

# J-Ply Roofing, Flooring and Decking



## Introduction

J-Ply plywood is manufactured in New Zealand by Juken New Zealand Limited (JNL) and marketed by New Zealand Wood Products Limited. The J-Ply Roofing and Flooring brochure provides a guide to utilising plywood in roofing, flooring and decking applications. The guide describes how to use J-Ply in these applications and provides span tables, fixing requirements and installation recommendations. It is important to consult the NZ Building Code and either contact New Zealand Wood Products for detailed engineering questions or consult your engineer or local council.



## Certification for New Zealand

JNL is an integrated forestry and manufacturing company, owning forests throughout the North Island of New Zealand. Two plywood mills based in Masterton and Gisborne manufacture plywood for the New Zealand and Australian markets to meet AS/NZS2269.0:2008. All Structural J-Ply is independently certified by the Engineered Wood Products Association of Australasia (EWPPAA). In addition J-Ply plywood is Forest Stewardship Council™ (FSC) certified which provides assurance that the plywood is produced from well managed forests and other responsible sources. FSC certification assists institutions in gaining the green star rating required for government and educational facilities.



The mark of responsible forestry

SGS-COC-006233

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## Long length / Tongue and Groove Plywood

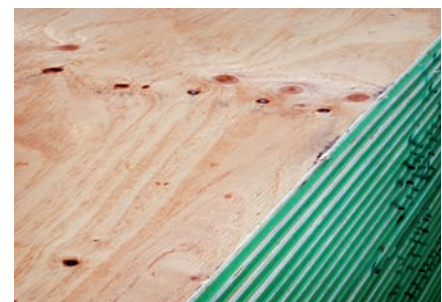
J-Ply is available in 2.4m, 2.7m and 3.0m sheet lengths. J-Ply is the only structurally certified plywood available in 3.0m sheets. 3.0m lengths are ideal for floor and roof layouts, providing improved sheet utilisation and spanning capabilities. J-Ply Roofing and Flooring products are available as tongue 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)



### Joist multiple options by length of sheet.

2.4	2.7	3.0
1200	1350	1000
800	900	750
600	675	600
480	540	500
400	450	429
343	386	375

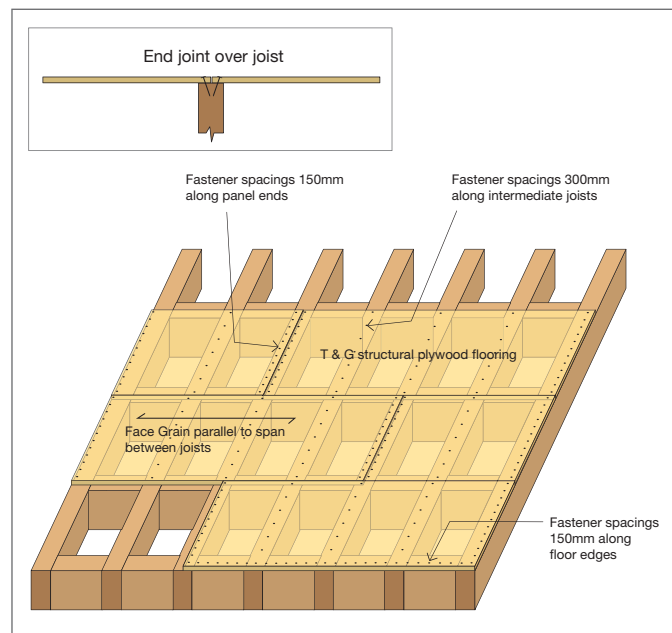
Table 1



## 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**

## 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
<b>Domestic Flooring</b> (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	
<b>Domestic Garage</b>	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
<b>Office</b>	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
<b>Retail</b>	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
<b>Industrial</b>	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.

## 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

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

## Adhesives

New Zealand Wood Products recommends the following adhesives for bonding of H3 Plywood:

### 1. Timber Framing

- Holdfast Gorilla Grip 2Hr Construction Adhesive, a continuous bead (5mm x 5mm)
- Holdfast Gorilla Nailpower Construction Adhesive, a continuous 30mm bead applied along the framing

### 2. Steel Framing

- Holdfast Fix All 220MS, a continuous bead (5mm x 5mm). Ensure that the steel framing is free from oil residues prior to applying
- Holdfast Gorilla Nailpower Construction Adhesive, a continuous 30mm bead applied along the framing. Ensure that the steel framing is free from oil residues prior to applying



If you have any questions regarding the application of suitable adhesives please contact **Holdfast NZ Ltd** on **0800 70 10 80**

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The information contained in this brochure relates to specific J-Ply products manufactured by Juken New Zealand Limited. The span tables cannot be applied to other plywood products however similar they appear.



**NEW ZEALAND WOOD PRODUCTS LIMITED**

PO Box 13647, Onehunga, Auckland 1643  
 Phone: +64-9-636 7030  
 0508-PLYWOOD (0508-75-99-66)  
 Fax: +64-9-636 0504  
 Email: sales@nzwoodproducts.co.nz

[www.nzwoodproducts.co.nz](http://www.nzwoodproducts.co.nz)