

Seasoned Softwood Span Tables: Floor Joists for Balconies & Decks - Revised Loading - 1 m & Above the Ground



The 2002 version of the Australian and New Zealand Loading Standard (AS/NZS 1170.1, 2002) introduced changes to the imposed loading for balconies and decks. The new distributed imposed loading on decks is now 2.0 kPa for decks at or above 1 m from the ground and the imposed concentrated load remains at 1.8 kN. For decks less than 1 m from the ground the imposed distributed loading is the same as the internal domestic loading of 1.5 kPa – refer to Timber Information Bulletin 2. The existing AS 1684 Residential Timber-Framed Construction Standard is based on the 1989 version of the Loading Code. This guide has been produced so that designers and builders can take advantage of the reduced loading introduced by the 2002 Loading Standard and easily compare the most commonly used seasoned softwood grades. As the timber is to be used in external exposed situations, it is assumed that the timber will be preservative treated to H3 level for external above ground situations.

Seasoned Softwood Floor Joist Spans for Balconies & Decks – Revised Loading (Joist Spacing 450 mm)

Single Span

Size DxB (mm)	F5		F7		MGP 10	
	Span (mm)	Cant. (mm)	Span (mm)	Cant. (mm)	Span (mm)	Cant. (mm)
70x35	NS	NS	NS	NS	NS	NS
70x45	NS	NS	NS	NS	NS	NS
90x35	NS	NS	1000	300	NS	NS
90x45	1100	300	1200	300	1400	400
120x35	1500	400	1700	500	1700	500
120x45	1800	500	2000	600	2200	600
140x35	2100	600	2200	600	2400	700
140x45	2300	600	2500	700	2900	800
190x35	3300	900	3400	1000	3500	1000
190x45	3600	1000	3800	1100	4100	1200
240x35	4200	1250	4400	1300	4300	1200
240x45	4500	1300	4800	1400	5100	1500
290x45	5500	1650	5700	1700	6000	1800

Continuous Span

Size DxB (mm)	F5		F7		MGP 10	
	Span (mm)	Cant. (mm)	Span (mm)	Cant. (mm)	Span (mm)	Cant. (mm)
70x35	NS	NS	NS	NS	NS	NS
70x45	NS	NS	NS	NS	1100	300
90x35	1000	300	1300	300	1200	300
90x45	1300	300	1500	400	1700	500
120x35	1900	500	2100	600	2200	600
120x45	2200	600	2400	700	2700	800
140x35	2500	750	2700	800	2700	800
140x45	2800	800	3000	850	3300	900
190x35	3400	1000	3800	1050	3500	1000
190x45	3800	1100	4200	1150	4300	1250
240x35	4300	1250	4800	1300	4300	1200
240x45	4800	1400	5400	1450	5200	1550
290x45	5800	1650	6500	1750	6000	1800

- Notes**
- i Maximum deck joist span is based on supporting a maximum decking mass of 20 kg/m², imposed point load of 1.8 kN and imposed distributed loading of 2 kPa.
 - ii Maximum cantilever length is 30% of the backspan. Minimum backspan is 200% of overhang.
 - iii Joists crippled over supports must be considered as single span joists.
 - iv Where joist depth is more than 4 times greater than breadth, restraint may be required. Refer AS1684 2 or 3 Cl. 4.2.2.3
 - v Bearing lengths shall be a minimum of 35 mm at end supports and 70 mm at internal supports for continuous members.
 - vi Continuous indicates continuous members, i.e. where the joists span over 3 or more bearers.
 - vii Cant. indicates the allowable cantilever length.
 - viii NS = Not Suitable



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