

PROLAM – TECH SHEET

Introduction to GLULAM

The Glulam process is time proven across Australia, as it has been used for the manufacture of beams and posts and manufactures look to utilise off cuts. Through the manufacturing process timber shooks are finger joint into long lengths prior to being glued and pressed in a laminator to create the desired size.

Species

Merbau (*Intsia bijuga*) is the timber of choice for ProLam products as it is naturally durable in and above ground which being strong with a natural reddy brown colour.

Natural durability properties:

In ground 3 - expected 8-15 years

Above Ground 1 - expected 50+ years

Naturally termites resistant

Natural Density Green Density 1200kg/m³, Air Dried Density 850kg/m³

Coatings

Merbau can be easily be painted or have an oil applied, the regular up keep of these coatings to prolong the life of the timber beneath. Coat all sides of the products including the ends for the best performance.

Surface deterioration

Over time the surface of the Merbau timber will grey off a crack, this is the natural aging process, oiling can slow the environmental impact of the timber surface.

Cracks can be filled an epoxy, check with epoxy supplier to ensure correct product is used.

Service Class 3 Applications

Phenol-Resorcinol Formaldehyde (PRF), A Service Class 3 adhesive is used in the manufacturing process to ensure they withstand the test of time. Service Class 3 application encompasses those situations where the equilibrium moisture content of the timber will, periodically, exceed 20% and the member is fully exposed to the elements.

Strengths properties

Stress Grade	Characteristic Strengths (MPA)				Elastic Moduli (Mpa)	
	Bending (f'b)	Tension Parallel to grain (f't)	Shear in beam (f's)	Compression parallel to grain (f'c)	Short duration modulus of elasticity parallel to grain (E)	Short duration average modulus of rigidity for beams (G)
GL 18	50	25	5	50	18500	1230
GL 17	42	21	3.7	35	16700	1110
GL 13	33	16	3.7	33	1330	900

Structural Sizes & Lengths

Posts

90 x 90mm	GL13	F/J Laminated	2.4, 2.7, 3.0, 3.6, 4.2, 4.8, 5.4, 6.0m
115 x 115mm	GL13	F/J Laminated	2.4, 2.7, 3.0, 3.6, 4.2, 4.8, 5.4, 6.0m
135 x 135mm	GL13	F/J Laminated	2.4, 2.7, 3.0, 3.6, 4.2, 4.8, 5.4, 6.0m
115 x 115mm	GL13	Solid Faced Veneer	2.4, 2.7, 3.0, 3.6, 4.2, 4.8, 5.4, 6.0m
140 x 140mm	GL13	Solid Faced Veneer	2.4, 2.7, 3.0, 3.6, 4.2, 4.8, 5.4, 6.0m
190 x 190mm	GL13	Solid Faced Veneer	2.4, 2.7, 3.0, 3.6, 4.2, 4.8, 5.4, 6.0m

Beams

70 x 32mm	GL17	F/J Laminated	5.4, 6.0m
70 x 42mm	GL17	F/J Laminated	6.0m
90 x 42mm	GL17	F/J Laminated	3.6, 4.2, 4.8, 5.4, 6.0m
140 x 42mm	GL17	F/J Laminated	3.6, 4.2, 4.8, 5.4, 6.0m
190 x 42mm	GL17	F/J Laminated	3.6, 4.2, 4.8, 5.4, 6.0m
240 x 42mm	GL17	F/J Laminated	3.6, 4.2, 4.8, 5.4, 6.0m
290 x 42mm	GL17	F/J Laminated	3.6, 4.2, 4.8, 5.4, 6.0m
140 x 65mm	GL17	F/J Laminated	3.6, 4.2, 4.8, 5.4, 6.0, 7.8m
190 x 65mm	GL17	F/J Laminated	3.6, 4.2, 4.8, 5.4, 6.0, 7.8m
240 x 65mm	GL17	F/J Laminated	3.6, 4.2, 4.8, 5.4, 6.0, 7.8m
290 x 65mm	GL17	F/J Laminated	3.6, 4.2, 4.8, 5.4, 6.0, 7.8m

Storage and Handling

Prolam products should be kept dry out of the weather until they are installed. If they are not stored inside, they will need to have the plastic sheet laid on the ground to prevent raising damp, plus completely wrapped in plastic to prevent rain getting to the products. Prior to installation ensure the moisture content is between 12-15%.

Merbau is a very stable and durable hardwood, but it is a natural product and needs care to be taken when handling it. Prolam products should not be dropped or pack lifted from a single point. Evenly support the pack or pieces until they are placed on gluts which are placed no wider than 1.2m apart.

Design Best Practice

The design of structures incorporating Prolam products which will be fully exposed to the elements should include measures to mitigate exposure to direct sunlight and moisture ponding, and promote rapid shedding of moisture.