



SELECTING JOISTS FOR CANTILEVERED BALCONIES

Changes to timber treatments mean revisiting the joist sizes needed to build a safe cantilevered balcony.

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NZS 3604: 1999 *Timber framed buildings* includes a selection table for cantilevered balcony joists, however, it is based on a weight limit for the balustrade of 5.5 kg/m². This allowance is insufficient for realistic balustrade constructions complying with NZBC Clause F4 *Safety from falling*.

To remedy this, *Build* (October/November 2002, page 14) included a revised selection table, and BRANZ Bulletin 483 *Timber slat decks* reproduced it. However, the table has become obsolete with timber grading changes. Since the next revision of NZS 3604 is still some years away, it is timely to update the table, taking into account the new grading regime. This updated table is also included in the recently published Bulletin 489 *Timber slat decks/balconies* which supersedes Bulletin 483.

Greater balustrade weight used

Table 1 is based on a balustrade weight of 26 kg/m², which will cover most construction types, including framing clad on both faces with fibre-cement sheeting with the outer face texture coated. The allowance for decking is 40 kg/m², which covers all construction types except tiles.

Note that the joist sizes are *after* any step down for weathering. Notching the joists by site cutting is not a satisfactory way to achieve a weathering step down. Removing part of

the timber section invalidates the timber grading and compromises its treatment, and thus its durability.

Timber treatment

Table 1 is derived using timber properties in the 'green' condition as defined by NZS 3603: 1993 *Timber structures standard*. This is appropriate for timber in an exposed situation, such as a deck or balcony, where

the timber is likely to become wet in service. It also takes account of an appropriate 'wet' treatment such as H3.2. G8 is the timber grade intended for this application, although BRANZ is aware that it is not yet widely available. Timber produced to No. 1 framing or VSG/MSG8, or VSG/MSG10, and then wet treated is suitable provided the appropriate column of the table is used. ■

Table 1: Selection table for cantilevered joists.

Joist size (mm x mm)	Joist spacing (mm)	Maximum cantilever length (mm)	
		No. 1 framing	G8, VSG/MSG8, VSG/MSG10
90 x 45	600	400	550
	450	500	650
	400	550	700
140 x 45	600	700	900
	450	800	1050
	400	900	1100
190 x 45	600	1000	1250
	450	1150	1450
	400	1200	1550
240 x 45	600	1250	1600
	450	1500	1850
	400	1550	2000
290 x 45	600	1550	1950
	450	1800	2300
	400	1900	2450