

Particleboard Flooring

trade essentials®





Trade Essentials® Particleboard Flooring is manufactured in Australia from renewable plantation pine resources and provides the best protection there is against damage caused by damp or humid conditions.

Flooring even rotten weather can't flaw

Trade Essentials® Particleboard Flooring is made to quality standards so high, not even the worst weather can flaw it if the guidelines in this brochure are followed. And, there are three product choices to cover your building requirements:

- **Green Tongue:** 19mm for 450mm joists
- **Beige Tongue:** 22mm for 600mm joists

Particleboard Flooring is offered in a range of sizes (3600x800mm and 3600x1200mm). Particleboard Flooring also comes as a Termite Treated option, great for areas where termites are a problem.

Superior moisture resistance

Unlike many particleboards, Trade Essentials® Particleboard Flooring is manufactured using extra fine wood particles. This ensures a far better distribution of the water resistant resins across the entire surface. In addition, all edges are coated with a wax edge seal.

The result is a level of moisture resistance, which is over **two times greater** than the required standards for flooring. Even when left exposed to the elements for up to three months Trade Essentials® Particleboard Flooring is guaranteed to meet the required standards (if guidelines are followed).

A safe, solid platform

Trade Essentials® Particleboard Flooring features an easy to use tongue and groove system that gives the flooring remarkable strength in the unsupported joints. This guarantees you a safe and solid platform on which to build your frame, or lay your floor coverings.

Particleboard Flooring

Applications

Trade Essentials® Particleboard Flooring is a three layered particleboard, bonded with moisture resistant resin and wax, specifically formulated for use as interior flooring.

It is suitable for all domestic housing as well as commercial installations, provided it is installed to the requirements of AS 1860 (Installation of Particleboard Flooring).

Trade Essentials® Particleboard Flooring can be used for a variety of framed building constructions including fitted floor, upper storey and platform constructions.

Physical Properties

(Typical physical properties when tested to AS/NZS 1860.1)

Property	Unit	Board Thickness	
		19mm	22mm
Weight	Kg/m ²	13.1	14.7
Modulus of Rupture	MPa	25 av.	25 av.
Modulus of Elasticity	MPa	3400 av.	3400 av.
Internal Bond	MPa	800 av.	700 av.
Thickness Swell 24hr	%	< 5	< 4
Wet Bending Strength	MPa	5	5
Surface Water Absorption	g/m ²	< 60	< 60
Thickness Stability	%	< 10	< 9
Glue Bond Quality	MPa	15.5	14.0

Fire Test Results

(Results when tested in accordance with AS/NZS 3837)

Classification	Result
Critical Heat Flux	5.6kw/m ²
Smoke Value	9% min

Moisture resistance – General information

Trade Essentials® Particleboard Flooring is capable of withstanding general weathering for up to 3 months. To maintain best practice, boards must be covered on building sites. It is recommended to avoid where possible, exposure of the panels to severe conditions, such as prolonged exposure to intense sun, cyclic soaking rain etc, as these exposures have the potential to alter the moisture gradient of the panels and may cause dimensional change, similar to natural timber. A moisture level of about 7% is present in the board at the time of despatch from the warehouse.

For further information refer: AS/NZS 1860.2: Particleboard Flooring Part 2 Installation.

Thermal properties

Thermal conductivity – 0.1 – 0.14 W/mk. Dimensionally stability and strength is unaffected over normal temperature range.

Acoustic properties

Sound transmission loss depends on the building element and its method of installation. Particleboard with thickness over 16mm should achieve 25dB loss.

Fire resistance

Trade Essentials® Particleboard Flooring is combustible. Burning is limited by charcoal formed on the board surface. The rate of burning is comparable to that of natural timber of similar density.

Particleboard flooring adhesives

We recommend the usage of construction adhesives for installing Particleboard Flooring.

Flooring	Construction Adhesive Required per Pack of Flooring
Green Tongue (19mm to span 450mm joists)	
900mm wide sheet (35 sheets per pack)	25 x 300ml cartridge or, 10 x 850ml cartridge
Beige Tongue (22mm to span 600mm joists)	
900mm wide sheet (25 sheets per pack)	20 x 300ml cartridge or, 8 x 850ml cartridge

Product range

Trade Essentials® Particleboard Flooring has a plain core colour with a yellow wax edge seal to all edges. There are two product thicknesses each identified by the colour of their PVC tongue:

- **Green tongue (19mm)** – For use with floor joists spaced at 450mm
- **Beige tongue (22mm)** – For use with floor joists spaced at 600mm



Trade Essentials® Particleboard Flooring is available in different sheet sizes. There is also the option of Termite Treated Particleboard Flooring and Brown Tongue (25mm) for commercial applications. For full details contact your nearest Laminex branch.

Installation instructions

1. Assess the site

Ensure correct sub-floor clearance and ventilation as per Australian Standard 1860 “Installation of Particleboard Flooring”, or local building regulations. Particleboard Flooring is not suitable under conditions of permanent dampness, i.e. where particleboard moisture content is permanently in excess of 16 per cent moisture content.

2. Positioning and fixing

Locate a string line parallel to the perimeter of the floor and at right angles to the joists. Fit the first new row of sheets with the tongued edge to the string line. This will ensure edge straightness. Tongue and grooved edges must run parallel to the span and sheeting must span no less than two floor joist spacings. Fix second sheet in a similar manner inserting plastic tongue into the groove of sheet one. Be sure to apply bead of adhesive to tongue prior to installation.

DO NOT cramp or over-tighten. After each row is laid, fully nail or screw the previous row (refer to the fixing pattern). Install all sheets with the same face upwards, to ensure flush mating of adjoining faces. Butt joints should be staggered in alternative rows to give a rigid floor.

Handy hints:

Laminex recommends **Trade Essentials® Construction Adhesive** for this application. This is a high performance, fast setting synthetic rubber based adhesive, specially formulated for the permanent and speedy installation of structural sheet flooring panels, in conjunction with supplementary mechanical fastenings.

If the tongue and grooved profile is changed to a square edge during trimming or cutting of sheet, re-profile the edge with a circular saw and insert a tongue, or alternatively use as **square edged Particleboard Flooring**.

Where Particleboard Flooring is used in square edge form, the sheets should be laid with their long edges supported by noggings or trimmers. Sheet butt joints must be staggered.

3. Fixing technique

Particleboard Flooring may be fixed on the subfloor with hand or power-driven fasteners. For a rigid squeak-free floor system, ensure a continuous 5mm bead of **Trade Essentials® Construction Adhesive** is applied to all joists and along the top of the tongue. Two beads of adhesive need to be placed on the joist where the butt joint occurs.

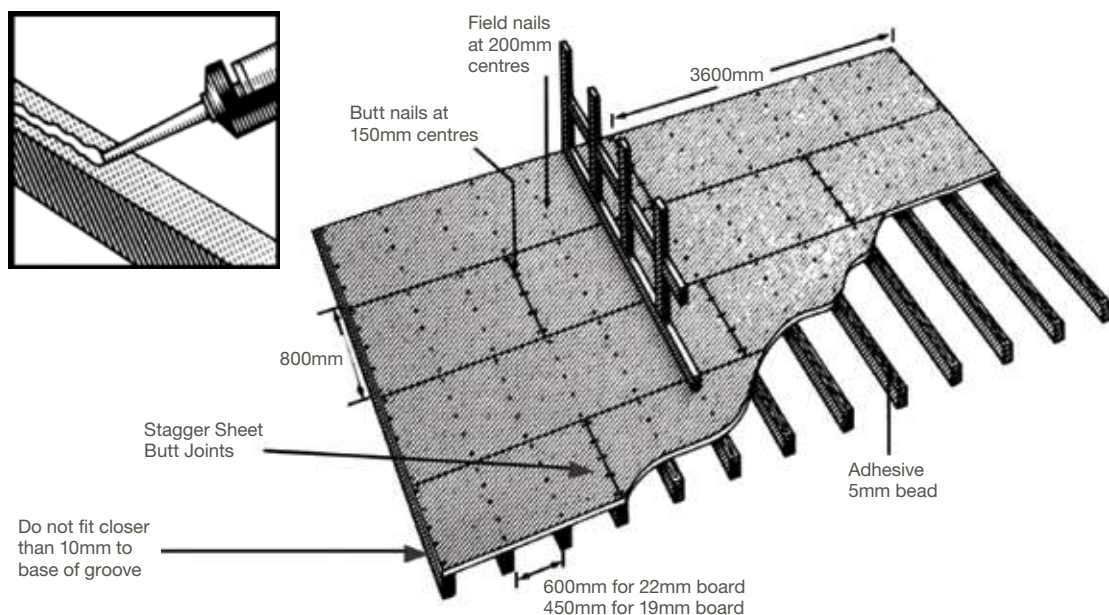
DO NOT apply too far ahead as adhesive cures quickly. At all times follow instructions on the adhesive pack.

Where gun nailing, nail heads should not penetrate the surface by more than 1.0mm. Adjust air pressure to suit softwood or hardwood joists. Gun nail only in accordance with gun nail specifications. Galvanised nails are recommended.

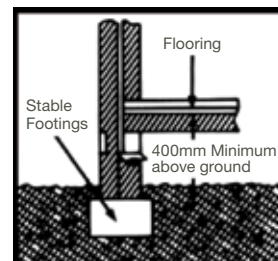
Nails should be punched below the surface of the sheets just before the sanding or laying of floor coverings. This ensures firm seating of the flooring joists. Particleboard Flooring that is likely to be subjected to increased levels of traffic vibration should be fixed with spiral or helical shank nails.



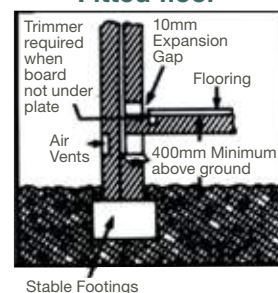
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Platform construction



Fitted floor



Nailing Method	Joist Type	Nail or Screw Size (mm)
Hand Hammer (nails)	Hardwood & Cypress Pine Softwood	50 x 2.80 55 x 3.15
Nail Gun (nails)*	All Timber	Ring shank D-head galvanised 65 x 2.8mm or similar
Screw	Timber Type Steel Type	No. 10 X 50mm, Type 17 Countersunk head, Self drilling No. 10 X 45mm Countersunk head, Self embedding wing tip

4. Types of construction

4.1 Platform floor construction

Platform flooring construction involves flooring laid on the floor joists over the whole floor area prior to the erection of the wall and roof framing. Trade Essentials® Particleboard Flooring is capable of withstanding general weathering for up to 3 months. Less exposure however, is recommended. To maintain best practice, packs of Particleboard Flooring should be protected from the weather before installation. Particleboard Flooring will expand and contract as sheets respond to changes in atmospheric moisture. Allowance for the movement must be made throughout the floor area by providing gaps and special joints as appropriate to accommodate sheet expansion.

An expansion joint is a 20mm gap in flooring sheets located above a wide (50mm minimum) or double joist. Extra joist area is necessary so that sheet ends can be properly fixed while still allowing the 20mm gap. The joint may be covered by a metal or plastic moulding, screwed into the joist, or partitioning may be located over the joint. Spacing of expansion joints should be between 10 and 20m with the final decision depending upon the assessment of whether:

- the floor is elevated or on ground level
- the area is air conditioned
- it is a tropical region (coastal area, north of 27th parallel)
- what moisture variations are likely in the flooring

Exposure to very hot sun, particularly after the board has been soaked by rain, may cause panel shrinkage and cupping. If this occurs, then light wetting of the board and shading of the site may help minimise the effect by slowing the rate at which the flooring dries.

DO NOT stack heavy concentrated loads on the floor, e.g. bricks, heavy structural materials. **DO NOT** use the floor as a mixing table and avoid build up of plaster, concrete and paint on the floor.

4.2 Fitted floor construction

Fitted floor construction involves construction of the floor after the internal walls. An expansion gap of 1–2 mm per metre of room dimension (10mm minimum) should be left around the room perimeter. This is usually covered by the skirting board. For large floor areas an expansion joint should be provided (see 4.1).

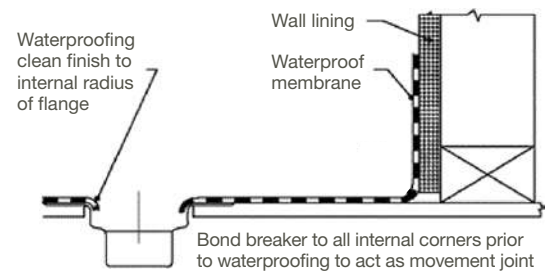
4.3 Upper storey construction

Upper storey construction utilises Particleboard Flooring laid on timber joists and supported on wall framing/internal brick work. Green and Beige Tongue Particleboard Flooring is ideal for internal upper storey construction and extensions.

5. Surface finishing

Australian Standard 1860 'Installation of Particleboard Flooring' provides guidelines for surface finishing.

- (a) Inspect for dampness especially if board has been weathered before proceeding with finishing operations; if found to be excessively damp it shall be left until its moisture content is 15 percent or less.
- (b) If the flooring is to be covered with carpet, the surface should be firm and tight with no loose flakes or particles:
 - (i) Nails should be inspected and hammered flush, screws should be flush with the surface.
 - (ii) If the surface has been exposed to the weather, some sanding may be required. Full sanding may not be necessary, but rough or uneven areas should be spot sanded. Nail punching and screw counter sinking will only be necessary in these areas.
NOTE: FULL SANDING may be necessary if the Particleboard Flooring has been subjected to prolonged rain while being exposed.
 - (iii) Sanding before carpet laying should be with 40-60 grit sand paper.
- (c) For other surface finishes, full sanding will usually be required if the particleboard has been exposed to the weather. The surface shall be given a first cut with 40-60 grit sand paper followed by 80-100 grit sand paper.
- (d) Depth of material removed shall not exceed the following except where otherwise specified by the manufacturer:
 - (i) Over the general sheet area – 1mm
 - (ii) Within 50mm of any supported edge – 2mm
- (e) All surfaces shall be cleaned to remove dust.



6. Surface preparation - wet area rooms

(Bathrooms, kitchens, laundries)

- Procedures required by AS 3740 'Waterproofing of Wet Areas Within Residential Buildings', should be followed closely.
- Holes may be required in the floor to accommodate pipes, drains and plumbing wastes. These should be accurately drilled and cut ensuring that excessive material is not removed (rough punching is unacceptable).
- All edges should be sealed using pink primer, construction adhesive, or another suitable sealer.
- All building debris, plastic or other building matter should be completely removed and the floor surface sanded clean prior to waterproofing treatments.
- Joints between sheets should be carefully inspected and prepared. Flashing should be placed over joints.
- An impermeable membrane is required to seal the floor prior to the overlaying of surface finishes such as ceramic or PVC tiles. Laminex recommends the following for application:
 - (a) Davco Dampfast
 - (b) Bostick Ultraseal

Laminex recommends that the respective manufacturer's instructions are followed when applying these products.

7. Resilient sheet and tile

The requirements of Australian Standard 1884 'Floor Coverings – Resilient Sheet and Tiles-Laying and Maintenance Practices' should be followed when finishing with materials such as flexible and semi-rigid cork, rubber, linoleum and vinyl.

Unsatisfactory results may be obtained if resilient floor coverings are laid directly on to the Green Tongue or Beige Tongue Particleboard Flooring, due to movement of the flooring or subfloor structure with changes in moisture content or settling.

Use of an underlay will minimise the risk of either failure of the bond between the covering and the floor, or of particleboard flooring sheet joints showing through the coverings. Underlay joints should not coincide with the particleboard flooring joints.

Standards & relevant codes

Building Code of Australia

- AS/NZS 1860.1 – Particleboard Flooring Part 1 Specification.
- AS 1170.1 SAA – Loading Code, Dead and Live Loads and Load Combinations.
- AS 1860.2 – Particleboard Flooring Part 2 Installation.
- AS 1884 – Floor Coverings – Resilient Sheet and Tiles - Laying and Maintenance Practice.
- AS 3740 – Waterproofing of Wet Areas Within Residential Buildings.

Particleboard Flooring

Design criteria

Industrial

Guidelines in Australian Wood Panels Association Flooring Design Manual. Obtainable online at www.woodpanels.org.au

Domestic

19mm to span 450mm maximum joist centres

22mm to span 600mm maximum joist centres

Hints & tips:

- Do ensure correct, sub-floor clearance and ventilation.
- Do lay out all sheets first when fixing a platform floor.
- Do leave an expansion gap around room perimeters of fitted floors (see positioning & fixing diagram).
- Do protect sheets from the weather before installation.
- Do store sheets prior to fixing to allow adjustment to site conditions.
- Do make sure to follow instructions when using adhesive.
- Avoid build-up of concrete, plaster and paint on floor.
- Do not allow water to pool on sheets – sweep away as soon as possible.
- If water has pooled: drill a maximum 3mm drain hole at spacings 1 metre or greater between holes to remove pooled water.
- Do not leave butt joints unsupported by joists or noggings.
- Do not stack heavy concreted loads on floor panels.
- Do not Bondcrete or otherwise seal floor during construction – this will prevent floor drying out properly.
- Do not use floor as a mixing table.
- Set out joists to suit sheet size and thickness.
- Underlay joints should not coincide with particleboard flooring joints.
- And a final hint – screws (rather than nails) produce a better squeak-free finish for DIY installers.



Storage and exposure of Particleboard Flooring

Trade Essentials® Particleboard Flooring should always be stored flat and in a dry area, with timber bearers spaced about 450mm apart to keep it off the floor or ground. Packs of board are best protected from the weather.

Covering should allow some air circulation during the storage period. Packs should be protected on the top and sides with waterproof material (such as plastic sheeting). Packing should be used to keep plastic sheeting clear of the flooring pack so that air circulation can occur.

To maintain best practice, packs of Particleboard Flooring should be protected from the weather before installation. Particleboard Flooring should be stored for about 1 week (where possible longer) prior to fixing to allow adjustment to site conditions. Water absorption will cause expansion of the sheets and this will lead to gaps in the floor later when the particleboard sheet dries out. It is recommended to avoid where possible, exposure of the panels to severe conditions, such as prolonged exposure to intense sun, cyclic soaking rain etc, as these exposures have the potential to alter the moisture gradient of the panels and may cause dimensional change, similar to natural timber.

Like nearly all timber products, Particleboard Flooring may react to changes in humidity and to direct wetting, but if laid in accordance with the required standards and the recommendations outlined in this brochure, Trade Essentials® Particleboard Flooring will withstand the conditions of platform construction.

Once it is laid, Trade Essentials® Particleboard Flooring may be exposed to the general effects of weather for up to three months and still meet the requirements of AS/NZS 1860.1 Part 1 Specifications for Class 1 flooring.

Water should not be allowed to lie on the flooring surface. Sweep it off or drill drain holes in positions that will be covered when the job is completed. It is recommended that protection by roof and walls be provided as soon as possible.

Safety and handling

Particleboard is a reconstituted wood product containing wood, resin and wax. Machine tools should be fitted with dust extractors and the wearing of a dust mask is recommended. Material Safety Data Sheets for Particleboard Flooring are available on request from any Laminex branch.

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Available in the Trade Essentials range:

Adhesives
Craftwood (MDF Products)
Lightweight PVC Panel Products
Particleboard Products
Plywood Products
Strandboard Products
Triboard Products
Ultra LDF Products
White Board and Edging Products

Particleboard Flooring is part of the Trade Essentials® range of products

For more information visit tradeessentials.thelaminexgroup.com.au or call 132 136.

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