

# EnduraFloor by Laminex™

## Particleboard Flooring

Fabrication and Installation Manual



Proudly  
Australian  
Made

EnduraFloor by Laminex™ 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.

EnduraFloor by Laminex Particleboard Flooring is made to Australian Standard AS 1860.1 and is guaranteed to withstand weathering for a period of 3 months exposure. It is a Class 1 flooring. This tongue and groove flooring is available in the following forms:

- Green Tongue: 19mm for 450mm joists
- Beige Tongue: 22mm for 600mm joists
- Commercial Brown Tongue: 25mm for a maximum of 700mm spans

Particleboard Flooring also comes as a Termite Treated option, great for areas where Termites are a problem.

## **Superior moisture resistance.**

The wood fibres are coated in Resins and waxes prior to being pressed into the final board product, so the moisture protection is throughout the core of the product. In addition, all edges are coated with a wax as required by the standard.

## **Generations of performance**

Laminex has been producing particleboard Flooring since the 1970's.

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# Section 1: Introduction

This manual has been created to provide clear instructions required to successfully install EnduraFloor by Laminex. Adherence to the and guidelines presented in this manual will ensure the installed floor is compliant with the conditions in the product warranty.

Throughout this manual the (W) symbol will appear against any specific instructions that are linked to compliance with the EnduraFloor by Laminex warranty.

This manual has been developed to allow designers and installers who work with EnduraFloor by Laminex to achieve performance standards for both domestic and commercial applications.

It is important to note that the techniques and guidelines presented in this manual are those recommended for use with EnduraFloor by Laminex.

Any variation from these guidelines may create unexpected performance problems and may void the limited warranty. It is impossible to cover all the existing fabrication techniques in this manual. This manual also reflects the requirements of the Australian Standard and the Australian Construction Code (ACC).

This manual provides instructions to comply with the product warranty and is not intended to replace any testing you may need to conduct to determine the suitability of this product for your particular purpose and needs.

While every precaution has been taken in the preparation of this document, Laminex assumes no responsibility for errors or omissions, or for damages resulting from the use of information contained in this document. In no event shall Laminex be liable for any loss of profit or any other loss or damage caused or alleged to have been caused directly or indirectly as a result of any person relying upon any information contained in this document.

Content in this manual is subject to change at any time without notice. Refer to the Laminex website for the latest revision of this document.

## 1.1 Applications

- (W) EnduraFloor is suitable for domestic and commercial interior applications provided it is installed according to the requirements specified in this manual and in AS 1684.2:2021 — Residential timber-framed construction—Non-cyclonic areas.
- (W) AS 1860.2:2006—Particleboard flooring Part 2: Installation  
AS 1884:2021—Floor coverings—Resilient sheet and tiles—Installation practice and,  
AS 3740:2021—Waterproofing of domestic wet areas
- (W) Do not use EnduraFloor for exterior applications.  
Do not use standard EnduraFloor in areas with termite risk. You must use termite-treated boards.

Available EnduraFloor products are listed in Table 1.1 (below).

Table 1.1: Available EnduraFloor products

Type	Substrate	Max Joist Spacing (mm)	Thickness (mm)	Sheet Size (mm)	Colour Description	Product Code	Pack Size
<b>PARTICLEBOARD FLOORING</b>	<b>PB Green Tongue</b>	450mm	19	1195 x 800	General Purpose	994098	35
				1795 x 800	General Purpose	983724	35
				3600 x 800	General Purpose	787842	35
					Termite Treated	794431	35
				3600 x 900	General Purpose	986338	30
					Termite Treated	986339	30
	3600 x 1200	General Purpose	787843	25			
		Termite Treated	794432	25			
	<b>PB Beige Tongue</b>	600mm	22	3600 x 800	General Purpose	787845	25
					Termite Treated	840326	25
				3600 x 900	General Purpose	986340	30
					Termite Treated	986341	30
				3600 x 1200	General Purpose	787846	25
					Termite Treated	794434	25
<b>PB Brown Tongue</b>	Refer to Engineering Requirements	25	3600 x 600	General Purpose	862056	20	

For technical information about EnduraFloor products, search the Laminex Document Library. See [Laminex Document Library \(www.laminex.com.au/for-your-home/document-library\)](http://www.laminex.com.au/for-your-home/document-library).

# Section 2: Safety

## 2.1 Site Safety

Safety training, product knowledge and product use, are the responsibility of the fabrication facility and its employees.

Equipment selection, use and maintenance, are the responsibility of the fabrication facility and its employees.

Maintaining a clean and adequately ventilated workplace, are the responsibility of the fabrication facility and its employees.

**Ensure packs are strapped when lifting to the floor joist frame. The floor factory finish is sanded to assist as a non-slip surface.**

### 2.1 Sheet Weight

	<b>Kg /m<sup>2</sup></b>	<b>3600 x 800</b>	<b>3600 x 900</b>	<b>3600 x 600</b>
<b>19mm</b>	13.1	37.72	42.44	
<b>22mm</b>	14.7	42.33	47.62	
<b>25mm</b>	18.6			40.17

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. Safety Data Sheets for Particleboard Flooring are available at: [Laminex Document Library](#).

### 2.2 Site safety requirements

<b>Risk</b>	<b>Requirements</b>
Dust	<ul style="list-style-type: none"><li>• Work must be performed in well-ventilated areas.</li><li>• Dust masks must always be worn.</li><li>• Personal protective equipment</li></ul>
Handling	<ul style="list-style-type: none"><li>• Appropriate personal protective equipment (PPE) must always be worn.</li><li>• Safety requirements for managing dust risk must be followed. See Dust (above).</li></ul>
Skin irritation	Particleboard material can cause skin irritation. PPE must always be worn. Additionally, avoid skin contact with used PPE.
Storage	Particleboard must be stored correctly to avoid (a) exposure to weather that could damage the boards and (b) chemicals that could be a fire hazard.
Working at heights	All guidelines for working safely at height must be followed.

For detailed product-specific site safety information, check the material safety data sheets in the [Laminex Document Library](#).

## 2.2 Personal protective equipment

Personal protective equipment Always wear appropriate PPE when handling or cutting this product. Wear gloves, safety footwear and suitable workwear apparel (no loose clothing or jewellery).



Occupational exposure to any type of dust is known to be hazardous to human health. Care must be taken to avoid the inhalation of dust.



Follow good hygiene and workplace practices. Dust can be vacuumed or swept to avoid accumulation. If dust levels exceed Safe Work Australia Standards the wearing of a dust mask (AS 1715 and AS 1716)



Always use safety glasses or approved eye protection and/or face shield when cutting, drilling, and sanding. If dust levels exceed Safe Work Australia Standards the wearing of safety glasses (AS 1337) is recommended.

## 2.3 Tool, equipment and consumable safety

EnduraFloor is installed using a range of tools, equipment, and consumables. See 2 Tools, equipment, and consumables (on page 8).

Use and maintain all tools and equipment in accordance with manufacturer's instructions.

Keep all equipment safety guards and dust collection devices in place. When working with tools, equipment, and consumables, always follow appropriate work safe procedures as well as any safety precautions provided by the manufacturer.

## 2.4 Safety data sheets

Safety data sheets provide information about:

- chemical properties
- product disposal
- emergencies (e.g., firefighting)
- handling, storage, and transportation
- personal protective equipment
- relevant regulations.

Safety Data Sheets are available at [Laminex Document Library](#).



# Section 3: Ordering, transportation and storage

## 3.1 Ordering

Ensure that sufficient material has been ordered to prevent delays during installation.

Table 3.1 Pack Sizes

m <sup>2</sup>	3600 x 600 x 25mm	3600 x 800 x 19mm	3600 x 800 x 22mm	3600 x 900 x 19mm	3600 x 900 x 22mm	3600 x 1200 x 19mm	3600 x 1200 x 22mm
<b>Per Sheet</b>	<b>2.16</b>	2.88	2.88	3.24	3.24	4.32	4.32
<b>Pack 20</b>	<b>43.2</b>				64.8		
<b>Pack 25</b>						108	108
<b>Pack 30</b>			86.4	97.2	97.2		
<b>Pack 35</b>		100.8					

## 3.2 Transportation

Particleboard must be loaded flat onto timber gluts and securely strapped to prevent packs falling off during transport.

Pack being lifted to raised platform should remain strapped.

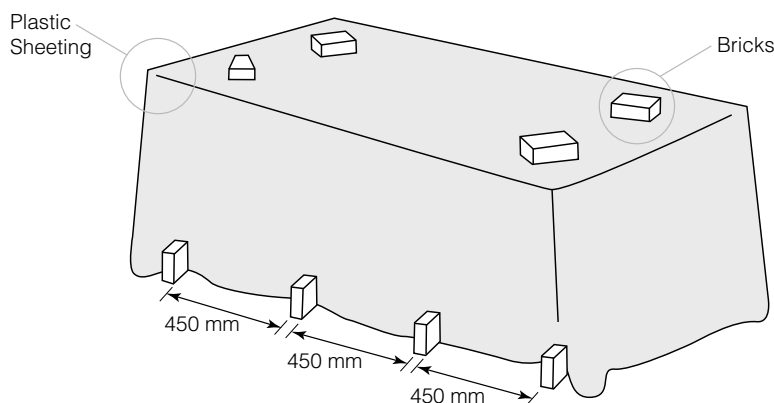
The Factory finish of EnduraFloor assists in the safety when handling preventing loose sheets from slipping.

## 3.3 Storage

Particleboard must be stored for at least one week (where possible longer) prior to installation to allow the boards to adjust to site conditions. Packs must be stored flat and protected from weather and other sources of moisture. Place them on timber bearers or slats spaced approximately 450 mm apart and cover them with waterproof material such as plastic sheeting. The required site storage setup is shown in Figure 3.3 (below).

Poorly stored boards may be more difficult to install.

Figure 3.3 Site storage setup (W)



Additionally, boards must not be stored near oxidising agents such as nitrates, oxidising acids, chlorine bleaches, pool chlorine, etc. Ignition may result.

### 3.4 Warranty information



EnduraFloor is suitable for domestic and commercial interior applications provided it is installed according to the requirements specified in this manual and in AS 1684.2:2021 — Residential timber-framed construction—Non-cyclonic areas.

For more information about the EnduraFloor warranty, see the [www.laminex.com.au](http://www.laminex.com.au)



# Section 4: Tools, equipment and consumables

## 4.1 Tools

- circular saw
- glue gun
- hammer
- nail gun
- stand up power screwdriver or equivalents
- rubber mallet
- measuring tape
- string lines
- pencil
- square
- moisture meter

## 4.2 Consumables

### 4.2.1 Adhesives

Adhesive used should be a construction grade contact adhesive with a high solids content, that retains a flexible glue line. Suitability for use with particleboard flooring should be confirmed by the adhesive supplier.

Before laying EnduraFloor, flooring adhesive must be applied to floor joists. The approximate amount of flooring adhesive required per pack of EnduraFloor flooring is listed in Table 4.2.1 (below).

Table 4.2.1: Adhesive requirements

	Flooring adhesive required per pack of flooring
Green tongue (19 mm to span 450 mm floor joists) (35 boards per pack)	25 × 300 ml cartridge
Beige tongue (22 mm to span 600 mm floor joists) (25 boards per pack)	20 × 300 ml cartridge

### 4.2.2 Fasteners

Once EnduraFloor has been laid onto floor joists it must be fastened using nails or screws. The fasteners used for each joist type are listed in Table 4.2.2 (below).

If the flooring will be exposed to the weather during construction, all nails shall be galvanized, and screws shall be cadmium- or zinc-electroplated and finished with yellow iridescent chromate conversion coating Type C in accordance with AS 1789 2003, re-confirmed 2017.



1. Nails shall be driven flush initially and not punched below the surface until immediately prior to sanding.
2. Nailing machines shall be adjusted so that the heads of the nails penetrate the surface by not more than 1mm. The use of a flush drive attachment, a chisel drive nail machine or similar is required.

Table 4.2.2: Fastener Type

Joist Type	Fastener Size (mm)	Fastening Method
Hardwood or Cypress pine	50 mm × 2.80 mm nail	Hand hammer
Softwood	55 mm × 3.15 mm nail	
All timber	55 mm × 2.5 mm tee-head or finished head nails	Nail gun
Timber composite	No. 10 × 50 mm, Type 17 countersunk head, self-drilling screws	Screwdriver or stand-up auto-feed screwdriver
Steel	No.10 × 45 mm countersunk self-embedding wing tip screws	Screwdriver or stand-up auto-feed screwdriver
I-Beams AS1860.2 states if particleboard	I-Beam flanges may only be 35mm thick and nails will penetrate through and may not have sufficient holding strength.	Flooring is fixed to I-Beam joists, screws (not nails) should be used.



# Section 5: Site requirements

Before installing EnduraFloor, you need to ensure the site complies with the following requirements.

## 5.1 Timber framing requirements

Timber framing standards specify the requirements that must be met by residential timber structures in Australia. Consult the following standards for more information:

- AS 1684.2:2021—Residential timber-framed construction—non-cyclonic areas (Standards Australia, 2021)
- AS 1684.3:2010—Residential timber-framed construction—Cyclonic areas (Standards Australia, 2021)
- AS 1684.4:2010—Residential timber-framed construction—Simplified—Non-Cyclonic (Standards Australia, 2010c).

## 5.2 Subfloor requirements

Sufficient subfloor ventilation and clearance must be provided to prevent distortion, decay, and excessive movement of the floor and supporting frame.

For information about subfloor requirements, consult the following sections of AS 1860.2 (Standards Australia, 2006):

- Section 5, Subfloor ventilation
- Appendix B Installation guidelines
- Appendix C Recommendations for subfloor ventilation.

## 5.3 Floor construction requirements

EnduraFloor can be used to construct platform floors (where boards are laid over the entire joist area) or fitted floors (where boards are fitted around walls).

## 5.4 Termite protection requirements

Termite Treated MR EnduraFloor must be used in regions with termite risk.

Ground clearance requirements must also be followed according to the requirements of The BCA and AS 3660.1: Termite Management.

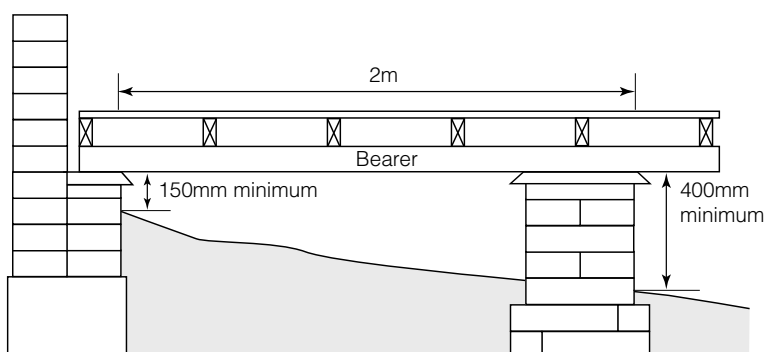


Figure 5.4 Minimum ground clearance requirements



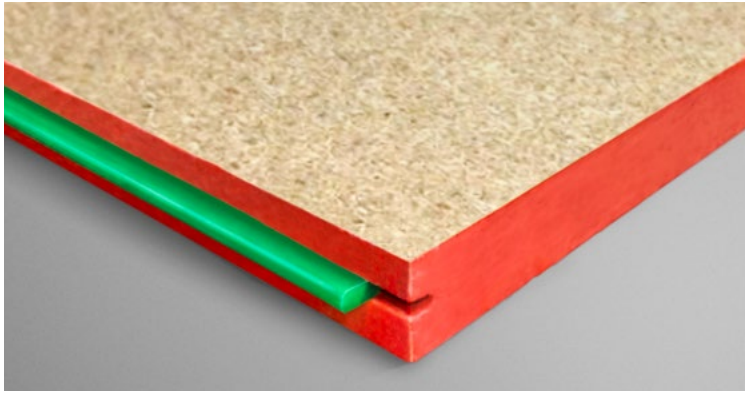


Figure 5.5 Termite Treated Particleboard Flooring with red wax for identification.

The relevant section of this standard AS 3660.1.2014 3.2 (c) (ii):

EnduraFloor by Laminex H2 Particleboard Flooring is treated with Permethrin, a preservative treatment that protects against termite damage in accordance with AS/NZS 1604.2:2021.

Preservative-treated timbers in accordance with AS (AS/NZS) 1604 (series) and specified for the appropriate hazard level in accordance with Appendix D.  
NOTE: Where preservative-treated timbers are cut, notched, or planed, the affected surface should be treated with a suitable remedial preservative.

Additionally, buildings must comply with the requirements specified in section 6 Subterranean Termites of AS 1860.2 (Standards Australia, 2006).



# Section 6: Installation

## 6.1 Inspecting particleboard

- Particleboard must be inspected to ensure it is suitable for installation.
- Check each board to ensure they have not been damaged.
- Check whether the particleboard is termite treated, if necessary.
- Ensure the correct thickness boards for the joist spacing on site.

## 6.2 Fitted floor installation

Fitted floor installation involves laying flooring over floor joists so that it fits around the shape of installed internal walls. This type of floor is usually installed after the walls and roof have been completed.

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 with measure more than 6 metres in width an expansion joint should be provided on a double joist as for Platform floors below.

## 6.3 Platform floor installation

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. EnduraFloor by Laminex Particleboard Flooring is capable of withstanding general weathering for up to 3 months. Less exposure, however, is recommended. 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:

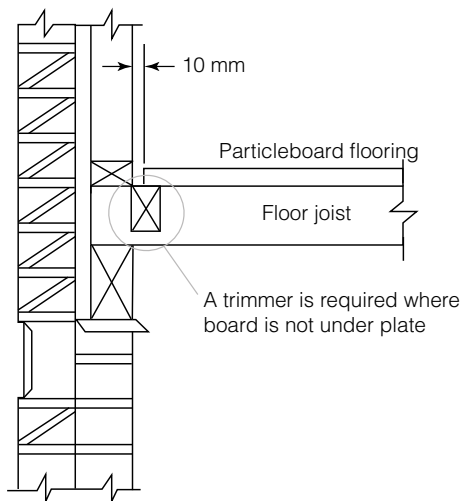
- the floor is elevated or on ground level
- the area is air conditioned
- it is a tropical region (coastal area, north of 27th parallel)
- what moisture variations are likely in the flooring

For floor with widths over 6m, measured at right angles to flooring, additional intermediate expansion joints are required within the platform, in addition to the perimeter gaps.

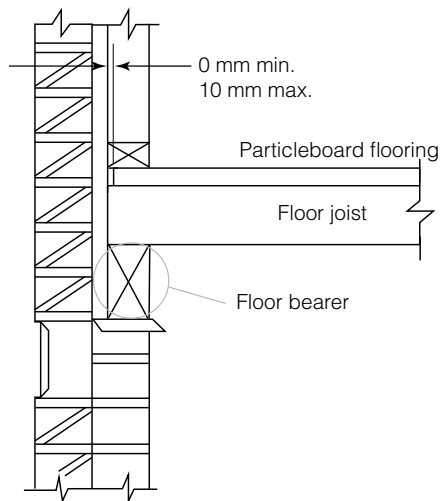


Figure 6.3: Expansion gap requirements

**Fitted Floor**



**Platform 6.4**



**General Installation Instructions:**

**Table 6.3: Floor installation requirements**

Requirement	Instructions
<b>The spacing between joists must not exceed the maximum joist spacing specified for the boards to be installed.</b>	<ul style="list-style-type: none"> <li>Check that the spacing between joists at the installation location does not exceed the maximum joist spacing value specified in the relevant EnduraFloor technical data sheet.</li> </ul>
<b>Boards should be supported by three floor joists.</b>	<ul style="list-style-type: none"> <li>Inspect the flooring frame for areas where boards cannot be supported by three floor joists.</li> <li>For each area where boards cannot be supported by three floor joists, fix trimmers no smaller than 70 mm (W) x 35 mm (H) between those floor joists where additional support is necessary.</li> </ul>
<b>Expansion joints must be included to allow for the expansion of saturated boards.</b>	<ul style="list-style-type: none"> <li>Expansion joints are gaps inserted between boards within the flooring area. Expansion joints are 15 to 20 mm wide and are required every 10–15 m (that is, every 3 to 4 boards).</li> </ul>
<b>Fitted Floors Board ends and edges must be installed at least 10 mm from wall edges.</b>	<ul style="list-style-type: none"> <li>Check that for each wall parallel to the floor joists, the maximum distance from the wall to the first joist – centre to centre – plus 10 mm does not exceed the maximum joist spacing specified for the particleboard. An example is shown in Figure 6 3 (below).</li> </ul> <p>600 (or 450) + 10mm</p> <p>Figure 6.3: Sample position of the first joist from the wall</p>
<b>Fitted Floors – Trimmers support.</b>	<ul style="list-style-type: none"> <li>Ensure that trimmers are in place at the edges of the floor to support the flooring at all the edges between the joists.</li> </ul>
<b>Platform Floors</b>	<ul style="list-style-type: none"> <li>Free edges of EnduraFloor that extend 60 mm or more beneath bottom wall plates that are perpendicular to joists do not require support from trimmers or solid blocking.</li> </ul>
<b>Floor joists supporting walls must project at least 22 mm into the flooring area.</b>	<ul style="list-style-type: none"> <li>Check that floor joists underneath walls project into the flooring area by at least 22mm to allow for the minimum expansion gap (10 mm) and the required 12mm of bearing.</li> </ul>
<b>Board ends must be butted centrally over floor joists or trimmers that provide at least 12 mm of bearing.</b>	<ul style="list-style-type: none"> <li>Check that joists are wide enough to provide at least 12 mm of bearing to each supported board.</li> <li>Check that there are double or single wide joists (50 mm minimum) every 10 to 15 m to support expansion joints.</li> </ul>





### 6.3.1 Installing particleboard floors

Flooring should be installed as per Australian Standard 1860 “Installation of Particleboard Flooring”,

The floor is installed perpendicular to the floor joists.

**String Lines** should be used to ensure the first run of flooring is straight as all other boards will follow.

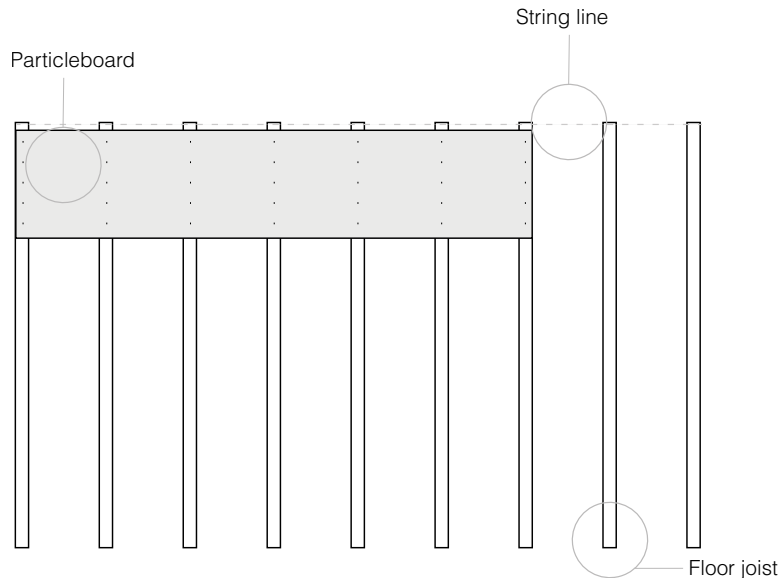


Figure 6.3.1: position of the string line and first board. Perpendicular to the floor joists.

**For Fitted Floors**, ensure there is a continuous clear 10mm expansion gap between the wall and floor. The tongue can be removed to ensure the expansion gap is clear.

#### **For Platform Floors:**

Place a string line perpendicular to the joists, ensuring the cavity gap is maintained un-hindered, allowing also for floor expansion.

Remove the tongue from the first run of boards to be installed against the wall or platform edge. This enables a block and hammer or floor lever to be used to position the board once adhesive is in place, on the groove side of the board.

When ready to install the board, apply a continuous 5–6 mm bead of flooring adhesive to all floor joists and trimmers supporting the board. Do not apply adhesive before the board is ready to be placed because the flooring adhesive cures quickly. Where boards meet only apply adhesive to that part of the joist that will be covered by the board about to be placed.

Place the board so that the tongue edge is facing the stringline. The side edge is 10 mm from a perimeter and supported by at least 12 mm of floor joist, at the wall edge.



Floor joist spacing of 450mm or 600mm centre to centre and the 3600mm full sheet size ensures the flooring will always sit centrally on the last joist, with correctly spaced floor.

Using an appropriate fastener fix the board to the supporting joists and trimmers at:

- Not greater than 300 mm centres for fasteners in the middle of the board.
- Not greater than 150 mm centres for fasteners at the ends of the board.

Fasteners (nails or screws) should be no closer than 10 mm to the end of the board. string lines can be employed to ensure accuracy of fastener placement into the joists.

Nails should be skew driven for strength.

Do not punch hammer-driven fasteners beneath the surface until immediately prior to sanding, once the structure is weather tight.

Indicate fasteners no closer than 10mm to end of board

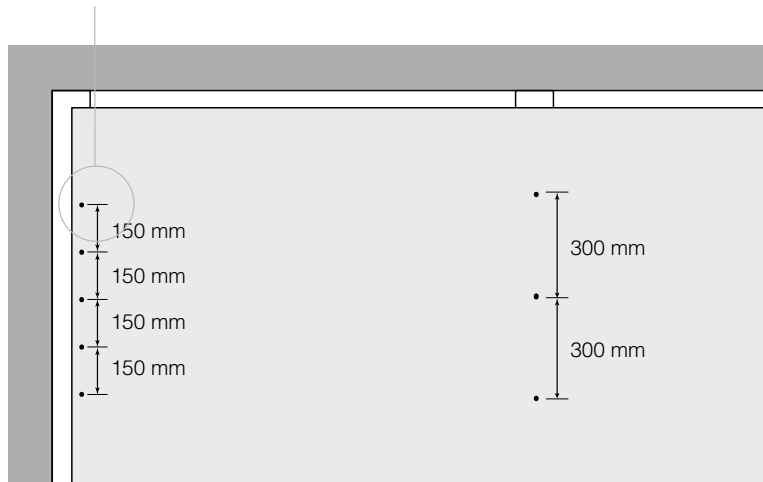


Figure 6.3.1: Fastener locations

Once the first board is positioned accurately on the joist with adhesive in place and fastened to prevent movement, the next board should be placed into position, glued, and fastened as before.

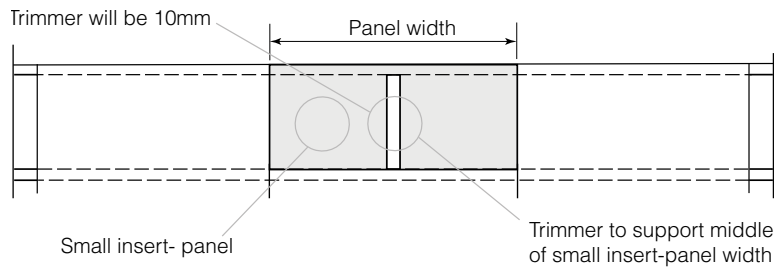
Continue this process until the row is completed. Ensure the expansion gap is maintained at all edges.

If the final board in the row leaves only a span between two joists, then the second last board should be shortened by one span to ensure that all boards are supported by at least three floor joists.

Alternatively, boards that can only be supported by two floor joists must be additionally supported by trimmers measuring no less than 70 mm (W) × 35 mm (H) fixed between the floor joists, supporting the middle of the panel to prevent bowing.



Figure 6.3.2: Fastener locations



If you need to cut the board, mark the cut using a pencil and square, ensuring that the ends of the board can be supported by at least 12 mm of floor joist. Square cuts are essential.

The second row should commence with a cut panel to achieve a staggered joint pattern as below.

Again, the first board must span at least two spans. The off cut from the first row can be used if the minimum size requirement is achieved.

Place the board on the joists with the grooved edge facing the tongue of the board in the previous row. Align a with the left edge of the first board of the previous row. The adhesive should be applied to the joist and to the top of tongue of the new board.

Insert the board into the tongue of the board in the previous row. Using a piece of wood along the length of the grooved edge of the board, hammer the piece of wood using a rubber mallet or use a floor lever to drive the boards together.

Repeat this process to complete the floor installation.

Where platform floor requires a 20mm expansion gap over a double joist, the laying pattern should stop and re start at this point. See (Platform Floors above)

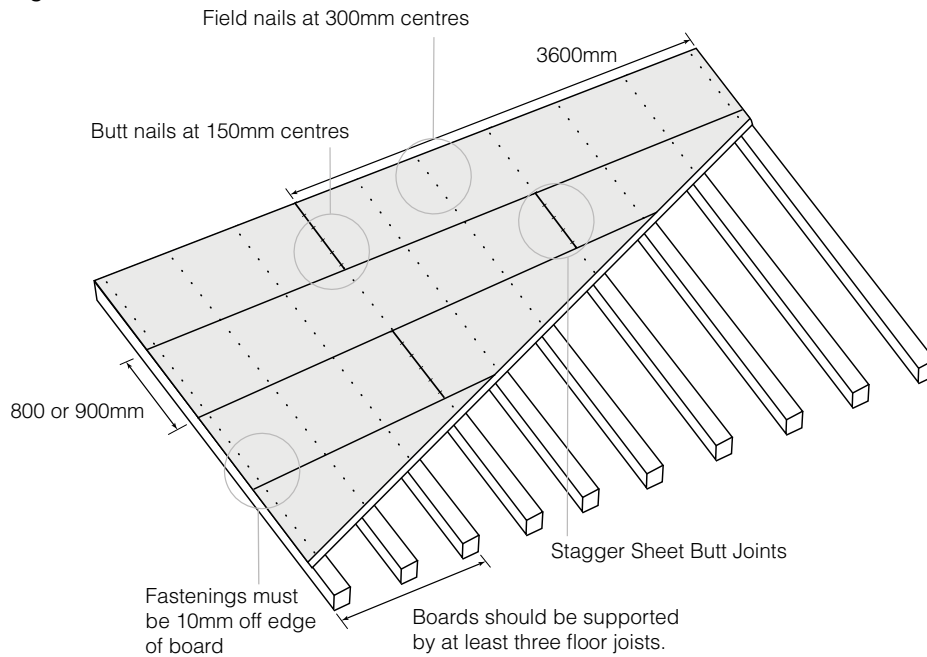
### Maximum raft size

For continuous floor widths over 6m, measured at right angles to flooring edges, intermediate expansion joints shall be provided in addition to the perimeter gaps.

Caution do not underestimate the requirement to adhere to these requirements as the flooring is capable of moving walls if insufficient control joints are employed.



Figure 6.2.4:



- Ⓢ Ensure that expansion gaps (10 mm minimum) are included along all walls and around columns or other fixtures when installing EnduraFloor for fitted floors. These gaps can be covered later by skirting.
- Ⓢ Boards should be supported by at least three floor joists. Boards that can only be supported by two floor joists must be additionally supported by trimmers measuring no less than 70 mm (W) × 35 mm (H) fixed between the floor joists.
- Ⓢ Boards do not need additional support along tongued joints (lengthwise) provided boards are installed perpendicular to floor joists
- Ⓢ Staggered board joints are required to reduce the impact of board expansion and should resemble an interlocked brick pattern
- Ⓢ AS 1860.2 Particleboard Flooring recommends that where panels are cut to size on site, the edges should be sealed with adhesive used to bond the panels to the joists.
- Ⓢ Do not fix nails or screws closer than 10 mm to the end of the board.
- Ⓢ Adjust nailing machines so that nails do not penetrate the particleboard by more than 1 mm. This requires a flush drive attachment or a chisel drive nail machine
- Ⓢ Do not punch hammer-driven fasteners beneath the surface until immediately prior to sanding
- Ⓢ Depending on the shape of your room, the left-over sheet from the previous row may be large enough to be used as the first sheet of the new row.
- Ⓢ When you mark the cut, ensure that the ends of the board will be supported by at least 12 mm of floor joist.
- Ⓢ Do not cut the board to a size where fasteners would need to be installed closer than 10 mm to any edge
- Ⓢ Do not exceed the maximum three-month exposure time. If the roof and external wall cladding still needs to be installed. Delay the flooring installation until at least three months before the roof and external wall cladding will be constructed
- Ⓢ **Expansion joints**  
Expansion joints are gaps between boards within the flooring area. Since platform flooring prevents potential movement at the ends of floor, expansion joints must be accommodated within the floor area rather than at the ends.  
Expansion joints are 15 to 20 mm wide, and they are required every 10–15 m (that is, every 3 to 4 boards). Joists supporting expansion joints must be either double or single wide (50 mm) floor joists
- Ⓢ **Expansion gaps**  
The potential movement of particleboard flooring is 1–2 mm per metre.  
Floor installations accommodate this movement with expansion gaps between the boards and walls as shown in Figure 6 2 (above). The expansion gap width is equal to 1–2 mm per metre of room dimension (10 mm minimum).



## 6.4 Installing particleboard Specialist applications

### 6.4.1 Installing over concrete

The most usual method is to place joists over the floor, with small spacing under the wood so there is no direct contact to the concrete. The floor installed in the usual manner.

Direct stick is occasionally employed. It is most important that the slab is dry and habitable (moisture membrane under the slab to prevent moisture being drawn into the slab causing sweating) it should also be free of grease, oils and other contamination that may affect bonding. Less than 5% moisture is acceptable.

The slab may need to be levelled to prevent hollow spaces. Approx 3mm/m maximum.

A moisture resistant direct stick membrane should be used. Adhesive suppliers should advise on this, and application instructions followed. The top surface of the floor should also be sealed once installed to maintain balance and flat characteristics.

In some cases, the floor is installed on a moisture barrier 2um plastic, and floats as a raft.

The over all size of the floor area needs to be considered and movement will still occur. Control joints will need to be incorporated into the floor depending on the cumulative lengths.

#### **Installing Double Layered floors.**

Inspect the site conditions to ensure that the first layer is sound, dry and level. Independent engineering required to ensure the load bearing is meeting the site requirements.

When installing the second layer, the first sheet is usually cut in half lengthwise, so that the joints are completely overlapped.

The end joints also should be separated in the same manner, so overlaps are achieved in both directions, using a different joist for the end fixing position. The sheets should be screw fixed where the joists are located, the screw fixing should be long enough to penetrate the joists by approximately 30mm.

Adhesive should also be applied at joist spacing, and on the tongues to reduce floor noise.



# Section 7: Protecting installed particleboard

EnduraFloor must be protected from weather as soon as possible after installation. As advised, Australian Standard 1860.2, The maximum period of exposure to the elements of the floor should be no longer than 3 months.

Ideally, this protection is provided by the roof and external wall cladding. Where this is not possible or additional work is required, the following requirements must be met:

- Pooled water on the floor surface should be removed as soon as practicable.
  - It can be swept from the surface periodically
  - 3mm diameter holes can be drilled where water accumulates, not closer than 1m apart.
  - Ensure the hole is free draining, avoiding the joists.
- The general effects of weathering on the wood fibre and resin system will be evident but not damaging to the structural integrity of the floor. It is possible that extremely hot sunny conditions may rapidly dry the moisture profile of the board causing cupping to the panels. This may result in fixings pulling through the board surface or lifting nails out of the joists.
- If the board shows signs of cupping in very hot conditions or has been soaked by rain, then exposed to hot dry conditions you must take steps to maintain a more even moisture gradient by:
  - shading the exposed floor to reduce the heat impact of the sun or,
  - Wetting the surface of the boards to slow the drying process.
- Contact Laminex if the particleboard has been exposed to weather for more than three months. Boards should perform satisfactorily provided expansion gaps and expansion joints have been included in the installation, but a professional written opinion is required.
- If the surface of the flooring is to be used as a decorative surface, then exposure to weather should be avoided.

**(W)** If you are leaving the site after installing the particleboard flooring, you must inform the foreman or supervisor about the following requirements for protecting installed particleboard flooring.

Do not exceed the maximum three-month exposure time.

**(W)** Contact Laminex if the particleboard has been exposed to weather for more than three months. Boards should perform satisfactorily provided expansion gaps and expansion joints have been included in the installation, but a professional written opinion is required.

Do not exceed the maximum three-month exposure time

**(W)** Do not use installed boards as a mixing table for plaster, concrete, paint or other mixtures.

Remove pooled water by drilling holes with a maximum diameter of 3 mm 1 m apart where the pooling occurs. Take care not to drill into floor joists.

Dampen boards exposed to direct and hot sun to prevent excess shrinkage



**Mould Growth.**

Wood fibre used in the manufacture of Particleboard will not support mould growth when dry. Mould grown on floor panel prior to the building being waterproofed will not damage the integrity of the boards, however, should be cleaned off prior to the building being completed.

Mould will only grow on the surface of timber where the moisture content is approximately 26% above and remains damp for a prolonged period. Dry surface will not continue to support mould growth.

**Precautions.**

The key to managing mould growth is to remove water from the area. Protecting timber products from prolonged un-drained water and achieving a weather tight structure are important.

It is the responsibility of the builder to achieve a weather tight structure to protect the building fabric within a 3-month period as advised in AS 1830.1 . The flooring is guaranteed to withstand this exposure.



# Section 8: Finishing

## 8.1 General surface finishing



EnduraFloor must be dry before the installation of additional floor coverings. Boards are dry when moisture content is between 10 and 14%. Boards that have been protected from wet conditions during installation should fall within this range.



Boards with moisture content outside this range must be protected until the moisture content is within this range

### Before you begin

You will need a moisture meter.

To dry particleboard:

Use a moisture meter to check that moisture levels are between 10 and 14%.

A minimum of three tests must be performed for the first 100 m<sup>2</sup> followed by at least one test for each additional 100 m<sup>2</sup>.

If the moisture content is not between 10 and 14%, protect the boards (see section 3.3 on page 9) and leave the floor to dry until the moisture content is within this range.

Do not dry boards by force (e.g., using fans or gas burning space heaters). This can cause cupping. Boards should be protected from the weather and allowed to dry.

If moisture is dried out rapidly from the floorboard surface, the moisture gradient through the board can be affected and can cause it to cup. This may be the case if the floor is exposed to very hot sun after the board has been soaked by rain. If this is the case, then steps should be taken to maintain approximately uniform moisture content through the particleboard thickness:

- This can be done by shading the floor to slow drying,
- Re-wetting the board periodically to prevent the surface from shrinking.

If during the drying process, gaps appear, then these gaps can be filled with a flexible sealant. Once the finishing process has been completed, not before.

### Mould & Mildew

Mould growth is only supported on timber structures when the fibre is generally above 26% moisture content.

The growth feeds on available sugars but does not affect the structure of the wood itself. Once installed and dry mould growth will cease. Residual spores can be treated although growth should only re-occur if moisture levels were to increase.

The presence of mould does not mean the floor is damaged. Once the building is closed to the weather, the structure flooring will dry, and growth will cease as the organism will not be able to survive. Spores can be chemically treated however growth is not possible when the floor is returned to a dry stable environment.





## 8.1.1 Replacing particleboard

**W** EnduraFloor must not have cracks (small or large), dusting, rain damage, efflorescence or blistering before the installation of additional floor coverings.

If flooring has been damaged during construction and require replacement a section of flooring can be cut out and replaced. It is important that the replaced section and the remaining section of flooring span at least 3 joists.

Ensure the joists are not cut into when removing the flooring.

As the tongue will not longer be in use, the unsupported edges of the flooring should be supported by cleats affixed to the underside of the floor.

Additional trimmers can be added between joists for support, if 3 joists are not covered.

Flooring adhesive should also be used to reduce the possibility of floor squeak.

## 8.1.2 Levelling particleboard

**W** EnduraFloor must not have cracks (small or large), dusting, rain damage, efflorescence or blistering before the installation of additional floor coverings.

### Before you begin

The following equipment is required:

- o 150 mm straightedge
- o 2000 mm straightedge.

To level particleboard:

3. Place a 150 mm straightedge on a section of the installed boards.
4. Check that the surface below the straightedge is no more than 0.5 mm below the bottom of the straightedge at any point.

If minor changes in the surface level are observed, sand the boards level. See below.

Do not remove more than:

- W**
- 2 mm within 50 mm of any supported edge
  - 1 mm over the remaining board area.

## 8.1.3 Sanding particleboard

**W** EnduraFloor must be smooth without any holes, lumps, raised nails or sudden rises or falls before the installation of additional floor coverings.



### 8.1.3.1 Sanding particleboard for carpet installation

#### Before you begin

The following equipment is required:

- hammer or screwdriver
- punch (if boards are nailed)
- putty that allows for some movement when set
- 40–60 grit closed coat sandpaper.

To sand particleboard in preparation for carpet installation:

1. Punch any exposed nails flush or below the surface.
2. Countersink any exposed screws flush or below the surface.
3. Fill any holes with a putty that allows for some movement when set.
4. Spot sand any rough or uneven areas using a 40–60 grit closed coat sandpaper.

Do not remove more than:



- 2 mm within 50 mm of any supported edge
- 1 mm over the remaining board area.

Do not use any other type of sandpaper. Particleboard for carpet installations must be sanded only with 40–60 grit closed coat sandpaper.

Rough or uneven areas are usually caused by weather exposure. Full floor sanding may be necessary if the particleboard has been exposed to prolonged rain.

Complete the particleboard surface finishing procedures by cleaning the particleboard. See below.

### 8.1.3.2 Sanding particleboard for floor coverings other than carpet

#### Before you begin

The following equipment is required:

- hammer or screwdriver
- punch (if boards are nailed)
- putty that allows for some movement when set
- 60–80 grit closed coat sandpaper
- 80–100 grit closed coat sandpaper

100 grit closed coat sandpaper.



To sand particleboard in preparation for floor coverings other than carpet:

1. Punch any exposed nails flush or below the surface.
2. Countersink any exposed screws flush or below the surface.
3. Fill any holes with a putty that allows for some movement when set.
4. Choose the appropriate sanding method:
  - o For particleboard that has been exposed to the weather, sand the entire surface using 60–80 grit closed coat sandpaper and then again using 100 grit closed coat sandpaper.
  - o For particleboard that has not been exposed to the weather, sand the joints
  - o using 80–100 grit closed coat sandpaper.

**(W)** Complete the particleboard surface finishing procedures by cleaning the particleboard.

#### **8.1.4 Cleaning particleboard**

EnduraFloor must be cleaned prior to the installation of floor coverings.

##### **Before you begin**

The following equipment is required:

- vacuum cleaner
- cleaning products to remove substances that may adversely impact the installation of floor coverings.

To clean particleboard:

1. Vacuum all boards to remove dust.
2. Clean all boards to remove substances that may adversely impact the installation of the floor covering such as:
  - o Oil & Grease
  - o paint curing or parting agent.

## **8.2 Finishing for wet areas**

Recommend CFC sheeting

EnduraFloor floors installed in wet areas must be finished by:

- completing the particleboard surface finishing procedures
- sealing board joints.



Waterproofing is not covered by the EnduraFloor warranty. Laminex bears no legal responsibility for damage caused by incorrectly installed wet areas.

- For information about waterproofing wet areas see:
  - AS 1860.2 (Standards Australia, 2006)
  - AS 3740 (Standards Australia, 2021).

Once these steps have been completed you must waterproof the wet area.

### Before you begin

The following equipment is required:

- epoxy flooring adhesive
- masking or packing tape
- rubber flashing tape.
- To finish particleboard flooring for a wet area:
  1. Complete the particleboard surface finishing procedures. See 8.1 General surface finishing (on page 24).
  2. Seal each board joint by applying the following, centred along the joint:
    - 140 mm wide band of epoxy flooring adhesive
    - 25 mm to 35 mm wide strip of masking or packing tape to serve as a bond breaker
    - 130 mm to 150 mm wide strip of rubber flashing tape.

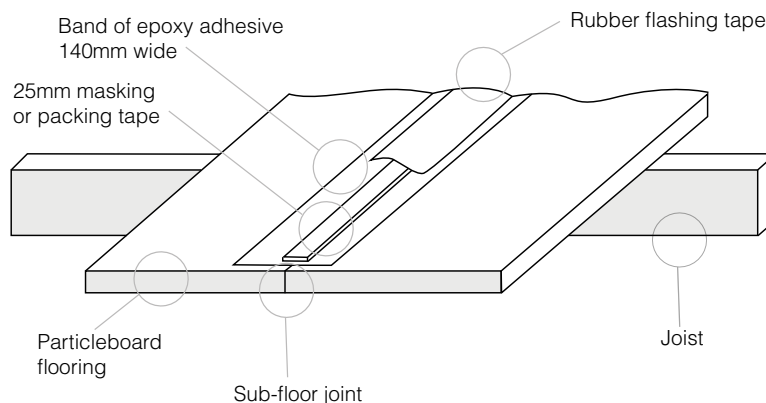


Figure 7.3: Board joint sealing detail

The bond breaker can be masking or packaging tape, but you must ensure this is compatible with your selected waterproofing products.

Once these steps have been completed you can waterproof the wet area.



### 8.3 Finishing for resilient sheet and tile flooring

EnduraFloor floors installed in areas where resilient sheet and tile flooring will be laid must be finished by:

- filling all joints with a rubber filler
- completing the surface finishing procedures
- installing an underlay.

Once these steps have been completed, you can install resilient sheet and tile flooring.

Installation of resilient sheet and tile flooring is not covered by the EnduraFloor warranty. Laminex bears no legal responsibility for incorrectly installed resilient sheet and tile flooring.

For information about resilient sheet and tile installation requirements, see AS 1884 (Standards Australia, 2021).

For tiled floors we recommend the use of Fire Cement sheeting. This is particularly important in wet areas where the natural movement of the wood fibres can lead to cracking of grouting and the moisture membrane.

#### **Before you begin**

The following equipment is required:

- rubber filler
- underlay
- 150 mm straightedge.

To finish particleboard flooring for a resilient sheet and tile flooring installation:

1. Complete the particleboard surface finishing procedures.
2. Fill all board joints and all screw and nail holes with rubber filler.
3. Install the underlay. You can install:
  - hardboard
  - high-performance medium-density fibreboard
  - plywood
  - fibre-cement board
  - other underlay that is specifically designed for timber composite flooring

Do not install resilient sheet and tile flooring directly onto particleboard. Particleboard flooring requires an underlay.

Follow the manufacturer's instructions and particleboard underlay requirements as per AS 1884 (Standards Australia, 2021).



4. Check that joints are flush with the floor surface using a 150 mm straightedge. Underlay joints that are not smooth may show through resilient sheet coverings.
5. Sand any raised joints until they are flush with the underlay surface. Once these steps have been completed you can install resilient sheet and tile flooring.



# Section 9: Other Documents

- EnduraFloor by Laminex Technical Data Sheet
- Particleboard Flooring Global Greentag
- EnduraFloor by Laminex Safety Data Sheet (SDS)
- EnduraFloor by Laminex Warranty
- EnduraFloor by Laminex Range Brochure
- EnduraFloor by Laminex Trade Flyers
- **Scan QR code at the bottom of this page to go to latest versions of these documents.**



# Section 10: References

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