

0383P TLB TIMBER IN SHEET FLOORING AND DECKING

Branded worksection

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Worksection abstract

This branded worksection *Template* is applicable to TLB Timber external timber decking and internal plywood sheet flooring as either platform floors or fitted floors. It assumes the provision of a supporting structure.

The worksection also covers composite or compressed fibre cement decking and internal sheet flooring of particleboard or compressed fibre cement.

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:

- 0314 *Concrete in situ*.
- 0342 *Light steel framing*.
- 0381p *TLB TIMBER in structural timber*.
- 0382 *Light timber framing*.
- 0631 *Ceramic tiling* for compressed fibre cement underlays.
- 0632 *Stone and terrazzo tiling* for compressed fibre cement underlays.
- 0654 *Engineered panel flooring* for floating or adhesive fixed manufactured panel floors and associated underlays.
- 0655 *Timber flooring* for fitted timber strip flooring intermittently supported and continuously supported, block and mosaic parquet flooring and associated underlays.

Material not provided by TLB Timber

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

- Recycled timber decking.
- Composite decking.
- Particleboard sheet flooring.
- CFC decking and sheet flooring.

Documenting this and related work

You may document this and related work as follows:

- The set out of floor patterns and location of control joints to your office documentation policy.

The *Normal* style text of this worksection *Template* may refer to items as being documented elsewhere in the contract documentation. Make sure they are documented.

Specifying ESD

The following may be specified by retaining default text:

- Recycled timber decking.
- Composite decking.
- Formaldehyde emission limit for particleboard and plywood.

The following may be specified using included options:

- LOSP preservative treatment.

The following may be specified by including additional text:

- Timber from a sustainable source.
- Adhesives with low VOC emission, e.g. for particleboard and plywood.
- 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 sheet flooring and decking, as documented.

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

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.

List the worksections cross referenced by this worksection. *0171 General requirements* references the *018 Common requirements* subgroup of worksections. It is not necessary to repeat them here. However, you may also wish to direct the contractor to other worksections where there may be work that is closely associated with this work.

NATSPEC uses generic worksection titles, whether or not there are branded equivalents. If you use a branded worksection, change the cross reference here.

1.4 STANDARD

General

Flooring and decking: To AS 1684.2, AS 1684.3 or AS 1684.4, as appropriate.

The AS 1684 series, in each part, covers the subject at Section 5. On building in bushfire-prone areas, see AS 3959 Appendix F, WoodSolutions 04 and NATSPEC TECHnote DES 018.

For further information on general fire behaviour of materials refer to NATSPEC TECHnote DES 020.

1.5 MANUFACTURER'S DOCUMENTS

Technical manuals

Website: www.tlbtimber.com.au

1.6 INTERPRETATION

Definitions

General: For the purposes of this worksection the following definitions apply:

- Butt joints (flooring): Floor units cross cut square with plain ends for joining over supports.
- Decking: Intermittently-supported external flooring with drainage gaps between boards.
- Flooring - fitted: Flooring fitted between the walls of each room i.e. not platform floors.
- Flooring - intermittently-supported: Flooring which is supported by, and spans across joists or battens.

With intermittently supported floors, nailing to supports and the floor acts as part of the structure.

- Platform flooring: Flooring laid over the whole of the joisted floor structure prior to the erection of external and internal wall frames.

- Subfloor: The structure that supports the flooring.

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

1.7 TOLERANCES

Sheet flooring

Maximum deviation from a 3 m straightedge laid in any direction on the floor surface: 3 mm.

1.8 SUBMISSIONS

Certification

Certificate: Submit a supplier's certificate (which may be included on an invoice or delivery docket) verifying conformance to grading, species and board size and noting the moisture content.

- **Timbers for which certification is required:** [complete/delete]

As branding will show through on clear finished decorative exposed timber, certification of grade may be preferred. List here the timber products for which certification is required e.g. timber decking.

Inspection: If neither branding nor certification is adopted, submit a report by an independent inspecting authority verifying conformance.

- **Inspecting authority:** [complete/delete]

If a particular authority is to be used, name it here. Forestry departments in each state usually offer timber inspection services. Advice can also be sought from timber advisory services.

Samples

General: Submit samples of each timber or synthetic decking type illustrating the range of variation in colour and figure.

Samples schedule

Item	Sample size (mm)	Number

For natural materials call for a number of samples to illustrate the expected range in surface appearance.

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.

1.9 INSPECTION

Notice

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

- Subfloor before laying sheet flooring, fibre cement flooring or decking.

Amend to suit the project adding critical stage inspections required.

Hold points, if required, should be inserted here.

2 PRODUCTS

2.1 PREPARATION

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.

Storage

Timber decking: Deliver to site and store on dry ground on level bearers 150 mm high, block stacked, banded and protected against the weather.

Plywood and particleboard sheet flooring: Deliver to site and store on dry ground on level bearers 150 mm high, stacked on flat and protected against the weather.

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 DECKING

TLB Timber merbau timber decking

Standard:

- Hardwood to AS 2796.1 Section 4.
- . Grade to AS 2796.2: Select.

Durability:

- Natural durability classification to AS 5604: Class 2 minimum.
- Preservative treatment to AS 1604.1 Table D1: H3 minimum.
- Identification: Brand preservative treated decking timber to AS 1604.1.

Branding preservative treated decking timber to AS 1604.1 is compulsory in some states, and is required by all the plywood standards, most of the structural timber standards and many of the standards for milled timbers. Refer to NATSPEC TECHnote PRO 001 regarding the ban on the use of copper chrome arsenic treated decking.

Arrises: Pencil round.

Recycled timber decking

Standard: To FWPA FWPA PN06.1039.

- Grading: To Section 5.
- . Grade: [complete/delete]

Select from the following, if available, one of the following three grades where grade 3 is more highly featured.

- Recycled feature Grade 1.
- Recycled feature Grade 2.
- Recycled feature Grade 3.

Type or species: [complete/delete]

Type: Hardwood if species is unknown.

Both hardwood and softwood flooring may be available. For hardwoods, if the species is of less importance, consider specifying either medium density or high density mixed hardwoods.

Source: [complete/delete]

Research the source to assure supply and quality.

Appearance: [complete/delete]

If weather staining or stained nail holes are unacceptable, specify remedial work such as re-sawing to expose fresh timber or coring and plugging with matching timber.

Composite decking

Grading: [complete/delete]

Composite decking, an alternative to timber decking is made from recycled plastic and wood fibres.

Compressed fibre cement decking

Standard: To AS/NZS 2908.2.

Category: Minimum 4.

Refer to AS/NZS 2908.2 Table 1 for category of modules of rupture.

Classification: Type: A.

Or select Type B sheets for internal application.

2.3 SHEET FLOORING

TLB Timber Structural Plywood - Hardwood

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

Standard: To AS/NZS 2269.0.

Plywood formaldehyde emission class to AS/NZS 2269.0: Class E₀.

A formaldehyde emission level of E₀ can improve indoor air quality.

Grading:

- Stress grade: [complete/delete]

Select:

- F14 for residential applications.
- F17 or F22 for commercial and industrial applications.

- Surface grade: CD.

- Bond: Type A to AS/NZS 2754.1.

Durability:

- Preservative treatment to AS/NZS 1604.3 Table 1.1: Hazard Class H2 (Bifenthrin glue line treatment).
- Identification: Brand preservative treated plywood to AS/NZS 1604.3.

Timber treated for Hazard Class H2 is protected against borers and termites, and is suitable for above ground, interior applications which are protected against wetting and leaching.

TLB Timber Structural Plywood - Softwood

TLB Timber pine plywood is manufactured to AS/NZS 2269 from plantation grown hoop pine and klinki pine veneers, using an A bond, WBP glue.

Standard: To AS/NZS 2269.0.

Plywood formaldehyde emission class to AS/NZS 2269.0: Class E₀.

A formaldehyde emission level of E₁ or less can improve indoor air quality.

Grading:

- Stress grade: F14

F14 is suitable for residential applications.

- Surface grade: CD.

- Bond: Type A to AS/NZS 2754.1.

Durability:

- Preservative treatment to AS/NZS 1604.3 Table 1.1: Hazard Class H3 (ACQ full core treatment).

Timber treated for Hazard Class H3 is protected against moderate decay, borers and termites, and is suitable for outside, above ground applications which are subject to periodic moderate wetting and leaching.

Alkaline Copper Quat (ACQ) is a waterborne, arsenic and chromium free preservative that is a suitable alternative to Chromated Copper Arsenate (CCA).

- Identification: Brand preservative treated plywood to AS/NZS 1604.3.

Sheet size: 2400 mm x 1200 mm.

Particleboard

Particleboard flooring: To AS/NZS 1860.1, Class 1.

Quote the manufacturer's designations when specifying particleboard if you do not feel comfortable with the generic provisions. Class 1 flooring is a moisture resistant board. Class 2 is not suitable for use in Australia.

Particleboard formaldehyde emission Class to AS/NZS 1860.1: Class E1.

E0 class may be available at additional cost and lead time. A formaldehyde emission class E1 or less can improve indoor air quality.

Identification

Requirement: Identify timber using branding or certification.

- Branding: Brand plywood and particleboard under the authority of a recognised product certification scheme to *0185 Timber products, finishes and treatment*, as applicable to the product. Locate the brand mark on faces or edges which will be concealed.
- Certification: Provide certification from a recognised product certification scheme to *0185 Timber products, finishes and treatment*, as appropriate to the product.

Nominate relevant certification schemes in *0185 Timber products, finishes and treatment*.

Compressed fibre cement sheeting

Standard: To AS/NZS 2908.2.

Category: Minimum 4.

Refer to AS/NZS 2908.2 Table 1 for category of modules of rupture.

Classification: Type: A.

Or select Type B sheets for internal application.

3 EXECUTION**3.1 GENERAL****Subfloors**

General: Make sure support members are in full lengths without splicing.

Flatness: Less than 3 mm deviation of the substrate under a 3 m straight edge laid in any direction with no abrupt variations greater than 1 mm over 250 mm.

The ventilation requirements are set out in BCA clauses BCA F1.12, BCA 3.1.2.3 and BCA 3.4.1. Note the requirements vary for climate zones.

Timber decking on steel joists

General: Screw fix seasoned battens to the steel joists so that their top surfaces are aligned.

- Batten size: Minimum 35 mm thick.
- Spacing of fasteners: Less than 600 mm.

3.2 FIXING SHEET FLOORING**Particleboard flooring**

Installation: To AS 1860.2.

Plywood flooring

Installation: To AS 1684.2, AS 1684.3 or AS 1684.4, as appropriate.

Compressed fibre cement flooring

Installation: Lay the length of the sheets at right angles to the joists. Stagger the end joints and locate centrally over joists. Apply adhesive to edges of sheets and firmly butt join together.

Minimum number of spans across support: 2.

Fixing: Pre-drill screw holes with 1 mm clearance over screw diameter and countersink. Fix with corrosion resistant countersunk screws.

Spacing of fasteners:

- Sheet edge and intermediate: Less than 450 mm.
- Corners and sheet edges: At least 12 mm from sheet edges and 50 mm from corners.

Wet area flooring: Stop screw heads with sealant.

3.3 FIXING DECKING**Timber decking**

Standard: To AS 1684.2, AS 1684.3 or AS 1684.4 as appropriate.

Installation: Lay in long lengths with the ends of each board firmly butted to the next and firmly in contact with the joists. Stagger the end joints and locate them centrally over joists.

Gap between edges of seasoned boards: Minimum 4 mm.

Minimum number of spans across support: 3.

Nailing:

- General: Make sure the boards are in contact with the joists at the time of nailing, particularly where boards are machine nailed. If nails are to be less than 10 mm from ends of boards, pre-drill nail holes 0 to 1 mm undersize.
- Top nailing: Double nail at each bearing with hot dip galvanized or stainless steel nails driven flush. Offset nails at intermediate fixings or skew nail 10° in opposite directions.

Select stainless steel or silicon bronze fixings for decking within 1 m of a swimming pool.

Concealed fixing system: [complete/delete]

Nominate proprietary system.

Sealing: Apply 1 coat of water repellent preservative and 1 coat of finish coat to top surface of joists and all surfaces of boards before fixing.

Compressed fibre cement decking

Installation: Lay the length of the sheets parallel or at right angles to the joists. Locate end joints centrally over joists. Provide noggings or trimmers joists, cut between and fixed to joists to support the edges of sheets.

Minimum number of spans across support: 2.

Fixing: Pre-drill screw holes with 1 mm clearance over screw diameter and countersink. Fix with corrosion resistant countersunk screws. Apply sealant to screw hole and screw before fixing and stop screw head with sealant, finished slightly below the surface after fixing.

Spacing of fasteners:

- Sheet edge and intermediate: less than 450 mm.
- Corners and sheet edges: At least 12 mm from sheet edges and 50 mm from corners.

Joints: Provide butt joints 5 mm wide. Insert compressible closed cell polyethylene foam backing rod and fill the joint with a flexible sealant.

Composite decking

Installation: In conformance with manufacturer's recommendations.

4 SELECTIONS

Schedules are a way of documenting a selection of proprietary or generic products or systems by their properties. Indicate their locations here and/or on the drawings. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

4.1 SCHEDULES**TLB Timber decking schedule**

Property	A	B	C	D
Size (width x thickness, mm)	90 x 19	140 x 19	140 x 25	140 x 32
Species	Merbau	Merbau	Merbau	Merbau
Surface finish and profile	DAR, Pencil Round	DAR, Pencil Round	DAR, Pencil Round	DAR, Pencil Round
End joints	Butt	Butt	Butt	Butt
Spacing (mm)	4	7	7	7
Coating system				

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

Size: 90 x 19 mm, 140 x 19 mm, 140 x 25 mm, 140 x 32 mm.

Surface finish and profile: Dressed all round – Pencil round edges or Dressed all round – Pencil round edges and reeded top surface. Note: Reeded top surface is only available for 90 x 19 mm, 140 x 19 mm, 140 x 25 mm size boards.

Fixings: e.g. Hot dip galvanized nails, proprietary concealed fixing system.

Spacing: Minimum 4 mm for boards less than 100 mm wide. 7 to 9 mm for boards more than 130 mm wide.

Coating system: Conform to 0671 *Painting*. Refer to NATSPEC TECHnote DES 001 on slip resistance.

Compressed fibre cement sheet decking schedule

Property	A	B	C
Type			
Product			
Thickness (mm)			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.
 Edit codes in the **Schedule** to match those on drawings.
 Type: Select Type A external.

Composite decking schedule

Property	A	B	C
Product			
Material			
Profile			
Width (mm)			
Thickness (mm)			
Spacing (mm)			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.
 Edit codes in the **Schedule** to match those on drawings.

Particleboard sheet flooring schedule

Property	A	B	C
Type			
Thickness (mm)			
Glue and nail fixing: Adhesive product			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.
 Edit codes in the **Schedule** to match those on drawings.
 Type: Platform floor or fitted floor.
 Thickness: 19 mm or 22 mm for joist spacing 450 mm or 600 mm respectively, but sheets have maximum permissible spacing marked on them. See AS 1860.2. Select sheet sizes to suit joist spacing.
 Glue and nail fixing: Adhesive product: As nominated by the sheet flooring supplier.

TLB Timber plywood sheet flooring schedule

Property	A	B	C
Product			
Type			
Thickness (mm)			
Edges			
Glue and nail fixing: Adhesive product			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.
 Edit codes in the **Schedule** to match those on drawings.
 Product: TLB Timber Structural Plywood – Hardwood or TLB Timber Structural Plywood – Softwood.

Type: Platform floor or fitted floor.

Thickness: Select from 12 mm, 15 mm, 17 mm, 19 mm, 21 mm, 25 mm. For plywood see Sections 5 of AS 1684.2, AS 1684.3 and AS 1684.4 for thickness related to joist/batten spacing and stress grade.

Edges: T&G or square. T&G edge profile available in 15 mm, 17 mm, 19 mm, 21 mm, 25 mm thicknesses.

Compressed fibre cement sheet flooring schedule

Property	A	B	C
Type			
Product			
Thickness (mm)			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

Type: Select Type B internal.

REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 1604		Specification for preservative treatment
AS 1604.1	2012	Sawn and round timber
AS/NZS 1604.3	2012	Plywood
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 1860		Particleboard flooring
AS/NZS 1860.1	2002	Specifications
AS 1860.2	2006	Installation
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 2796		Timber - Hardwood - Sawn and milled products
AS 2796.1	1999	Product specification
AS 2796.2	2006	Grade description
AS/NZS 2908		Cellulose-cement products
AS/NZS 2908.2	2000	Flat sheets
AS 5604	2005	Timber - Natural durability ratings
FWPA PN06.1039	2008	Interim industry standard – Recycled timber – Visually graded recycled decorative

The following documents are mentioned only in the **Guidance text**:

AS 1684		Residential timber-framed construction
AS/NZS 2269		Plywood - Structural
AS 3959	2009	Construction of buildings in bushfire prone areas
BCA 3.1.2.3	2016	Acceptable construction - Site preparation - Drainage - Surface water drainage
BCA 3.4.1	2016	Acceptable construction - Framing - Subfloor ventilation
BCA F1.12	2016	Health and amenity - Damp and weatherproofing - Subfloor ventilation
NATSPEC DES 001	2016	Slip resistance performance
NATSPEC DES 018	2008	Bushfire protection
NATSPEC DES 020	2011	Fire behaviour of building materials and assemblies
NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC GEN 024	2015	Using NATSPEC selections schedules
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