Column: Polygonaler Pfeiler - Höhe 41.05 m

Building member: Polygonaler Pfeiler - Höhe 41.05 m
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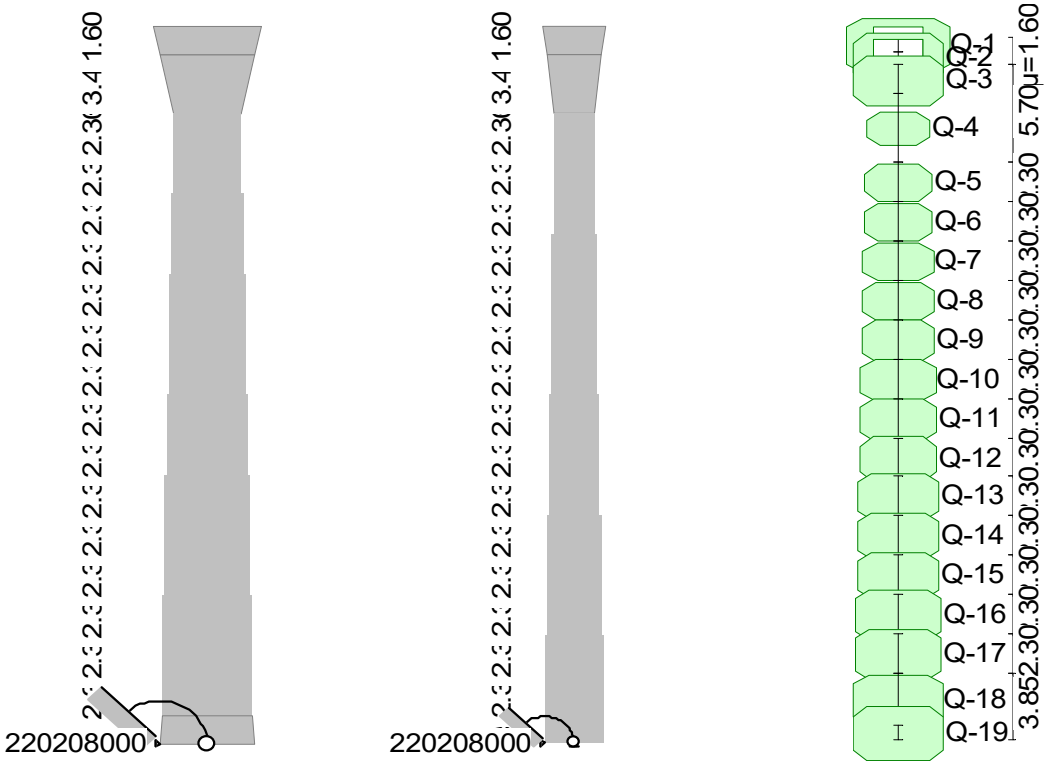


Column analysis according to DIN EN 1992-1-1,5.8.6

Materials

The following conditions shall apply for analysis according to 2nd order theory:

* Geometrical and physical nonlinear analysis of stress resultants, at the limit state of load capacity, as a result of deformation of the structure, including creep- and pre-deformation, Design dimensioning for 1.00-times nonlinear stress resultants
* In the case of percentage of reinforcement up to 2%, the effective stiffness for calculation of required reinforcement is assumed to be a maximum of: E.cm * I.gross * (.2 + 15 As/Ac) For calculation of the final deformations, however, the effective cross-section values as determined from the strain state are applied without the top-stated limitation. This counters the dangerous risk of an appreciable drop in stiffness for weakly reinforced cross-section in the state 1-->2.
* Material diagram for concrete under normal temperature for eff.EI is according to Fig.3.2 and Eq.3.14, for dimensioning, according to Fig.3.3 and Gl.3.17/3.18,

reinforced concrete in all cases according to Fig.3.8

* The verification of constructional fire protection takes place in the simplified, tabular procedure for the fire resitance class R 90. Exposed on more than one side.

Material under normal temperature

	Strength	E-Modulus elasticity	Dead load
Concr C 35/ 45	f.ck = 35.0 N/mm2	E.c0m= 35805. N/mm2	25.0 kN/m3
Reinfsteel 500	f.yk = 500.0 N/mm2	E.s =200000. N/mm2	78.5 kN/m3
Prestres.steel	f.pk = 1770. N/mm2	E.p = 195000. N/mm2	78.5 kN/m3

Material diagrams for the following calculations

1 Deformation calculation eff.EI (permanent design situation)
2 Design dimensioning (permanent design situation)
5 Creep under sustained load; Conc. stress = 'Sigma'/(1+creep coef.)

Permissible strains used for loadbearing capacity, or for design dim.:
Concrete on compression -3.5 (o/oo), mean compression force -2.00 (o/oo)
Steel on tension side 10.0 (o/oo)

Partial safety factors used for loadbearing capacity:

	Analysis 1 2	Analysis 3 4	Analysis 6 7	
Concrete	gamma.c: 1.50	1.30	1.00	alfa.cc 1.15
Steel	gamma.s: 1.00	1.00		

Permissible partial safety factors used for loadbearing capacity:
Concrete gamma.c 0.85 alfa.cc 0.85
Steel gamma.s 1.00

The characteristic curves should be defined at least 1 o/oo more than the permissible strain. In case of prestressing, the pre-strain constraints must be taken into account.
Each characteristic curve must contain the point sigma = 0. The following designation 'quadr' means the middle of a section with quadratic plot.

Building member: Polygonaler Pfeiler - Höhe 41.05 m

```
Material  1   Concrete      for analysis  1 with k =  1.872
Strain (o/oo)    -5.00  -2.25  quadr  -1.40  quadr  -0.60  quadr     .0
Sigma  (N/mm2)    -28.7  -28.7  -27.6  -24.2  -19.3  -12.7   -6.8    0.0

Material  1   Concrete      for analysis  2
Strain (o/oo)    -5.00  -2.00  quadr     .0
Sigma  (N/mm2)    -19.8  -19.8  -14.9    0.0

Material  1   Concrete      for analysis  5
Strain (o/oo)   -10.00     .0  10.00
Sigma  (N/mm2)   -358.0    0.0  358.1

Material  2   Reinforcemen  for analysis  1  2
Strain (o/oo)   -11.00  -2.17     .0   2.17  11.00
Sigma  (N/mm2)   -434.8 -434.8    0.0  434.8  434.8

Material  2   Reinforcemen  for analysis  5
Strain (o/oo)   -10.00     .0  10.00
Sigma  (N/mm2)  -2000.0    0.0 2000.0
```

System

Length of members

Member i		Length (m)	begin. Member i Height(m)
1		1.60	41.05
2		3.40	39.45
3	to 5	2.30	36.05
6	to 29	1.15	29.15
30		1.55	1.55

Support conditions (valid until new definition)

elast = force proportional and contradirectional to displacement, C positive

Junc	Height	Condition in direction x	y	Phi.x	Phi.y	C.displacement(kN/m) C.x	C.y	C.rotation(kNm/1) C.Phi.x	C.Phi.y
31	0.00	rigid	rigid	elast	elast	0.0	0.0	220208000.0	220208000.0

Imperfection = Pre-deformation (valid until new definition)

```
Plot                = affine to buckling figure
Refenrence junction = junction  1
Amount       =  0.290 m
Direction    = determined by program
```

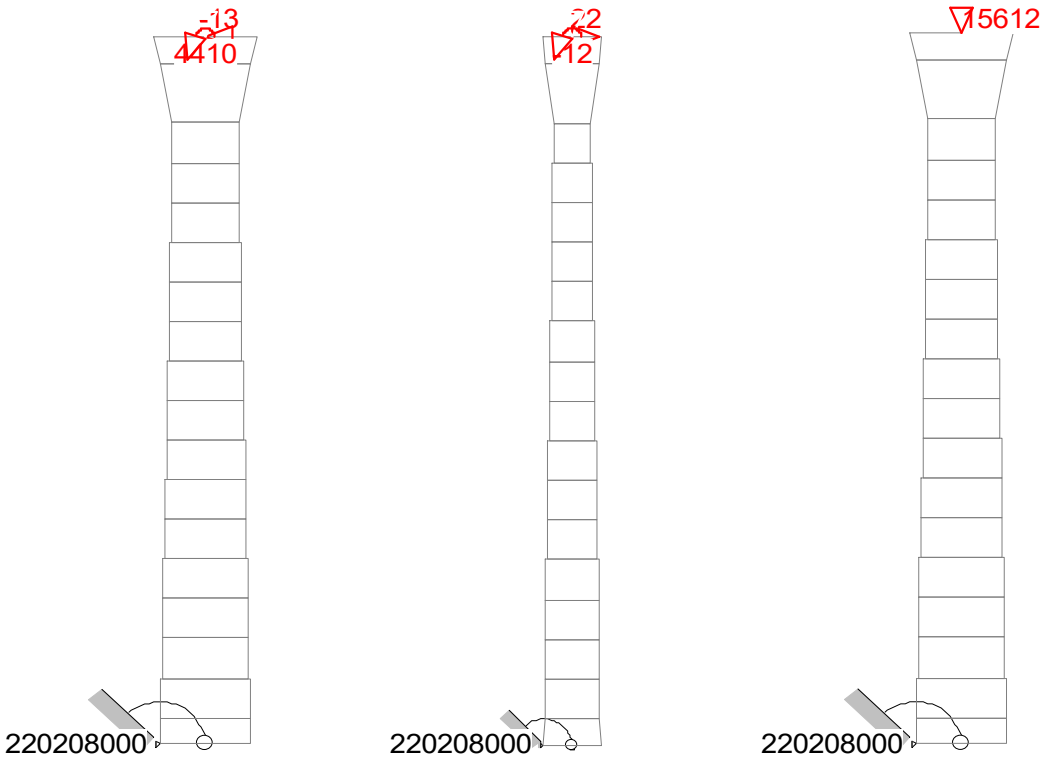
Dead load pz(kN/m) = 25.0 * A.gross for all load cases

```
gamma.g  = 1.35 Ultimate limit state
```

Building member: Polygonaler Pfeiler - Höhe 41.05 m

LCC 1 = permanent load

kriecherzeugende Dauerlasten



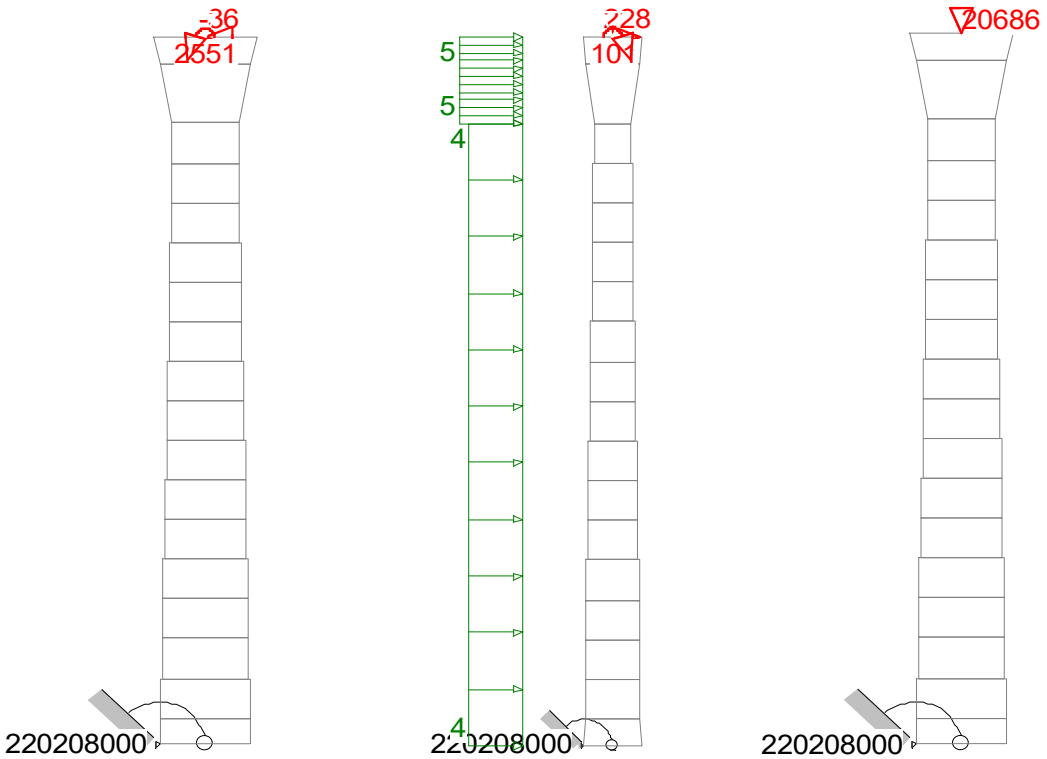
Point loads (moments obtained from excentrical point loads)

Height	Px(kN)	Py(kN)	Pz(kN)	Mx(kNm)	My(kNm)	ex(m)	ey(m)	gam	psi
41.05	-12.7	22.3	15612.0	-12.3	4410.0			1.00	1.00

Building member: Polygonaler Pfeiler - Höhe 41.05 m

LCC 2 = permanent or transient design situation

Creep due to sustained loading Lc 1 with creep value = 2.00
1.35(G+V)+ 1.50(P+Z+0.8T+S)+1.50x0.6xW



Height	Px(kN)	Py(kN)	Pz(kN)	Mx(kNm)	My(kNm)	ex(m)	ey(m)	gam	psi
41.05	-12.7	22.3	15612.0	-12.3	4410.0			1.35	1.00
41.05	-23.0	206.0	5074.0	113.0	-1859.0			1.50	1.00

Line loads (kN/m)

Memb	3 bis 30	px =	0.00	py =	4.20	pz =	0.00	gam x psi= 0.90
Memb	1 bis 2	px =	0.00	py =	5.00	pz =	0.00	gam x psi= 0.90

Cross-section 1

distance between reinforcement and edge 0.060 m given

Polygonal cross-section 1

Concrete= Material 1

y (m)	z (m)	Point
0.000	-1.600	1
2.000	-1.600	2
2.750	-1.100	3
2.750	1.100	4
2.000	1.600	5
0.000	1.600	6
0.000	1.050	7
1.300	1.050	8
1.300	-1.050	9
0.000	-1.050	10
-1.300	-1.050	11
-1.300	1.050	12
0.000	1.050	13
0.000	1.600	14
-2.000	1.600	15
-2.750	1.100	16

-2.750	-1.100	17
-2.000	-1.600	18

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0		cm2/m	-1.940	-1.540	1.940	-1.540	
2	Line	1	2	0.01000.0		cm2/m	-1.940	1.540	1.940	1.540	
3	Line	1	2	0.01000.0		cm2/m	-2.690	1.040	-2.690	-1.040	
4	Line	1	2	0.01000.0		cm2/m	2.690	-1.040	2.690	1.040	
5	Line	1	2	0.01000.0		cm2/m	-2.690	-1.040	-1.940	-1.540	
6	Line	1	2	0.01000.0		cm2/m	1.940	1.540	2.690	1.040	
7	Line	1	2	0.01000.0		cm2/m	-1.940	1.540	-2.690	1.040	
8	Line	1	2	0.01000.0		cm2/m	2.690	1.040	1.940	1.540	

Section 1 1Local

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Cross-section 2

distance between reinforcement and edge 0.060 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.410	1	
1.680	-1.410	2	
2.430	-0.910	3	
2.430	0.910	4	
1.680	1.410	5	
0.000	1.410	6	
0.000	1.050	7	
1.300	1.050	8	
1.300	-1.050	9	
0.000	-1.050	10	
-1.300	-1.050	11	
-1.300	1.050	12	
0.000	1.050	13	
0.000	1.410	14	
-1.680	1.410	15	
-2.430	0.910	16	
-2.430	-0.910	17	
-1.680	-1.410	18	

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0		cm2/m	-1.620	-1.350	1.620	-1.350	
2	Line	1	2	0.01000.0		cm2/m	-1.620	1.350	1.620	1.350	
3	Line	1	2	0.01000.0		cm2/m	-2.370	0.850	-2.370	-0.850	
4	Line	1	2	0.01000.0		cm2/m	2.370	-0.850	2.370	0.850	
5	Line	1	2	0.01000.0		cm2/m	-2.370	-0.850	-1.620	-1.350	
6	Line	1	2	0.01000.0		cm2/m	1.620	1.350	2.370	0.850	
7	Line	1	2	0.01000.0		cm2/m	-2.370	0.850	-1.620	1.350	
8	Line	1	2	0.01000.0		cm2/m	2.370	0.850	1.620	1.350	

Section 2 1Local

Cross-section 3

distance between reinforcement and edge 0.060 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.410	1	
1.680	-1.410	2	
2.430	-0.910	3	
2.430	0.910	4	
1.680	1.410	5	
0.000	1.410	6	
-1.680	1.410	7	
-2.430	0.910	8	
-2.430	-0.910	9	

Building member: Polygonaler Pfeiler - Höhe 41.05 m

-1.680 -1.410 10

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0	cm2/m		-1.620	-1.350	1.620	-1.350	
2	Line	1	2	0.01000.0	cm2/m		-1.620	1.350	1.620	1.350	
3	Line	1	2	0.01000.0	cm2/m		-2.370	0.850	-2.370	-0.850	
4	Line	1	2	0.01000.0	cm2/m		2.370	-0.850	2.370	0.850	
5	Line	1	2	0.01000.0	cm2/m		-2.370	-0.850	-1.620	-1.350	
6	Line	1	2	0.01000.0	cm2/m		1.620	1.350	2.370	0.850	
7	Line	1	2	0.01000.0	cm2/m		-2.370	0.850	-1.620	1.350	
8	Line	1	2	0.01000.0	cm2/m		2.370	0.850	1.620	1.350	

Section 3 1Local

Cross-section 4

distance between reinforcement and edge 0.090 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.000	1	
1.000	-1.000	2	
1.750	-0.500	3	
1.750	0.500	4	
1.000	1.000	5	
0.000	1.000	6	
-1.000	1.000	7	
-1.750	0.500	8	
-1.750	-0.500	9	
-1.000	-1.000	10	

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0	cm2/m		-0.910	-0.910	0.910	-0.910	
2	Line	1	2	0.01000.0	cm2/m		-0.910	0.910	0.910	0.910	
3	Line	1	2	0.01000.0	cm2/m		-1.660	0.500	-1.660	-0.500	
4	Line	1	2	0.01000.0	cm2/m		1.660	-0.500	1.660	0.500	
5	Line	1	2	0.01000.0	cm2/m		-1.660	-0.500	-0.910	-0.910	
6	Line	1	2	0.01000.0	cm2/m		0.910	0.910	1.660	0.500	
7	Line	1	2	0.01000.0	cm2/m		-1.660	0.500	-0.910	0.910	
8	Line	1	2	0.01000.0	cm2/m		1.660	0.500	0.910	0.910	

Section 4 3Sections

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Cross-section 5

distance between reinforcement and edge 0.090 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.035	1	
1.045	-1.035	2	
1.795	-0.535	3	
1.795	0.535	4	
1.045	1.035	5	
0.000	1.035	6	
-1.045	1.035	7	
-1.795	0.535	8	
-1.795	-0.535	9	
-1.045	-1.035	10	

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01	000.0	cm2/m	-0.910	-0.910	0.910	-0.910	
2	Line	1	2	0.01	000.0	cm2/m	-0.910	0.910	0.910	0.910	
3	Line	1	2	0.01	000.0	cm2/m	-1.660	0.530	-1.660	-0.530	
4	Line	1	2	0.01	000.0	cm2/m	1.660	-0.530	1.660	0.530	
5	Line	1	2	0.01	000.0	cm2/m	-1.660	-0.530	-0.910	-0.910	
6	Line	1	2	0.01	000.0	cm2/m	0.910	0.910	1.660	0.530	
7	Line	1	2	0.01	000.0	cm2/m	-1.660	0.530	-0.910	0.910	
8	Line	1	2	0.01	000.0	cm2/m	1.660	0.530	0.910	0.910	

Section 5 2Sections

Cross-section 6

distance between reinforcement and edge 0.090 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.070	1	
1.090	-1.070	2	
1.840	-0.570	3	
1.840	0.570	4	
1.090	1.070	5	
0.000	1.070	6	
-1.090	1.070	7	
-1.840	0.570	8	
-1.840	-0.570	9	
-1.090	-1.070	10	

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0		cm2/m	-1.000	-0.990	1.000	-0.990	
2	Line	1	2	0.01000.0		cm2/m	-1.000	0.990	1.000	0.990	
3	Line	1	2	0.01000.0		cm2/m	-1.750	0.570	-1.750	-0.570	
4	Line	1	2	0.01000.0		cm2/m	1.750	-0.570	1.750	0.570	
5	Line	1	2	0.01000.0		cm2/m	-1.750	-0.570	-1.000	-0.990	
6	Line	1	2	0.01000.0		cm2/m	1.000	0.990	1.750	0.570	
7	Line	1	2	0.01000.0		cm2/m	-1.750	0.570	-1.000	0.990	
8	Line	1	2	0.01000.0		cm2/m	1.750	0.570	1.000	0.990	

Section 6 2Sections

Cross-section 7

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point
0.000	-1.105	1
1.135	-1.105	2
1.885	-0.605	3
1.885	0.605	4
1.135	1.105	5
0.000	1.105	6
-1.135	1.105	7
-1.885	0.605	8
-1.885	-0.605	9
-1.135	-1.105	10

Concrete= Material 1

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0		cm2/m	-1.000	-0.990	1.000	-0.990	
2	Line	1	2	0.01000.0		cm2/m	-1.000	0.990	1.000	0.990	
3	Line	1	2	0.01000.0		cm2/m	-1.750	0.570	-1.750	-0.570	
4	Line	1	2	0.01000.0		cm2/m	1.750	-0.570	1.750	0.570	
5	Line	1	2	0.01000.0		cm2/m	-1.750	-0.570	-1.000	-0.990	
6	Line	1	2	0.01000.0		cm2/m	1.000	0.990	1.750	0.570	
7	Line	1	2	0.01000.0		cm2/m	-1.750	0.570	-1.000	0.990	
8	Line	1	2	0.01000.0		cm2/m	1.750	0.570	1.000	0.990	

Section 7 4Sections

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Cross-section 8

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.140	1	
1.180	-1.140	2	
1.930	-0.640	3	
1.930	0.640	4	
1.180	1.140	5	
0.000	1.140	6	
-1.180	1.140	7	
-1.930	0.640	8	
-1.930	-0.640	9	
-1.180	-1.140	10	

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01	000.0	cm2/m	-1.060	-1.020	1.060	-1.020	
2	Line	1	2	0.01	000.0	cm2/m	-1.060	1.020	1.060	1.020	
3	Line	1	2	0.01	000.0	cm2/m	-1.810	0.520	-1.810	-0.520	
4	Line	1	2	0.01	000.0	cm2/m	1.810	-0.520	1.810	0.520	
5	Line	1	2	0.01	000.0	cm2/m	-1.810	-0.520	-1.060	-1.020	
6	Line	1	2	0.01	000.0	cm2/m	1.060	1.020	1.810	0.520	
7	Line	1	2	0.01	000.0	cm2/m	-1.810	0.520	-1.060	1.020	
8	Line	1	2	0.01	000.0	cm2/m	1.810	0.520	1.060	1.020	

Section 8 4Sections

Cross-section 9

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.175	1	
1.225	-1.175	2	
1.975	-0.675	3	
1.975	0.675	4	
1.225	1.175	5	
0.000	1.175	6	
-1.225	1.175	7	
-1.975	0.675	8	
-1.975	-0.675	9	
-1.225	-1.175	10	

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0		cm2/m	-1.100	-1.020	1.100	-1.020	
2	Line	1	2	0.01000.0		cm2/m	-1.100	1.020	1.100	1.020	
3	Line	1	2	0.01000.0		cm2/m	-1.850	0.550	-1.850	-0.550	
4	Line	1	2	0.01000.0		cm2/m	1.850	-0.550	1.850	0.550	
5	Line	1	2	0.01000.0		cm2/m	-1.850	-0.550	-1.100	-1.020	
6	Line	1	2	0.01000.0		cm2/m	1.100	1.020	1.850	0.550	
7	Line	1	2	0.01000.0		cm2/m	-1.850	0.550	-1.100	1.020	
8	Line	1	2	0.01000.0		cm2/m	1.850	0.550	1.100	1.020	

Section 9 4Sections

Cross-section 10

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point
0.000	-1.210	1
1.270	-1.210	2
2.020	-0.710	3
2.020	0.710	4
1.270	1.210	5
0.000	1.210	6
-1.270	1.210	7
-2.020	0.710	8
-2.020	-0.710	9
-1.270	-1.210	10

Concrete= Material 1

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0		cm2/m	-1.150	-1.090	1.150	-1.090	
2	Line	1	2	0.01000.0		cm2/m	-1.150	1.090	1.150	1.090	
3	Line	1	2	0.01000.0		cm2/m	-1.900	0.700	-1.900	-0.700	
4	Line	1	2	0.01000.0		cm2/m	1.900	-0.700	1.900	0.700	
5	Line	1	2	0.01000.0		cm2/m	-1.900	-0.700	-1.150	-1.090	
6	Line	1	2	0.01000.0		cm2/m	1.150	1.090	1.900	0.700	
7	Line	1	2	0.01000.0		cm2/m	-1.900	0.700	-1.150	1.090	
8	Line	1	2	0.01000.0		cm2/m	1.900	0.700	1.150	1.090	

Section 10 4Sections

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Cross-section 11

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.245	1	
1.315	-1.245	2	
2.065	-0.745	3	
2.065	0.745	4	
1.315	1.245	5	
0.000	1.245	6	
-1.315	1.245	7	
-2.065	0.745	8	
-2.065	-0.745	9	
-1.315	-1.245	10	

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01	000.0	cm2/m	-1.200	-1.120	1.200	-1.120	
2	Line	1	2	0.01	000.0	cm2/m	-1.200	1.120	1.200	1.120	
3	Line	1	2	0.01	000.0	cm2/m	-1.900	0.740	-1.900	-0.740	
4	Line	1	2	0.01	000.0	cm2/m	1.900	-0.740	1.900	0.740	
5	Line	1	2	0.01	000.0	cm2/m	-1.900	-0.740	-1.150	-1.120	
6	Line	1	2	0.01	000.0	cm2/m	1.150	1.120	1.900	0.740	
7	Line	1	2	0.01	000.0	cm2/m	-1.900	0.740	-1.150	1.120	
8	Line	1	2	0.01	000.0	cm2/m	1.900	0.740	1.150	1.120	

Section 11 4Sections

Cross-section 12

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.280	1	
1.360	-1.280	2	
2.110	-0.780	3	
2.110	0.780	4	
1.360	1.280	5	
0.000	1.280	6	
-1.360	1.280	7	
-2.110	0.780	8	
-2.110	-0.780	9	
-1.360	-1.280	10	

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0	cm2/m		-1.240	-1.160	1.240	-1.160	
2	Line	1	2	0.01000.0	cm2/m		-1.240	1.160	1.240	1.160	
3	Line	1	2	0.01000.0	cm2/m		-2.000	0.780	-2.000	-0.780	
4	Line	1	2	0.01000.0	cm2/m		2.000	-0.780	2.000	0.780	
5	Line	1	2	0.01000.0	cm2/m		-2.000	-0.780	-1.240	-1.160	
6	Line	1	2	0.01000.0	cm2/m		1.240	1.160	2.000	0.780	
7	Line	1	2	0.01000.0	cm2/m		-2.000	0.780	-1.240	1.160	
8	Line	1	2	0.01000.0	cm2/m		2.000	0.780	1.240	1.160	

Section 12 4Sections

Cross-section 13

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.315	1	
1.405	-1.315	2	
2.155	-0.815	3	
2.155	0.815	4	
1.405	1.315	5	
0.000	1.315	6	
-1.405	1.315	7	
-2.155	0.815	8	
-2.155	-0.815	9	
-1.405	-1.315	10	

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0	cm2/m		-1.280	-1.200	1.280	-1.200	
2	Line	1	2	0.01000.0	cm2/m		-1.280	1.200	1.280	1.200	
3	Line	1	2	0.01000.0	cm2/m		-2.000	0.810	-2.000	-0.810	
4	Line	1	2	0.01000.0	cm2/m		2.000	-0.810	2.000	0.810	
5	Line	1	2	0.01000.0	cm2/m		-2.000	-0.810	-1.280	-1.200	
6	Line	1	2	0.01000.0	cm2/m		1.280	1.200	2.000	0.810	
7	Line	1	2	0.01000.0	cm2/m		-2.000	0.810	-1.280	1.200	
8	Line	1	2	0.01000.0	cm2/m		2.000	0.810	1.280	1.200	

Section 13 4Sections

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Cross-section 14

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.350	1	
1.450	-1.350	2	
2.200	-0.850	3	
2.200	0.850	4	
1.450	1.350	5	
0.000	1.350	6	
-1.450	1.350	7	
-2.200	0.850	8	
-2.200	-0.850	9	
-1.450	-1.350	10	

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01	000.0	cm2/m	-1.330	-1.220	1.330	-1.220	
2	Line	1	2	0.01	000.0	cm2/m	-1.330	1.220	1.330	1.220	
3	Line	1	2	0.01	000.0	cm2/m	-2.080	0.850	-2.080	-0.850	
4	Line	1	2	0.01	000.0	cm2/m	2.080	-0.850	2.080	0.850	
5	Line	1	2	0.01	000.0	cm2/m	-2.080	-0.850	-1.330	-1.220	
6	Line	1	2	0.01	000.0	cm2/m	1.330	1.220	2.080	0.850	
7	Line	1	2	0.01	000.0	cm2/m	-2.080	0.850	-1.330	1.220	
8	Line	1	2	0.01	000.0	cm2/m	2.080	0.850	1.330	1.220	

Section 14 4Sections

Cross-section 15

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.385	1	
1.495	-1.385	2	
2.245	-0.885	3	
2.245	0.885	4	
1.495	1.385	5	
0.000	1.385	6	
-1.495	1.385	7	
-2.245	0.885	8	
-2.245	-0.885	9	
-1.495	-1.385	10	

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0		cm2/m	-1.370	-1.260	1.370	-1.260	
2	Line	1	2	0.01000.0		cm2/m	-1.370	1.260	1.370	1.260	
3	Line	1	2	0.01000.0		cm2/m	-2.120	0.880	-2.120	-0.880	
4	Line	1	2	0.01000.0		cm2/m	2.120	-0.880	2.120	0.880	
5	Line	1	2	0.01000.0		cm2/m	-2.120	-0.880	-1.370	-1.260	
6	Line	1	2	0.01000.0		cm2/m	1.370	1.260	2.120	0.880	
7	Line	1	2	0.01000.0		cm2/m	-2.120	0.880	-1.370	1.260	
8	Line	1	2	0.01000.0		cm2/m	2.120	0.880	1.370	1.260	

Section 15 4Sections

Cross-section 16

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point
0.000	-1.420	1
1.540	-1.420	2
2.290	-0.920	3
2.290	0.920	4
1.540	1.420	5
0.000	1.420	6
-1.540	1.420	7
-2.290	0.920	8
-2.290	-0.920	9
-1.540	-1.420	10

Concrete= Material 1

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0		cm2/m	-1.420	-1.300	1.420	-1.300	
2	Line	1	2	0.01000.0		cm2/m	-1.420	1.300	1.420	1.300	
3	Line	1	2	0.01000.0		cm2/m	-2.170	0.920	-2.170	-0.920	
4	Line	1	2	0.01000.0		cm2/m	2.170	-0.920	2.170	0.920	
5	Line	1	2	0.01000.0		cm2/m	-2.170	-0.920	-1.420	-1.300	
6	Line	1	2	0.01000.0		cm2/m	1.420	1.300	2.170	0.920	
7	Line	1	2	0.01000.0		cm2/m	-2.170	0.920	-1.420	1.300	
8	Line	1	2	0.01000.0		cm2/m	2.170	0.920	1.420	1.300	

Section 16 4Sections

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Cross-section 17

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.465	1	
1.585	-1.465	2	
2.335	-0.965	3	
2.335	0.965	4	
1.585	1.465	5	
0.000	1.465	6	
-1.585	1.465	7	
-2.335	0.965	8	
-2.335	-0.965	9	
-1.585	-1.465	10	

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01	000.0	cm2/m	-1.460	-1.340	1.460	-1.340	
2	Line	1	2	0.01	000.0	cm2/m	-1.460	1.340	1.460	1.340	
3	Line	1	2	0.01	000.0	cm2/m	-2.210	0.960	-2.210	-0.960	
4	Line	1	2	0.01	000.0	cm2/m	2.210	-0.960	2.210	0.960	
5	Line	1	2	0.01	000.0	cm2/m	-2.210	-0.960	-1.460	-1.340	
6	Line	1	2	0.01	000.0	cm2/m	1.460	1.340	2.210	0.960	
7	Line	1	2	0.01	000.0	cm2/m	-2.210	0.960	-1.460	1.340	
8	Line	1	2	0.01	000.0	cm2/m	2.210	0.960	1.460	1.340	

Section 17 4Sections

Cross-section 18

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.490	1	
1.630	-1.490	2	
2.380	-0.990	3	
2.380	0.990	4	
1.630	1.490	5	
0.000	1.490	6	
-1.630	1.490	7	
-2.380	0.990	8	
-2.380	-0.990	9	
-1.630	-1.490	10	

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0	cm2/m		-1.510	-1.370	1.510	-1.370	
2	Line	1	2	0.01000.0	cm2/m		-1.510	1.370	1.510	1.370	
3	Line	1	2	0.01000.0	cm2/m		-2.260	0.990	-2.260	-0.990	
4	Line	1	2	0.01000.0	cm2/m		2.260	-0.990	2.260	0.990	
5	Line	1	2	0.01000.0	cm2/m		-2.260	-0.960	-1.510	-1.370	
6	Line	1	2	0.01000.0	cm2/m		1.510	1.370	2.260	0.990	
7	Line	1	2	0.01000.0	cm2/m		-2.260	0.990	-1.510	1.370	
8	Line	1	2	0.01000.0	cm2/m		2.260	0.990	1.510	1.370	

Section 18 5Sections

Cross-section 19

distance between reinforcement and edge 0.120 m given

Polygonal cross-section 1

y (m)	z (m)	Point	Concrete= Material 1
0.000	-1.520	1	
1.720	-1.520	2	
2.470	-1.020	3	
2.470	1.020	4	
1.720	1.520	5	
0.000	1.520	6	
-1.720	1.520	7	
-2.470	1.020	8	
-2.470	-1.020	9	
-1.720	-1.520	10	

Point-, line- und ring-reinforcement

No	Slap	Prio	Mat-no	Reinforcement As min	max		Point 1 y1(m)	z1(m)	Point 2 y2(m)	z2(m)	refle-cted
1	Line	1	2	0.01000.0	cm2/m		-1.600	-1.400	1.600	-1.400	
2	Line	1	2	0.01000.0	cm2/m		-1.600	1.400	1.600	1.400	
3	Line	1	2	0.01000.0	cm2/m		-2.350	1.020	-2.350	-1.020	
4	Line	1	2	0.01000.0	cm2/m		2.350	-1.020	2.350	1.020	
5	Line	1	2	0.01000.0	cm2/m		-2.350	-1.020	-1.600	-1.400	
6	Line	1	2	0.01000.0	cm2/m		1.600	1.400	2.350	1.020	
7	Line	1	2	0.01000.0	cm2/m		-2.350	1.020	-1.600	1.400	
8	Line	1	2	0.01000.0	cm2/m		2.350	1.020	1.600	1.400	

Section 19 1Local

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Results

LCC 2 1st order theory, service loads

1.35(G+V)+ 1.50(P+Z+0.8T+S)+1.50x0.6xW

LCC 2 1st order theory, design action for minimum reinforcement

1.35(G+V)+ 1.50(P+Z+0.8T+S)+1.50x0.6xW

Creep deformations under sustained loading LCC 1 with creep value = 2.00

Material diagrams for analysis no. 5

Stress resultants, 2nd oder theorie (Permanent load)

Memb	Height	N(kN)	Mx(kNm)	My(kNm)	Vx(kN)	Vy(kN)	As/Ac(%)
1	41.05	-15612.0	12.3	-4410.0	12.7	-22.3	0.16
1	39.45	-15989.7	-389.3	-4639.6	12.7	-22.3	0.16
2	36.05	-16805.9	-1257.6	-5133.6	12.7	-22.3	0.17
3	33.75	-17165.3	-1834.9	-5460.1	12.7	-22.3	0.17
4	33.75	-17165.3	-1834.9	-5460.1	12.7	-22.3	0.16
4	31.45	-17549.5	-2387.9	-5772.7	12.7	-22.3	0.16
5	31.45	-17549.5	-2387.9	-5772.7	12.7	-22.3	0.30
5	29.15	-17959.2	-2911.4	-6069.5	12.7	-22.3	0.30
6	29.15	-17959.2	-2911.4	-6069.5	12.7	-22.3	0.45
6	28.00	-18177.1	-3161.1	-6211.6	12.7	-22.3	0.45
7	26.85	-18395.1	-3402.3	-6349.4	12.7	-22.3	0.45
8	26.85	-18395.1	-3402.3	-6349.4	12.7	-22.3	0.55
8	25.70	-18626.6	-3634.9	-6482.8	12.7	-22.3	0.55
9	24.55	-18858.0	-3858.6	-6611.8	12.7	-22.3	0.55
10	24.55	-18858.0	-3858.6	-6611.8	12.7	-22.3	0.63
10	23.40	-19103.4	-4073.5	-6736.3	12.7	-22.3	0.63
11	22.25	-19348.7	-4279.3	-6856.2	12.7	-22.3	0.63
12	21.10	-19608.2	-4476.1	-6971.6	12.7	-22.3	0.63
13	19.95	-19867.7	-4663.9	-7082.4	12.7	-22.3	0.63
14	19.95	-19867.7	-4663.9	-7082.4	12.7	-22.3	0.64

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Stress resultants, 2nd oder theorie (Permanent load)

Memb	Height	N(kN)	Mx(kNm)	My(kNm)	Vx(kN)	Vy(kN)	As/Ac(%)
14	18.80	-20141.8	-4842.7	-7188.7	12.7	-22.3	0.64
15	17.65	-20415.9	-5012.6	-7290.2	12.7	-22.3	0.64
16	17.65	-20415.9	-5012.6	-7290.2	12.7	-22.3	0.64
16	16.50	-20704.9	-5173.4	-7387.2	12.7	-22.3	0.64
17	15.35	-20993.9	-5325.4	-7479.5	12.7	-22.3	0.64
18	15.35	-20993.9	-5325.4	-7479.5	12.7	-22.3	0.62
18	14.20	-21298.3	-5468.5	-7567.2	12.7	-22.3	0.62
19	13.05	-21602.6	-5602.9	-7650.3	12.7	-22.3	0.62
20	13.05	-21602.6	-5602.9	-7650.3	12.7	-22.3	0.60
20	11.90	-21922.6	-5728.4	-7728.7	12.7	-22.3	0.60
21	10.75	-22242.6	-5845.3	-7802.5	12.7	-22.3	0.60
22	10.75	-22242.6	-5845.3	-7802.5	12.7	-22.3	0.56
22	9.60	-22578.6	-5953.6	-7871.8	12.7	-22.3	0.56
23	8.45	-22914.6	-6053.4	-7936.4	12.7	-22.3	0.56
24	8.45	-22914.6	-6053.4	-7936.4	12.7	-22.3	0.51
24	7.30	-23267.0	-6144.7	-7996.5	12.7	-22.3	0.51
25	6.15	-23619.4	-6227.6	-8051.9	12.7	-22.3	0.51
26	6.15	-23619.4	-6227.6	-8051.9	12.7	-22.3	0.45
26	5.00	-23991.2	-6302.3	-8102.9	12.7	-22.3	0.45
27	3.85	-24363.0	-6368.9	-8149.3	12.7	-22.3	0.45
28	3.85	-24363.0	-6368.9	-8149.3	12.7	-22.3	0.42
28	2.70	-24749.3	-6427.5	-8191.3	12.7	-22.3	0.42
29	1.55	-25135.5	-6478.0	-8228.7	12.7	-22.3	0.42
30	0.00	-25672.3	-6533.0	-8271.8	12.7	-22.3	0.36

{Block:Kriechverformung 1}

Perm.load Node	Height	Pre-displace. x(mm)	y(mm)	without Creep x(mm)	y(mm)	with Creep x(mm)	y(mm)	Creep-displace. x(mm)	y(mm)
1	41.05	-145.5	250.9	-11.6	18.4	-34.8	55.3	-23.2	36.8
2	39.45	-135.3	231.9	-10.6	17.0	-31.8	51.1	-21.2	34.1
3	36.05	-114.0	192.4	-8.5	14.1	-25.6	42.3	-17.1	28.2
4	33.75	-100.2	167.0	-7.3	12.2	-21.9	36.7	-14.6	24.5
5	31.45	-87.2	143.3	-6.2	10.5	-18.5	31.5	-12.4	21.0
6	29.15	-75.1	121.5	-5.2	8.9	-15.6	26.7	-10.4	17.8
7	28.00	-69.4	111.4	-4.7	8.1	-14.2	24.4	-9.5	16.3
8	26.85	-63.9	101.7	-4.3	7.4	-13.0	22.3	-8.6	14.9
9	25.70	-58.7	92.5	-3.9	6.8	-11.8	20.3	-7.8	13.5
10	24.55	-53.7	83.9	-3.5	6.1	-10.6	18.4	-7.1	12.3
11	23.40	-48.9	75.7	-3.2	5.5	-9.6	16.6	-6.4	11.1
12	22.25	-44.4	68.0	-2.9	5.0	-8.6	14.9	-5.7	9.9
13	21.10	-40.2	60.8	-2.6	4.4	-7.7	13.3	-5.1	8.9
14	19.95	-36.2	54.1	-2.3	3.9	-6.8	11.8	-4.6	7.9
15	18.80	-32.4	47.8	-2.0	3.5	-6.1	10.4	-4.0	7.0
16	17.65	-28.8	42.0	-1.8	3.0	-5.3	9.1	-3.5	6.1
17	16.50	-25.5	36.6	-1.5	2.6	-4.6	7.9	-3.1	5.3
18	15.35	-22.4	31.6	-1.3	2.3	-4.0	6.8	-2.7	4.6
19	14.20	-19.5	27.1	-1.1	1.9	-3.4	5.8	-2.3	3.9
20	13.05	-16.8	22.9	-1.0	1.6	-2.9	4.9	-1.9	3.3
21	11.90	-14.4	19.2	-0.8	1.4	-2.4	4.1	-1.6	2.7
22	10.75	-12.1	15.8	-0.7	1.1	-2.0	3.3	-1.3	2.2
23	9.60	-10.1	12.8	-0.5	0.9	-1.6	2.7	-1.1	1.8

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Perm.load Node	Height	Pre-displace. x(mm)	y(mm)	without Creep x(mm)	y(mm)	with Creep x(mm)	y(mm)	Creep-displace. x(mm)	y(mm)
24	8.45	-8.2	10.1	-0.4	0.7	-1.3	2.1	-0.9	1.4
25	7.30	-6.5	7.8	-0.3	0.5	-1.0	1.6	-0.7	1.0
26	6.15	-5.1	5.8	-0.2	0.4	-0.7	1.1	-0.5	0.8
27	5.00	-3.8	4.1	-0.2	0.3	-0.5	0.8	-0.3	0.5
28	3.85	-2.6	2.7	-0.1	0.2	-0.3	0.5	-0.2	0.3
29	2.70	-1.6	1.5	-0.1	0.1	-0.2	0.3	-0.1	0.2
30	1.55	-0.8	0.7	0.0	0.0	-0.1	0.1	-0.1	0.1
31	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

LCC 2 Design resistance analysis (2nd order theory, Basic combination)

Material diagrams for analysis no. 1 2
1.35(G+V)+ 1.50(P+Z+0.8T+S)+1.50x0.6xW

Effective cross-section values

Memb	Height	Bx(MN.m2)	By(MN.m2)	Kappa.x	Kappa.y	Kappa (o/oo per m) = (plastic curvature)
1	41.05	383113.7	1226297.0	0.000	-0.001	
1	39.45	191006.7	658900.2	-0.003	-0.002	
2	39.45	266332.8	791866.2	-0.003	-0.002	
2	36.05	56931.9	173200.6	-0.035	-0.010	
3	33.75	40993.8	124715.7	0.000	-0.001	
4	33.75	65993.3	197348.0	-0.045	-0.009	
4	31.45	46783.5	139904.9	0.000	-0.001	
5	31.45	55923.3	165772.7	0.000	-0.002	
5	29.15	54021.1	160136.3	0.000	-0.003	
6	29.15	64293.4	188922.0	0.000	-0.003	
6	28.00	62794.3	184517.4	0.000	-0.003	
7	26.85	60924.8	179022.6	0.000	-0.004	
8	26.85	72180.8	210997.6	0.000	-0.004	
8	25.70	70097.7	204905.7	0.000	-0.004	
9	24.55	67811.9	198219.0	0.000	-0.005	
10	24.55	79452.1	229826.9	0.000	-0.004	
10	23.40	76997.1	222719.8	0.000	-0.005	
11	22.25	74464.6	215386.1	0.000	-0.006	
12	22.25	87561.9	248048.8	0.000	-0.005	
12	21.10	84973.5	240711.0	0.000	-0.005	

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Effective cross-section values

Memb	Height	Bx(MN.m2)	By(MN.m2)	Kappa.x	Kappa.y	Kappa (o/oo per m) = (plastic curvature)
13	19.95	82387.4	234653.9	0.000	-0.006	
14	19.95	95617.2	266779.8	0.000	-0.005	
14	18.80	92968.8	259385.3	0.000	-0.005	
15	17.65	90378.6	253370.0	0.000	-0.006	
16	17.65	104376.1	288177.8	0.000	-0.005	
16	16.50	101751.6	282379.0	0.000	-0.005	
17	15.35	99220.6	275355.2	0.000	-0.006	
18	15.35	113728.8	309544.3	0.000	-0.005	
18	14.20	111190.5	303982.1	0.000	-0.005	
19	13.05	108771.6	297369.1	0.000	-0.005	
20	13.05	123716.0	334591.8	0.000	-0.005	
20	11.90	121300.7	328059.4	0.000	-0.005	
21	10.75	119022.1	321897.0	0.000	-0.005	
22	10.75	134979.6	360629.1	0.000	-0.004	
22	9.60	132738.9	354642.6	0.000	-0.005	
23	8.45	130643.4	349044.1	0.000	-0.005	
24	8.45	147381.7	389014.5	0.000	-0.004	
24	7.30	145352.5	383658.5	0.000	-0.004	
25	6.15	143472.4	378695.8	0.000	-0.004	
26	6.15	164792.6	422743.3	0.000	-0.003	
26	5.00	162989.3	419444.4	0.000	-0.004	
27	3.85	161333.6	415183.7	0.000	-0.004	
28	3.85	175847.8	452452.8	0.000	-0.003	
28	2.70	174330.6	449814.7	0.000	-0.003	
29	1.55	172962.5	446284.8	0.000	-0.003	
30	0.00	192268.5	510822.9	0.000	-0.003	

Stress resultants

Memb	Height	NEd(kN)	MEdx(kNm)	MEdy(kNm)	VEdx(kN)	VEdy(kN)	M2/M1
1	41.05	-28687.2	-152.9	-3165.0	51.6	-339.1	1.00
1	39.45	-29197.1	-1760.9	-3377.0	51.6	-346.3	1.15
2	36.05	-30299.0	-5249.8	-3829.0	51.6	-361.6	1.66
3	33.75	-30784.2	-7614.9	-4129.5	51.6	-370.3	1.93
4	31.45	-31302.8	-9939.2	-4421.8	51.6	-379.0	2.12
5	29.15	-31855.9	-12209.4	-4705.0	51.6	-387.7	2.23
6	28.00	-32150.2	-13321.4	-4843.0	51.6	-392.0	2.27
7	26.85	-32444.4	-14416.8	-4978.5	51.6	-396.4	2.29
8	25.70	-32756.9	-15494.7	-5111.5	51.6	-400.7	2.31
9	24.55	-33069.4	-16554.3	-5241.8	51.6	-405.1	2.32
10	23.40	-33400.5	-17594.8	-5369.4	51.6	-409.4	2.32
11	22.25	-33731.7	-18615.5	-5494.2	51.6	-413.8	2.32
12	21.10	-34082.0	-19615.9	-5616.2	51.6	-418.1	2.32
13	19.95	-34432.4	-20595.5	-5735.3	51.6	-422.5	2.31
14	18.80	-34802.4	-21554.0	-5851.4	51.6	-426.8	2.30
15	17.65	-35172.5	-22490.9	-5964.6	51.6	-431.2	2.28
16	16.50	-35562.6	-23405.9	-6074.7	51.6	-435.5	2.27
17	15.35	-35952.8	-24298.9	-6181.7	51.6	-439.9	2.25
18	14.20	-36363.7	-25169.8	-6285.7	51.6	-444.2	2.23
19	13.05	-36774.5	-26018.3	-6386.5	51.6	-448.5	2.21

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Stress resultants

Memb	Height	NEd(kN)	MEdx(kNm)	MEdy(kNm)	VEdx(kN)	VEdy(kN)	M2/M1
20	11.90	-37206.5	-26844.5	-6484.3	51.6	-452.9	2.19
21	10.75	-37638.5	-27648.3	-6579.0	51.6	-457.2	2.16
22	9.60	-38092.1	-28429.8	-6670.5	51.6	-461.6	2.14
23	8.45	-38545.7	-29189.2	-6759.0	51.6	-465.9	2.11
24	7.30	-39021.4	-29926.4	-6844.4	51.6	-470.3	2.09
25	6.15	-39497.2	-30641.9	-6926.7	51.6	-474.6	2.06
26	5.00	-39999.1	-31336.0	-7006.0	51.6	-479.0	2.04
27	3.85	-40501.1	-32009.5	-7082.4	51.6	-483.3	2.01
28	2.70	-41022.5	-32662.1	-7155.7	51.6	-487.7	1.98
29	1.55	-41544.0	-33293.9	-7226.1	51.6	-492.0	1.96
30	0.00	-42268.6	-34111.3	-7316.2	51.6	-497.9	1.92

Displacements

		Displacement(mm)				Rotation (o/oo)			
Node	Height	x.pre	y.pre	x.tot	y.tot	Phix.v	Phiy.v	Phix.g	Phiy.g
1	41.05	-40.10	331.14	-62.25	513.46	14.9	1.7	22.9	2.8
2	39.45	-37.37	307.35	-57.78	476.85	14.9	1.7	22.9	2.8
3	36.05	-31.63	257.39	-48.49	400.01	14.5	1.7	22.2	2.7
4	33.75	-27.87	224.90	-42.54	350.13	13.7	1.6	21.1	2.5
5	31.45	-24.30	194.20	-36.95	303.01	12.9	1.5	19.8	2.3
6	29.15	-20.94	165.59	-31.74	259.04	11.9	1.4	18.4	2.2
7	28.00	-19.35	152.13	-29.28	238.30	11.5	1.4	17.7	2.1
8	26.85	-17.82	139.24	-26.93	218.42	10.9	1.3	16.9	2.0
9	25.70	-16.35	126.94	-24.67	199.41	10.4	1.3	16.2	1.9
10	24.55	-14.94	115.24	-22.51	181.30	9.9	1.2	15.3	1.8
11	23.40	-13.60	104.14	-20.46	164.08	9.4	1.1	14.6	1.7
12	22.25	-12.32	93.64	-18.51	147.77	8.9	1.1	13.8	1.6
13	21.10	-11.10	83.75	-16.67	132.37	8.3	1.0	13.0	1.6
14	19.95	-9.95	74.46	-14.92	117.88	7.8	1.0	12.2	1.5
15	18.80	-8.87	65.77	-13.28	104.30	7.3	0.9	11.4	1.4
16	17.65	-7.86	57.68	-11.75	91.63	6.8	0.9	10.6	1.3
17	16.50	-6.91	50.17	-10.31	79.84	6.3	0.8	9.9	1.2
18	15.35	-6.02	43.24	-8.98	68.94	5.8	0.7	9.1	1.1
19	14.20	-5.20	36.89	-7.75	58.92	5.3	0.7	8.4	1.0
20	13.05	-4.45	31.09	-6.61	49.75	4.8	0.6	7.6	0.9
21	11.90	-3.75	25.84	-5.58	41.43	4.3	0.6	6.9	0.9
22	10.75	-3.12	21.12	-4.63	33.93	3.9	0.5	6.1	0.8
23	9.60	-2.56	16.93	-3.78	27.24	3.4	0.5	5.5	0.7
24	8.45	-2.05	13.24	-3.03	21.34	3.0	0.4	4.8	0.6
25	7.30	-1.60	10.04	-2.36	16.21	2.6	0.4	4.1	0.5
26	6.15	-1.20	7.31	-1.77	11.83	2.2	0.3	3.5	0.5
27	5.00	-0.87	5.03	-1.27	8.16	1.8	0.3	2.9	0.4
28	3.85	-0.58	3.18	-0.85	5.17	1.4	0.2	2.3	0.3
29	2.70	-0.35	1.76	-0.51	2.86	1.1	0.2	1.7	0.3
30	1.55	-0.17	0.74	-0.24	1.20	0.7	0.1	1.2	0.2
31	0.00	0.00	0.00	0.00	0.00	0.2	0.1	0.4	0.1

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Design dimensioning

Design		Resistance			Strain (o/oo)			Beta	Util-	As/Ac
Mem	Height	NRd(kN)	MRdx(kNm)	MRdy(kNm)	Eps1	Eps2	Epss	(°)	izati	(%)
1	41.05	-221834.	-1181.	-24478.	-2.68	-1.09	-1.11	-93.0	0.129	0.16
1	39.45	-142775.	-8614.	-16514.	-2.92	-0.77	-0.80	213.4	0.204	0.16
2	39.45	-245008.	-14782.	-28339.	-3.11	-0.51	-0.55	216.3	0.119	0.16
2	36.05	-100117.	-17347.	-12652.	-3.50	0.42	0.27	194.3	0.303	0.17
3	33.75	-90336.	-22346.	-12118.	-3.50	0.78	0.62	191.2	0.341	0.17
4	33.75	-97642.	-24153.	-13098.	-3.50	0.74	0.58	191.3	0.315	0.16
4	31.45	-88114.	-27978.	-12447.	-3.50	1.12	0.94	189.7	0.355	0.16
5	31.45	-99807.	-31691.	-14099.	-3.50	0.98	0.81	190.4	0.314	0.30
5	29.15	-90845.	-34818.	-13417.	-3.50	1.33	1.15	189.4	0.351	0.30
6	29.15	-102671.	-39351.	-15164.	-3.50	1.20	0.98	189.9	0.310	0.45
6	28.00	-98377.	-40762.	-14819.	-3.50	1.36	1.13	189.6	0.327	0.45
7	26.85	-94328.	-41915.	-14474.	-3.50	1.52	1.29	189.3	0.344	0.45
8	26.85	-105359.	-46817.	-16167.	-3.50	1.39	1.17	189.6	0.308	0.55
8	25.70	-101432.	-47980.	-15828.	-3.50	1.54	1.31	189.4	0.323	0.55
9	24.55	-97759.	-48938.	-15496.	-3.50	1.68	1.45	189.2	0.338	0.55
10	24.55	-107886.	-54007.	-17101.	-3.50	1.58	1.35	189.3	0.307	0.63
10	23.40	-104326.	-54957.	-16771.	-3.50	1.70	1.47	189.1	0.320	0.63
11	22.25	-101014.	-55747.	-16453.	-3.50	1.83	1.59	189.0	0.334	0.63
12	22.25	-110386.	-60919.	-17980.	-3.50	1.69	1.47	189.1	0.306	0.63
12	21.10	-107257.	-61732.	-17674.	-3.50	1.80	1.57	189.0	0.318	0.63
13	19.95	-104353.	-62418.	-17382.	-3.50	1.91	1.68	188.9	0.330	0.63
14	19.95	-113212.	-67717.	-18857.	-3.50	1.81	1.59	189.0	0.304	0.64
14	18.80	-110444.	-68400.	-18569.	-3.50	1.91	1.68	188.9	0.315	0.64
15	17.65	-107880.	-68984.	-18294.	-3.50	2.00	1.77	188.7	0.326	0.64
16	17.65	-116321.	-74381.	-19726.	-3.50	1.90	1.68	188.8	0.302	0.64
16	16.50	-113890.	-74958.	-19454.	-3.50	1.99	1.76	188.7	0.312	0.64
17	15.35	-111644.	-75456.	-19196.	-3.50	2.06	1.84	188.6	0.322	0.64
18	15.35	-119502.	-80766.	-20547.	-3.50	1.98	1.76	188.6	0.301	0.62
18	14.20	-117388.	-81253.	-20291.	-3.50	2.05	1.83	188.5	0.310	0.62
19	13.05	-115441.	-81676.	-20048.	-3.50	2.12	1.89	188.4	0.319	0.62
20	13.05	-123067.	-87071.	-21373.	-3.50	2.05	1.84	188.4	0.299	0.60
20	11.90	-121239.	-87474.	-21129.	-3.50	2.11	1.89	188.3	0.307	0.60
21	10.75	-119561.	-87827.	-20899.	-3.50	2.17	1.95	188.3	0.315	0.60
22	10.75	-126874.	-93199.	-22177.	-3.50	2.10	1.89	188.3	0.297	0.56
22	9.60	-125321.	-93533.	-21946.	-3.50	2.15	1.94	188.2	0.304	0.56
23	8.45	-123902.	-93826.	-21726.	-3.50	2.20	1.98	188.1	0.311	0.56
24	8.45	-130922.	-99143.	-22957.	-3.50	2.14	1.93	188.1	0.294	0.51
24	7.30	-129629.	-99416.	-22737.	-3.50	2.18	1.97	188.0	0.301	0.51
25	6.15	-128456.	-99656.	-22528.	-3.50	2.22	2.01	188.0	0.307	0.51
26	6.15	-136214.	-105675.	-23888.	-3.50	2.17	1.96	188.0	0.290	0.45
26	5.00	-135167.	-105892.	-23675.	-3.50	2.20	1.99	187.9	0.296	0.45
27	3.85	-134226.	-106084.	-23472.	-3.50	2.23	2.02	187.8	0.302	0.45
28	3.85	-139723.	-110428.	-24433.	-3.50	2.19	1.99	187.7	0.290	0.42
28	2.70	-138905.	-110597.	-24230.	-3.50	2.22	2.02	187.7	0.295	0.42
29	1.55	-138186.	-110745.	-24036.	-3.50	2.24	2.04	187.6	0.301	0.42
30	0.00	-145519.	-117436.	-25188.	-3.50	2.24	2.04	187.2	0.290	0.36

Building member: Polygonaler Pfeiler - Höhe 41.05 m

Foundation loads[Type: 1 = 1.00-fold, 2 = gamma-fold]

1.00-times foundation loads apply for geo-static verification and gamma-times foundation loads apply for design dimensioning for the following building members.

Lcc	Type	Pz (kN)	Mx (kNm)	My (kNm)	Hx (kN)	Hy (kN)
2	Th1O 1	30746.3	11688.2	4016.5	-35.7	334.1
	Th2O-Th1O		10595.2	1358.6	0.0	0.0
	Th1O 2	42268.6	17396.8	5285.0	-51.7	497.9
	Th2O-Th1O		16714.5	2031.2	0.0	0.0

Required reinforcement

The reinforcement may not be specified smaller than, the assumption made for calculation of the deflections of the members.

Reinforcement (Pri=Priority M=Material)

As No	R	M	min.As (cm2)	max.As (cm2)	required.As (cm2)	cm2/m	Coordinates (m) y1	z1	y2	z2
1	1	2	0.	3880.	46.	11.9	-1.940	-1.540	1.940	-1.540
2	1	2	0.	3880.	46.	11.9	-1.940	1.540	1.940	1.540
3	1	2	0.	2080.	25.	11.9	-2.690	1.040	-2.690	-1.040
4	1	2	0.	2080.	25.	11.9	2.690	-1.040	2.690	1.040
5	1	2	0.	901.	11.	11.9	-2.690	-1.040	-1.940	-1.540
6	1	2	0.	901.	11.	11.9	1.940	1.540	2.690	1.040
7	1	2	0.	901.	11.	11.9	-1.940	1.540	-2.690	1.040
8	1	2	0.	901.	11.	11.9	2.690	1.040	1.940	1.540
Total			0.0	15525.6	185.1	Section 1	As/A.gross = 0.16 %			
1	1	2	0.	3240.	29.	9.0	-1.620	-1.350	1.620	-1.350
2	1	2	0.	3240.	29.	9.0	-1.620	1.350	1.620	1.350
3	1	2	0.	1700.	15.	9.0	-2.370	0.850	-2.370	-0.850
4	1	2	0.	1700.	15.	9.0	2.370	-0.850	2.370	0.850
5	1	2	0.	901.	8.	9.0	-2.370	-0.850	-1.620	-1.350
6	1	2	0.	901.	8.	9.0	1.620	1.350	2.370	0.850
7	1	2	0.	901.	8.	9.0	-2.370	0.850	-1.620	1.350
8	1	2	0.	901.	8.	9.0	2.370	0.850	1.620	1.350
Total			0.0	13485.6	121.8	Section 2	As/A.gross = 0.16 %			

Building member: Polygonaler Pfeiler - Höhe 41.05 m

As No	R	M	min.As (cm2)	max.As (cm2)	required.As (cm2)	cm2/m	Coordinates (m) y1	z1	y2	z2
1	1	2	0.	3240.	51.	15.6	-1.620	-1.350	1.620	-1.350
2	1	2	0.	3240.	51.	15.6	-1.620	1.350	1.620	1.350
3	1	2	0.	1700.	27.	15.6	-2.370	0.850	-2.370	-0.850
4	1	2	0.	1700.	27.	15.6	2.370	-0.850	2.370	0.850
5	1	2	0.	901.	14.	15.6	-2.370	-0.850	-1.620	-1.350
6	1	2	0.	901.	14.	15.6	1.620	1.350	2.370	0.850
7	1	2	0.	901.	14.	15.6	-2.370	0.850	-1.620	1.350
8	1	2	0.	901.	14.	15.6	2.370	0.850	1.620	1.350
Total			0.0	13485.6	210.5	Section 3	As/A.gross = 0.16 %			
1	1	2	0.0	1820.0	21.3	11.7	-0.910	-0.910	0.910	-0.910
2	1	2	0.0	1820.0	21.3	11.7	-0.910	0.910	0.910	0.910
3	1	2	0.0	1000.0	11.7	11.7	-1.660	0.500	-1.660	-0.500
4	1	2	0.0	1000.0	11.7	11.7	1.660	-0.500	1.660	0.500
5	1	2	0.0	854.8	10.0	11.7	-1.660	-0.500	-0.910	-0.910
6	1	2	0.0	854.8	10.0	11.7	0.910	0.910	1.660	0.500
7	1	2	0.0	854.8	10.0	11.7	-1.660	0.500	-0.910	0.910
8	1	2	0.0	854.8	10.0	11.7	1.660	0.500	0.910	0.910
Total			0.0	9059.0	106.2	Section 4	As/A.gross = 0.17 %			
1	1	2	0.0	1820.0	21.7	11.9	-0.910	-0.910	0.910	-0.910
2	1	2	0.0	1820.0	21.7	11.9	-0.910	0.910	0.910	0.910
3	1	2	0.0	1060.0	12.6	11.9	-1.660	0.530	-1.660	-0.530
4	1	2	0.0	1060.0	12.6	11.9	1.660	-0.530	1.660	0.530
5	1	2	0.0	840.8	10.0	11.9	-1.660	-0.530	-0.910	-0.910
6	1	2	0.0	840.8	10.0	11.9	0.910	0.910	1.660	0.530
7	1	2	0.0	840.8	10.0	11.9	-1.660	0.530	-0.910	0.910
8	1	2	0.0	840.8	10.0	11.9	1.660	0.530	0.910	0.910
Total			0.0	9123.1	108.6	Section 5	As/A.gross = 0.16 %			
1	1	2	0.0	2000.0	43.7	21.9	-1.000	-0.990	1.000	-0.990
2	1	2	0.0	2000.0	43.7	21.9	-1.000	0.990	1.000	0.990
3	1	2	0.0	1140.0	24.9	21.9	-1.750	0.570	-1.750	-0.570
4	1	2	0.0	1140.0	24.9	21.9	1.750	-0.570	1.750	0.570
5	1	2	0.0	859.6	18.8	21.9	-1.750	-0.570	-1.000	-0.990
6	1	2	0.0	859.6	18.8	21.9	1.000	0.990	1.750	0.570
7	1	2	0.0	859.6	18.8	21.9	-1.750	0.570	-1.000	0.990
8	1	2	0.0	859.6	18.8	21.9	1.750	0.570	1.000	0.990
Total			0.0	9718.4	212.4	Section 6	As/A.gross = 0.30 %			
1	1	2	0.0	2000.0	69.7	34.9	-1.000	-0.990	1.000	-0.990
2	1	2	0.0	2000.0	69.7	34.9	-1.000	0.990	1.000	0.990
3	1	2	0.0	1140.0	39.7	34.9	-1.750	0.570	-1.750	-0.570
4	1	2	0.0	1140.0	39.7	34.9	1.750	-0.570	1.750	0.570
5	1	2	0.0	859.6	30.0	34.9	-1.750	-0.570	-1.000	-0.990
6	1	2	0.0	859.6	30.0	34.9	1.000	0.990	1.750	0.570
7	1	2	0.0	859.6	30.0	34.9	-1.750	0.570	-1.000	0.990
8	1	2	0.0	859.6	30.0	34.9	1.750	0.570	1.000	0.990
Total			0.0	9718.4	338.8	Section 7	As/A.gross = 0.45 %			

Building member: Polygonaler Pfeiler - Höhe 41.05 m

As No	R	M	min.As (cm2)	max.As (cm2)	required.As (cm2)	cm2/m	Coordinates (m) y1	z1	y2	z2
1	1	2	0.0	2120.0	94.6	44.6	-1.060	-1.020	1.060	-1.020
2	1	2	0.0	2120.0	94.6	44.6	-1.060	1.020	1.060	1.020
3	1	2	0.0	1040.0	46.4	44.6	-1.810	0.520	-1.810	-0.520
4	1	2	0.0	1040.0	46.4	44.6	1.810	-0.520	1.810	0.520
5	1	2	0.0	901.4	40.2	44.6	-1.810	-0.520	-1.060	-1.020
6	1	2	0.0	901.4	40.2	44.6	1.060	1.020	1.810	0.520
7	1	2	0.0	901.4	40.2	44.6	-1.810	0.520	-1.060	1.020
8	1	2	0.0	901.4	40.2	44.6	1.810	0.520	1.060	1.020
Total			0.0	9925.6	443.1	Section 8		As/A.gross =	0.55	%
1	1	2	0.	2200.	117.	53.1	-1.100	-1.020	1.100	-1.020
2	1	2	0.	2200.	117.	53.1	-1.100	1.020	1.100	1.020
3	1	2	0.	1100.	58.	53.1	-1.850	0.550	-1.850	-0.550
4	1	2	0.	1100.	58.	53.1	1.850	-0.550	1.850	0.550
5	1	2	0.	885.	47.	53.1	-1.850	-0.550	-1.100	-1.020
6	1	2	0.	885.	47.	53.1	1.100	1.020	1.850	0.550
7	1	2	0.	885.	47.	53.1	-1.850	0.550	-1.100	1.020
8	1	2	0.	885.	47.	53.1	1.850	0.550	1.100	1.020
Total			0.0	10140.4	538.2	Section 9		As/A.gross =	0.63	%
1	1	2	0.	2300.	121.	52.8	-1.150	-1.090	1.150	-1.090
2	1	2	0.	2300.	121.	52.8	-1.150	1.090	1.150	1.090
3	1	2	0.	1400.	74.	52.8	-1.900	0.700	-1.900	-0.700
4	1	2	0.	1400.	74.	52.8	1.900	-0.700	1.900	0.700
5	1	2	0.	845.	45.	52.8	-1.900	-0.700	-1.150	-1.090
6	1	2	0.	845.	45.	52.8	1.150	1.090	1.900	0.700
7	1	2	0.	845.	45.	52.8	-1.900	0.700	-1.150	1.090
8	1	2	0.	845.	45.	52.8	1.900	0.700	1.150	1.090
Total			0.0	10781.4	569.5	Section 10		As/A.gross =	0.63	%
1	1	2	0.	2400.	132.	55.2	-1.200	-1.120	1.200	-1.120
2	1	2	0.	2400.	132.	55.2	-1.200	1.120	1.200	1.120
3	1	2	0.	1480.	82.	55.2	-1.900	0.740	-1.900	-0.740
4	1	2	0.	1480.	82.	55.2	1.900	-0.740	1.900	0.740
5	1	2	0.	841.	46.	55.2	-1.900	-0.740	-1.150	-1.120
6	1	2	0.	841.	46.	55.2	1.150	1.120	1.900	0.740
7	1	2	0.	841.	46.	55.2	-1.900	0.740	-1.150	1.120
8	1	2	0.	841.	46.	55.2	1.900	0.740	1.150	1.120
Total			0.0	11123.1	614.0	Section 11		As/A.gross =	0.64	%
1	1	2	0.	2480.	138.	55.8	-1.240	-1.160	1.240	-1.160
2	1	2	0.	2480.	138.	55.8	-1.240	1.160	1.240	1.160
3	1	2	0.	1560.	87.	55.8	-2.000	0.780	-2.000	-0.780
4	1	2	0.	1560.	87.	55.8	2.000	-0.780	2.000	0.780
5	1	2	0.	850.	47.	55.8	-2.000	-0.780	-1.240	-1.160
6	1	2	0.	850.	47.	55.8	1.240	1.160	2.000	0.780
7	1	2	0.	850.	47.	55.8	-2.000	0.780	-1.240	1.160
8	1	2	0.	850.	47.	55.8	2.000	0.780	1.240	1.160
Total			0.0	11478.8	641.0	Section 12		As/A.gross =	0.64	%

Building member: Polygonaler Pfeiler - Höhe 41.05 m

As No	R	M	min.As (cm2)	max.As (cm2)	required.As (cm2)	cm2/m	Coordinates (m) y1	z1	y2	z2
1	1	2	0.	2560.	143.	56.0	-1.280	-1.200	1.280	-1.200
2	1	2	0.	2560.	143.	56.0	-1.280	1.200	1.280	1.200
3	1	2	0.	1620.	91.	56.0	-2.000	0.810	-2.000	-0.810
4	1	2	0.	1620.	91.	56.0	2.000	-0.810	2.000	0.810
5	1	2	0.	819.	46.	56.0	-2.000	-0.810	-1.280	-1.200
6	1	2	0.	819.	46.	56.0	1.280	1.200	2.000	0.810
7	1	2	0.	819.	46.	56.0	-2.000	0.810	-1.280	1.200
8	1	2	0.	819.	46.	56.0	2.000	0.810	1.280	1.200
Total			0.0	11635.4	651.8	Section 13		As/A.gross = 0.62 %		
1	1	2	0.	2660.	146.	54.9	-1.330	-1.220	1.330	-1.220
2	1	2	0.	2660.	146.	54.9	-1.330	1.220	1.330	1.220
3	1	2	0.	1700.	93.	54.9	-2.080	0.850	-2.080	-0.850
4	1	2	0.	1700.	93.	54.9	2.080	-0.850	2.080	0.850
5	1	2	0.	836.	46.	54.9	-2.080	-0.850	-1.330	-1.220
6	1	2	0.	836.	46.	54.9	1.330	1.220	2.080	0.850
7	1	2	0.	836.	46.	54.9	-2.080	0.850	-1.330	1.220
8	1	2	0.	836.	46.	54.9	2.080	0.850	1.330	1.220
Total			0.0	12065.2	662.5	Section 14		As/A.gross = 0.60 %		
1	1	2	0.	2740.	145.	52.7	-1.370	-1.260	1.370	-1.260
2	1	2	0.	2740.	145.	52.7	-1.370	1.260	1.370	1.260
3	1	2	0.	1760.	93.	52.7	-2.120	0.880	-2.120	-0.880
4	1	2	0.	1760.	93.	52.7	2.120	-0.880	2.120	0.880
5	1	2	0.	841.	44.	52.7	-2.120	-0.880	-1.370	-1.260
6	1	2	0.	841.	44.	52.7	1.370	1.260	2.120	0.880
7	1	2	0.	841.	44.	52.7	-2.120	0.880	-1.370	1.260
8	1	2	0.	841.	44.	52.7	2.120	0.880	1.370	1.260
Total			0.0	12363.1	652.1	Section 15		As/A.gross = 0.56 %		
1	1	2	0.	2840.	140.	49.5	-1.420	-1.300	1.420	-1.300
2	1	2	0.	2840.	140.	49.5	-1.420	1.300	1.420	1.300
3	1	2	0.	1840.	91.	49.5	-2.170	0.920	-2.170	-0.920
4	1	2	0.	1840.	91.	49.5	2.170	-0.920	2.170	0.920
5	1	2	0.	841.	42.	49.5	-2.170	-0.920	-1.420	-1.300
6	1	2	0.	841.	42.	49.5	1.420	1.300	2.170	0.920
7	1	2	0.	841.	42.	49.5	-2.170	0.920	-1.420	1.300
8	1	2	0.	841.	42.	49.5	2.170	0.920	1.420	1.300
Total			0.0	12723.1	629.3	Section 16		As/A.gross = 0.51 %		
1	1	2	0.	2920.	132.	45.1	-1.460	-1.340	1.460	-1.340
2	1	2	0.	2920.	132.	45.1	-1.460	1.340	1.460	1.340
3	1	2	0.	1920.	87.	45.1	-2.210	0.960	-2.210	-0.960
4	1	2	0.	1920.	87.	45.1	2.210	-0.960	2.210	0.960
5	1	2	0.	841.	38.	45.1	-2.210	-0.960	-1.460	-1.340
6	1	2	0.	841.	38.	45.1	1.460	1.340	2.210	0.960
7	1	2	0.	841.	38.	45.1	-2.210	0.960	-1.460	1.340
8	1	2	0.	841.	38.	45.1	2.210	0.960	1.460	1.340
Total			0.0	13043.1	588.2	Section 17		As/A.gross = 0.45 %		

Building member: Polygonaler Pfeiler - Höhe 41.05 m

As No	R	M	min.As (cm2)	max.As (cm2)	required.As (cm2)	cm2/m	Coordinates (m) y1	z1	y2	z2
1	1	2	0.	3020.	126.	41.9	-1.510	-1.370	1.510	-1.370
2	1	2	0.	3020.	126.	41.9	-1.510	1.370	1.510	1.370
3	1	2	0.	1980.	83.	41.9	-2.260	0.990	-2.260	-0.990
4	1	2	0.	1980.	83.	41.9	2.260	-0.990	2.260	0.990
5	1	2	0.	855.	36.	41.9	-2.260	-0.960	-1.510	-1.370
6	1	2	0.	841.	35.	41.9	1.510	1.370	2.260	0.990
7	1	2	0.	841.	35.	41.9	-2.260	0.990	-1.510	1.370
8	1	2	0.	841.	35.	41.9	2.260	0.990	1.510	1.370
Total			0.0	13377.1	559.9	Section 18		As/A.gross =	0.42 %	
1	1	2	0.	3200.	118.	36.8	-1.600	-1.400	1.600	-1.400
2	1	2	0.	3200.	118.	36.8	-1.600	1.400	1.600	1.400
3	1	2	0.	2040.	75.	36.8	-2.350	1.020	-2.350	-1.020
4	1	2	0.	2040.	75.	36.8	2.350	-1.020	2.350	1.020
5	1	2	0.	841.	31.	36.8	-2.350	-1.020	-1.600	-1.400
6	1	2	0.	841.	31.	36.8	1.600	1.400	2.350	1.020
7	1	2	0.	841.	31.	36.8	-2.350	1.020	-1.600	1.400
8	1	2	0.	841.	31.	36.8	2.350	1.020	1.600	1.400
Total			0.0	13843.1	510.0	Section 19		As/A.gross =	0.36 %	

Height to(m)		Lateral	Sectio	d1(m)	As(cm2)	As/Ac.gross
41.05		1	1	0.060	185.1	0.16 %
39.45		2	2	0.060	121.8	0.16 %
39.45		3	3	0.060	210.5	0.16 %
36.05	33.75	4	4	0.090	106.2	0.17 %
33.75	31.45	5	5	0.090	108.6	0.16 %
31.45	29.15	6	6	0.090	212.4	0.30 %
29.15	26.85	7	7	0.120	338.8	0.45 %
26.85	24.55	8	8	0.120	443.1	0.55 %
24.55	22.25	9	9	0.120	538.2	0.63 %
22.25	19.95	10	10	0.120	569.5	0.63 %
19.95	17.65	11	11	0.120	614.0	0.64 %
17.65	15.35	12	12	0.120	641.0	0.64 %
15.35	13.05	13	13	0.120	651.8	0.62 %
13.05	10.75	14	14	0.120	662.5	0.60 %
10.75	8.45	15	15	0.120	652.1	0.56 %
8.45	6.15	16	16	0.120	629.3	0.51 %
6.15	3.85	17	17	0.120	588.2	0.45 %
3.85	1.55	18	18	0.120	559.9	0.42 %
0.00		19	19	0.120	510.0	0.36 %

Total long. reinforcement = 14475. kg (without anchorage length etc.)

Result graphics

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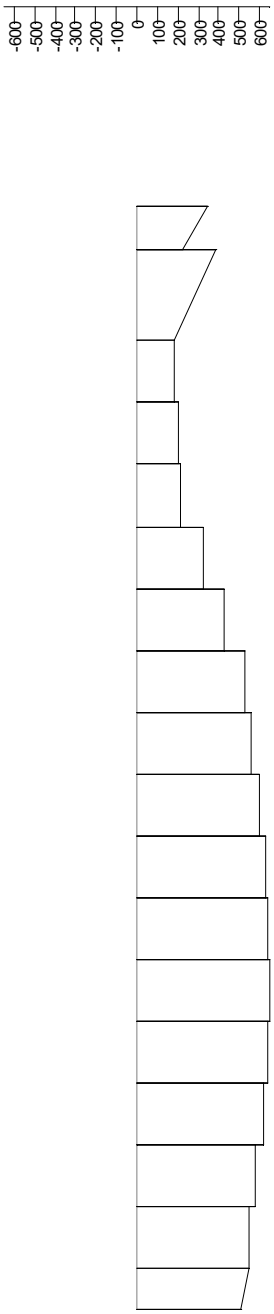

Longitudinal reinforcement [cm2]

max 653.80 min 187.50

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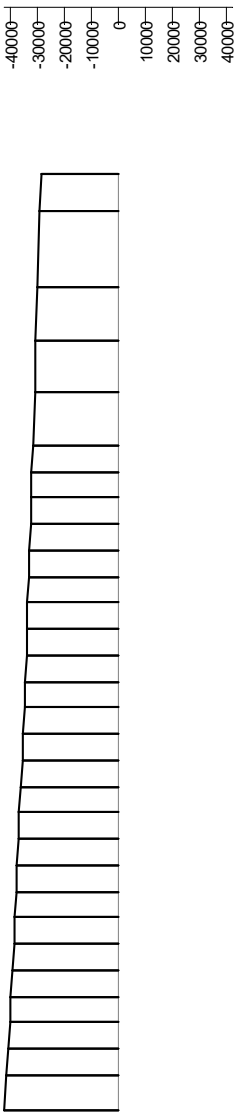
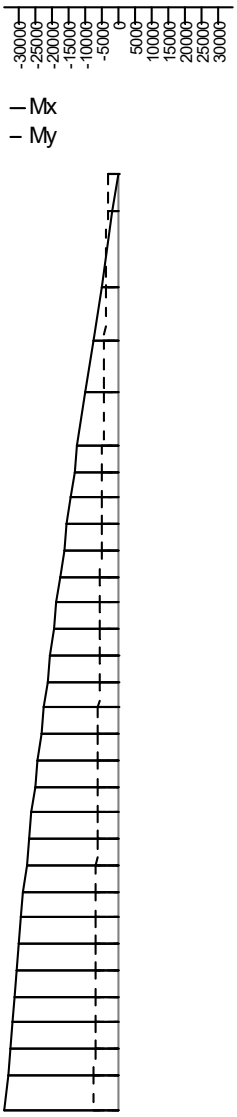


LC2: 1.35(G+V)+ 1.50(P+Z+0.8T+S)...

Normal force, 2nd order theory [kN]

max -28687.20 min -42268.60



LC2: 1.35(G+V)+ 1.50(P+Z+0.8T+S)...

Bending moments 2nd order theory [kNm]

max -152.90 min -34119.20

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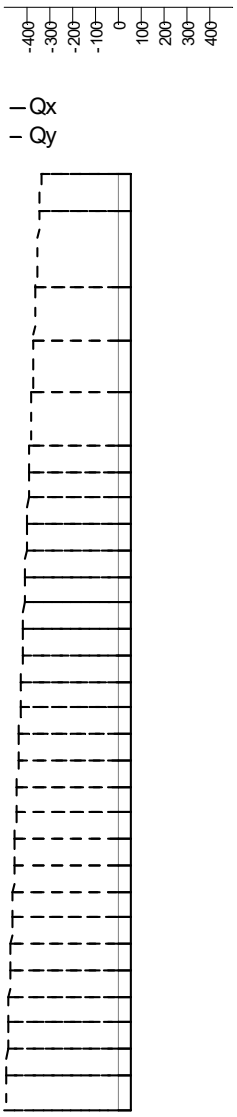
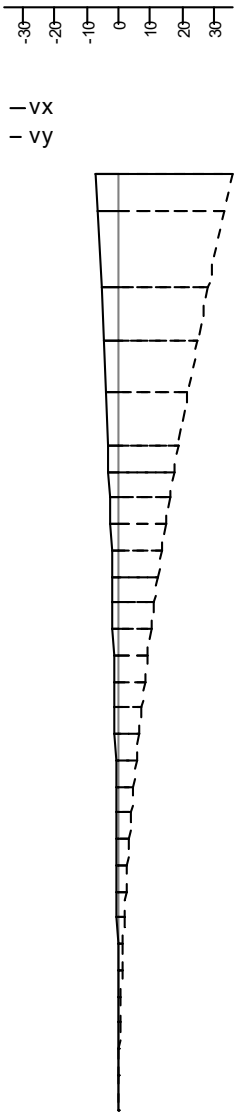


LC2: 1.35(G+V)+ 1.50(P+Z+0.8T+S)...

Shear forces, 2nd order theory [kN]

max 51.60 min -497.90



LC2: 1.35(G+V)+ 1.50(P+Z+0.8T+S)...

Displacements 1.0-fold [mm]

max 35.51 min -6.92

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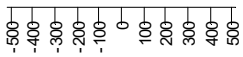
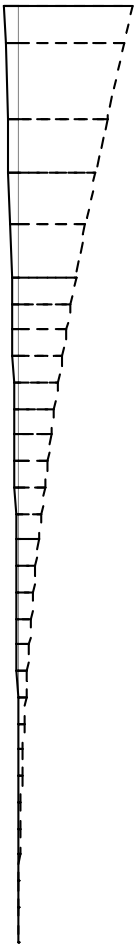


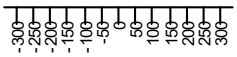
– vx
– vy



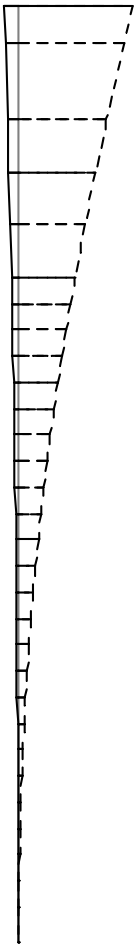
LC2: 1.35(G+V)+ 1.50(P+Z+0.8T+S)...

Displacements, 2nd order theory [mm]

max 513.65 min -62.15



– Vorv.vx
– Vorv.vy



LC2: 1.35(G+V)+ 1.50(P+Z+0.8T+S)...

Initial displacements, 2nd order theory [mm]

max 331.11 min -40.04