

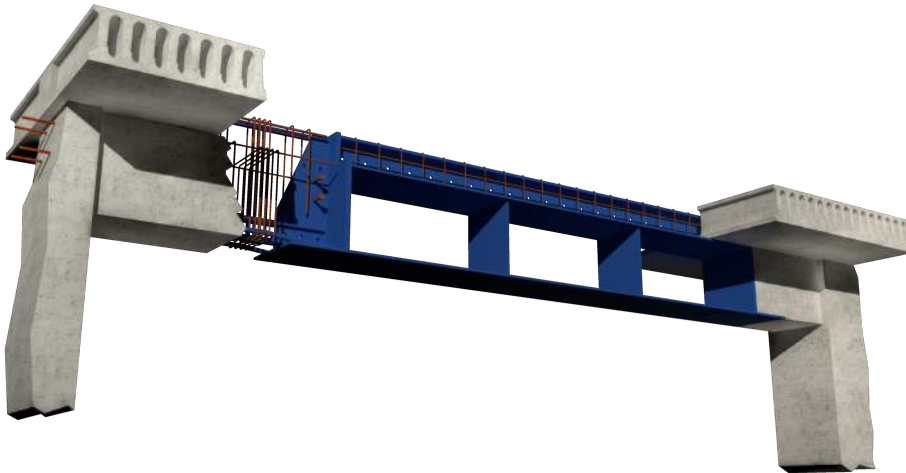
PRE-DIMENSIONING TABLES beamUp

1 Pre-dimensioning tables in-situ concrete ceilings



1.1	In - situ concrete ceiling	- payload = 5 kN/m ²	- 1 opening	Page 1
1.2	In - situ concrete ceiling	- payload = 5 kN/m ²	- 2 openings	Page 2
1.3	In - situ concrete ceiling	- payload = 5 kN/m ²	- 3 openings	Page 3
1.4	In - situ concrete ceiling	- payload = 10 kN/m ²	- 1 opening	Page 5
1.5	In - situ concrete ceiling	- payload = 10 kN/m ²	- 2 openings	Page 6
1.6	In - situ concrete ceiling	- payload = 10 kN/m ²	- 3 openings	Page 7

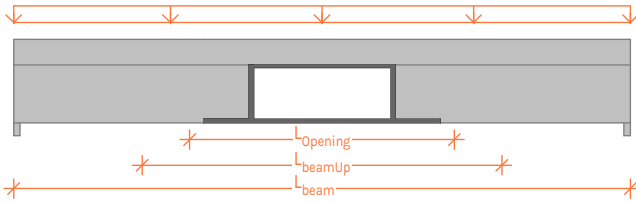
2 Pre-dimensioning tables prestressed concrete hollow ceilings



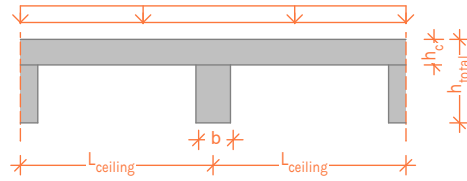
2.1	Prestressed concrete hollow ceiling	- payload = 5 kN/m ²	- 1 opening	Page 8
2.2	Prestressed concrete hollow ceiling	- payload = 5 kN/m ²	- 2 openings	Page 9
2.3	Prestressed concrete hollow ceiling	- payload = 5 kN/m ²	- 3 openings	Page 10
2.4	Prestressed concrete hollow ceiling	- payload = 10 kN/m ²	- 1 opening	Page 11
2.5	Prestressed concrete hollow ceiling	- payload = 10 kN/m ²	- 2 openings	Page 12
2.6	Prestressed concrete hollow ceiling	- payload = 10 kN/m ²	- 3 openings	Page 13

2.1 PRE-DIMENSIONING TABLES PRESTRESSED CONCRETE HOLLOW CEILINGS - 1 Opening

Beam view:



Slab cross section:



Payload = 5 kN/m ²			1 opening							
b [cm]	h _{total} [cm]	h _c [cm]	type	L _{beam} [m]	L _{ceiling} [m]	G [kg]	A _{coating} [m ²]	L _{beamUp} [m]	L _{opening} [m]	A _{opening} [m ²]
35	60	20	S-B1-35-60-20	5.5	6	230	0.86	1.49	0.80	0.30
		25	S-B1-35-60-25	5	7	230	0.79	1.39	0.70	0.22
		32	S-B1-35-60-32	4	10	190	0.65	1.17	0.56	0.14
	70	20	S-B1-35-70-20	6.5	6	300	1.00	1.69	1.00	0.47
		25	S-B1-35-70-25	6	7	280	0.93	1.59	0.90	0.37
		32	S-B1-35-70-32	5.5	10	290	0.84	1.46	0.76	0.26
	80	20	S-B1-35-80-20	8	6	400	1.20	1.97	1.20	0.67
		25	S-B1-35-80-25	7	7	370	1.10	1.80	1.10	0.56
		32	S-B1-35-80-32	6	10	390	1.00	1.66	0.96	0.42
	90	20	S-B1-35-90-20	8	6	390	1.30	2.09	1.40	0.93
		25	S-B1-35-90-25	8	7	440	1.27	2.07	1.30	0.79
		32	S-B1-35-90-32	6.5	10	450	1.15	1.86	1.16	0.62
40	60	20	S-B1-40-60-20	5.5	6	270	0.98	1.50	0.80	0.30
		25	S-B1-40-60-25	5.5	7	280	0.90	1.40	0.70	0.22
		32	S-B1-40-60-32	4.5	10	260	0.81	1.33	0.56	0.14
	70	20	S-B1-40-70-20	7	6	350	1.14	1.70	1.00	0.47
		25	S-B1-40-70-25	6.5	7	350	1.10	1.68	0.90	0.37
		32	S-B1-40-70-32	5.5	10	370	1.00	1.54	0.76	0.25
	80	20	S-B1-40-80-20	7.5	6	400	1.31	1.90	1.20	0.68
		25	S-B1-40-80-25	7.5	7	440	1.28	1.88	1.10	0.56
		32	S-B1-40-80-32	6	10	430	1.13	1.66	0.96	0.42
	90	20	S-B1-40-90-20	9	6	500	1.51	2.18	1.40	0.92
		25	S-B1-40-90-25	8	7	500	1.45	2.08	1.30	0.79
		32	S-B1-40-90-32	7	10	520	1.34	1.94	1.16	0.62
50	60	20	S-B1-50-60-20	6	6	340	1.21	1.50	0.80	0.29
		25	S-B1-50-60-25	5.5	7	320	1.11	1.40	0.70	0.22
		32	S-B1-50-60-32	4.5	10	300	1.01	1.34	0.56	0.13
	70	20	S-B1-50-70-20	7	6	410	1.42	1.70	1.00	0.47
		25	S-B1-50-70-25	6.5	7	410	1.36	1.68	0.90	0.37
		32	S-B1-50-70-32	5.5	10	390	1.18	1.46	0.76	0.26
	80	20	S-B1-50-80-20	8	6	480	1.62	1.90	1.20	0.68
		25	S-B1-50-80-25	8	7	540	1.53	1.79	1.10	0.56
		32	S-B1-50-80-32	7	10	540	1.42	1.65	0.96	0.42
	90	20	S-B1-50-90-20	9	6	590	1.87	2.18	1.40	0.93
		25	S-B1-50-90-25	8.5	7	650	1.74	1.99	1.30	0.79
		32	S-B1-50-90-32	8	10	740	1.72	2.05	1.16	0.61

In case of deviating boundary conditions please feel free to contact us and we will dimension your individual beamUp.

DEFINITIONS:

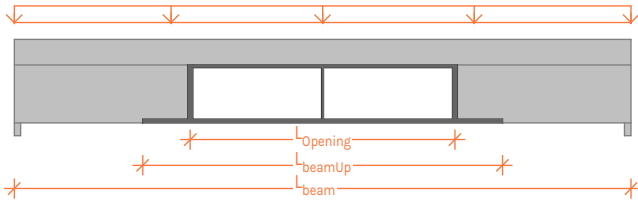
b	width beam/beamUp	L _{ceiling}	ceiling span per side
h _{tot}	beam height (incl. ceiling thickness)	A _{coating}	coating area for fire protection
h _c	ceiling thickness	L _{beamUp}	length of beamup
G	weight beamUp	A _{opening}	total net opening area
L _{beam}	length of reinforced concrete beam	L _{opening}	total gross opening length

ASSUMPTIONS:

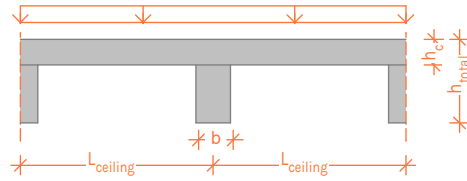
- strength class concrete at least C30/37
- yield strength steel $f_{yd} = 355 \text{ N/mm}^2$
- Exposure class XC1
- symmetrical loading
- beamUp centered in the beam
- no pointloads
- additional load 2 kN/m²
- payload 5 kN/m²

2.2 PRE-DIMENSIONING TABLES PRESTRESSED CONCRETE HOLLOW CEILINGS - 2 Openings

Beam view:



Slab cross section:



Payload = 5 kN/m ²			2 openings							
b [cm]	h _{total} [cm]	h _c [cm]	type	L _{beam} [m]	L _{ceiling} [m]	G [kg]	A _{coating} [m ²]	L _{beamUp} [m]	L _{opening} [m]	A _{opening} [m ²]
35	60	20	S-B2-35-60-20	5.5	6	340	1.70	2.29	1.60	0.57
		25	S-B2-35-60-25	5	7	320	1.52	2.09	1.40	0.43
		32	S-B2-35-60-32	4	10	300	1.29	1.88	1.12	0.26
	70	20	S-B2-35-70-20	6.5	6	420	2.06	2.69	2.00	0.91
		25	S-B2-35-70-25	6	7	430	1.91	2.50	1.80	0.73
		32	S-B2-35-70-32	5.5	10	460	1.76	2.51	1.52	0.49
	80	20	S-B2-35-80-20	8	6	630	2.46	3.10	2.40	1.30
		25	S-B2-35-80-25	7	7	540	2.27	2.90	2.20	1.10
		32	S-B2-35-80-32	6	10	570	2.06	2.74	1.92	0.81
	90	20	S-B2-35-90-20	8	6	750	2.83	3.50	2.80	1.80
		25	S-B2-35-90-25	8	7	720	2.64	3.30	2.60	1.54
		32	S-B2-35-90-32	6.5	10	670	2.41	3.02	2.32	1.21
40	60	20	S-B2-40-60-20	5.5	6	390	1.93	2.30	1.60	0.57
		25	S-B2-40-60-25	5.5	7	400	1.76	2.18	1.40	0.43
		32	S-B2-40-60-32	4.5	10	360	1.50	1.98	1.12	0.26
	70	20	S-B2-40-70-20	7	6	520	2.37	2.78	2.00	0.91
		25	S-B2-40-70-25	6.5	7	480	2.14	2.50	1.80	0.73
		32	S-B2-40-70-32	5.5	10	500	1.89	2.22	1.52	0.49
	80	20	S-B2-40-80-20	7.5	6	620	2.76	3.10	2.40	1.32
		25	S-B2-40-80-25	7.5	7	670	2.60	2.98	2.20	1.09
		32	S-B2-40-80-32	6	10	610	2.29	2.62	1.92	0.81
	90	20	S-B2-40-90-20	9	6	840	3.23	3.58	2.80	1.80
		25	S-B2-40-90-25	8	7	810	3.02	3.38	2.60	1.54
		32	S-B2-40-90-32	7	10	760	2.74	3.12	2.32	1.21
50	60	20	S-B2-50-60-20	6	6	500	2.41	2.38	1.60	0.57
		25	S-B2-50-60-25	5.5	7	460	2.16	2.18	1.40	0.43
		32	S-B2-50-60-32	4.5	10	440	1.87	2.02	1.12	0.26
	70	20	S-B2-50-70-20	7	6	610	2.88	2.70	2.00	0.91
		25	S-B2-50-70-25	6.5	7	560	2.63	2.50	1.80	0.73
		32	S-B2-50-70-32	5.5	10	560	2.31	2.30	1.52	0.50
	80	20	S-B2-50-80-20	8	6	790	3.42	3.10	2.40	1.32
		25	S-B2-50-80-25	8	7	740	3.17	2.90	2.20	1.10
		32	S-B2-50-80-32	7	10	760	2.99	2.98	1.92	0.81
	90	20	S-B2-50-90-20	9	6	970	3.93	3.58	2.80	1.81
		25	S-B2-50-90-25	8.5	7	950	3.71	3.38	2.60	1.54
		32	S-B2-50-90-32	8	10	1040	3.39	3.10	2.32	1.20

In case of deviating boundary conditions please feel free to contact us and we will dimension your individual beamUp.

DEFINITIONS:

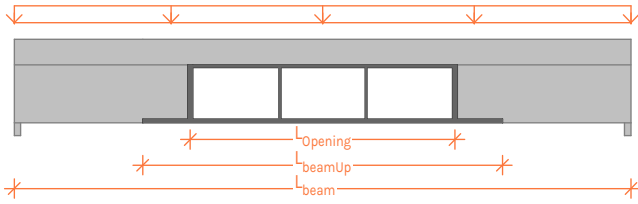
b	width beam/beamUp	L _{ceiling}	ceiling span per side
h _{tot}	beam height (incl. ceiling thickness)	A _{coating}	coating area for fire protection
h _c	ceiling thickness	L _{beamUp}	length of beamup
G	weight beamUp	A _{opening}	total net opening area
L _{beam}	length of reinforced concrete beam	L _{opening}	total gross opening length

ASSUMPTIONS:

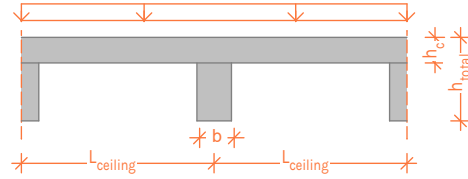
- strength class concrete at least C30/37
- yield strength steel $f_{y,d} = 355 \text{ N/mm}^2$
- Exposure class XC1
- symmetrical loading
- beamUp centered in the beam
- no pointloads
- additional load 2 kN/m²
- payload 5 kN/m²

2.3 PRE-DIMENSIONING TABLES PRESTRESSED CONCRETE HOLLOW CEILINGS - 3 Openings

Beam view:



Slab cross section:



Payload = 5 kN/m ²			3 openings							
b [cm]	h _{total} [cm]	h _c [cm]	type	L _{beam} [m]	L _{ceiling} [m]	G [kg]	A _{coating} [m ²]	L _{beamUp} [m]	L _{opening} [m]	A _{opening} [m ²]
35	60	20	S-B3-35-60-20	5.5	6	440	2.51	3.01	2.40	0.86
		25	S-B3-35-60-25	5	7	420	2.26	2.81	2.10	0.65
		28	S-B3-35-60-32	4	10	380	1.89	2.48	1.68	0.40
	70	22	S-B3-35-70-20	6.5	6	620	3.12	3.62	3.00	1.36
		25	S-B3-35-70-25	6	7	610	2.90	3.52	2.70	1.08
		28	S-B3-35-70-32	5.5	10	640	2.57	3.25	2.28	0.74
	80	20	S-B3-35-80-20	8	6	990	3.77	4.39	3.60	1.94
		25	S-B3-35-80-25	7	7	890	3.50	4.08	3.30	1.62
		28	S-B3-35-80-32	6	10	770	3.18	3.96	2.88	1.23
	90	20	S-B3-35-90-20	8	6	1190	4.15	4.63	3.91	2.47
		25	S-B3-35-90-25	8	7	1110	4.08	4.72	3.90	2.30
		28	S-B3-35-90-32	6.5	10	1040	3.74	4.50	3.48	1.81
40	60	20	S-B3-40-60-20	5.5	6	510	2.84	3.02	2.40	0.86
		25	S-B3-40-60-25	5.5	7	480	2.58	2.88	2.10	0.64
		28	S-B3-40-60-32	4.5	10	510	2.21	2.62	1.68	0.38
	70	20	S-B3-40-70-20	7	6	790	3.57	3.78	3.00	1.35
		25	S-B3-40-70-25	6.5	7	740	3.26	3.48	2.70	1.07
		28	S-B3-40-70-32	5.5	10	690	2.90	3.30	2.28	0.75
	80	20	S-B3-40-80-20	7.5	6	980	4.31	4.58	3.60	1.98
		25	S-B3-40-80-25	7.5	7	920	3.93	4.08	3.30	1.63
		28	S-B3-40-80-32	6	10	860	3.60	3.90	2.88	1.23
	90	20	S-B3-40-90-20	9	6	1290	4.74	4.82	3.91	2.49
		25	S-B3-40-90-25	8	7	1210	4.64	4.80	3.90	2.30
		28	S-B3-40-90-32	7	10	1160	4.28	4.53	3.48	1.79
50	60	20	S-B3-50-60-20	6	6	640	3.55	3.14	2.40	0.85
		25	S-B3-50-60-25	5.5	7	570	3.17	2.88	2.10	0.64
		28	S-B3-50-60-32	4.5	10	560	2.69	2.62	1.68	0.39
	70	20	S-B3-50-70-20	7	6	900	4.38	3.78	3.00	1.35
		25	S-B3-50-70-25	6.5	7	810	4.01	3.56	2.70	1.08
		28	S-B3-50-70-32	5.5	10	750	3.57	3.38	2.28	0.76
	80	20	S-B3-50-80-20	8	6	1180	5.19	4.38	3.60	1.98
		25	S-B3-50-80-25	8	7	1110	4.80	4.12	3.30	1.63
		28	S-B3-50-80-32	7	10	1130	4.42	3.90	2.88	1.21
	90	20	S-B3-50-90-20	9	6	1540	5.73	4.83	3.91	2.47
		25	S-B3-50-90-25	8.5	7	1500	5.72	4.88	3.90	2.29
		28	S-B3-50-90-32	8	10	1490	5.17	4.37	3.48	1.79

In case of deviating boundary conditions please feel free to contact us and we will dimension your individual beamUp.

DEFINITIONS:

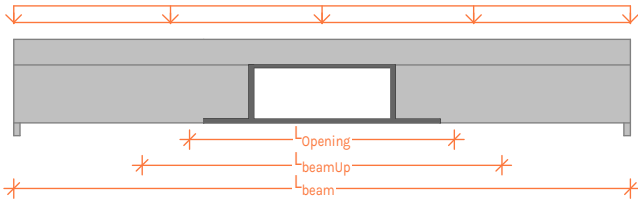
b	width beam/beamUp	L _{ceiling}	ceiling span per side
h _{tot}	beam height (incl. ceiling thickness)	A _{coating}	coating area for fire protection
h _c	ceiling thickness	L _{beamUp}	length of beamup
G	weight beamUp	A _{opening}	total net opening area
L _{beam}	length of reinforced concrete beam	L _{opening}	total gross opening length

ASSUMPTIONS:

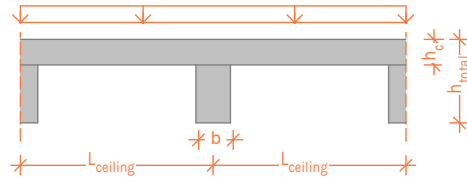
- strength class concrete at least C30/37
- yield strength steel $f_{y,d} = 355 \text{ N/mm}^2$
- Exposure class XC1
- symmetrical loading
- beamUp centered in the beam
- no pointloads
- additional load 2 kN/m²
- payload 5 kN/m²

2.4 PRE-DIMENSIONING TABLES PRESTRESSED CONCRETE HOLLOW CEILINGS - 1 Opening

Beam view:



Slab cross section:



Payload = 10 kN/m ²			1 opening							
b [cm]	h _{total} [cm]	h _c [cm]	type	L _{beam} [m]	L _{ceiling} [m]	G [kg]	A _{coating} [m ²]	L _{beamUp} [m]	L _{opening} [m]	A _{opening} [m ²]
30	60	25	S-B1-35-60-25	5.5	5	240	0.79	1.39	0.70	0.22
		32	S-B1-35-60-32	4.5	7	230	0.7	1.25	0.56	0.13
	70	25	S-B1-35-70-25	6.5	5	310	0.96	1.67	0.90	0.37
		32	S-B1-35-70-32	5.5	7	290	0.86	1.53	0.76	0.26
	80	25	S-B1-35-80-25	7.5	5	360	1.12	1.85	1.10	0.56
		32	S-B1-35-80-32	6	7	390	1	1.66	0.96	0.42
		40	S-B1-35-80-40	5.5	8	370	0.93	1.58	0.80	0.28
	90	25	S-B1-35-90-25	8	5	480	1.27	2.00	1.30	0.79
		32	S-B1-35-90-32	7	7	500	1.23	2.01	1.16	0.61
40		S-B1-35-90-40	6	8	450	1.08	1.82	1.00	0.46	
40	60	25	S-B1-40-60-25	5.5	5	270	0.9	1.40	0.70	0.22
		32	S-B1-40-60-32	4.5	7	260	0.81	1.33	0.56	0.14
	70	25	S-B1-40-70-25	6.5	5	360	1.1	1.68	0.90	0.37
		32	S-B1-40-70-32	5.5	7	370	1	1.54	0.76	0.25
	80	25	S-B1-40-80-25	7	5	420	1.26	1.80	1.10	0.57
		32	S-B1-40-80-32	6	7	430	1.13	1.66	0.96	0.42
		40	S-B1-40-80-40	5.5	8	420	1.03	1.58	0.80	0.28
	90	25	S-B1-40-90-25	8	5	530	1.43	2.00	1.30	0.79
		32	S-B1-40-90-32	6.5	7	500	1.33	1.94	1.16	0.62
40		S-B1-40-90-40	6	8	500	1.2	1.78	1.00	0.46	
50	60	25	S-B1-50-60-25	5.5	5	320	1.11	1.40	0.70	0.22
		32	S-B1-50-60-32	4.5	7	300	1.01	1.34	0.56	0.13
	70	25	S-B1-50-70-25	7	5	460	1.36	1.59	0.90	0.37
		32	S-B1-50-70-32	5.5	7	400	1.21	1.54	0.76	0.26
	80	25	S-B1-50-80-25	8	5	570	1.53	1.79	1.10	0.56
		32	S-B1-50-80-32	7	7	540	1.42	1.65	0.96	0.42
		40	S-B1-50-80-40	6	8	480	1.3	1.64	0.80	0.28
	90	25	S-B1-50-90-25	9	5	650	1.77	1.99	1.30	0.79
		32	S-B1-50-90-32	8	7	740	1.7	2.00	1.16	0.61
40		S-B1-50-90-40	7.5	8	700	1.56	1.89	1.00	0.45	

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DEFINITIONS:

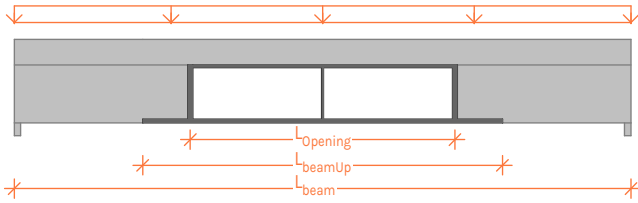
b	width beam/beamUp	L _{ceiling}	ceiling span per side
h _{tot}	beam height (incl. ceiling thickness)	A _{coating}	coating area for fire protection
h _c	ceiling thickness	L _{beamUp}	length of beamup
G	weight beamUp	A _{opening}	total net opening area
L _{beam}	length of reinforced concrete beam	L _{opening}	total gross opening length

ASSUMPTIONS:

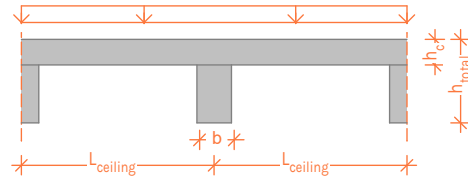
- strength class concrete at least C30/37
- yield strength steel $f_{yd} = 355 \text{ N/mm}^2$
- Exposure class XC1
- symmetrical loading
- beamUp centered in the beam
- no pointloads
- additional load 2 kN/m^2
- payload 10 kN/m^2

2.5 PRE-DIMENSIONING TABLES PRESTRESSED CONCRETE HOLLOW CEILINGS - 2 Openings

Beam view:



Slab cross section:



Payload = 10 kN/m ²			2 openings							
b [cm]	h _{total} [cm]	h _c [cm]	type	L _{beam} [m]	L _{ceiling} [m]	G [kg]	A _{coating} [m ²]	L _{beamUp} [m]	L _{opening} [m]	A _{opening} [m ²]
30	60	25	S-B2-35-60-25	5.5	5	350	1.55	2.09	1.40	0.42
		32	S-B2-35-60-32	4.5	7	330	1.37	2.08	1.12	0.26
		25	S-B2-35-70-25	6.5	5	440	1.92	2.58	1.80	0.72
	70	32	S-B2-35-70-32	5.5	7	490	1.82	2.66	1.52	0.49
		25	S-B2-35-80-25	7.5	5	600	2.3	2.90	2.20	1.09
		32	S-B2-35-80-32	6	7	560	2.09	2.70	1.92	0.81
	80	40	S-B2-35-80-40	5.5	8	560	1.9	2.71	1.60	0.54
		25	S-B2-35-90-25	8	5	750	2.67	3.38	2.60	1.53
		32	S-B2-35-90-32	7	7	760	2.56	3.40	2.32	1.20
90	40	S-B2-35-90-40	6	8	670	2.21	2.94	2.00	0.88	
	40	25	S-B2-40-60-25	5.5	5	400	1.76	2.18	1.40	0.43
		32	S-B2-40-60-32	4.5	7	360	1.52	2.02	1.12	0.26
25		S-B2-40-70-25	6.5	5	480	2.17	2.58	1.80	0.73	
70	32	S-B2-40-70-32	5.5	7	500	1.91	2.22	1.52	0.49	
	25	S-B2-40-80-25	7	5	670	2.57	2.90	2.20	1.09	
	32	S-B2-40-80-32	6	7	610	2.31	2.62	1.92	0.81	
80	40	S-B2-40-80-40	5.5	8	580	2.09	2.63	1.60	0.55	
	25	S-B2-40-90-25	8	5	800	3.02	3.38	2.60	1.54	
	32	S-B2-40-90-32	6.5	7	740	2.73	3.10	2.32	1.21	
90	40	S-B2-40-90-40	6	8	700	2.43	2.86	2.00	0.89	
	50	25	S-B2-50-60-25	5.5	5	460	2.16	2.18	1.40	0.43
		32	S-B2-50-60-32	4.5	7	440	1.89	2.06	1.12	0.26
25		S-B2-50-70-25	7	5	680	2.65	2.49	1.80	0.71	
70	32	S-B2-50-70-32	5.5	7	570	2.37	2.42	1.52	0.50	
	25	S-B2-50-80-25	8	5	820	3.14	2.89	2.20	1.09	
	32	S-B2-50-80-32	7	7	820	2.97	2.94	1.92	0.81	
80	40	S-B2-50-80-40	6	8	780	2.72	2.93	1.60	0.54	
	25	S-B2-50-90-25	9	5	1040	3.71	3.38	2.60	1.53	
	32	S-B2-50-90-32	8	7	1040	3.39	3.10	2.32	1.20	
90	40	S-B2-50-90-40	7.5	8	1040	3.02	2.86	2.00	0.87	

In case of deviating boundary conditions please feel free to contact us and we will dimension your individual beamUp.

DEFINITIONS:

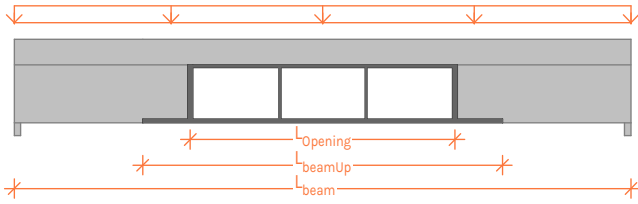
b	width beam/beamUp	L _{ceiling}	ceiling span per side
h _{tot}	beam height (incl. ceiling thickness)	A _{coating}	coating area for fire protection
h _c	ceiling thickness	L _{beamUp}	length of beamup
G	weight beamUp	A _{opening}	total net opening area
L _{beam}	length of reinforced concrete beam	L _{opening}	total gross opening length

ASSUMPTIONS:

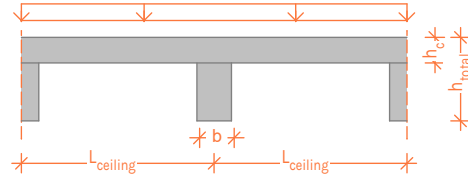
- strength class concrete at least C30/37
- yield strength steel $f_{yd} = 355 \text{ N/mm}^2$
- Exposure class XC1
- symmetrical loading
- beamUp centered in the beam
- no pointloads
- additional load 2 kN/m^2
- payload 10 kN/m^2

2.6 PRE-DIMENSIONING TABLES PRESTRESSED CONCRETE HOLLOW CEILINGS - 3 Openings

Beam view:



Slab cross section:



Payload = 10 kN/m ²			3 openings								
b [cm]	h _{total} [cm]	h _c [cm]	type	L _{beam} [m]	L _{ceiling} [m]	G [kg]	A _{coating} [m ²]	L _{beamUp} [m]	L _{opening} [m]	A _{opening} [m ²]	
30	60	25	S-B3-35-60-25	5.5	5	380	2.23	2.72	2.10	0.65	
		32	S-B3-35-60-32	4.5	7	360	1.84	2.36	1.68	0.40	
		25	S-B3-35-70-25	6.5	5	560	2.83	3.40	2.70	1.10	
	70	32	S-B3-35-70-32	5.5	7	500	2.53	3.25	2.28	0.77	
		80	25	S-B3-35-80-25	7.5	5	750	3.54	4.30	3.30	1.66
			32	S-B3-35-80-32	6	7	660	3.11	3.75	2.88	1.25
	40		S-B3-35-80-40	5.5	8	580	2.66	3.21	2.40	0.85	
	90	25	S-B3-35-90-25	8	5	950	4.07	4.80	3.90	2.34	
		32	S-B3-35-90-32	7	7	930	3.73	4.46	3.48	1.82	
40		S-B3-35-90-40	6	8	800	3.26	3.96	3.00	1.34		
40	60	25	S-B3-40-60-25	5.5	5	470	2.52	2.72	2.10	0.64	
		32	S-B3-40-60-32	4.5	7	410	2.1	2.41	1.68	0.40	
		25	S-B3-40-70-25	6.5	5	600	3.21	3.40	2.70	1.10	
	70	32	S-B3-40-70-32	5.5	7	540	2.75	3.00	2.28	0.77	
		80	25	S-B3-40-80-25	7	5	750	3.84	3.92	3.30	1.66
			32	S-B3-40-80-32	6	7	680	3.41	3.57	2.88	1.25
	40		S-B3-40-80-40	5.5	8	650	2.94	3.24	2.40	0.84	
	90	25	S-B3-40-90-25	8	5	990	4.52	4.60	3.90	2.34	
		32	S-B3-40-90-32	6.5	7	920	4.07	4.21	3.48	1.84	
40		S-B3-40-90-40	6	8	820	3.6	3.88	3.00	1.35		
50	60	25	S-B3-50-60-25	5.5	5	560	3.09	2.72	2.10	0.64	
		32	S-B3-50-60-32	4.5	7	490	2.63	2.49	1.68	0.40	
		25	S-B3-50-70-25	7	5	740	3.94	3.40	2.70	1.10	
	70	32	S-B3-50-70-32	5.5	7	640	3.4	3.04	2.28	0.77	
		80	25	S-B3-50-80-25	8	5	990	4.78	4.08	3.30	1.65
			32	S-B3-50-80-32	7	7	900	4.25	3.74	2.88	1.24
	40		S-B3-50-80-40	6	8	780	3.66	3.36	2.40	0.84	
	90	25	S-B3-50-90-25	9	5	1230	5.59	4.68	3.90	2.34	
		32	S-B3-50-90-32	8	7	1190	5.08	4.30	3.48	1.82	
40		S-B3-50-90-40	7.5	8	1040	4.42	3.82	3.00	1.34		

In case of deviating boundary conditions please feel free to contact us and we will dimension your individual beamUp.

DEFINITIONS:

b	width beam/beamUp	L _{ceiling}	ceiling span per side
h _{tot}	beam height (incl. ceiling thickness)	A _{coating}	coating area for fire protection
h _c	ceiling thickness	L _{beamUp}	length of beamup
G	weight beamUp	A _{opening}	total net opening area
L _{beam}	length of reinforced concrete beam	L _{opening}	total gross opening length

ASSUMPTIONS:

- strength class concrete at least C30/37
- yield strength steel $f_{yd} = 355 \text{ N/mm}^2$
- Exposure class XC1
- symmetrical loading
- beamUp centered in the beam
- no pointloads
- additional load 2 kN/m^2
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