

# 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 D×B (mm)	F5		F7		MGP 10	
	Span (mm)	Cant. (mm)	Span (mm)	Cant. (mm)	Span (mm)	Cant. (mm)
70×35	NS	NS	NS	NS	NS	NS
70×45	NS	NS	NS	NS	NS	NS
90×35	NS	NS	1000	300	NS	NS
90×45	1100	300	1200	300	1400	400
120×35	1500	400	1700	500	1700	500
120×45	1800	500	2000	600	2200	600
140×35	2100	600	2200	600	2400	700
140×45	2300	600	2500	700	2900	800
190×35	3300	900	3400	1000	3500	1000
190×45	3600	1000	3800	1100	4100	1200
240×35	4200	1250	4400	1300	4300	1200
240×45	4500	1300	4800	1400	5100	1500
290×45	5500	1650	5700	1700	6000	1800

### Continuous Span (See Note iii)

Size D×B (mm)	F5		F7		MGP 10	
	Span (mm)	Cant. (mm)	Span (mm)	Cant. (mm)	Span (mm)	Cant. (mm)
70×35	NS	NS	NS	NS	NS	NS
70×45	NS	NS	NS	NS	1100	300
90×35	1000	300	1300	300	1200	300
90×45	1300	300	1500	400	1700	500
120×35	1900	500	2100	600	2200	600
120×45	2200	600	2400	700	2700	800
140×35	2500	750	2700	800	2700	800
140×45	2800	800	3000	850	3300	900
190×35	3400	1000	3800	1050	3500	1000
190×45	3800	1100	4200	1150	4300	1250
240×35	4300	1250	4800	1300	4300	1200
240×45	4800	1400	5400	1450	5200	1550
290×45	5800	1650	6500	1750	6000	1800

- Notes**
- i These tables assume the building practice contained in AS1684 – 2006 – Residential Timber Framing 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



Australian Government  
Forest and Wood Products  
Research and Development  
Corporation

These tables have been produced using Timber Solutions software Version 2.02 © Forest and Wood Products Research and Development Corporation (FWPRDC). This publication was produced by the Timber and Building Materials Association, in conjunction with the Timber Development Association (NSW) and with assistance from the FWPRDC. The FWPRDC is jointly funded by the forest and wood products industry and the Australian Government.

**Important notice:** The information and advice provided in the publication is intended as a guide only. As successful design and construction depends upon numerous factors outside the scope of this publication, the Timber Development Association (NSW) accepts no responsibility for specifications in, nor work done or omitted to be done in reliance on this information sheet. Whilst all care has been taken to ensure the accuracy of the information contained in this publication, the Timber Development Association (NSW) disclaims, to the full extent permitted by law, all and any liability for any damage or loss, whether direct, indirect, special or consequential, arising directly or indirectly out of use of or reliance on this guide, whether as a result of the Timber Development Association (NSW) negligence or otherwise.