

Engineered Wood Products

Building an Innovative, Sustainable Future

Building in Confidence

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Australasia

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EWPA

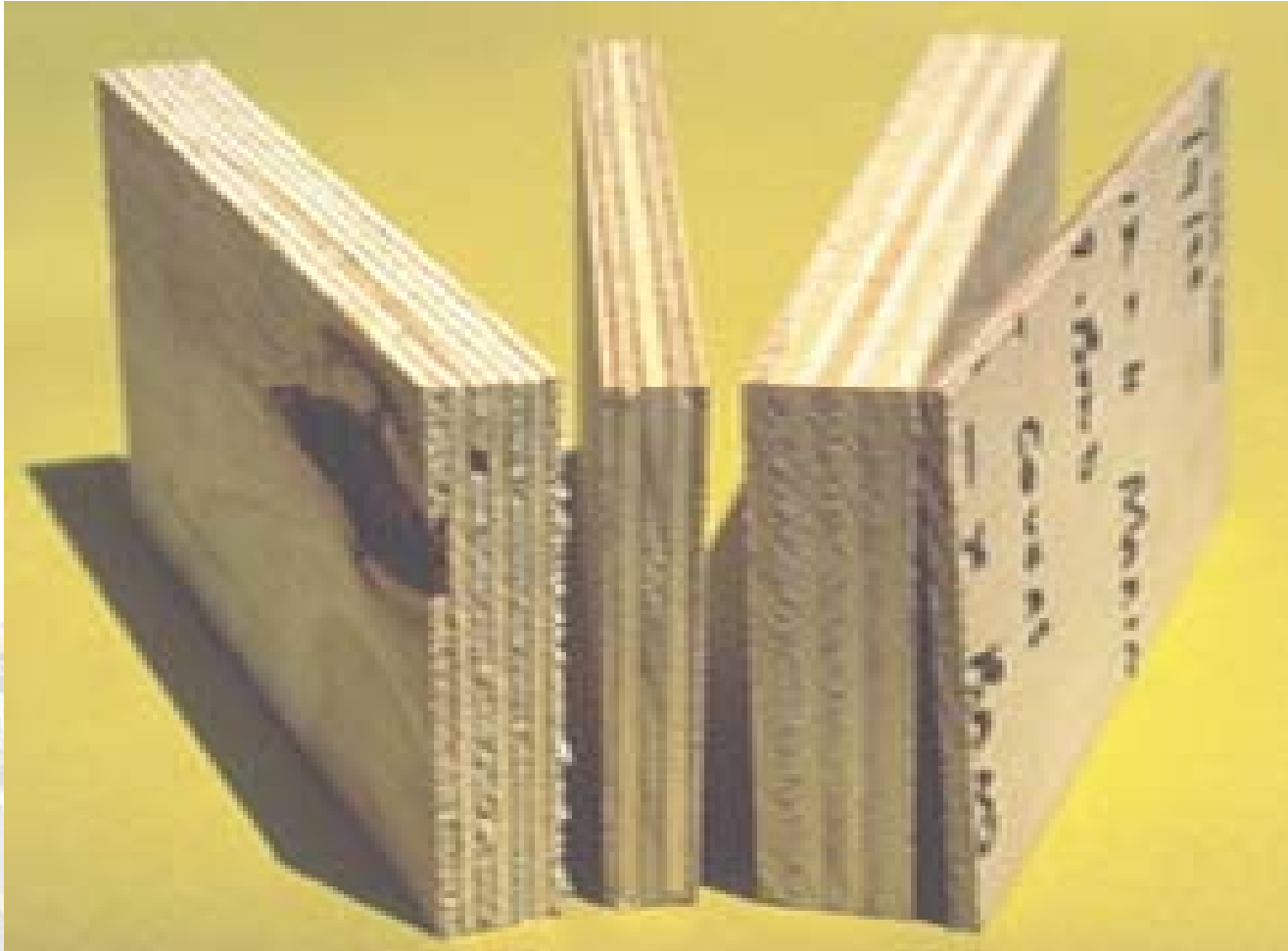
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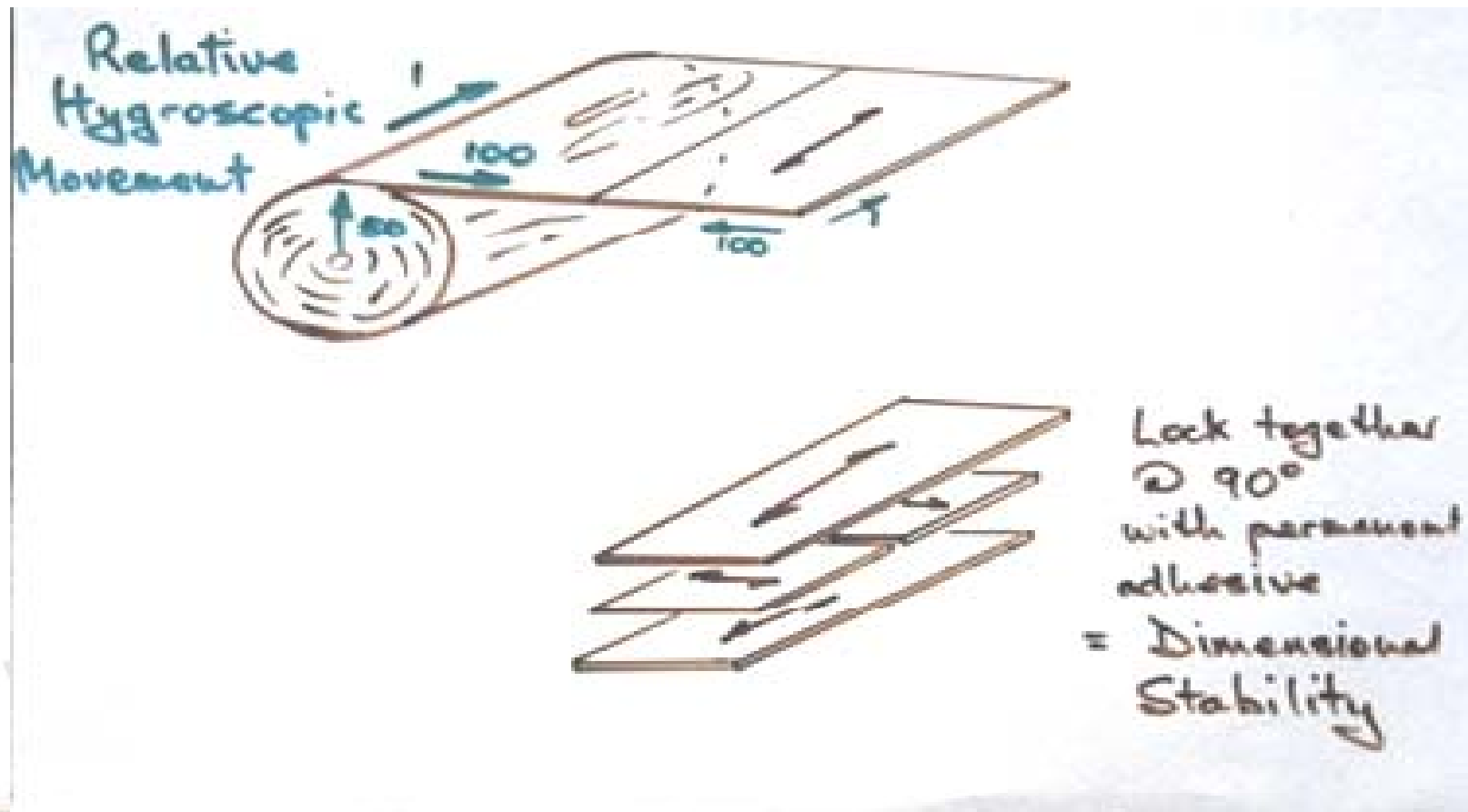
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EWP's Have the following in common

- WOOD (solid timber laminates, veneers, strands, flakes, fibres, chips etc)
- ADHESIVE - structural adhesives
- STRUCTURALLY RATED - F grade, span rated, Published Characteristic structural properties

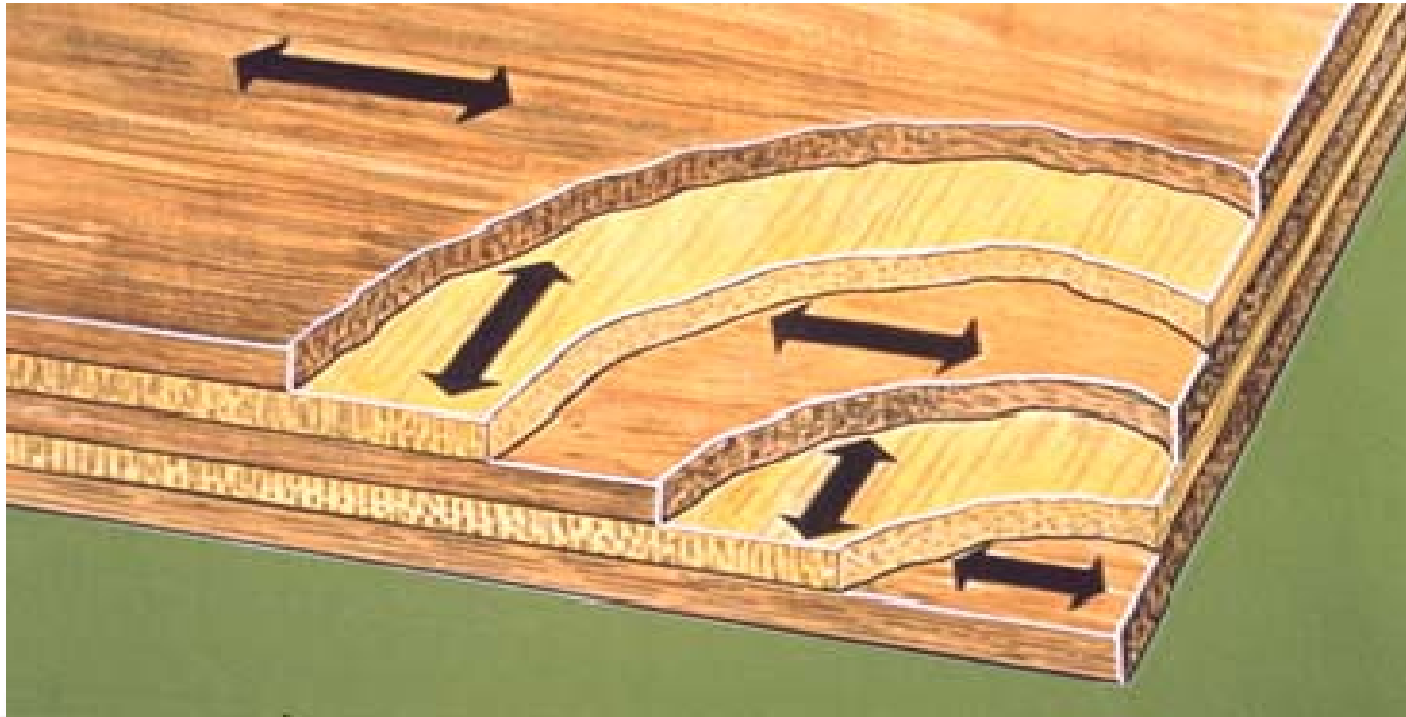
Structural Plywood





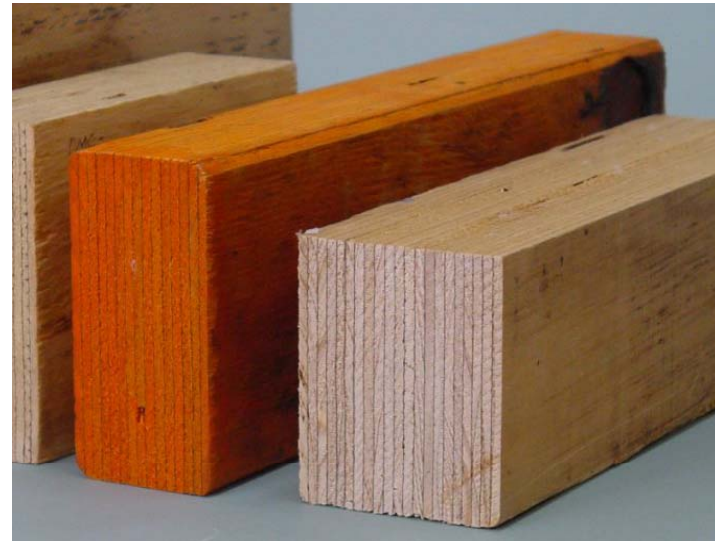
Bonded with Type A phenolic adhesive

Cross-Lamination



- Stops splitting along the grain- Nail only 10mm from the edge
- Improves dimensional stability
- Increases panel shear properties
- Randomises defects- Improved strength and stiffness

Structural Laminated Veneer Lumber



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Metri-guard Grading of Veneers



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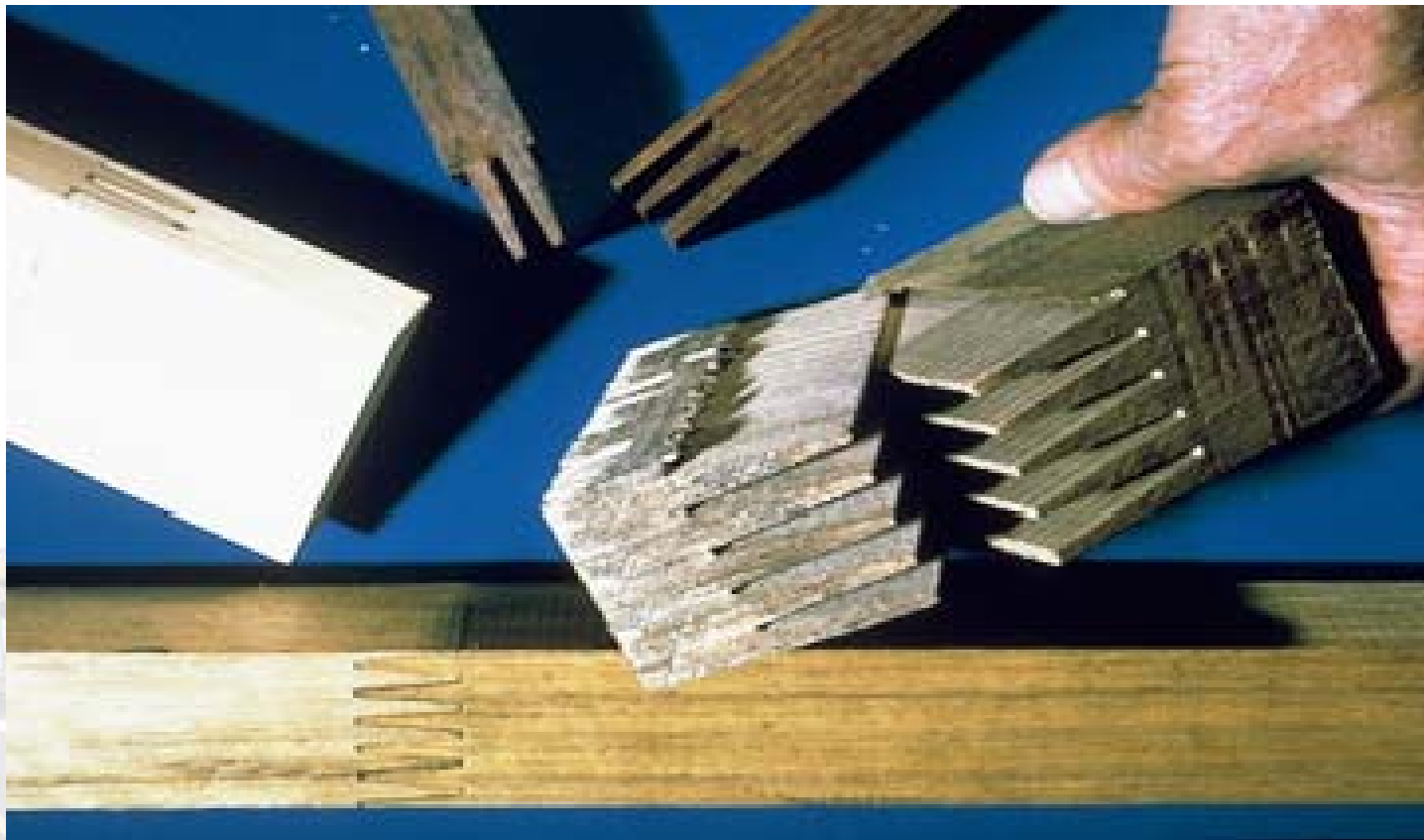
Structural Laminated Veneer Lumber

- graded parallel veneers
- phenolic bond
- staggered veneer joints
- 1200mm wide - continuous length
- 36, 45, 63, 75, 90, 105, 120 thick
- 50% stiffer 2-3 X stronger
- Low co-efficient of variation (less than 10%)

Glue Laminated Timber



Strength Reducing Defects Removed Through Finger Jointing



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Glue laminated Timber

- graded timber laminates
- Resorcinol/ PU bond
- staggered finger joints
- 1200mm wide - long length
- Stiffer and stronger than the parent wood
- Low coefficient of variation (less than 15%)
- Decorative beams are available

Timber I-Beams



I beams utilise timber and wood panel properties to advantage

The tension and compression are carried in the flanges and utilise timber's strength and stiffness

The web transfers these shear forces in-plane in truss type action utilising panel shear capacity and dimensional stability

Efficient Use of resource

When compared to sawn timber I-beams
maximise the end product from the log

1m³ log

12 / 4m 190 x 45 MGP 10

24 / 4m 200 I beam





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Structural Properties of Plywood Standard Grades

**TABLE 2: CHARACTERISTIC STRENGTHS AND STIFFNESS FOR STRUCTURAL PLYWOOD
(MOISTURE CONTENT 15% OR LESS).**

Stress grade	Characteristic strength, MPa					Short duration average modulus of elasticity MPa (E)	Short duration average modulus of rigidity MPa (G)
	Bending	Tension	Panel Shear	Compression in the plane of the sheet	Bearing normal to the plane of the sheet		
	(f'_b)	(f'_t)	(f'_s)	(f'_c)	(f'_p)		
F34	100	60	6.8	75	31	21 500	1 075
F27	80	50	6.8	60	27	18 500	925
F22	65	40	6.8	50	23	16 000	800
F17	50	30	6.8	40	20	14 000	700
F14	40	25	6.1	30	15	12 000	625
F11	35	20	5.3	25	12	10 500	525
F8	25	15	4.7	20	9.7	9 100	455
F7	20	12	4.2	15	7.7	7 900	345

Use of F-grades

Structural Properties of Glulam Standard grades

TABLE 7.1

CHARACTERISTIC VALUES FOR STRUCTURAL DESIGN—GL-GRADES

Stress grade	Characteristic values, MPa					
	Bending (f'_b)	Tension parallel to grain (f'_t)	Shear in beam (f'_s)	Compression parallel to grain (f'_c)	Short duration average modulus of elasticity parallel to the grain (E)	Short duration average modulus of rigidity for beams (G)
GL18	45	25	5.0	45	18500	1230
GL17	40	20	4.2	33	16700	1110
GL13	33	16	4.2	26	13300	900
GL12	25	11	4.2	22	11500	770
GL10	22	8	3.7	18	10000	670
GL8	19	6	3.7	14	8000	530

NOTE: The characteristic values for tension for GL grades apply for tension members with the larger cross-sectional dimension not greater than 150 mm. For tension members with a cross-sectional dimension greater than 150 mm, the characteristic values are determined by multiplying the value in the table by $(150/d)^{0.167}$, where d is the larger cross-sectional dimension of the section.

LVL - No Standard Grades

Structural Properties declared by the manufacturer

TABLE 1
PROPERTIES TO BE DETERMINED DEPENDING UPON END USE

Intended application	Strength and stiffness									Joint strength				
	Bending, shear and bearing								Axial		Nails	Bolts	Self-drilling screws, e.g., Type 17	Nail plates
	On flat				On edge				f_t	f_c				
	E	f_b	f_s	f_p	E	f_b	f_s	f_p						
General beams used on edge only					✓	✓	✓	✓			✓	✓	✓	
Scaffold planks or other applications involving flat-wise bending only	✓	✓	✓	✓										
General structural use	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Nail-plate jointed trusses (see Note 2)					✓	✓	✓	✓	✓	✓	✓	✓		✓

NOTES:

- 1 ✓ indicates property to be determined.
- 2 Assumes on-edge orientation. Where used on flat, corresponding on-flat properties will be required.

I-Beams- No Standard Grades Span Tables Published by the Manufacturer



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CERTIFICATION

100% of plywood and LVL manufactured in Australia, New Zealand, Fiji and PNG is certified as compliant to Australian Standards by the EWPA

Glulam is certified by the GLTAA (Glue laminated timber Association)





EWPA Lab tests 10,000 samples/yr

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Formaldehyde Emissions

The EWPAAs has 2 emission testing labs and test about 6000 samples/yr.

All EWPAAs certified structural plywood and LVL meets emission Class E₀

Allows qualification for additional Green Star Points.

PRODUCT CERTIFIED



JAS-ANZ



www.jas-anz.org/register

PRODUCT CERTIFIED



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Forest Certification



100% of plywood and LVL made in Australia and New Zealand is from certified forests