



PRESLAB PRE-STRESSED PERMANENT SHUTTER WIDE SLABS

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TYPICAL APPLICATIONS OF PRESTRESSED PERMANENT SHUTTER WIDE SLABS WITH 3X3 PRESTRESSING CABLES

Preslab Code	Ref. Total Depth/No. 3x3 Cables	Preslab C35/40 (mm)	In-situ C20/25 (mm)	Total Depth (mm)	Self weight + finishes (kN/m ²)	Maximum effective simply supported span (m) for service superimposed load (kN/m ²) shown excluding self-weight and 100 mm finishes														
						3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0					
P60A	100/25	65	35	100	4.40	3.00														
P60A	120/25	65	55	120	4.88	5.50	3.21													
P60B	120/33	65	55	120	4.88	7.16	4.14													
P60B	140/33	65	75	140	5.36	10.82	7.18	3.98												
P60C	140/37	65	75	140	5.36	12.02	9.26	4.60												
P80B	160/33	80	80	160	5.84	13.86	9.41	6.36	4.20											
P80C	160/37	80	80	160	5.84	15.64	10.77	7.44	5.06											
P80B	180/33	80	100	180	6.32	16.88	11.63	8.03	5.45	3.55										
P80C	180/37	80	100	180	6.32		13.33	9.37	6.54	4.44										
P80C	200/37	80	120	200	6.80		16.10	11.47	8.16	5.71	3.85									
P80D	200/49	80	120	200	6.80			15.76	11.64	8.58	5.50									
P80C	220/37	80	140	220	7.28			13.40	9.65	6.87	4.75	3.10								
P80D	220/49	80	140	220	7.28			18.45	13.74	10.24	7.60	5.53								
P100C	240/37	100	140	240	7.76			15.35	11.14	8.03	5.66	3.82								
P100D	240/49	100	140	240	7.76			21.14	15.83	11.91	8.93	6.60	4.75							
P100C	260/37	100	160	260	8.24			17.31	12.65	9.21	6.58	4.54	2.92							
P100D	260/49	100	160	260	8.24				17.93	13.57	10.25	7.67	5.62							
P100C	280/37	100	180	280	8.72				14.14	10.36	7.49	5.25	3.48							
P100D	280/49	100	180	280	8.72				20.31	15.46	11.77	8.90	6.62	4.79						
P100C	300/37	100	200	300	9.20				15.65	11.54	8.41	5.98	4.04	2.49						
P100D	300/49	100	200	300	9.20					17.14	13.11	9.98	7.50	5.49	3.85					
NO. PROPS						1	1	1	2	2	2	2	3	3	3					

NOTES:

Safe load tables in single span condition

Table above has been based on standard width of 2.52 metres in simple supported condition. An allowance of 2.0 kN/m² has been taken for finishes in addition to self weight of slab.

Safe load tables in multiple span condition

Safe superimposed loading for continuous panels in double and/or multiple spans can be improved by the addition of reinforcement over supports placed on chairs. Detailed information can be requested from manufacturer for individual project conditions.

Prestressing Cables

Low relaxation 3x3 wire strand diameter 6.5mm cross-sectional area 21.20 mm². Characteristic strength f_{pu} = 1760 N/mm² stressed at f_{pi} = 1350 N/mm².

Fire construction

Cover to all reinforcement/cables must be minimum 25 mm for a fire construction of 1 hour.

Concrete grades

Preslab shall be in C25 (25 N/mm²) concrete at release for an ultimate strength of C40 concrete (40 N/mm²). In-situ topping shall be in minimum C25 (25 N/mm²) concrete.

Preslab reinforcement

Reinforcement in the form of mesh must be placed in preslab to cater for lifting points/hook arrangement; typically A98 for a maximum lifting span of 3.50 meters.

Top surface Preslab

The top surface of preslab is to be finished rough and/or brushed to provide a good key between preslab and in-situ topping.

Bearing

Provide a minimum seating of 75 mm on mortar bedding.

Handling and Storage

Preslabs should be lifted by multiple hooks, which should be self-balancing, at maximum 500 mm from corners. Slab units should be stacked on bearers on firm level ground. Stacks should be not more than 10 units high and each layer separated by bearers at not more than two meters intervals.

Erection/Sequence of operations

Pre-stressed wide slabs should be lifted from transport directly onto prepared supports. Never walk on unsupported slabs. Once the slabs are in position, any loose reinforcement required by the design, including trimming of holes, continuity reinforcement, top reinforcement over supports etc., is placed. Site in-situ concrete is spread and compacted in position. Temporary supports are removed between 7-14 days after the in-situ concrete is poured to ensure that the in-situ topping has achieved the design strength of C25 concrete.

Continuity ties

Compliance to be achieved by providing longitudinal and transverse ties to ensure compliance with stability requirements of code; recommendations can be requested from manufacturer for individual project conditions.