0381P TLB TIMBER IN STRUCTURAL TIMBER

Branded worksection

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Worksection abstract

This branded worksection *Template* is applicable to TLB Timber elements for general residential, commercial and similar purposes, including major beams and columns in residential buildings and timber decks and walkways.

The worksection is also applicable to timber building and civil engineering structures or elements for general industrial, marine and similar purposes including the following:

- Timber portal frames and trusses.
- Timber jetties.
- Pole structures.
- Timber bridges.
- Timber masts, pylons, towers, and similar structures.

TLB Timber's merbau products have a class 1 durability rating of heartwood for above ground use to AS 5604, but are not suitable for in-ground use.

***Guidance* text**

All text within these boxes is provided as guidance for developing this worksection and should not form part of the final specification. This *Guidance* text may be hidden or deleted from the document using the NATSPEC Toolbar or the hidden text *Hide* and *Delete* functions of your word processing system. For additional information visit FAQs at www.natspec.com.au.

***Optional* style text**

Text in this font (blue with a grey background) covers items specified less frequently. It is provided for incorporation into *Normal* style text where it is applicable to a project.

Related material located elsewhere in NATSPEC

If a listed worksection is not part of your subscription package and you wish to purchase it, contact NATSPEC.

Related material may be found in other worksections. See for example:

- *0310 Concrete – combined* for footings of pole structures.
- *0382 Light timber framing*.

Material not provided by TLB Timber

This branded worksection includes generic material which may not be provided by the Product Partner including:

- Laminated veneer lumber.
- Fasteners.
- Timber portal frames.
- Pole structures.
- Finger jointed solid timber.

Documenting this and related work

You may document this and related work as follows:

- Normally structural timber will be fully detailed in the structural drawings. If it is intended that the contractor be responsible for any components or structure, the structural drawings must define performance criteria (loading, deflection, exposure) and independent certification by a professional engineer of the design and documentation, and of the erected work, are then required.

Specifying ESD

The following may be specified by retaining default text:

- Recycled timber.

The following may be specified by including additional text:

- Timber from a sustainable source.
- Adhesives with low VOC emission for laminated timber.
- Water-based, solvent free finish.

Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

1 GENERAL

TLB Timber specialises in supplying the Australian Timber Industry with high strength, low shrinkage, durable, fire and insect resistant hardwood timbers and plywood which can be used in both internal and external applications. TLB Timber's extensive product range of tropical hardwoods includes merbau, kwila, hopea, rosewood and plantation mahogany, plus hardwood plywoods (CD Structural F14+ and appearance grade) and plantation sourced hoop pine plywoods (CD Structural F14+ and appearance grade).

1.1 RESPONSIBILITIES

General

Requirement: Provide TLB Timber structural timber, as documented.

Documented is defined in *0171 General requirements* as meaning contained in the contract documents.

Design

This worksection can be used to document a variety of design and construct approaches. For example:

- Full design and construct: The contractor designs the whole of the project.
- Partial design and construct: The documents show some design details and all the design parameters for the project.

If the design, or completion of the design, is not the responsibility of the contractor, delete the subclause.

Authority requirements: [complete/delete]

In particular, draw attention to any specific requirements of the DA and regulatory bodies. Consider attaching DA conditions if appropriate.

Performance

Requirements: [complete/delete]

Define verifiable outcomes relating to the overall worksection or system. Use design schedules as appropriate and delete from **SELECTIONS** if duplicated.

1.2 COMPANY CONTACTS

TLB Timber technical contacts

Website: www.tlbtimber.com.au/ContactUs

1.3 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements*.

0171 General requirements contains umbrella requirements for all building and services worksections.

- *0181 Adhesives, sealants and fasteners*.
- *0184 Termite management*.
- *0185 Timber products, finishes and treatment*.

Common text

1.4 STANDARDS

General

Design: To AS 1720.1.

See SAA HB 108 for guidance. Loading design criteria used in the AS 1684 series is given in AS 1720.3. Minimum sizes for members must be shown on the drawings. Local authorities' regulations may govern. On building in bushfire-prone areas, see AS 3959 Appendix F and WoodSolutions 04. For mid-rise timber building design considerations, see WoodSolutions 37 and WoodSolutions 38.

1.5 MANUFACTURER'S DOCUMENTS

Technical manuals

Website: www.tlbtimber.com.au

1.6 INTERPRETATION

Definitions

General: For the purposes of this worksection the definitions given in AS 1720.1 apply.

Edit the **Definitions** subclause to suit the project or delete, if not required.

1.7 SUBMISSIONS

Certification

Design: If design by the contractor is required, submit independent certification by a professional engineer of the design and documentation, and of the erected work for conformance with AS 1720.1 and project performance criteria.

Preservative treatment: Submit a test certificate from an independent testing authority confirming that the required preservative retention has been achieved for every member.

Consider calling for certificates of samples from batches of identical structural elements.

- Treatment record: Submit a certified copy of the charge sheet.

Products and materials

Identification:

- Certification: Submit a supplier's certificate (which may be included on an invoice or delivery docket) verifying that the timber conforms to the specification, including moisture content.
- Inspection: Submit the inspection authority's certificate verifying that the timber conforms to the specification.

Moisture content: Submit records of moisture content.

Edit these requirements as appropriate.

CCA treated timber: If proposed, provide details of treatment.

The default allows the possibility of CCA use. Refer to NATSPEC TECHnote PRO 001 for guidance and if appropriate, amend the text as follows:

CCA treated timber: Do not use.

Shop drawings

Items to be designed by the contractor will normally include only specialist prefabricated items such as trusses, portal frames, glued laminated timber, laminated veneer lumber and nail plated joined beams.

General: Submit shop drawings showing the following:

- Marking plans.
- Arrangement of members.
- Location of the members in the building.
- Loading parameters and bracing lengths assumed in the design.
- Species, stress grade, strength group and joint group of timber.
- Size of each member.
- Tolerances on member sizes.
- Joint details including connector plates.
- Lifting points.
- Method of fixing and bracing.
- Preservative treatment, if any.
- Long term deflection.
- Moisture content at time of manufacture.
- Method of fabrication.
- Precamber.
- For pole construction: Pole footing hole diameter and pole embedment length.

Drawing format: 2D and 3D CAD drawings.

Timber portal frames: Show the following additional information:

- Size and specification of gussets.
- Gusset fastenings (nail size and arrangement).

- Base plate details.
- Fixings for purlins, girts and bracing.
- Method of handling and erection, including temporary bracing required, if any.

Glued laminated timber: Show the following additional information:

- Design stresses.
- Appearance grade.
- Service class.
- Strength grade.
- Precamber.

Contractor design: For items designed by the contractor, submit independent certification of shop details by a professional engineer for conformance to AS 1720.1 and the project performance criteria.

Subcontractors

General: Submit names and contact details of proposed suppliers and installers.

Evidence of experience: [complete/delete]

Delete if supplier/installer details are not required.

Prefabricated items: Submit name and contact details of proposed prefabricator.

Delete if supplier/installer details are not required.

1.8 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the following:

- Prefabricated items before priming or water-repellent treatment.
- Structural timberwork after erection but before being concealed.
- On site preservative treated members before being concealed.
- Post holes/foundations before placing concrete.
- Bolts after final tightening.

Amend to suit the project adding critical stage inspections required.

Hold points, if required, should be inserted here.

2 PRODUCTS

2.1 GENERAL

Product substitution

Other products: Conform to **PRODUCTS**, **GENERAL**, **Substitutions** in *0171 General requirements*.

The *0171 General requirements* clause sets out the submissions required if the contractor proposes alternative products. Refer also to NATSPEC TECHnote GEN 006 for more information on proprietary specification.

Marking

Identification: Marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.

Edit the list to suit the project or delete if not required.

2.2 TIMBER

TLB Timber – merbau solid timber

Merbau is recognised as one of the most versatile hardwood products in the world. Its strength, durability and natural resistance to termites make it ideal for construction and engineering applications.

Conformance: As documented in the **TLB Timbersolid timber schedule.**

Appearance grade: To AS 2082.

This grade is only used when the appearance is important (for example exposed beams or stair stringers). TLB Timber's F27 merbau is a structural appearance grade product to AS 2082.

Timber grading methods:

- F-grades: To AS 1720.1 Table H2.1.

Structural timber is generally stamped with the grade and the Australian Standard method.

Preservative treatment: To the *Timber products, finishes and treatment* worksection.

Termite treatment: To the *Termite management* worksection.

Recycled timber

Grit blasted or re-machined: Remove all nails and screws.

Stress grade: [complete/delete]

Visually graded F-grade: To AS 2082 or AS 2858. Note the characteristic strength of the species may be reduced.

Identification

Identification may be required for species, grade, stress grade, preservative treatment level to AS 1604.1 seasoning, etc.

Method: Identify timber using branding, certification or both.

Branding: Brand structural timber, under the authority of a recognised product certification program applicable to the product. Locate the brand mark on faces or edges which will be concealed in the works. Include the following data for timbers not covered by branding provisions in Australian standards or regulations for which branding is required:

Branding is compulsory in some states, and is required by all the plywood standards, most of the structural timber standards (e.g. AS/NZS 1328.1, AS/NZS 1748.1, AS 2082, AS 2858) and many of the standards for milled timbers. Engineered Wood Products Association of Australia (EWPAA) branding incidentally ensures that the bulk of the timber used is plantation grown.

- Stress grade.
- Method of grading.
- If seasoned, the word, SEASONED or DRY, or an abbreviation of seasoned, such as SEAS or S.
- The certification mark of the product certification program.
- The applicable standard.

Certification: Forest certification, chain of custody and product labelling to the *0185 Timber products, finishes and treatment* worksection.

2.3 TLB TIMBER STRUCTURAL PLYWOOD

TLB Timber distributes a range of structural plywoods.

TLB Timber's ACQ H3 & H4 Structural Plywood is manufactured to AS/NZS 2269 from plantation grown hoop pine and klinki pine veneers using an A bond, WBP glue.

TLB Timber's Structural Plywood is manufactured to AS/NZS 2269 from tropical hardwood veneers, using an A bond, WBP glue with a minimum F14 stress grade and veneer quality selections from B to D.

General

Standard: To AS/NZS 2269.0.

Bond: Type A to AS/NZS 2754.1.

Bond Type A is generally required for structural plywood, reduce to Type B if applicable. Refer to AS/NZS 2754.1 Table 1.

Type A: Long-term structural performance requirements. Applicable to extreme long-term exposure to weather or wet or damp conditions.

Type B: Short-term structural performance requirements. Applicable to extreme short-term exposure to weather or wet or damp conditions.

Type C: Non-structural applications with full protection from weather. Applicable to potential exposure to long-term high humidity conditions.

Type D: Non-structural applications with full protection from weather. Applicable to potential exposure to long-term medium humidity conditions.

Stress grade: [complete/delete]

Select F-Grade to AS 1720.1 Table 5.1 or to AS/NZS 2269.0 Table 4.1.

Plywood nominal thickness: [complete/delete]

Identification code: [complete/delete]

Nominal thickness of individual plies through assembly, mm: [complete/delete]

Thickness, identification code, ply thickness to AS/NZS 2269.0 Table 3.1.

Formaldehyde emission class to AS/NZS 1860.1: [complete/delete]

Select E1 or E2. A formaldehyde emission class of E1 or less can improve indoor air quality.

Preservative treatment: To the *0185 Timber products, finishes and treatment* worksection.

Application

Bracing unit type: [complete/delete]

Bracing thickness (mm): [complete/delete]

TLB Timber supply F14, 4 mm thick plywood bracing. TLB Timber's 6mm and 9 mm softwood plywood, and 7mm and 9mm hardwood plywood are also suitable for bracing.

4 mm thick plywood with F14 stress grade is suitable for limited bracing applications in residential light timber frame construction. See Section 8 of AS 1684.2, AS 1684.3, and AS 1684.4 for bracing requirements.

Note: EWPAA has withdrawn all technical support for structural plywood bracing systems using plywood less than 7 mm thick.

Veneer

Veneer quality to visible surfaces: CD (minimum) to AS/NZS 2269.0.

Plywood veneer quality is designated by two letters, the first being the face veneer quality and the second the back veneer quality. For example:

- AA for marine plywood.
- AD for wall cladding where only the front face is visible.
- CD for structural plywood flooring.
- DD for structural bracing.

Identification

Branding: To AS/NZS 2269.0.

Brand mark: Locate the brand mark on faces or edges which will be concealed in the works.

2.4 TLB TIMBER GLUED LAMINATED TIMBER

MAGNA Glulam finger joint laminated posts and beams

MAGNA Glulam products are manufactured using merbau timber and are renowned for their consistent high quality. They carry a 15 year warranty against defects in manufacture and material and a Certificate of Conformance from the Glue Laminated Timber Association of Australia (GLTAA).

Consult TLB Timber regarding available stress grades and section sizes.

If more than one type is required it may be preferable to set out this information in a table.

Conformance: As documented in the **TLB Timber finger joint glued laminated timber schedule**.

Glued laminated structural timber: To AS/NZS 1328.1.

AS/NZS 1328.2 is a guide to AS/NZS 1328.1. Refer also to WoodSolutions 36 for further information on the fabrication and installation of engineered wood products.

Production record: To AS/NZS 1328.1.

Glulam stress grade: [complete/delete]

Refer to AS 1720.1 Table 7.1 or AS/NZS 1328.2 Table 1.1.

MAGNA Glulam finger joint laminated merbau posts are minimum GL 13 rated (some are GL 17).

Service class to AS/NZS 1328.1: Class 3.

Service class 3 timber is suitable for exterior, fully exposed conditions where the ambient moisture content can be greater than 18%.

Appearance grade: Grade A to AS/NZS 1328.1.

Appearance grade A is suitable for use where appearance is important and clear or painted finishes are used. All surface voids are filled or repaired.

Tolerance of overlap: [complete/delete]

Select the limits to AS/NZS 1328.2 Table 1.3.

Laminated members: Widths and depths to AS/NZS 1328.2 Table 2.2.

Edit as appropriate for non-standard sizes.

Direction of laminations: Horizontal.

See AS 1720.1 Section 7. In Australia most manufacturers use horizontal. The alternative is vertical.

Preservative treatment: To the *0185 Timber products, finishes and treatment* worksection.

Joints

End joints: Finger.

Camber

Orientation: Install cambered members with the camber up.

Protection from weather

Duration: Provide temporary protection for glued laminated timber members until permanent covering is in place.

Exposed applications: Paint glued products or otherwise protect them with a moisture-excluding envelope.

Consider long term maintenance.

Long span applications: Provide adhesive with non-creep permanent characteristics, applied under rigid control procedures.

2.5 LAMINATED VENEER LUMBER

General

Laminated veneer lumber is manufactured to EWPAA guidelines using phenolic adhesive to give a Type A exterior glue bond. There is JAS-ANZ accredited Product Certification of Structural LVL.

Consult manufacturers for information about available species, design stress, section and lengths.

The Woodsolutions 32 guide provides optimised design solutions for a range of long span LVL frames and trusses.

Standard: To AS/NZS 4357.0.

Refer also to WoodSolutions 36 for further information on the fabrication and installation of engineered wood products.

Branding: To AS/NZS 4357.0 clause 1.8.

Conformance: As documented in the **Laminated veneer lumber schedule**.

Product brand name: [complete/delete]

Veneer quality: To AS/NZS 2269.0.

Bond: Type A to AS/NZS 2754.1.

Bond Type A is generally required for structural plywood, reduce to Type B if applicable. Refer to AS/NZS 2754.1 Table 1.

Stress grade: [complete/delete]

Select F-grade to AS/NZS 4357.0 clause 3.4.

Product type: [complete/delete]

e.g. Continuous LVL (lengths up to 12 m long with scarf jointed veneers) or Nailplated LVL (made up by nailplating 2.4 m lengths).

Preservative treatment: To the *0185 Timber products, finishes and treatment* worksection.

2.6 FINGER JOINTED STRUCTURAL TIMBER

General

Performance: To AS/NZS 8008 (Int).

AS/NZS 8008 (Int) had an expiry date of 30 June 2016.

Production: To AS 5068.

Conformance: As documented in the **Finger jointed structural timber schedule**.

Stress grade: [complete/delete]

Both the grade and the grading method are required. For example stress grade: F8 to AS 1720.1 Table H2.1. The stress grade covers the parent material whereas AS 5068 and AS/NZS 8008 (Int) describe the finger joint strength.

2.7 FASTENERS

Use this clause if fasteners have been selected as part of the design of particular structural members.

Joint

Type: [complete/delete]

Either Type 1 joint or Type 2 joint depending on whether the fastener is subjected to shear or axial loads.

Jointing Methods: [complete/delete]

The jointing methods can be bolts, nails and screws, nailplates and shear connectors. Do not use shear connectors, the product is virtually obsolete and specialist tools are required.

Materials

Type: [complete/delete]

e.g. plain, stainless or galvanized steel. The interaction of moisture and chemicals on metals can cause a breakdown of the wood fibres around the metal fasteners. Breakdown can lead to additional moisture traps and loosening of joints, resulting in a greater chance of decay.

Conformance: To the fasteners requirements in the *0181 Adhesives, sealants and fasteners* worksection.

Fastener type

Metal fasteners: Select fastener as appropriate for the documented atmospheric category and the life of the structure.

Fastener configuration: If timber elements experience tension perpendicular to the grain, use the appropriate fastener configuration.

Note shrinkage between fasteners can cause tension.

Nails and screws

Nail diameter: [complete/delete]

To AS 1720.1 Tables 4.1(A), 4.1(B), 4.2(A) & 4.2(B).

Nail spacings and edge and end spacing: [complete/delete]

To AS 1720.1 Table 4.4.

Coach screw diameter: [complete/delete]

To AS 1720.1 Section 4.5.

Bolts

Thread: Provide thread length at least four times the bolt diameter.

Holes: Drill bolt holes 2 mm larger than the bolt diameter.

Bolt diameter: [complete/delete]

To AS 1720.1 Section 4.4.

Washers

Standard: To AS 1720.1 Table 4.11.

Dimensions:

- Thickness: [complete/delete]
- Width: [complete/delete]
- Breadth: [complete/delete]
- Diameter: [complete/delete]

2.8 POLE STRUCTURES

AS 3818.10 is the standard for building poles which are intended primarily for use in the framework (internal or external) of a building. However local or state regulations may override the provisions for preservative treatment.

For timber piles and utility poles refer to AS 3818.3 and AS 3818.11 respectively. This worksection relates to the use of building poles only.

Round timber posts and stumps are covered by Sections 3 of AS 1684.2, AS 1684.3 and AS 1684.4.

Make sure that pole footings, including encasing (if any) are shown on the drawings and documented in the *0314 Concrete in situ* worksection.

Poles

Standard: To AS 3818.10

Barrel checks and end splits:

- Rating: [complete/delete]

Select rating A or B, as required in conformance with AS 3818.10 Table 1.7(A), Table 1.7(B) and clause 2.2.3, clause 3.2.2 and clause 4.2.2.

Straightness: To AS 3818.10 clause 1.5.5.

Mechanical damage: To AS 3818.10 clause 2.2.3, clause 3.2.2 and clause 4.2.2. Indentations may be dressed out before or after preservative treatment provided that the dressing does not adversely affect the treatment and is visually acceptable.

Limits for extent of mechanical damage are stated in clauses listed. If dressing of mechanical damage is not visually acceptable consider removing text.

Species: [complete/delete]

AS 3818.1 Appendix C provides a list of timber species, their properties and uses. If a particular species (e.g. Radiata pine) is required, state it here.

Stress grade: [complete/delete]

See AS 1720.1 Section 6.2 for strength group and F-grade for round timbers.

2.9 TIMBER PORTAL FRAMES

Show on the drawings the layout and spacing of the portal frames.

If the contractor is required to design the portal frames the subclauses **Certification** and **Shop drawings** in **SUBMISSIONS** will apply. If the contractor is not required to design the portal frames, provide the necessary detail drawings including bracing and fixing details and where required, provide footing details.

Specify other requirements such as timber species, stress grade, tolerances, finish and preservative treatment. For glued laminated timber or laminated veneer lumber either specify the requirements in detail here or refer to the relevant clause.

Product

Material type: [complete/delete]

e.g. Glued laminated timber or Laminated veneer lumber.

Gusset plate replacement

Cause: If more than 10% of nail heads penetrate the outer veneer of the gusset plate, replace the gusset plate.

Damp proofing

Protection: If timber columns are placed in contact with concrete footings, provide a damp-proof membrane between the timber and the concrete.

Lifting

Care: Provide spreaders, strongbacks and bracing to make sure fabricated sections are lifted without racking or distress.

Purlins and girts

Shrinkage: When fitting unseasoned purlins and girts, provide for transverse shrinkage.

3 EXECUTION

3.1 TRANSPORT AND DELIVERY

General

Handling and protection: Do not distort or damage timber or timber products.

Moisture content: Maintain the equilibrium moisture content of seasoned timber.

Appearance products: Store under cover.

3.2 STRUCTURAL TIMBER

General

Preservative treatment: If holes are drilled in treated timber, apply a saturation coating of preservative to the sides of the holes before inserting fixings.

Outdoor structures

Sealing: Seal the ends of members with wax emulsion or petroleum jelly immediately after sawing.

Anti splitting plates: Plate the ends of members 250 x 75 mm or larger with pressed or hammer-on galvanized nail plates equal to 50% of the cross-sectional area.

Bolt holes: Treat bolt holes with a protective treatment before inserting the bolt.

See NATSPEC TECHnote PRO 001 for treatment alternatives to CCA.

Creosote is designated as Carcinogenic, category 2. R45 on the Australian Governments hazardous substances Information System (HSIS) hsis.ascc.gov.au. In this designation, R45 means May cause cancer. Creosote should be used with caution. Consider alternatives.

Coating: After completion of fabrication, notching and machining, coat joints, holes and notches with a protective coating.

Heart: Place the heart side of bracing members on the inside of joints. Place the heart side of other members on the downside wherever possible.

Minimum bolts size: M20.

Minimum washer size: 5 mm thick and 65 mm square or 75 mm diameter.

Bolt protection: Coat bolts with a bituminous coating before insertion in the bolt hole.

Recessed fixing: For fixings punched or sunk below the surface, fill the recess with a suitable wood filler or mastic.

Finishing: If a protective or decorative finish is required apply one coat of primer and one finishing coat all around before fixing.

3.3 POLE STRUCTURES

Removal of bumps

General: Trimming or removal of bumps is not permitted.

Whilst improving the appearance, the process sometimes results in a significant reduction in strength and, in the case of preservative treated poles, a reduction in, or loss of, the protection given by treatment.

Protection

Metal caps and bands: Protect pole tops exposed to weather with metal caps or bands.

Refer to epoxy capping, if applicable

Site preservative treatment

Application: If untreated timber is exposed by docking, checking or dressing, apply a saturation coating of preservative before erection or concealment.

Delete the above, if exposing untreated timber is unacceptable.

Erecting poles

Tolerance: Erect poles plumb and true within the limits of deviation from verticality set by the allowed straightness of the poles.

Positioning

General: Centre the poles on the framing grids at ground level and roof level. Align any allowable straightness deviation parallel to the roof beams.

Tolerance: 10 mm from grid location at ground level.

Temporary bracing

Provision: Provide temporary bracing to maintain poles in correct position until structural framing is complete.

Pole footings

Preparation: Make sure holes are dry and clear of loose material before placing concrete footings.

Concrete: Minimum 20 MPa.

Alternatively direct the contractor to the *0310 Concrete – combined* worksection or AS 3600.

Connection: Slope concrete top of footing away from the pole to prevent water ingress and compromise of the timber pole.

Curing: Allow 10 days after placing concrete before loading or carrying out fabrication work.

Beam connection
Bearing surface: Form flat bearing surfaces by checking or notching into the pole to a depth just sufficient to achieve the required width of bearing.

3.4 COMPLETION

Tightening
Initial: Tighten bolts, screws and other fixings so that joints and anchorages are secure at the date for practical completion.

Subsequent: If unseasoned timber is used, retighten after 6 months all bolts, screws and other fixings.

4 SELECTIONS

Common text

4.1 SCHEDULE

TLB Timber solid timber schedule

Item	Location	Cross-section (mm)	Length (mm)	Moisture content	F-grade	Species
		70 x 35	2100-6300	12%	F-27	Merbau
		90 x 35	2100-6300	12%	F-27	Merbau
		120 x 35	2100-6300	12%	F-27	Merbau
		140 x 35	2100-6300	12%	F-27	Merbau
		170 x 35	2100-6300	12%	F-27	Merbau
		190 x 35	2100-6300	12%	F-27	Merbau
		220 x 35	2100-6300	12%	F-27	Merbau
		240 x 35	2100-6300	12%	F-27	Merbau
		290 x 35	2100-6300	12%	F-27	Merbau
		70 x 45	2100-6300	12%	F-27	Merbau
		90 x 45	2100-6300	12%	F-27	Merbau
		120 x 45	2100-6300	12%	F-27	Merbau
		140 x 45	2100-6300	12%	F-27	Merbau
		170 x 45	2100-6300	12%	F-27	Merbau
		190 x 45	2100-6300	12%	F-27	Merbau
		220 x 45	2100-6300	12%	F-27	Merbau
		240 x 45	2100-6300	12%	F-27	Merbau
		290 x 45	2100-6300	12%	F-27	Merbau

Delete items that are not applicable to the project.

Item: Note beam, post, etc.

Location: Describe, identify by tag or refer to the drawings.

Cross-section: Available standard sizes vary throughout Australia. Contact TLB Timber to obtain a list of available sizes before beginning design work. Larger cross-section hardwood members may have long lead times. Timber is specified by larger cross-sectional dimension first, then the smaller cross-sectional dimension (both in millimetres) e.g. 170 x 45. There are tolerances on actual cross-section dimensions and they may vary from product to product. Also note that for seasoned structural timber the nominal dimensions are the actual dimensions and for unseasoned structural timber, subtract 3 mm from both cross-sectional nominal dimensions.

Length: TLB Timber merbau is sold in standard lengths starting at 2.1 m up to 6.3 m in 0.3 m increments. Consideration on transportation and installation may be required.

Moisture content: Generally seasoned for indoor and unseasoned for outdoor, or note the percentage moisture content.

F-grade: TLB Timber kiln dried merbau is F27 to AS 1720.1 Table H2.1.

TLB Timber finger joint glued laminated timber schedule

Item	Location	Cross-section (mm)	Length (mm)	Service class	Surface finish	Adhesive	Species
Beam		90 x 42	5400	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Beam		140 x 42	5400	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Beam		190 x 42	5400	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Beam		140 x 65	3600 4800 6000 7800	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Beam		190 x 65	3600 4800 6000 7800	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Beam		240 x 65	3600 4800 6000 7800	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Beam		290 x 65	3600 4800 6000 7800	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Beam		140 x 80	2400 3600 4800 6000	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Beam		190 x 80	2400 3600 4800	3	Smooth finished ready for	Phenol-Resorcinol Formaldehyde	Merbau

Item	Location	Cross-section (mm)	Length (mm)	Service class	Surface finish	Adhesive	Species
			6000		clear coating or painting	(PRF)	
Beam		240 x 80	2400 3600 4800 6000	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Beam		290 x 80	2400 3600 4800 6000	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Post		90 x 90	2400 2700 3000 3600 4200 4800 5400 6000	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Post		100 x 100	2400 2700 3000 3600 4200 4800 5400 5700 6000	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Post		115 x 115	2400 2700 3000 3600 4200 4800 5400 6000	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Post		140 x 140	2400 2700 3000 3600 4200 4800 5400 5700 6000	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau
Post		190 x 190	2400 2700 3000 3600 4200 4800	3	Smooth finished ready for clear coating or painting	Phenol-Resorcinol Formaldehyde (PRF)	Merbau

Item	Location	Cross-section (mm)	Length (mm)	Service class	Surface finish	Adhesive	Species
			5400 5700 6000				

Delete items that are not applicable to the project.

Item: Note beam, post etc.

Location: Describe, identify by tag or refer to the drawings.

Cross-section and length (mm): Contact TLB Timber for available sizes. Note dimensions here or refer to the drawings.

Service class: Class 1(Interior), 2 (Exterior but protected) or 3 (Exterior) to AS/NZS 1328.1. Service class relates to the environment (temperature and humidity). Different types of adhesives are used in the manufacture of beams; this is dependent on the service class. MAGNA Glulam posts and beams are suitable for Class 3 environments.

Surface finish: A (dressed for clear finishing or painting), B (machine planed finish for painted application), or C (appearance not important) to AS/NZS 1328.1 clause 2.7. This bears no relationship to the structural performance of the member. MAGNA Glulam posts and beams are surface finish A.

Adhesive: Select from Interior or Exterior. These grades are based on adhesive and timber used. See AS/NZS 1328.1 Appendix A.

Laminated veneer lumber schedule

Item	Location	Cross-section (mm)	Length (mm)	Formaldehyde emission class	Surface finish

Item: Note beam, portal etc.

Location: Describe, identify by tag or refer to the drawings.

Cross-section and length: Note here or refer to the drawings. Generally sheets are 1200 mm wide x 65 mm thick in lengths up to 7.2 m (for transport considerations). They are ripped longitudinally to produce members of 100 mm, 150 mm, 200 mm, etc. Check the availability of sizes with the manufacturer.

Formaldehyde emission class: Select E_0, E_1, or E_2 to AS/NZS 4357.0 Table 1. E_0 class may be available at additional cost and lead time. If required consult the manufacturer.

Surface finish: Standard finish is unsanded with some surfaces sawn. Specify Sanded finish if required.

Finger jointed solid timber schedule

Item	Location	Cross-section (mm)	Length (mm)	Service class

Item: Note beam, portal etc.

Location: Describe, identify by tag or refer to the drawings.

Service class: Select Class 1, 2 or 3 to AS 5068 or AS/NZS 4364.

REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS/NZS 1328		Glued laminated structural timber
AS/NZS 1328.1	1998	Performance requirements and minimum production requirements
AS/NZS 1328.2	1998	Guidelines for AS/NZS 1328: Part 1 for the selection, production and installation of glued laminated structural timber
AS 1720		Timber structures
AS 1720.1	2010	Design methods

AS 1860		Particleboard flooring
AS/NZS 1860.1	2002	Specifications
AS 2082	2007	Timber - Hardwood - Visually stress-graded for structural purposes
AS/NZS 2269		Plywood - Structural
AS/NZS 2269.0	2012	Specifications
AS 2754		Adhesives for timber and timber products
AS/NZS 2754.1	2016	Adhesives for manufacture of plywood and laminated veneer lumber (LVL)
AS 3818		Timber - Heavy structural products - Visually graded
AS 3818.10	2010	Building poles
AS/NZS 4357		Structural laminated veneer lumber
AS/NZS 4357.0	2005	Specifications
AS 5068	2006	Timber - Finger joints in structural products - Production requirements
AS/NZS 8008 (Int)	2014	Timber - Finger-jointed structural timber - Performance requirements
The following documents are mentioned only in the *Guidance* text:		
AS 1604		Specification for preservative treatment
AS 1604.1	2012	Sawn and round timber
AS 1684		Residential timber-framed construction
AS 1684.2	2010	Non-cyclonic areas
AS 1684.3	2010	Cyclonic areas
AS 1684.4	2010	Simplified non-cyclonic areas
AS 1720.3	2016	Design criteria for timber-framed residential buildings
AS/NZS 1748		Timber - Solid - Stress-graded for structural purposes
AS/NZS 1748.1	2011	General requirements
AS/NZS 2269		Plywood - Structural
AS 2858	2008	Timber - Softwood - Visually stress-graded for structural purposes
AS 3600	2009	Concrete structures
AS 3818		Timber - Heavy structural products - Visually graded
AS 3818.1	2009	General requirements
AS 3818.3	2010	Piles
AS 3818.11	2009	Utility poles
AS 3959	2009	Construction of buildings in bushfire prone areas
AS/NZS 4364	2010	Timber - Bond performance of structural adhesives
AS 5604	2005	Timber - Natural durability ratings
SAA HB 108	2013	Timber Design Handbook
NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC PRO 001	2005	CCA (Copper chrome arsenate) treated timber
NATSPEC TR 01	2016	Specifying ESD
WoodSolutions 04	2012	Building with timber in bushfire-prone areas - BCA Compliant design and construction guide
WoodSolutions 32	2016	Long span roofs - LVL portal frames and trusses
WoodSolutions 36	2016	Engineered woods and fabrication specification
WoodSolutions 37	2016	Mid-rise timber buildings - Class 2, 3 and 5 buildings
WoodSolutions 38	2016	Fire safety design of mid-rise timber buildings