt{0.51^2 - 0.19^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 624651 \cdot 355}{1.05} = 211.19 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{211.19} = 0.00 \leq 1.00 \quad (6.54) - \text{OK}$$

Lateral torsional buckling, bottom flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 5.782e+07}{(1.00 \cdot 5600)^2} = 3821.69 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -110 - 0.49 \cdot 0) = -49.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 3.822e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{4.872e+08}{5.782e+07} + \frac{8.077e+04 \cdot 9.550e+07}{3.822e+06} + (-49.50)^2 \right]^{0.5} - (-49.50) \right\} =$$

$$= 6352.58 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{624651 \cdot 355}{6.353e+09}} = 0.19$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.76 \cdot (0.19 - 0.2) + 0.19^2 \right] = 0.51$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.51 + \sqrt{0.51^2 - 0.19^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 624651 \cdot 355}{1.05} = 211.19 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{211.19} = 0.00 \leq 1.00 \quad (6.54) - \text{OK}$$

Interaction between normal force and bending 1. - Part 1-1: 6.3.3

Not relevant

Interaction between normal force and bending 2. - Part 1-1: 6.3.3

Not relevant

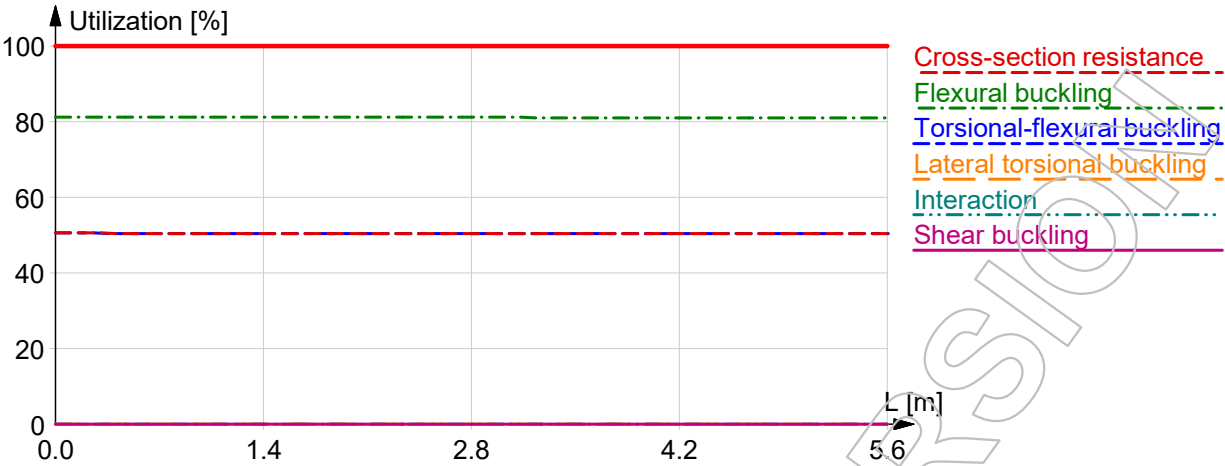
Interaction between normal force and bending, 2nd order - Part 1-1: 6.3.3

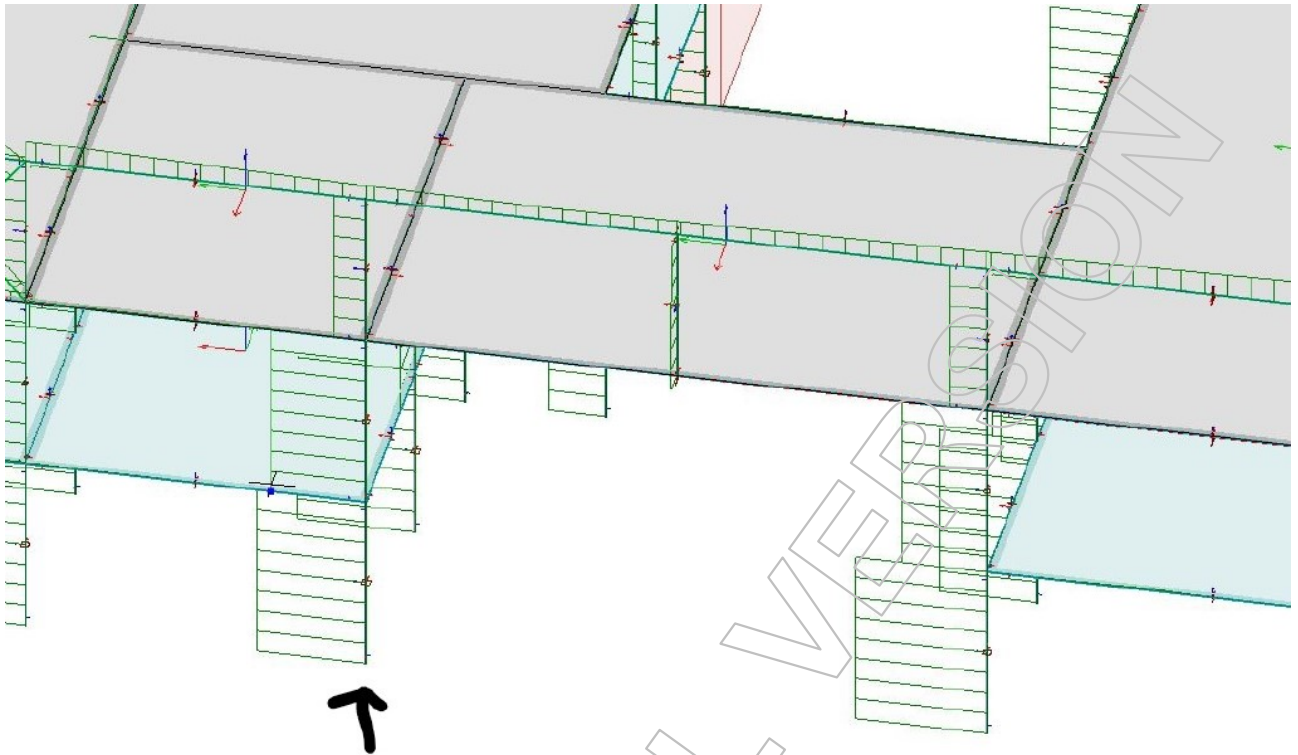
Not relevant

Shear buckling - Part 1-5: 5

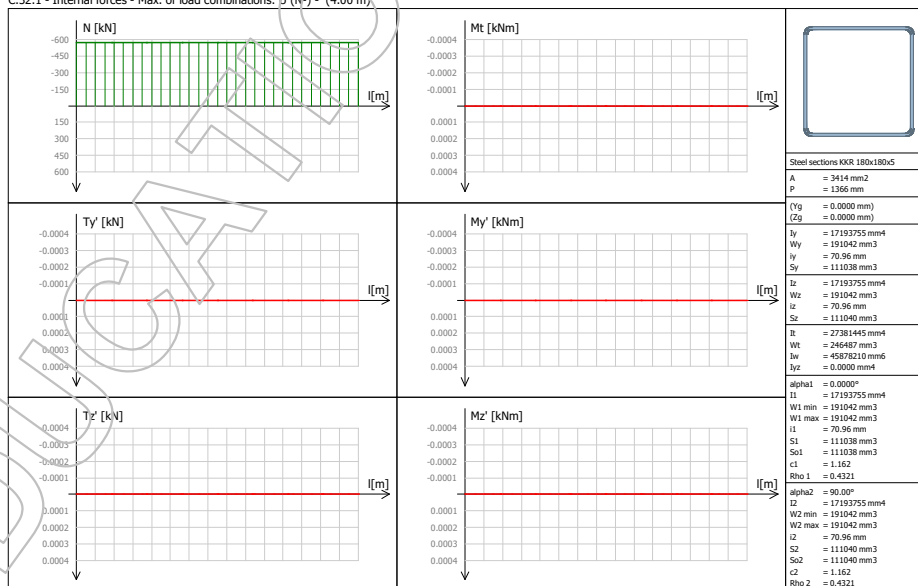
$$\frac{h_w}{t} = \frac{200}{10} = 20.0 \leq \frac{72}{\eta} \cdot \varepsilon = \frac{72}{1.20} \cdot 0.81 = 48.8 \rightarrow \text{Not relevant}$$

Summary





C.32.1 - Internal forces - Max. of load combinations: U (N°) - (4.00 m)



Group S P1Ø 3, C.32.1

Maximum of load combinations

S 355

$$E = 210000 \text{ N/mm}^2$$

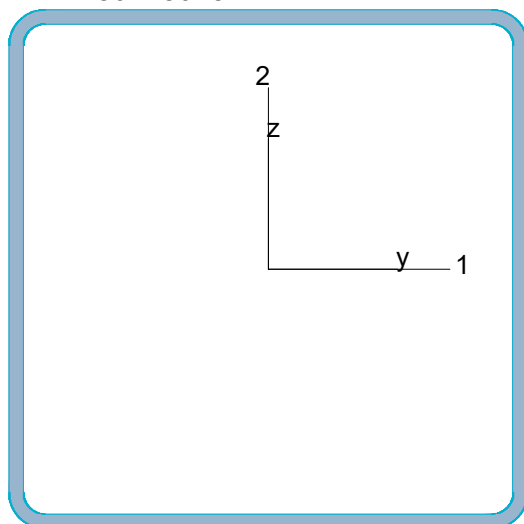
$$G = 80769 \text{ N/mm}^2$$

$$V_{M0,ult} = 1.05 \quad V_{M0,acc/seis} = 1.00$$

$$V_{M1,ult} = 1.05 \quad V_{M1,acc/seis} = 1.00$$

$$V_{M2,ult} = 1.25 \quad V_{M2,acc/seis} = 1.00$$

KKR 180x180x5



$$P = 699 \text{ mm} \quad f_y = 355 \text{ N/mm}^2$$

$$A = 3414 \text{ mm}^2 \quad \epsilon = 0.81$$

$$I_y = 1.719e+07 \text{ mm}^4 \quad \lambda_1 = 76.40$$

$$I_z = 1.719e+07 \text{ mm}^4$$

$$I_1 = 1.719e+07 \text{ mm}^4$$

$$I_2 = 1.719e+07 \text{ mm}^4$$

$$W_{pl,1} = 2.221e+05 \text{ mm}^3$$

$$W_{pl,2} = 2.221e+05 \text{ mm}^3$$

$$W_{el,min,1} = 1.910e+05 \text{ mm}^3$$

$$W_{el,min,2} = 1.910e+05 \text{ mm}^3$$

$$i_1 = 71 \text{ mm}$$

$$i_2 = 71 \text{ mm}$$

$$I_t = 2.738e+07 \text{ mm}^4$$

$$I_w = 4.588e+07 \text{ mm}^6$$

Shear resistance, 1-1 - Part 1-1: 6.2.6, 6.2.8

Not relevant

Shear resistance, 2-2 - Part 1-1: 6.2.6, 6.2.8

Not relevant

Torsional resistance - Part 1-1: 6.2.7

Not relevant

Shear stress - Part 1-1: 6.2.6

LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0 \text{ mm}$

$$\text{Class}_N = 3, \text{Class}_{M1} = 3, \text{Class}_{M2} = 3$$

$$\frac{T_{Ed}}{(f_y / \sqrt{3}) / V_{M0}} = \frac{0.00}{(355 / \sqrt{3}) / 1.05} = 0.00 \leq 1.00 \quad (6.19) - \text{OK}$$

Normal stress - Part 1-1: 6.2.1

LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 0 \text{ mm}$

$$\text{Class}_N = 3, \text{Class}_{M1} = 3, \text{Class}_{M2} = 3$$

$$\left(\frac{\sigma_{Ed}}{f_y / V_{M0}} \right)^2 + 3 \left(\frac{T_{Ed}}{f_y / V_{M0}} \right)^2 = \left(\frac{169.11}{355 / 1.05} \right)^2 + 3 \left(\frac{0.00}{355 / 1.05} \right)^2 = 0.25 \leq 1.00 \quad (6.1) - \text{OK}$$

Normal capacity - Part 1-1: 6.2

Not relevant

Flexural buckling, 1-1 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$\bar{\lambda}_1 = \frac{L_{cr,1}}{i_1 \cdot \lambda_1} = \frac{4000}{71 \cdot 76.40} = 0.74 \quad (6.50)$$

 $\alpha_1 = 0.49$ (Buckling curve: c)

$$\varphi_1 = 0.5 [1 + \alpha_1 \cdot (\bar{\lambda}_1 - 0.2) + \bar{\lambda}_1^2] = 0.5 [1 + 0.49 \cdot (0.74 - 0.2) + 0.74^2] = 0.90$$

$$\chi_1 = \min\left(\frac{1}{\varphi_1 + \sqrt{\varphi_1^2 - \bar{\lambda}_1^2}}, 1.0\right) = \min\left(\frac{1}{0.90 + \sqrt{0.90^2 - 0.74^2}}, 1.0\right) = 0.70 \quad (6.49)$$

$$N_{b,Rd,1} = \frac{\chi_1 \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.70 \cdot 3414 \cdot 355}{1.05} = 809.38 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,1}} = \frac{577.38}{809.38} = 0.71 \leq 1.00 \quad (6.46) - \text{OK}$$

Flexural buckling, 2-2 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$\bar{\lambda}_2 = \frac{L_{cr,2}}{i_2 \cdot \lambda_1} = \frac{4000}{71 \cdot 76.40} = 0.74 \quad (6.50)$$

 $\alpha_2 = 0.49$ (Buckling curve: c)

$$\varphi_2 = 0.5 [1 + \alpha_2 \cdot (\bar{\lambda}_2 - 0.2) + \bar{\lambda}_2^2] = 0.5 [1 + 0.49 \cdot (0.74 - 0.2) + 0.74^2] = 0.90$$

$$\chi_2 = \min\left(\frac{1}{\varphi_2 + \sqrt{\varphi_2^2 - \bar{\lambda}_2^2}}, 1.0\right) = \min\left(\frac{1}{0.90 + \sqrt{0.90^2 - 0.74^2}}, 1.0\right) = 0.70 \quad (6.49)$$

$$N_{b,Rd,2} = \frac{\chi_2 \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.70 \cdot 3414 \cdot 355}{1.05} = 809.38 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,2}} = \frac{577.38}{809.38} = 0.71 \leq 1.00 \quad (6.46) - \text{OK}$$

Torsional-flexural buckling - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$i_0 = \sqrt{i_1^2 + i_2^2 + y_0^2 + z_0^2} = \sqrt{71^2 + 71^2 + 0^2 + 0^2} = 100 \text{ mm}$$

$$N_{cr,1} = \frac{\pi^2 \cdot E \cdot I_1}{L_{cr,1}^2} = \frac{\pi^2 \cdot 210000 \cdot 17193755}{4000^2} = 2227.25 \text{ kN}$$

$$N_{cr,2} = \frac{\pi^2 \cdot E \cdot I_2}{L_{cr,2}^2} = \frac{\pi^2 \cdot 210000 \cdot 17193755}{4000^2} = 2227.25 \text{ kN}$$

$$N_{cr,T} = \frac{1}{i_0^2} \left(G \cdot I_t + \frac{\pi^2 \cdot E \cdot I_w}{L_t^2} \right) =$$

$$= \frac{1}{100^2} \left(80769 \cdot 2.738e+07 + \frac{\pi^2 \cdot 210000 \cdot 4.588e+07}{4000^2} \right) = 219577.23 \text{ kN}$$

$$i_0^2 (N - N_{cr,1}) (N - N_{cr,2}) (N - N_{cr,T}) - N^2 y_0^2 (N - N_{cr,2}) - N^2 z_0^2 (N - N_{cr,1}) =$$

$$= 100^2 (N - 2227.25) (N - 2227.25) (N - 219577.23) - N^2 0^2 (N - 2227.25) - N^2 0^2 (N - 2227.25) = 0$$

Smallest root of the above equation related to the torsional-flexural buckling:

$$N_{cr,TF} = 219577.23 \text{ kN}$$

$$N_{cr} = \min(N_{cr,T}, N_{cr,TF}) = \min(219577.23, 219577.23) = 219577.23 \text{ kN}$$

$$\bar{\lambda}_T = \sqrt{\frac{A \cdot f_y}{N_{cr}}} = \sqrt{\frac{3414 \cdot 355}{219577.23}} = 0.07 \quad (6.53)$$

$$\alpha_T = 0.49 \quad (\text{Buckling curve: c})$$

$$\varphi_T = 0.5 \left[1 + \alpha_T \cdot (\bar{\lambda}_T - 0.2) + \bar{\lambda}_T^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.07 - 0.2) + 0.07^2 \right] = 0.47$$

$$\chi_T = \min \left(\frac{1}{\varphi_T + \sqrt{\varphi_T^2 - \bar{\lambda}_T^2}}, 1.0 \right) = \min \left(\frac{1}{0.47 + \sqrt{0.47^2 - 0.07^2}}, 1.0 \right) = 1.00 \quad (6.49)$$

$$N_{b,Rd,T} = \frac{\chi_T \cdot A \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 3414 \cdot 355}{1.05} = 1154.31 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,T}} = \frac{577.38}{1154.31} = 0.50 \leq 1.00 - \text{OK}$$

Lateral torsional buckling, top flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.719e+07}{(1.00 \cdot 4000)^2} = 2227.25 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -90 - 0.49 \cdot 0) = -40.50 \text{ mm}$$

$$\begin{aligned} M_{cr} &= C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} = \\ &= 1.13 \cdot 2.227e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{4.588e+07}{1.719e+07} + \frac{8.077e+04 \cdot 2.738e+07}{2.227e+06} + (-40.50)^2 \right]^{0.5} - (-40.50) \right\} = \\ &= 2611.93 \text{ kNm} \end{aligned}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{191042 \cdot 355}{2.612e+09}} = 0.16$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\begin{aligned} \phi_{LT} &= 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] = \\ &= 0.5 \left[1 + 0.76 \cdot (0.16 - 0.2) + 0.16^2 \right] = 0.50 \end{aligned}$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.50 + \sqrt{0.50^2 - 0.16^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 191042 \cdot 355}{1.05} = 64.59 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{64.59} = 0.00 \leq 1.00 \quad (6.54) \text{ - OK}$$

Lateral torsional buckling, bottom flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.719e+07}{(1.00 \cdot 4000)^2} = 2227.25 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -90 - 0.49 \cdot 0) = -40.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 2.227e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{4.588e+07}{1.719e+07} + \frac{8.077e+04 \cdot 2.738e+07}{2.227e+06} + (-40.50)^2 \right]^{0.5} - (-40.50) \right\} =$$

$$= 2611.93 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{191042 \cdot 355}{2.612e+09}} = 0.16$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.76 \cdot (0.16 - 0.2) + 0.16^2 \right] = 0.50$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.50 + \sqrt{0.50^2 - 0.16^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 191042 \cdot 355}{1.05} = 64.59 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{64.59} = 0.00 \leq 1.00 \quad (6.54) \text{ - OK}$$

Interaction between normal force and bending 1. - Part 1-1: 6.3.3

Not relevant

Interaction between normal force and bending 2. - Part 1-1: 6.3.3

Not relevant

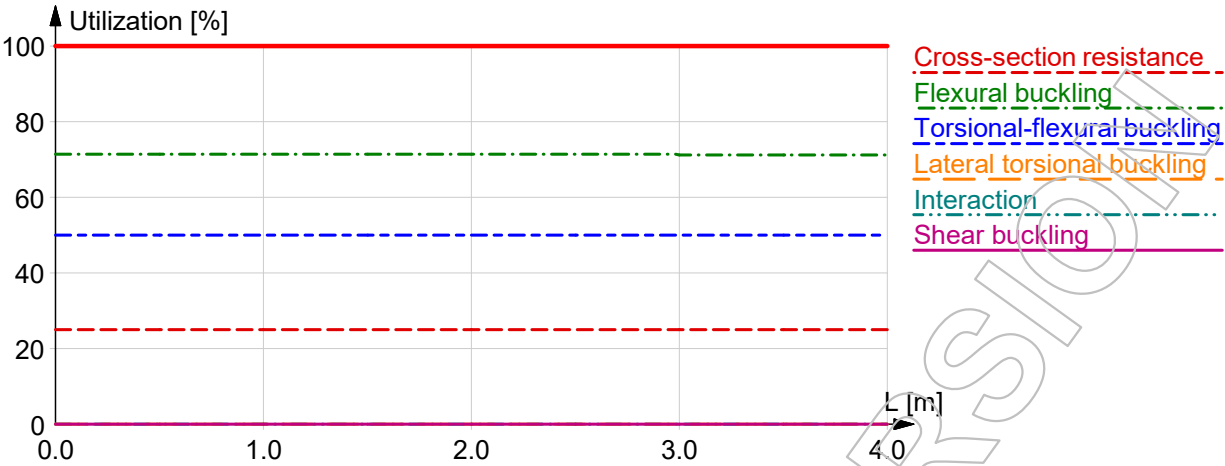
Interaction between normal force and bending, 2nd order - Part 1-1: 6.3.3

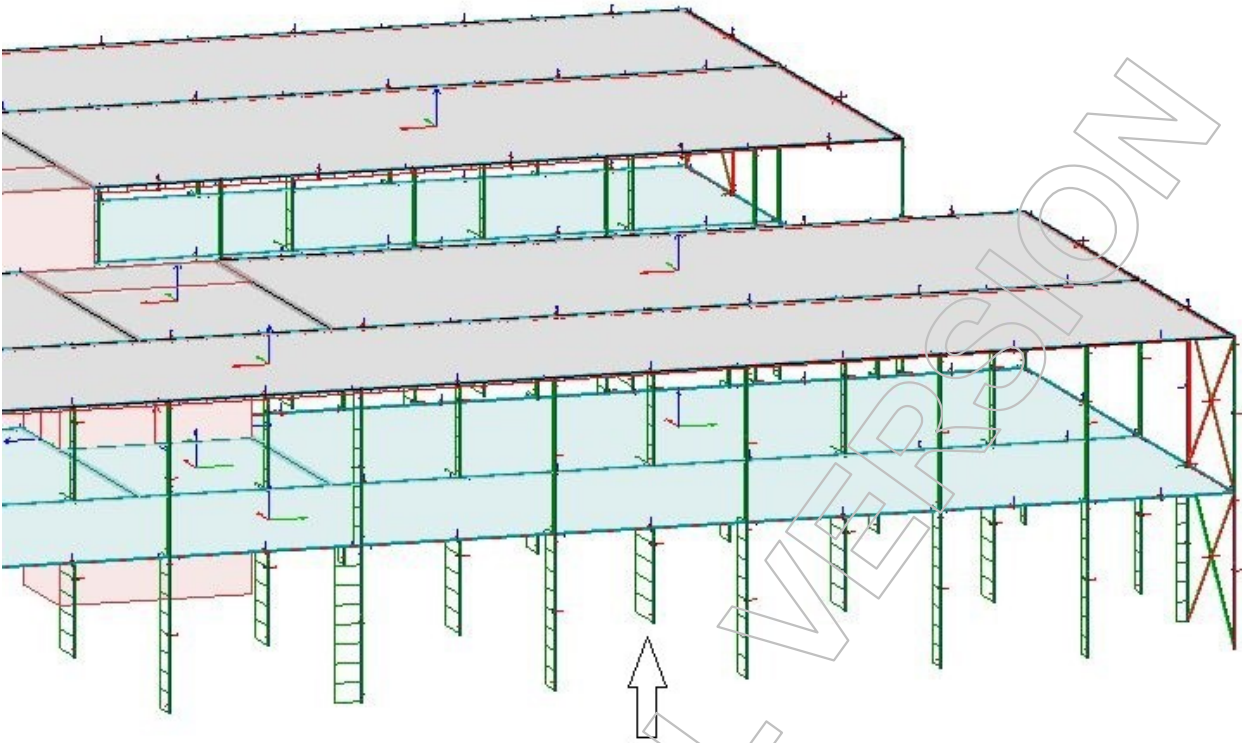
Not relevant

Shear buckling - Part 1-5: 5

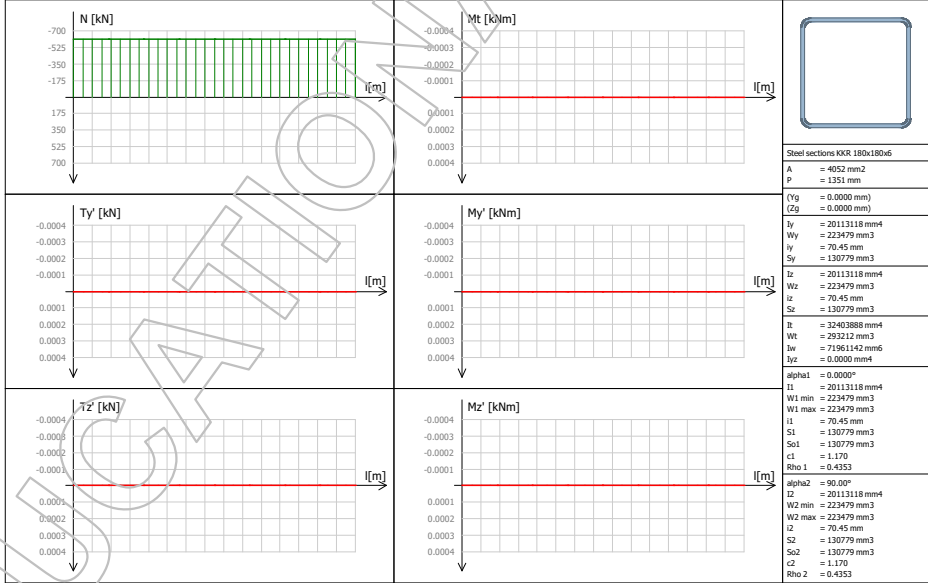
$$\frac{h_w}{t} = \frac{170}{5} = 34.0 \leq \frac{72}{\eta} \cdot \varepsilon = \frac{72}{1.20} \cdot 0.81 = 48.8 \rightarrow \text{Not relevant}$$

Summary





C.46.1 - Internal forces - Max. of load combinations: U (N-) - (4.00 m)



Group S P1Ø 5, C.46.1

Maximum of load combinations

S 355

$$E = 210000 \text{ N/mm}^2$$

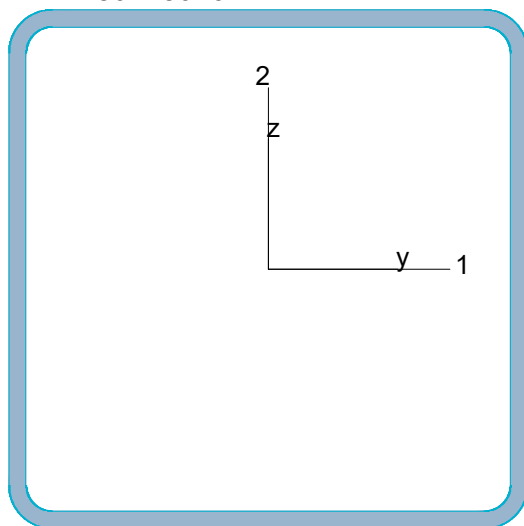
$$G = 80769 \text{ N/mm}^2$$

$$V_{M0,ult} = 1.05 \quad V_{M0,acc/seis} = 1.00$$

$$V_{M1,ult} = 1.05 \quad V_{M1,acc/seis} = 1.00$$

$$V_{M2,ult} = 1.25 \quad V_{M2,acc/seis} = 1.00$$

KKR 180x180x6



$$P = 694 \text{ mm} \quad f_y = 355 \text{ N/mm}^2$$

$$A = 4052 \text{ mm}^2 \quad \epsilon = 0.81$$

$$I_y = 2.011e+07 \text{ mm}^4 \quad \lambda_1 = 76.40$$

$$I_z = 2.011e+07 \text{ mm}^4$$

$$I_1 = 2.011e+07 \text{ mm}^4$$

$$I_2 = 2.011e+07 \text{ mm}^4$$

$$W_{pl,1} = 2.616e+05 \text{ mm}^3$$

$$W_{pl,2} = 2.616e+05 \text{ mm}^3$$

$$W_{el,min,1} = 2.235e+05 \text{ mm}^3$$

$$W_{el,min,2} = 2.235e+05 \text{ mm}^3$$

$$i_1 = 70 \text{ mm}$$

$$i_2 = 70 \text{ mm}$$

$$I_t = 3.240e+07 \text{ mm}^4$$

$$I_w = 7.196e+07 \text{ mm}^6$$

Shear resistance, 1-1 - Part 1-1: 6.2.6, 6.2.8

LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0 \text{ mm}$

$$\text{Class}_N = 1, \text{Class}_{M1} = 1, \text{Class}_{M2} = 1$$

$$V_{1,pl,Rd} = \frac{A_{1,v} \cdot f_y}{\sqrt{3} \cdot V_{M0}} = \frac{2026 \cdot 355}{\sqrt{3} \cdot 1.05} = 395.51 \text{ kN} \quad (6.18)$$

$$V_{1,pl,T,Rd} = 1 - \frac{T_{t,Ed}}{(f_y / \sqrt{3}) / V_{M0}} \cdot V_{1,pl,Rd} = 1 - \frac{0.00}{(355 / \sqrt{3}) / 1.05} \cdot 395.51 = 395.51 \text{ kN} \quad (6.28)$$

$$\frac{V_{1,Ed}}{V_{1,pl,T,Rd}} = \frac{0.00}{395.51} = 0.00 \leq 1.00 \quad (6.25) - \text{OK}$$

Shear resistance, 2-2 - Part 1-1: 6.2.6, 6.2.8

LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0 \text{ mm}$

$$\text{Class}_N = 1, \text{Class}_{M1} = 1, \text{Class}_{M2} = 1$$

$$V_{2,pl,Rd} = \frac{A_{2,v} \cdot f_y}{\sqrt{3} \cdot V_{M0}} = \frac{2026 \cdot 355}{\sqrt{3} \cdot 1.05} = 395.51 \text{ kN} \quad (6.18)$$

$$V_{2,pl,T,Rd} = 1 - \frac{T_{t,Ed}}{(f_y / \sqrt{3}) / V_{M0}} \cdot V_{2,pl,Rd} = 1 - \frac{0.00}{(355 / \sqrt{3}) / 1.05} \cdot 395.51 = 395.51 \text{ kN} \quad (6.28)$$

$$\frac{V_{2,Ed}}{V_{2,pl,T,Rd}} = \frac{0.00}{395.51} = 0.00 \leq 1.00 \quad (6.25) - \text{OK}$$

Torsional resistance - Part 1-1: 6.2.7LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1 $T_{\max, \text{unit}} = 3.41 \frac{\text{N/mm}^2}{\text{kNm}}$ is calculated by FEM analysis.

$$T_{\text{Rd}} = \frac{f_y}{\sqrt{3} \cdot T_{\max, \text{unit}} \cdot Y_{M0}} = \frac{355}{\sqrt{3} \cdot 3.41 \cdot 1.05} = 57.23 \text{ kNm}$$

$$\frac{T_{\text{Ed}}}{T_{\text{Rd}}} = \frac{0.00}{57.23} = 0.00 \leq 1.00 \quad (6.23) - \text{OK}$$

Shear stress - Part 1-1: 6.2.6

Not relevant

Normal stress - Part 1-1: 6.2.1

Not relevant

Normal capacity - Part 1-1: 6.2LC: 'B2: Dominerende snølast, vindretning fra Øst', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$V_{1, \text{Ed}} = 0.00 \text{ kN} \leq 0.5 \cdot V_{1, \text{pl}, T, \text{Rd}} = 0.5 \cdot 395.51 = 197.76 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$V_{2, \text{Ed}} = 0.00 \text{ kN} \leq 0.5 \cdot V_{2, \text{pl}, T, \text{Rd}} = 0.5 \cdot 395.51 = 197.76 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$\frac{N_{\text{Ed}}}{N_{\text{Rd}}} + \frac{M_{1, \text{Ed}}}{M_{1, \text{Rd}}} + \frac{M_{2, \text{Ed}}}{M_{2, \text{Rd}}} = \frac{612.32}{1370.09} + \frac{0.00}{88.43} + \frac{0.00}{88.43} = 0.45 \leq 1.00 \quad (6.2) - \text{OK}$$

Flexural buckling, 1-1 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Øst', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_1 = \frac{L_{\text{cr}, 1}}{i_1 \cdot \lambda_1} = \frac{4000}{70 \cdot 76.40} = 0.74 \quad (6.50)$$

$$\alpha_1 = 0.49 \quad (\text{Buckling curve: c})$$

$$\phi_1 = 0.5 \left[1 + \alpha_1 \cdot (\bar{\lambda}_1 - 0.2) + \bar{\lambda}_1^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.74 - 0.2) + 0.74^2 \right] = 0.91$$

$$X_1 = \min \left(\frac{1}{\phi_1 + \sqrt{\phi_1^2 - \bar{\lambda}_1^2}}, 1.0 \right) = \min \left(\frac{1}{0.91 + \sqrt{0.91^2 - 0.74^2}}, 1.0 \right) = 0.70 \quad (6.49)$$

$$N_{b, \text{Rd}, 1} = \frac{X_1 \cdot A \cdot f_y}{Y_{M1}} = \frac{0.70 \cdot 4052 \cdot 355}{1.05} = 956.06 \text{ kN} \quad (6.47)$$

$$\frac{N_{\text{Ed}}}{N_{b, \text{Rd}, 1}} = \frac{612.32}{956.06} = 0.64 \leq 1.00 \quad (6.46) - \text{OK}$$

Flexural buckling, 2-2 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Øst', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_2 = \frac{L_{cr,2}}{i_2 \cdot \lambda_1} = \frac{4000}{70 \cdot 76.40} = 0.74 \quad (6.50)$$

 $\alpha_2 = 0.49$ (Buckling curve: c)

$$\varphi_2 = 0.5 \left[1 + \alpha_2 \cdot (\bar{\lambda}_2 - 0.2) + \bar{\lambda}_2^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.74 - 0.2) + 0.74^2 \right] = 0.91$$

$$\chi_2 = \min \left(\frac{1}{\varphi_2 + \sqrt{\varphi_2^2 - \bar{\lambda}_2^2}}, 1.0 \right) = \min \left(\frac{1}{0.91 + \sqrt{0.91^2 - 0.74^2}}, 1.0 \right) = 0.70 \quad (6.49)$$

$$N_{b,Rd,2} = \frac{\chi_2 \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.70 \cdot 4052 \cdot 355}{1.05} = 956.06 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,2}} = \frac{612.32}{956.06} = 0.64 \leq 1.00 \quad (6.46) - \text{OK}$$

Torsional-flexural buckling - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Øst', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$i_0 = \sqrt{i_1^2 + i_2^2 + y_0^2 + z_0^2} = \sqrt{70^2 + 70^2 + 0^2 + 0^2} = 100 \text{ mm}$$

$$N_{cr,1} = \frac{\pi^2 \cdot E \cdot I_1}{L_{cr,1}^2} = \frac{\pi^2 \cdot 210000 \cdot 20113118}{4000^2} = 2605.42 \text{ kN}$$

$$N_{cr,2} = \frac{\pi^2 \cdot E \cdot I_2}{L_{cr,2}^2} = \frac{\pi^2 \cdot 210000 \cdot 20113118}{4000^2} = 2605.42 \text{ kN}$$

$$N_{cr,T} = \frac{1}{i_0^2} \left(G \cdot I_t + \frac{\pi^2 \cdot E \cdot I_w}{L_t^2} \right) = \frac{1}{100^2} \left(80769 \cdot 3.240e+07 + \frac{\pi^2 \cdot 210000 \cdot 7.196e+07}{4000^2} \right) = 263661.50 \text{ kN}$$

$$i_0^2 (N - N_{cr,1}) (N - N_{cr,2}) (N - N_{cr,T}) - N^2 y_0^2 (N - N_{cr,2}) - N^2 z_0^2 (N - N_{cr,1}) = 100^2 (N - 2605.42) (N - 2605.42) (N - 263661.50) - N^2 0^2 (N - 2605.42) - N^2 0^2 (N - 2605.42) = 0$$

Smallest root of the above equation related to the torsional-flexural buckling:

$$N_{cr,TF} = 263661.50 \text{ kN}$$

$$N_{cr} = \min(N_{cr,T}, N_{cr,TF}) = \min(263661.50, 263661.50) = 263661.50 \text{ kN}$$

$$\bar{\lambda}_T = \sqrt{\frac{A \cdot f_y}{N_{cr}}} = \sqrt{\frac{4052 \cdot 355}{263661.50}} = 0.07 \quad (6.53)$$

 $\alpha_T = 0.49$ (Buckling curve: c)

$$\varphi_T = 0.5 \left[1 + \alpha_T \cdot (\bar{\lambda}_T - 0.2) + \bar{\lambda}_T^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.07 - 0.2) + 0.07^2 \right] = 0.47$$

$$\chi_T = \min \left(\frac{1}{\varphi_T + \sqrt{\varphi_T^2 - \bar{\lambda}_T^2}}, 1.0 \right) = \min \left(\frac{1}{0.47 + \sqrt{0.47^2 - 0.07^2}}, 1.0 \right) = 1.00 \quad (6.49)$$

$$N_{b,Rd,T} = \frac{\chi_T \cdot A \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 4052 \cdot 355}{1.05} = 1370.09 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,T}} = \frac{612.32}{1370.09} = 0.45 \leq 1.00 - \text{OK}$$

Lateral torsional buckling, top flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 2.011e+07}{(1.00 \cdot 4000)^2} = 2605.42 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -90 - 0.49 \cdot 0) = -40.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 2.605e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{7.196e+07}{2.011e+07} + \frac{8.077e+04 \cdot 3.240e+07}{2.605e+06} + (-40.50)^2 \right]^{0.5} - (-40.50) \right\} =$$

$$= 3072.45 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{261557 \cdot 355}{3.072e+09}} = 0.17$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.76 \cdot (0.17 - 0.2) + 0.17^2 \right] = 0.51$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.51 + \sqrt{0.51^2 - 0.17^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 261557 \cdot 355}{1.05} = 88.43 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{88.43} = 0.00 \leq 1.00 \quad (6.54) \text{ - OK}$$

Lateral torsional buckling, bottom flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 2.011e+07}{(1.00 \cdot 4000)^2} = 2605.42 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -90 - 0.49 \cdot 0) = -40.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 2.605e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{7.196e+07}{2.011e+07} + \frac{8.077e+04 \cdot 3.240e+07}{2.605e+06} + (-40.50)^2 \right]^{0.5} - (-40.50) \right\} =$$

$$= 3072.45 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{261557 \cdot 355}{3.072e+09}} = 0.17$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.76 \cdot (0.17 - 0.2) + 0.17^2 \right] = 0.51$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.51 + \sqrt{0.51^2 - 0.17^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 261557 \cdot 355}{1.05} = 88.43 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{88.43} = 0.00 \leq 1.00 \quad (6.54) \text{ - OK}$$

Interaction between normal force and bending 1. - Part 1-1: 6.3.3

Not relevant

Interaction between normal force and bending 2. - Part 1-1: 6.3.3

Not relevant

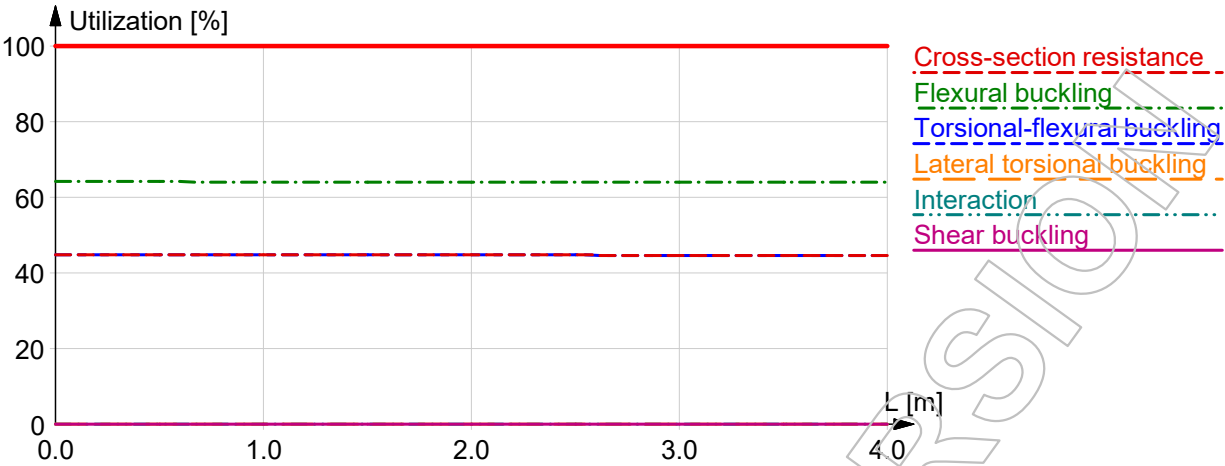
Interaction between normal force and bending, 2nd order - Part 1-1: 6.3.3

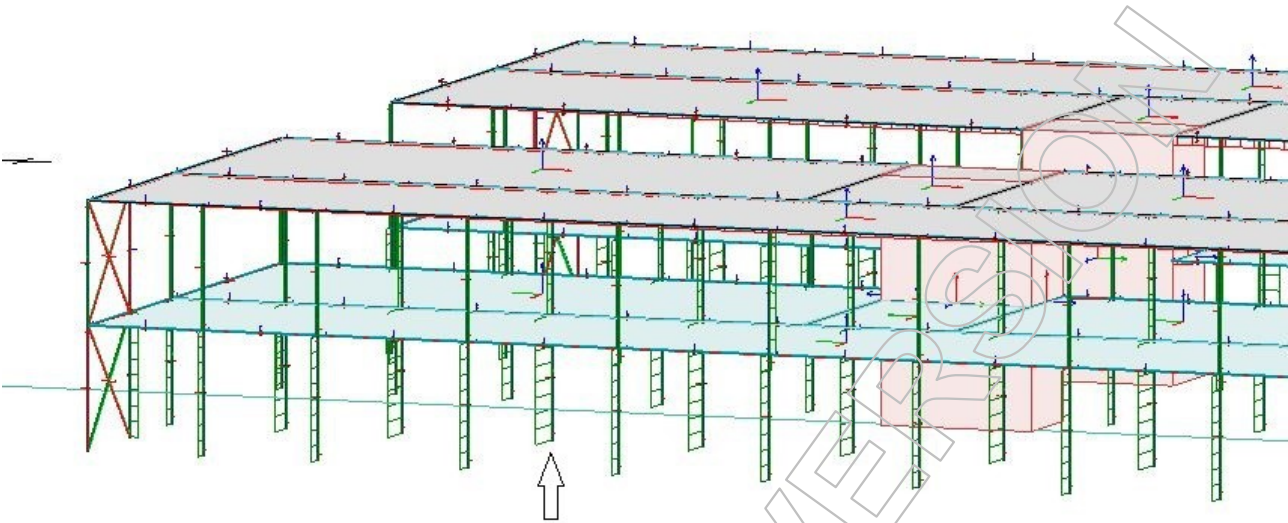
Not relevant

Shear buckling - Part 1-5: 5

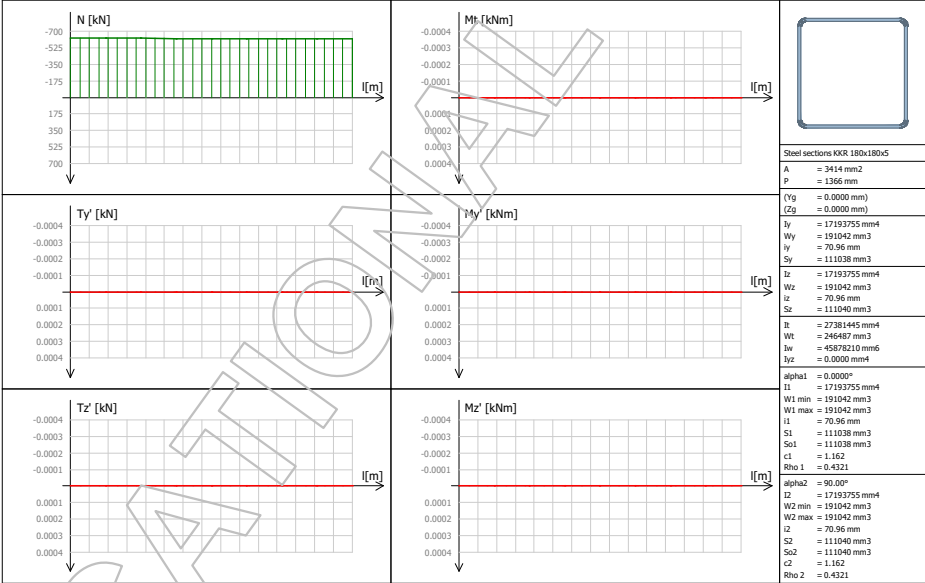
$$\frac{h_w}{t} = \frac{168}{6} = 28.0 \leq \frac{72}{\eta} \cdot \varepsilon = \frac{72}{1.20} \cdot 0.81 = 48.8 \rightarrow \text{Not relevant}$$

Summary





C.15.1 - Internal forces - Max. of load combinations: U (N-) - (4.00 m)



Group S P1Ø 2, C.15.1

Maximum of load combinations

S 355

$$E = 210000 \text{ N/mm}^2$$

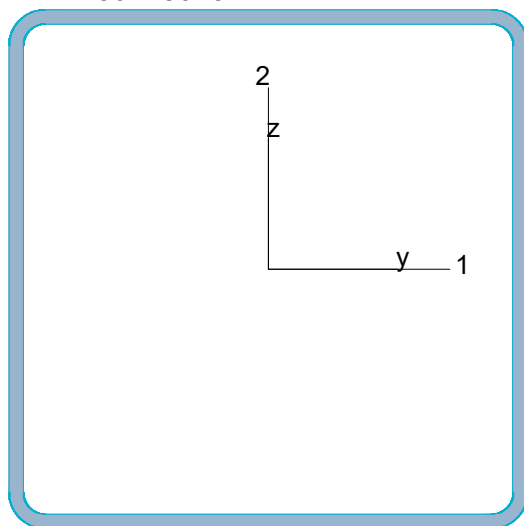
$$G = 80769 \text{ N/mm}^2$$

$$V_{M0,ult} = 1.05 \quad V_{M0,acc/seis} = 1.00$$

$$V_{M1,ult} = 1.05 \quad V_{M1,acc/seis} = 1.00$$

$$V_{M2,ult} = 1.25 \quad V_{M2,acc/seis} = 1.00$$

KKR 180x180x5



$$P = 699 \text{ mm} \quad f_y = 355 \text{ N/mm}^2$$

$$A = 3414 \text{ mm}^2 \quad \epsilon = 0.81$$

$$I_y = 1.719e+07 \text{ mm}^4 \quad \lambda_1 = 76.40$$

$$I_z = 1.719e+07 \text{ mm}^4$$

$$I_1 = 1.719e+07 \text{ mm}^4$$

$$I_2 = 1.719e+07 \text{ mm}^4$$

$$W_{pl,1} = 2.221e+05 \text{ mm}^3$$

$$W_{pl,2} = 2.221e+05 \text{ mm}^3$$

$$W_{el,min,1} = 1.910e+05 \text{ mm}^3$$

$$W_{el,min,2} = 1.910e+05 \text{ mm}^3$$

$$i_1 = 71 \text{ mm}$$

$$i_2 = 71 \text{ mm}$$

$$I_t = 2.738e+07 \text{ mm}^4$$

$$I_w = 4.588e+07 \text{ mm}^6$$

Shear resistance, 1-1 - Part 1-1: 6.2.6, 6.2.8

Not relevant

Shear resistance, 2-2 - Part 1-1: 6.2.6, 6.2.8

Not relevant

Torsional resistance - Part 1-1: 6.2.7

Not relevant

Shear stress - Part 1-1: 6.2.6

LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0 \text{ mm}$

$$\text{Class}_N = 3, \text{Class}_{M1} = 3, \text{Class}_{M2} = 3$$

$$\frac{T_{Ed}}{(f_y / \sqrt{3}) / V_{M0}} = \frac{0.00}{(355 / \sqrt{3}) / 1.05} = 0.00 \leq 1.00 \quad (6.19) - \text{OK}$$

Normal stress - Part 1-1: 6.2.1

LC: 'B2: Dominerende snølast, vindretning fra Øst', $x = 0 \text{ mm}$

$$\text{Class}_N = 3, \text{Class}_{M1} = 3, \text{Class}_{M2} = 3$$

$$\left(\frac{\sigma_{Ed}}{f_y / V_{M0}} \right)^2 + 3 \left(\frac{T_{Ed}}{f_y / V_{M0}} \right)^2 = \left(\frac{183.53}{355 / 1.05} \right)^2 + 3 \left(\frac{0.00}{355 / 1.05} \right)^2 = 0.29 \leq 1.00 \quad (6.1) - \text{OK}$$

Normal capacity - Part 1-1: 6.2

Not relevant

Flexural buckling, 1-1 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Øst', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$\bar{\lambda}_1 = \frac{L_{cr,1}}{i_1 \cdot \lambda_1} = \frac{4000}{71 \cdot 76.40} = 0.74 \quad (6.50)$$

 $\alpha_1 = 0.49$ (Buckling curve: c)

$$\varphi_1 = 0.5 [1 + \alpha_1 \cdot (\bar{\lambda}_1 - 0.2) + \bar{\lambda}_1^2] = 0.5 [1 + 0.49 \cdot (0.74 - 0.2) + 0.74^2] = 0.90$$

$$\chi_1 = \min\left(\frac{1}{\varphi_1 + \sqrt{\varphi_1^2 - \bar{\lambda}_1^2}}, 1.0\right) = \min\left(\frac{1}{0.90 + \sqrt{0.90^2 - 0.74^2}}, 1.0\right) = 0.70 \quad (6.49)$$

$$N_{b,Rd,1} = \frac{\chi_1 \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.70 \cdot 3414 \cdot 355}{1.05} = 809.38 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,1}} = \frac{626.61}{809.38} = 0.77 \leq 1.00 \quad (6.46) - \text{OK}$$

Flexural buckling, 2-2 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Øst', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$\bar{\lambda}_2 = \frac{L_{cr,2}}{i_2 \cdot \lambda_1} = \frac{4000}{71 \cdot 76.40} = 0.74 \quad (6.50)$$

 $\alpha_2 = 0.49$ (Buckling curve: c)

$$\varphi_2 = 0.5 [1 + \alpha_2 \cdot (\bar{\lambda}_2 - 0.2) + \bar{\lambda}_2^2] = 0.5 [1 + 0.49 \cdot (0.74 - 0.2) + 0.74^2] = 0.90$$

$$\chi_2 = \min\left(\frac{1}{\varphi_2 + \sqrt{\varphi_2^2 - \bar{\lambda}_2^2}}, 1.0\right) = \min\left(\frac{1}{0.90 + \sqrt{0.90^2 - 0.74^2}}, 1.0\right) = 0.70 \quad (6.49)$$

$$N_{b,Rd,2} = \frac{\chi_2 \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.70 \cdot 3414 \cdot 355}{1.05} = 809.38 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,2}} = \frac{626.61}{809.38} = 0.77 \leq 1.00 \quad (6.46) - \text{OK}$$

Torsional-flexural buckling - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Øst', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$i_0 = \sqrt{i_1^2 + i_2^2 + y_0^2 + z_0^2} = \sqrt{71^2 + 71^2 + 0^2 + 0^2} = 100 \text{ mm}$$

$$N_{cr,1} = \frac{\pi^2 \cdot E \cdot I_1}{L_{cr,1}^2} = \frac{\pi^2 \cdot 210000 \cdot 17193755}{4000^2} = 2227.25 \text{ kN}$$

$$N_{cr,2} = \frac{\pi^2 \cdot E \cdot I_2}{L_{cr,2}^2} = \frac{\pi^2 \cdot 210000 \cdot 17193755}{4000^2} = 2227.25 \text{ kN}$$

$$N_{cr,T} = \frac{1}{i_0^2} \left(G \cdot I_t + \frac{\pi^2 \cdot E \cdot I_w}{L_t^2} \right) =$$

$$= \frac{1}{100^2} \left(80769 \cdot 2.738e+07 + \frac{\pi^2 \cdot 210000 \cdot 4.588e+07}{4000^2} \right) = 219577.23 \text{ kN}$$

$$i_0^2 (N - N_{cr,1}) (N - N_{cr,2}) (N - N_{cr,T}) - N^2 y_0^2 (N - N_{cr,2}) - N^2 z_0^2 (N - N_{cr,1}) =$$

$$= 100^2 (N - 2227.25) (N - 2227.25) (N - 219577.23) - N^2 0^2 (N - 2227.25) - N^2 0^2 (N - 2227.25) = 0$$

Smallest root of the above equation related to the torsional-flexural buckling:

$$N_{cr,TF} = 219577.23 \text{ kN}$$

$$N_{cr} = \min(N_{cr,T}, N_{cr,TF}) = \min(219577.23, 219577.23) = 219577.23 \text{ kN}$$

$$\bar{\lambda}_T = \sqrt{\frac{A \cdot f_y}{N_{cr}}} = \sqrt{\frac{3414 \cdot 355}{219577.23}} = 0.07 \quad (6.53)$$

$$\alpha_T = 0.49 \quad (\text{Buckling curve: c})$$

$$\varphi_T = 0.5 \left[1 + \alpha_T \cdot (\bar{\lambda}_T - 0.2) + \bar{\lambda}_T^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.07 - 0.2) + 0.07^2 \right] = 0.47$$

$$\chi_T = \min \left(\frac{1}{\varphi_T + \sqrt{\varphi_T^2 - \bar{\lambda}_T^2}}, 1.0 \right) = \min \left(\frac{1}{0.47 + \sqrt{0.47^2 - 0.07^2}}, 1.0 \right) = 1.00 \quad (6.49)$$

$$N_{b,Rd,T} = \frac{\chi_T \cdot A \cdot f_y}{Y_{M1}} = \frac{1.00 \cdot 3414 \cdot 355}{1.05} = 1154.31 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,T}} = \frac{626.61}{1154.31} = 0.54 \leq 1.00 - \text{OK}$$

Lateral torsional buckling, top flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.719e+07}{(1.00 \cdot 4000)^2} = 2227.25 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -90 - 0.49 \cdot 0) = -40.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 2.227e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{4.588e+07}{1.719e+07} + \frac{8.077e+04 \cdot 2.738e+07}{2.227e+06} + (-40.50)^2 \right]^{0.5} - (-40.50) \right\} =$$

$$= 2611.93 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{191042 \cdot 355}{2.612e+09}} = 0.16$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.76 \cdot (0.16 - 0.2) + 0.16^2 \right] = 0.50$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.50 + \sqrt{0.50^2 - 0.16^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 191042 \cdot 355}{1.05} = 64.59 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{64.59} = 0.00 \leq 1.00 \quad (6.54) \text{ - OK}$$

Lateral torsional buckling, bottom flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.719e+07}{(1.00 \cdot 4000)^2} = 2227.25 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -90 - 0.49 \cdot 0) = -40.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 2.227e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{4.588e+07}{1.719e+07} + \frac{8.077e+04 \cdot 2.738e+07}{2.227e+06} + (-40.50)^2 \right]^{0.5} - (-40.50) \right\} =$$

$$= 2611.93 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{191042 \cdot 355}{2.612e+09}} = 0.16$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.76 \cdot (0.16 - 0.2) + 0.16^2 \right] = 0.50$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.50 + \sqrt{0.50^2 - 0.16^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 191042 \cdot 355}{1.05} = 64.59 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{64.59} = 0.00 \leq 1.00 \quad (6.54) \text{ - OK}$$

Interaction between normal force and bending 1. - Part 1-1: 6.3.3

Not relevant

Interaction between normal force and bending 2. - Part 1-1: 6.3.3

Not relevant

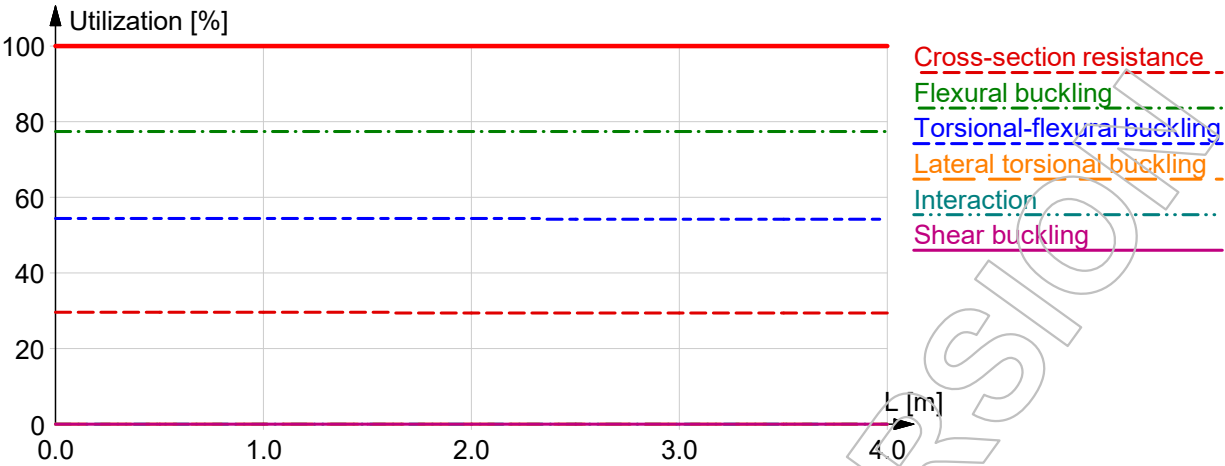
Interaction between normal force and bending, 2nd order - Part 1-1: 6.3.3

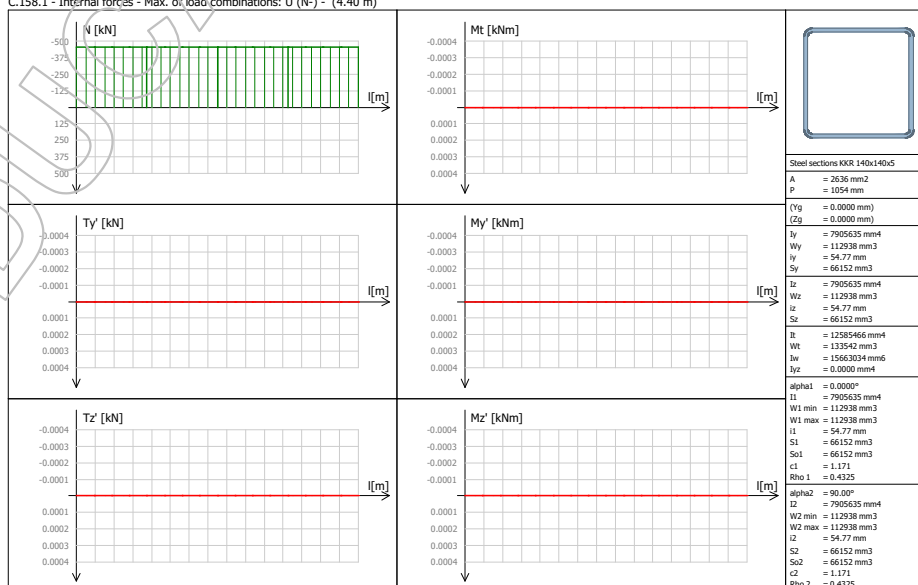
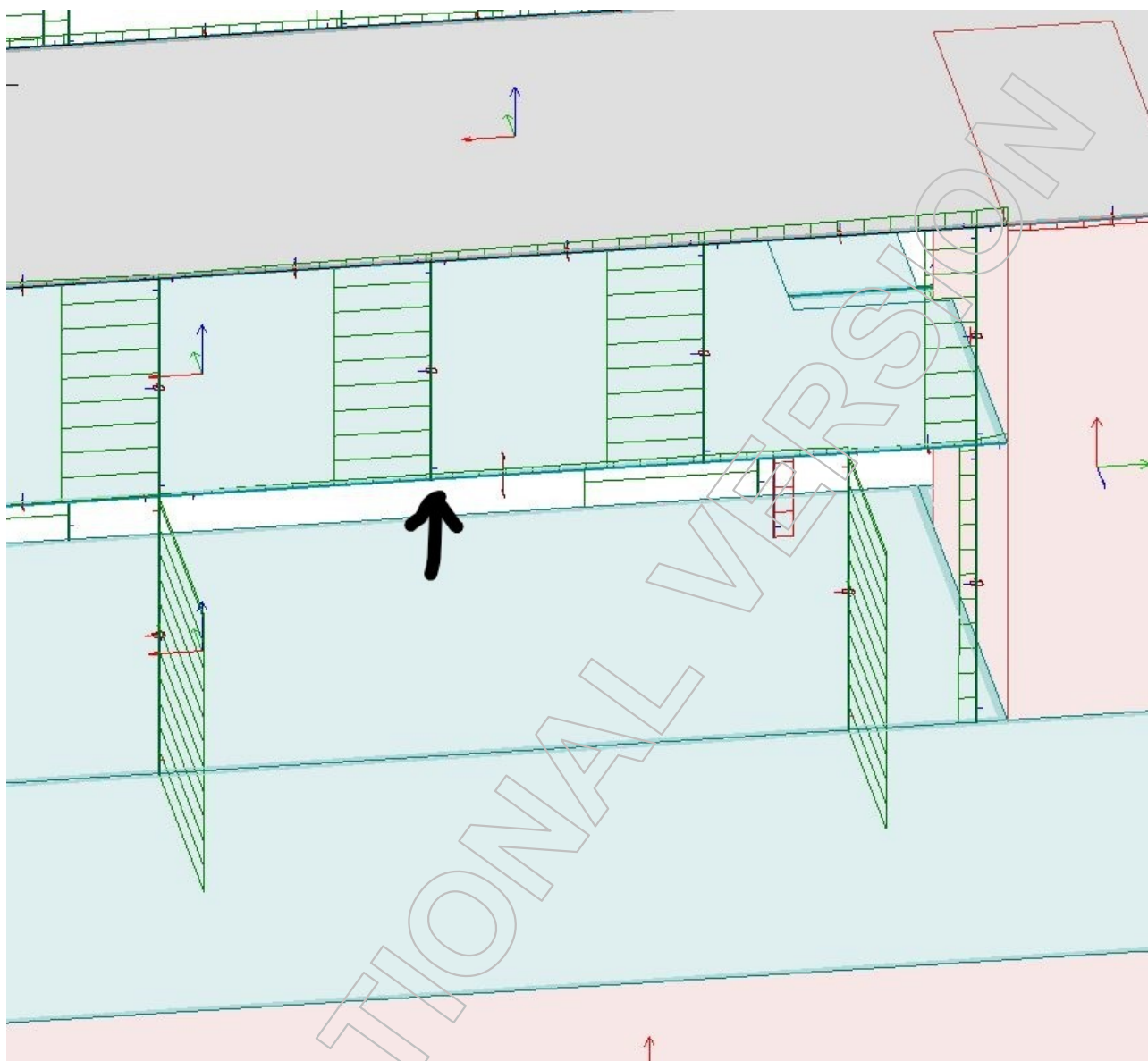
Not relevant

Shear buckling - Part 1-5: 5

$$\frac{h_w}{t} = \frac{170}{5} = 34.0 \leq \frac{72}{\eta} \cdot \varepsilon = \frac{72}{1.20} \cdot 0.81 = 48.8 \rightarrow \text{Not relevant}$$

Summary





Group S P2V 8, C.158.1

Maximum of load combinations

S 355

$$E = 210000 \text{ N/mm}^2$$

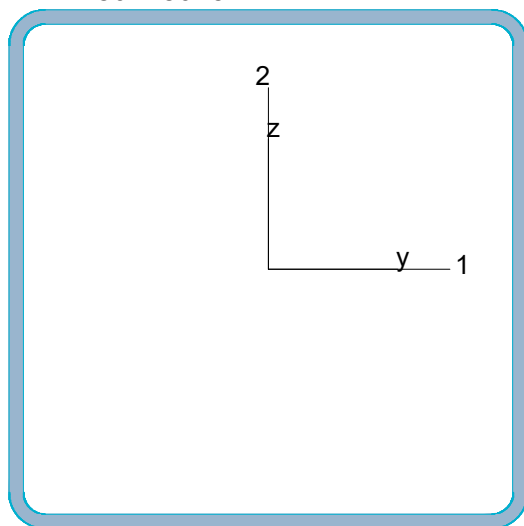
$$G = 80769 \text{ N/mm}^2$$

$$V_{M0,ult} = 1.05 \quad V_{M0,acc/seis} = 1.00$$

$$V_{M1,ult} = 1.05 \quad V_{M1,acc/seis} = 1.00$$

$$V_{M2,ult} = 1.25 \quad V_{M2,acc/seis} = 1.00$$

KKR 180x180x5



$$P = 699 \text{ mm} \quad f_y = 355 \text{ N/mm}^2$$

$$A = 3414 \text{ mm}^2 \quad \epsilon = 0.81$$

$$I_y = 1.719e+07 \text{ mm}^4 \quad \lambda_1 = 76.40$$

$$I_z = 1.719e+07 \text{ mm}^4$$

$$I_1 = 1.719e+07 \text{ mm}^4$$

$$I_2 = 1.719e+07 \text{ mm}^4$$

$$W_{pl,1} = 2.221e+05 \text{ mm}^3$$

$$W_{pl,2} = 2.221e+05 \text{ mm}^3$$

$$W_{el,min,1} = 1.910e+05 \text{ mm}^3$$

$$W_{el,min,2} = 1.910e+05 \text{ mm}^3$$

$$i_1 = 71 \text{ mm}$$

$$i_2 = 71 \text{ mm}$$

$$I_t = 2.738e+07 \text{ mm}^4$$

$$I_w = 4.588e+07 \text{ mm}^6$$

Shear resistance, 1-1 - Part 1-1: 6.2.6, 6.2.8

Not relevant

Shear resistance, 2-2 - Part 1-1: 6.2.6, 6.2.8

Not relevant

Torsional resistance - Part 1-1: 6.2.7

Not relevant

Shear stress - Part 1-1: 6.2.6

LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0 \text{ mm}$

$$\text{Class}_N = 3, \text{Class}_{M1} = 3, \text{Class}_{M2} = 3$$

$$\frac{T_{Ed}}{(f_y / \sqrt{3}) / V_{M0}} = \frac{0.00}{(355 / \sqrt{3}) / 1.05} = 0.00 \leq 1.00 \quad (6.19) - \text{OK}$$

Normal stress - Part 1-1: 6.2.1

LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 0 \text{ mm}$

$$\text{Class}_N = 3, \text{Class}_{M1} = 3, \text{Class}_{M2} = 3$$

$$\left(\frac{\sigma_{Ed}}{f_y / V_{M0}} \right)^2 + 3 \left(\frac{T_{Ed}}{f_y / V_{M0}} \right)^2 = \left(\frac{133.00}{355 / 1.05} \right)^2 + 3 \left(\frac{0.00}{355 / 1.05} \right)^2 = 0.15 \leq 1.00 \quad (6.1) - \text{OK}$$

Normal capacity - Part 1-1: 6.2

Not relevant

Flexural buckling, 1-1 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$\bar{\lambda}_1 = \frac{L_{cr,1}}{i_1 \cdot \lambda_1} = \frac{4400}{71 \cdot 76.40} = 0.81 \quad (6.50)$$

 $\alpha_1 = 0.49$ (Buckling curve: c)

$$\varphi_1 = 0.5 [1 + \alpha_1 \cdot (\bar{\lambda}_1 - 0.2) + \bar{\lambda}_1^2] = 0.5 [1 + 0.49 \cdot (0.81 - 0.2) + 0.81^2] = 0.98$$

$$\chi_1 = \min\left(\frac{1}{\varphi_1 + \sqrt{\varphi_1^2 - \bar{\lambda}_1^2}}, 1.0\right) = \min\left(\frac{1}{0.98 + \sqrt{0.98^2 - 0.81^2}}, 1.0\right) = 0.65 \quad (6.49)$$

$$N_{b,Rd,1} = \frac{\chi_1 \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.65 \cdot 3414 \cdot 355}{1.05} = 755.95 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,1}} = \frac{454.10}{755.95} = 0.60 \leq 1.00 \quad (6.46) - \text{OK}$$

Flexural buckling, 2-2 - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$\bar{\lambda}_2 = \frac{L_{cr,2}}{i_2 \cdot \lambda_1} = \frac{4400}{71 \cdot 76.40} = 0.81 \quad (6.50)$$

 $\alpha_2 = 0.49$ (Buckling curve: c)

$$\varphi_2 = 0.5 [1 + \alpha_2 \cdot (\bar{\lambda}_2 - 0.2) + \bar{\lambda}_2^2] = 0.5 [1 + 0.49 \cdot (0.81 - 0.2) + 0.81^2] = 0.98$$

$$\chi_2 = \min\left(\frac{1}{\varphi_2 + \sqrt{\varphi_2^2 - \bar{\lambda}_2^2}}, 1.0\right) = \min\left(\frac{1}{0.98 + \sqrt{0.98^2 - 0.81^2}}, 1.0\right) = 0.65 \quad (6.49)$$

$$N_{b,Rd,2} = \frac{\chi_2 \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.65 \cdot 3414 \cdot 355}{1.05} = 755.95 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,2}} = \frac{454.10}{755.95} = 0.60 \leq 1.00 \quad (6.46) - \text{OK}$$

Torsional-flexural buckling - Part 1-1: 6.3.1LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$i_0 = \sqrt{i_1^2 + i_2^2 + y_0^2 + z_0^2} = \sqrt{71^2 + 71^2 + 0^2 + 0^2} = 100 \text{ mm}$$

$$N_{cr,1} = \frac{\pi^2 \cdot E \cdot I_1}{L_{cr,1}^2} = \frac{\pi^2 \cdot 210000 \cdot 17193755}{4400^2} = 1840.71 \text{ kN}$$

$$N_{cr,2} = \frac{\pi^2 \cdot E \cdot I_2}{L_{cr,2}^2} = \frac{\pi^2 \cdot 210000 \cdot 17193755}{4400^2} = 1840.71 \text{ kN}$$

$$N_{cr,T} = \frac{1}{i_0^2} \left(G \cdot I_t + \frac{\pi^2 \cdot E \cdot I_w}{L_t^2} \right) =$$

$$= \frac{1}{100^2} \left(80769 \cdot 2.738e+07 + \frac{\pi^2 \cdot 210000 \cdot 4.588e+07}{4400^2} \right) = 219577.13 \text{ kN}$$

$$i_0^2 (N - N_{cr,1}) (N - N_{cr,2}) (N - N_{cr,T}) - N^2 y_0^2 (N - N_{cr,2}) - N^2 z_0^2 (N - N_{cr,1}) =$$

$$= 100^2 (N - 1840.71) (N - 1840.71) (N - 219577.13) - N^2 0^2 (N - 1840.71) - N^2 0^2 (N - 1840.71) = 0$$

Smallest root of the above equation related to the torsional-flexural buckling:

$$N_{cr,TF} = 219577.13 \text{ kN}$$

$$N_{cr} = \min(N_{cr,T}, N_{cr,TF}) = \min(219577.13, 219577.13) = 219577.13 \text{ kN}$$

$$\bar{\lambda}_T = \sqrt{\frac{A \cdot f_y}{N_{cr}}} = \sqrt{\frac{3414 \cdot 355}{219577.13}} = 0.07 \quad (6.53)$$

$$\alpha_T = 0.49 \quad (\text{Buckling curve: c})$$

$$\varphi_T = 0.5 \left[1 + \alpha_T \cdot (\bar{\lambda}_T - 0.2) + \bar{\lambda}_T^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.07 - 0.2) + 0.07^2 \right] = 0.47$$

$$\chi_T = \min \left(\frac{1}{\varphi_T + \sqrt{\varphi_T^2 - \bar{\lambda}_T^2}}, 1.0 \right) = \min \left(\frac{1}{0.47 + \sqrt{0.47^2 - 0.07^2}}, 1.0 \right) = 1.00 \quad (6.49)$$

$$N_{b,Rd,T} = \frac{\chi_T \cdot A \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 3414 \cdot 355}{1.05} = 1154.31 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,T}} = \frac{454.10}{1154.31} = 0.39 \leq 1.00 - \text{OK}$$

Lateral torsional buckling, top flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.719e+07}{(1.00 \cdot 4400)^2} = 1840.71 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -90 - 0.49 \cdot 0) = -40.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 1.841e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{4.588e+07}{1.719e+07} + \frac{8.077e+04 \cdot 2.738e+07}{1.841e+06} + (-40.50)^2 \right]^{0.5} - (-40.50) \right\} =$$

$$= 2365.73 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{191042 \cdot 355}{2.366e+09}} = 0.17$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.76 \cdot (0.17 - 0.2) + 0.17^2 \right] = 0.50$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.50 + \sqrt{0.50^2 - 0.17^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 191042 \cdot 355}{1.05} = 64.59 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{64.59} = 0.00 \leq 1.00 \quad (6.54) \text{ - OK}$$

Lateral torsional buckling, bottom flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 3, Class_{M2} = 3

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.719e+07}{(1.00 \cdot 4400)^2} = 1840.71 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot -90 - 0.49 \cdot 0) = -40.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 1.841e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{4.588e+07}{1.719e+07} + \frac{8.077e+04 \cdot 2.738e+07}{1.841e+06} + (-40.50)^2 \right]^{0.5} - (-40.50) \right\} =$$

$$= 2365.73 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{191042 \cdot 355}{2.366e+09}} = 0.17$$

 $\alpha_{LT} = 0.76$ (Buckling curve: d)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.76 \cdot (0.17 - 0.2) + 0.17^2 \right] = 0.50$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.50 + \sqrt{0.50^2 - 0.17^2}}, 1.0 \right) = 1.00 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{1.00 \cdot 191042 \cdot 355}{1.05} = 64.59 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{64.59} = 0.00 \leq 1.00 \quad (6.54) \text{ - OK}$$

Interaction between normal force and bending 1. - Part 1-1: 6.3.3

Not relevant

Interaction between normal force and bending 2. - Part 1-1: 6.3.3

Not relevant

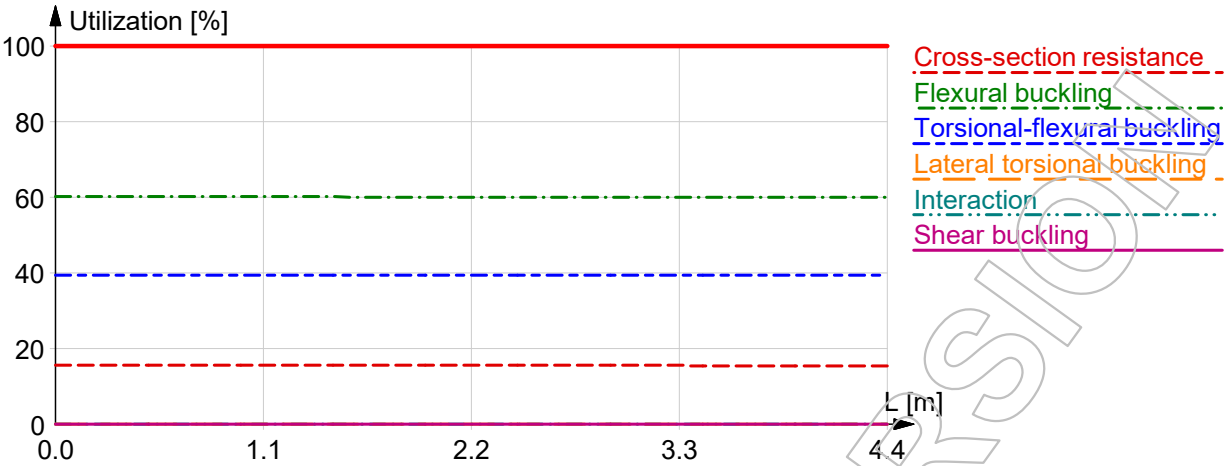
Interaction between normal force and bending, 2nd order - Part 1-1: 6.3.3

Not relevant

Shear buckling - Part 1-5: 5

$$\frac{h_w}{t} = \frac{170}{5} = 34.0 \leq \frac{72}{\eta} \cdot \varepsilon = \frac{72}{1.20} \cdot 0.81 = 48.8 \rightarrow \text{Not relevant}$$

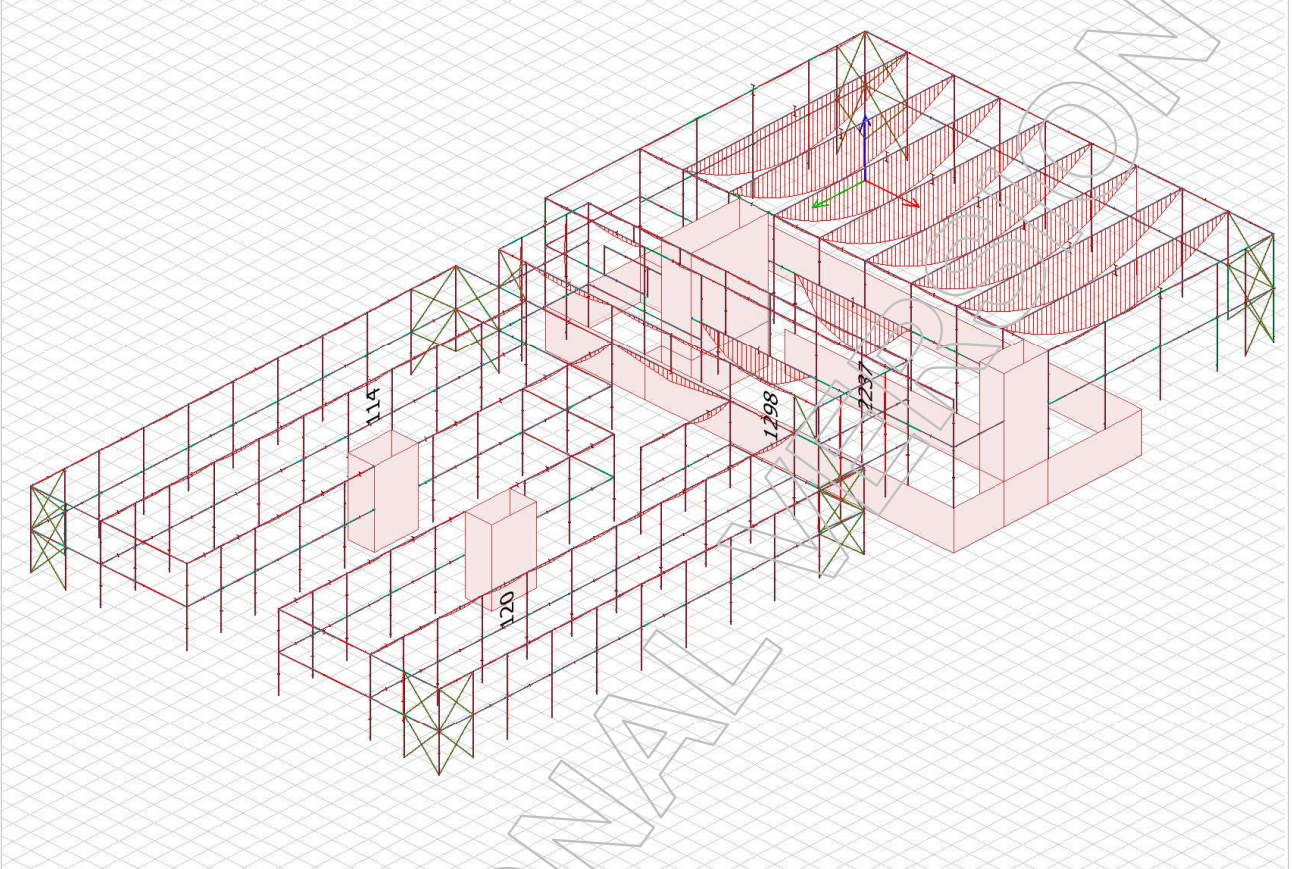
Summary



3.2.4 Bjelker

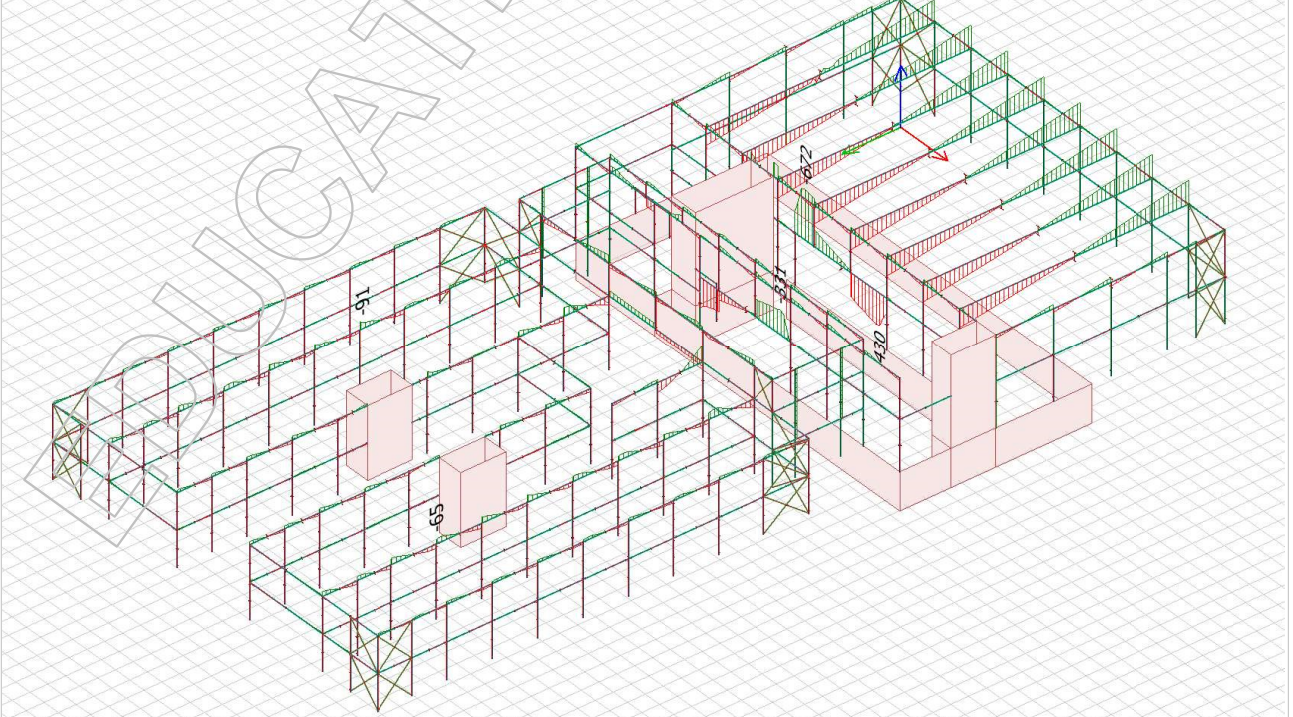
3.2.4.1 Maks moment bjelker

Eurocode (NA: Norwegian) code: Max. of combinations, Ultimate - Bar internal forces - M_y' (M_y' +) - Graph - [kNm]

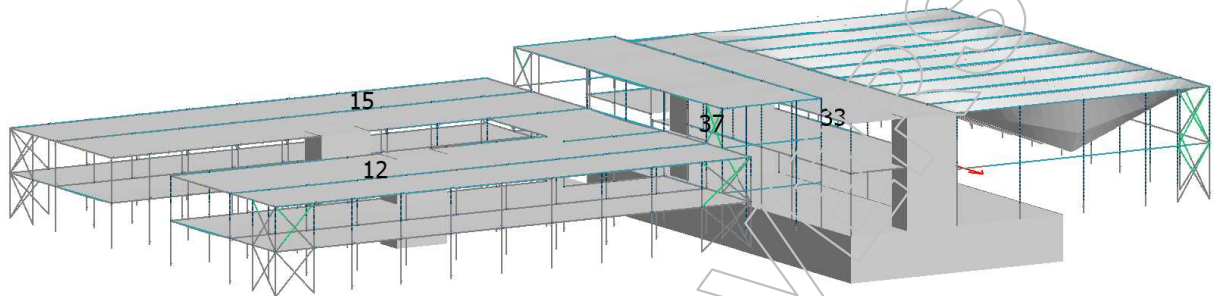


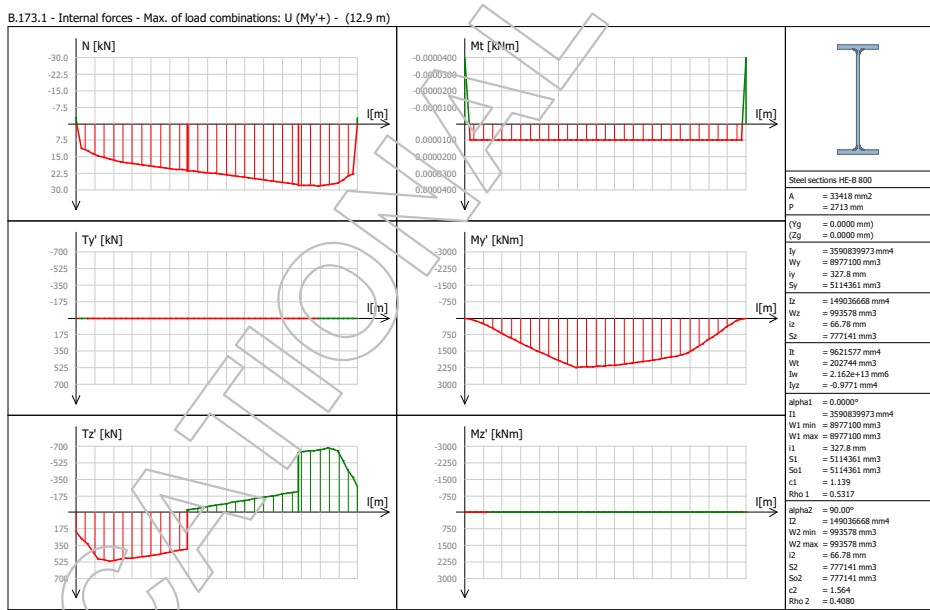
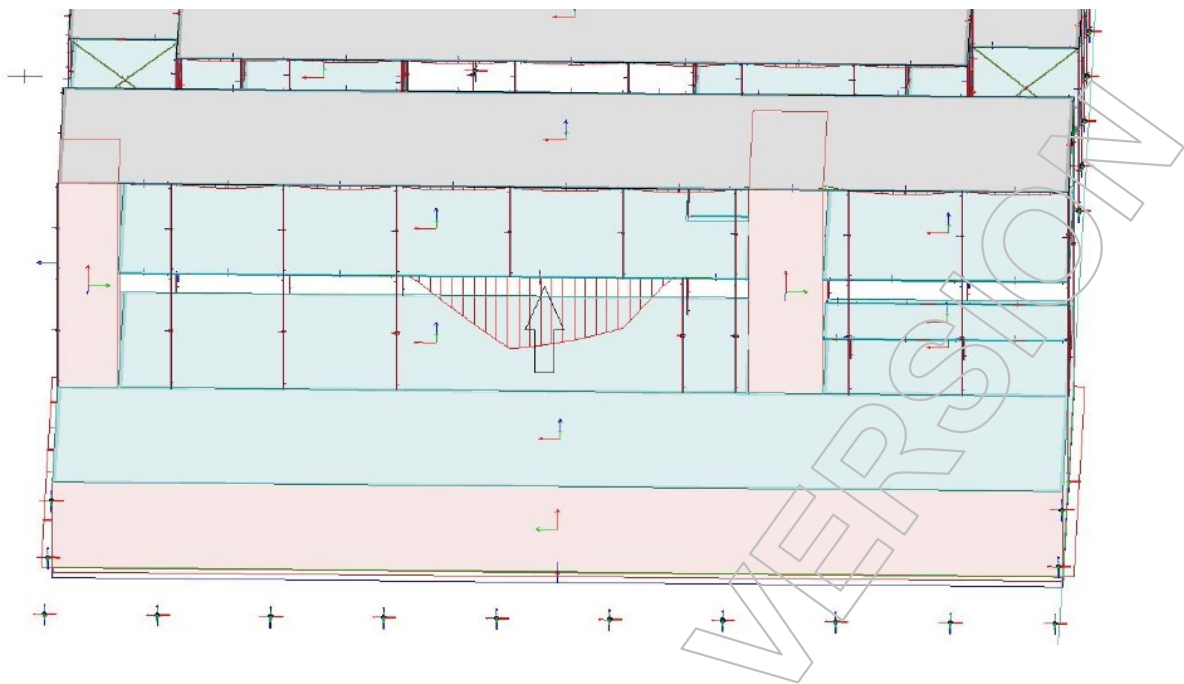
3.2.4.2 Maks skjærkraft bjelker

Eurocode (NA: Norwegian) code: Max. of combinations, Ultimate - Bar internal forces - T_z' (T_z' -) - Graph - [kN]



Eurocode (NA: Norwegian) code: 1st order theory - Load combinations - Bruksgrense, vindretning fra Nord -
Translational displacements - Graph - [mm]





B.173.1

Maximum of load combinations

S 355

$$E = 210000 \text{ N/mm}^2$$

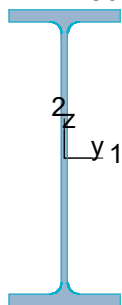
$$G = 80769 \text{ N/mm}^2$$

$$V_{M0,ult} = 1.05 \quad V_{M0,acc/seis} = 1.00$$

$$V_{M1,ult} = 1.05 \quad V_{M1,acc/seis} = 1.00$$

$$V_{M2,ult} = 1.25 \quad V_{M2,acc/seis} = 1.00$$

HE-B 800



$$\begin{aligned} P &= 2713 \text{ mm} & W_{el,min,1} &= 8.977e+06 \text{ mm}^3 & f_y &= 355 \text{ N/mm}^2 \\ A &= 33418 \text{ mm}^2 & W_{el,min,2} &= 9.936e+05 \text{ mm}^3 & \epsilon &= 0.81 \\ I_y &= 3.591e+09 \text{ mm}^4 & i_1 &= 328 \text{ mm} & \lambda_1 &= 76.40 \\ I_z &= 1.490e+08 \text{ mm}^4 & i_2 &= 67 \text{ mm} & & \\ I_1 &= 3.591e+09 \text{ mm}^4 & I_t &= 9.622e+06 \text{ mm}^4 & & \\ I_2 &= 1.490e+08 \text{ mm}^4 & I_w &= 2.162e+13 \text{ mm}^6 & & \\ W_{pl,1} &= 1.023e+07 \text{ mm}^3 & & & & \\ W_{pl,2} &= 1.554e+06 \text{ mm}^3 & & & & \end{aligned}$$

Shear resistance, 1-1 - Part 1-1: 6.2.6, 6.2.8

LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 12000 \text{ mm}$

$$\text{Class}_N = 2, \text{Class}_{M1} = 1, \text{Class}_{M2} = 1$$

$$V_{1,pl,Rd} = \frac{A_{1,v} \cdot f_y}{\sqrt{3} \cdot Y_{M0}} = \frac{20573 \cdot 355}{\sqrt{3} \cdot 1.05} = 4015.75 \text{ kN} \quad (6.18)$$

$$\begin{aligned} V_{1,pl,T,Rd} &= \sqrt{1 - \frac{T_{t,Ed}}{1.25 (f_y / \sqrt{3}) / Y_{M0}}} \cdot V_{1,pl,Rd} = \\ &= \sqrt{1 - \frac{0.00}{1.25 (355 / \sqrt{3}) / 1.05}} \cdot 4015.75 = 4015.75 \text{ kN} \quad (6.26) \end{aligned}$$

$$\frac{V_{1,Ed}}{V_{1,pl,T,Rd}} = \frac{0.05}{4015.75} = 0.00 \leq 1.00 \quad (6.25) - \text{OK}$$

Shear resistance, 2-2 - Part 1-1: 6.2.6, 6.2.8

LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 11550 \text{ mm}$

$$\text{Class}_N = 4, \text{Class}_{M1} = 1, \text{Class}_{M2} = 1$$

$$V_{2,pl,Rd} = \frac{A_{2,v} \cdot f_y}{\sqrt{3} \cdot Y_{M0}} = \frac{16175 \cdot 355}{\sqrt{3} \cdot 1.05} = 3157.36 \text{ kN} \quad (6.18)$$

$$\begin{aligned} V_{2,pl,T,Rd} &= \sqrt{1 - \frac{T_{t,Ed}}{1.25 (f_y / \sqrt{3}) / Y_{M0}}} \cdot V_{2,pl,Rd} = \\ &= \sqrt{1 - \frac{0.00}{1.25 (355 / \sqrt{3}) / 1.05}} \cdot 3157.36 = 3157.36 \text{ kN} \quad (6.26) \end{aligned}$$

$$\frac{V_{2,Ed}}{V_{2,pl,T,Rd}} = \frac{682.35}{3157.36} = 0.22 \leq 1.00 \quad (6.25) - \text{OK}$$

Torsional resistance - Part 1-1: 6.2.7LC: 'B2: Dominerende vindlast, vindretning fra Nord', $x = 0$ mmClass_N = 4, Class_{M1} = 1, Class_{M2} = 1 $T_{\max, \text{unit}} = 4.93 \frac{\text{N/mm}^2}{\text{kNm}}$ is calculated by FEM analysis.

$$T_{\text{Rd}} = \frac{f_y}{\sqrt{3} \cdot T_{\max, \text{unit}} \cdot Y_{M0}} = \frac{355}{\sqrt{3} \cdot 4.93 \cdot 1.05} = 39.58 \text{ kNm}$$

$$\frac{T_{\text{Ed}}}{T_{\text{Rd}}} = \frac{0.00}{39.58} = 0.00 \leq 1.00 \quad (6.23) - \text{OK}$$

Shear stress - Part 1-1: 6.2.6

Not relevant

Normal stress - Part 1-1: 6.2.1

Not relevant

Normal capacity - Part 1-1: 6.2LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 5100$ mmClass_N = 2, Class_{M1} = 1, Class_{M2} = 1

$$V_{1, \text{Ed}} = 0.00 \text{ kN} \leq 0.5 \cdot V_{1, \text{pl}, T, \text{Rd}} = 0.5 \cdot 4015.75 = 2007.88 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$V_{2, \text{Ed}} = 26.44 \text{ kN} \leq 0.5 \cdot V_{2, \text{pl}, T, \text{Rd}} = 0.5 \cdot 3157.36 = 1578.68 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$\frac{N_{\text{Ed}}}{N_{\text{Rd}}} + \frac{M_{1, \text{Ed}}}{M_{1, \text{Rd}}} + \frac{M_{2, \text{Ed}}}{M_{2, \text{Rd}}} = \frac{21.38}{11298.32} + \frac{2236.84}{3458.28} + \frac{0.01}{525.50} = 0.65 \leq 1.00 \quad (6.2) - \text{OK}$$

Flexural buckling, 1-1 - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Sør', $x = 11100$ mmClass_N = 4, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_1 = \frac{L_{\text{cr}, 1}}{i_1 \cdot \lambda_1} \cdot \sqrt{\frac{A_{\text{eff}}}{A}} = \frac{2700}{328 \cdot 76.40} \cdot \sqrt{\frac{32645}{33418}} = 0.11 \quad (6.51)$$

 $\alpha_1 = 0.21$ (Buckling curve: a)

$$\varphi_1 = 0.5 \left[1 + \alpha_1 \cdot (\bar{\lambda}_1 - 0.2) + \bar{\lambda}_1^2 \right] = 0.5 \left[1 + 0.21 \cdot (0.11 - 0.2) + 0.11^2 \right] = 0.50$$

$$\chi_1 = \min \left(\frac{1}{\varphi_1 + \sqrt{\varphi_1^2 - \bar{\lambda}_1^2}}, 1.0 \right) = \min \left(\frac{1}{0.50 + \sqrt{0.50^2 - 0.11^2}}, 1.0 \right) = 1.00 \quad (6.49)$$

$$N_{\text{b}, \text{Rd}, 1} = \frac{\chi_1 \cdot A_{\text{eff}} \cdot f_y}{Y_{M1}} = \frac{1.00 \cdot 32645 \cdot 355}{1.05} = 11037.12 \text{ kN} \quad (6.48)$$

$$\frac{N_{\text{Ed}}}{N_{\text{b}, \text{Rd}, 1}} = \frac{35.43}{11037.12} = 0.00 \leq 1.00 \quad (6.46) - \text{OK}$$

Flexural buckling, 2-2 - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Sør', $x = 10200$ mmClass_N = 4, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_2 = \frac{L_{cr,2}}{i_2 \cdot \lambda_1} \cdot \sqrt{\frac{A_{eff}}{A}} = \frac{5100}{67 \cdot 76.40} \cdot \sqrt{\frac{32645}{33418}} = 0.99 \quad (6.51)$$

 $\alpha_2 = 0.34$ (Buckling curve: b)

$$\varphi_2 = 0.5 \left[1 + \alpha_2 \cdot (\bar{\lambda}_2 - 0.2) + \bar{\lambda}_2^2 \right] = 0.5 \left[1 + 0.34 \cdot (0.99 - 0.2) + 0.99^2 \right] = 1.12$$

$$\chi_2 = \min \left(\frac{1}{\varphi_2 + \sqrt{\varphi_2^2 - \bar{\lambda}_2^2}}, 1.0 \right) = \min \left(\frac{1}{1.12 + \sqrt{1.12^2 - 0.99^2}}, 1.0 \right) = 0.60 \quad (6.49)$$

$$N_{b,Rd,2} = \frac{\chi_2 \cdot A_{eff} \cdot f_y}{\gamma_{M1}} = \frac{0.60 \cdot 32645 \cdot 355}{1.05} = 6673.82 \text{ kN} \quad (6.48)$$

$$\frac{N_{Ed}}{N_{b,Rd,2}} = \frac{34.58}{6673.82} = 0.01 \leq 1.00 \quad (6.46) - \text{OK}$$

Torsional-flexural buckling - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Sør', $x = 10200$ mmClass_N = 4, Class_{M1} = 1, Class_{M2} = 1

$$i_0 = \sqrt{i_1^2 + i_2^2 + y_0^2 + z_0^2} = \sqrt{328^2 + 67^2 + 0^2 + 0^2} = 335 \text{ mm}$$

$$N_{cr,1} = \frac{\pi^2 \cdot E \cdot I_1}{L_{cr,1}^2} = \frac{\pi^2 \cdot 210000 \cdot 3590839973}{5100^2} = 286137.47 \text{ kN}$$

$$N_{cr,2} = \frac{\pi^2 \cdot E \cdot I_2}{L_{cr,2}^2} = \frac{\pi^2 \cdot 210000 \cdot 149036668}{5100^2} = 11876.04 \text{ kN}$$

$$N_{cr,T} = \frac{1}{i_0^2} \left(G \cdot I_t + \frac{\pi^2 \cdot E \cdot I_w}{L_t^2} \right) = \frac{1}{335^2} \left(80769 \cdot 9.622e+06 + \frac{\pi^2 \cdot 210000 \cdot 2.162e+13}{5100^2} \right) = 22335.88 \text{ kN}$$

$$\begin{aligned} i_0^2 (N - N_{cr,1}) (N - N_{cr,2}) (N - N_{cr,T}) - N^2 y_0^2 (N - N_{cr,2}) - N^2 z_0^2 (N - N_{cr,1}) &= \\ = 335^2 (N - 286137.47) (N - 11876.04) (N - 22335.88) - N^2 0^2 (N - 11876.04) - N^2 0^2 (N - 286137.47) &= \\ = 0 \end{aligned}$$

Smallest root of the above equation related to the torsional-flexural buckling:

$$N_{cr,TF} = 22335.88 \text{ kN}$$

$$N_{cr} = \min(N_{cr,T}, N_{cr,TF}) = \min(22335.88, 22335.88) = 22335.88 \text{ kN}$$

$$\bar{\lambda}_T = \sqrt{\frac{A_{eff} \cdot f_y}{N_{cr}}} = \sqrt{\frac{32645 \cdot 355}{22335.88}} = 0.72 \quad (6.52)$$

 $\alpha_T = 0.34$ (Buckling curve: b)

$$\varphi_T = 0.5 \left[1 + \alpha_T \cdot (\bar{\lambda}_T - 0.2) + \bar{\lambda}_T^2 \right] = 0.5 \left[1 + 0.34 \cdot (0.72 - 0.2) + 0.72^2 \right] = 0.85$$

$$\chi_T = \min \left(\frac{1}{\varphi_T + \sqrt{\varphi_T^2 - \bar{\lambda}_T^2}}, 1.0 \right) = \min \left(\frac{1}{0.85 + \sqrt{0.85^2 - 0.72^2}}, 1.0 \right) = 0.77 \quad (6.49)$$

$$N_{b,Rd,T} = \frac{\chi_T \cdot A_{eff} \cdot f_y}{\gamma_{M1}} = \frac{0.77 \cdot 32645 \cdot 355}{1.05} = 8521.92 \text{ kN} \quad (6.48)$$

$$\frac{N_{Ed}}{N_{b,Rd,T}} = \frac{34.58}{8521.92} = 0.00 \leq 1.00 - \text{OK}$$

Lateral torsional buckling, top flange - Part 1-1: 6.3.2.2LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 5100$ mmClass_N = 2, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.490e+08}{(1.00 \cdot 5100)^2} = 11876.04 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.00 \cdot 400 - 0.99 \cdot 0) = 0.00 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.16 \cdot 1.188e+07 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{2.162e+13}{1.490e+08} + \frac{8.077e+04 \cdot 9.622e+06}{1.188e+07} + 0.00^2 \right]^{0.5} - 0.00 \right\} =$$

$$= 6333.77 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{10228723 \cdot 355}{6.334e+09}} = 0.76$$

 $\alpha_{LT} = 0.34$ (Buckling curve: b)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.34 \cdot (0.76 - 0.2) + 0.76^2 \right] = 0.88$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.88 + \sqrt{0.88^2 - 0.76^2}}, 1.0 \right) = 0.75 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{0.75 \cdot 10228723 \cdot 355}{1.05} = 2595.35 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{2236.84}{2595.35} = 0.86 \leq 1.00 \quad (6.54) - \text{OK}$$

Lateral torsional buckling, bottom flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 4, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.490e+08}{(1.00 \cdot 5100)^2} = 11876.04 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.00 \cdot 400 - 0.94 \cdot 0) = 0.00 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.77 \cdot 1.188e+07 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{2.162e+13}{1.490e+08} + \frac{8.077e+04 \cdot 9.622e+06}{1.188e+07} + 0.00^2 \right]^{0.5} - 0.00 \right\} =$$

$$= 9643.88 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{10228723 \cdot 355}{9.644e+09}} = 0.61$$

 $\alpha_{LT} = 0.34$ (Buckling curve: b)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.34 \cdot (0.61 - 0.2) + 0.61^2 \right] = 0.76$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.76 + \sqrt{0.76^2 - 0.61^2}}, 1.0 \right) = 0.83 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{0.83 \cdot 10228723 \cdot 355}{1.05} = 2870.95 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{2870.95} = 0.00 \leq 1.00 \quad (6.54) - \text{OK}$$

Interaction between normal force and bending 1. - Part 1-1: 6.3.3LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 5100$ mmClass_N = 2, Class_{M1} = 1, Class_{M2} = 1 k_{ij} factors are calculated according to Method 1

$$C_{my} = 1.00 \quad C_{yy} = 1.00$$

$$C_{mz} = 1.00 \quad C_{yz} = 0.52$$

$$C_{mLT} = 1.00 \quad C_{zy} = 1.00$$

$$C_{zz} = 0.64$$

$$M_{2,Rk} = f_y \cdot W_{pl,2} = 355 \cdot 1554282 = 551.77 \text{ kNm}$$

$$\frac{N_{Ed}^{comp}}{N_{b,Rd,1}} + k_{11} \cdot \frac{M_{1,Ed}}{M_{y,b,Rd}} + k_{12} \cdot \frac{M_{2,Ed}}{M_{2,Rk}} =$$

$$= \frac{0.00}{11289.30} + 1.00 \cdot \frac{2236.84}{2595.35} + 1.32 \cdot \frac{0.01}{\frac{551.77}{1.05}} = 0.86 \leq 1.00 \quad (6.61) - \text{OK}$$

Interaction between normal force and bending 2. - Part 1-1: 6.3.3

LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 5100 \text{ mm}$

Class_N = 2, Class_{M1} = 1, Class_{M2} = 1

k_{ij} factors are calculated according to Method 1

$$C_{my} = 1.00 \quad C_{yy} = 1.00$$

$$C_{mz} = 1.00 \quad C_{yz} = 0.52$$

$$C_{mLT} = 1.00 \quad C_{zy} = 1.00$$

$$C_{zz} = 0.64$$

$$M_{2,Rk} = f_y \cdot W_{pl,2} = 355 \cdot 1554282 = 551.77 \text{ kNm}$$

$$\begin{aligned} \frac{N_{Ed}^{comp}}{N_{b,Rd,2}} + k_{21} \cdot \frac{M_{1,Ed}}{M_{y,b,Rd}} + k_{22} \cdot \frac{M_{2,Ed}}{M_{2,Rk}} &= \\ = \frac{0.00}{6748.23} + 0.52 \cdot \frac{2236.84}{2595.35} + 1.56 \cdot \frac{0.01}{\frac{551.77}{1.05}} &= 0.45 \leq 1.00 \quad (6.62) - \text{OK} \end{aligned}$$

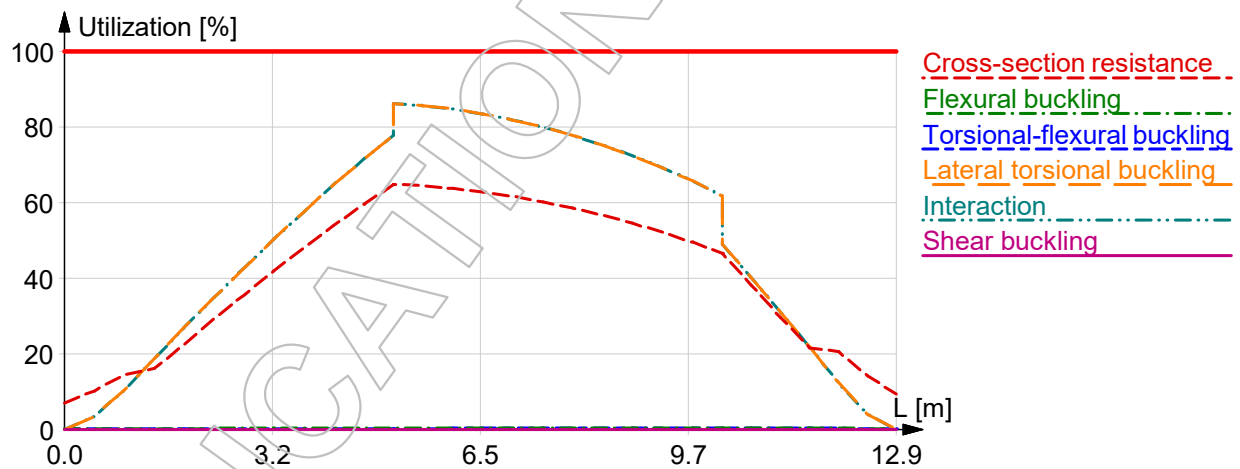
Interaction between normal force and bending, 2nd order - Part 1-1: 6.3.3

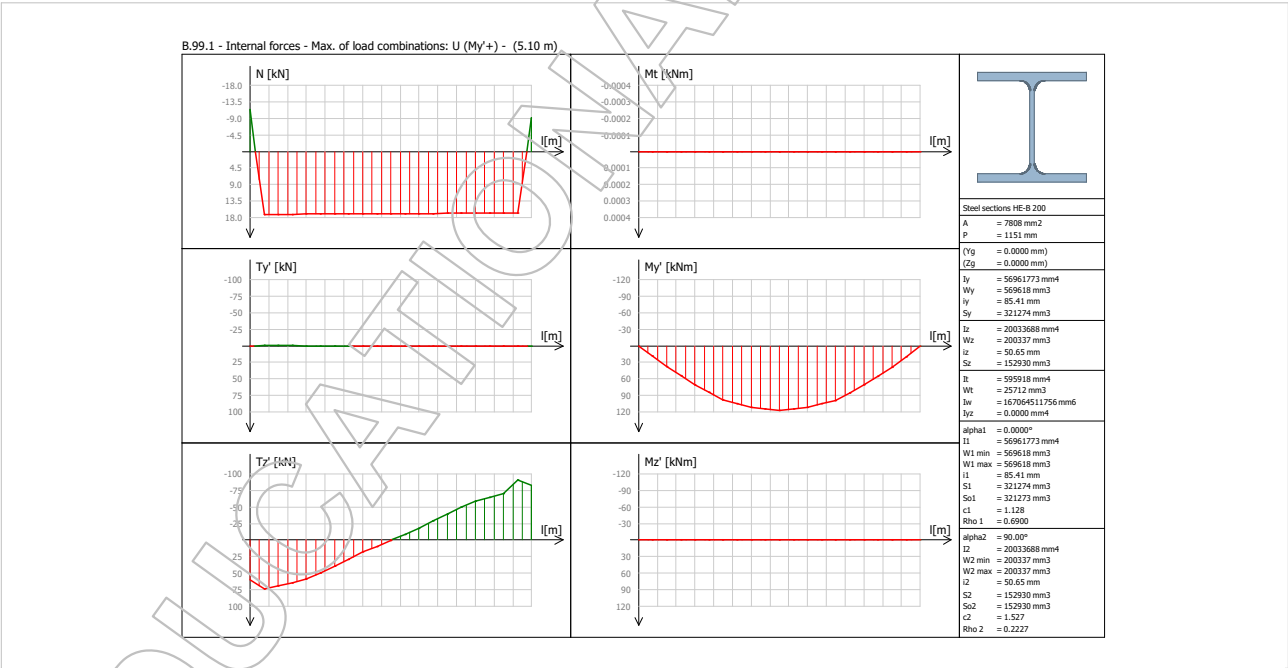
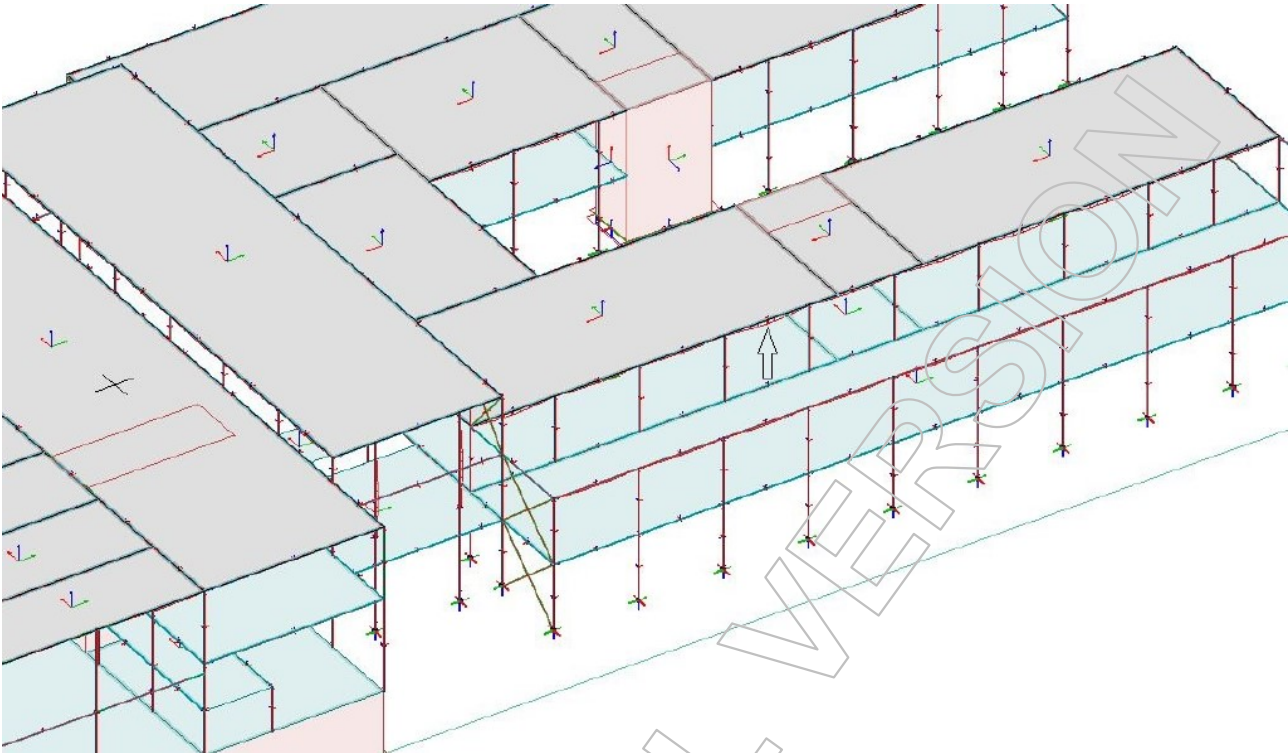
Not relevant

Shear buckling - Part 1-5: 5

$$\frac{h_w}{t} = \frac{734}{17} = 41.9 \leq \frac{72}{\eta} \cdot \varepsilon = \frac{72}{1.20} \cdot 0.81 = 48.8 \rightarrow \text{Not relevant}$$

Summary





Group B PTØ 5, B.99.1

Maximum of load combinations

S 355

$$E = 210000 \text{ N/mm}^2$$

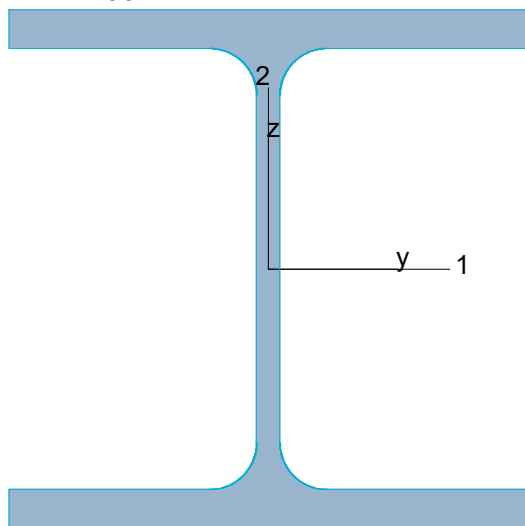
$$G = 80769 \text{ N/mm}^2$$

$$V_{M0,ult} = 1.05 \quad V_{M0,acc/seis} = 1.00$$

$$V_{M1,ult} = 1.05 \quad V_{M1,acc/seis} = 1.00$$

$$V_{M2,ult} = 1.25 \quad V_{M2,acc/seis} = 1.00$$

HE-B 200



$$P = 1151 \text{ mm} \quad f_y = 355 \text{ N/mm}^2$$

$$A = 7808 \text{ mm}^2 \quad \epsilon = 0.81$$

$$I_y = 5.696 \times 10^7 \text{ mm}^4 \quad \lambda_1 = 76.40$$

$$I_z = 2.003 \times 10^7 \text{ mm}^4$$

$$I_1 = 5.696 \times 10^7 \text{ mm}^4$$

$$I_2 = 2.003 \times 10^7 \text{ mm}^4$$

$$W_{pl,1} = 6.425 \times 10^5 \text{ mm}^3$$

$$W_{pl,2} = 3.059 \times 10^5 \text{ mm}^3$$

$$W_{el,min,1} = 5.696 \times 10^5 \text{ mm}^3$$

$$W_{el,min,2} = 2.003 \times 10^5 \text{ mm}^3$$

$$i_1 = 85 \text{ mm}$$

$$i_2 = 51 \text{ mm}$$

$$I_t = 5.959 \times 10^5 \text{ mm}^4$$

$$I_w = 1.671 \times 10^{11} \text{ mm}^6$$

Shear resistance, 1-1 - Part 1-1: 6.2.6, 6.2.8

LC: 'B2: Dominerende vindlast, vindrethning fra Sør', $x = 0 \text{ mm}$

$$\text{Class}_N = 1, \text{Class}_{M1} = 1, \text{Class}_{M2} = 1$$

$$V_{1,pl,Rd} = \frac{A_{1,v} \cdot f_y}{\sqrt{3} \cdot Y_{M0}} = \frac{6278 \cdot 355}{\sqrt{3} \cdot 1.05} = 1225.49 \text{ kN} \quad (6.18)$$

$$\begin{aligned} V_{1,pl,T,Rd} &= \sqrt{1 - \frac{T_{t,Ed}}{1.25 (f_y / \sqrt{3}) / Y_{M0}}} \cdot V_{1,pl,Rd} = \\ &= \sqrt{1 - \frac{0.00}{1.25 (355 / \sqrt{3}) / 1.05}} \cdot 1225.49 = 1225.49 \text{ kN} \quad (6.26) \end{aligned}$$

$$\frac{V_{1,Ed}}{V_{1,pl,T,Rd}} = \frac{0.15}{1225.49} = 0.00 \leq 1.00 \quad (6.25) - \text{OK}$$

Shear resistance, 2-2 - Part 1-1: 6.2.6, 6.2.8LC: 'B2: Dominerende snølast, vindretning fra Sør', $x = 5100$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$V_{2,pl,Rd} = \frac{A_{2,v} \cdot f_y}{\sqrt{3} \cdot Y_{M0}} = \frac{2483 \cdot 355}{\sqrt{3} \cdot 1.05} = 484.70 \text{ kN} \quad (6.18)$$

$$V_{2,pl,T,Rd} = \sqrt{1 - \frac{T_{t,Ed}}{1.25 (f_y / \sqrt{3}) / Y_{M0}}} \cdot V_{2,pl,Rd} =$$

$$= \sqrt{1 - \frac{0.00}{1.25 (355 / \sqrt{3}) / 1.05}} \cdot 484.70 = 484.70 \text{ kN} \quad (6.26)$$

$$\frac{V_{2,Ed}}{V_{2,pl,T,Rd}} = \frac{111.31}{484.70} = 0.23 \leq 1.00 \quad (6.25) - \text{OK}$$

Torsional resistance - Part 1-1: 6.2.7LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1
 $T_{\max,unit} = 38.89 \frac{\text{N/mm}^2}{\text{kNm}}$ is calculated by FEM analysis.

$$T_{Rd} = \frac{f_y}{\sqrt{3} \cdot T_{\max,unit} \cdot Y_{M0}} = \frac{355}{\sqrt{3} \cdot 38.89 \cdot 1.05} = 5.02 \text{ kNm}$$

$$\frac{T_{Ed}}{T_{Rd}} = \frac{0.00}{5.02} = 0.00 \leq 1.00 \quad (6.23) - \text{OK}$$

Shear stress - Part 1-1: 6.2.6

Not relevant

Normal stress - Part 1-1: 6.2.1

Not relevant

Normal capacity - Part 1-1: 6.2LC: 'B2: Dominerende snølast, vindretning fra Sør', $x = 2782$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$V_{1,Ed} = 0.01 \text{ kN} \leq 0.5 \cdot V_{1,pl,T,Rd} = 0.5 \cdot 1225.49 = 612.74 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$V_{2,Ed} = 7.83 \text{ kN} \leq 0.5 \cdot V_{2,pl,T,Rd} = 0.5 \cdot 484.70 = 242.35 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$\frac{N_{Ed}}{N_{Rd}} + \frac{M_{1,Ed}}{M_{1,Rd}} + \frac{M_{2,Ed}}{M_{2,Rd}} = \frac{16.93}{2639.89} + \frac{114.74}{217.24} + \frac{0.07}{103.41} = 0.54 \leq 1.00 \quad (6.2) - \text{OK}$$

Flexural buckling, 1-1 - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_1 = \frac{L_{cr,1}}{i_1 \cdot \lambda_1} = \frac{5100}{85 \cdot 76.40} = 0.78 \quad (6.50)$$

 $\alpha_1 = 0.34$ (Buckling curve: b)

$$\varphi_1 = 0.5 [1 + \alpha_1 \cdot (\bar{\lambda}_1 - 0.2) + \bar{\lambda}_1^2] = 0.5 [1 + 0.34 \cdot (0.78 - 0.2) + 0.78^2] = 0.90$$

$$\chi_1 = \min\left(\frac{1}{\varphi_1 + \sqrt{\varphi_1^2 - \bar{\lambda}_1^2}}, 1.0\right) = \min\left(\frac{1}{0.90 + \sqrt{0.90^2 - 0.78^2}}, 1.0\right) = 0.74 \quad (6.49)$$

$$N_{b,Rd,1} = \frac{\chi_1 \cdot A \cdot f_y}{Y_{M1}} = \frac{0.74 \cdot 7808 \cdot 355}{1.05} = 1942.32 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,1}} = \frac{28.10}{1942.32} = 0.01 \leq 1.00 \quad (6.46) - \text{OK}$$

Flexural buckling, 2-2 - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_2 = \frac{L_{cr,2}}{i_2 \cdot \lambda_1} = \frac{5100}{51 \cdot 76.40} = 1.32 \quad (6.50)$$

 $\alpha_2 = 0.49$ (Buckling curve: c)

$$\varphi_2 = 0.5 [1 + \alpha_2 \cdot (\bar{\lambda}_2 - 0.2) + \bar{\lambda}_2^2] = 0.5 [1 + 0.49 \cdot (1.32 - 0.2) + 1.32^2] = 1.64$$

$$\chi_2 = \min\left(\frac{1}{\varphi_2 + \sqrt{\varphi_2^2 - \bar{\lambda}_2^2}}, 1.0\right) = \min\left(\frac{1}{1.64 + \sqrt{1.64^2 - 1.32^2}}, 1.0\right) = 0.38 \quad (6.49)$$

$$N_{b,Rd,2} = \frac{\chi_2 \cdot A \cdot f_y}{Y_{M1}} = \frac{0.38 \cdot 7808 \cdot 355}{1.05} = 1006.73 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,2}} = \frac{28.10}{1006.73} = 0.03 \leq 1.00 \quad (6.46) - \text{OK}$$

Torsional-flexural buckling - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$i_0 = \sqrt{i_1^2 + i_2^2 + y_0^2 + z_0^2} = \sqrt{85^2 + 51^2 + 0^2 + 0^2} = 99 \text{ mm}$$

$$N_{cr,1} = \frac{\pi^2 \cdot E \cdot I_1}{L_{cr,1}^2} = \frac{\pi^2 \cdot 210000 \cdot 56961773}{5100^2} = 4539.02 \text{ kN}$$

$$N_{cr,2} = \frac{\pi^2 \cdot E \cdot I_2}{L_{cr,2}^2} = \frac{\pi^2 \cdot 210000 \cdot 20033688}{5100^2} = 1596.39 \text{ kN}$$

$$N_{cr,T} = \frac{1}{i_0^2} \left(G \cdot I_t + \frac{\pi^2 \cdot E \cdot I_w}{L_t^2} \right) =$$

$$= \frac{1}{99^2} \left(80769 \cdot 5.959e+05 + \frac{\pi^2 \cdot 210000 \cdot 1.671e+11}{5100^2} \right) = 6231.10 \text{ kN}$$

$$i_0^2 (N - N_{cr,1}) (N - N_{cr,2}) (N - N_{cr,T}) - N^2 y_0^2 (N - N_{cr,2}) - N^2 z_0^2 (N - N_{cr,1}) =$$

$$= 99^2 (N - 4539.02) (N - 1596.39) (N - 6231.10) - N^2 0^2 (N - 1596.39) - N^2 0^2 (N - 4539.02) = 0$$

Smallest root of the above equation related to the torsional-flexural buckling:

$$N_{cr,TF} = 6231.10 \text{ kN}$$

$$N_{cr} = \min(N_{cr,T}, N_{cr,TF}) = \min(6231.10, 6231.10) = 6231.10 \text{ kN}$$

$$\bar{\lambda}_T = \sqrt{\frac{A \cdot f_y}{N_{cr}}} = \sqrt{\frac{7808 \cdot 355}{6231.10}} = 0.67 \quad (6.53)$$

$$\alpha_T = 0.49 \quad (\text{Buckling curve: c})$$

$$\varphi_T = 0.5 \left[1 + \alpha_T \cdot (\bar{\lambda}_T - 0.2) + \bar{\lambda}_T^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.67 - 0.2) + 0.67^2 \right] = 0.84$$

$$\chi_T = \min \left(\frac{1}{\varphi_T + \sqrt{\varphi_T^2 - \bar{\lambda}_T^2}}, 1.0 \right) = \min \left(\frac{1}{0.84 + \sqrt{0.84^2 - 0.67^2}}, 1.0 \right) = 0.75 \quad (6.49)$$

$$N_{b,Rd,T} = \frac{\chi_T \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.75 \cdot 7808 \cdot 355}{1.05} = 1966.78 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,T}} = \frac{28.10}{1966.78} = 0.01 \leq 1.00 - \text{OK}$$

Lateral torsional buckling, top flange - Part 1-1: 6.3.2.2LC: 'B2: Dominerende snølast, vindretning fra Sør', $x = 2782$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 2.003e+07}{(1.00 \cdot 5100)^2} = 1596.39 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot 100 - 0.52 \cdot 0) = 45.00 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 1.596e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{1.671e+11}{2.003e+07} + \frac{8.077e+04 \cdot 5.959e+05}{1.596e+06} + 45.00^2 \right]^{0.5} - 45.00 \right\} =$$

$$= 281.92 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{642546 \cdot 355}{2.819e+08}} = 0.90$$

 $\alpha_{LT} = 0.21$ (Buckling curve: a)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.21 \cdot (0.90 - 0.2) + 0.90^2 \right] = 0.98$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.98 + \sqrt{0.98^2 - 0.90^2}}, 1.0 \right) = 0.73 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{0.73 \cdot 642546 \cdot 355}{1.05} = 159.51 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{114.74}{159.51} = 0.72 \leq 1.00 \quad (6.54) - \text{OK}$$

Lateral torsional buckling, bottom flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 2.003e+07}{(1.00 \cdot 5100)^2} = 1596.39 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot 100 - 0.52 \cdot 0) = 45.00 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 1.596e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{1.671e+11}{2.003e+07} + \frac{8.077e+04 \cdot 5.959e+05}{1.596e+06} + 45.00^2 \right]^{0.5} - 45.00 \right\} =$$

$$= 281.92 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{642546 \cdot 355}{2.819e+08}} = 0.90$$

 $\alpha_{LT} = 0.21$ (Buckling curve: a)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.21 \cdot (0.90 - 0.2) + 0.90^2 \right] = 0.98$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.98 + \sqrt{0.98^2 - 0.90^2}}, 1.0 \right) = 0.73 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{0.73 \cdot 642546 \cdot 355}{1.05} = 159.51 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{159.51} = 0.00 \leq 1.00 \quad (6.54) - \text{OK}$$

Interaction between normal force and bending 1. - Part 1-1: 6.3.3LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 2782$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1 k_{ij} factors are calculated according to Method 1

$$C_{my} = 1.00 \quad C_{yy} = 1.00$$

$$C_{mz} = 1.00 \quad C_{yz} = 0.67$$

$$C_{mLT} = 1.00 \quad C_{zy} = 0.99$$

$$C_{zz} = 0.83$$

$$M_{2,Rk} = f_y \cdot W_{pl,2} = 355 \cdot 305861 = 108.58 \text{ kNm}$$

$$\frac{N_{Ed}^{comp}}{N_{b,Rd,1}} + k_{11} \cdot \frac{M_{1,Ed}}{M_{y,b,Rd}} + k_{12} \cdot \frac{M_{2,Ed}}{M_{2,Rk}} =$$

$$= \frac{16.24}{1942.32} + 1.00 \cdot \frac{114.74}{159.51} + 1.04 \cdot \frac{0.05}{\frac{108.58}{1.05}} = 0.73 \leq 1.00 \quad (6.61) - \text{OK}$$

Interaction between normal force and bending 2. - Part 1-1: 6.3.3

LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 2782$ mm

Class_N = 1, Class_{M1} = 1, Class_{M2} = 1

k_{ij} factors are calculated according to Method 1

$$C_{my} = 1.00 \quad C_{yy} = 1.00$$

$$C_{mz} = 1.00 \quad C_{yz} = 0.67$$

$$C_{mLT} = 1.00 \quad C_{zy} = 0.99$$

$$C_{zz} = 0.83$$

$$M_{2,Rk} = f_y \cdot W_{pl,2} = 355 \cdot 305861 = 108.58 \text{ kNm}$$

$$\begin{aligned} \frac{N_{Ed}^{comp}}{N_{b,Rd,2}} + k_{21} \cdot \frac{M_{1,Ed}}{M_{y,b,Rd}} + k_{22} \cdot \frac{M_{2,Ed}}{M_{2,Rk}} &= \\ &= \frac{16.24}{1006.73} + 0.52 \cdot \frac{114.74}{159.51} + 1.21 \cdot \frac{0.05}{\frac{108.58}{1.05}} = 0.39 \leq 1.00 \quad (6.62) - \text{OK} \end{aligned}$$

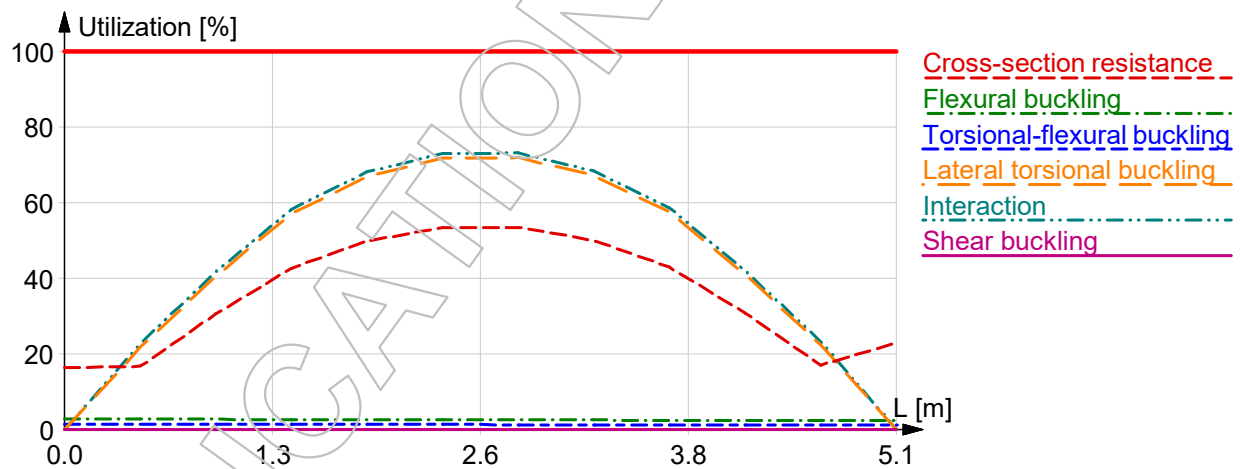
Interaction between normal force and bending, 2nd order - Part 1-1: 6.3.3

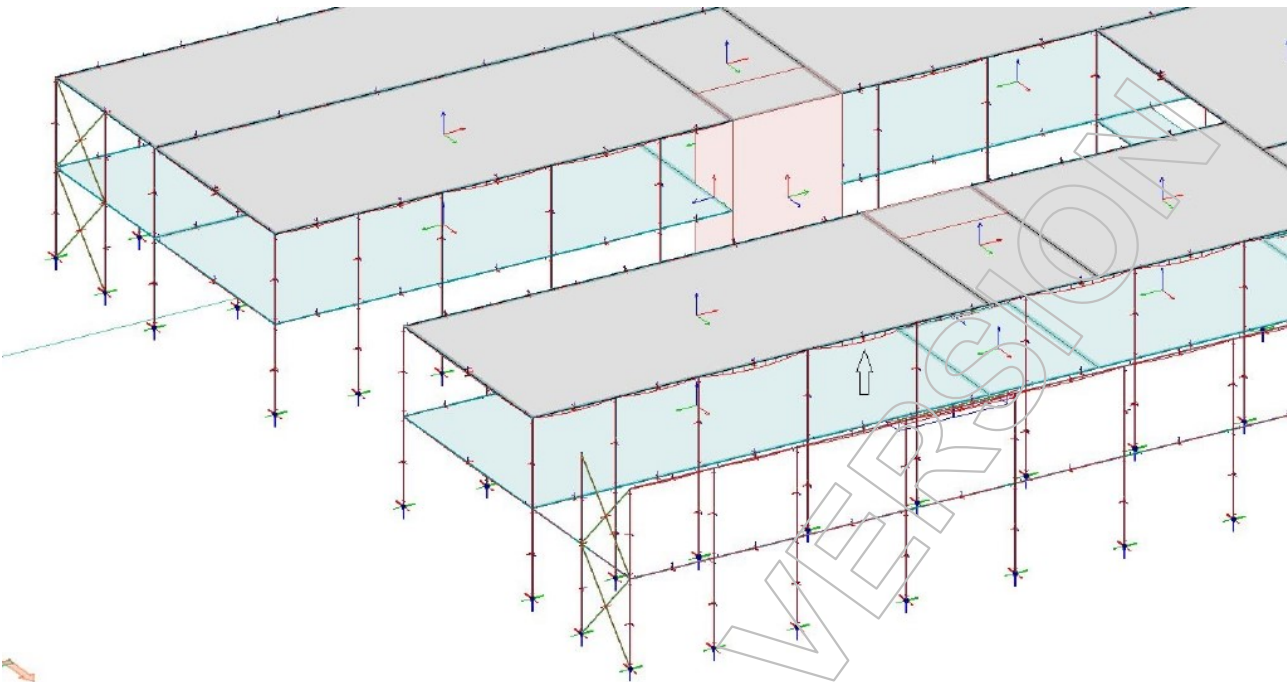
Not relevant

Shear buckling - Part 1-5: 5

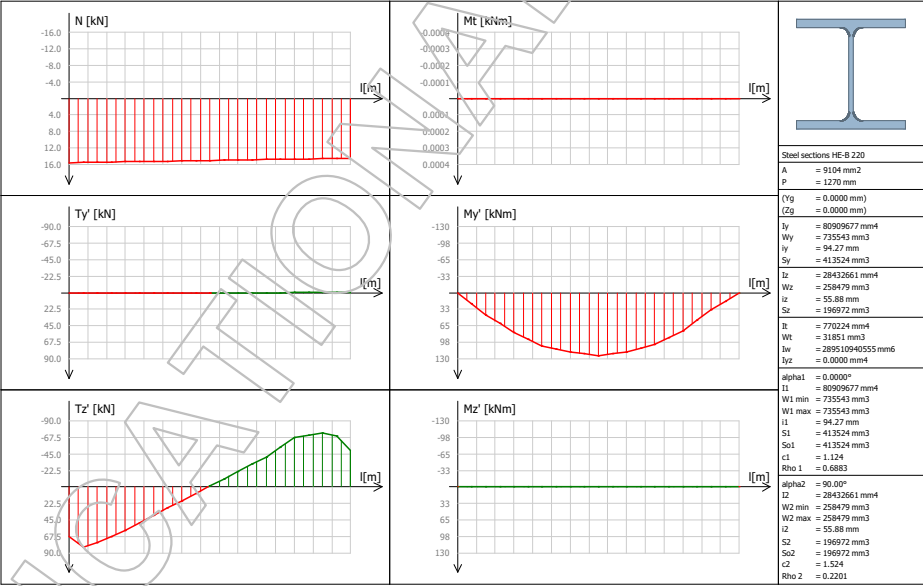
$$\frac{h_w}{t} = \frac{170}{9} = 18.9 \leq \frac{72}{\eta} \cdot \varepsilon = \frac{72}{1.20} \cdot 0.81 = 48.8 \rightarrow \text{Not relevant}$$

Summary





B.77.1 - Internal forces - Max. of load combinations: U (My'+) - (5.10 m)



Group B PTØ 2, B.77.1

Maximum of load combinations

S 355

$$E = 210000 \text{ N/mm}^2$$

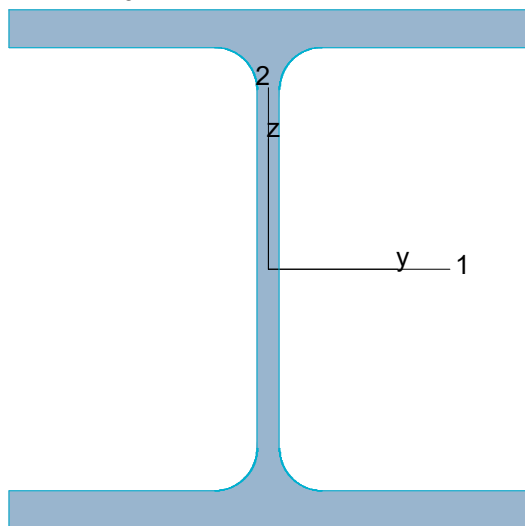
$$G = 80769 \text{ N/mm}^2$$

$$V_{M0,ult} = 1.05 \quad V_{M0,acc/seis} = 1.00$$

$$V_{M1,ult} = 1.05 \quad V_{M1,acc/seis} = 1.00$$

$$V_{M2,ult} = 1.25 \quad V_{M2,acc/seis} = 1.00$$

HE-B 220



$$P = 1270 \text{ mm} \quad f_y = 355 \text{ N/mm}^2$$

$$A = 9104 \text{ mm}^2 \quad \epsilon = 0.81$$

$$I_y = 8.091e+07 \text{ mm}^4 \quad \lambda_1 = 76.40$$

$$I_z = 2.843e+07 \text{ mm}^4$$

$$I_1 = 8.091e+07 \text{ mm}^4$$

$$I_2 = 2.843e+07 \text{ mm}^4$$

$$W_{pl,1} = 8.270e+05 \text{ mm}^3$$

$$W_{pl,2} = 3.939e+05 \text{ mm}^3$$

$$W_{el,min,1} = 7.355e+05 \text{ mm}^3$$

$$W_{el,min,2} = 2.585e+05 \text{ mm}^3$$

$$i_1 = 94 \text{ mm}$$

$$i_2 = 56 \text{ mm}$$

$$I_t = 7.702e+05 \text{ mm}^4$$

$$I_w = 2.895e+11 \text{ mm}^6$$

Shear resistance, 1-1 - Part 1-1: 6.2.6, 6.2.8

LC: 'B2: Dominerende vindlast, vindrethning fra Nord', $x = 5100 \text{ mm}$

$$\text{Class}_N = 1, \text{Class}_{M1} = 1, \text{Class}_{M2} = 1$$

$$V_{1,pl,Rd} = \frac{A_{1,v} \cdot f_y}{\sqrt{3} \cdot Y_{M0}} = \frac{7318 \cdot 355}{\sqrt{3} \cdot 1.05} = 1428.49 \text{ kN} \quad (6.18)$$

$$V_{1,pl,T,Rd} = \sqrt{1 - \frac{T_{t,Ed}}{1.25 (f_y / \sqrt{3}) / Y_{M0}}} \cdot V_{1,pl,Rd} =$$

$$= \sqrt{1 - \frac{0.00}{1.25 (355 / \sqrt{3}) / 1.05}} \cdot 1428.49 = 1428.49 \text{ kN} \quad (6.26)$$

$$\frac{V_{1,Ed}}{V_{1,pl,T,Rd}} = \frac{0.20}{1428.49} = 0.00 \leq 1.00 \quad (6.25) - \text{OK}$$

Shear resistance, 2-2 - Part 1-1: 6.2.6, 6.2.8LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$V_{2,pl,Rd} = \frac{A_{2,v} \cdot f_y}{\sqrt{3} \cdot Y_{M0}} = \frac{2792 \cdot 355}{\sqrt{3} \cdot 1.05} = 545.02 \text{ kN} \quad (6.18)$$

$$V_{2,pl,T,Rd} = \sqrt{1 - \frac{T_{t,Ed}}{1.25 (f_y / \sqrt{3}) / Y_{M0}}} \cdot V_{2,pl,Rd} =$$

$$= \sqrt{1 - \frac{0.00}{1.25 (355 / \sqrt{3}) / 1.05}} \cdot 545.02 = 545.02 \text{ kN} \quad (6.26)$$

$$\frac{V_{2,Ed}}{V_{2,pl,T,Rd}} = \frac{86.88}{545.02} = 0.16 \leq 1.00 \quad (6.25) - \text{OK}$$

Torsional resistance - Part 1-1: 6.2.7LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1T_{max,unit} = 31.40 $\frac{\text{N/mm}^2}{\text{kNm}}$ is calculated by FEM analysis.

$$T_{Rd} = \frac{f_y}{\sqrt{3} \cdot T_{max,unit} \cdot Y_{M0}} = \frac{355}{\sqrt{3} \cdot 31.40 \cdot 1.05} = 6.22 \text{ kNm}$$

$$\frac{T_{Ed}}{T_{Rd}} = \frac{0.00}{6.22} = 0.00 \leq 1.00 \quad (6.23) - \text{OK}$$

Shear stress - Part 1-1: 6.2.6

Not relevant

Normal stress - Part 1-1: 6.2.1

Not relevant

Normal capacity - Part 1-1: 6.2LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 2318$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$V_{1,Ed} = 0.00 \text{ kN} \leq 0.5 \cdot V_{1,pl,T,Rd} = 0.5 \cdot 1428.49 = 714.25 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$V_{2,Ed} = 7.96 \text{ kN} \leq 0.5 \cdot V_{2,pl,T,Rd} = 0.5 \cdot 545.02 = 272.51 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$\frac{N_{Ed}}{N_{Rd}} + \frac{M_{1,Ed}}{M_{1,Rd}} + \frac{M_{2,Ed}}{M_{2,Rd}} = \frac{15.08}{3078.06} + \frac{120.73}{279.62} + \frac{0.11}{133.19} = 0.44 \leq 1.00 \quad (6.2) - \text{OK}$$

Flexural buckling, 1-1 - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_1 = \frac{L_{cr,1}}{i_1 \cdot \lambda_1} = \frac{5100}{94 \cdot 76.40} = 0.71 \quad (6.50)$$

 $\alpha_1 = 0.34$ (Buckling curve: b)

$$\varphi_1 = 0.5 [1 + \alpha_1 \cdot (\bar{\lambda}_1 - 0.2) + \bar{\lambda}_1^2] = 0.5 [1 + 0.34 \cdot (0.71 - 0.2) + 0.71^2] = 0.84$$

$$\chi_1 = \min\left(\frac{1}{\varphi_1 + \sqrt{\varphi_1^2 - \bar{\lambda}_1^2}}, 1.0\right) = \min\left(\frac{1}{0.84 + \sqrt{0.84^2 - 0.71^2}}, 1.0\right) = 0.78 \quad (6.49)$$

$$N_{b,Rd,1} = \frac{\chi_1 \cdot A \cdot f_y}{Y_{M1}} = \frac{0.78 \cdot 9104 \cdot 355}{1.05} = 2398.14 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,1}} = \frac{13.80}{2398.14} = 0.01 \leq 1.00 \quad (6.46) - \text{OK}$$

Flexural buckling, 2-2 - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_2 = \frac{L_{cr,2}}{i_2 \cdot \lambda_1} = \frac{5100}{56 \cdot 76.40} = 1.19 \quad (6.50)$$

 $\alpha_2 = 0.49$ (Buckling curve: c)

$$\varphi_2 = 0.5 [1 + \alpha_2 \cdot (\bar{\lambda}_2 - 0.2) + \bar{\lambda}_2^2] = 0.5 [1 + 0.49 \cdot (1.19 - 0.2) + 1.19^2] = 1.46$$

$$\chi_2 = \min\left(\frac{1}{\varphi_2 + \sqrt{\varphi_2^2 - \bar{\lambda}_2^2}}, 1.0\right) = \min\left(\frac{1}{1.46 + \sqrt{1.46^2 - 1.19^2}}, 1.0\right) = 0.44 \quad (6.49)$$

$$N_{b,Rd,2} = \frac{\chi_2 \cdot A \cdot f_y}{Y_{M1}} = \frac{0.44 \cdot 9104 \cdot 355}{1.05} = 1343.24 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,2}} = \frac{13.80}{1343.24} = 0.01 \leq 1.00 \quad (6.46) - \text{OK}$$

Torsional-flexural buckling - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$i_0 = \sqrt{i_1^2 + i_2^2 + y_0^2 + z_0^2} = \sqrt{94^2 + 56^2 + 0^2 + 0^2} = 110 \text{ mm}$$

$$N_{cr,1} = \frac{\pi^2 \cdot E \cdot I_1}{L_{cr,1}^2} = \frac{\pi^2 \cdot 210000 \cdot 80909677}{5100^2} = 6447.32 \text{ kN}$$

$$N_{cr,2} = \frac{\pi^2 \cdot E \cdot I_2}{L_{cr,2}^2} = \frac{\pi^2 \cdot 210000 \cdot 28432661}{5100^2} = 2265.67 \text{ kN}$$

$$N_{cr,T} = \frac{1}{i_0^2} \left(G \cdot I_t + \frac{\pi^2 \cdot E \cdot I_w}{L_t^2} \right) =$$

$$= \frac{1}{110^2} \left(80769 \cdot 7.702e+05 + \frac{\pi^2 \cdot 210000 \cdot 2.895e+11}{5100^2} \right) = 7100.65 \text{ kN}$$

$$i_0^2 (N - N_{cr,1}) (N - N_{cr,2}) (N - N_{cr,T}) - N^2 y_0^2 (N - N_{cr,2}) - N^2 z_0^2 (N - N_{cr,1}) =$$

$$= 110^2 (N - 6447.32) (N - 2265.67) (N - 7100.65) - N^2 0^2 (N - 2265.67) - N^2 0^2 (N - 6447.32) = 0$$

Smallest root of the above equation related to the torsional-flexural buckling:

$$N_{cr,TF} = 7100.65 \text{ kN}$$

$$N_{cr} = \min(N_{cr,T}, N_{cr,TF}) = \min(7100.65, 7100.65) = 7100.65 \text{ kN}$$

$$\bar{\lambda}_T = \sqrt{\frac{A \cdot f_y}{N_{cr}}} = \sqrt{\frac{9104 \cdot 355}{7100.65}} = 0.67 \quad (6.53)$$

$$\alpha_T = 0.49 \quad (\text{Buckling curve: c})$$

$$\varphi_T = 0.5 \left[1 + \alpha_T \cdot (\bar{\lambda}_T - 0.2) + \bar{\lambda}_T^2 \right] = 0.5 \left[1 + 0.49 \cdot (0.67 - 0.2) + 0.67^2 \right] = 0.84$$

$$\chi_T = \min \left(\frac{1}{\varphi_T + \sqrt{\varphi_T^2 - \bar{\lambda}_T^2}}, 1.0 \right) = \min \left(\frac{1}{0.84 + \sqrt{0.84^2 - 0.67^2}}, 1.0 \right) = 0.74 \quad (6.49)$$

$$N_{b,Rd,T} = \frac{\chi_T \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.74 \cdot 9104 \cdot 355}{1.05} = 2278.72 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,T}} = \frac{13.80}{2278.72} = 0.01 \leq 1.00 - \text{OK}$$

Lateral torsional buckling, top flange - Part 1-1: 6.3.2.2LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 2318$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 2.843e+07}{(1.00 \cdot 5100)^2} = 2265.67 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot 110 - 0.52 \cdot 0) = 49.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 2.266e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{2.895e+11}{2.843e+07} + \frac{8.077e+04 \cdot 7.702e+05}{2.266e+06} + 49.50^2 \right]^{0.5} - 49.50 \right\} =$$

$$= 385.89 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{827048 \cdot 355}{3.859e+08}} = 0.87$$

 $\alpha_{LT} = 0.21$ (Buckling curve: a)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.21 \cdot (0.87 - 0.2) + 0.87^2 \right] = 0.95$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.95 + \sqrt{0.95^2 - 0.87^2}}, 1.0 \right) = 0.75 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{0.75 \cdot 827048 \cdot 355}{1.05} = 210.25 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{120.73}{210.25} = 0.57 \leq 1.00 \quad (6.54) - \text{OK}$$

Lateral torsional buckling, bottom flange - Part 1-1: 6.3.2.2LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 2.843e+07}{(1.00 \cdot 5100)^2} = 2265.67 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.45 \cdot 110 - 0.52 \cdot 0) = 49.50 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.13 \cdot 2.266e+06 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{2.895e+11}{2.843e+07} + \frac{8.077e+04 \cdot 7.702e+05}{2.266e+06} + 49.50^2 \right]^{0.5} - 49.50 \right\} =$$

$$= 385.89 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{827048 \cdot 355}{3.859e+08}} = 0.87$$

 $\alpha_{LT} = 0.21$ (Buckling curve: a)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.21 \cdot (0.87 - 0.2) + 0.87^2 \right] = 0.95$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.95 + \sqrt{0.95^2 - 0.87^2}}, 1.0 \right) = 0.75 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{0.75 \cdot 827048 \cdot 355}{1.05} = 210.25 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{0.00}{210.25} = 0.00 \leq 1.00 \quad (6.54) - \text{OK}$$

Interaction between normal force and bending 1. - Part 1-1: 6.3.3LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 2318$ mmClass_N = 1, Class_{M1} = 1, Class_{M2} = 1 k_{ij} factors are calculated according to Method 1

$$C_{my} = 1.00 \quad C_{yy} = 1.00$$

$$C_{mz} = 1.00 \quad C_{yz} = 0.73$$

$$C_{mLT} = 1.00 \quad C_{zy} = 1.00$$

$$C_{zz} = 0.81$$

$$M_{2,Rk} = f_y \cdot W_{pl,2} = 355 \cdot 393944 = 139.85 \text{ kNm}$$

$$\frac{N_{Ed}^{comp}}{N_{b,Rd,1}} + k_{11} \cdot \frac{M_{1,Ed}}{M_{y,b,Rd}} + k_{12} \cdot \frac{M_{2,Ed}}{M_{2,Rk}} =$$

$$= \frac{7.58}{2398.14} + 1.00 \cdot \frac{120.73}{210.25} + 0.95 \cdot \frac{0.07}{\frac{139.85}{1.05}} = 0.58 \leq 1.00 \quad (6.61) - \text{OK}$$

Interaction between normal force and bending 2. - Part 1-1: 6.3.3

LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 2318 \text{ mm}$

$\text{Class}_N = 1$, $\text{Class}_{M1} = 1$, $\text{Class}_{M2} = 1$

k_{ij} factors are calculated according to Method 1

$$C_{my} = 1.00 \quad C_{yy} = 1.00$$

$$C_{mz} = 1.00 \quad C_{yz} = 0.73$$

$$C_{mLT} = 1.00 \quad C_{zy} = 1.00$$

$$C_{zz} = 0.81$$

$$M_{2,Rk} = f_y \cdot W_{pl,2} = 355 \cdot 393944 = 139.85 \text{ kNm}$$

$$\begin{aligned} \frac{N_{Ed}^{comp}}{N_{b,Rd,2}} + k_{21} \cdot \frac{M_{1,Ed}}{M_{y,b,Rd}} + k_{22} \cdot \frac{M_{2,Ed}}{M_{2,Rk}} &= \\ &= \frac{7.58}{1343.24} + 0.52 \cdot \frac{120.73}{210.25} + 1.23 \cdot \frac{0.07}{\frac{139.85}{1.05}} = 0.31 \leq 1.00 \quad (6.62) - \text{OK} \end{aligned}$$

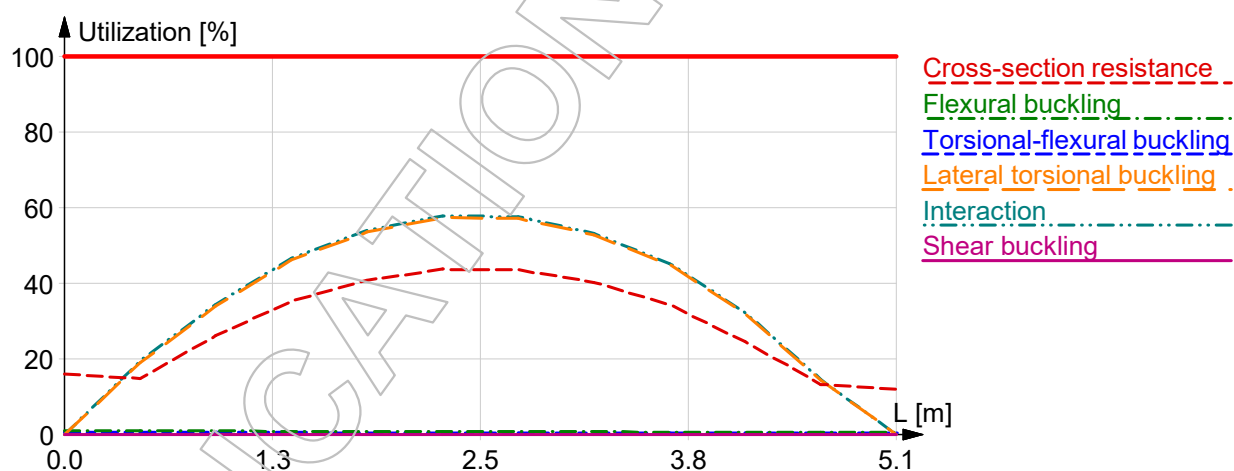
Interaction between normal force and bending, 2nd order - Part 1-1: 6.3.3

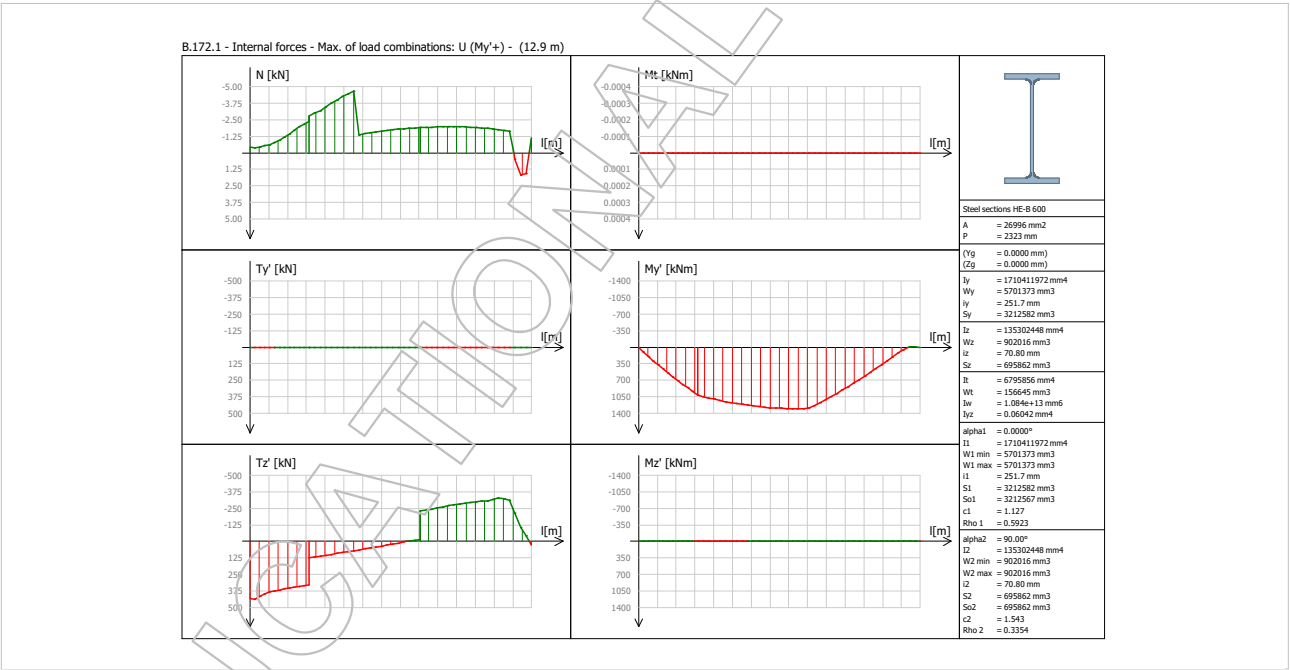
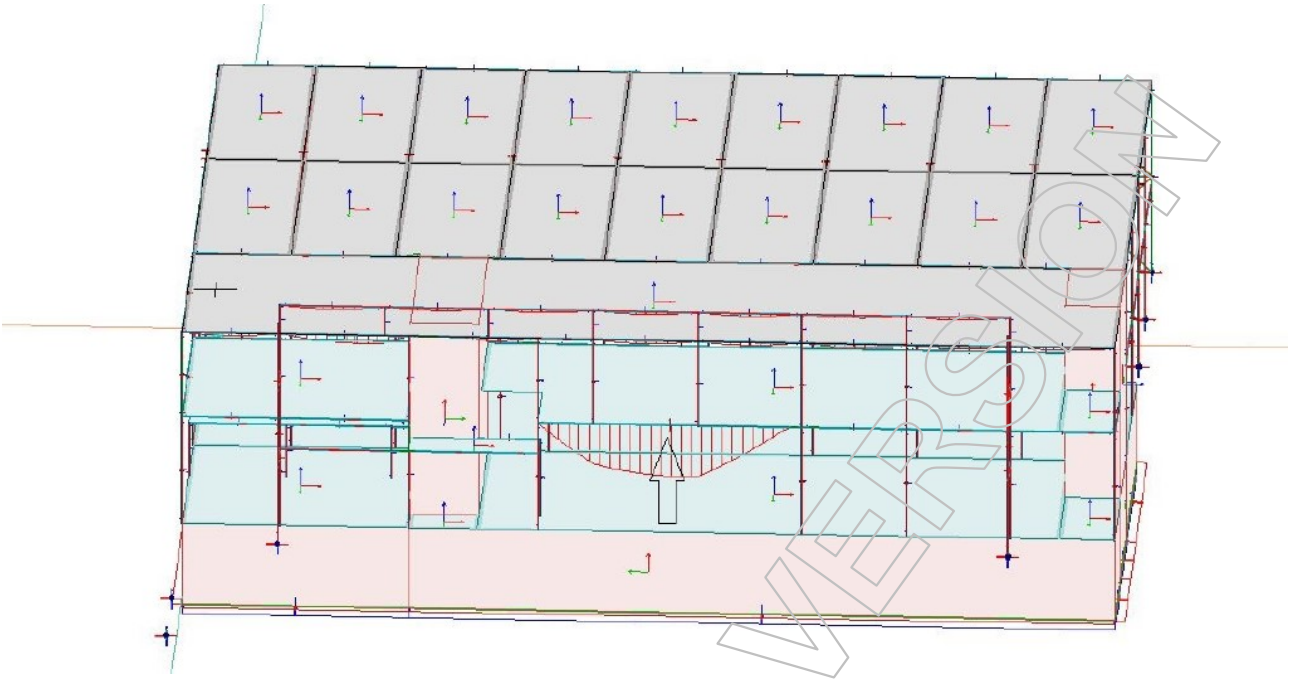
Not relevant

Shear buckling - Part 1-5: 5

$$\frac{h_w}{t} = \frac{188}{9} = 19.8 \leq \frac{72}{\eta} \cdot \varepsilon = \frac{72}{1.20} \cdot 0.81 = 48.8 \rightarrow \text{Not relevant}$$

Summary





B.172.1**Maximum of load combinations****S 355**

$$E = 210000 \text{ N/mm}^2$$

$$G = 80769 \text{ N/mm}^2$$

$$V_{M0,ult} = 1.05$$

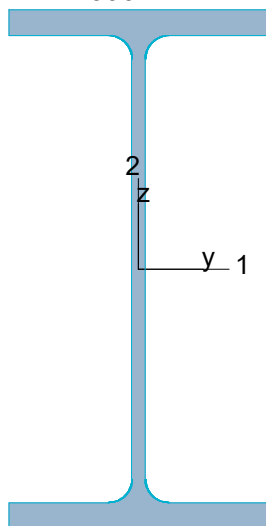
$$V_{M0,acc/seis} = 1.00$$

$$V_{M1,ult} = 1.05$$

$$V_{M1,acc/seis} = 1.00$$

$$V_{M2,ult} = 1.25$$

$$V_{M2,acc/seis} = 1.00$$

HE-B 600

P	=	2323 mm	f_y	=	355 N/mm ²
A	=	26996 mm ²	ϵ	=	0.81
I_y	=	1.710e+09 mm ⁴	λ_1	=	76.40
I_z	=	1.353e+08 mm ⁴			
I_1	=	1.710e+09 mm ⁴			
I_2	=	1.353e+08 mm ⁴			
$W_{pl,1}$	=	6.425e+06 mm ³			
$W_{pl,2}$	=	1.392e+06 mm ³			
$W_{el,min,1}$	=	5.701e+06 mm ³			
$W_{el,min,2}$	=	9.020e+05 mm ³			
i_1	=	252 mm			
i_2	=	71 mm			
I_t	=	6.796e+06 mm ⁴			
I_w	=	1.084e+13 mm ⁶			

Shear resistance, 1-1 - Part 1-1: 6.2.6, 6.2.8

LC: 'B2: Dominerende vindlast, vindrethning fra Nord', $x = 0$ mm

Class_N = 3, Class_{M1} = 1, Class_{M2} = 1

$$V_{1,pl,Rd} = \frac{A_{1,v} \cdot f_y}{\sqrt{3} \cdot Y_{M0}} = \frac{18626 \cdot 355}{\sqrt{3} \cdot 1.05} = 3635.74 \text{ kN} \quad (6.18)$$

$$\begin{aligned} V_{1,pl,T,Rd} &= \sqrt{1 - \frac{T_{t,Ed}}{1.25 (f_y / \sqrt{3}) / Y_{M0}}} \cdot V_{1,pl,Rd} = \\ &= \sqrt{1 - \frac{0.00}{1.25 (355 / \sqrt{3}) / 1.05}} \cdot 3635.74 = 3635.74 \text{ kN} \quad (6.26) \end{aligned}$$

$$\frac{V_{1,Ed}}{V_{1,pl,T,Rd}} = \frac{0.08}{3635.74} = 0.00 \leq 1.00 \quad (6.25) - \text{OK}$$

Shear resistance, 2-2 - Part 1-1: 6.2.6, 6.2.8LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 0$ mmClass_N = 3, Class_{M1} = 1, Class_{M2} = 1

$$V_{2,pl,Rd} = \frac{A_{2,v} \cdot f_y}{\sqrt{3} \cdot Y_{M0}} = \frac{11081 \cdot 355}{\sqrt{3} \cdot 1.05} = 2162.96 \text{ kN} \quad (6.18)$$

$$V_{2,pl,T,Rd} = \sqrt{1 - \frac{T_{t,Ed}}{1.25 (f_y / \sqrt{3}) / Y_{M0}}} \cdot V_{2,pl,Rd} =$$

$$= \sqrt{1 - \frac{0.00}{1.25 (355 / \sqrt{3}) / 1.05}} \cdot 2162.96 = 2162.96 \text{ kN} \quad (6.26)$$

$$\frac{V_{2,Ed}}{V_{2,pl,T,Rd}} = \frac{457.07}{2162.96} = 0.21 \leq 1.00 \quad (6.25) - \text{OK}$$

Torsional resistance - Part 1-1: 6.2.7LC: 'B1: Dominerende snølast, Vindretning fra Nord', $x = 0$ mmClass_N = 3, Class_{M1} = 1, Class_{M2} = 1
 $T_{\max,unit} = 6.38 \frac{\text{N/mm}^2}{\text{kNm}}$ is calculated by FEM analysis.

$$T_{Rd} = \frac{f_y}{\sqrt{3} \cdot T_{\max,unit} \cdot Y_{M0}} = \frac{355}{\sqrt{3} \cdot 6.38 \cdot 1.05} = 30.58 \text{ kNm}$$

$$\frac{T_{Ed}}{T_{Rd}} = \frac{0.00}{30.58} = 0.00 \leq 1.00 \quad (6.23) - \text{OK}$$

Shear stress - Part 1-1: 6.2.6

Not relevant

Normal stress - Part 1-1: 6.2.1

Not relevant

Normal capacity - Part 1-1: 6.2LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 7336$ mmClass_N = 3, Class_{M1} = 1, Class_{M2} = 1

$$V_{1,Ed} = 0.00 \text{ kN} \leq 0.5 \cdot V_{1,pl,T,Rd} = 0.5 \cdot 3635.74 = 1817.87 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$V_{2,Ed} = 5.36 \text{ kN} \leq 0.5 \cdot V_{2,pl,T,Rd} = 0.5 \cdot 2162.96 = 1081.48 \text{ kN} \rightarrow \rho_1 = 0.00$$

$$\frac{N_{Ed}}{N_{Rd}} + \frac{M_{1,Ed}}{M_{1,Rd}} + \frac{M_{2,Ed}}{M_{2,Rd}} = \frac{5.57}{9127.14} + \frac{1304.47}{2172.31} + \frac{0.01}{470.54} = 0.60 \leq 1.00 \quad (6.2) - \text{OK}$$

Flexural buckling, 1-1 - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 7800$ mmClass_N = 3, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_1 = \frac{L_{cr,1}}{i_1 \cdot \lambda_1} = \frac{5100}{252 \cdot 76.40} = 0.27 \quad (6.50)$$

 $\alpha_1 = 0.21$ (Buckling curve: a)

$$\varphi_1 = 0.5 [1 + \alpha_1 \cdot (\bar{\lambda}_1 - 0.2) + \bar{\lambda}_1^2] = 0.5 [1 + 0.21 \cdot (0.27 - 0.2) + 0.27^2] = 0.54$$

$$\chi_1 = \min\left(\frac{1}{\varphi_1 + \sqrt{\varphi_1^2 - \bar{\lambda}_1^2}}, 1.0\right) = \min\left(\frac{1}{0.54 + \sqrt{0.54^2 - 0.27^2}}, 1.0\right) = 0.99 \quad (6.49)$$

$$N_{b,Rd,1} = \frac{\chi_1 \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.99 \cdot 26996 \cdot 355}{1.05} = 8994.80 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,1}} = \frac{7.89}{8994.80} = 0.00 \leq 1.00 \quad (6.46) - \text{OK}$$

Flexural buckling, 2-2 - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 7800$ mmClass_N = 3, Class_{M1} = 1, Class_{M2} = 1

$$\bar{\lambda}_2 = \frac{L_{cr,2}}{i_2 \cdot \lambda_1} = \frac{5100}{71 \cdot 76.40} = 0.94 \quad (6.50)$$

 $\alpha_2 = 0.34$ (Buckling curve: b)

$$\varphi_2 = 0.5 [1 + \alpha_2 \cdot (\bar{\lambda}_2 - 0.2) + \bar{\lambda}_2^2] = 0.5 [1 + 0.34 \cdot (0.94 - 0.2) + 0.94^2] = 1.07$$

$$\chi_2 = \min\left(\frac{1}{\varphi_2 + \sqrt{\varphi_2^2 - \bar{\lambda}_2^2}}, 1.0\right) = \min\left(\frac{1}{1.07 + \sqrt{1.07^2 - 0.94^2}}, 1.0\right) = 0.63 \quad (6.49)$$

$$N_{b,Rd,2} = \frac{\chi_2 \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.63 \cdot 26996 \cdot 355}{1.05} = 5782.46 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,2}} = \frac{7.89}{5782.46} = 0.00 \leq 1.00 \quad (6.46) - \text{OK}$$

Torsional-flexural buckling - Part 1-1: 6.3.1LC: 'B2: Dominerende vindlast, vindretning fra Vest', $x = 7800$ mmClass_N = 3, Class_{M1} = 1, Class_{M2} = 1

$$i_0 = \sqrt{i_1^2 + i_2^2 + y_0^2 + z_0^2} = \sqrt{252^2 + 71^2 + 0^2 + 0^2} = 261 \text{ mm}$$

$$N_{cr,1} = \frac{\pi^2 \cdot E \cdot I_1}{L_{cr,1}^2} = \frac{\pi^2 \cdot 210000 \cdot 1710411972}{5100^2} = 136294.84 \text{ kN}$$

$$N_{cr,2} = \frac{\pi^2 \cdot E \cdot I_2}{L_{cr,2}^2} = \frac{\pi^2 \cdot 210000 \cdot 135302448}{5100^2} = 10781.63 \text{ kN}$$

$$N_{cr,T} = \frac{1}{i_0^2} \left(G \cdot I_t + \frac{\pi^2 \cdot E \cdot I_w}{L_t^2} \right) =$$

$$= \frac{1}{261^2} \left(80769 \cdot 6.796e+06 + \frac{\pi^2 \cdot 210000 \cdot 1.084e+13}{5100^2} \right) = 20659.63 \text{ kN}$$

$$i_0^2 (N - N_{cr,1}) (N - N_{cr,2}) (N - N_{cr,T}) - N^2 y_0^2 (N - N_{cr,2}) - N^2 z_0^2 (N - N_{cr,1}) =$$

$$= 261^2 (N - 136294.84) (N - 10781.63) (N - 20659.63) - N^2 0^2 (N - 10781.63) - N^2 0^2 (N - 136294.84) =$$

$$= 0$$

Smallest root of the above equation related to the torsional-flexural buckling:

$$N_{cr,TF} = 20659.63 \text{ kN}$$

$$N_{cr} = \min(N_{cr,T}, N_{cr,TF}) = \min(20659.63, 20659.63) = 20659.63 \text{ kN}$$

$$\bar{\lambda}_T = \sqrt{\frac{A \cdot f_y}{N_{cr}}} = \sqrt{\frac{26996 \cdot 355}{20659.63}} = 0.68 \quad (6.53)$$

$$\alpha_T = 0.34 \quad (\text{Buckling curve: b})$$

$$\varphi_T = 0.5 \left[1 + \alpha_T \cdot (\bar{\lambda}_T - 0.2) + \bar{\lambda}_T^2 \right] = 0.5 \left[1 + 0.34 \cdot (0.68 - 0.2) + 0.68^2 \right] = 0.81$$

$$\chi_T = \min \left(\frac{1}{\varphi_T + \sqrt{\varphi_T^2 - \bar{\lambda}_T^2}}, 1.0 \right) = \min \left(\frac{1}{0.81 + \sqrt{0.81^2 - 0.68^2}}, 1.0 \right) = 0.79 \quad (6.49)$$

$$N_{b,Rd,T} = \frac{\chi_T \cdot A \cdot f_y}{\gamma_{M1}} = \frac{0.79 \cdot 26996 \cdot 355}{1.05} = 7249.55 \text{ kN} \quad (6.47)$$

$$\frac{N_{Ed}}{N_{b,Rd,T}} = \frac{7.89}{7249.55} = 0.00 \leq 1.00 - \text{OK}$$

Lateral torsional buckling, top flange - Part 1-1: 6.3.2.2LC: 'B2: Dominerende snølast, vindretning fra Nord', $x = 7336$ mmClass_N = 3, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.353e+08}{(1.00 \cdot 5100)^2} = 10781.63 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.00 \cdot -300 - 0.99 \cdot 0) = 0.00 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.12 \cdot 1.078e+07 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{1.084e+13}{1.353e+08} + \frac{8.077e+04 \cdot 6.796e+06}{1.078e+07} + 0.00^2 \right]^{0.5} - 0.00 \right\} =$$

$$= 4381.64 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{6425134 \cdot 355}{4.382e+09}} = 0.72$$

 $\alpha_{LT} = 0.21$ (Buckling curve: a)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.21 \cdot (0.72 - 0.2) + 0.72^2 \right] = 0.82$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.82 + \sqrt{0.82^2 - 0.72^2}}, 1.0 \right) = 0.84 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{0.84 \cdot 6425134 \cdot 355}{1.05} = 1819.12 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{1304.49}{1819.12} = 0.72 \leq 1.00 \quad (6.54) - \text{OK}$$

Lateral torsional buckling, bottom flange - Part 1-1: 6.3.2.2LC: 'B2: Dominerende snølast, vindretning fra Vest', $x = 12436$ mmClass_N = 3, Class_{M1} = 1, Class_{M2} = 1

$$N_{cr,LT} = \frac{\pi^2 \cdot E \cdot I_z}{(k_z \cdot L_{cr})^2} = \frac{\pi^2 \cdot 2.100e+05 \cdot 1.353e+08}{(1.00 \cdot 5100)^2} = 10781.63 \text{ kN}$$

Loaded on top edge.

$$Z = (C_2 \cdot z_g - C_3 \cdot z_j) = (0.07 \cdot 300 - 2.64 \cdot 0) = 19.63 \text{ mm}$$

$$M_{cr} = C_1 \cdot N_{cr,LT} \cdot \left\{ \left[\left(\frac{k_z}{k_w} \right)^2 \cdot \frac{I_w}{I_z} + \frac{G \cdot I_t}{N_{cr,LT}} + Z^2 \right]^{0.5} - Z \right\} =$$

$$= 1.99 \cdot 1.078e+07 \cdot \left\{ \left[\left(\frac{1.00}{1.00} \right)^2 \cdot \frac{1.084e+13}{1.353e+08} + \frac{8.077e+04 \cdot 6.796e+06}{1.078e+07} + 19.63^2 \right]^{0.5} - 19.63 \right\} =$$

$$= 7351.30 \text{ kNm}$$

$$\bar{\lambda}_{LT} = \sqrt{\frac{W_y \cdot f_y}{M_{cr}}} = \sqrt{\frac{6425134 \cdot 355}{7.351e+09}} = 0.56$$

 $\alpha_{LT} = 0.21$ (Buckling curve: a)

$$\phi_{LT} = 0.5 \left[1 + \alpha_{LT} \cdot (\bar{\lambda}_{LT} - 0.2) + \bar{\lambda}_{LT}^2 \right] =$$

$$= 0.5 \left[1 + 0.21 \cdot (0.56 - 0.2) + 0.56^2 \right] = 0.69$$

$$\chi_{LT} = \min \left(\frac{1}{\phi_{LT} + \sqrt{\phi_{LT}^2 - \bar{\lambda}_{LT}^2}}, 1.0 \right) = \min \left(\frac{1}{0.69 + \sqrt{0.69^2 - 0.56^2}}, 1.0 \right) = 0.91 \quad (6.56)$$

$$M_{y,b,Rd} = \frac{\chi_{LT} \cdot W_y \cdot f_y}{\gamma_{M1}} = \frac{0.91 \cdot 6425134 \cdot 355}{1.05} = 1967.18 \text{ kNm} \quad (6.55)$$

$$\frac{M_{1,Ed}}{M_{y,b,Rd}} = \frac{14.43}{1967.18} = 0.01 \leq 1.00 \quad (6.54) - \text{OK}$$

Interaction between normal force and bending 1. - Part 1-1: 6.3.3LC: 'B2: Dominerende snølast, vindretning fra Sør', $x = 7336$ mmClass_N = 3, Class_{M1} = 1, Class_{M2} = 1 k_{ij} factors are calculated according to Method 1

$$C_{my} = 1.00 \quad C_{yy} = 1.00$$

$$C_{mz} = 1.00 \quad C_{yz} = 0.64$$

$$C_{mLT} = 1.00 \quad C_{zy} = 1.00$$

$$C_{zz} = 0.65$$

$$M_{2,Rk} = f_y \cdot W_{pl,2} = 355 \cdot 1391725 = 494.06 \text{ kNm}$$

$$\frac{N_{Ed}^{comp}}{N_{b,Rd,1}} + k_{11} \cdot \frac{M_{1,Ed}}{M_{y,b,Rd}} + k_{12} \cdot \frac{M_{2,Ed}}{M_{2,Rk}} =$$

$$= \frac{0.00}{8994.80} + 1.00 \cdot \frac{1304.29}{1819.14} + 1.08 \cdot \frac{0.01}{\frac{494.06}{1.05}} = 0.72 \leq 1.00 \quad (6.61) - \text{OK}$$

Interaction between normal force and bending 2. - Part 1-1: 6.3.3

LC: 'B2: Dominerende snølast, vindretning fra Sør', $x = 7336$ mm

Class_N = 3, Class_{M1} = 1, Class_{M2} = 1

k_{ij} factors are calculated according to Method 1

$$C_{my} = 1.00 \quad C_{yy} = 1.00$$

$$C_{mz} = 1.00 \quad C_{yz} = 0.64$$

$$C_{mLT} = 1.00 \quad C_{zy} = 1.00$$

$$C_{zz} = 0.65$$

$$M_{2,Rk} = f_y \cdot W_{pl,2} = 355 \cdot 1391725 = 494.06 \text{ kNm}$$

$$\begin{aligned} \frac{N_{Ed}^{comp}}{N_{b,Rd,2}} + k_{21} \cdot \frac{M_{1,Ed}}{M_{y,b,Rd}} + k_{22} \cdot \frac{M_{2,Ed}}{M_{2,Rk}} &= \\ = \frac{0.00}{5782.46} + 0.52 \cdot \frac{1304.29}{1819.14} + 1.54 \cdot \frac{0.01}{\frac{494.06}{1.05}} &= 0.37 \leq 1.00 \quad (6.62) - \text{OK} \end{aligned}$$

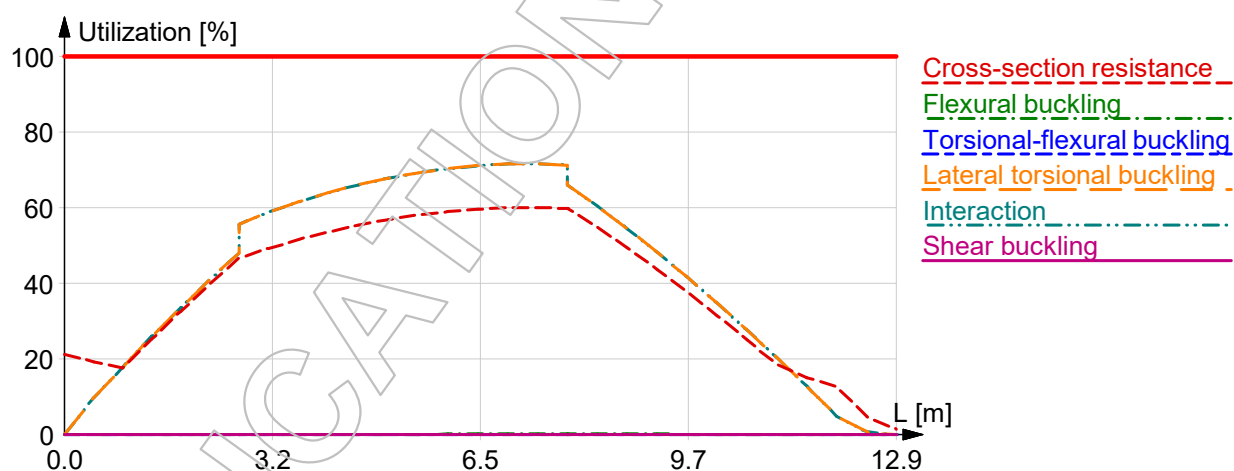
Interaction between normal force and bending, 2nd order - Part 1-1: 6.3.3

Not relevant

Shear buckling - Part 1-5: 5

$$\frac{h_w}{t} = \frac{540}{15} = 34.8 \leq \frac{72}{\eta} \cdot \varepsilon = \frac{72}{1.20} \cdot 0.81 = 48.8 \rightarrow \text{Not relevant}$$

Summary



3.2.5 Utnyttelse søyler og bjelker

Max. of load combinations, Bar, Utilization

Member	Section	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	IA
[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
B.1.1	HE-B 140	5	B1: Dominerende vindlast, vindretning fra Sør	4	1	0	4	1	5
B.2.1	HE-B 140	6	B2: Dominerende vindlast, vindretning fra Vest	3	6	2	4	0	4
B.3.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Nord	3	1	0	4	0	4
B.4.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Nord	3	0	0	4	0	4
B.5.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Nord	3	0	0	4	0	4
B.6.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	0	4
B.7.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	0	4
B.8.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Nord	3	0	0	4	0	4
B.9.1	HE-B 140	3	B2: Dominerende vindlast, vindretning fra Øst	3	2	1	2	0	3
B.10.1	HE-B 140	3	B2: Dominerende vindlast, vindretning fra Øst	3	0	0	3	0	3
B.11.1	HE-B 180	5	B1: Dominerende vindlast, vindretning fra Sør	3	0	0	5	0	5
B.12.1	HE-B 180	4	B1: Dominerende vindlast, vindretning fra Sør	3	0	0	4	0	4
B.13.1	HE-B 180	4	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	0	4
B.14.1	HE-B 180	4	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	0	4
B.15.1	HE-B 180	3	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	3	0	3
B.16.1	HE-B 180	3	B1: Dominerende vindlast, vindretning fra Øst	2	0	0	3	1	3
B.17.1	HE-B 180	5	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	0	5
B.18.1	HE-B 180	5	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	0	5
B.19.1	HE-B 180	3	B1: Dominerende vindlast, vindretning fra Øst	2	0	0	3	0	3
B.20.1	HE-B 180	4	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	0	4
B.21.1	HE-B 160	4	B1: Dominerende vindlast, vindretning fra Sør	3	0	0	4	2	4
B.22.1	HE-B 160	10	B1: Dominerende vindlast, vindretning fra Nord	10	0	0	10	0	10
B.23.1	HE-B 160	5	B1: Dominerende vindlast, vindretning fra Sør	5	1	0	3	3	4
B.24.1	HE-B 160	5	B1: Dominerende vindlast, vindretning fra Vest	4	2	1	5	2	5
B.25.1	HE-B 160	6	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	3	6
B.26.1	HE-B 160	6	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	3	6
B.27.1	HE-B 160	3	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	3	2	3
B.28.1	HE-B 160	5	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	1	5
B.29.1	HE-B 160	6	B1: Dominerende vindlast, vindretning fra Nord	4	1	0	5	2	6
B.30.1	HE-B 160	9	B1: Dominerende vindlast, vindretning fra Vest	9	0	0	8	1	9
B.31.1	HE-B 160	5	B1: Dominerende vindlast, vindretning fra Vest	4	1	0	5	2	5
B.32.1	HE-B 160	5	B1: Dominerende vindlast, vindretning fra Vest	4	1	0	5	0	5
B.33.1	HE-B 160	5	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	3	5
B.34.1	HE-B 160	5	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	3	5
B.35.1	HE-B 160	3	B1: Dominerende vindlast, vindretning fra Øst	2	0	0	3	2	3
B.36.1	HE-B 160	5	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	1	5
B.37.1	HE-B 200	4	B1: Dominerende vindlast, vindretning fra Nord	3	0	0	4	2	4
B.38.1	HE-B 200	5	B1: Dominerende vindlast, vindretning fra Nord	4	0	0	5	0	5
B.39.1	HE-B 200	5	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	0	5
B.40.1	HE-B 200	5	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	0	5
B.41.1	HE-B 200	2	B1: Dominerende vindlast, vindretning fra Øst	2	0	0	2	1	2
B.42.1	HE-B 200	3	B1: Dominerende vindlast, vindretning fra Øst	2	0	0	3	0	3
B.43.1	HE-B 200	5	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	0	5
B.44.1	HE-B 200	5	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	5	0	5
B.45.1	HE-B 200	3	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	3	0	3
B.46.1	HE-B 200	4	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	0	4
B.47.1	HE-B 140	5	B2: Dominerende vindlast, vindretning fra Nord	4	3	1	4	3	5
B.48.1	HE-B 140	4	B2: Dominerende vindlast, vindretning fra Nord	3	3	1	4	2	4
B.49.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Sør	3	0	0	4	3	4

Member	Section	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	IA
[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
B.50.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Sør	3	0	0	4	2	4
B.51.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Sør	3	0	0	4	3	4
B.52.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	2	4
B.53.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	3	4
B.54.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	4	2	4
B.55.1	HE-B 140	3	B2: Dominerende vindlast, vindretning fra Øst	2	1	1	2	2	3
B.56.1	HE-B 140	3	B1: Dominerende vindlast, vindretning fra Vest	3	0	0	2	1	3
B.57.1	HE-B 160	6	B2: Dominerende vindlast, vindretning fra Nord	5	6	6	0	1	5
B.58.1	HE-B 160	5	B2: Dominerende vindlast, vindretning fra Nord	4	5	3	1	1	4
B.59.1	HE-B 160	6	B2: Dominerende vindlast, vindretning fra Sør	4	6	4	1	1	5
B.60.1	HE-B 160	3	B2: Dominerende vindlast, vindretning fra Sør	3	3	3	0	2	3
B.61.1	HE-B 160	69	B2: Dominerende snølast, vindretning fra Øst	48	5	2	68	0	69
B.62.1	HE-B 160	73	B2: Dominerende snølast, vindretning fra Øst	48	9	3	67	0	73
B.63.1	HE-B 160	71	B2: Dominerende snølast, vindretning fra Øst	48	6	2	68	0	71
B.64.1	HE-B 160	70	B2: Dominerende snølast, vindretning fra Øst	48	4	2	67	0	70
B.65.1	HE-B 160	70	B2: Dominerende snølast, vindretning fra Vest	48	4	1	68	0	70
B.66.1	HE-B 160	70	B2: Dominerende snølast, vindretning fra Vest	48	4	1	68	0	70
B.67.1	HE-B 160	71	B2: Dominerende snølast, vindretning fra Vest	48	4	1	68	0	71
B.68.1	HE-B 160	71	B2: Dominerende snølast, vindretning fra Vest	48	5	2	67	0	71
B.69.1	HE-B 120	82	B2: Dominerende snølast, vindretning fra Vest	57	10	3	75	0	82
B.70.1	HE-B 120	78	B2: Dominerende snølast, vindretning fra Øst	57	3	1	78	0	78
B.71.1	HE-B 220	89	B2: Dominerende snølast, vindretning fra Vest	67	2	1	89	0	89
B.72.1	HE-B 220	50	B2: Dominerende snølast, vindretning fra Vest	38	2	1	49	0	50
B.73.1	HE-B 220	59	B2: Dominerende snølast, vindretning fra Vest	44	2	1	58	0	59
B.74.1	HE-B 220	57	B2: Dominerende snølast, vindretning fra Vest	43	2	1	56	0	57
B.75.1	HE-B 220	45	B2: Dominerende snølast, vindretning fra Vest	40	1	1	44	0	45
B.76.1	HE-B 220	43	B2: Dominerende snølast, vindretning fra Nord	39	1	1	43	0	43
B.77.1	HE-B 220	58	B2: Dominerende snølast, vindretning fra Vest	44	1	1	57	0	58
B.78.1	HE-B 220	58	B2: Dominerende snølast, vindretning fra Vest	44	1	0	57	0	58
B.79.1	HE-B 220	31	B2: Dominerende snølast, vindretning fra Øst	26	0	0	31	0	31
B.80.1	HE-B 220	31	B2: Dominerende snølast, vindretning fra Øst	26	0	0	31	0	31
B.81.1	HE-B 300	13	B2: Dominerende snølast, vindretning fra Vest	11	0	0	13	0	13
B.82.1	HE-B 300	15	B2: Dominerende snølast, vindretning fra Vest	13	1	1	15	0	15
B.83.1	HE-B 300	15	B2: Dominerende snølast, vindretning fra Vest	12	1	1	15	0	15
B.84.1	HE-B 300	16	B2: Dominerende snølast, vindretning fra Øst	13	1	1	15	0	16
B.85.1	HE-B 300	16	B2: Dominerende snølast, vindretning fra Øst	13	1	1	15	0	16
B.86.1	HE-B 300	9	B2: Dominerende snølast, vindretning fra Øst	8	1	1	8	0	9
B.87.1	HE-B 300	9	B2: Dominerende snølast, vindretning fra Øst	8	0	0	8	0	9
B.88.1	HE-B 300	37	B2: Dominerende snølast, vindretning fra Vest	31	0	0	37	0	37
B.89.1	HE-B 300	21	B2: Dominerende snølast, vindretning fra Vest	18	1	1	21	0	21
B.90.1	HE-B 300	5	B1: Dominerende vindlast, vindretning fra Vest	4	1	1	4	0	5
B.91.1	HE-B 300	15	B2: Dominerende snølast, vindretning fra Vest	12	1	1	14	0	15
B.92.1	HE-B 300	15	B2: Dominerende snølast, vindretning fra Øst	12	1	1	14	0	15
B.93.1	HE-B 300	15	B2: Dominerende snølast, vindretning fra Øst	12	1	1	14	0	15
B.94.1	HE-B 300	8	B2: Dominerende snølast, vindretning fra Øst	7	1	0	8	0	8
B.95.1	HE-B 300	8	B2: Dominerende snølast, vindretning fra Øst	7	0	0	8	0	8
B.96.1	HE-B 200	64	B2: Dominerende snølast, vindretning fra Vest	47	2	1	63	0	64
B.97.1	HE-B 200	38	B2: Dominerende snølast, vindretning fra Vest	28	3	2	37	0	38
B.98.1	HE-B 200	39	B2: Dominerende snølast, vindretning fra Vest	29	3	2	38	0	39
B.99.1	HE-B 200	73	B2: Dominerende snølast, vindretning fra Vest	54	3	1	72	0	73
B.100.1	HE-B 200	42	B2: Dominerende snølast, vindretning fra Sør	37	1	1	42	0	42
B.101.1	HE-B 200	54	B2: Dominerende snølast, vindretning fra Sør	47	1	1	54	0	54

Member	Section	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	IA
[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
B.102.1	HE-B 200	72	B2: Dominerende snølast, vindretning fra Vest	53	1	1	72	0	72
B.103.1	HE-B 200	72	B2: Dominerende snølast, vindretning fra Vest	53	1	0	72	0	72
B.104.1	HE-B 200	39	B2: Dominerende snølast, vindretning fra Øst	32	1	0	38	0	39
B.105.1	HE-B 200	39	B2: Dominerende snølast, vindretning fra Øst	32	1	0	39	0	39
B.106.1	HE-B 160	69	B2: Dominerende snølast, vindretning fra Sør	48	5	2	68	0	69
B.107.1	HE-B 160	72	B2: Dominerende snølast, vindretning fra Øst	48	9	3	67	0	72
B.108.1	HE-B 160	71	B2: Dominerende snølast, vindretning fra Øst	48	6	2	68	0	71
B.109.1	HE-B 160	70	B2: Dominerende snølast, vindretning fra Vest	48	4	1	67	0	70
B.110.1	HE-B 160	71	B2: Dominerende snølast, vindretning fra Vest	48	4	2	68	0	71
B.111.1	HE-B 160	71	B2: Dominerende snølast, vindretning fra Vest	48	4	2	67	0	71
B.112.1	HE-B 160	71	B2: Dominerende snølast, vindretning fra Vest	48	4	2	68	0	71
B.113.1	HE-B 160	71	B2: Dominerende snølast, vindretning fra Vest	48	5	2	67	0	71
B.114.1	HE-B 120	82	B2: Dominerende snølast, vindretning fra Vest	57	10	3	75	0	82
B.115.1	HE-B 120	78	B2: Dominerende snølast, vindretning fra Øst	57	3	1	78	0	78
B.116.1	HE-B 300	2	B2: Dominerende vindlast, vindretning fra Øst	2	1	1	1	0	2
B.117.1	HE-B 300	7	B2: Dominerende snølast, vindretning fra Øst	6	1	1	6	0	7
B.118.1	HE-B 300	6	B2: Dominerende snølast, vindretning fra Øst	6	1	1	6	0	6
B.119.1	HE-B 300	2	B2: Dominerende vindlast, vindretning fra Øst	2	1	1	0	0	1
B.120.1	HE-B 140	4	B1: Dominerende vindlast, vindretning fra Nord	3	0	0	4	2	4
B.121.1	HE-B 140	9	B1: Dominerende vindlast, vindretning fra Nord	6	1	0	9	2	9
B.122.1	HE-B 140	23	B2: Dominerende snølast, vindretning fra Vest	18	1	0	2	23	23
B.123.1	HE-B 140	12	B1: Dominerende vindlast, vindretning fra Vest	8	0	0	12	9	12
B.124.1	HE-B 140	11	B1: Dominerende vindlast, vindretning fra Sør	8	0	0	11	5	11
B.125.1	HE-B 140	11	B1: Dominerende vindlast, vindretning fra Sør	8	1	0	10	4	11
B.126.1	HE-B 140	11	B1: Dominerende vindlast, vindretning fra Sør	8	5	3	11	6	11
B.127.1	HE-B 140	16	B2: Dominerende snølast, vindretning fra Sør	15	3	3	9	15	16
B.128.1	HE-B 140	21	B1: Dominerende vindlast, vindretning fra Sør	16	3	1	2	20	21
B.129.1	HE-B 140	10	B1: Dominerende vindlast, vindretning fra Sør	7	1	0	9	2	10
B.130.1	HE-B 220	90	B2: Dominerende snølast, vindretning fra Sør	72	0	0	90	0	90
B.131.1	HE-B 160	81	B2: Dominerende snølast, vindretning fra Sør	58	1	0	81	0	81
B.132.1	HE-B 160	74	B2: Dominerende snølast, vindretning fra Nord	51	5	2	73	0	74
B.133.1	HE-B 180	72	B2: Dominerende snølast, vindretning fra Nord	50	6	3	69	0	72
B.134.1	HE-B 180	72	B2: Dominerende snølast, vindretning fra Nord	50	7	3	69	0	72
B.135.1	HE-B 180	72	B2: Dominerende snølast, vindretning fra Nord	50	7	3	69	0	72
B.136.1	HE-B 180	73	B2: Dominerende snølast, vindretning fra Nord	51	6	3	70	0	73
B.137.1	HE-B 120	43	B2: Dominerende snølast, vindretning fra Nord	35	6	3	40	0	43
B.138.1	HE-B 300	84	B2: Dominerende snølast, vindretning fra Øst	75	0	0	84	0	84
B.139.1	HE-B 160	38	B1: Dominerende vindlast, vindretning fra Sør	34	1	1	38	9	38
B.140.1	HE-B 140	29	B1: Dominerende vindlast, vindretning fra Sør	25	6	1	12	27	29
B.141.1	HE-B 120	3	B2: Dominerende vindlast, vindretning fra Vest	3	3	1	3	2	3
B.142.1	HE-B 140	2	B2: Dominerende vindlast, vindretning fra Vest	2	1	1	0	1	2
B.143.1	HE-B 140	5	B1: Dominerende vindlast, vindretning fra Sør	4	1	0	5	3	5
B.144.1	HE-B 140	9	B1: Dominerende vindlast, vindretning fra Sør	6	3	1	8	4	9
B.145.1	HE-B 140	3	B2: Dominerende vindlast, vindretning fra Vest	3	2	2	2	0	2
B.146.1	HE-B 140	6	B1: Dominerende vindlast, vindretning fra Vest	4	0	0	6	0	6
B.147.1	HE-B 140	9	B1: Dominerende vindlast, vindretning fra Vest	6	1	0	9	0	9
B.148.1	HE-B 140	2	B2: Dominerende vindlast, vindretning fra Sør	2	0	0	2	0	2
B.149.1	HE-B 300	54	B2: Dominerende snølast, vindretning fra Vest	44	0	0	54	0	54
B.150.1	HE-B 120	59	B2: Dominerende vindlast, vindretning fra Øst	59	23	8	7	8	57
B.151.1	HE-B 120	63	B2: Dominerende vindlast, vindretning fra Øst	63	22	8	5	7	57
B.152.1	HE-B 300	12	B1: Dominerende vindlast, vindretning fra Øst	7	1	0	11	0	12
B.153.1	HE-B 120	8	B1: Dominerende vindlast, vindretning fra Øst	6	4	1	3	7	8

Member	Section	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	IA
[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
B.154.1	HE-B 120	7	B1: Dominerende vindlast, vindretning fra Vest	6	3	1	3	7	7
B.155.1	HE-B 300	10	B1: Dominerende vindlast, vindretning fra Øst	6	0	0	10	0	10
B.156.1	HE-B 300	3	B1: Dominerende vindlast, vindretning fra Øst	3	0	0	3	0	3
B.157.1	HE-B 300	7	B1: Dominerende vindlast, vindretning fra Øst	4	0	0	7	0	7
B.158.1	HE-B 300	12	B1: Dominerende vindlast, vindretning fra Øst	7	1	0	11	0	12
B.159.1	HE-B 160	23	B1: Dominerende vindlast, vindretning fra Vest	10	10	1	23	0	23
B.160.1	HE-B 120	56	B1: Dominerende vindlast, vindretning fra Sør	21	7	0	55	0	56
B.161.1	HE-B 140	11	B1: Dominerende vindlast, vindretning fra Nord	9	7	2	11	1	11
B.162.1	HE-B 140	4	B2: Dominerende vindlast, vindretning fra Nord	4	4	3	2	2	4
B.163.1	HE-B 160	22	B1: Dominerende vindlast, vindretning fra Nord	13	3	1	22	0	22
B.164.1	HE-B 160	59	B1: Dominerende vindlast, vindretning fra Vest	26	3	0	59	0	59
B.165.1	HE-B 140	15	B1: Dominerende vindlast, vindretning fra Vest	12	3	1	5	13	15
B.166.1	HE-B 160	51	B1: Dominerende vindlast, vindretning fra Nord	24	2	0	50	0	51
B.167.1	HE-B 140	13	B1: Dominerende vindlast, vindretning fra Vest	12	3	1	5	13	13
B.168.1	HE-B 160	36	B1: Dominerende vindlast, vindretning fra Øst	19	6	1	36	23	36
B.169.1	HE-B 140	11	B2: Dominerende vindlast, vindretning fra Sør	9	11	3	10	0	11
B.170.1	HE-B 140	13	B1: Dominerende vindlast, vindretning fra Nord	12	4	2	0	13	13
B.171.1	HE-B 120	4	B1: Dominerende vindlast, vindretning fra Nord	2	1	0	4	0	4
B.172.1	HE-B 600	72	B2: Dominerende snølast, vindretning fra Nord	60	0	0	72	1	72
B.173.1	HE-B 800	86	B2: Dominerende snølast, vindretning fra Vest	65	1	0	86	0	86
B.174.1	UKB 914...	5	B2: Dominerende vindlast, vindretning fra Vest	4	1	1	2	2	5
B.175.1	UKB 914...	89	B2: Dominerende snølast, vindretning fra Vest	42	2	1	87	0	89
B.176.1	UKB 914...	88	B2: Dominerende snølast, vindretning fra Vest	42	1	1	87	0	88
B.177.1	UKB 914...	88	B2: Dominerende snølast, vindretning fra Vest	41	1	1	87	0	88
B.178.1	UKB 914...	88	B2: Dominerende snølast, vindretning fra Nord	41	1	1	87	0	88
B.179.1	UKB 914...	88	B2: Dominerende snølast, vindretning fra Vest	41	1	1	87	0	88
B.180.1	UKB 914...	89	B2: Dominerende snølast, vindretning fra Vest	42	4	2	87	0	89
B.181.1	UKB 914...	88	B2: Dominerende snølast, vindretning fra Vest	41	2	1	86	0	88
B.182.1	UKB 914...	87	B2: Dominerende snølast, vindretning fra Vest	51	1	1	86	0	87
B.183.1	UKB 914...	6	B2: Dominerende vindlast, vindretning fra Vest	6	1	1	2	3	6
B.184.1	HE-B 120	67	B1: Dominerende vindlast, vindretning fra Sør	41	23	5	60	0	67
B.185.1	HE-B 160	36	B1: Dominerende vindlast, vindretning fra Sør	23	21	7	27	0	36
B.186.1	HE-B 120	84	B1: Dominerende vindlast, vindretning fra Sør	43	38	8	60	0	84
B.187.1	HE-B 120	78	B1: Dominerende vindlast, vindretning fra Sør	42	28	6	60	0	78
B.188.1	HE-B 120	76	B1: Dominerende vindlast, vindretning fra Sør	42	23	5	60	0	76
B.189.1	HE-B 120	78	B1: Dominerende vindlast, vindretning fra Nord	42	31	7	60	0	78
B.190.1	HE-B 120	86	B1: Dominerende vindlast, vindretning fra Nord	44	38	8	60	0	86
B.191.1	HE-B 160	40	B1: Dominerende vindlast, vindretning fra Nord	25	19	7	31	0	40
B.192.1	HE-B 120	66	B1: Dominerende vindlast, vindretning fra Nord	44	16	4	61	0	66
B.193.1	HE-B 220	8	B2: Dominerende snølast, vindretning fra Sør	8	3	3	6	0	8
B.194.1	HE-B 220	40	B2: Dominerende snølast, vindretning fra Sør	30	5	3	39	0	40
B.195.1	HE-B 220	39	B2: Dominerende snølast, vindretning fra Sør	30	3	2	38	0	39
B.196.1	HE-B 220	40	B2: Dominerende snølast, vindretning fra Nord	30	3	2	39	0	40
B.197.1	HE-B 220	41	B2: Dominerende snølast, vindretning fra Nord	31	5	3	39	0	41
B.198.1	HE-B 220	42	B2: Dominerende snølast, vindretning fra Nord	31	6	4	39	0	42
B.199.1	HE-B 220	78	B2: Dominerende vindlast, vindretning fra Vest	74	4	4	0	50	78
B.200.1	HE-B 220	44	B2: Dominerende snølast, vindretning fra Sør	32	9	5	40	0	44
B.201.1	HE-B 220	35	B2: Dominerende snølast, vindretning fra Sør	27	5	3	34	0	35
B.202.1	HE-B 120	52	B2: Dominerende snølast, vindretning fra Nord	42	11	5	49	0	52
B.203.1	HE-B 300	79	B2: Dominerende snølast, vindretning fra Nord	45	12	5	71	0	79
B.204.1	HE-B 220	84	B2: Dominerende snølast, vindretning fra Nord	53	12	5	75	0	84
B.205.1	HE-B 220	91	B2: Dominerende snølast, vindretning fra Sør	53	16	6	79	0	91

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[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
B.206.1	HE-B 140	32	B2: Dominerende snølast, vindretning fra Sør	27	6	4	30	0	32
B.207.1	HE-B 160	86	B2: Dominerende snølast, vindretning fra Nord	59	6	2	84	0	86
B.208.1	HE-B 160	84	B2: Dominerende snølast, vindretning fra Nord	58	7	2	81	0	84
B.209.1	HE-B 160	84	B2: Dominerende snølast, vindretning fra Nord	60	6	2	82	0	84
B.210.1	HE-B 160	81	B2: Dominerende snølast, vindretning fra Nord	58	5	2	80	0	81
B.211.1	HE-B 160	83	B2: Dominerende snølast, vindretning fra Sør	59	6	2	81	0	83
B.212.1	HE-B 160	85	B2: Dominerende snølast, vindretning fra Sør	59	7	2	82	0	85
B.213.1	HE-B 160	87	B2: Dominerende snølast, vindretning fra Sør	60	6	2	85	0	87
B.214.1	HE-B 120	23	B2: Dominerende vindlast, vindretning fra Sør	16	14	3	9	17	23
B.215.1	HE-B 120	23	B2: Dominerende vindlast, vindretning fra Nord	15	14	3	8	16	23
B.216.1	HE-B 120	13	B2: Dominerende vindlast, vindretning fra Vest	9	13	8	1	0	13
B.217.1	HE-B 120	19	B2: Dominerende vindlast, vindretning fra Vest	6	17	4	3	0	19
B.218.1	HE-B 120	2	B2: Dominerende vindlast, vindretning fra Øst	1	2	1	1	0	2
B.219.1	HE-B 120	11	B2: Dominerende vindlast, vindretning fra Øst	6	11	7	1	0	11
B.220.1	HE-B 120	17	B2: Dominerende vindlast, vindretning fra Øst	4	16	3	3	0	17
B.221.1	HE-B 120	1	B2: Dominerende vindlast, vindretning fra Sør	1	0	0	1	0	1
B.222.1	HE-B 120	14	B2: Dominerende vindlast, vindretning fra Vest	10	13	8	1	0	14
B.223.1	HE-B 120	20	B2: Dominerende vindlast, vindretning fra Vest	6	18	4	3	0	20
B.224.1	HE-B 120	2	B2: Dominerende vindlast, vindretning fra Nord	2	2	1	1	0	2
B.225.1	HE-B 120	4	B1: Dominerende vindlast, vindretning fra Sør	4	0	0	0	2	2
B.226.1	HE-B 120	3	B2: Dominerende vindlast, vindretning fra Nord	2	2	0	3	3	3
B.227.1	HE-B 120	3	B2: Dominerende vindlast, vindretning fra Sør	2	3	2	0	2	3
B.228.1	HE-B 180	62	B2: Dominerende snølast, vindretning fra Vest	59	1	1	60	9	62
B.229.1	HE-B 120	3	B2: Dominerende vindlast, vindretning fra Sør	3	0	0	0	1	2
B.230.1	HE-B 120	3	B1: Dominerende vindlast, vindretning fra Vest	3	1	0	2	3	3
B.231.1	HE-B 120	3	B1: Dominerende vindlast, vindretning fra Vest	3	1	0	1	3	3
B.232.1	HE-B 120	4	B2: Dominerende vindlast, vindretning fra Nord	4	1	0	1	3	4
B.233.1	HE-B 120	8	B2: Dominerende vindlast, vindretning fra Sør	4	6	1	2	4	8
B.234.1	HE-B 120	7	B2: Dominerende vindlast, vindretning fra Sør	4	6	1	1	3	7
B.235.1	HE-B 120	7	B2: Dominerende vindlast, vindretning fra Sør	4	6	1	1	3	7
B.236.1	HE-B 120	7	B2: Dominerende vindlast, vindretning fra Sør	4	6	1	1	3	7
B.237.1	HE-B 120	7	B2: Dominerende vindlast, vindretning fra Sør	4	5	1	1	3	7
B.238.1	HE-B 120	7	B2: Dominerende vindlast, vindretning fra Sør	4	5	1	1	3	7
B.239.1	HE-B 120	8	B2: Dominerende vindlast, vindretning fra Sør	5	5	1	2	4	8
B.240.1	HE-B 120	11	B2: Dominerende vindlast, vindretning fra Vest	9	8	4	4	4	11
B.241.1	HE-B 120	29	B2: Dominerende vindlast, vindretning fra Vest	8	27	4	2	4	29
B.242.1	HE-B 120	30	B2: Dominerende vindlast, vindretning fra Vest	8	27	4	1	4	30
B.243.1	HE-B 120	30	B2: Dominerende vindlast, vindretning fra Vest	9	27	4	2	4	30
C.1.1	KKR 120...	82	B2: Dominerende snølast, vindretning fra Øst	39	82	39	0	0	-
C.2.1	KKR 120...	83	B2: Dominerende snølast, vindretning fra Vest	39	83	39	0	0	-
C.3.1	KKR 120...	83	B2: Dominerende snølast, vindretning fra Vest	39	83	39	0	0	-
C.4.1	KKR 120...	85	B2: Dominerende snølast, vindretning fra Sør	40	85	40	0	0	-
C.5.1	KKR 120...	73	B2: Dominerende snølast, vindretning fra Øst	34	73	34	0	0	-
C.6.1	KKR 120...	50	B1: Dominerende vindlast, vindretning fra Øst	24	50	24	0	0	-
C.7.1	KKR 120...	21	B2: Dominerende vindlast, vindretning fra Vest	10	21	10	0	0	-
C.8.1	KKR 120...	84	B2: Dominerende snølast, vindretning fra Øst	40	84	40	0	0	-
C.9.1	KKR 120...	82	B2: Dominerende snølast, vindretning fra Sør	39	82	39	0	0	-
C.10.1	KKR 120...	76	B1: Dominerende vindlast, vindretning fra Sør	36	76	36	0	0	-
C.11.1	KKR 120...	48	B2: Dominerende vindlast, vindretning fra Sør	23	48	23	0	0	-
C.12.1	KKR 180...	67	B2: Dominerende snølast, vindretning fra Øst	22	67	47	0	0	-
C.13.1	KKR 180...	62	B2: Dominerende snølast, vindretning fra Vest	19	62	44	0	0	-
C.14.1	KKR 180...	69	B2: Dominerende snølast, vindretning fra Vest	23	69	48	0	0	-

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[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
C.15.1	KKR 180...	77	B2: Dominerende snølast, vindretning fra Øst	29	77	54	0	0	-
C.16.1	KKR 180...	68	B2: Dominerende snølast, vindretning fra Øst	23	68	48	0	0	-
C.17.1	KKR 180...	56	B2: Dominerende snølast, vindretning fra Nord	16	56	39	0	0	-
C.18.1	KKR 180...	26	B2: Dominerende snølast, vindretning fra Nord	3	26	18	0	0	-
C.19.1	KKR 180...	72	B2: Dominerende snølast, vindretning fra Vest	25	72	50	0	0	-
C.20.1	KKR 180...	64	B2: Dominerende snølast, vindretning fra Sør	20	64	45	0	0	-
C.21.1	KKR 180...	72	B2: Dominerende snølast, vindretning fra Nord	26	72	51	0	0	-
C.22.1	KKR 180...	40	B2: Dominerende snølast, vindretning fra Nord	8	40	28	0	0	-
C.23.1	KKR 180...	23	B2: Dominerende snølast, vindretning fra Nord	3	23	16	0	0	-
C.24.1	KKR 180...	33	B2: Dominerende snølast, vindretning fra Nord	5	33	23	0	0	-
C.25.1	KKR 180...	48	B2: Dominerende snølast, vindretning fra Øst	11	48	34	0	0	-
C.26.1	KKR 180...	42	B2: Dominerende snølast, vindretning fra Nord	9	42	29	0	0	-
C.27.1	KKR 180...	37	B2: Dominerende snølast, vindretning fra Øst	7	37	26	0	0	-
C.28.1	KKR 180...	23	B1: Dominerende vindlast, vindretning fra Nord	3	23	16	0	0	-
C.29.1	KKR 180...	41	B2: Dominerende snølast, vindretning fra Vest	8	41	29	0	0	-
C.30.1	KKR 180...	46	B1: Dominerende vindlast, vindretning fra Sør	10	46	32	0	0	-
C.31.1	KKR 180...	77	B2: Dominerende snølast, vindretning fra Sør	29	77	54	0	0	-
C.32.1	KKR 180...	71	B2: Dominerende snølast, vindretning fra Nord	25	71	50	0	0	-
C.33.1	KKR 180...	27	B2: Dominerende snølast, vindretning fra Sør	3	27	19	0	0	-
C.34.1	KKR 180...	31	B2: Dominerende snølast, vindretning fra Sør	5	31	22	0	0	-
C.35.1	KKR 180...	46	B2: Dominerende snølast, vindretning fra Øst	10	46	32	0	0	-
C.36.1	KKR 180...	40	B2: Dominerende snølast, vindretning fra Sør	8	40	28	0	0	-
C.37.1	KKR 180...	35	B2: Dominerende snølast, vindretning fra Øst	6	35	24	0	0	-
C.38.1	KKR 180...	21	B1: Dominerende vindlast, vindretning fra Sør	2	21	15	0	0	-
C.39.1	KKR 180...	82	B2: Dominerende snølast, vindretning fra Vest	33	82	57	0	0	-
C.40.1	KKR 180...	56	B1: Dominerende vindlast, vindretning fra Nord	15	56	39	0	0	-
C.41.1	KKR 180...	64	B2: Dominerende snølast, vindretning fra Vest	20	64	45	0	0	-
C.42.1	KKR 180...	86	B2: Dominerende snølast, vindretning fra Sør	37	86	61	0	0	-
C.43.1	KKR 180...	54	B2: Dominerende snølast, vindretning fra Øst	38	54	38	0	0	-
C.44.1	KKR 180...	44	B2: Dominerende snølast, vindretning fra Vest	31	44	31	0	0	-
C.45.1	KKR 180...	56	B2: Dominerende snølast, vindretning fra Vest	39	56	39	0	0	-
C.46.1	KKR 180...	64	B2: Dominerende snølast, vindretning fra Øst	45	64	45	0	0	-
C.47.1	KKR 180...	56	B2: Dominerende snølast, vindretning fra Øst	39	56	39	0	0	-
C.48.1	KKR 180...	46	B2: Dominerende snølast, vindretning fra Sør	32	46	32	0	0	-
C.49.1	KKR 180...	20	B2: Dominerende snølast, vindretning fra Sør	14	20	14	0	0	-
C.50.1	KKR 180...	93	B2: Dominerende snølast, vindretning fra Nord	65	93	65	0	0	-
C.51.1	KKR 180...	59	B1: Dominerende vindlast, vindretning fra Nord	41	59	41	0	0	-
C.52.1	KKR 180...	58	B1: Dominerende vindlast, vindretning fra Sør	41	58	41	0	0	-
C.53.1	KKR 180...	81	B2: Dominerende vindlast, vindretning fra Sør	56	81	56	0	0	-
C.54.1	KKR 120...	82	B2: Dominerende snølast, vindretning fra Øst	39	82	39	0	0	-
C.55.1	KKR 120...	83	B2: Dominerende snølast, vindretning fra Vest	39	83	39	0	0	-
C.56.1	KKR 120...	85	B2: Dominerende snølast, vindretning fra Nord	40	85	40	0	0	-
C.57.1	KKR 120...	72	B2: Dominerende snølast, vindretning fra Øst	34	72	34	0	0	-
C.58.1	KKR 120...	48	B1: Dominerende vindlast, vindretning fra Øst	23	48	23	0	0	-
C.59.1	KKR 120...	21	B2: Dominerende vindlast, vindretning fra Vest	10	21	10	0	0	-
C.60.1	KKR 120...	84	B2: Dominerende snølast, vindretning fra Øst	40	84	40	0	0	-
C.61.1	KKR 120...	75	B1: Dominerende vindlast, vindretning fra Nord	35	75	35	0	0	-
C.62.1	KKR 120...	51	B2: Dominerende vindlast, vindretning fra Nord	24	51	24	0	0	-
C.63.1	KKR 80x...	77	B2: Dominerende snølast, vindretning fra Øst	19	77	19	0	0	-
C.64.1	KKR 80x...	77	B2: Dominerende snølast, vindretning fra Sør	19	77	19	0	0	-
C.65.1	KKR 80x...	79	B2: Dominerende snølast, vindretning fra Sør	20	79	20	0	0	-
C.66.1	KKR 70x...	99	B2: Dominerende snølast, vindretning fra Øst	20	99	20	0	0	-

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[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
C.67.1	KKR 70x...	71	B2: Dominerende snølast, vindretning fra Øst	14	71	14	0	0	-
C.68.1	KKR 60x...	84	B2: Dominerende vindlast, vindretning fra Vest	12	84	12	0	0	-
C.69.1	KKR 80x...	80	B2: Dominerende snølast, vindretning fra Øst	20	80	20	0	0	-
C.70.1	KKR 80x...	77	B2: Dominerende snølast, vindretning fra Vest	19	77	19	0	0	-
C.71.1	KKR 80x...	69	B2: Dominerende snølast, vindretning fra Sør	17	69	17	0	0	-
C.72.1	KKR 70x...	71	B2: Dominerende snølast, vindretning fra Øst	14	71	14	0	0	-
C.73.1	KKR 120...	55	B2: Dominerende snølast, vindretning fra Sør	26	55	26	0	0	-
C.74.1	KKR 120...	55	B2: Dominerende snølast, vindretning fra Vest	26	55	26	0	0	-
C.75.1	KKR 120...	54	B2: Dominerende snølast, vindretning fra Vest	25	54	25	0	0	-
C.76.1	KKR 120...	57	B2: Dominerende snølast, vindretning fra Nord	27	57	27	0	0	-
C.77.1	KKR 120...	49	B2: Dominerende snølast, vindretning fra Øst	23	49	23	0	0	-
C.78.1	KKR 120...	43	B2: Dominerende snølast, vindretning fra Sør	20	43	20	0	0	-
C.79.1	KKR 120...	26	B2: Dominerende snølast, vindretning fra Nord	12	26	12	0	0	-
C.80.1	KKR 120...	57	B2: Dominerende snølast, vindretning fra Nord	27	57	27	0	0	-
C.81.1	KKR 120...	51	B2: Dominerende snølast, vindretning fra Sør	24	51	24	0	0	-
C.82.1	KKR 120...	66	B2: Dominerende snølast, vindretning fra Nord	31	66	31	0	0	-
C.83.1	KKR 120...	77	B2: Dominerende vindlast, vindretning fra Nord	36	77	36	0	0	-
C.84.1	KKR 140...	16	B2: Dominerende snølast, vindretning fra Nord	9	16	9	0	0	-
C.85.1	KKR 140...	21	B2: Dominerende snølast, vindretning fra Nord	12	21	12	0	0	-
C.86.1	KKR 140...	25	B2: Dominerende snølast, vindretning fra Øst	14	25	14	0	0	-
C.87.1	KKR 140...	22	B2: Dominerende snølast, vindretning fra Øst	12	22	12	0	0	-
C.88.1	KKR 140...	19	B2: Dominerende snølast, vindretning fra Nord	11	19	11	0	0	-
C.89.1	KKR 140...	12	B2: Dominerende snølast, vindretning fra Nord	7	12	7	0	0	-
C.90.1	KKR 140...	24	B2: Dominerende snølast, vindretning fra Vest	14	24	14	0	0	-
C.91.1	KKR 140...	15	B2: Dominerende snølast, vindretning fra Sør	9	15	9	0	0	-
C.92.1	KKR 140...	99	B2: Dominerende snølast, vindretning fra Nord	56	99	56	0	0	-
C.93.1	KKR 140...	19	B2: Dominerende snølast, vindretning fra Sør	11	19	11	0	0	-
C.94.1	KKR 140...	20	B2: Dominerende snølast, vindretning fra Sør	11	20	11	0	0	-
C.95.1	KKR 140...	24	B2: Dominerende snølast, vindretning fra Øst	13	24	13	0	0	-
C.96.1	KKR 140...	21	B2: Dominerende snølast, vindretning fra Øst	12	21	12	0	0	-
C.97.1	KKR 140...	18	B2: Dominerende snølast, vindretning fra Nord	10	18	10	0	0	-
C.98.1	KKR 140...	12	B2: Dominerende snølast, vindretning fra Nord	7	12	7	0	0	-
C.99.1	KKR 140...	90	B2: Dominerende snølast, vindretning fra Vest	51	90	51	0	0	-
C.100.1	KKR 140...	23	B2: Dominerende snølast, vindretning fra Nord	13	23	13	0	0	-
C.101.1	KKR 140...	47	B2: Dominerende snølast, vindretning fra Sør	27	47	27	0	0	-
C.102.1	KKR 140...	90	B2: Dominerende snølast, vindretning fra Sør	51	90	51	0	0	-
C.103.1	KKR 120...	31	B2: Dominerende snølast, vindretning fra Nord	14	31	14	0	0	-
C.104.1	KKR 120...	27	B2: Dominerende snølast, vindretning fra Nord	12	27	12	0	0	-
C.105.1	KKR 120...	31	B2: Dominerende snølast, vindretning fra Vest	13	31	13	0	0	-
C.106.1	KKR 120...	33	B2: Dominerende snølast, vindretning fra Sør	14	33	14	0	0	-
C.107.1	KKR 120...	28	B2: Dominerende snølast, vindretning fra Øst	12	28	12	0	0	-
C.108.1	KKR 120...	25	B2: Dominerende snølast, vindretning fra Vest	11	25	11	0	0	-
C.109.1	KKR 120...	15	B2: Dominerende snølast, vindretning fra Sør	7	15	7	0	0	-
C.110.1	KKR 120...	88	B2: Dominerende snølast, vindretning fra Sør	38	88	38	0	0	-
C.111.1	KKR 120...	17	B2: Dominerende snølast, vindretning fra Nord	8	17	8	0	0	-
C.112.1	KKR 120...	23	B2: Dominerende snølast, vindretning fra Sør	10	23	10	0	0	-
C.113.1	KKR 120...	49	B2: Dominerende vindlast, vindretning fra Sør	22	49	22	0	0	-
C.114.1	KKR 80x...	77	B2: Dominerende snølast, vindretning fra Øst	19	77	19	0	0	-
C.115.1	KKR 80x...	77	B2: Dominerende snølast, vindretning fra Vest	19	77	19	0	0	-
C.116.1	KKR 80x...	79	B2: Dominerende snølast, vindretning fra Vest	20	79	20	0	0	-
C.117.1	KKR 70x...	99	B2: Dominerende snølast, vindretning fra Øst	20	99	20	0	0	-
C.118.1	KKR 70x...	71	B2: Dominerende snølast, vindretning fra Øst	14	71	14	0	0	-

Member	Section	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	IA
[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
C.119.1	KKR 60x...	83	B2: Dominerende vindlast, vindretning fra Vest	12	83	12	0	0	-
C.120.1	KKR 80x...	80	B2: Dominerende snølast, vindretning fra Øst	20	80	20	0	0	-
C.121.1	KKR 80x...	77	B2: Dominerende snølast, vindretning fra Vest	19	77	19	0	0	-
C.122.1	KKR 80x...	70	B2: Dominerende snølast, vindretning fra Nord	18	70	18	0	0	-
C.123.1	KKR 70x...	67	B2: Dominerende snølast, vindretning fra Øst	13	67	13	0	0	-
C.124.1	KKR 200...	26	B2: Dominerende vindlast, vindretning fra Nord	17	26	17	1	0	26
C.125.1	KKR 200...	41	B2: Dominerende vindlast, vindretning fra Sør	26	41	26	1	1	41
C.126.1	KKR 200...	37	B2: Dominerende snølast, vindretning fra Sør	24	36	23	2	1	37
C.127.1	KKR 200...	37	B2: Dominerende snølast, vindretning fra Sør	24	36	23	1	1	37
C.128.1	KKR 200...	37	B2: Dominerende snølast, vindretning fra Nord	24	36	23	1	1	37
C.129.1	KKR 200...	37	B2: Dominerende snølast, vindretning fra Nord	24	36	23	1	2	37
C.130.1	KKR 200...	37	B2: Dominerende snølast, vindretning fra Nord	24	36	23	1	1	37
C.131.1	KKR 200...	37	B2: Dominerende snølast, vindretning fra Nord	24	36	23	1	1	37
C.132.1	KKR 200...	40	B2: Dominerende vindlast, vindretning fra Nord	26	40	26	1	1	40
C.133.1	KKR 200...	20	B2: Dominerende vindlast, vindretning fra Sør	13	20	13	0	1	20
C.134.1	KKR 220...	34	B2: Dominerende snølast, vindretning fra Nord	21	34	21	0	0	-
C.135.1	KKR 220...	39	B2: Dominerende snølast, vindretning fra Sør	24	39	24	0	0	-
C.136.1	KKR 220...	4	B2: Dominerende snølast, vindretning fra Sør	3	4	3	0	0	-
C.137.1	KKR 220...	13	B2: Dominerende snølast, vindretning fra Nord	11	13	11	0	0	13
C.138.1	KKR 220...	39	B2: Dominerende snølast, vindretning fra Sør	35	39	34	0	0	39
C.139.1	KKR 220...	19	B2: Dominerende vindlast, vindretning fra Sør	19	10	9	0	0	17
C.140.1	KKR 200...	18	B1: Dominerende vindlast, vindretning fra Sør	10	18	10	0	0	-
C.141.1	KKR 200...	35	B2: Dominerende snølast, vindretning fra Vest	28	35	28	1	1	35
C.142.1	KKR 140...	86	B2: Dominerende snølast, vindretning fra Vest	49	85	48	1	2	86
C.143.1	KKR 200...	10	B2: Dominerende snølast, vindretning fra Vest	6	10	6	0	0	-
C.144.1	KKR 200...	27	B2: Dominerende snølast, vindretning fra Vest	20	26	19	0	0	27
C.145.1	KKR 200...	55	B2: Dominerende snølast, vindretning fra Nord	41	55	41	0	1	55
C.146.1	KKR 200...	90	B2: Dominerende snølast, vindretning fra Nord	52	90	52	0	0	-
C.147.1	KKR 220...	5	B2: Dominerende vindlast, vindretning fra Sør	3	5	3	0	0	4
C.148.1	KKR 200...	37	B2: Dominerende snølast, vindretning fra Sør	21	37	21	0	0	-
C.149.1	KKR 180...	38	B2: Dominerende snølast, vindretning fra Nord	6	38	25	0	0	-
C.150.1	KKR 180...	59	B2: Dominerende snølast, vindretning fra Nord	15	59	39	0	0	-
C.151.1	KKR 180...	15	B2: Dominerende snølast, vindretning fra Nord	1	15	10	0	0	-
C.152.1	KKR 140...	16	B2: Dominerende snølast, vindretning fra Nord	8	16	8	0	0	-
C.153.1	KKR 140...	45	B2: Dominerende vindlast, vindretning fra Øst	45	32	25	0	0	44
C.154.1	KKR 140...	35	B2: Dominerende snølast, vindretning fra Vest	18	35	18	0	0	-
C.155.1	KKR 180...	55	B2: Dominerende snølast, vindretning fra Nord	13	55	36	0	0	-
C.156.1	KKR 180...	60	B2: Dominerende snølast, vindretning fra Vest	16	60	39	0	0	-
C.157.1	KKR 180...	60	B2: Dominerende snølast, vindretning fra Vest	15	60	39	0	0	-
C.158.1	KKR 180...	60	B2: Dominerende snølast, vindretning fra Vest	15	60	39	0	0	-
C.159.1	KKR 180...	60	B2: Dominerende snølast, vindretning fra Vest	15	60	39	0	0	-
C.160.1	KKR 180...	29	B2: Dominerende snølast, vindretning fra Sør	4	29	19	0	0	-
C.161.1	KKR 140...	12	B2: Dominerende snølast, vindretning fra Vest	6	12	6	0	0	-
C.162.1	KKR 140...	40	B2: Dominerende vindlast, vindretning fra Øst	40	26	21	0	0	39
C.163.1	KKR 140...	24	B2: Dominerende snølast, vindretning fra Vest	12	24	12	0	0	-
C.164.1	KKR 140...	56	B2: Dominerende snølast, vindretning fra Nord	28	56	28	0	0	-
C.165.1	KKR 180...	2	B2: Dominerende vindlast, vindretning fra Nord	0	2	1	0	0	2
C.166.1	KKR 140...	55	B2: Dominerende snølast, vindretning fra Nord	28	55	28	0	0	-
C.167.1	KKR 140...	48	B2: Dominerende snølast, vindretning fra Sør	25	48	25	0	0	-
C.168.1	KKR 140...	55	B2: Dominerende snølast, vindretning fra Sør	28	55	28	0	0	-
C.169.1	KKR 50x...	53	B1: Dominerende vindlast, vindretning fra Nord	11	53	11	0	0	-
C.170.1	KKR 60x...	47	B1: Dominerende vindlast, vindretning fra Vest	13	47	13	0	0	-

Member	Section	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	IA
[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
C.171.1	KKR 60x...	85	B1: Dominerende vindlast, vindretning fra Vest	24	85	24	0	0	-
C.172.1	KKR 80x...	58	B2: Dominerende vindlast, vindretning fra Sør	18	58	18	0	0	-
C.173.1	KKR 80x...	71	B2: Dominerende vindlast, vindretning fra Nord	22	71	22	0	0	-
C.174.1	KKR 90x...	82	B2: Dominerende snølast, vindretning fra Nord	31	82	31	0	0	-
C.175.1	KKR 90x...	94	B2: Dominerende snølast, vindretning fra Sør	35	94	35	0	0	-
C.176.1	KKR 90x...	76	B2: Dominerende vindlast, vindretning fra Sør	29	76	29	0	0	-
C.177.1	KKR 80x...	58	B2: Dominerende vindlast, vindretning fra Nord	18	58	18	0	0	-
C.178.1	KKR 50x...	42	B2: Dominerende snølast, vindretning fra Nord	21	42	21	0	0	-
C.179.1	KKR 50x...	85	B2: Dominerende snølast, vindretning fra Vest	42	85	42	0	0	-
C.180.1	KKR 50x...	42	B2: Dominerende snølast, vindretning fra Sør	21	42	21	0	0	-
C.181.1	KKR 50x...	83	B2: Dominerende snølast, vindretning fra Nord	41	83	41	0	0	-
C.182.1	KKR 50x...	84	B2: Dominerende snølast, vindretning fra Nord	41	84	41	0	0	-
C.183.1	KKR 50x...	85	B2: Dominerende snølast, vindretning fra Vest	42	85	42	0	0	-
C.184.1	KKR 50x...	85	B2: Dominerende snølast, vindretning fra Vest	42	85	42	0	0	-
C.185.1	KKR 50x...	84	B2: Dominerende snølast, vindretning fra Sør	41	84	41	0	0	-
C.186.1	KKR 180...	38	B1: Dominerende vindlast, vindretning fra Nord	7	38	26	0	0	-
C.187.1	KKR 200...	5	B1: Dominerende vindlast, vindretning fra Nord	5	0	0	0	0	-
C.188.1	KKR 120...	36	B2: Dominerende snølast, vindretning fra Nord	17	36	17	0	0	-
C.189.1	KKR 90x...	72	B2: Dominerende vindlast, vindretning fra Nord	22	72	22	0	0	-
C.190.1	KKR 140...	10	B2: Dominerende snølast, vindretning fra Nord	6	10	6	0	0	-
C.191.1	KKR 140...	78	B2: Dominerende snølast, vindretning fra Nord	44	78	44	0	0	-
C.192.1	KKR 80x...	79	B2: Dominerende snølast, vindretning fra Sør	20	79	20	0	0	-
C.193.1	KKR 120...	69	B1: Dominerende vindlast, vindretning fra Øst	34	67	32	3	2	69
C.194.1	KKR 100...	84	B1: Dominerende vindlast, vindretning fra Nord	31	84	31	0	0	-
C.195.1	KKR 50x...	52	B2: Dominerende vindlast, vindretning fra Nord	5	52	5	0	0	-
C.196.1	KKR 120...	56	B1: Dominerende vindlast, vindretning fra Sør	27	56	27	0	0	-
C.197.1	KKR 50x...	54	B2: Dominerende vindlast, vindretning fra Sør	5	54	5	0	0	-
C.198.1	KKR 120...	82	B2: Dominerende snølast, vindretning fra Vest	39	82	39	0	0	-
C.199.1	KKR 80x...	79	B2: Dominerende snølast, vindretning fra Nord	20	79	20	0	0	-
C.200.1	KKR 120...	83	B2: Dominerende snølast, vindretning fra Vest	39	83	39	0	0	-
C.201.1	KKR 220...	67	B2: Dominerende snølast, vindretning fra Sør	42	67	42	0	0	-
C.202.1	KKR 200...	13	B2: Dominerende snølast, vindretning fra Sør	8	12	8	1	1	13
C.203.1	KKR 200...	14	B2: Dominerende vindlast, vindretning fra Vest	9	14	9	2	1	14
C.204.1	KKR 200...	14	B2: Dominerende snølast, vindretning fra Sør	9	14	9	1	1	14
C.205.1	KKR 200...	14	B2: Dominerende snølast, vindretning fra Nord	9	14	9	0	0	14
C.206.1	KKR 200...	10	B2: Dominerende snølast, vindretning fra Vest	6	10	6	0	0	10
C.207.1	KKR 200...	13	B2: Dominerende snølast, vindretning fra Sør	8	13	8	0	0	13
C.208.1	KKR 200...	85	B2: Dominerende vindlast, vindretning fra Øst	85	3	2	84	62	69
C.209.1	KKR 200...	85	B2: Dominerende vindlast, vindretning fra Øst	85	3	2	83	61	68
C.210.1	KKR 200...	73	B2: Dominerende vindlast, vindretning fra Øst	73	14	11	66	47	71
C.211.1	KKR 200...	72	B2: Dominerende vindlast, vindretning fra Øst	72	10	7	67	47	71
C.212.1	KKR 90x...	67	B2: Dominerende snølast, vindretning fra Sør	25	67	25	0	0	-
C.213.1	KKR 220...	81	B2: Dominerende snølast, vindretning fra Nord	50	81	50	0	0	-
C.214.1	KKR 200...	8	B2: Dominerende vindlast, vindretning fra Sør	6	8	5	1	1	8
C.215.1	KKR 200...	12	B2: Dominerende vindlast, vindretning fra Sør	9	8	5	3	4	12
T.1.1	KKR 140...	65	B2: Dominerende vindlast, vindretning fra Sør	20	65	20	-	-	-
T.2.1	KKR 70x...	86	B2: Dominerende vindlast, vindretning fra Øst	7	86	7	-	-	-
T.3.1	KKR 80x...	77	B2: Dominerende vindlast, vindretning fra Nord	9	77	8	-	-	-
T.4.1	KKR 120...	80	B2: Dominerende vindlast, vindretning fra Sør	18	80	18	-	-	-
T.5.1	KKR 140...	71	B2: Dominerende vindlast, vindretning fra Nord	23	71	23	-	-	-
T.6.1	KKR 90x...	76	B2: Dominerende vindlast, vindretning fra Nord	11	76	11	-	-	-
T.7.1	KKR 70x...	69	B2: Dominerende snølast, vindretning fra Øst	6	69	6	-	-	-

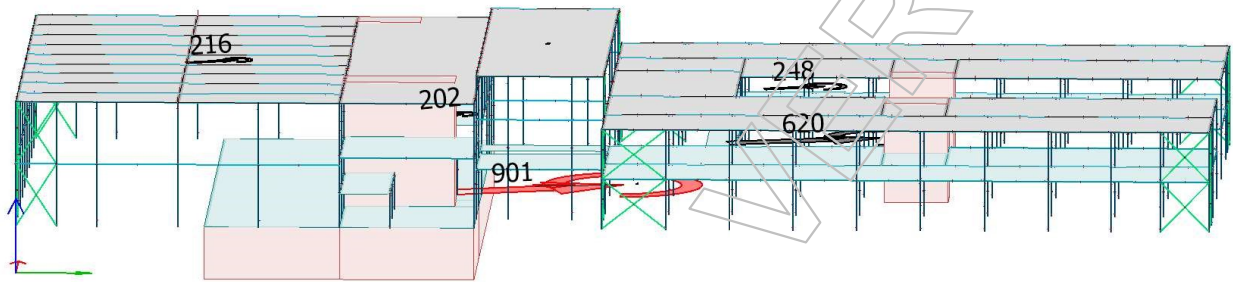
Member	Section	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	IA
[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]
T.8.1	KKR 80x...	90	B2: Dominerende vindlast, vindretning fra Sør	10	90	10	-	-	-
T.9.1	KKR 70x...	54	B2: Dominerende vindlast, vindretning fra Vest	6	54	6	-	-	-
T.10.1	KKR 60x...	84	B2: Dominerende vindlast, vindretning fra Nord	7	84	7	-	-	-
T.11.1	KKR 90x...	93	B1: Dominerende vindlast, vindretning fra Vest	16	93	16	-	-	-
T.12.1	KKR 60x...	97	B2: Dominerende vindlast, vindretning fra Nord	8	97	8	-	-	-
T.13.1	KKR 70x...	52	B2: Dominerende vindlast, vindretning fra Vest	6	52	6	-	-	-
T.14.1	KKR 60x...	87	B2: Dominerende vindlast, vindretning fra Sør	7	87	7	-	-	-
T.15.1	KKR 90x...	81	B1: Dominerende vindlast, vindretning fra Vest	14	81	14	-	-	-
T.16.1	KKR 60x...	92	B2: Dominerende vindlast, vindretning fra Sør	7	92	7	-	-	-
T.17.1	KKR 100...	79	B2: Dominerende vindlast, vindretning fra Nord	13	79	11	-	-	-
T.18.1	KKR 140...	63	B2: Dominerende vindlast, vindretning fra Sør	16	63	16	-	-	-
T.19.1	KKR 100...	85	B2: Dominerende vindlast, vindretning fra Nord	15	85	12	-	-	-
T.20.1	KKR 50x...	13	B2: Dominerende snølast, vindretning fra Sør	13	0	0	-	-	-
T.21.1	KKR 140...	61	B2: Dominerende vindlast, vindretning fra Sør	16	61	16	-	-	-
T.22.1	KKR 100...	86	B2: Dominerende vindlast, vindretning fra Sør	13	86	13	-	-	-
T.23.1	KKR 120...	80	B2: Dominerende vindlast, vindretning fra Nord	17	80	17	-	-	-
T.24.1	KKR 100...	88	B2: Dominerende vindlast, vindretning fra Sør	13	88	13	-	-	-
T.25.1	KKR 50x...	13	B2: Dominerende snølast, vindretning fra Nord	13	0	0	-	-	-
T.26.1	KKR 120...	77	B2: Dominerende vindlast, vindretning fra Nord	16	77	16	-	-	-
T.27.1	KKR 100...	87	B2: Dominerende vindlast, vindretning fra Sør	27	87	27	-	-	-
T.28.1	KKR 70x...	81	B2: Dominerende vindlast, vindretning fra Nord	19	81	13	-	-	-
T.29.1	KKR 120...	68	B2: Dominerende vindlast, vindretning fra Nord	27	68	27	-	-	-
T.30.1	KKR 80x...	83	B2: Dominerende vindlast, vindretning fra Sør	17	83	16	-	-	-
T.31.1	KKR 70x...	53	B2: Dominerende vindlast, vindretning fra Vest	6	53	6	-	-	-
T.32.1	KKR 100...	78	B2: Dominerende vindlast, vindretning fra Sør	12	78	12	-	-	-
T.33.1	KKR 100...	82	B2: Dominerende snølast, vindretning fra Vest	13	82	13	-	-	-
T.34.1	KKR 70x...	52	B2: Dominerende vindlast, vindretning fra Øst	6	52	6	-	-	-
T.35.1	KKR 70x...	88	B2: Dominerende vindlast, vindretning fra Sør	7	88	7	-	-	-
T.36.1	KKR 100...	91	B2: Dominerende vindlast, vindretning fra Øst	16	91	16	-	-	-
T.37.1	KKR 100...	80	B1: Dominerende vindlast, vindretning fra Vest	14	80	14	-	-	-
T.38.1	KKR 100...	72	B2: Dominerende vindlast, vindretning fra Sør	12	72	12	-	-	-
T.39.1	KKR 70x...	51	B2: Dominerende vindlast, vindretning fra Sør	5	51	5	-	-	-
T.40.1	KKR 70x...	60	B2: Dominerende vindlast, vindretning fra Nord	6	60	6	-	-	-
T.41.1	KKR 70x...	44	B2: Dominerende vindlast, vindretning fra Sør	4	44	4	-	-	-
T.42.1	KKR 70x...	83	B2: Dominerende vindlast, vindretning fra Sør	8	83	8	-	-	-
T.43.1	KKR 70x...	85	B2: Dominerende vindlast, vindretning fra Vest	15	85	8	-	-	-
T.44.1	KKR 100...	85	B2: Dominerende vindlast, vindretning fra Sør	17	85	17	-	-	-
T.45.1	KKR 70x...	0	B2: Dominerende vindlast, vindretning fra Sør	0	0	0	-	-	-
T.46.1	KKR 100...	83	B2: Dominerende vindlast, vindretning fra Sør	12	83	12	-	-	-
T.47.1	KKR 70x...	96	B2: Dominerende vindlast, vindretning fra Nord	8	96	8	-	-	-
T.48.1	KKR 100...	90	B2: Dominerende vindlast, vindretning fra Øst	16	90	16	-	-	-
T.49.1	KKR 90x...	71	B2: Dominerende vindlast, vindretning fra Nord	10	71	10	-	-	-
T.50.1	KKR 100...	75	B1: Dominerende vindlast, vindretning fra Vest	13	75	13	-	-	-
T.51.1	KKR 70x...	50	B2: Dominerende vindlast, vindretning fra Øst	5	50	5	-	-	-
T.52.1	KKR 70x...	99	B2: Dominerende snølast, vindretning fra Sør	11	99	11	-	-	-
T.53.1	KKR 70x...	44	B2: Dominerende vindlast, vindretning fra Vest	5	44	5	-	-	-
T.54.1	KKR 100...	82	B2: Dominerende snølast, vindretning fra Vest	13	82	13	-	-	-

3.3 Jordskjelv

3.3.1 Jordskjelv x-retning

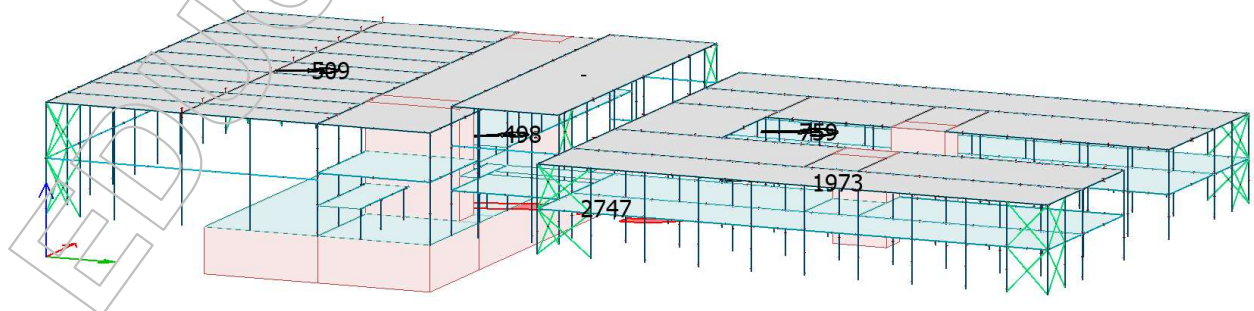
3.3.1.1 Krefter x-retning

Eurocode (NA: Norwegian) code: Seismic calculation - Sum, $F_x + M_x$ - Equivalent loads - [kN, kNm]



3.3.1.2 Moment x-retning

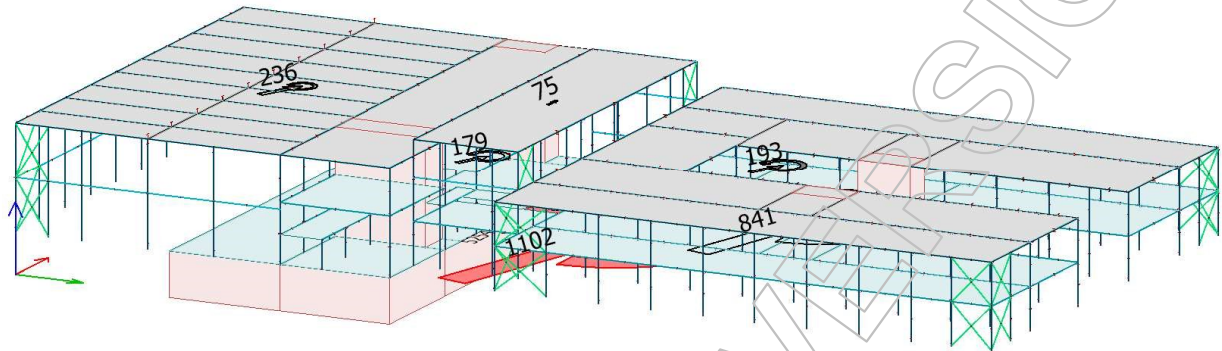
Eurocode (NA: Norwegian) code: Seismic calculation - Sum, $F_x + M_x$ - Equivalent loads - [kN, kNm]



3.3.2 Jordskjelv y-retning

3.3.2.1 Krefter y-retning

Eurocode (NA: Norwegian) code: Seismic calculation - Sum, $F_y + M_y$ - Equivalent loads - [kN, kNm]



3.3.2.2 Moment y-retning

Eurocode (NA: Norwegian) code: Seismic calculation - Sum, $F_y + M_y$ - Equivalent loads - [kN, kNm]

