

Vedlegg

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Vedlegg 1 – Snø

Snølast Elvekanten i Førde

μ – Formfaktor Tabell 5.2 $\mu := 0.8$
 Sk_0 – Karakteristisk snølast Tabell NA.A.1 Førde $Sk_0 := 3.5 \frac{kN}{m^2}$
 C_e – Eksponeringskoeffisient Tabell 5.1 $C_e := 1$
 C_t – Termiskekoeffisient $C_t := 1$
 $Sk := Sk_0$ $n\Delta Sk := 0$

$S := \mu \cdot C_e \cdot C_t \cdot Sk$

$S = 2.8 \frac{kN}{m^2}$ +

Må kontrollere Snøfonning på tak

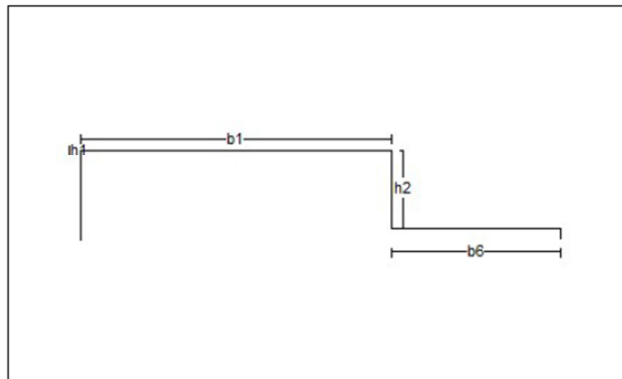
Snøfonning på uteområde

Snøfonning bygg 2-VEST

Titel Bygg 2 VEST		Side 1
Prosjekt	Ordre	Sign Date 14-02-2023

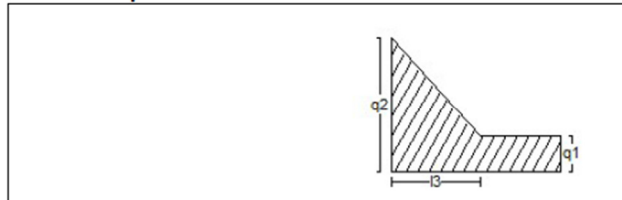
Dataprogram: LastBeregning versjon 7.3.1 Laget av Sletten Byggdata AS
 Standard NS-EN 1991-1-3: Snølaster

1. Geometri



b1	52500	mm
h1	0	mm
h2	13350	mm
b6	28600	mm

2. Snølast på tak



Last nr.:1		
q1	2,80	kN/m2
q2	10,63	kN/m2
l3	15000	mm

Det er snøfanger på overliggende tak, og bidrag pga takras er ikke tatt med ($U_s=0$)

3. Snølastdata

Fylke	Sogn og Fjordane
Kommune	Førde
Sted	
Byggets plassering (moh)	24 moh
Eksponeringskoeffisient C_e	1
Termisk koeffisient C_t	1
Snølast, S:	3,5 kN/m2

Vedlegg 2 – Vind

V_b	Basis	Vindhastighet	NA.A.2
$C_{dir} := 1$			
$C_{season} := 1$			
$V_{bo} := 26$		Førde i Sogn og fjordane	
$V_b := C_{dir} \cdot C_{season} \cdot V_{bo} = 26$			$\frac{m}{sek}$
Z_e	Referanseshøyde		
$Z_e := 24$			m
Terrengruhetskategori og overgangssone			
H	$Z_{min} := 4$		m
	$K_r := 0.19$		
	$Z_o := 0.05$		
	$V_{mz} := 1$		
	$C_o := 1$	Hentet frå	
	$K_I := 1.75$	figur 5	
I_{vz}	Vindturbulens	NA.A.4	
$I_{vz} := \frac{K_I}{C_o \cdot \ln\left(\frac{Z_e}{Z_o}\right)} = 0.283$			+
V_m	Stedvindhastighet	NA.A.3.1	
$C_r(z)$	Ruhetsfaktoren	NA.A.3.2	
$C_{rz} := K_r \cdot \ln\left(\frac{Z_e}{Z_o}\right) = 1.173$			
$C_{oz} := 1$			
$C_{rz} = 1.173$			
$V_{mz} := C_{rz} \cdot C_{oz} \cdot V_b = 30.499$			$\frac{m}{sek}$
$p := 1.25$			$\frac{kg}{m^3}$
q_b	Karakteristisk vindhastighetstrykk	4.5 (1)	
$q_{pz} := (1 + 7 \cdot I_{vz}) \cdot \frac{1}{2} \cdot p \cdot V_{mz}^2 = 1.735 \cdot 10^3$			$\frac{N}{m^2}$

Vedlegg 2 – Vind

Vindlast på bygg 2

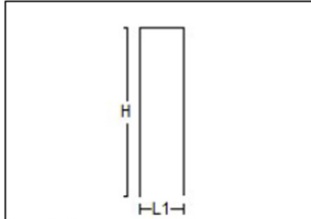
Titel		Side 1
Prosjekt	Ordre	Sign Dato 17-02-2023

Dataprogram: LastBeregning versjon 7.3.1 Laget av Sletten Byggdata AS

Standard NS-EN 1991-1-4: Vindlaster

Data er lagret på fil: C:\Users\147049\Høgskulen på Vestlandet\Bachelor Forde - Consto - General\Tolo, Tjonnis og Tefre\Beregningsgrunnlag\Laster\Vind\Vindlast på bygg 2.sls

1. Geometri



H 24000 mm
L1 12800 mm

Byggets lengde, L2: 52500 mm
Takvinkel : 0,00 (grader)

Vertikalsnitt

2. Vindhastighet

Fylke: Sogn og Fjordane Kommune: Forde Referansevindhastighet: 26 m/s

Byggested, høyde over havet (m): 24 Calt: 1

Returperiode (år): 50 Cprob: 1

Årstidsfaktoren, Cseason: 1 hele året

Vindretning (region): Bruker retningsfaktoren C-ret: 1

Basisvindhastighet: 26 m/s

Høyde Z over grunnivået: 24 m

BYGGESTEDETS TERRENGDATA

Terrengkategorikategori II: Landbruksområde, område med spredte små bygninger eller trær.

Terrengkategorifaktoren Kt: 0,19 Ruhetslengden Zo (m): 0,05 Zmin (m): 4 Vm (m/s): 30,50 Cr: 1,17

TOPOGRAFI: NA.4.3.3 (901.4) Byggested på lesiden av bratt terreng med fall større en 30 grader i vindretningen.

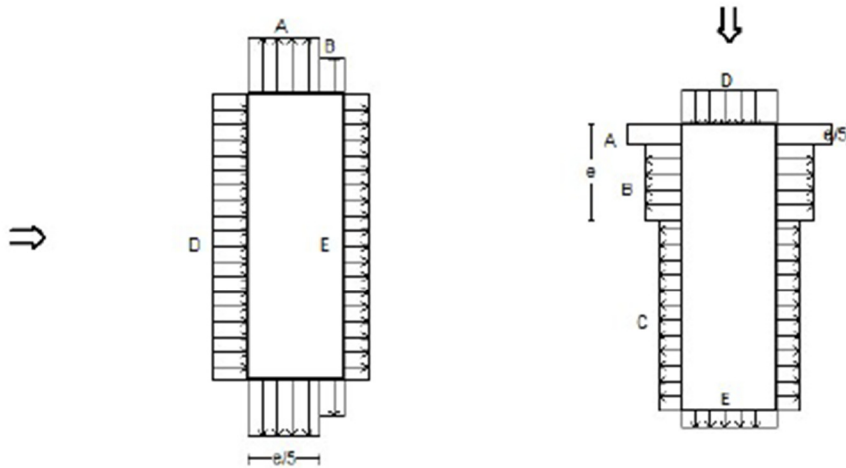
Terrengformfaktor Co(z): 1 Turbulensfaktor Ki: 1,75

Vkast: 52,69 m/s

Qkast: 1,735 kN/m²

3. Yttervegger

3.1 Utvendig vindlast



Vindretning 0 grader. $e=48000$ mm

Vindretning 90 grader. $e=12800$ mm

Vindinnfallsretning på 0 grader.

	A	B	C	D	E
Formfaktor $C_{pe,10}$	-1,20	-0,80		0,80	-0,54
Utvendig last (kN/m ²)	-2,08	-1,39		1,39	-0,94
Formfaktor $C_{pe,1}$	-1,40	-1,10		1,00	-0,54
Utvendig last (kN/m ²)	-2,43	-1,91		1,73	-0,94
Utstrekning (mm)	9600	3200		52500	52500

Vindinnfallsretning på 90 grader.

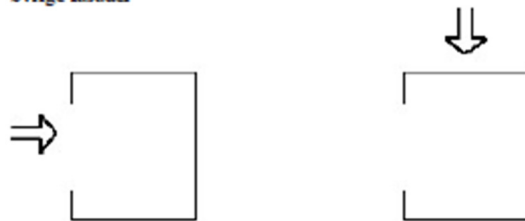
	A	B	C	D	E
Formfaktor $C_{pe,10}$	-1,20	-0,80	-0,50	0,73	-0,36
Utvendig last (kN/m ²)	-2,08	-1,39	-0,87	1,26	-0,62
Formfaktor $C_{pe,1}$	-1,40	-1,10	-0,50	1,00	-0,36
Utvendig last (kN/m ²)	-2,43	-1,91	-0,87	1,73	-0,62
Utstrekning (mm)	2560	10240	39700	12800	12800

Positiv verdi for last gir trykk. Negativ verdi hvis last er sug.

3.2 Innvendig vindlast

Bygning med dominerende vindfasade

$C_{pi} = 0.9 * C_{pe,10}$ (sone D) når åpningene i den dominerende vindfasaden er minst 3 ganger summen av åpningen i de øvrige fasader



	Overtrykk		Undertrykk
Last(kN/m ²)	1,25	Last(kN/m ²)	-1,25

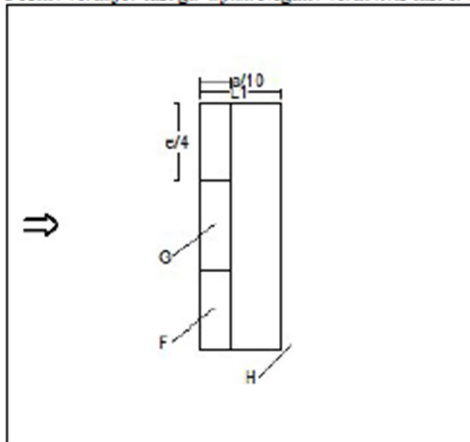
4 Overside av tak

Taktype: Flatt tak

L1=12800 mm L2=52500 mm

Cpe,10 Gjelder for hele bygget. (>=10m2)

Positiv verdi for last gir trykk. Negativ verdi hvis last er sug.



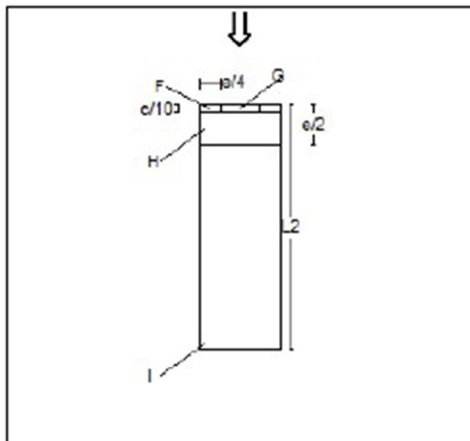
Utstrekning (mm)

e=48000

e/4=12000

e/10=4800

	Cpe,10	Last (kN/m ²)	Hor.prosjeksjon (mm)
F	-1,80	-3,12	12000x4800
G	-1,20	-2,08	28500x4800
H	-0,70	-1,21	52500x8000



Utstrekning (mm)

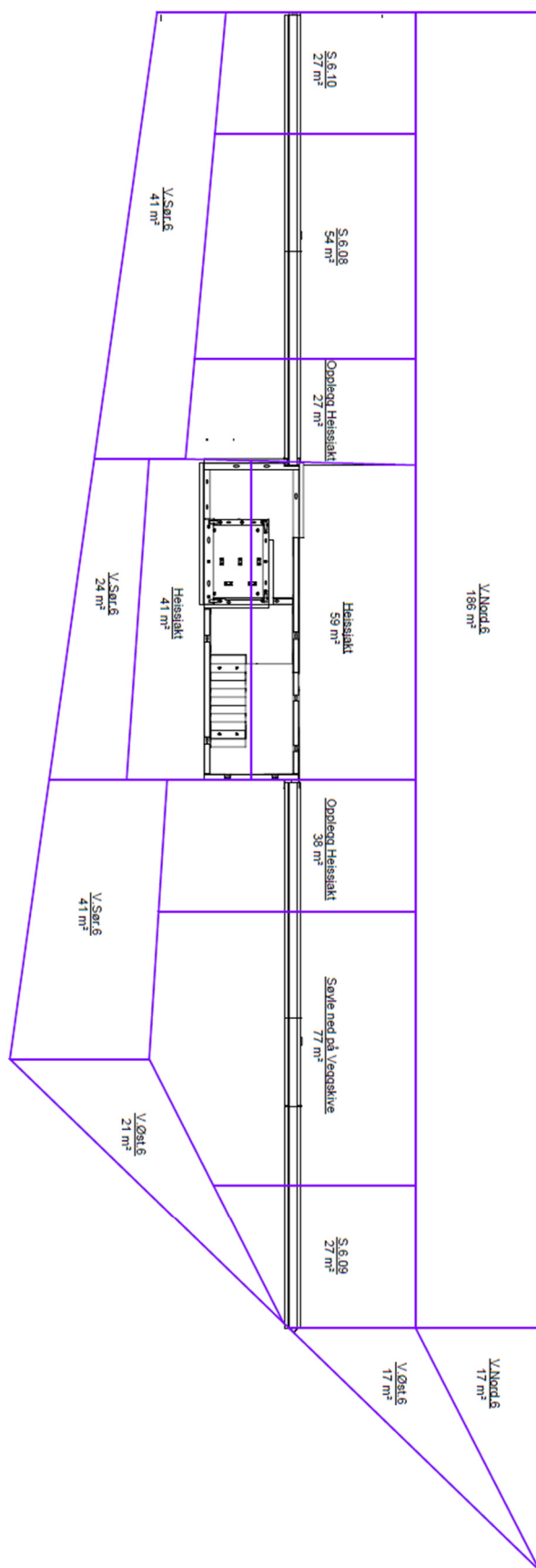
e=12800

e/4=3200

e/10=1280

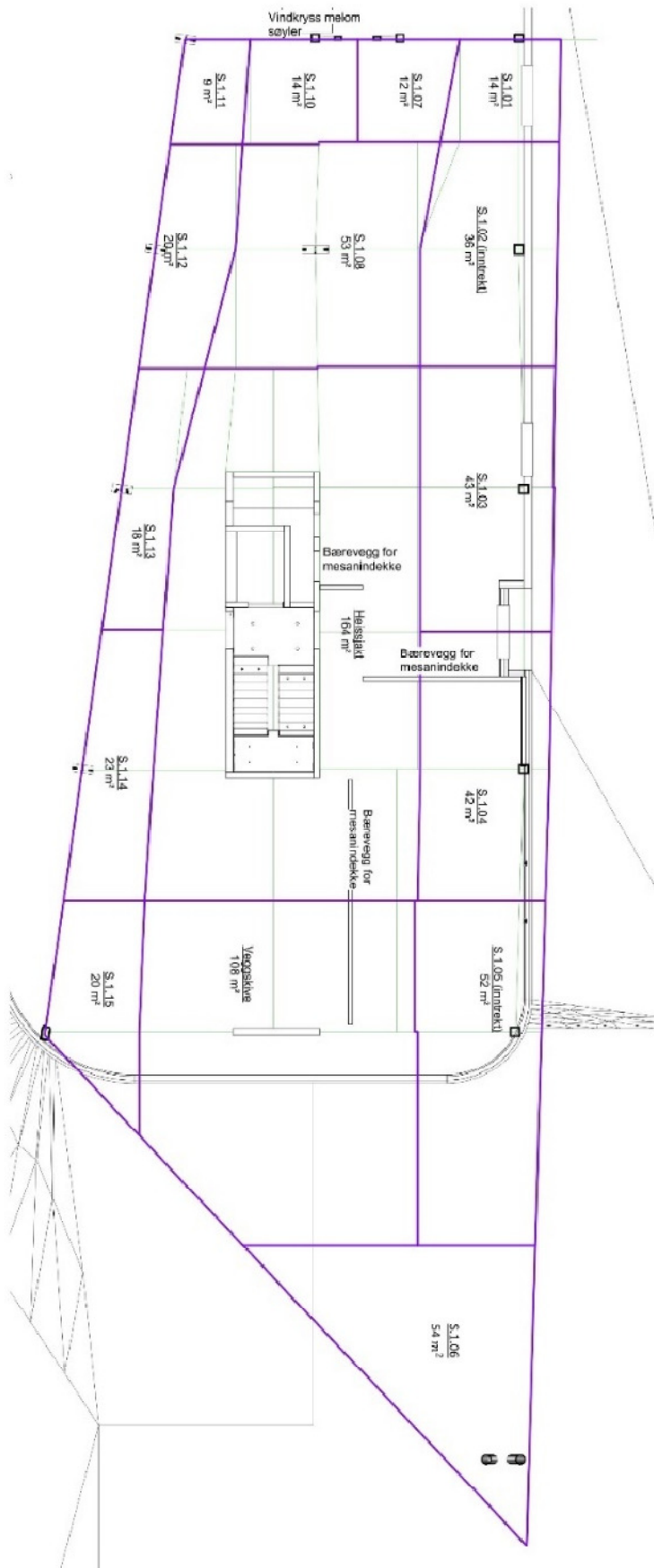
	Cpe,10	Last (kN/m ²)	Hor.prosjeksjon (mm)
F	-1,80	-3,12	3200x1280
G	-1,20	-2,08	6400x1280
H	-0,70	-1,21	12800x5120
I	+/-0,20	+/-0,35	12800x46100

Vedlegg 3 – Lastfordeling



Lastfordeling tak

Lastfordeling plan 1-5



Vedlegg 4 –Excel

3	EGENVEKT				NYTTELAST				Total last	LAST I SØYLE KN
4	Søyle nr	AREAL	HD320	TAK	påstøp	SNØ	C2	C3		
5	6.01	15		28		45			73	73 kN
6	6.02	33		59		96			155	155 kN
7	6.03	37		67		110			177	177 kN
8	6.04	39		71		115			186	186 kN
9	6.05	40		71		117			188	188 kN
10	6.06	53		95		156			251	251 kN
11	6.07	0		0		0			0	0 kN
12	6.08	54		97		159			256	256 kN
13	-	-							-	-
14	6.10	27		49		79			128	128 kN
15	6.11	10		19		30			49	49 kN
16	6.12	21		37		60			97	97 kN
17	6.13	22		40		65			105	105 kN
18	6.14	32,5		59		96			154	154 kN
19	6.15	31		56		91			147	147 kN
20	-	-							-	-
21	Heisjakt	165		297		485			782	782 kN
22	Veggskive	77		139		226			365	365 kN
24										
25	5.01	14	71		20		42		133	206 kN
26	5.02	36	181		52		108		341	496 kN
27	5.03	43	217		62		129		408	585 kN
28	5.04	42	212		60		126		398	584 kN
29	5.05	52	262		75		156		493	681 kN
30	5.06	53	267		76		159		502	754 kN
31	5.07	12	60		17		36		114	114 kN
32	5.08	53	267		76		159		502	758 kN
33	-	-							-	-
34	5.10	14	71		20		42		133	261 kN
35	5.11	9	45		13		27		85	134 kN
36	5.12	20	101		29		60		190	287 kN
37	5.13	18	91		26		54		171	276 kN
38	5.14	23	116		33		69		218	372 kN
39	5.15	20	101		29		60		190	337 kN
40	-	-							-	-
41	HEISSJAKT	164	827		236		492		1555	2337 kN
42	VEGGSKIVE	108	544		156		324		1024	1389 kN
44	4.01	14	71		20		42		133	338 kN
45	4.02	36	181		52		108		341	837 kN
46	4.03	43	217		62		129		408	992 kN
47	4.04	42	212		60		126		398	982 kN
48	4.05	52	262		75		156		493	1174 kN
49	4.06	53	267		76		159		502	1256 kN
50	4.07	12	60		17		36		114	228 kN
51	4.08	53	267		76		159		502	1261 kN
52	-	-							-	-
53	4.10	14	71		20		42		133	393 kN
54	4.11	9	45		13		27		85	219 kN
55	4.12	20	101		29		60		190	476 kN
56	4.13	18	91		26		54		171	447 kN
57	4.14	23	116		33		69		218	590 kN
58	4.15	20	101		29		60		190	526 kN
59	-	-							-	-
60	HEISSJAKT	164	827		236		492		1555	3892 kN
61	VEGGSKIVE	108	544		156		324		1024	2413 kN

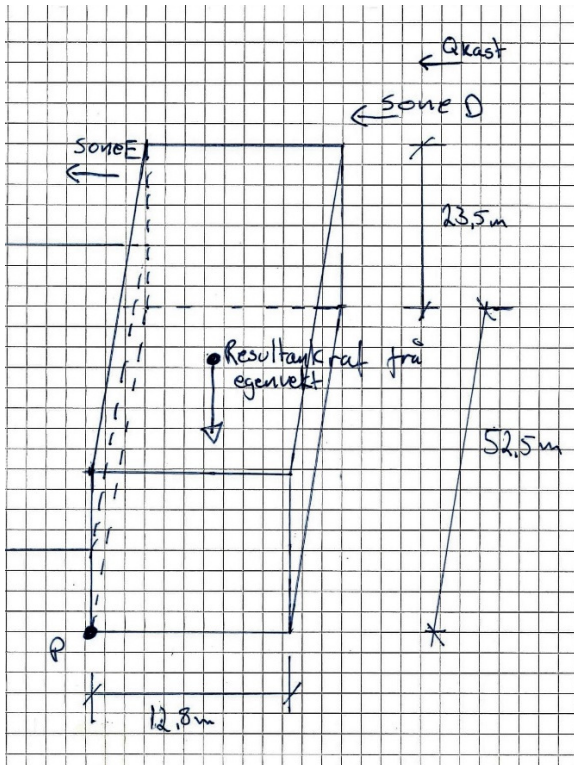
Vedlegg 4 – Excel

63	3.01	14	71		20		42		133		493	kN
64	3.02	36	181		52		108		341		1225	kN
65	3.03	43	217		62		129		408		1454	kN
66	3.04	42	212		60		126		398		1437	kN
67	3.05	52	262		75		156		493		1724	kN
68	3.06	53	267		76		159		502		1835	kN
69	3.07	12	60		17		36		114		341	kN
70	3.08	53	267		76		159		502		1841	kN
71	-	-	-		-		-		-		-	
72	3.10	14	71		20		42		133		565	kN
73	3.11	9	45		13		27		85		320	kN
74	3.12	20	101		29		60		190		695	kN
75	3.13	18	91		26		54		171		649	kN
76	3.14	23	116		33		69		218		855	kN
77	3.15	20	101		29		60		190		760	kN
78	-	-	-		-		-		-		-	
79	HEISSJAKT	164	827		236		492		1555		5684	kN
80	VEGGSKIVE	108	544		156		324		1024		3547	kN
82	2.01	14	71		20		42		133		626	kN
83	2.02	36	181		52		108		341		1567	kN
84	2.03	43	217		62		129		408		1862	kN
85	2.04	42	212		60		126		398		1835	kN
86	2.05	52	262		75		156		493		2217	kN
87	2.06	53	267		76		159		502		2337	kN
88	2.07	12	60		17		36		114		455	kN
89	2.08	53	267		76		159		502		2343	kN
90	-	-	-		-		-		-		-	
91	2.10	14	71		20		42		133		698	kN
92	2.11	9	45		13		27		85		405	kN
93	2.12	20	101		29		60		190		885	kN
94	2.13	18	91		26		54		171		820	kN
95	2.14	23	116		33		69		218		1073	kN
96	2.15	20	101		29		60		190		950	kN
97	-	-	-		-		-		-		-	
98	HEISSJAKT	164	827		236		492		1555		7239	kN
99	VEGGSKIVE	108	544		156		324		1024		4571	kN

Vedlegg 4 – Excel

101	1.01	14	71	20	63	154	780	kN
102	1.02	36	181	52	162	395	1962	kN
103	1.03	43	217	62	193,5	472	2334	kN
104	1.04	42	212	60	189	461	2296	kN
105	1.05	52	262	75	234	571	2788	kN
106	1.06	53	267	76	238,5	582	2919	kN
107	1.07	12	60	17	54	132	587	kN
108	1.08	53	267	76	238,5	582	2925	kN
109	-	-	-	-	-	-	-	-
110	1.10	14	71	20	63	154	851	kN
111	1.11	9	45	13	40,5	99	504	kN
112	1.12	20	101	29	90	220	1105	kN
113	1.13	18	91	26	81	198	1018	kN
114	1.14	23	116	33	103,5	253	1326	kN
115	1.15	20	101	29	90	220	1170	kN
116	-	-	-	-	-	-	-	kN
117	HEISSJAKT	164	827	236	738	1801	9039	kN
118	VEGGSKIVE	108	544	156	486	1186	5757	kN
120	0.01	14	71	42	63	176	955	kN
121	0.02	36	181	108	162	451	2413	kN
122	0.03	43	217	129	193,5	539	2873	kN
123	0.04	42	212	126	189	527	2823	kN
124	0.05	52	262	156	234	652	3440	kN
125	0.06	53	267	159	238,5	665	3584	kN
126	0.07	12	60	36	54	150	737	kN
127	0.08	53	267	159	238,5	665	3590	kN
128	0.09	0	0	0	0	0	-	kN
129	0.10	14	71	42	63	176	1027	kN
130	0.11	9	45	27	40,5	113	617	kN
131	0.12	20	101	60	90	251	1355	kN
132	0.13	18	91	54	81	226	1243	kN
133	0.14	23	116	69	103,5	288	1614	kN
134	0.15	20	101	60	90	251	1420	kN
135	0.16	0	0	0	0	0	-	kN
136	HEISSJAKT	164	827	492	738	2057	11096	kN
137	VEGGSKIVE	108	544	324	486	1354	7111	kN
138						Total vertikal last bygg	45900	kN

Vedlegg 5 – Global stabilitet



Kontrollerer om bygget vipper med vindlasten.

$$D := 1.39 \frac{\text{kN}}{\text{m}^2} \cdot 1.5$$

$$E := 0.94 \frac{\text{kN}}{\text{m}^2} \cdot 1.5$$

Areal om vegg sone D

$$A_d := 23.5 \text{ m} \cdot 52.1 \text{ m} = (1.224 \cdot 10^3) \text{ m}^2$$

Areal om vegg sone E

$$A_e := 52.1 \text{ m} \cdot 13.6 \text{ m} = 708.56 \text{ m}^2$$

Moment om P

$$M_D := A_d \cdot D \cdot \frac{23.5 \text{ m}}{2}$$

$$M_E := A_e \cdot E \cdot 16.7 \text{ m} = (1.668 \cdot 10^4) \text{ kN} \cdot \text{m}$$

$$M_R := 50892 \text{ kN} \cdot 0.9 \cdot \frac{12.8 \text{ m}}{2} = (2.931 \cdot 10^5) \text{ kN} \cdot \text{m}$$

$$M_D + M_E = (4.668 \cdot 10^4) \text{ kN} \cdot \text{m} < M_R$$

Vedlegg 6 – Dimensjonering Søyler 1.08

Søyler 1.08

Søyler 1.08

$$b := 900 \text{ mm}$$

$$h := 300 \text{ mm}$$

$$l := 5740 \text{ mm}$$

$$A_c := b \cdot h = 0.27 \text{ m}^2$$

$$l_0 := 1 \cdot l \quad (\text{Konservativt})$$

$$d := h - (50 \text{ mm} + 25 \text{ mm}) = 225 \text{ mm}$$

$$f_{ck} := 45$$

$$f_{cd} := 45 \frac{\text{N}}{\text{mm}^2} \cdot \frac{0.85}{1.5} = 25.5 \frac{\text{N}}{\text{mm}^2}$$

$$f_{yd} := 435 \frac{\text{N}}{\text{mm}^2}$$

Eksentrisitet

$$e := \frac{h}{30} \quad e \geq 20$$

$$e := 20 \text{ mm}$$

Aksiallast total

$$N_{ed} := 2925 \text{ kN}$$

Aksiallast frå overstående søyle:

$$N_{ed_s} := 2343 \text{ kN}$$

Forhåndsdim

$$\sigma := \frac{N_{ed}}{A_c} = 10.833 \frac{\text{N}}{\text{mm}^2}$$

Foreslår 8 stk K20, symmetrisk plassert.

$$A_s := 8 \cdot \left(\frac{20 \text{ mm}}{2} \right)^2 \cdot \pi$$

$$A_s = (2.513 \cdot 10^3) \text{ mm}^2$$

$$f_{yd} := 435 \frac{\text{N}}{\text{mm}^2}$$

Kontroll slankethet om svaks akse

Konservativt, velger punkt NA.5.13bN

Kryptallet fig 3.1 $\varphi_{ef} := 1.5$

$$\Lambda\sigma := \frac{1.25}{(1 + 0.2 \cdot \varphi_{ef})} \quad \Lambda\sigma \leq 1$$

$$\lambda_{nlim} := 13 \cdot \Lambda\sigma = 12.5 \quad (\text{Konservativt})$$

$$\lambda := \frac{l_0}{h} = 66.28$$

$$n := \frac{N_{ed}}{f_{cd} \cdot A_c} = 0.425$$

$$k_a := 1 \quad (\text{Forneklet})$$

$$\omega := f_{yd} \cdot \frac{A_s}{f_{cd} \cdot A_c}$$

$$\lambda n := \lambda \cdot \sqrt{\left(\frac{n}{1 + 2 \cdot k_a \cdot \omega} \right)} = 37.636$$

$\lambda n \geq \lambda_{nlim}$ Søylen er slank om svak akse

Kontroll sterk akse

Kryptallet fig 3.1 $\varphi_{ef} := 1$

$$\Lambda\sigma := \frac{1.25}{(1 + 0.2 \cdot \varphi_{ef})} \quad \Lambda\sigma \leq 1$$

$$\lambda_{nlim} := 13 \cdot \Lambda\sigma = 13.542 \quad (\text{Konservativt})$$

$$\lambda := \frac{l_0}{b} = 22.093$$

$$n := \frac{N_{ed}}{f_{cd} \cdot A_c} = 0.425$$

$$k_a := 1 \quad (\text{Forneklet})$$

$$\omega := f_{yd} \cdot \frac{A_s}{f_{cd} \cdot A_c}$$

$$\lambda n := \lambda \cdot \sqrt{\left(\frac{n}{1 + 2 \cdot k_a \cdot \omega} \right)} = 12.545$$

Ikkje slank om sterk akse

Beregning av 2.ordens moment om svak akse

$$n_u := 1 + \omega = 1.159$$

$$n_{bal} := 0.4 \quad (\text{Forenkla})$$

$$\beta := 0.35 + \frac{f_{ck}}{200} - \frac{\lambda}{150}$$

$$k_\varphi := 1 + \beta \cdot \varphi_{ef} \leq 1$$

$$E_s := 210000 \text{ MPa}$$

$$\varepsilon_{yd} := \frac{f_{yd}}{E_s} = 0.002$$

$$K_r := \frac{n_u - n}{n_u - n_{bal}} = 0.967 \quad K_r \leq 1$$

$$K_\varphi := 1 + \beta \cdot \varphi_{ef} = 1.428 \quad K_\varphi \geq 1$$

$$l_0^2 = 32.948 \text{ m}^2$$

$$e_2 := K_r \cdot K_\varphi \cdot \frac{\varepsilon_{yd}}{0.45 \cdot d} \cdot \frac{l_0^2}{10} = 0.093 \text{ m}$$

Har funnet 2.ordens, og eksentrisitet. Kan nå finne moment om svak akse.

$$M_{2Ed} := N_{ed} \cdot e_2 = (2.723 \cdot 10^5) \text{ J}$$

$$M_{2Ed} = 272.278 \text{ kN} \cdot \text{m}$$

Moment skapt av eksentrisitet fra søylerada ovenfor og ned på søylen.
Eksentrisitetet frå dekkavill utligne hverandre sidan dei hviler på hver sine sider av søylen

$$M_e := N_{ed_s} \cdot e = 46.86 \text{ m} \cdot \text{kN}$$

Total moment om svak akse

$$M_{ed} := M_{2Ed} + M_e = 319.138 \text{ m} \cdot \text{kN}$$

Kontroll armering ved hjelp av nm diagram

$$h' := 300 \text{ mm} - 50 \text{ mm} - 25 \text{ mm} = 225 \text{ mm}$$

$$\frac{h'}{h} = 0.75$$

tabell $h'/h = 0.8$

$$w := \frac{A_s}{2} \cdot \frac{f_{yd}}{f_{cd} \cdot A_c} = 0.079$$

Interpolerer mellom $w=0,05$ og $w=0.1$

$$n := \frac{N_{ed}}{f_{cd} \cdot A_c} = 0.425$$

Leser av figur

$$m := 0.18$$

$$M_{rd} := m \cdot (f_{cd} \cdot A_c \cdot h) = (3.718 \cdot 10^5) \text{ J}$$

$$M_{rd} = 371.79 \text{ kN} \cdot \text{m}$$

$$\frac{M_{ed}}{M_{rd}} = 0.858$$

Søylen har tilstrekkelig momentkapasitet om svak akse. Men må kontrollere for biaksialt moment, sidan søylen vill få moment om sterk akse og.

Moment påført om sterk akse

Må ta med 20% av maksimummoment fra bjelken som hulldekka hviler på. Velger å kunn sjå på den eine, lengste bjelken som gir mest moment, og ser vekk ifrå den andre bjelken då den berre gir støttemoment som er bra for søylen.

Bjelken er 8,8m lang, og spenner over 2 opplager, med ein avstand på 7,6m , og ein utdrager på 1,2m.

Maks moment er 30kNm, 20 % er 6knm

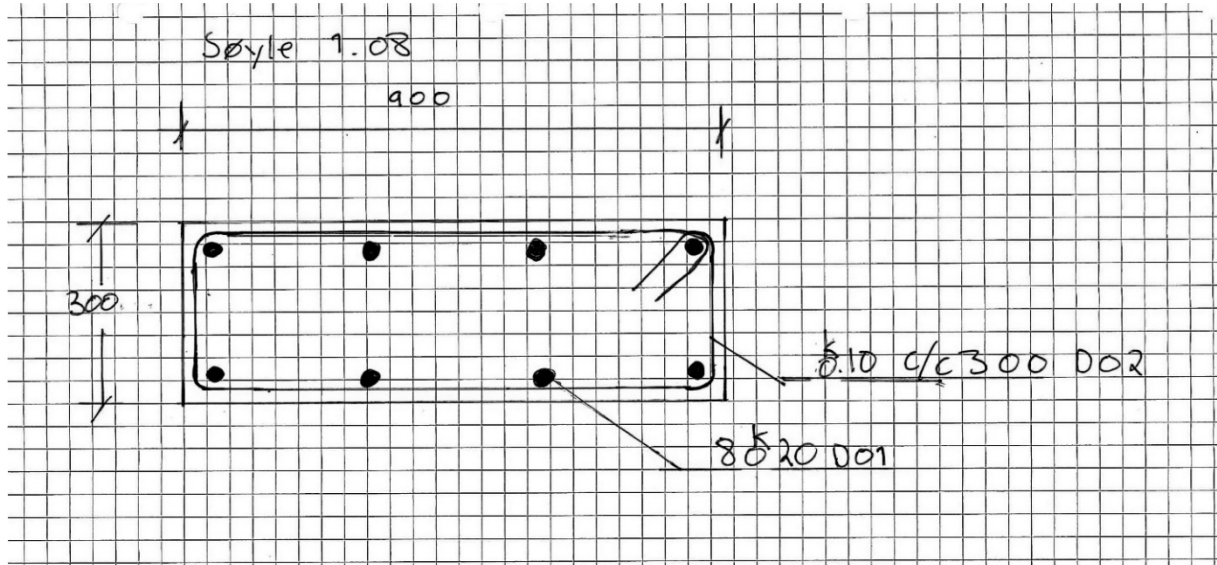
Ser at momentet om sterk akse er så lite, og kapasiteten so stor, at vi velger neglisjere dette.

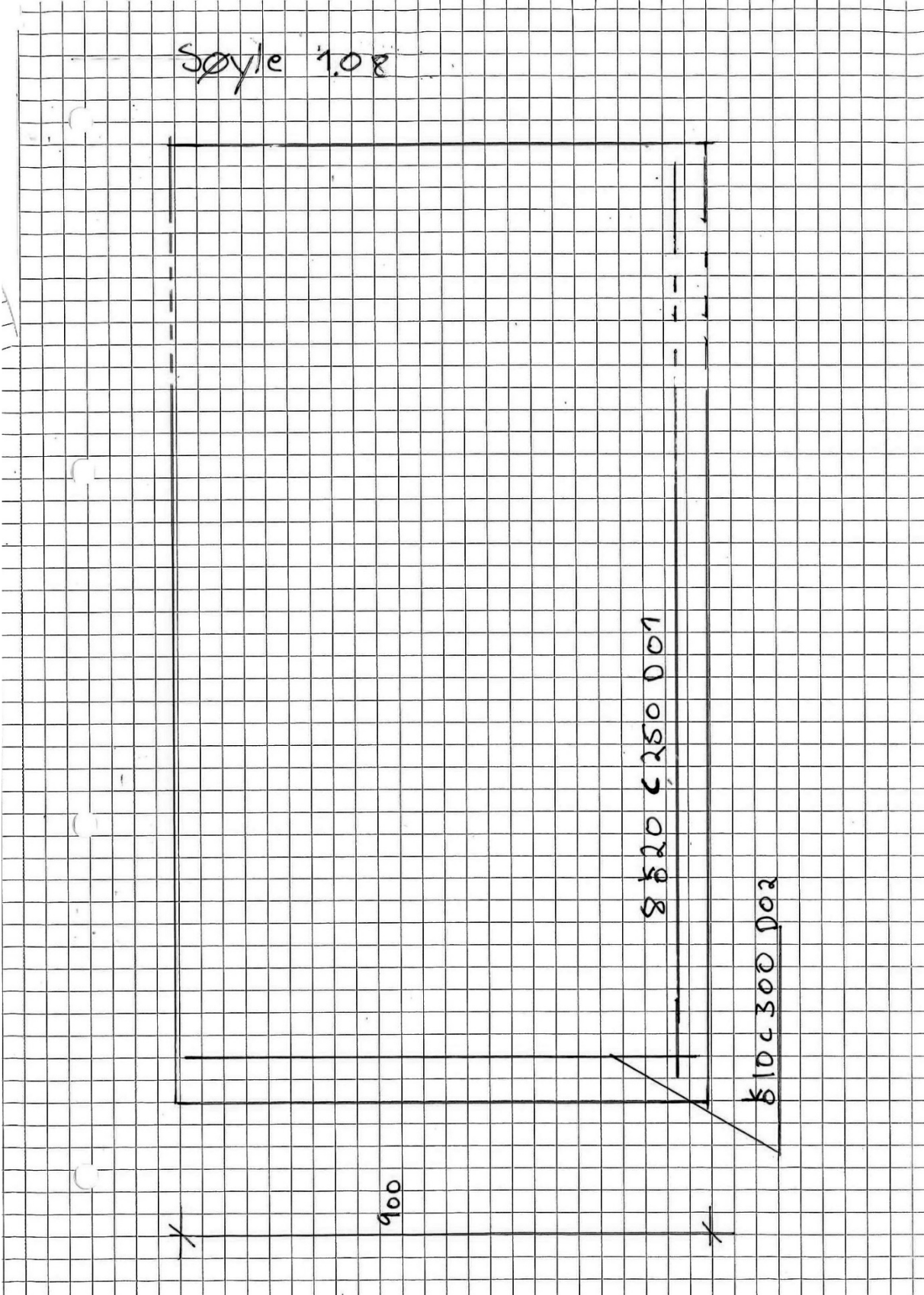
Konklusjon

Konklusjonen er at en søyle med 8 symmetrisk plasserte K20-jern, med en overdekning på 20 mm, utført med B45-betong og et tverrsnitt på 300 mm x 900 mm, har tilstrekkelig kapasitet til å motstå en påført aksialkraft på 2925 kN.

+

Armeringstegning S.1.08





Vedlegg 7 – Søyler 1.10 kontroll

Kontroll av S.1.10_HUP_250x150x10 i bruddgrense (Maks av lastkombinasjoner)

NS-EN 1993-1-1

$$A := 7450 \text{ mm}^2 \quad b := 250 \text{ mm} \quad h := 150 \text{ mm} \quad I_y := 60.9 \cdot 10^6 \text{ mm}^4$$

$$i_y := 90.4 \text{ mm} \quad i_z := 60.5 \text{ mm}$$

$$t := 10 \text{ mm} \quad c := h - 2 \cdot t \quad \varepsilon := 0.81$$

$$c_2 := b - 2 \cdot t$$

$$l := 5740 \text{ mm} \quad l_k := 1 \cdot l$$

$$f_y := 355 \text{ MPa} \quad \gamma_{m1} := 1.05 \quad \text{NA.6.1}$$

Tversnittklasse (Tabell 5.2);

$$\text{Steg} \quad \frac{c}{t} \leq 33 \cdot \varepsilon \quad \frac{c}{t} = 13.00 \quad (33 \cdot \varepsilon = 26.73)$$

$$\text{Flens} \quad \frac{c_2}{t} \leq 33 \cdot \varepsilon \quad \frac{c_2}{t} = 23.00$$

Tversnitt overholder klasse 1, tversnittdeler i trykk.

Skjærknekking 6.2.6(6)

$$\frac{h - 2 \cdot t}{t} = 13.00 \quad \text{mindre enn} \quad 72 \cdot \frac{\varepsilon}{1} = 58.32$$

Profil er ikke utsatt for skjærknekking

Knekking 6.3.1

Sterk akse

$$\alpha := 0.21 \quad \text{Knekkurve a, Tabell 6.1}$$

$$\lambda_1 := 93.9 \cdot \varepsilon \quad \lambda := \frac{lk}{i_y} \cdot \frac{1}{\lambda_1} = 0.83$$

$$\phi := 0.5 \cdot (1 + \alpha \cdot (\lambda - 0.2) + \lambda^2)$$

$$\chi := \frac{1}{\phi + \sqrt{\phi^2 - \lambda^2}} = 0.78$$

$$Nb.Rd_y := \frac{\chi \cdot A \cdot f_y}{\gamma_{m1}} = 1952.60 \text{ kN}$$

Svak akse

$$\lambda := \frac{lk}{i_z} \cdot \frac{1}{\lambda_1} = 1.25$$

$$\phi := 0.5 \cdot (1 + \alpha \cdot (\lambda - 0.2) + \lambda^2)$$

$$\chi := \frac{1}{\phi + \sqrt{\phi^2 - \lambda^2}} = 0.50$$

$$Nb.Rd_z := \frac{\chi \cdot A \cdot f_y}{\gamma_{m1}} = 1261.51 \text{ kN}$$

Utnyttelse

$$NEd := 850 \text{ kN}$$

$$\text{Sterk akse} \quad \frac{NEd}{Nb.Rd_y} = 43.53\%$$

$$\text{Svak akse} \quad \frac{NEd}{Nb.Rd_z} = 67.38\%$$

Vedlegg 8 – Alternativ fagverkstav T2.3

Kontroll av HUP_250x250x12,5 i fagverksbjelke (kun aksiallast) i bruddgrense
(Maks av lastkombinasjoner)

NS-EN 1993-1-1

$$A := 11204 \text{ mm}^2 \quad b := 250 \text{ mm} \quad h := 250 \text{ mm}$$

$$i_y := 95.23 \text{ mm} \quad i_z := 95.23 \text{ mm}$$

$$t := 12.5 \text{ mm} \quad c := h - 2 \cdot t \quad \varepsilon := 0.81$$

$$c_2 := b - 2 \cdot t$$

$$l := 9045 \text{ mm} \quad l_k := 1 \cdot l \quad \text{For fritt opplegg i begge ender}$$

$$f_y := 355 \text{ MPa} \quad \gamma_{m1} := 1.05 \quad \text{NA.6.1}$$

Tversnittklasse (Tabell 5.2);

$$\text{Steg} \quad \frac{c}{t} \leq 33 \cdot \varepsilon \quad \frac{c}{t} = 18.00 \quad (33 \cdot \varepsilon = 26.73)$$

$$\text{Flens} \quad \frac{c_2}{t} \leq 33 \cdot \varepsilon \quad \frac{c_2}{t} = 18.00$$

Tversnitt overholder klasse 2, tversnittdeler i trykk.

Skjærknekking 6.2.6(6)

$$\frac{h - 2 \cdot t}{t} = 18.00 \quad \text{mindre enn} \quad 72 \cdot \frac{\varepsilon}{1} = 58.32$$

Profil er ikke utsatt for skjærknekking

Knekking 6.3.1

Sterk akse

$$\alpha := 0.21 \quad \text{Knekkurve a, Tabell 6.1}$$

$$\lambda_1 := 93.9 \cdot \varepsilon \quad \lambda := \frac{lk}{i_y} \cdot \frac{1}{\lambda_1} = 1.25$$

$$\phi := 0.5 \cdot (1 + \alpha \cdot (\lambda - 0.2) + \lambda^2)$$

$$\chi := \frac{1}{\phi + \sqrt{\phi^2 - \lambda^2}} = 0.50$$

$$Nb.Rd_y := \frac{\chi \cdot A \cdot fy}{\gamma_{m1}} = 1894.07 \text{ kN}$$

Svak akse

$$\lambda := \frac{lk}{i_z} \cdot \frac{1}{\lambda_1} = 1.25$$

$$\phi := 0.5 \cdot (1 + \alpha \cdot (\lambda - 0.2) + \lambda^2)$$

$$\chi := \frac{1}{\phi + \sqrt{\phi^2 - \lambda^2}} = 0.50$$

$$Nb.Rd_z := \frac{\chi \cdot A \cdot fy}{\gamma_{m1}} = 1894.07 \text{ kN}$$

Utnyttelse

$$NEd := 1295 \text{ kN} \quad \text{Hentet fra FEM-modell}$$

$$\text{Sterk akse} \quad \frac{NEd}{Nb.Rd_y} = 68.37\%$$

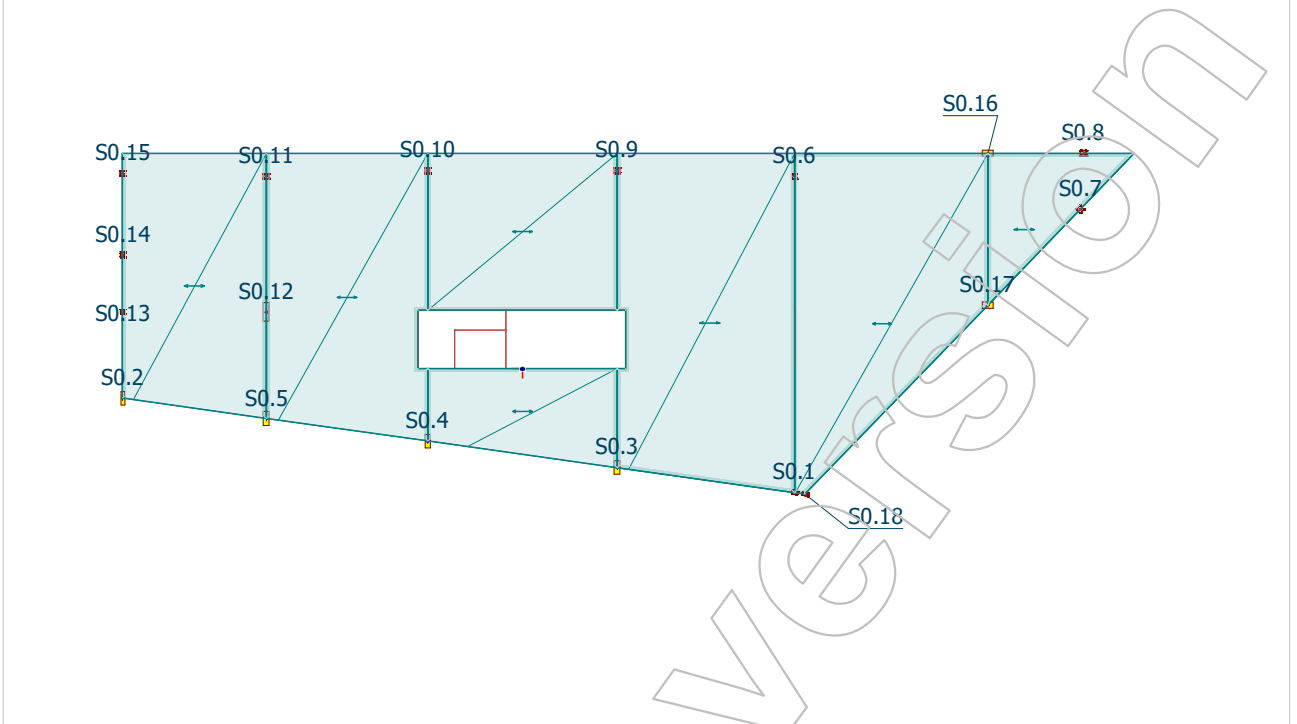
$$\text{Svak akse} \quad \frac{NEd}{Nb.Rd_z} = 68.37\%$$

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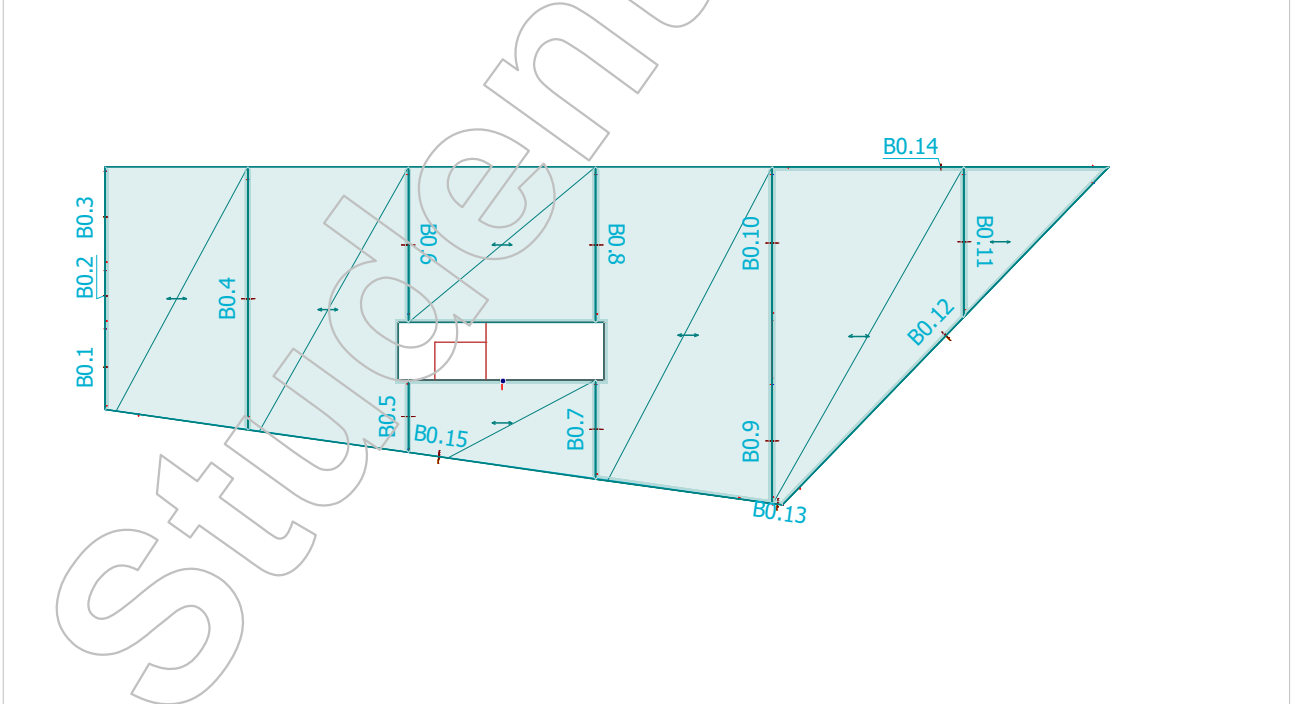
Student version

1 Plassering av komponenter

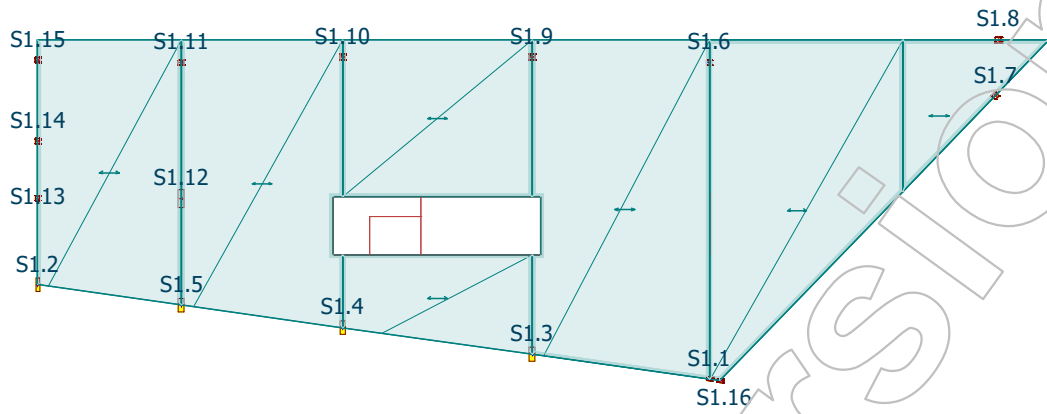
Eurocode (NA: Norwegian)
View: Storey 1 (+0.370)



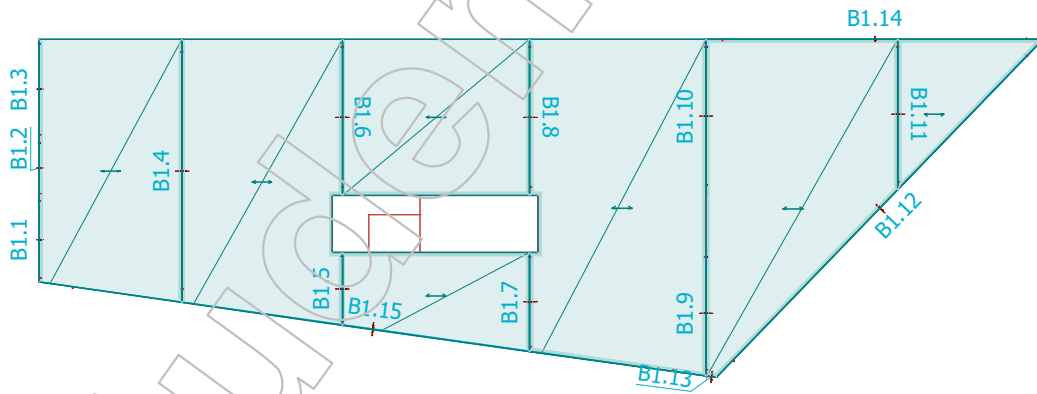
Eurocode (NA: Norwegian)
View: Storey 1 (+0.370)



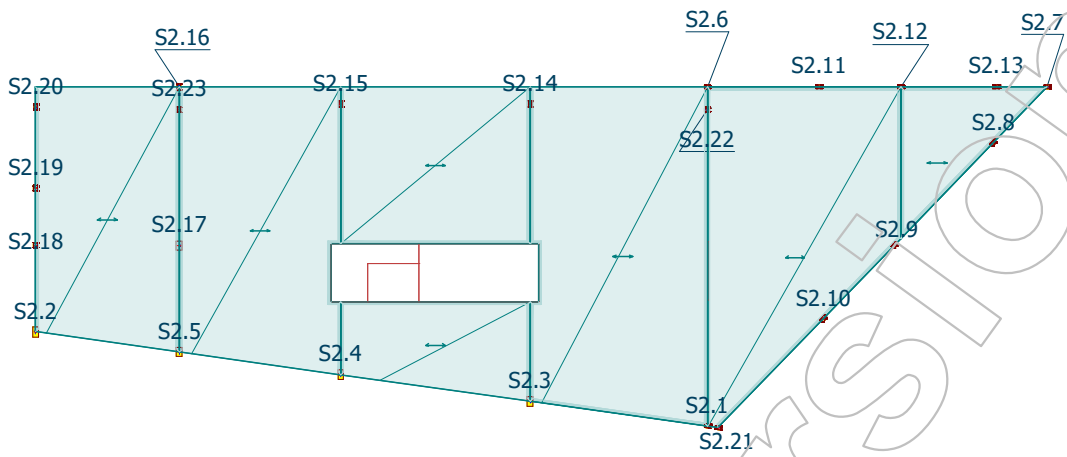
Eurocode (NA: Norwegian)
View: Storey 2 (+6.110)



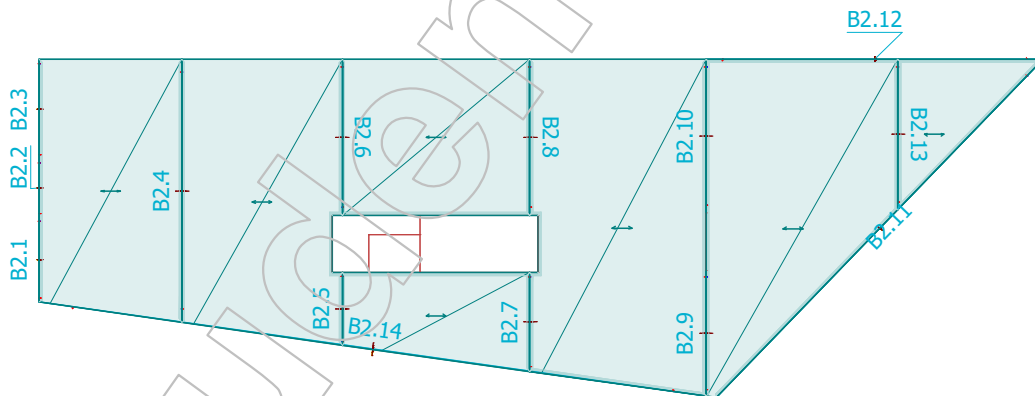
Eurocode (NA: Norwegian)
View: Storey 2 (+6.110)



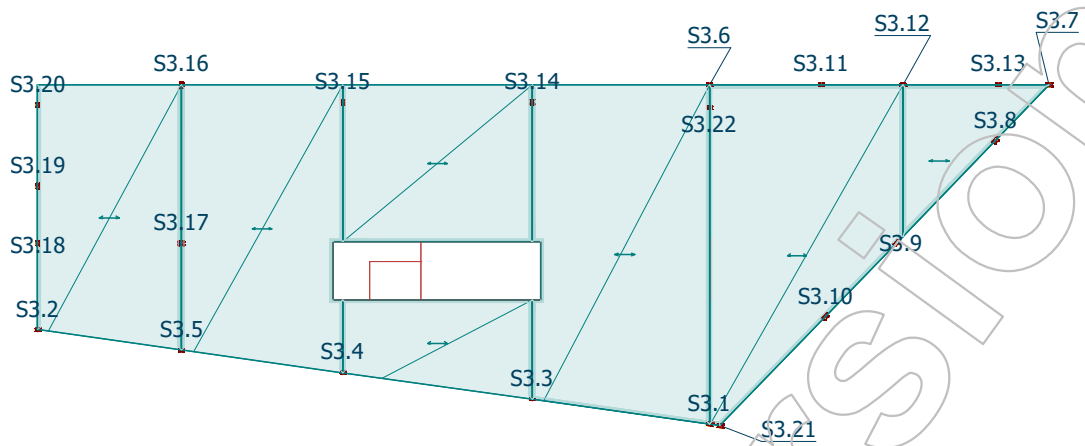
Eurocode (NA: Norwegian)
View: Storey 3 (+10.700)



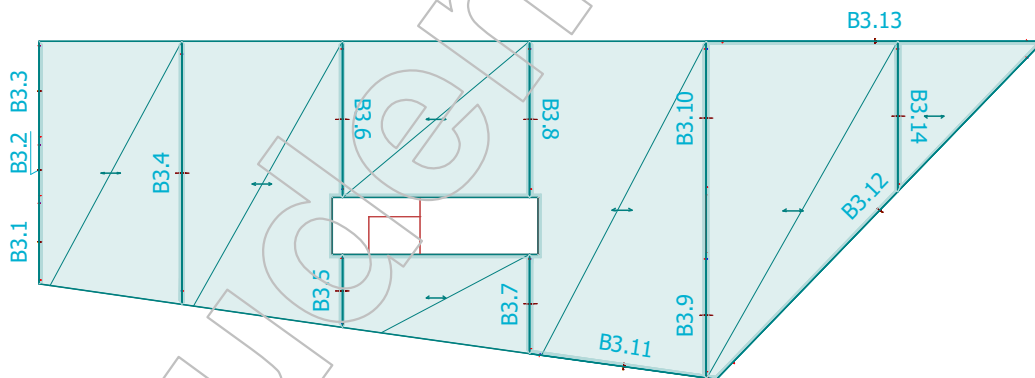
Eurocode (NA: Norwegian)
View: Storey 3 (+10.700)



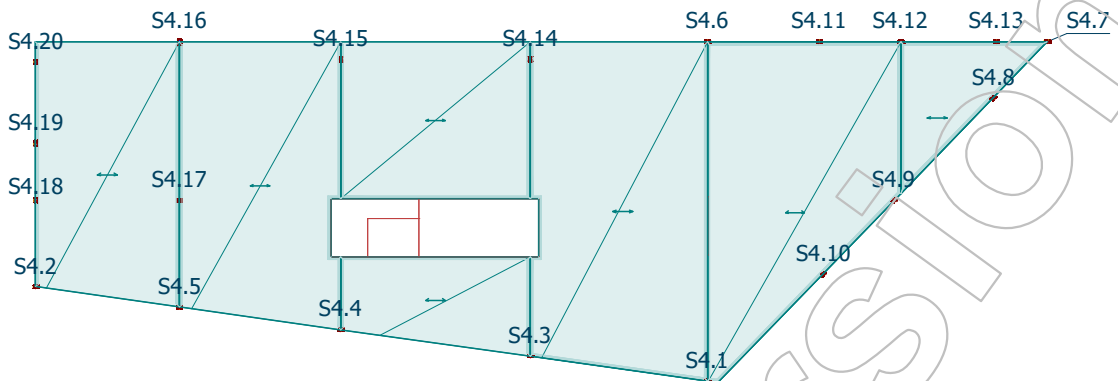
Eurocode (NA: Norwegian)
View: Storey 4 (+14.410)



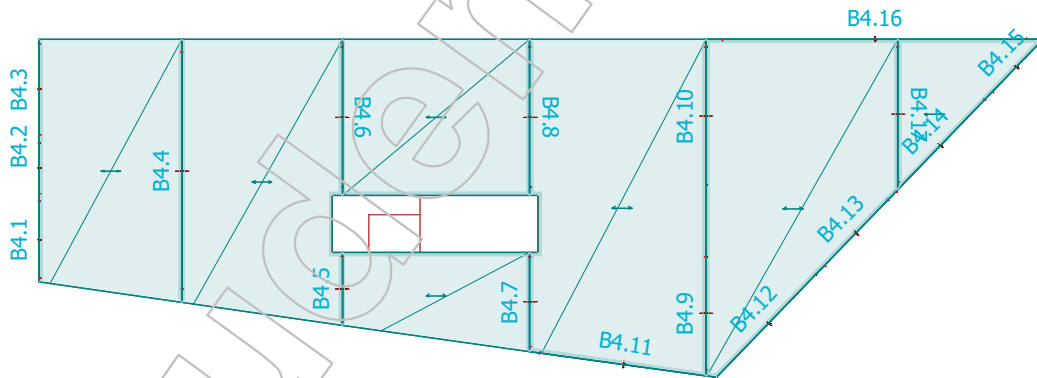
Eurocode (NA: Norwegian)
View: Storey 4 (+14.410)



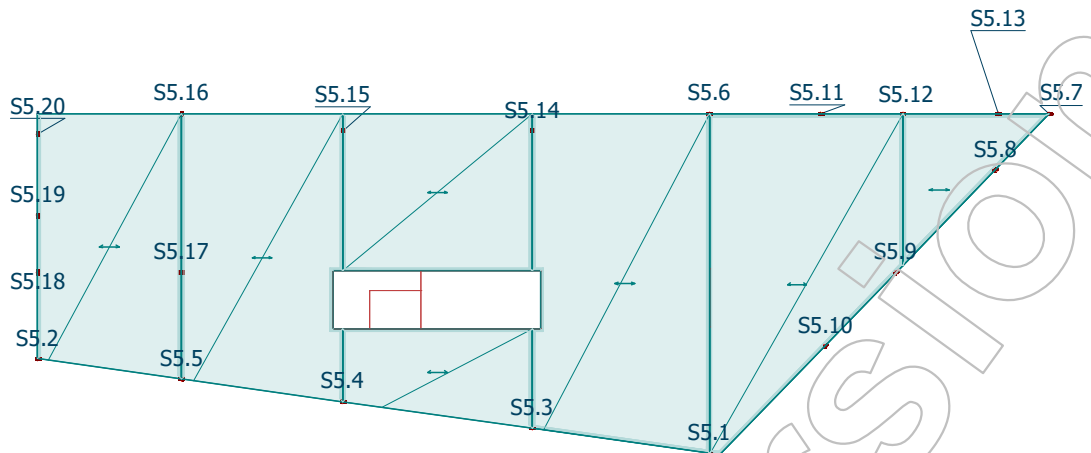
Eurocode (NA: Norwegian)
View: Storey 5 (+17.510)



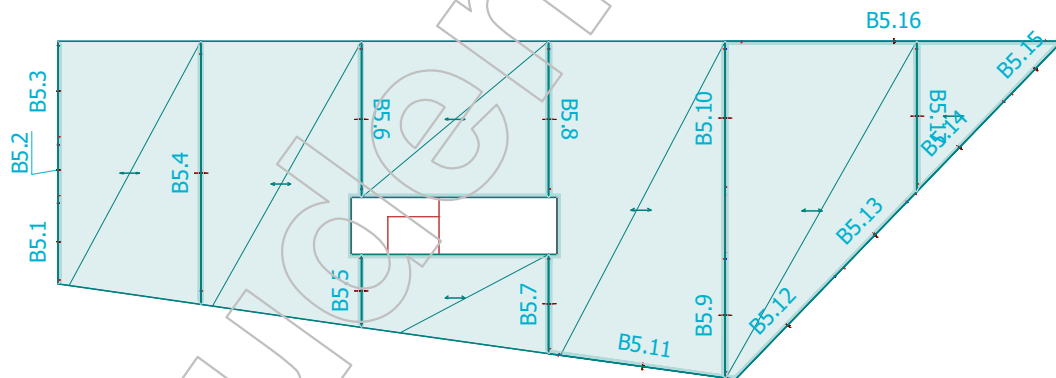
Eurocode (NA: Norwegian)
View: Storey 5 (+17.510)



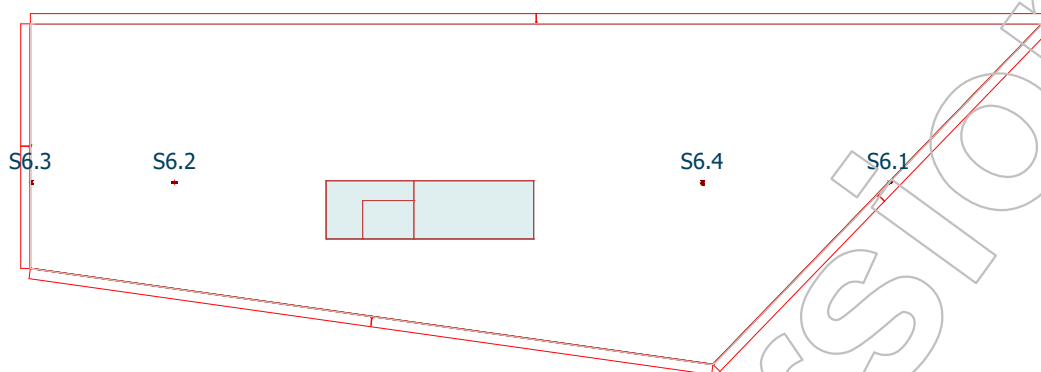
Eurocode (NA: Norwegian)
View: Storey 6 (+20.610)



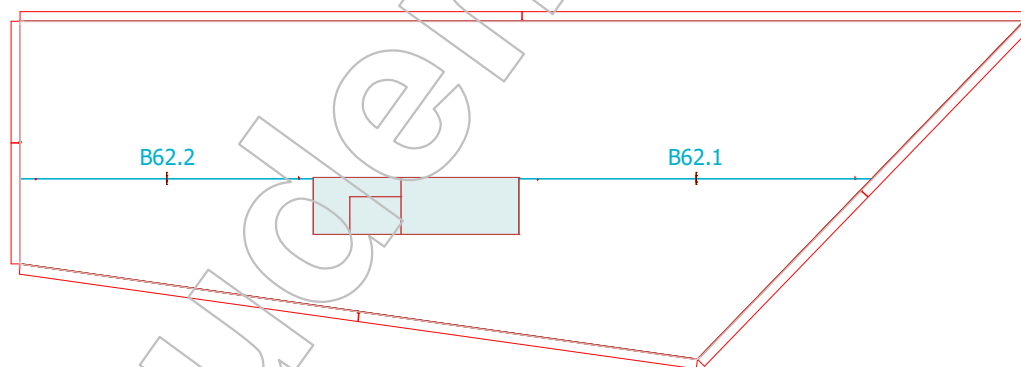
Eurocode (NA: Norwegian)
View: Storey 6 (+20.610)

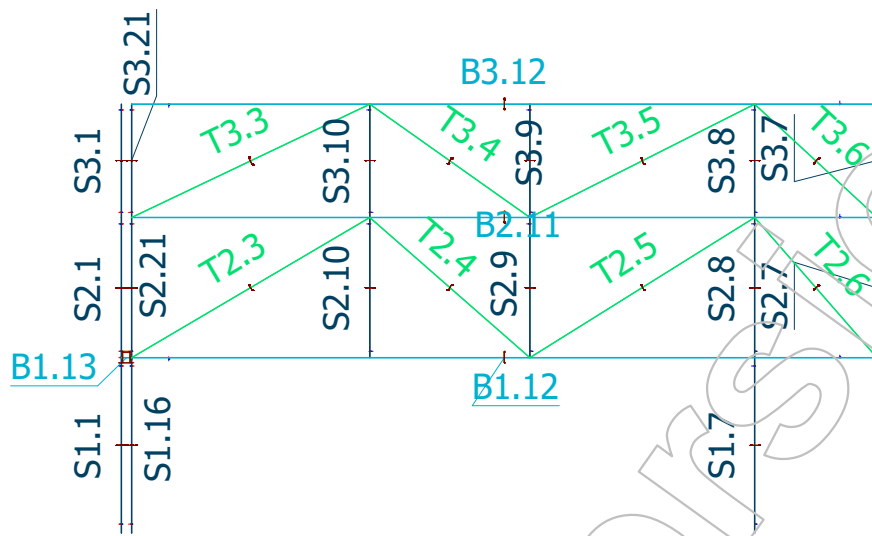


Eurocode (NA: Norwegian)
View: Storey 7 (+23.860)



Eurocode (NA: Norwegian)
View: Storey 7 (+23.860)

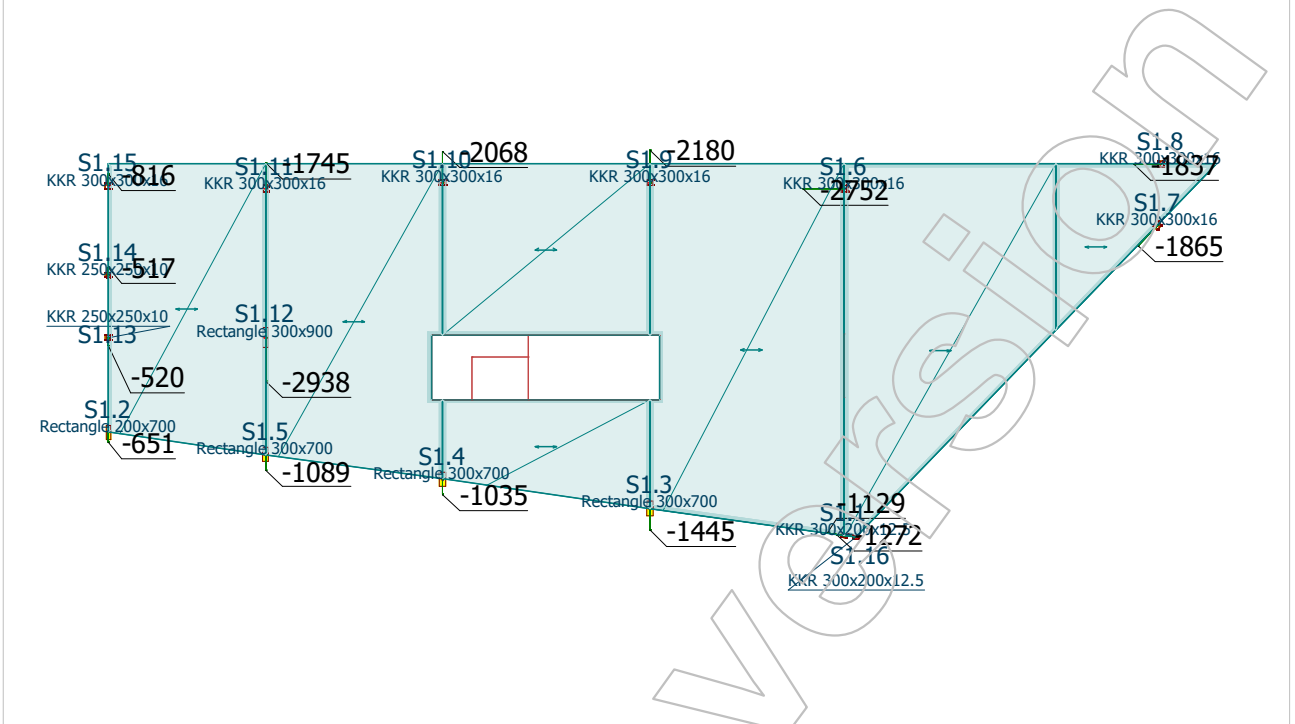




Student Versjon

2 Laster til kontrollering

Eurocode (NA: Norwegian) code: 2nd order theory - Load combinations - LK1 BRD - Bars, N - Graph - [kN]
View: Storey 2 (+6.110)



Student

3 Lastkombinasjoner

Load combinations

No.	Name	Type	Factor	Load cases
1	LK1 BRD	Ultimate	1.200	Påført egen
			1.500	Nytte
			1.050	Snow load, UD
			1.200	Egen (+Struc. dead load)
			1.200	Påført egen 2
2	LK2 BRD	Ultimate	1.200	Påført egen
			1.050	Snow load, UD
			1.500	Nytte
			1.200	Egen (+Struc. dead load)
			0.900	Egen (+Struc. dead load)
3	LK3 BRD	Ultimate	1.050	Nytte
			0.900	Påført egen
			1.500	WL, Y-, 1.
			1.200	Egen (+Struc. dead load)
			1.050	WL, X+, 3.
4	LK4 BRD	Ultimate	1.500	Nytte
			1.200	Påført egen
			1.050	Snow load, UD
			1.000	Egen (+Struc. dead load)
			1.000	Påført egen
5	LK5 BRK	Characteristic	1.000	Nytte
			1.000	Egen (+Struc. dead load)
			1.000	Påført egen
6	LK6 BRK	Characteristic	1.000	Egen (+Struc. dead load)
			1.000	Påført egen
			1.000	Nytte

Studententversjon

4 Utnyttelse, Plan 0

Max. of load combinations, Bar, Utilization - for Storey 1

Member	Section	Status	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	SB	IA
[-]	[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
B0.1.1	IPE 300	Real	24	LK2 BRD	12	13	6	24	0	-	24
B0.2.1	IPE 300	Real	7	LK2 BRD	7	-	-	5	0	-	5
B0.3.1	IPE 300	Real	25	LK2 BRD	17	11	6	19	25	-	25
B0.11.1	HSQ 350	Real	19	LK2 BRD	7	0	0	19	0	-	19
B0.12.1	HSQ 350	Real	45	LK2 BRD	27	0	0	24	45	-	45
B0.13.1	HSQ 350	Real	3	LK2 BRD	3	-	-	0	0	-	0
B0.14.1	HE-A 360	Real	38	LK2 BRD	24	0	0	22	38	-	38
S0.1.1	KKR 300x200x12.5	Real	39	LK4 BRD	37	39	32	0	0	-	37
S0.6.1	KKR 300x300x16	Real	62	LK2 BRD	62	59	54	0	0	-	62
S0.7.1	KKR 300x300x16	Real	37	LK2 BRD	37	36	32	0	0	-	37
S0.8.1	KKR 300x300x16	Real	37	LK2 BRD	37	36	33	0	0	-	37
S0.9.1	KKR 300x300x16	Real	52	LK2 BRD	52	50	46	0	0	-	52
S0.10.1	KKR 300x300x16	Real	50	LK2 BRD	50	48	43	0	0	-	50
S0.11.1	KKR 300x300x16	Real	42	LK2 BRD	42	40	36	0	0	-	42
S0.13.1	KKR 250x250x10	Real	28	LK2 BRD	28	27	23	0	0	-	28
S0.14.1	KKR 250x250x10	Real	30	LK4 BRD	29	30	26	0	0	-	29
S0.15.1	KKR 300x300x16	Real	19	LK2 BRD	19	18	16	0	0	-	19
S0.18.1	KKR 300x200x12.5	Real	46	LK4 BRD	43	46	38	0	0	-	43
T0.1.1	KKR 100x100x8	Real	57	LK2 BRD	16	57	16	-	-	-	-
T0.2.1	KKR 100x100x8	Real	50	LK2 BRD	14	50	14	-	-	-	-

Max. of load combinations, Delta beam, utilization - for Storey 1

Member	Section	Status	Maximum	Combination	T	TRd	Shear	M	MRd	Moment
[-]	[-]	[-]	[%]	[-]	[kN]	[kN]	[%]	[kNm]	[kNm]	[%]
B0.4.1	D32-400	Real	44	LK2 BRD	338.008	776.320	44	-273.479	857.190	32
B0.5.1	D32-400	Real	6	LK2 BRD	46.666	776.320	6	23.835	1000.880	2
B0.6.1	D32-400	Real	38	LK2 BRD	293.249	776.320	38	192.715	1000.880	19
B0.7.1	D32-400	Real	14	LK2 BRD	104.941	776.320	14	61.147	1000.880	6
B0.8.1	D32-400	Real	39	LK2 BRD	304.118	776.320	39	200.286	1000.880	20
B0.9.1	D32-400	Real	12	LK2 BRD	61.579	776.320	8	121.302	1000.880	12
B0.10.1	D32-400	Real	32	LK2 BRD	-250.965	776.320	32	157.687	1000.880	16
B0.15.1	D32-400	Real	33	LK2 BRD	-259.281	776.320	33	-280.990	857.190	33

Max. of load combinations, Bars, Internal forces, MinMax, Ultimate - for Storey 1

Max.	ID	N	Ty'	Tz'	Mt	My'	Mz'	x	Comb
[-]	[-]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]	[m]	[-]
N (+)	B0.2.1	109.591	0.281	-21.832	-0.000	0.000	0.000	2.945	LK2 BRD
Ty' (+)	B0.6.1	-2.923	6.772	78.139	-0.000	0.000	0.000	8.070	LK4 BRD
Tz' (+)	B0.4.1	0.402	-0.281	338.011	-0.000	-273.484	0.001	5.491	LK2 BRD
Mt (+)	B0.15.1	15.699	0.217	131.116	7.063	-127.438	0.185	19.362	LK2 BRD
My' (+)	B0.8.1	-3.589	0.027	9.549	-0.000	200.392	-0.047	3.673	LK2 BRD
Mz' (+)	B0.6.1	-2.052	2.084	-6.480	-0.000	-31.560	2.708	7.670	LK4 BRD
N (-)	S0.12.1	-3923.043	0.041	-0.132	-0.000	0.000	0.000	0.000	LK2 BRD
Ty' (-)	B0.15.1	-5.512	-8.704	-100.612	1.296	-114.925	1.993	19.073	LK3 BRD
Tz' (-)	B0.4.1	0.475	-0.308	-314.780	-0.000	-273.484	0.246	5.491	LK2 BRD
Mt (-)	B0.15.1	5.271	0.008	66.974	-7.388	4.792	-0.030	11.496	LK2 BRD
My' (-)	B0.12.1	-0.594	0.055	-233.683	-0.000	-326.410	0.001	13.539	LK2 BRD
Mz' (-)	B0.14.1	-0.154	6.549	-14.287	-0.000	-9.868	-2.595	2.630	LK3 BRD

5 Utnyttelse, Plan 1

Max. of load combinations, Bar, Utilization - for Storey 2

Member	Section	Status	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	SB	IA
[-]	[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
B1.1.1	HE-A 320	Real	8	LK2 BRD	7	2	2	8	0	-	8
B1.2.1	HE-A 320	Real	5	LK2 BRD	5	-	-	3	0	-	3
B1.3.1	HE-A 320	Real	8	LK2 BRD	8	1	1	7	6	-	7
B1.10.1	HSQ 385	Real	49	LK2 BRD	43	1	1	6	48	-	49
B1.11.1	HSQ 350	Real	48	LK2 BRD	48	2	2	41	0	-	42
B1.12.1	HSQ 350	Real	29	LK2 BRD	29	4	4	10	20	-	20
B1.13.1	HSQ 350	Real	8	LK2 BRD	8	3	3	0	0	-	4
B1.14.1	HE-A 360	Real	25	LK2 BRD	24	4	3	12	22	-	25
S1.1.1	KKR 300x200x12.5	Real	51	LK4 BRD	34	51	29	0	0	-	34
S1.6.1	KKR 300x300x16	Real	62	LK4 BRD	53	62	47	0	0	-	53
S1.7.1	KKR 300x300x16	Real	43	LK4 BRD	37	43	32	0	0	-	37
S1.8.1	KKR 300x300x16	Real	42	LK4 BRD	36	42	32	0	0	-	36
S1.9.1	KKR 300x300x16	Real	49	LK4 BRD	42	49	37	0	0	-	42
S1.10.1	KKR 300x300x16	Real	46	LK4 BRD	40	46	35	0	0	-	40
S1.11.1	KKR 300x300x16	Real	39	LK4 BRD	34	39	29	0	0	-	34
S1.13.1	KKR 250x250x10	Real	24	LK4 BRD	19	24	16	0	0	-	19
S1.14.1	KKR 250x250x10	Real	23	LK4 BRD	19	23	16	0	0	-	19
S1.15.1	KKR 300x300x16	Real	18	LK4 BRD	16	18	13	0	0	-	16
S1.16.1	KKR 300x200x12.5	Real	59	LK4 BRD	39	59	33	0	0	-	39
T1.1.1	KKR 200x100x10	Real	88	LK2 BRD	15	88	15	-	-	-	-
T1.2.1	KKR 200x100x10	Real	75	LK2 BRD	13	75	13	-	-	-	-

Max. of load combinations, Delta beam, utilization - for Storey 2

Member	Section	Status	Maximum	Combination	T	TRd	Shear	M	MRd	Moment
[-]	[-]	[-]	[%]	[-]	[kN]	[kN]	[%]	[kNm]	[kNm]	[%]
B1.4.1	D32-400	Real	66	LK2 BRD	514.015	776.320	66	-451.117	857.190	53
B1.5.1	D32-400	Real	5	LK2 BRD	-42.690	776.320	5	46.671	1000.880	5
B1.6.1	D32-400	Real	34	LK2 BRD	262.061	776.320	34	200.977	1000.880	20
B1.7.1	D32-400	Real	10	LK2 BRD	75.274	776.320	10	86.010	1000.880	9
B1.8.1	D32-400	Real	35	LK2 BRD	271.949	776.320	35	207.134	1000.880	21
B1.9.1	D32-400	Real	12	LK2 BRD	60.532	776.320	8	115.644	1000.880	12
B1.15.1	D32-400	Real	29	LK2 BRD	-224.115	776.320	29	-233.264	857.190	27

Max. of load combinations, Bars, Internal forces, MinMax, Ultimate - for Storey 2

Max.	ID	N	Ty'	Tz'	Mt	My'	Mz'	x	Comb
[-]	[-]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]	[m]	[-]
N (+)	B1.12.1	1017.645	-57.752	58.387	-0.000	0.000	0.000	0.000	LK2 BRD
Ty' (+)	B1.11.1	-2.997	307.221	258.397	-0.000	0.000	0.000	0.000	LK2 BRD
Tz' (+)	B1.10.1	-7.226	34.468	755.748	-0.000	-756.338	-19.063	6.800	LK2 BRD
Mt (+)	B1.15.1	-104.590	0.808	153.429	12.742	-169.402	-0.281	9.600	LK2 BRD
My' (+)	B1.11.1	-40.967	-0.112	-5.022	-0.000	273.003	-1.051	3.527	LK2 BRD
Mz' (+)	B1.14.1	-50.253	-4.581	-30.103	-0.000	-75.750	30.224	2.630	LK3 BRD
N (-)	S1.12.1	-3192.459	0.012	-0.188	-0.245	0.000	0.000	0.000	LK2 BRD
Ty' (-)	B1.10.1	-0.735	-249.090	694.383	-0.000	0.000	0.000	7.970	LK2 BRD
Tz' (-)	B1.10.1	-7.828	28.685	-500.445	-0.000	-756.338	-18.700	6.800	LK2 BRD
Mt (-)	B1.15.1	-1.552	-1.388	-132.413	-21.507	-96.924	0.645	18.770	LK2 BRD
My' (-)	B1.10.1	-7.226	34.468	755.748	-0.000	-756.338	-19.063	6.800	LK2 BRD
Mz' (-)	B1.11.1	-6.214	127.303	203.382	-0.000	66.395	-79.028	0.257	LK2 BRD

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Max. of load combinations, Bar, Utilization - for Storey 3

Member	Section	Status	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	SB	IA
[-]	[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
B2.1.1	HE-A 360	Real	8	LK2 BRD	7	1	1	8	0	-	8
B2.2.1	HE-A 360	Real	4	LK2 BRD	4	-	-	3	0	-	3
B2.3.1	HE-A 360	Real	8	LK2 BRD	8	1	1	7	5	-	7
B2.10.1	HSQ 385	Real	26	LK2 BRD	23	0	0	8	26	-	26
B2.11.1	HE-B 400	Real	26	LK2 BRD	24	16	10	11	17	-	26
B2.12.1	HE-A 360	Real	30	LK2 BRD	29	17	14	9	17	-	30
B2.13.1	HSQ 350	Real	31	LK2 BRD	12	2	2	29	0	-	31
S2.1.1	KKR 300x200x12.5	Real	37	LK4 BRD	30	37	26	0	0	-	30
S2.6.1	KKR 300x200x12.5	Real	9	LK4 BRD	6	9	6	0	0	-	6
S2.7.1	KKR 300x200x12.5	Real	10	LK4 BRD	8	10	7	0	0	-	8
S2.8.1	KKR 300x200x12.5	Real	64	LK4 BRD	51	64	44	0	0	-	51
S2.9.1	KKR 300x200x12.5	Real	15	LK4 BRD	12	15	10	0	0	-	12
S2.10.1	KKR 300x200x12.5	Real	6	LK2 BRD	6	-	-	0	0	-	0
S2.11.1	KKR 300x200x12.5	Real	1	LK2 BRD	1	-	-	0	0	-	0
S2.12.1	KKR 300x200x12.5	Real	21	LK4 BRD	17	21	15	0	0	-	17
S2.13.1	KKR 300x200x12.5	Real	67	LK4 BRD	53	67	46	0	0	-	53
S2.14.1	KKR 300x200x10	Real	79	LK4 BRD	63	79	55	0	0	-	63
S2.15.1	KKR 300x200x10	Real	74	LK4 BRD	60	74	52	0	0	-	60
S2.16.1	KKR 300x200x10	Real	19	LK4 BRD	16	19	14	0	0	-	16
S2.18.1	KKR 250x250x10	Real	20	LK4 BRD	18	20	15	0	0	-	18
S2.19.1	KKR 250x250x10	Real	18	LK4 BRD	17	18	14	0	0	-	17
S2.20.1	KKR 300x200x10	Real	30	LK4 BRD	25	30	21	0	0	-	25
S2.21.1	KKR 300x200x12.5	Real	21	LK4 BRD	17	21	15	0	0	-	17
S2.22.1	KKR 250x250x10	Real	60	LK4 BRD	54	60	47	0	0	-	54
S2.23.1	KKR 300x200x10	Real	37	LK4 BRD	31	37	26	0	0	-	31
T2.1.1	KKR 100x100x10	Real	54	LK2 BRD	11	54	11	-	-	-	-
T2.2.1	KKR 100x100x10	Real	67	LK2 BRD	13	67	13	-	-	-	-
T2.3.1	KKR 250x250x12.5	Real	91	LK2 BRD	38	91	38	-	-	-	-
T2.4.1	KKR 250x150x12.5	Real	8	LK3 BRD	8	-	-	-	-	-	-
T2.5.1	KKR 250x150x12.5	Real	45	LK2 BRD	45	-	-	-	-	-	-
T2.6.1	KKR 250x150x12.5	Real	3	LK3 BRD	3	-	-	-	-	-	-
T2.7.1	KKR 250x150x12.5	Real	9	LK2 BRD	9	-	-	-	-	-	-
T2.8.1	KKR 250x150x12.5	Real	46	LK2 BRD	46	-	-	-	-	-	-
T2.9.1	KKR 250x150x12.5	Real	2	LK3 BRD	2	-	-	-	-	-	-
T2.10.1	KKR 250x150x12.5	Real	98	LK2 BRD	27	98	27	-	-	-	-

Max. of load combinations, Delta beam, utilization - for Storey 3

Member	Section	Status	Maximum	Combination	T	TRd	Shear	M	MRd	Moment
[-]	[-]	[-]	[%]	[-]	[kN]	[kN]	[%]	[kNm]	[kNm]	[%]
B2.4.1	D32-400	Real	61	LK2 BRD	474.445	776.320	61	-410.346	857.190	48
B2.5.1	D32-400	Real	5	LK2 BRD	-40.212	776.320	5	44.604	1000.880	4
B2.6.1	D32-400	Real	33	LK2 BRD	257.167	776.320	33	196.964	1000.880	20
B2.7.1	D32-400	Real	9	LK2 BRD	-72.063	776.320	9	84.216	1000.880	8
B2.8.1	D32-400	Real	34	LK2 BRD	266.085	776.320	34	202.489	1000.880	20
B2.9.1	D32-400	Real	11	LK2 BRD	56.053	776.320	7	114.640	1000.880	11
B2.14.1	D32-400	Real	31	LK2 BRD	-242.404	776.320	31	-252.933	857.190	30

Max. of load combinations, Bars, Internal forces, MinMax, Ultimate - for Storey 3

Max.	ID	N	Ty'	Tz'	Mt	My'	Mz'	x	Comb
[-]	[-]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]	[m]	[-]
N (+)	T2.8.1	1398.200	0.000	0.000	-0.000	0.000	0.000	0.000	LK2 BRD
Ty' (+)	B2.6.1	-13.211	48.553	10.266	-0.000	0.000	0.000	8.070	LK3 BRD
Tz' (+)	B2.4.1	0.931	-0.001	474.450	-0.000	-410.352	-0.036	12.486	LK2 BRD
Mt (+)	B2.14.1	2.398	0.702	167.412	12.841	-182.112	0.322	9.600	LK2 BRD
My' (+)	B2.8.1	3.648	-0.006	3.874	-0.000	202.661	-0.156	4.071	LK2 BRD
Mz' (+)	B2.6.1	-11.569	10.476	-29.046	-0.000	-4.342	19.414	7.670	LK3 BRD
N (-)	S2.17.1	-2653.539	0.069	-0.002	0.182	0.000	0.000	0.000	LK2 BRD
Ty' (-)	B2.9.1	14.439	-62.115	53.801	-0.000	0.000	0.000	0.000	LK2 BRD
Tz' (-)	B2.4.1	0.975	-0.050	-415.363	-0.000	-410.352	0.015	12.486	LK2 BRD
Mt (-)	B2.14.1	7.035	-0.009	-150.379	-21.367	-112.647	-0.080	18.802	LK2 BRD
My' (-)	B2.4.1	0.931	-0.001	474.450	-0.000	-410.352	-0.036	12.486	LK2 BRD
Mz' (-)	B2.8.1	-13.059	-7.144	-44.973	-0.000	-17.643	-12.066	7.670	LK2 BRD

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Max. of load combinations, Bar, Utilization - for Storey 4

Member	Section	Status	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	SB	IA
[-]	[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
B3.1.1	IPE 300	Real	27	LK2 BRD	17	6	3	27	0	-	27
B3.2.1	IPE 300	Real	5	LK2 BRD	5	-	-	4	0	-	4
B3.3.1	IPE 300	Real	19	LK2 BRD	14	5	3	13	19	-	19
B3.10.1	HSQ 385	Real	22	LK2 BRD	19	0	0	8	22	-	22
B3.11.1	HE-A 300	Real	27	LK2 BRD	24	1	1	27	19	-	27
B3.12.1	HE-B 400	Real	24	LK2 BRD	22	17	10	10	15	-	24
B3.13.1	HE-A 360	Real	21	LK4 BRD	21	-	-	10	12	-	19
B3.14.1	HSQ 350	Real	37	LK2 BRD	27	1	1	36	0	-	37
S3.1.1	KKR 300x200x10	Real	35	LK4 BRD	31	35	27	0	0	-	31
S3.2.1	KKR 250x150x10	Real	25	LK4 BRD	19	25	17	0	0	-	19
S3.3.1	KKR 250x150x10	Real	48	LK4 BRD	36	48	32	0	0	-	36
S3.4.1	KKR 250x150x10	Real	34	LK4 BRD	26	34	23	0	0	-	26
S3.5.1	KKR 250x150x10	Real	32	LK4 BRD	24	32	21	0	0	-	24
S3.6.1	KKR 250x150x10	Real	35	LK4 BRD	25	35	23	0	0	-	25
S3.7.1	KKR 300x200x10	Real	10	LK4 BRD	8	10	8	0	0	-	8
S3.8.1	KKR 300x200x10	Real	36	LK4 BRD	32	36	28	0	0	-	32
S3.9.1	KKR 300x200x10	Real	20	LK4 BRD	19	20	16	0	0	-	19
S3.10.1	KKR 300x200x10	Real	6	LK4 BRD	5	6	5	0	0	-	5
S3.11.1	KKR 250x150x10	Real	12	LK4 BRD	8	12	8	0	0	-	8
S3.12.1	KKR 250x150x10	Real	25	LK4 BRD	19	25	17	0	0	-	19
S3.13.1	KKR 250x150x10	Real	32	LK4 BRD	24	32	21	0	0	-	24
S3.14.1	KKR 250x150x10	Real	80	LK4 BRD	60	80	53	0	0	-	60
S3.15.1	KKR 250x150x10	Real	74	LK4 BRD	56	74	49	0	0	-	56
S3.16.1	KKR 250x150x10	Real	49	LK4 BRD	37	49	32	0	0	-	37
S3.17.1	KKR 300x200x10	Real	78	LK4 BRD	68	78	61	0	0	-	68
S3.18.1	KKR 250x150x10	Real	23	LK4 BRD	18	23	15	0	0	-	18
S3.19.1	KKR 250x150x10	Real	20	LK4 BRD	16	20	13	0	0	-	16
S3.20.1	KKR 250x150x10	Real	31	LK4 BRD	25	31	21	0	0	-	25
S3.21.1	KKR 300x200x10	Real	4	LK4 BRD	3	4	3	0	0	-	2
S3.22.1	KKR 250x150x10	Real	43	LK4 BRD	33	43	28	0	0	-	33
T3.1.1	KKR 100x100x8	Real	42	LK2 BRD	11	42	11	-	-	-	-
T3.2.1	KKR 100x100x8	Real	34	LK2 BRD	9	34	9	-	-	-	-
T3.3.1	KKR 300x200x10	Real	91	LK2 BRD	32	91	32	-	-	-	-
T3.4.1	KKR 250x150x10	Real	10	LK2 BRD	10	-	-	-	-	-	-
T3.5.1	KKR 250x150x10	Real	33	LK2 BRD	33	-	-	-	-	-	-
T3.6.1	KKR 250x150x10	Real	16	LK2 BRD	7	16	7	-	-	-	-

Max. of load combinations, Delta beam, utilization - for Storey 4

Member	Section	Status	Maximum	Combination	T	TRd	Shear	M	MRd	Moment
[-]	[-]	[-]	[%]	[-]	[kN]	[kN]	[%]	[kNm]	[kNm]	[%]
B3.4.1	D32-400	Real	39	LK2 BRD	305.845	776.320	39	-267.190	857.190	31
B3.5.1	D32-400	Real	16	LK2 BRD	123.468	776.320	16	49.421	1000.880	5
B3.6.1	D32-400	Real	28	LK2 BRD	216.526	776.320	28	134.410	1000.880	13
B3.7.1	D32-400	Real	19	LK2 BRD	146.340	776.320	19	90.711	1000.880	9
B3.8.1	D32-400	Real	29	LK2 BRD	226.944	776.320	29	144.939	1000.880	14
B3.9.1	D32-400	Real	10	LK2 BRD	58.515	776.320	8	102.387	1000.880	10

Max. of load combinations, Bars, Internal forces, MinMax, Ultimate - for Storey 4

Max.	ID	N	Ty'	Tz'	Mt	My'	Mz'	x	Comb
[-]	[-]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]	[m]	[-]
N (+)	T3.5.1	843.434	0.000	0.000	-0.000	0.000	0.000	0.000	LK2 BRD
Ty' (+)	B3.6.1	-14.953	52.694	36.312	-0.000	0.000	0.000	8.070	LK3 BRD
Tz' (+)	B3.10.1	1.689	-4.905	382.063	-0.000	-348.012	2.131	6.800	LK2 BRD
Mt (+)	S3.17.1	-1158.503	0.000	0.000	0.058	0.000	0.000	0.000	LK3 BRD
My' (+)	B3.14.1	-22.783	0.480	-4.521	-0.000	237.780	-2.124	3.583	LK2 BRD
Mz' (+)	B3.13.1	37.168	19.527	-13.345	-0.000	59.120	33.305	7.545	LK4 BRD
N (-)	S3.17.1	-2137.934	0.095	-0.004	0.024	0.000	0.000	0.000	LK2 BRD
Ty' (-)	B3.5.1	7.595	-22.908	37.636	-0.000	0.000	0.000	3.753	LK4 BRD
Tz' (-)	B3.10.1	2.226	-4.010	-317.748	-0.000	-348.012	2.102	6.800	LK2 BRD
Mt (-)	S3.11.1	-183.696	0.000	0.000	-2.057	0.000	0.000	3.339	LK4 BRD
My' (-)	B3.10.1	1.689	-4.905	382.063	-0.000	-348.012	2.131	6.800	LK2 BRD
Mz' (-)	B3.13.1	37.168	0.460	2.953	-0.000	-1.414	-22.607	13.579	LK4 BRD

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Max. of load combinations, Bar, Utilization - for Storey 5

Member	Section	Status	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	SB	IA
[-]	[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
B4.1.1	IPE 300	Real	27	LK2 BRD	17	9	4	27	0	-	27
B4.2.1	IPE 300	Real	5	LK2 BRD	5	-	-	4	0	-	4
B4.3.1	IPE 300	Real	19	LK2 BRD	14	3	2	13	19	-	19
B4.11.1	HE-A 300	Real	33	LK2 BRD	33	1	1	24	29	-	29
B4.12.1	HE-B 400	Real	3	LK2 BRD	3	1	1	3	-	-	3
B4.13.1	HE-B 400	Real	11	LK2 BRD	9	1	1	11	0	-	11
B4.14.1	HE-B 400	Real	15	LK2 BRD	14	1	1	15	1	-	15
B4.15.1	HE-B 400	Real	3	LK2 BRD	3	0	0	3	0	-	3
B4.16.1	HE-A 360	Real	15	LK4 BRD	15	0	0	10	11	-	13
B4.17.1	HSQ 350	Real	37	LK2 BRD	18	0	0	37	0	-	37
S4.1.1	KKR 250x150x8	Real	51	LK4 BRD	42	51	38	0	0	-	42
S4.2.1	KKR 250x150x8	Real	21	LK4 BRD	18	21	16	0	0	-	18
S4.3.1	KKR 250x150x8	Real	39	LK4 BRD	32	39	29	0	0	-	32
S4.4.1	KKR 250x150x8	Real	28	LK4 BRD	24	28	21	0	0	-	24
S4.5.1	KKR 250x150x8	Real	25	LK4 BRD	22	25	19	0	0	-	22
S4.6.1	KKR 250x150x8	Real	54	LK4 BRD	45	54	40	0	0	-	45
S4.7.1	KKR 250x150x8	Real	16	LK4 BRD	13	16	12	0	0	-	13
S4.8.1	KKR 250x150x8	Real	34	LK4 BRD	28	34	25	0	0	-	28
S4.9.1	KKR 250x150x8	Real	13	LK4 BRD	12	13	10	0	0	-	12
S4.10.1	KKR 250x150x8	Real	17	LK4 BRD	15	17	12	0	0	-	15
S4.11.1	KKR 250x150x10	Real	9	LK4 BRD	7	9	6	0	0	-	7
S4.12.1	KKR 250x150x10	Real	9	LK4 BRD	8	9	7	0	0	-	8
S4.13.1	KKR 250x150x10	Real	25	LK4 BRD	20	25	19	0	0	-	20
S4.14.1	KKR 250x150x8	Real	62	LK4 BRD	52	62	46	0	0	-	52
S4.15.1	KKR 250x150x8	Real	56	LK4 BRD	48	56	42	0	0	-	48
S4.16.1	KKR 250x150x8	Real	35	LK4 BRD	31	35	26	0	0	-	31
S4.17.1	KKR 250x150x10	Real	74	LK4 BRD	61	74	55	0	0	-	61
S4.18.1	KKR 250x150x8	Real	18	LK4 BRD	17	18	14	0	0	-	17
S4.19.1	KKR 250x150x8	Real	14	LK4 BRD	14	14	11	0	0	-	14
S4.20.1	KKR 250x150x8	Real	26	LK4 BRD	24	26	20	0	0	-	24
T4.1.1	KKR 100x100x8	Real	27	LK2 BRD	8	27	8	-	-	-	-
T4.2.1	KKR 100x100x8	Real	24	LK3 BRD	7	24	7	-	-	-	-

Max. of load combinations, Delta beam, utilization - for Storey 5

Member	Section	Status	Maximum	Combination	T	TRd	Shear	M	MRd	Moment
[-]	[-]	[-]	[%]	[-]	[kN]	[kN]	[%]	[kNm]	[kNm]	[%]
B4.4.1	D32-400	Real	39	LK2 BRD	299.937	776.320	39	-253.068	857.190	30
B4.5.1	D32-400	Real	17	LK2 BRD	129.158	776.320	17	59.817	1000.880	6
B4.6.1	D32-400	Real	28	LK2 BRD	220.349	776.320	28	158.815	1000.880	16
B4.7.1	D32-400	Real	19	LK2 BRD	144.676	776.320	19	102.698	1000.880	10
B4.8.1	D32-400	Real	30	LK2 BRD	229.317	776.320	30	166.897	1000.880	17
B4.9.1	D32-400	Real	10	LK2 BRD	54.518	776.320	7	96.106	1000.880	10
B4.10.1	D32-400	Real	36	LK2 BRD	-278.576	776.320	36	207.832	1000.880	21

Max. of load combinations, Bars, Internal forces, MinMax, Ultimate - for Storey 5

Max.	ID	N	Ty'	Tz'	Mt	My'	Mz'	x	Comb
[-]	[-]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]	[m]	[-]
N (+)	B4.9.1	60.632	0.194	-11.233	1.245	0.000	0.000	6.504	LK3 BRD
Ty' (+)	B4.16.1	-1.074	41.003	-13.815	-0.000	55.739	16.756	7.545	LK4 BRD
Tz' (+)	B4.4.1	-1.785	0.032	299.940	-0.000	-253.072	0.072	5.491	LK2 BRD
Mt (+)	S4.11.1	-158.981	0.000	0.000	2.331	0.000	0.000	0.310	LK4 BRD
My' (+)	B4.17.1	-0.170	0.003	3.718	0.237	244.628	-0.002	3.256	LK2 BRD
Mz' (+)	B4.16.1	-3.056	-13.797	19.785	-0.000	55.589	19.449	7.545	LK4 BRD
N (-)	S4.17.1	-1500.639	0.052	0.007	0.026	0.000	0.000	0.000	LK2 BRD
Ty' (-)	B4.5.1	8.057	-14.332	48.365	-0.000	0.000	0.000	3.753	LK4 BRD
Tz' (-)	B4.4.1	-1.585	0.074	-283.339	-0.000	-253.072	0.020	5.491	LK2 BRD
Mt (-)	S4.13.1	-458.512	0.000	0.000	-0.406	0.000	0.000	3.100	LK4 BRD
My' (-)	B4.4.1	-1.785	0.032	299.940	-0.000	-253.072	0.072	5.491	LK2 BRD
Mz' (-)	B4.16.1	-3.056	0.909	-23.631	-0.000	-57.588	-12.720	2.630	LK4 BRD

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Max. of load combinations, Bar, Utilization - for Storey 6

Member	Section	Status	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	SB	IA
[-]	[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
B5.1.1	IPE 300	Real	21	LK2 BRD	21	2	1	19	0	-	19
B5.2.1	IPE 300	Real	11	LK2 BRD	11	3	2	6	0	-	8
B5.3.1	IPE 300	Real	31	LK4 BRD	30	16	8	5	26	-	31
B5.11.1	HE-A 300	Real	62	LK2 BRD	62	11	5	8	31	-	40
B5.12.1	HE-B 400	Real	5	LK2 BRD	5	1	0	5	0	-	5
B5.13.1	HE-B 400	Real	5	LK2 BRD	5	-	-	2	0	-	2
B5.14.1	HE-B 400	Real	9	LK2 BRD	9	1	0	5	0	-	6
B5.15.1	HE-B 400	Real	10	LK2 BRD	10	0	0	5	0	-	8
B5.16.1	HE-A 360	Real	29	LK4 BRD	29	4	4	18	17	-	20
B5.17.1	HSQ 350	Real	35	LK2 BRD	17	0	0	35	0	-	35
S5.1.1	KKR 200x100x8	Real	76	LK2 BRD	76	76	41	0	0	-	76
S5.2.1	KKR 200x100x8	Real	29	LK4 BRD	17	29	16	0	0	-	17
S5.3.1	KKR 200x100x8	Real	51	LK4 BRD	28	51	27	0	0	-	28
S5.4.1	KKR 200x100x8	Real	37	LK4 BRD	21	37	20	0	0	-	21
S5.5.1	KKR 200x100x8	Real	30	LK4 BRD	18	30	16	0	0	-	18
S5.6.1	KKR 200x100x10	Real	55	LK4 BRD	31	55	29	0	0	-	31
S5.7.1	KKR 200x100x8	Real	30	LK4 BRD	17	30	16	0	0	-	17
S5.8.1	KKR 200x100x8	Real	50	LK4 BRD	29	50	27	0	0	-	29
S5.9.1	KKR 200x100x8	Real	10	LK3 BRD	10	-	-	0	0	-	0
S5.10.1	KKR 200x100x8	Real	13	LK4 BRD	8	13	7	0	0	-	8
S5.11.1	KKR 200x100x8	Real	17	LK4 BRD	9	17	9	0	0	-	9
S5.12.1	KKR 200x100x8	Real	9	LK3 BRD	9	-	-	0	0	-	0
S5.13.1	KKR 200x100x8	Real	52	LK4 BRD	30	52	28	0	0	-	30
S5.14.1	KKR 200x100x10	Real	61	LK4 BRD	35	61	32	0	0	-	35
S5.15.1	KKR 200x100x8	Real	63	LK4 BRD	38	63	34	0	0	-	38
S5.16.1	KKR 200x100x8	Real	34	LK4 BRD	21	34	18	0	0	-	21
S5.17.1	KKR 250x150x8	Real	52	LK4 BRD	44	52	39	0	0	-	44
S5.18.1	KKR 200x100x8	Real	15	LK4 BRD	11	15	8	0	0	-	11
S5.19.1	KKR 200x100x8	Real	18	LK4 BRD	12	18	10	0	0	-	12
S5.20.1	KKR 200x100x8	Real	36	LK4 BRD	24	36	19	0	0	-	24
T5.1.1	KKR 100x100x8	Real	2	LK4 BRD	2	-	-	-	-	-	-
T5.2.1	KKR 100x100x8	Real	38	LK2 BRD	12	38	12	-	-	-	-

Max. of load combinations, Delta beam, utilization - for Storey 6

Member	Section	Status	Maximum	Combination	T	TRd	Shear	M	MRd	Moment
[-]	[-]	[-]	[%]	[-]	[kN]	[kN]	[%]	[kNm]	[kNm]	[%]
B5.4.1	D32-400	Real	36	LK2 BRD	275.888	776.320	36	-210.301	857.190	25
B5.5.1	D32-400	Real	17	LK2 BRD	134.282	776.320	17	39.045	1000.880	4
B5.6.1	D32-400	Real	38	LK2 BRD	-297.747	776.320	38	-185.593	857.190	22
B5.7.1	D32-400	Real	19	LK2 BRD	146.112	776.320	19	71.764	1000.880	7
B5.8.1	D32-400	Real	43	LK2 BRD	-337.263	776.320	43	-212.335	857.190	25
B5.9.1	D32-400	Real	8	LK2 BRD	64.214	776.320	8	83.550	1000.880	8
B5.10.1	D32-400	Real	29	LK2 BRD	-225.698	776.320	29	178.524	1000.880	18

Max. of load combinations, Bars, Internal forces, MinMax, Ultimate - for Storey 6

Max.	ID	N	Ty'	Tz'	Mt	My'	Mz'	x	Comb
[-]	[-]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]	[m]	[-]
N (+)	B5.16.1	537.205	-0.166	186.413	-0.000	112.205	1.548	7.545	LK2 BRD
Ty' (+)	B5.17.1	15.705	218.171	195.309	-0.076	0.000	0.000	0.000	LK4 BRD
Tz' (+)	B5.4.1	-4.532	0.149	275.890	-0.000	-210.305	-0.374	5.491	LK2 BRD
Mt (+)	S5.13.1	-408.612	0.000	0.000	0.151	0.000	0.000	0.000	LK4 BRD
My' (+)	B5.17.1	2.691	-0.377	2.939	-0.076	229.697	-0.180	3.131	LK2 BRD
Mz' (+)	B5.7.1	-26.145	16.148	-2.420	-0.000	-22.905	22.793	4.757	LK4 BRD
N (-)	S5.17.1	-876.664	-0.037	0.057	0.079	0.000	0.000	0.000	LK2 BRD
Ty' (-)	B5.6.1	22.126	-71.041	30.161	-0.000	0.000	0.000	8.070	LK3 BRD
Tz' (-)	B5.8.1	-47.326	-0.701	-337.266	-0.000	-212.339	-0.395	0.873	LK2 BRD
Mt (-)	B5.9.1	15.685	4.082	64.214	-0.673	0.000	0.000	0.000	LK2 BRD
My' (-)	B5.8.1	-47.326	-0.701	-337.266	-0.000	-212.339	-0.395	0.873	LK2 BRD
Mz' (-)	B5.17.1	12.548	93.242	151.034	-0.076	46.685	-52.230	0.239	LK4 BRD

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Max. of load combinations, Bar, Utilization - for Storey 7

Member	Section	Status	Maximum	Combination	RCS	FB	TFB	LTB,t	LTB,b	SB	IA
[-]	[-]	[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
B62.1.1	HSQ 350	Real	46	LK4 BRD	29	1	1	23	46	-	46
B62.2.1	HSQ 350	Real	34	LK4 BRD	18	1	1	33	24	-	34
S6.1.1	KKR 160x80x8	Real	22	LK4 BRD	14	22	8	0	0	-	13
S6.2.1	KKR 200x100x8	Real	36	LK4 BRD	21	36	18	0	0	-	21
S6.3.1	KKR 160x80x8	Real	13	LK4 BRD	8	13	5	0	0	-	10
S6.4.1	KKR 200x100x8	Real	67	LK4 BRD	34	67	34	0	0	-	32

Max. of load combinations, Bars, Internal forces, MinMax, Ultimate - for Storey 7

Max.	ID	N	Ty'	Tz'	Mt	My'	Mz'	x	Comb
[-]	[-]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]	[m]	[-]
N (+)	S6.1.1	154.811	-0.018	0.638	-0.002	0.000	0.000	0.000	LK2 BRD
Ty' (+)	S6.3.1	6.396	3.229	0.489	-0.000	0.000	0.000	3.250	LK3 BRD
Tz' (+)	B62.1.1	32.297	0.001	253.561	-0.000	-451.211	0.013	9.622	LK4 BRD
Mt (+)	S6.4.1	45.005	0.000	0.000	0.084	0.000	0.000	2.925	LK3 BRD
My' (+)	B62.1.1	32.297	0.001	1.046	-0.000	236.541	0.005	15.062	LK4 BRD
Mz' (+)	S6.3.1	15.759	0.052	0.001	0.026	-0.014	0.683	1.462	LK3 BRD
N (-)	S6.4.1	-496.527	0.000	0.000	-0.027	0.000	0.000	0.000	LK4 BRD
Ty' (-)	S6.3.1	-53.886	-4.382	-0.042	-0.000	0.000	0.000	3.250	LK4 BRD
Tz' (-)	B62.1.1	32.297	0.001	-241.667	-0.000	-451.211	-0.014	9.622	LK4 BRD
Mt (-)	S6.2.1	54.001	0.000	0.000	-0.070	0.000	0.000	3.250	LK3 BRD
My' (-)	B62.1.1	32.297	0.001	-241.667	-0.000	-451.211	-0.014	9.622	LK4 BRD
Mz' (-)	S6.3.1	-25.634	-0.028	0.005	-0.028	-0.022	-0.692	1.462	LK4 BRD

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Max. of load combinations, Bars, Deflections, Characteristic - for Storey 1

Bar	x	Behaviour	Length	Maximum value	Limit value	Utilization	Comb
[-]	[m]	[-]	[m]	[mm]	[mm]	[%]	[-]
B0.1.1	2.199	Simply supported	4.45	1.62	14.85	10.93	LK5 BRK
B0.2.1	1.472	Simply supported	2.95	0.27	9.82	2.75	LK6 BRK
B0.3.1	2.090	Simply supported	5.22	1.19	13.94	8.57	LK6 BRK
B0.4.1	9.377	Simply supported	13.66	4.23	23.32	18.14	LK5 BRK
B0.5.1	1.756	Simply supported	3.75	0.19	12.51	1.55	LK5 BRK
B0.6.1	4.471	Simply supported	8.07	6.20	23.99	25.85	LK6 BRK
B0.7.1	2.563	Simply supported	5.12	0.97	17.08	5.70	LK5 BRK
B0.8.1	4.471	Simply supported	8.07	6.40	23.99	26.66	LK6 BRK
B0.9.1	3.252	Simply supported	6.50	3.33	21.68	15.34	LK5 BRK
B0.10.1	3.400	Simply supported	7.97	4.51	22.67	19.89	LK5 BRK
B0.11.1	3.907	Simply supported	7.81	3.82	26.05	14.65	LK5 BRK
B0.12.1	6.769	Simply supported	24.40	14.47	45.13	32.06	LK5 BRK
B0.13.1	0.225	Simply supported	0.57	0.01	1.89	0.47	LK6 BRK
B0.14.1	12.911	Simply supported	17.51	8.66	33.22	26.06	LK6 BRK
B0.15.1	4.238	Simply supported	34.93	6.29	30.73	20.46	LK5 BRK
S0.1.1	3.370	Cantilever	3.37	0.07	11.23	0.65	LK6 BRK
S0.2.1	3.370	Cantilever	3.37	0.08	11.23	0.71	LK6 BRK
S0.3.1	3.370	Cantilever	3.37	0.04	11.23	0.35	LK6 BRK
S0.4.1	3.370	Cantilever	3.37	0.04	11.23	0.39	LK6 BRK
S0.5.1	3.370	Cantilever	3.37	0.07	11.23	0.63	LK6 BRK
S0.6.1	3.370	Cantilever	3.37	0.05	11.23	0.45	LK6 BRK
S0.7.1	3.370	Cantilever	3.37	0.11	11.23	1.02	LK6 BRK
S0.8.1	3.370	Cantilever	3.37	0.12	11.23	1.05	LK6 BRK
S0.9.1	3.370	Cantilever	3.37	0.02	11.23	0.20	LK6 BRK
S0.10.1	3.370	Cantilever	3.37	0.03	11.23	0.26	LK6 BRK
S0.11.1	3.370	Cantilever	3.37	0.06	11.23	0.54	LK6 BRK
S0.12.1	3.370	Cantilever	3.37	0.06	11.23	0.57	LK6 BRK
S0.13.1	3.370	Cantilever	3.37	0.05	11.23	0.42	LK6 BRK
S0.14.1	3.370	Cantilever	3.37	0.15	11.23	1.35	LK6 BRK
S0.15.1	3.370	Cantilever	3.37	0.12	11.23	1.04	LK6 BRK
S0.16.1	3.370	Cantilever	3.37	0.10	11.23	0.86	LK6 BRK
S0.17.1	3.370	Cantilever	3.37	0.09	11.23	0.82	LK6 BRK
S0.18.1	3.370	Cantilever	3.37	0.07	11.23	0.66	LK6 BRK

Max. of load combinations, Bars, Deflections, Characteristic - for Storey 2

Bar	x	Behaviour	Length	Maximum value	Limit value	Utilization	Comb
[-]	[m]	[-]	[m]	[mm]	[mm]	[%]	[-]
B1.1.1	2.199	Simply supported	4.45	1.10	14.85	7.44	LK5 BRK
B1.2.1	1.472	Simply supported	2.95	0.23	9.82	2.35	LK6 BRK
B1.3.1	2.090	Simply supported	5.22	0.87	13.94	6.23	LK6 BRK
B1.4.1	2.357	Simply supported	13.66	1.22	18.30	6.64	LK5 BRK
B1.5.1	1.877	Simply supported	3.75	0.43	12.51	3.44	LK5 BRK
B1.6.1	4.471	Simply supported	8.07	6.85	23.99	28.54	LK6 BRK
B1.7.1	2.561	Simply supported	5.12	1.48	17.08	8.68	LK5 BRK
B1.8.1	4.471	Simply supported	8.07	7.01	23.99	29.20	LK6 BRK
B1.9.1	3.270	Simply supported	6.50	3.26	21.68	15.04	LK5 BRK
B1.10.1	2.266	Simply supported	7.97	0.64	22.67	2.82	LK6 BRK
B1.11.1	3.911	Simply supported	7.81	8.21	26.05	31.51	LK6 BRK
B1.12.1	10.419	Simply supported	24.40	1.27	17.50	7.24	LK6 BRK
B1.13.1	0.212	Simply supported	0.57	0.00	1.89	0.13	LK6 BRK
B1.14.1	9.320	Simply supported	17.51	0.96	14.07	6.81	LK5 BRK
B1.15.1	4.238	Simply supported	34.93	5.84	30.73	19.00	LK5 BRK
S1.1.1	5.740	Cantilever	5.74	0.38	19.13	1.97	LK6 BRK
S1.2.1	5.740	Cantilever	5.74	0.25	19.13	1.30	LK6 BRK
S1.3.1	5.740	Cantilever	5.74	0.19	19.13	0.99	LK6 BRK
S1.4.1	5.740	Cantilever	5.74	0.15	19.13	0.77	LK6 BRK
S1.5.1	5.740	Cantilever	5.74	0.19	19.13	1.02	LK6 BRK
S1.6.1	5.740	Cantilever	5.74	0.10	19.13	0.52	LK6 BRK
S1.7.1	5.740	Cantilever	5.74	0.33	19.13	1.73	LK6 BRK
S1.8.1	5.740	Cantilever	5.74	0.46	19.13	2.41	LK6 BRK
S1.9.1	5.740	Cantilever	5.74	0.09	19.13	0.50	LK6 BRK
S1.10.1	5.740	Cantilever	5.74	0.12	19.13	0.64	LK6 BRK
S1.11.1	5.740	Cantilever	5.74	0.18	19.13	0.95	LK6 BRK
S1.12.1	5.740	Cantilever	5.74	0.18	19.13	0.94	LK6 BRK
S1.13.1	5.740	Cantilever	5.74	0.26	19.13	1.34	LK6 BRK
S1.14.1	5.740	Cantilever	5.74	0.21	19.13	1.08	LK6 BRK
S1.15.1	5.740	Cantilever	5.74	0.23	19.13	1.21	LK6 BRK
S1.16.1	5.740	Cantilever	5.74	0.52	19.13	2.72	LK6 BRK

Max. of load combinations, Bars, Deflections, Characteristic - for Storey 3

Bar	x	Behaviour	Length	Maximum value	Limit value	Utilization	Comb
[-]	[m]	[-]	[m]	[mm]	[mm]	[%]	[-]
B2.1.1	2.227	Simply supported	4.45	1.00	14.85	6.71	LK5 BRK
B2.2.1	1.472	Simply supported	2.95	0.21	9.82	2.17	LK6 BRK
B2.3.1	2.090	Simply supported	5.22	0.74	13.94	5.29	LK6 BRK
B2.4.1	2.357	Simply supported	13.66	1.24	18.30	6.78	LK5 BRK
B2.5.1	1.877	Simply supported	3.75	0.41	12.51	3.29	LK5 BRK
B2.6.1	4.471	Simply supported	8.07	6.67	23.99	27.82	LK5 BRK
B2.7.1	2.563	Simply supported	5.12	1.44	17.08	8.46	LK5 BRK
B2.8.1	4.471	Simply supported	8.07	6.82	23.99	28.42	LK6 BRK
B2.9.1	3.270	Simply supported	6.50	3.15	21.68	14.53	LK5 BRK
B2.10.1	3.018	Simply supported	7.97	1.66	22.67	7.34	LK6 BRK
B2.11.1	16.205	Simply supported	24.40	1.89	22.85	8.26	LK5 BRK
B2.12.1	14.638	Simply supported	17.51	1.19	19.15	6.20	LK6 BRK
B2.13.1	3.911	Simply supported	7.81	5.82	26.05	22.33	LK5 BRK
B2.14.1	4.238	Simply supported	34.93	5.62	30.73	18.29	LK5 BRK
S2.1.1	4.590	Cantilever	4.59	0.49	15.30	3.22	LK6 BRK
S2.2.1	4.590	Cantilever	4.59	0.11	15.30	0.72	LK6 BRK
S2.3.1	4.590	Cantilever	4.59	0.18	15.30	1.17	LK6 BRK
S2.4.1	4.590	Cantilever	4.59	0.11	15.30	0.74	LK5 BRK
S2.5.1	4.590	Cantilever	4.59	0.02	15.30	0.13	LK6 BRK
S2.6.1	4.590	Cantilever	4.59	0.44	15.30	2.88	LK6 BRK
S2.7.1	4.590	Cantilever	4.59	1.50	15.30	9.83	LK6 BRK
S2.8.1	4.590	Cantilever	4.59	1.03	15.30	6.71	LK6 BRK
S2.9.1	4.590	Cantilever	4.59	0.69	15.30	4.51	LK6 BRK
S2.10.1	4.590	Cantilever	4.59	0.77	15.30	5.05	LK6 BRK
S2.11.1	4.590	Cantilever	4.59	0.72	15.30	4.71	LK6 BRK
S2.12.1	4.590	Cantilever	4.59	1.13	15.30	7.37	LK6 BRK
S2.13.1	4.590	Cantilever	4.59	1.36	15.30	8.90	LK6 BRK
S2.14.1	4.590	Cantilever	4.59	0.31	15.30	2.01	LK6 BRK
S2.15.1	4.590	Cantilever	4.59	0.21	15.30	1.41	LK6 BRK
S2.16.1	4.590	Cantilever	4.59	0.20	15.30	1.28	LK6 BRK
S2.17.1	4.590	Cantilever	4.59	0.07	15.30	0.48	LK5 BRK
S2.18.1	4.590	Cantilever	4.59	0.12	15.30	0.78	LK6 BRK
S2.19.1	4.590	Cantilever	4.59	0.17	15.30	1.08	LK6 BRK
S2.20.1	4.590	Cantilever	4.59	0.21	15.30	1.40	LK6 BRK
S2.21.1	4.590	Cantilever	4.59	0.52	15.30	3.42	LK6 BRK
S2.22.1	4.590	Cantilever	4.59	0.51	15.30	3.30	LK6 BRK
S2.23.1	4.590	Cantilever	4.59	0.18	15.30	1.17	LK6 BRK

Max. of load combinations, Bars, Deflections, Characteristic - for Storey 4

Bar	x	Behaviour	Length	Maximum value	Limit value	Utilization	Comb
[-]	[m]	[-]	[m]	[mm]	[mm]	[%]	[-]
B3.1.1	2.227	Simply supported	4.45	1.68	14.85	11.32	LK6 BRK
B3.2.1	1.472	Simply supported	2.95	0.21	9.82	2.13	LK6 BRK
B3.3.1	2.090	Simply supported	5.22	0.82	13.94	5.91	LK5 BRK
B3.4.1	9.913	Simply supported	13.66	6.98	27.22	25.65	LK5 BRK
B3.5.1	1.580	Simply supported	3.75	0.36	12.51	2.85	LK5 BRK
B3.6.1	4.144	Simply supported	8.07	4.21	23.99	17.53	LK5 BRK
B3.7.1	2.243	Simply supported	5.12	1.42	17.08	8.31	LK5 BRK
B3.8.1	4.144	Simply supported	8.07	4.55	23.99	18.95	LK5 BRK
B3.9.1	3.256	Simply supported	6.50	2.74	21.68	12.62	LK5 BRK
B3.10.1	3.058	Simply supported	7.97	1.79	22.67	7.88	LK6 BRK
B3.11.1	4.610	Simply supported	9.79	8.47	30.73	27.55	LK6 BRK
B3.12.1	10.419	Simply supported	24.40	1.19	17.50	6.78	LK6 BRK
B3.13.1	9.320	Simply supported	17.51	0.68	14.07	4.82	LK5 BRK
B3.14.1	3.907	Simply supported	7.81	7.26	26.05	27.88	LK5 BRK
S3.1.1	3.710	Cantilever	3.71	0.36	12.37	2.90	LK6 BRK
S3.2.1	3.710	Cantilever	3.71	0.05	12.37	0.38	LK5 BRK
S3.3.1	3.710	Cantilever	3.71	0.20	12.37	1.59	LK6 BRK
S3.4.1	3.710	Cantilever	3.71	0.13	12.37	1.08	LK5 BRK
S3.5.1	3.710	Cantilever	3.71	0.09	12.37	0.73	LK5 BRK
S3.6.1	3.710	Cantilever	3.71	0.25	12.37	2.01	LK6 BRK
S3.7.1	3.710	Cantilever	3.71	1.00	12.37	8.06	LK5 BRK
S3.8.1	3.710	Cantilever	3.71	0.33	12.37	2.66	LK5 BRK
S3.9.1	3.710	Cantilever	3.71	0.10	12.37	0.82	LK6 BRK
S3.10.1	3.710	Cantilever	3.71	0.22	12.37	1.78	LK6 BRK
S3.11.1	3.710	Cantilever	3.71	0.22	12.37	1.80	LK6 BRK
S3.12.1	3.710	Cantilever	3.71	0.32	12.37	2.58	LK5 BRK
S3.13.1	3.710	Cantilever	3.71	0.70	12.37	5.65	LK5 BRK
S3.14.1	3.710	Cantilever	3.71	0.20	12.37	1.64	LK6 BRK
S3.15.1	3.710	Cantilever	3.71	0.14	12.37	1.13	LK5 BRK
S3.16.1	3.710	Cantilever	3.71	0.10	12.37	0.80	LK5 BRK
S3.17.1	3.710	Cantilever	3.71	0.09	12.37	0.71	LK5 BRK
S3.18.1	3.710	Cantilever	3.71	0.03	12.37	0.27	LK5 BRK
S3.19.1	3.710	Cantilever	3.71	0.05	12.37	0.40	LK5 BRK
S3.20.1	3.710	Cantilever	3.71	0.06	12.37	0.49	LK5 BRK
S3.21.1	3.710	Cantilever	3.71	0.56	12.37	4.50	LK6 BRK
S3.22.1	3.710	Cantilever	3.71	0.24	12.37	1.96	LK6 BRK

Max. of load combinations, Bars, Deflections, Characteristic - for Storey 5

Bar	x	Behaviour	Length	Maximum value	Limit value	Utilization	Comb
[-]	[m]	[-]	[m]	[mm]	[mm]	[%]	[-]
B4.1.1	2.227	Simply supported	4.45	1.68	14.85	11.33	LK6 BRK
B4.2.1	1.472	Simply supported	2.95	0.19	9.82	1.98	LK6 BRK
B4.3.1	2.090	Simply supported	5.22	0.80	13.94	5.74	LK5 BRK
B4.4.1	9.913	Simply supported	13.66	7.23	27.22	26.56	LK5 BRK
B4.5.1	1.580	Simply supported	3.75	0.52	12.51	4.12	LK5 BRK
B4.6.1	4.471	Simply supported	8.07	5.35	23.99	22.28	LK5 BRK
B4.7.1	2.561	Simply supported	5.12	1.75	17.08	10.26	LK5 BRK
B4.8.1	4.471	Simply supported	8.07	5.59	23.99	23.32	LK5 BRK
B4.9.1	3.252	Simply supported	6.50	2.57	21.68	11.84	LK5 BRK
B4.10.1	4.317	Simply supported	7.97	8.12	26.57	30.57	LK6 BRK
B4.11.1	4.281	Simply supported	9.79	7.59	30.73	24.70	LK5 BRK
B4.12.1	3.897	Simply supported	7.79	0.49	25.98	1.87	LK5 BRK
B4.13.1	2.625	Simply supported	5.25	1.60	17.50	9.13	LK6 BRK
B4.14.1	3.237	Simply supported	7.35	2.45	22.85	10.74	LK5 BRK
B4.15.1	2.321	Simply supported	4.01	0.18	13.35	1.38	LK5 BRK
B4.16.1	9.320	Simply supported	17.51	0.58	14.07	4.13	LK5 BRK
B4.17.1	3.907	Simply supported	7.81	7.38	26.05	28.35	LK5 BRK
S4.1.1	3.100	Cantilever	3.10	0.17	10.33	1.62	LK5 BRK
S4.2.1	3.100	Cantilever	3.10	0.04	10.33	0.43	LK6 BRK
S4.3.1	3.100	Cantilever	3.10	0.19	10.33	1.83	LK5 BRK
S4.4.1	3.100	Cantilever	3.10	0.14	10.33	1.38	LK5 BRK
S4.5.1	3.100	Cantilever	3.10	0.07	10.33	0.71	LK5 BRK
S4.6.1	3.100	Cantilever	3.10	0.09	10.33	0.84	LK6 BRK
S4.7.1	3.100	Cantilever	3.10	0.81	10.33	7.79	LK6 BRK
S4.8.1	3.100	Cantilever	3.10	0.58	10.33	5.65	LK6 BRK
S4.9.1	3.100	Cantilever	3.10	0.10	10.33	0.93	LK6 BRK
S4.10.1	3.100	Cantilever	3.10	0.20	10.33	1.95	LK5 BRK
S4.11.1	3.100	Cantilever	3.10	0.07	10.33	0.71	LK6 BRK
S4.12.1	3.100	Cantilever	3.10	0.17	10.33	1.60	LK6 BRK
S4.13.1	3.100	Cantilever	3.10	0.55	10.33	5.34	LK6 BRK
S4.14.1	3.100	Cantilever	3.10	0.16	10.33	1.60	LK5 BRK
S4.15.1	3.100	Cantilever	3.10	0.15	10.33	1.47	LK5 BRK
S4.16.1	3.100	Cantilever	3.10	0.11	10.33	1.08	LK5 BRK
S4.17.1	3.100	Cantilever	3.10	0.07	10.33	0.63	LK5 BRK
S4.18.1	3.100	Cantilever	3.10	0.03	10.33	0.34	LK6 BRK
S4.19.1	3.100	Cantilever	3.10	0.06	10.33	0.60	LK6 BRK
S4.20.1	3.100	Cantilever	3.10	0.09	10.33	0.92	LK6 BRK

Max. of load combinations, Bars, Deflections, Characteristic - for Storey 6

Bar	x	Behaviour	Length	Maximum value	Limit value	Utilization	Comb
[-]	[m]	[-]	[m]	[mm]	[mm]	[%]	[-]
B5.1.1	1.602	Simply supported	4.45	0.49	14.85	3.30	LK6 BRK
B5.2.1	1.729	Simply supported	2.95	0.20	9.82	2.09	LK6 BRK
B5.3.1	1.797	Simply supported	5.22	0.31	13.94	2.26	LK5 BRK
B5.4.1	9.573	Simply supported	13.66	6.20	27.22	22.79	LK5 BRK
B5.5.1	1.537	Simply supported	3.75	0.35	12.51	2.78	LK5 BRK
B5.6.1	4.471	Simply supported	8.07	3.61	23.99	15.04	LK5 BRK
B5.7.1	2.563	Simply supported	5.12	1.26	17.08	7.36	LK6 BRK
B5.8.1	4.471	Simply supported	8.07	3.51	23.99	14.65	LK5 BRK
B5.9.1	3.252	Simply supported	6.50	2.28	21.68	10.49	LK5 BRK
B5.10.1	4.384	Simply supported	7.97	7.13	26.57	26.85	LK6 BRK
B5.11.1	4.226	Simply supported	9.79	1.00	30.73	3.24	LK6 BRK
B5.12.1	2.338	Simply supported	7.79	0.35	25.98	1.34	LK6 BRK
B5.13.1	2.625	Simply supported	5.25	0.26	17.50	1.50	LK6 BRK
B5.14.1	4.286	Simply supported	7.35	0.42	22.85	1.84	LK5 BRK
B5.15.1	2.003	Simply supported	4.01	0.48	13.35	3.56	LK5 BRK
B5.16.1	1.084	Simply supported	17.51	0.23	8.77	2.61	LK5 BRK
B5.17.1	3.907	Simply supported	7.81	6.85	26.05	26.32	LK5 BRK
S5.1.1	3.100	Cantilever	3.10	0.43	10.33	4.20	LK5 BRK
S5.2.1	3.100	Cantilever	3.10	0.44	10.33	4.23	LK6 BRK
S5.3.1	3.100	Cantilever	3.10	0.37	10.33	3.59	LK5 BRK
S5.4.1	3.100	Cantilever	3.10	0.20	10.33	1.91	LK5 BRK
S5.5.1	3.100	Cantilever	3.10	0.11	10.33	1.02	LK6 BRK
S5.6.1	3.100	Cantilever	3.10	0.31	10.33	3.01	LK5 BRK
S5.7.1	3.100	Cantilever	3.10	0.91	10.33	8.81	LK5 BRK
S5.8.1	3.100	Cantilever	3.10	0.46	10.33	4.43	LK5 BRK
S5.9.1	3.100	Cantilever	3.10	0.24	10.33	2.37	LK5 BRK
S5.10.1	3.100	Cantilever	3.10	0.28	10.33	2.69	LK5 BRK
S5.11.1	3.100	Cantilever	3.10	0.46	10.33	4.45	LK5 BRK
S5.12.1	3.100	Cantilever	3.10	0.62	10.33	5.99	LK5 BRK
S5.13.1	3.100	Cantilever	3.10	0.82	10.33	7.91	LK5 BRK
S5.14.1	3.100	Cantilever	3.10	0.23	10.33	2.20	LK5 BRK
S5.15.1	3.100	Cantilever	3.10	0.29	10.33	2.79	LK6 BRK
S5.16.1	3.100	Cantilever	3.10	0.52	10.33	5.02	LK6 BRK
S5.17.1	3.100	Cantilever	3.10	0.14	10.33	1.36	LK6 BRK
S5.18.1	3.100	Cantilever	3.10	0.43	10.33	4.20	LK6 BRK
S5.19.1	3.100	Cantilever	3.10	0.55	10.33	5.29	LK6 BRK
S5.20.1	3.100	Cantilever	3.10	0.84	10.33	8.11	LK6 BRK

Max. of load combinations, Bars, Deflections, Characteristic - for Storey 7

Bar	x	Behaviour	Length	Maximum value	Limit value	Utilization	Comb
[-]	[m]	[-]	[m]	[mm]	[mm]	[%]	[-]
B62.1.1	3.849	Simply supported	18.33	3.40	32.07	10.59	LK6 BRK
B62.2.1	11.292	Simply supported	15.20	3.67	26.04	14.08	LK5 BRK
S6.1.1	3.250	Cantilever	3.25	0.44	10.83	4.09	LK6 BRK
S6.2.1	3.250	Cantilever	3.25	0.23	10.83	2.10	LK5 BRK
S6.3.1	3.250	Cantilever	3.25	0.32	10.83	2.94	LK5 BRK
S6.4.1	3.250	Cantilever	3.25	0.20	10.83	1.82	LK6 BRK

12 Likevekt

Equilibrium, Load comb.

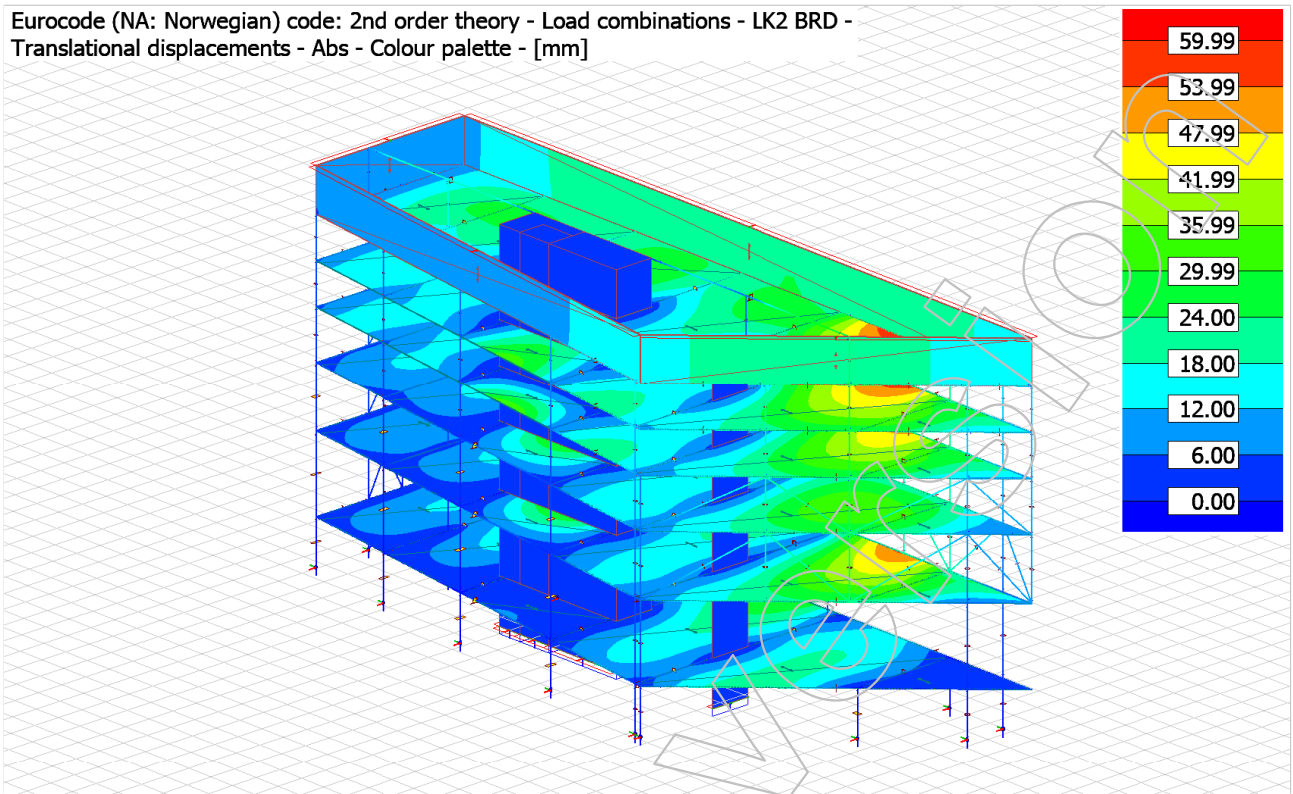
Load comb	Comp.	Loads	Reactions	Error
[-]	[-]	[kN(m)]	[kN(m)]	[%]
LK1 BRD	Fx'	0.000	0.000	-
	Fy'	0.000	0.003	-
	Fz'	-51013.284	51013.279	0.00
	Mx'	-1919248.111	1919247.870	0.00
	My'	2612037.027	-2612036.738	0.00
	Mz'	0.000	0.120	-
LK2 BRD	Fx'	0.000	0.000	-
	Fy'	0.000	0.003	-
	Fz'	-56289.063	56289.057	0.00
	Mx'	-2122362.072	2122361.801	0.00
	My'	2887717.506	-2887717.177	0.00
	Mz'	0.000	0.126	-
LK3 BRD	Fx'	826.391	-826.392	0.00
	Fy'	-3772.846	3772.831	0.00
	Fz'	-34201.187	34201.183	0.00
	Mx'	-1229612.480	1229612.500	0.00
	My'	1758980.167	-1758979.983	0.00
	Mz'	-236764.821	236764.149	0.00

Load comb	Comp.	Loads	Reactions	Error
[-]	[-]	[kN(m)]	[kN(m)]	[%]
LK4 BRD	Fx'	344.652	-344.651	0.00
	Fy'	492.818	-492.812	0.00
	Fz'	-51042.926	51042.921	0.00
	Mx'	-1923674.205	1923673.937	0.00
	My'	2623054.064	-2623053.772	0.00
	Mz'	10330.393	-10330.145	0.00
LK5 BRK	Fx'	0.000	0.000	-
	Fy'	0.000	0.002	-
	Fz'	-38540.093	38540.093	0.00
	Mx'	-1448553.724	1448553.645	0.00
	My'	1973616.284	-1973616.208	0.00
	Mz'	0.000	0.083	-
LK6 BRK	Fx'	0.000	0.000	-
	Fy'	0.000	0.002	-
	Fz'	-38540.093	38540.093	0.00
	Mx'	-1448553.724	1448553.645	0.00
	My'	1973616.284	-1973616.208	0.00
	Mz'	0.000	0.083	-

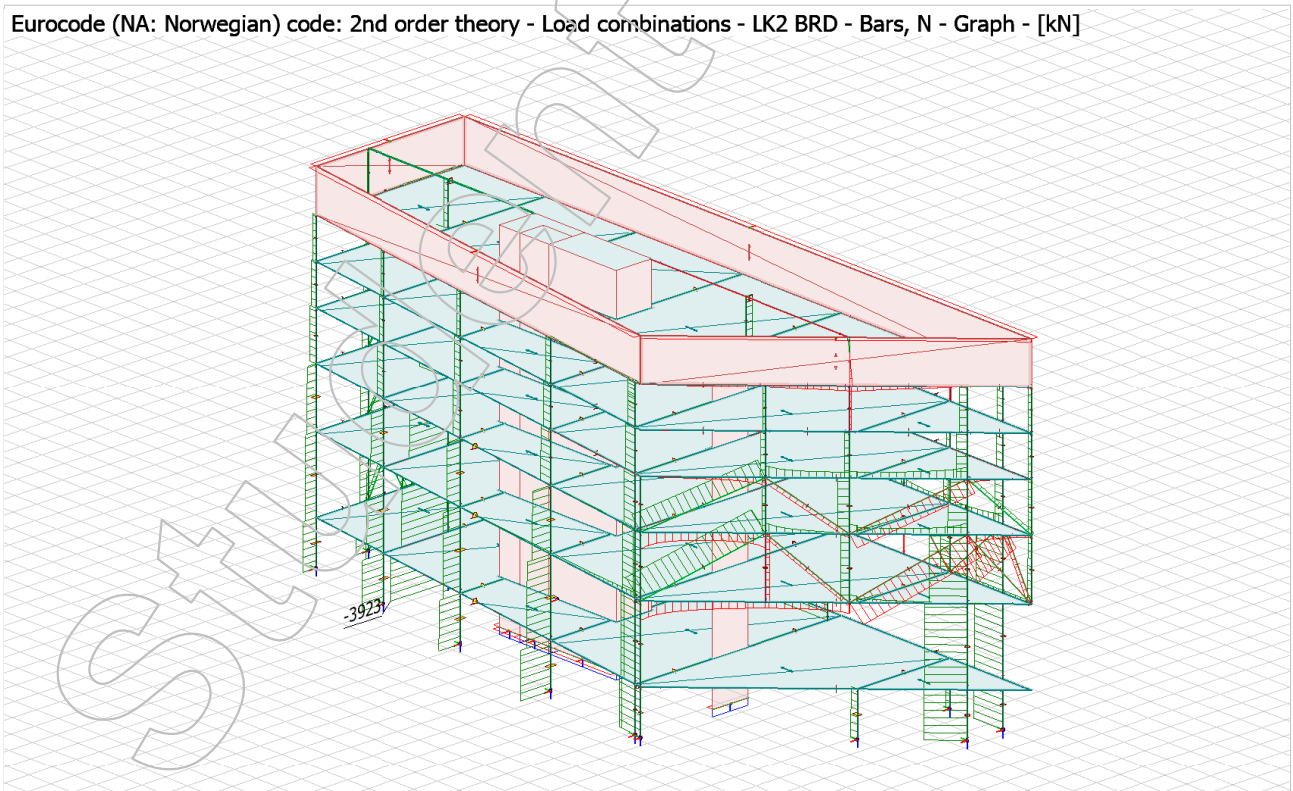
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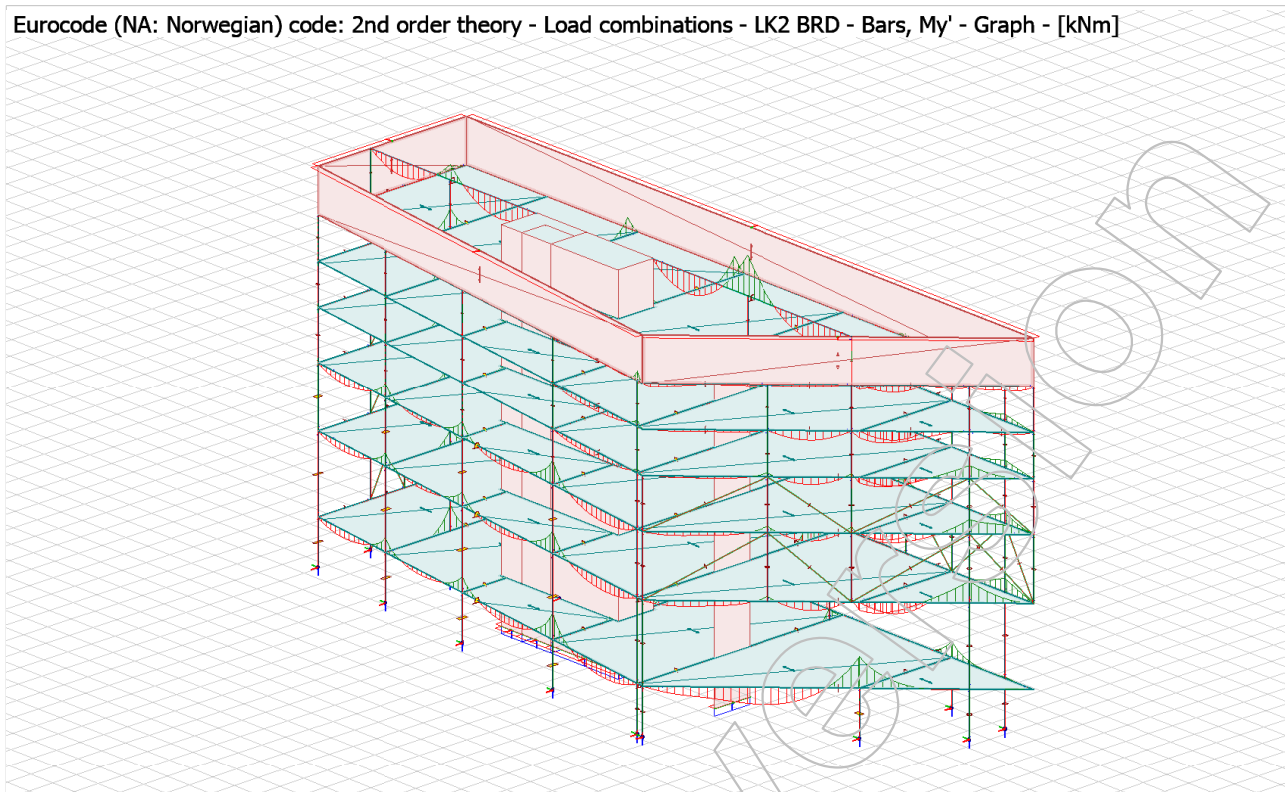
13 Figurer

Eurocode (NA: Norwegian) code: 2nd order theory - Load combinations - LK2 BRD - Translational displacements - Abs - Colour palette - [mm]



Eurocode (NA: Norwegian) code: 2nd order theory - Load combinations - LK2 BRD - Bars, N - Graph - [kN]





14 Bjelke, Plan 1

Max. of load combinations, Bar, Utilization - for Storey 2

Bar	Max.	Combination	SEC	ST	C	T	CW
[-]	[%]	[-]	[%]	[%]	[%]	[%]	[%]
S1.12.1	70	LK4 BRD	70	1	1	2	-

Bar reinforcement - for Storey 2

Bar	Type	Diameter	Quality	Profile	Start	End	Length	Position, x	Position, y	Spacing	Shape
[-]	[-]	[mm]	[-]	[-]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[-]
S1.12.1	Longitudinal	16	B500C	Ribbed	0.000	5.740	5.740	-107	-407	-	-
		16	B500C	Ribbed	0.000	5.740	5.740	107	-407	-	-
		8	B500C	Ribbed	0.000	5.740	5.740	-107	-136	-	-
		8	B500C	Ribbed	0.000	5.740	5.740	107	-136	-	-
		8	B500C	Ribbed	0.000	5.740	5.740	-107	136	-	-
		8	B500C	Ribbed	0.000	5.740	5.740	107	136	-	-
		16	B500C	Ribbed	0.000	5.740	5.740	-107	407	-	-
	Stirrup	16	B500C	Ribbed	0.000	5.740	5.740	107	407	-	-
		10	B500C	Ribbed	0.000	0.957	0.957	-	-	70	Rectangle
		10	B500C	Ribbed	0.957	4.783	3.827	-	-	120	Rectangle
		10	B500C	Ribbed	4.783	5.740	0.957	-	-	70	Rectangle

Width	Height	Pieces
[mm]	[mm]	[-]
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
250	850	14
250	850	32
250	850	14

15 Lastkombinasjon, ugunstig global stabilitet

Point support group, Reactions, Load comb.: LK3 BRD

ID	x	y	z	Node	Fx'	Fy'	Fz'	Mx'	My'	Mz'	Fr	Mr
[-]	[m]	[m]	[m]	[-]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]	[kN]	[kNm]
S.1	77.471	42.288	-3.000	55623	-0.000	0.000	-1267.646	0.000	0.000	0.000	1267.646	0.000
S.2	77.624	45.170	-3.000	55759	-0.000	0.000	-1225.146	0.000	0.000	0.000	1225.146	0.000
S.3	62.744	44.000	-3.000	44799	-0.000	0.000	-1967.235	0.000	0.000	0.000	1967.235	0.000
S.4	53.613	44.297	-3.000	34067	-0.000	0.000	-1715.479	0.000	0.000	0.000	1715.479	0.000
S.5	43.856	44.297	-3.000	17133	-0.000	0.000	-1638.085	0.000	0.000	0.000	1638.085	0.000
S.6	35.538	44.000	-3.000	7369	-0.000	0.000	-1411.773	0.000	0.000	0.000	1411.773	0.000
S.7	28.152	44.131	-3.000	1336	-0.000	-0.000	-722.767	0.000	0.000	0.000	722.767	0.000
S.8	28.152	39.950	-3.000	1087	-0.000	65.170	-612.018	0.000	0.000	0.000	615.478	0.000
S.9	28.152	37.005	-3.000	864	-0.000	-44.640	-566.649	0.000	0.000	0.000	568.404	0.000
S.10	28.152	32.551	-3.000	593	0.000	-0.000	-446.989	0.000	0.000	0.000	446.989	0.000
S.11	35.538	31.514	-3.000	6825	0.000	0.000	-911.471	0.000	0.000	0.000	911.471	0.000
S.12	35.538	37.005	-3.000	7043	-0.000	0.000	-2419.942	0.000	0.000	0.000	2419.942	0.000
S.13	43.856	30.347	-3.000	16487	0.000	0.000	-904.095	0.000	0.000	0.000	904.095	0.000
S.14	48.735	34.100	0.370	27057	-135.128	-549.921	-1506.135	0.000	0.000	0.000	1609.072	0.000
S.15	62.744	27.696	-3.000	44872	0.000	0.000	-680.971	0.000	0.000	0.000	680.971	0.000
S.26	53.613	28.977	-3.000	33604	0.000	0.000	-1237.978	0.000	0.000	0.000	1237.978	0.000
S.27	72.709	37.356	-3.000	53391	-0.000	0.000	-328.997	0.000	0.000	0.000	328.997	0.000
S.28	72.709	45.170	-3.000	53543	-0.000	0.000	-201.119	0.000	0.000	0.000	201.119	0.000
S.29	63.305	27.617	-3.000	45616	0.000	0.000	-913.356	0.000	0.000	0.000	913.356	0.000

Line support group, Resultants, Load comb.: LK3 BRD

ID	l/2	Fx'	Fy'	Fz'	Mx'	My'	Mz'
	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
S.16	1.500	369.898	0.279	-3807.904	0.000	2175.196	-2.227
S.17	3.070	-249.013	-45.852	-3307.298	0.000	1305.576	-50.039
S.18	1.500	-627.321	-15.981	-1116.299	0.000	-769.756	-12.800
S.19	5.345	-706.023	30.864	-199.926	0.000	569.451	-84.244
S.20	1.500	103.128	-9.462	-843.286	0.000	444.570	-19.480
S.21	0.945	-93.272	-14.365	-1008.700	0.000	-19.191	6.083
S.22	1.330	-50.809	-23.971	-1604.654	0.000	-17.520	-15.116
S.23	0.990	-30.050	12.178	-597.617	0.000	-136.548	-4.666
S.24	1.330	-18.126	-10.230	-355.957	0.000	27.538	-17.499
S.25	1.500	-294.025	-14.652	-681.693	0.000	-374.783	-7.790
S.30	17.749	837.205	-83.446	0.000	0.000	0.000	40.776
S.31	12.200	-1158.684	-102.402	0.000	0.000	0.000	-129.941
S.32	26.051	-562.102	190.708	0.000	0.000	0.000	-67.631
S.33	6.309	399.389	9.065	0.000	0.000	0.000	117.710