



Armourply®

Armourply Plywood Products



Big River

Big River

The Big River Group

With over a century of experience in the timber industry, the Big River Group is one of the largest private timber manufacturing and marketing businesses in Australia, servicing all states and many international projects.

Manufacturing operations are located at Grafton and Wagga Wagga in NSW, where a range of hardwood and pine resources are processed into timber products, including plywood for formwork, structural and decorative applications.

The Big River Group has sales and distribution outlets in Townsville, The Sunshine Coast, Brisbane, Grafton, Sydney, The Illawarra, Melbourne, Adelaide and Perth, servicing the construction and building industry as well as the manufacturing sector with a diverse range of timber products and other associated construction materials.

As both manufacturer and distributor of building products, the Big River Group provides the security of a complete support network, backed by technical expertise and years of experience.



Big River Plywood

The Big River Group is a major manufacturer of plywood products, producing panels from both hardwood and pine species and distributing them through a network of sales outlets Australia wide.

The Big River veneer and plywood facility at Grafton is Australia's only processor of hardwood resource, producing unique eucalypt plywood products that preserve the beauty of Australian hardwood through highly efficient use of this precious resource.

The structural plywood mill at Wagga Wagga was established in 1958. It was known as Ausply when it joined the Big River Group in 2007. Since then a major investment has been made in upgrading plant and equipment and increasing production capacity.

Hardwood plywood is manufactured in stress grades from F17 to F27. Pine structural plywood is manufactured to a standard stress grade of F11 but can be manufactured to F14 on request.

Products for specialist applications include plywood for roofing, flooring, and decorative panels, as well as concrete formwork and sound barriers.

Eco-friendly Manufacture

All Big River plywood is manufactured from managed regrowth and plantation forest timbers, with full Chain of Custody certification under AS4707. The hardwood manufacturing plant at Grafton was the first plywood operation in Australia to be accredited under this scheme.

The Grafton factory also operates a co-generation electricity plant that uses manufacturing wood waste to create renewable energy, greatly reducing the requirement to source energy from the grid.

Low emission glues (classed as Super Eo and Eo) are used in the manufacture of plywood, with levels of formaldehyde emission from 0.03 to 0.05 ppm, well below the WHO requirement.

Quality Assurance

All Big River plywood products are manufactured and stress graded to the relevant Australian Standards and certified by the Engineered Wood Products Association of Australasia (EWPAA). Products carrying the PAA stamp are manufactured and product certified under the EWPAA's third party audited quality control program.

The EWPAA Quality Control Program and Product Certification Scheme is accredited by the internationally recognised Joint Accreditation System of Australia and New Zealand (JAS-ANZ).

Structural Ply

T&G Structural

V-Groove

Slip-Resistant

Sound Barrier

Hardwood Ply

Formply





Highest quality appearance grade veneer, when surface appearance is critical. Suitable for clear finishing.

A

Appearance grade, smooth veneer but retaining some natural characteristics of the timber. Suitable for high quality paint and stain finishes.

B

Non-appearance grade, solid sanded surface with natural defects and distinctive grain. Suitable for non-decorative applications.

C

Non-appearance grade, unfilled veneer with limited knots and holes up to 75mm diameter. For structural applications, not suitable for painting.

D

Armourply Structural

Stress Grade F11 (F14 on request)

For domestic and light commercial structural and decorative applications

Big River manufactures structural plywood in a range of widths, lengths, thicknesses and grades to AS/NZS2269 from locally sourced plantation Radiata Pine. Products are certified by the Engineered Wood Products Association of Australasia (EWPPAA).

Armourply Structural is manufactured to a standard stress grade of F11 but can be manufactured up to F14 on request. Slip-resistant faced plywood is manufactured to stress grades F14 and F17.

Custom-made panels can also be supplied, in thicknesses from 7mm to 50mm thick, with hardwood face if required, and cut-to-size. For termite resistance, plywood can be treated to H2 standard or manufactured with a bifenthrin glue line additive.

General Specifications

The following specifications apply to all Armourply structural plywood products:

Standard	AS/NZS2269-2008 Structural Plywood
Stress Grade	F11 (F14 on request)
Timber Species	Radiata Pine (<i>Pinus radiata</i>)
Moisture Content	10-15% (< 7,5mm), 8-15% (> 7,5mm)
Tolerance	As per AS/NZS2269-2008
Adhesive	Phenolic (AS2754.1)
Bond	Type A (AS/NZS2098.2)
Formaldehyde Emission	Super E ₀
Thermal Expansion	Average coefficient of thermal expansion for structural plywood is approximately 4.5×10^{-6} mm/mm/°C compared with 11×10^{-6} mm/mm/°C for steel.
Certification	EWPPAA Chain of Custody AS4707

Radiata Pine

Armourply Structural

Sheet Size (mm)	2400 x 1200
Thickness (mm)	7, 9, 12, 15, 17, 19, 21, 25, 32, 35, 39, 45, 50
Plywood Grades	AA, AB, AC, AD, BB, BC, BD, CC, CD, DD
Stress Grades	F11 (F14 on request)
Timber Species	Radiata Pine
Typical Applications	Wall panelling, bracing, ceiling linings, furniture and fittings

Armourply Builder Ply

Economical alternative, when appearance is unimportant but structural integrity is still required. Can be trimmed on site for cut-to-size applications.

Sheet Size (mm)	2400 x 1200
Thickness (mm)	7, 9, 12, 15, 17, 19, 21, 25, 32, 35, 39, 45, 50
Stress Grade	F11
Timber Species	Radiata Pine
Typical Applications	Economical solution for cut-to-size applications

Armourply V-Grooved

Sheet Size (mm)	2400 x 1200
Thickness (mm)	9, 13, 18
Veneer Grade	BD (knotty face if required)
Face & Back Profile	V-groove 100mm spacing, half V-groove on each edge
Stress Grade	F11
Timber Species	Radiata Pine
Edge Profile	12mm, 19mm Tongue & Groove
Applications	Ceilings and walls, lining, cabinetmaking.



V-Grooved



Armourply T&G Flooring

Sheet Size (mm)	2400 x 1200, 2250 x 1200
Thickness (mm)	15, 17, 19, 21, 25
Plywood Grade	CD
Stress Grade	F11 (F14 on request)
Timber Species	Radiata Pine
Applications	Structural residential flooring, mezzanines, transportables.

T&G Flooring Installation

T&G structural flooring should be installed in accordance with EWPAAs recommendations. See “Tongued and Grooved Residential Flooring” publication, available from www.ewp.asn.au.

The table shows minimum thicknesses for trafficable floors in residential applications with occupancy requirements of 2.7kN concentrated live loads, as detailed in the Loading Code (AS/NZS1170.1 “Structural design actions – Permanent, imposed and other actions”).

Minimum Plywood Thickness – Residential Flooring

Joist Centres (mm)	Min. Thickness (mm)	
	F11	F14
400	12	12
450	13	12.5
480	14	13
600	18.5	17

Armourply T&G Roofing

Lightweight system allows cost savings by reducing weight of overall roof structure. Plywood base creates fully braced roof structure.

Sheet Size (mm)	2400 x 1200
Thickness (mm)	12, 15
Plywood Grade	DD
Stress Grade	F11
Timber Species	Radiata Pine
Benefits	Reduced penetration of wind, dust and vermin. No loose mortar, broken tiles or rust.



Armourply structural plywood flooring for portable buildings



Armourply structural used for custom shapes and box manufacture





Anti-Slip Plywood

Noise Barrier

Anti-Slip Plywood

Big River slip-resistant plywood is an ideal solution for both permanent and temporary applications where safety is paramount.

Sheet Size (mm)	1800 x 1200, 2400 x 1200, cut to size
Thickness (mm)	12, 17, 19, 21, >21
Ant-Slip Surface	Heavy duty textured coating incorporating ground glass
Face Veneer Grade	0.9mm hardwood face and back
Stress Grade	F17
Phenolic Surface Density	45/130 (underside)
Tolerance	As per AS2269
Bond Standard	AS2754.1
Adhesive Types	(AS-2269) A-bond, (AS-2271) B-Bond
Formaldehyde Emissions	Super- Eo
Certification	(EWPA) CoC

Armourply Noise Barrier

Sound attenuation and visual screening or fencing for exterior applications.

Sheet Size (mm)	2400 x 1200
Thickness (mm)	25, 27, 32
Veneer Grade	BB, CC
Face & Back Profile	180mm rippled profile
Joining System	Tongue & Groove
Stress Grade	F11, F14
Timber Species	Radiata Pine



Anti-slip plywood for wet areas and exteriors



Armourply Noise Barrier at Melton, Victoria

Armourply Hardwood

Stress Grade F17, F22, F27

For commercial and industrial structural and decorative applications (interior only)

Big River manufactures Australia's strongest plywood. Armourply hardwood plywood is made from face and core veneers of high-density eucalypt hardwoods such as Flooded Gum and Blackbutt.

It is designed, tested and approved to tolerate extremes of heat and humidity and to resist shrinkage. Its tolerance of changes in ambient temperature and its toughness make Armourply hardwood ideal as flooring for hard-wearing areas.

Note that the Type B bond adhesive used on Armourply hardwood plywood makes it unsuitable for exposed applications.

In unexposed applications, such as internal flooring, the structural properties of Armourply hardwood far exceed any other plywood product manufactured in Australia. Its high spanning capabilities can withstand higher point loads, or provide wider joist spans to save on materials.

When used as an engineered flooring panel for industrial and commercial applications, loading requirements are in accordance with Australian Standard AS/NZS1170.1 SAA Loading Code Part 1 Dead and Live Loads and Load Combinations.

Design thickness/span tables under point and uniformly distributed live loads are available that conform to the requirements of Australian Standard AS/NZS1720.1-1988 SAA Timber Structures Code.

It is also manufactured as an appearance grade plywood. See the Big River range of specialist hardwood flooring products, including Armourfloor, Armourpanel, Armourtread and Armourtrim.

Armourply Hardwood Specifications

Standards	Manufactured to AS/NZS2271
	Graded to AS/NZS2269
Sheet Size (mm)	2400 x 1200, 1800 x 1200
Thickness (mm)	15, 18, 21 Contact Big River for availability of other thicknesses
Plywood Grade	SD (to Big River grading specification), DD
Timber Species	Blackbutt (<i>Eucalyptus pilularis</i>) Flooded Gum (<i>Eucalyptus grandis</i>) Spotted Gum (<i>Corymbia citriodora</i>) Sydney Blue Gum (<i>Eucalyptus saligna</i>)
Stress Grade	Flooded Gum – F22 Sydney Blue Gum – F27 Blackbutt – F27 Spotted Gum – F27
Moisture Content	8% to 15%
Tolerances	As per AS/NZS2269-2008
Adhesive	Fortified melamine urea formaldehyde (AS/NZS2754.1)
Bond	Type B (AS/NZS2098.2)
Formaldehyde Emission	E ₀
Certification	EWPA Chain of Custody AS4707

Armourply hardwood plywood flooring on demountable exhibition buildings.



Big River also manufactures hardwood plywood in appearance grade, which is suitable for high quality flooring, wall and ceiling panels, and cabinetmaking.

Armourform Formply

Big River manufactures a wide range of plywood formwork products, with total hardwood, mixed pine and hardwood, or all pine construction.

Armourform F27 is a premium quality total hardwood formply manufactured from Australian hardwood eucalypt species. It is extremely strong, stiff and durable, outperforming other formply in all respects. With proper care, it consistently achieves up to 60 castings.

Stress grades from F14 to F22 are also available, manufactured from a mixture of hardwood and pine veneers, or all pine construction.

A high-density phenolic resin impregnated

paper is adhered to each side of the Armourform panel to ensure the highest quality off-form finish. All panels are edge-sealed with water-resistant paint.

Big River also manufactures formply for curved formwork applications in 5mm and 9mm thicknesses and 2400 x 1200mm sheets.

All Big River formply is EWPAAs stamped, manufactured and product certified to the relevant Australian and New Zealand Standards under a JAS-ANZ accredited, third party audited quality control program that is internationally recognised. Plywood made under this system meets all requirements of product certification under the Building Code of Australia.

Armourform Formply Range

Stress Grade	Sheet Size (mm)	Thickness (mm)	Bond Type	Construction
F27	2400/1800 x 1200	12, 17, 19, 25	B	Total hardwood
F22	2400/1800 x 1200	12, 17, 19, 25	B	Pine and hardwood
F17	2400/1800 x 1200	17, 19	B	All pine or pine and hardwood
F17	2400/1800 x 1200	17	A	Pine core, hardwood faces
F14	2400/1800 x 1200	12, 17, 19, 25	A	Pine core, hardwood faces

Armourform Specifications

Stress Grades	F14, F17, F22, F27
Standard	AS/NZS 6669
Timber Species	Mixed Hardwood, Radiata Pine, 0.9mm Hardwood face and back
Moisture Content	As per AS/NZS 2269 (not less than 8% or more than 15%)
Tolerance	As per AS/NZS 2269-2008
Adhesives	Phenol formaldehyde (AS/NZS 2754.1) – Type A Melamine fortified urea formaldehyde (AS/NZS 2754.1) – Type B
Bonds	F22 and F27 – Type B (AS/NZS 2098.2) F17 – Type A or B F14 – Type A
Formaldehyde Emission	E ₀
Off-form Finish	Suitable for Class 2 & Class 3
Certification	EWPAAs Chain of Custody AS4707

Big River manufactures a wide range of plywood formwork products.



Big River

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