

STATICS TABLES

BS-CEILING BEAMS GLUED

Preconditions:

- Basis for calculation of these schedules is a loading capacity of $p = 2.0 \text{ kN/m}^2$ and an addition for dividing walls of 0.75 kN/m^2 .
Using double- and triple-span girders, working load is calculated with the most disadvantageous loading position in each case.
- The own weight of the ceiling has not to be considered.
- GL 24h (= BS 11) with $E = 11000 \text{ N/mm}^2$

single-span girder	fzul. = l/300 Element thickness in mm										
	80	100	120	140	160	180	200	220	240	260	
	max. span in m										
Loading [kN/m ²]	2.75	3.38	4.19	4.98	5.75	6.51	7.26	8.00	8.75	9.47	10.15
	3.25	3.22	3.99	4.75	5.50	6.24	6.97	7.68	8.39	9.09	9.76
	3.75	3.08	3.82	4.55	5.28	6.00	6.70	7.38	8.07	8.76	9.42
	4.25	2.96	3.68	4.39	5.09	5.78	6.47	7.15	7.82	8.48	9.12
	4.75	2.86	3.56	4.25	4.93	5.61	6.27	6.93	7.58	8.23	8.85
	5.25	2.78	3.45	4.12	4.78	5.44	6.09	6.74	7.37	8.00	8.61

single-span girder	fzul. = l/500 Element thickness in mm										
	80	100	120	140	160	180	200	220	240	260	
	max. span in m										
Loading [kN/m ²]	2.75	2.85	3.53	4.20	4.85	5.50	6.14	6.75	7.37	7.99	8.56
	3.25	2.71	3.36	4.00	4.64	5.26	5.87	6.47	7.08	7.67	8.24
	3.75	2.60	3.22	3.84	4.45	5.05	5.64	6.23	6.82	7.39	7.95
	4.25	2.50	3.11	3.70	4.29	4.87	5.45	6.03	6.60	7.15	7.69
	4.75	2.42	3.00	3.58	4.16	4.73	5.29	5.85	6.40	6.93	7.46
	5.25	2.34	2.91	3.48	4.04	4.59	5.13	5.67	6.21	6.74	7.28

Double-span girder	fzul. = l/300 Element thickness in mm										
	80	100	120	140	160	180	200	220	240	260	
	max. span in m										
Loading [kN/m ²]	2.75	3.86	4.80	5.74	6.64	7.55	8.45	9.33			
	3.25	3.75	4.66	5.56	6.45	7.34	8.22	9.09			
	3.75	3.64	4.52	5.40	6.27	7.15	8.00	8.85			
	4.25	3.54	4.41	5.27	6.13	6.97	7.80	8.63	9.45		
	4.75	3.46	4.31	5.15	5.98	6.81	7.62	8.44	9.25		
	5.25	3.38	4.21	5.03	5.85	6.66	7.46	8.27	9.06		

Double-span girder	fzul. = l/500 Element thickness in mm										
	80	100	120	140	160	180	200	220	240	260	
	max. span in m										
Loading [kN/m ²]	2.75	3.26	4.05	4.84	5.60	6.38	7.14	7.89	8.63	9.35	
	3.25	3.16	3.93	4.69	5.44	6.19	6.92	7.65	8.37	9.09	
	3.75	3.07	3.82	4.56	5.29	6.02	6.74	7.45	8.16	8.88	
	4.25	2.99	3.72	4.45	5.16	5.87	6.57	7.27	7.98	8.67	
	4.75	2.92	3.63	4.34	5.04	5.74	6.43	7.12	7.80	8.48	9.04
	5.25	2.85	3.55	4.24	4.93	5.62	6.30	6.97	7.63	8.30	8.74

Triple-span girder	fzul. = l/300 Element thickness in mm										
	80	100	120	140	160	180	200	220	240	260	
	max. span in m										
Loading [kN/m ²]	2.75	3.75	4.65	5.55	6.43						
	3.25	3.61	4.49	5.36	6.21						
	3.75	3.50	4.35	5.19	6.03						
	4.25	3.39	4.22	5.04	5.86						
	4.75	3.30	4.11	4.91	5.70						
	5.25	3.22	4.00	4.79	5.57	6.32					

Triple-span girder	fzul. = l/500 Element thickness in mm										
	80	100	120	140	160	180	200	220	240	260	
	max. span in m										
Loading [kN/m ²]	2.75	3.16	3.92	4.67	5.42	6.15					
	3.25	3.05	3.79	4.52	5.24	5.95					
	3.75	2.95	3.67	4.38	5.07	5.78					
	4.25	2.86	3.58	4.25	4.93	5.62	6.29				
	4.75	2.78	3.46	4.14	4.81	5.47	6.13				
	5.25	2.71	3.38	4.04	4.69	5.34	5.99				

Beams longer than 18.0 m are not producible

Example for application of a single-span girder with bending limit l/500

Construction	$g = 1.0 \text{ kN/m}^2$
Working load	$p = 2.0 \text{ kN/m}^2$
Addition for dividing walls	$p_{TW} = 0.75 \text{ kN/m}^2$
Total	$q = 3.75 \text{ kN/m}^2$
Span max.	$L = 5.05 \text{ m}$

These schedules are to be used for pre-dimensioning. There has to be made a correct structural analysis before execution.