

# 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 AS1170.2 – 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 Spans for Balconies & Decks – Revised Loading (Joist Spacing 450 mm)

### Single Span (See Note iii)

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 (See Note iii)

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 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/m<sup>2</sup>, 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.
  - xi NS = Not Suitable



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