

NZWOOD

NEW ZEALAND WOOD PRODUCTS LIMITED

December 2013

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/NZS 2269:2008. All Structural J-Ply is independently certified by the Engineered Wood Products Association of Australasia (EWPA). 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.

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.

Joist Layout Options

Table 1 lists the alternative joist layout options that are derived from each sheet length

Joist multiple options by length of sheet.

	Sheet Size (m)		
	2.4	2.7	3.0
Joist Spacing (mm)	1200	1350	1000
	800	900	750
	600	675	600
	480	540	500
	400	450	429
	343	386	375

Table 1

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. (Tables 2 & 3)

Roofing - F8 & F14 Strength/ Stiffness Rating

Roofing Application	UDL kPa	CONC kN	Sheet length	Plywood thickness (mm)												
				15		17		19		21		25				
				F8	F14	F8	F14	F8	F14	F8	F14	F8	F14			
Sub-sheathing	n/a	n/a	2.4m	1200												
			2.7m													
			3.0m													
Non-trafficable Slope > 30 deg	0.25	1.1	2.4m	800	800	800	1200	800	1200	800	1200	1200	1200	1200	1200	
			2.7m	900		900		900		900		1350				
			3.0m	750		1000		1000		1000		1000				
Non-trafficable Slope < 30 deg	0.25	1.1	2.4m	800	800	800	800	800	800	800	1200	1200	1200			
			2.7m	675		900		900		900		900				
			3.0m	750		750		750		1000		1000				
Non-trafficable Slope < 10 deg	0.25	1.8	2.4m	480	600	600	800	800	800	800	1200	1200	1200			
			2.7m	450		675		900		900		900				
			3.0m	500		750		750		1000		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:

Ground snow load 2.6kPa (sub-alpine to 500m). Wind Load to Extra High (NZS 3604:2011)

Flooring & Decking - F8, F11, F14 Strength/ Stiffness Rating

Flooring & Decking Application	UDL kPa	CONC kN	Sheet length	Plywood thickness (mm)													
				15		17			19			21			25		
				F8	F14	F8	F11	F14	F8	F11	F14	F8	F11	F14	F8	F11	F14
Domestic Flooring (floor, deck, trafficable roof)	2.0	1.8	2.4m	400	480	480	Use F8	600	600	Use F8	600	600	Use F8	800	800	Use F8	800
			2.7m	450		540			540			675			900		
			3.0m	429		500			600			600			750		
Domestic Garage	2.5	9.0	2.4m								343	343	400	400	480	480	600
			2.7m								386	386		450	540		
			3.0m								375	375		500	500		
Office	3.0	2.7	2.4m			400		480	600	600	600	600	800	800	800	800	
			2.7m			450		450	540	675	675	900	900				
			3.0m			429		500	600		600	750		750	750		
Retail	4.0	3.6	2.4m						480	480	400	600	600	800	800	800	
			2.7m						450		450	540		675	900		
			3.0m						429		429	600		750	750		
Industrial	5.0	4.5	2.4m								400		480	480	600	800	800
			2.7m										450		540	675	
			3.0m										500		600	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. Staggering 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.

LP SolidStart I-Beam

- Fast and easy to install
- Light weight
- Long lengths
- Ability to cut large holes in the web which provide for ducting, plumbing and cabling

Hyne Beam 17C

- The heavy weight solution
- Stiffer than other laminated beams of similar dimensions
- Ideal for lintels, bearers and ridge beams
- Manufactured from Australian slash pine
- 18C and 21C beams are available for the ultimate in performance and beauty. Manufactured from Australian hardwoods

Hyne Edge Beam / Hyne LGL

- Laminated timber beam
- Ideal as a trimmer or lintel

Rimboard

- LVL, LGL and plywood perimeter / boundary board
- Available in 21mm, 35mm and 45mm thickness
- A dimensionally stable perimeter board that will carry the load evenly

Laminated Veneer Lumber (LVL)

- Applications include: bearers, lintels, joists, rafters and rimboard
- Range of thicknesses- 35mm, 45mm, 63mm and 90mm (capability to provide up to 120mm)
- Range of engineered strength – MOE of 5.5, 9.0, 10.7, 13 and 15 MPa

Pryda Hardware

- Full range of Pryda Hangers, nails and screws are provided to match the I-Built range

J-Ply Premium Plywood

- The strong stiff premium plywood solution
- Strength and durability of plywood
- Manufactured in NZ to AS/NZS 2269:2008
- Available in 2.4, 2.7 and 3m lengths
- F8, F11 and F14 structural rating

Strandfloor

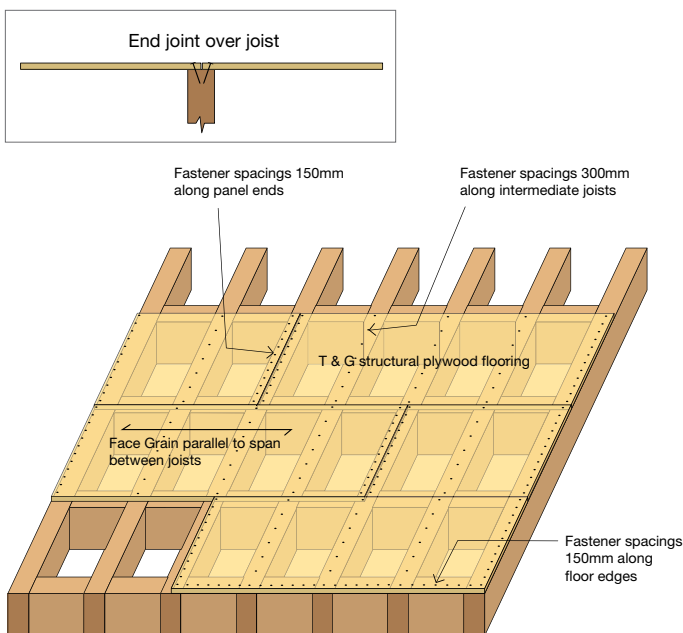
- Available in 20mm x 800mm x 3600mm

Benefits of I-Built

- Less total timber used
- Speed of construction
- Engineered performance providing a structure that is reliable and predictable
- Flexibility – providing the ability to allow for large holes in I-Beams and ability to space joists and bearers to allow for design considerations

I-Built Partners:

- Hyne Timber Products – Hyne Beam 17C, 18C and 21C. Hyne Edge Beam, Hyne LGL
- Louisiana Pacific Solidstart I-Beams – Douglas-fir LVL Flange with an OSB web
- Juken NZ Ltd – J-Ply, J-Plank and J90 LVL
- Nelson Pine Industries Ltd – Nelson Pine LVL 10.7E and 13.2E
- Pryda Hardware – our preferred hanger, nail and screw supplier



Plywood T & G Floor Layout

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.

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
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

Clear Finishes

J-Ply is suitable to achieve a paint grade finish. If a clear finish is required ensure panels are protected from weather throughout construction and a sample sheet is tested for suitability before installation.

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**

All products and relative statements within this document are subject to the applicable products being installed in accordance with information mentioned, and subject to any governing codes of practice. New Zealand Wood Products retains the right to change specifications without notice. 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.

No part of this publication may be reproduced without prior written consent of New Zealand Wood Products Limited.

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.

NZWOOD

NEW ZEALAND WOOD PRODUCTS LIMITED

PO Box 13647, Onehunga, Auckland 1643

Tech Info Line: 0800-022-352

Phone: +64-9-276 7030

Fax: +64-9-270 0504

Email: sales@nzwoodproducts.co.nz

www.nzwoodproducts.co.nz