

# Builders' Installation Guide

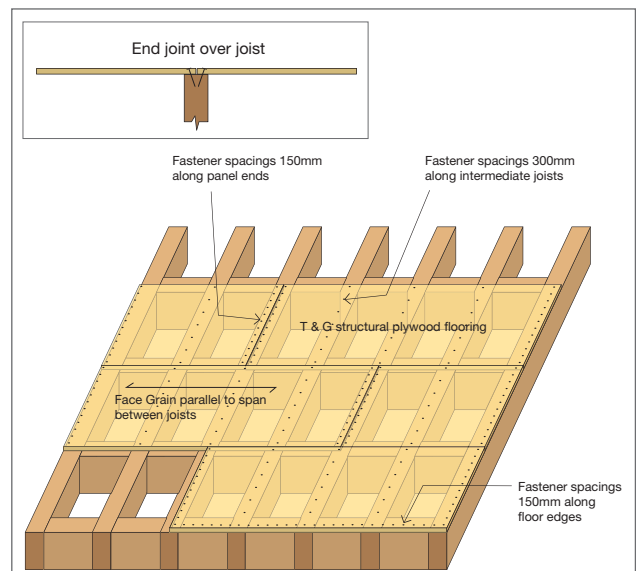
## Long length / Tongue and Groove Plywood

J-Ply is available in 2.4m, 2.7m and 3.0m sheet lengths. J-Ply is the only structurally certified plywood available in 3.0m sheets. 3.0m lengths are ideal for floor and roof layouts, providing improved sheet utilisation and spanning capabilities. J-Ply Roofing and Flooring products are available as tongue and grooved panels, with the distinctive green tongue. J-Ply green tongue plywood will eliminate the use of sub-floor blocking in a number of instances, except where overlaid with membrane roofs or where diaphragm action is required. Utilising tongue and groove J-Ply together with polyurethane adhesive and proper fixings will help achieve a squeak free floor system. The span tables are designed to optimise available sheet length. The best span option can be selected from the table by choosing the appropriate application class and the desired thickness of the plywood. (Table 2)

## Layout

It is important to lay out a plywood floor/deck or roof correctly and allow for expansion of the plywood, especially in high moisture areas. The key points to remember are as follows:

1. J-Ply plywood face grade should be laid perpendicular to the floor joists (lay the plywood lengthwise across the joists) in a brick work pattern with the joints staggered.
2. In flat roofing situations it is recommended that solid blocking at 600mm centres is incorporated to minimise the potential for water to pond on the roof surface.
3. Tongue and groove plywood should be butt jointed on the sheet edges and allow a 2mm expansion gap on sheet ends. Square edge sheets require a minimum 2mm expansion gap around the whole sheet. In addition plywood used for flooring and decking should have a 5mm expansion gap left around the whole floor.



**Plywood T & G Floor Layout**

## Treatment

Structural J-Ply is recommended as a substrate for permanent weather barrier systems on walls, decks and roofs. Treated H3 (CCA) J-Ply is recommended as a substrate behind membranes, shingles and tiles. J-Ply with a minimum C grade face is recommended for supporting roof membranes. Rubber membrane adhesives are not compatible with LOSP H3 treatments.

## Fixings

Holdfast is the recommended adhesive. Please refer to the J-Ply Technical brochure. Gluing and screwing of J-Ply to joists improves stiffness and reduces squeaking in the finished floor.

## Nailing / Screwing

Fix nails or screws at 150mm centres around panel edges and 300mm on intermediate supports. Corrosion resistant fasteners (hot dip galvanised fasteners or stainless steel) must be used when using H3 CCA treated plywood.

Ply Thickness	Timber Framing		Steel Framing***	
	Flat Head*	Screws**	Thick <1.15mm	Thick <2mm
7	40 x 2.8	8 x 25	10-24-35	10-24-35
9	40 x 2.8	8 x 25	10-24-35	10-24-35
12	50 x 2.8	8 x 40	10-24-40	10-16-40
15	50 x 2.8	8 x 40	10-24-40	10-16-40
17	60 x 2.8	8 x 50	10-16-45	10-16-45
19	60 x 2.8	8 x 50	10-16-45	10-16-45
21	60 x 2.8	10 x 50	10-16-45	10-16-45
25	75 x 3.15	10 x 50	10-16-45	10-16-45

**Table 4**

\* Length in mm x thickness in mm      \*\* Gauge x length in mm

\*\*\* Gauge - threads per inch - length in mm

# J-Ply Roofing, Flooring and Decking Span Tables

## Maximum recommended frame centres (mm)

### ROOFING - F8 STRENGTH / STIFFNESS RATING

Roofing Application	UDL kPa	CONC kN	Plywood thickness (mm)					
			sheet length	15	17	19	21	25
Sub-sheathing	n/a	n/a	2.4m	<b>1200</b>				
			2.7m					
			3.0m					
Non-trafficable Slope > 30 deg	0.25	1.1	2.4m	<b>800</b>	800	800	800	1200
			2.7m	675	<b>900</b>	900	900	<b>1350</b>
			3.0m	750	750	<b>1000</b>	<b>1000</b>	1000
Non-trafficable Slope < 30 deg	0.25	1.1	2.4m	<b>800</b>	800	800	800	<b>1200</b>
			2.7m	675	<b>900</b>	900	900	900
			3.0m	750	750	<b>1000</b>	<b>1000</b>	1000
Non-trafficable Slope < 10 deg	0.25	1.8	2.4m	480	600	800	800	<b>1200</b>
			2.7m	450	675	900	900	900
			3.0m	<b>500</b>	<b>750</b>	<b>1000</b>	<b>1000</b>	1000

**Table 2**

**Note:** Recommended spans are calculated to maximise the usable sheet size. 12mm and 31mm J-ply are available on request. F11 plywood spans may be greater than those for F8, please contact New Zealand Wood Products. Bolded numbers are the recommended best span option for the relevant thickness ply.

#### Roofing tables assume design actions from:

Snow  $S_u = 2.0$  kPa,  $S_s = 1.26$  kPa (sub-alpine to 500m)

Wind  $W_u = 4.80$  kPa,  $W_s = 3.14$  kPa

(winds to Very High,  $C_p(in) = 0.55$ ,  $C_p(out) = 1.6$ ,  $K_1 = 3.2$ )

Dead load light roof = 0.2 kPa, heavy roof = 0.6 kPa

### FLOORING & DECKING - F8 / F11 STRENGTH / STIFFNESS RATING

Application	UDL kPa	CONC kN	sheet length	Plywood thickness (mm)									
				15		17		19		21		25	
				F8	F8	F11	F8	F11	F8	F11	F8	F11	
Domestic Flooring (floor, deck, trafficable roof)	2.0	1.8	2.4m	400	480	USE F8	<b>600</b>	USE F8	600	USE F8	800	USE F8	
			2.7m	<b>450</b>	<b>540</b>		540		<b>675</b>		<b>900</b>		
			3.0m	429	500		<b>600</b>		600		750		
Domestic Garage	2.5	9.0	2.4m						343	<b>400</b>	480	480	
			2.7m						<b>386</b>	386	450	<b>540</b>	
			3.0m						375	375	<b>500</b>	500	
Office	3.0	2.7	2.4m			400	480	<b>600</b>	600	600	800	800	
			2.7m			<b>450</b>	450	540	<b>675</b>	675	<b>900</b>	<b>900</b>	
			3.0m			429	<b>500</b>	<b>600</b>	600	<b>750</b>	750	750	
Retail	4.0	3.6	2.4m					<b>480</b>	400	<b>600</b>	<b>800</b>	800	
			2.7m					450	<b>450</b>	540	675	<b>900</b>	
			3.0m					429	429	<b>600</b>	750	750	
Industrial	5.0	4.5	2.4m							480	<b>600</b>	<b>800</b>	
			2.7m							450	540	675	
			3.0m							<b>500</b>	<b>600</b>	750	

**Table 3**

**Note:** Design actions as defined in AS/NZS 1170. Refer to code for clarification of application, and for a more extensive list. Tables designed for IL2 buildings, 50 year working life. Specific design recommended for other applications.

#### General Note

Support framing width assumed to be 45mm. Ply face grain is laid perpendicular to support framing. Staggered joints, minimum two spans per sheet, see sheet layout diagram. Flooring applications designed for a 1.5mm deflection under a 1.0 kN point load. This is in the middle of the AS/NZS 1170 suggested range. For more sensitive applications, specific design is recommended. Concentrated loads (CONC) are applied over varying footprints, as defined in AS/NZS 1170.

Every care has been taken in preparing the information contained within this publication, however, the company cannot accept responsibility for any inaccuracies that may have arisen, and cannot accept liability for loss or damage (either direct or consequential) arising out of or in relation to use or application of the said information. The span tables cannot be applied to other plywood products however similar they appear.



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