

Seasoned Softwood Span Tables: Floor Joists for Domestic Balconies & Decks - Revised Loading

The 2006 AS 1684 – Residential Timber-Framed Construction Standard is based on the loadings contained in the Loading Code AS1170 – 1989. The current Loading Code, AS/NZS 1170.1: 2002, has introduced a reduced imposed loading of 2.0 kPa on domestic decks above 1 m from the ground. This guide has been produced so that designers and builders can take advantage of the reduced loading and compare the most commonly used seasoned softwood grades. As the timber is for external exposed above ground application, it is assumed that it will be preservative treated to H3 level.

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

Single Span (See Note iii)

Span (mm)	F5 Size D×B (mm)	F7 Size D×B (mm)	MGP 10 Size D×B (mm)
1200	120 x 45	90 x 45	90 x 45
1500	120 x 45	120 x 45	90 x 45
1800	120 x 45	120 x 45	120 x 45
2100	140 x 45	140 x 45	120 x 45
2400	190 x 45	140 x 45	140 x 45
2700	190 x 45	190 x 45	140 x 45
3000	190 x 45	190 x 45	190 x 45
3300	190 x 45	190 x 45	190 x 45
3600	190 x 45	190 x 45	190 x 45

Continuous Span (See Note iii)

Span (mm)	F5 Size D×B (mm)	F7 Size D×B (mm)	MGP 10 Size D×B (mm)
1200	90 x 45	90 x 45	90 x 45
1500	120 x 45	90 x 45	90 x 45
1800	120 x 45	120 x 45	120 x 45
2100	120 x 45	120 x 45	120 x 45
2400	140 x 45	120 x 45	120 x 45
2700	140 x 45	140 x 45	140 x 45
3000	190 x 45	140 x 45	140 x 45
3300	190 x 45	190 x 45	140 x 45
3600	190 x 45	190 x 45	190 x 45

- Notes**
- i These tables assume the building practice contained in AS1684 – 2006 – Residential Timber Framed Construction and should be read in conjunction with that standard
 - ii Check available joist lengths with your supplier before specifying
 - iii While the same deflection criteria used by Timber Solutions © to produce the AS1684 span tables have been used, the resultant deck may exhibit some “bounce”. Where this is not desirable, for sizes above 190x35 mm designers and builders may reduce the spans by 500 mm and cantilevers by 250 mm.
 - iv Maximum deck joist span is based on supporting a maximum decking mass of 20 kg/m², imposed point load of 1.8 kN, imposed distributed loading of 2 kPa and 450 mm joist spacing. Suitable for high and low decks.
 - v Maximum cantilever length is 30% of the backspan. Minimum backspan is 200% of overhang.
 - vi Joists crippled over supports must be considered as single span joists.
 - vii Where joist depth is more than 4 times greater than breadth, restraint may be required. Refer AS1684.2 or AS1684.3 Cl. 4.2.2.3.
 - viii Bearing lengths shall be a minimum of 35 mm at end supports and 70 mm at internal supports for continuous members.
 - ix Continuous indicates continuous members, i.e. where the joists span over 3 or more bearers.
 - x Cant. indicates the allowable cantilever length.



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