SPAN TABLES:

FLOOR JOIST SPAN TABLES 3.0, 4.0, 5.0 kPa

Limit State Capacities - Recommended maximum single spans (m)

FLOOR LIVE LOADS (EXCLUDING STORAGE LOADING)

3.0 kPa OFFICES, CLASS ROOMS, LABORATORIES, ETC (EXCLUDING CARPARKING)

CODE	BEAM SIZE (mm)	Floor Joist SPACING (mm)					
		300	338	360	400	450	600
T257aP10	248 x 71	5.74	5.41	5.24	4.97	4.69	4.06
T257bP10	248 x 71	5.89	5.54	5.37	5.10	4.81	4.16
T259aP10	248 x 88	6.12	5.87	5.73	5.43	5.12	4.44
T259bP10	248 x 88	6.27	6.01	5.85	5.55	5.23	4.53
T259aP12	248 x 88	6.53	6.25	6.11	5.89	5.64	4.95
T259bP12	248 x 88	6.68	6.40	6.26	6.03	5.79	5.21
T259bL13	248 x 91	6.81	6.55	6.40	6.17	5.92	5.33
T307bP10	302 x 71	6.84	6.46	6.26	5.94	5.60	4.85
T309bP10	302 x 88	7.10	6.87	6.75	6.45	6.08	5.27
T309cP10	302 x 88	7.23	6.99	6.87	6.60	6.22	5.39
T309bP12	302 x 88	7.43	7.05	6.84	6.53	6.29	5.93
T309cP12	302 x 88	7.55	7.30	7.17	6.96	6.73	6.03
T309cL13	302 x 91	7.67	7.42	7.29	7.07	6.84	6.16
T357bP10	354 x 71	7.75	7.50	7.38	7.13	6.72	5.82
T357cP10	354 x 71	7.86	7.62	7.49	7.24	6.83	5.91
T357bP12	354 x 71	8.11	7.85	7.71	7.49	7.25	6.65

4.0 kPa PUBLIC SPACE, SHOPS, CORRIDORS, LANDINGS, ETC

CODE	BEAM SIZE (mm)	Floor Joist SPACING (mm)					
		300	338	360	400	450	600
T257aP10	248 x 71	5.03	4.74	4.59	4.36	4.11	3.56
T257bP10	248 x 71	5.16	4.86	4.71	4.47	4.21	3.65
T259aP10	248 x 88	5.50	5.18	5.02	4.76	4.49	3.81
T259bP10	248 x 88	5.62	5.29	5.13	4.86	4.58	3.97
T259aP12	248 x 88	5.89	5.63	5.50	5.29	5.05	3.81
T259bP12	248 x 88	6.03	5.78	5.65	5.44	5.21	4.67
T259bL13	248 x 91	6.17	5.92	5.78	5.57	5.33	4.78

4.0 kPa PUBLIC SPACE, SHOPS, CORRIDORS, LANDINGS, ETC (continued)

CODE	BEAM SIZE (mm)	Floor Joist SPACING (mm)					
		300	338	360	400	450	600
T307bP10	302 x 71	6.01	5.66	5.49	5.21	4.91	4.25
T309bP10	302 x 88	6.48	6.15	5.96	5.66	5.33	4.62
T309cP10	302 x 88	6.64	6.29	6.10	5.78	5.45	4.72
T309bP12	302 x 88	6.53	6.29	6.19	6.07	5.93	5.30
T309cP12	302 x 88	7.05	6.73	6.56	6.31	6.03	5.39
T309cL13	302 x 91	7.20	6.87	6.71	6.44	6.16	5.50
T357bP10	354 x 71	7.21	6.80	6.59	6.25	5.89	5.10
T357cP10	354 x 71	7.33	6.91	6.69	6.35	5.98	5.18
T357bP12	354 x 71	7.63	7.38	7.25	6.97	6.65	5.91

5.0 kPa PUBLIC ASSEMBLY AREAS, WORKSHOPS, GYMNASIUMS, ETC

CODE	BEAM SIZE (mm)	Floor Joist SPACING (mm)					
		300	338	360	400	450	600
T257aP10	248 x 71	4.53	4.27	4.14	3.93	3.70	3.09
T257bP10	248 x 71	4.65	4.38	4.24	4.03	3.80	3.29
T259aP10	248 x 88	4.96	4.67	4.52	4.29	4.05	3.09
T259bP10	248 x 88	5.06	4.77	4.62	4.38	4.13	3.58
T259aP12	248 x 88	5.42	5.18	5.05	4.64	4.12	3.09
T259bP12	248 x 88	5.57	5.33	5.21	5.01	4.79	4.26
T259bL13	248 x 91	5.70	5.45	5.33	5.12	4.90	4.26
T307bP10	302 x 71	5.42	5.10	4.95	4.69	4.42	3.83
T309bP10	302 x 88	5.88	5.54	5.37	5.10	4.80	4.16
T309cP10	302 x 88	6.02	5.67	5.49	5.21	4.91	4.26
T309bP12	302 x 88	6.14	6.02	5.93	5.75	5.47	4.71
T309cP12	302 x 88	6.46	6.18	6.03	5.79	5.53	4.91
T309cL13	302 x 91	6.60	6.31	6.16	5.91	5.64	5.01
T357bP10	354 x 71	6.50	6.12	5.93	5.63	5.31	4.60
T357cP10	354 x 71	6.61	6.22	6.03	5.72	5.39	4.67
T357bP12	354 x 71	7.15	6.82	6.65	6.37	6.07	4.85

NOTES - Tables 3, 4, 5 kPa

1. Spans - face to face of supports
2. For continuous spans, no increase in span is recommended for higher loads because joist shear increases at the intermediate support. It is recommended that shear is checked*
3. Live Loads - refer to AS1170.1 for the relevant activity loading. These tables are not applicable to storage loads where long term deflection may exceed span/300 or 15 mm*
4. Dead Load - 0.4 kPa. For higher dead loads check shear, bending and long-term deflection*
5. Deflection or serviceability criteria adopted:

   Short-term loading $\psi_s = 0.7$ - (excluding storage where $\psi_s = 1.0$, $\psi_l = 0.6$)
   y = span/480

   Long-term loading $\psi_l = 0.4$
   y = span/300, max 15mm

   For further details refer to the Design Guidelines, section 2.1
   Note for the 3.0 kPa table, some spans are greater than those applicable to houses; this is because deflection is not limited to 9.0 mm
6. To control vibration in spans over 6.0 m two rows of strongbacks are recommended. For spans over 7.0 m, an increase in the strongback stiffness is recommended, eg. use two rows of MGP12 or LVL13, or use three rows of MGP10 strongbacks
7. Where a concentrated load exceeds 5.0 kN add a pair of web stiffeners under the point load and check that there is a strongback (min. 2.4 m long) within 1.0 m, closer to the mid span. Concentrated loads over 7.5 kN should be specified on the drawings
8. Beam CODE: T25, T30, T35 – joist depth (cm); 7 or 9 – joist width (cm); a, b, c – galvanized steel web thickness 0.8, 1.0, 1.2mm grade G300, Z275; P10, P12 – Pine timber flange grade equivalent to MGP10, MGP12 respectively, L13 – LVL flange, grade F16
9. Spacing, nominal average, ie:
   - 300crs is equivalent to 450crs plus an extra joist @ 900crs
   - 338 " " 450 " " 1350 "
   - 360 " " 450 " " 1800 "

   NB If extra joists are installed, at least one row of strongbacks is required for uniform support
10. For higher floor loadings incl. storage, up to 15kPa, refer to TECBEAM Australasia Pty Ltd. Tecbeam joists provide an economical solution for storage loads due to their strength and low creep factor
11. Section properties and structural design guidelines are available from TECBEAM Australasia Pty Ltd or can be downloaded from 'Technical Documents' section on the TECBEAM Australasia web site: www.tecbeam.com.au

* Refer to TECBEAM Australasia or a Structural Engineer for design.

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