Architect: Figr Architects
Builder: Roda Developments
Photography: Tom Blanchford

RADIAL INSTALLATION GUIDE
INTERNAL LINING BOARD

radialtimber
USING WOOD WISELY

MARCH 2024

CONTENTS

Please make sure that the information in this installation guide is current by checking with Radial Timber or referring to our website **www.radialtimbers.com.au**

1.0 INTRODUCTION

Tanglewood Winery

Radial tongue & groove, hardwood lining boards provide a sleek modern alternative to traditional softwood, manufactured sheet cladding or plaster systems.

The 13mm tongue & groove lining boards are the same profile of our standard 19mm tongue & groove shiplap boards, however as the lining is a mixed species, some variation in colour and feature should be expected. Lining boards are typically used internally in the following applications: Ceiling lining, walls and eaves in Houses, Apartments, Wineries, Restaurants, Hospitals and Schools as well as on limited applications on protected external garage doors.

Radial lining boards are sawn from a selected mix of naturally durable regrowth hardwoods or plantation timbers all of which are of a Class 2 or 3 durability and are perfect for indoor or undercover applications.

The lining is supplied in two grades, standard and better and discounted rustic (higher feature) grade with the option of dressed all round or a rustic weathered and sawn finish.

1.1 SUSTAINABILITY

1.2 WHERE DOES OUR TIMBER COME FROM?

Radial Timber is committed to the sustainable management of our timber resources. All Radial timber products are curently supplied through sustainable regrowth or plantation timber partners, unless specified otherwise.

Our vision is to become totally self sufficient by managing our own saw log plantations of durable hardwood in Gippsland. In 2004 we put in place a plan to establish at least 2000 hectares of native hardwood plantations, since then we have been planting and managing these plantations every year. We also acknowledge that we must work together with industries and government bodies to carefully manage our native regrowth timber resources to ensure a sustainable future for all. We truly believe you can love both timber and trees, if we work together to do so sustainably.

1.3 RADIAL SAWING METHOD

Radial Sawing was specifically designed to maximise the recovery of sawn timber from smaller logs. As such, Radial Sawing has a range of both environmental and technical benefits. Where conventional sawing methods require large diameter logs Radial Sawing technology helps make native hardwood plantations logs more viable by maximising the yield of high value timber products from much smaller logs.

Radial sawing works by quarter sawing a log into wedges (like a pizza) from these wedges the log is then back sawn into varying sizes of bevelled edge boards. These bevelled edged, rough sawn boards can be used unseasoned (green) for products such as Board & Batten or Screening. Alternatively the boards can be racked out for air drying, to then be kiln dried and moulded into high quality profiles such as Shiplap Cladding or Decking.

Other Radial Timber enviromental endevours include our new Bioenergy and LVL peeling plant both due to be commisioned in 2024/25.

2.0 PRE-PLANNING

Architect: Architecture Architecture
Photography: Peter Bennetts

2.1 PROPER STORAGE OF TIMBER ON A CONSTRUCTION SITE

Timber should be stored up off the ground on bearers and preferably inside in a cool dry area or protected with an additional heavy-duty tarp to prevent rain damage. When the lining is delivered it will be wrapped in thin plastic, this is not a waterproof barrier and care must be taken to ensure boards don't get wet as this can cause issues with movement of timber after installation. If wetting does occur, separate the timber with strips between each layer, and place in a well-ventilated area allowing a minimum 48 hours to dry before installation. Properly stored timber will reduce the risk of moisture born problems such as warping, swelling or water damage and contribute to the overall quality and performance of the construction project.

Architect: Architecture Architecture
Photography: Peter Bennetts

2.2 MOISTURE CONTROL

Lining boards are kiln dried to 12-14% and will exhibit some seasonal movement as a result of daily humidity changes, but is often small and usually of no consequence if installed correctly. The lining boards must be positioned internally or undercover out of the weather such as for an eave lining. Lining boards have also been used in situations where the weight of the timber is critical (10.5kg weight per/m2) such as protected garage or entrance doors. Lining boards should not be used in exposed applications.

The lining boards can be installed at any time except if used in an external situation such as a protected garage door. In this case these boards should not be installed in the rain or on extremely hot and windy days in full direct sun as these conditions increase the risk of movement.

3.0 PROFILES

Architect: Figr Architecture
Construction: Byde Constructions
Photography: Tom Blanchford

3.1 INTERNAL LINING BOARD PROFILES

70x13mm (Overall width 85mm)

90x13mm (Overall width 105mm)

130x13mm (Overall width 144mm)

Radial Timber Tongue and Groove Lining is supplied as a series of kiln dried & dressed or rustic fine sawn/textured 13mm thick profiles which can be concealed fixed.

These are available in three cover widths of 70x13mm, 90x13mm and130x13mm.

The majority of the lining is sold in random lengths (1.0-6.0m) but certain set lengths are available (subject to availability) which will be sold at a higher surcharge.

A cost effective, discounted rustic grade timber with higher feature is also available (subject to availability).
We can also do a sawn faced shiplap and variety of different timber finishes.

Recommended screw size
3.5mm-4.5mm x 50mm Stainless steel.
These have a smaller head to allow proper concealment.
Alternatively, on internal applications only, and depending on the holding capacity, It is possible to finish with brad nails and appropriate glue.

4.0 INSTALLATION

4.1 SARKING

Good quality vapour permeable wall wraps or sarking are additional layers of protection and can be used behind the lined walls that are situated within an undercover alfresco area or eaves for added moisture protection if required.

4.2 LAYOUT

The information provided outlines the recommended methods for fixing to ensure that your internal lining is installed correctly and will provide a long lasting, attractive finish for your project:

· **Layout:** Lining boards are typically installed in a regular pattern with max 450mm fixing centres into noggings or battens with the tongue and grooves of adjacent boards fitted together.

· **Wall and ceilings:** When fixing the tongue and groove profile, there is a slightly raised step. This step serves as a guide to properly position the boards side by side during installation. The neighbouring board should not be pushed beyond this point because the step forms part of the 5mm shadow line, which acts as an expansion joint.

· **Eaves:** Lining boards are typically installed horizontally along the eaves, starting from the roof edge and extending inward. They can be attached directly to the roof structure or to a substrate, such as plywood or roof battens.

· **Garage doors:** Installing lining boards vertically on a garage door is preferable due to the profile shape and square step down between the boards. However, it's important to note that lining boards are not recommended for fully exposed areas where they will be directly exposed to weather conditions. For fully exposed areas, it is advisable to use a 19mm thick shiplap, providing better protection against moisture and weathering.

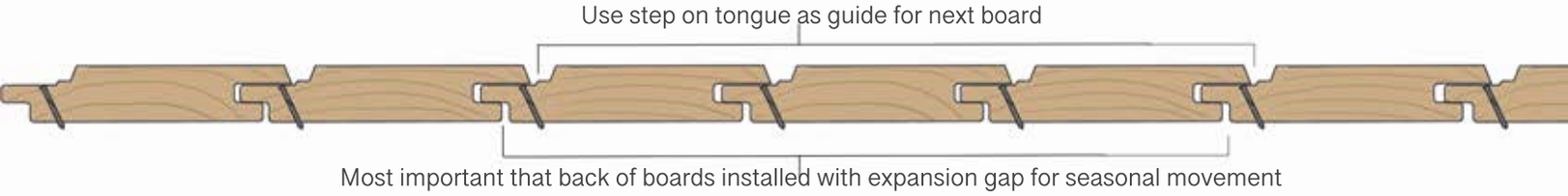
4.3 FIXING

Lining boards can be fixed with either a small head 50mm long (3.5mm) counter sunk stainless steel self-drilling wood screw, or glued and gun nailed into position. Care must be taken to avoid splitting of the tongue.

If being used externally on a garage door, it is recommended to use a 3.9mm x 28mm bi-metal stainless steel (304 grade) self-drilling screw.

In all cases, the fixings should be installed on a slight angle so that they sit flush on the tongue allowing the over lapping board to lock into place against the 5mm shadow line.

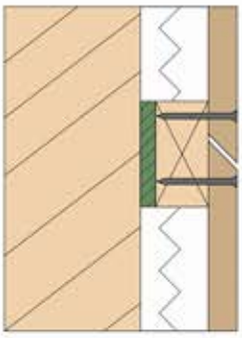
MOST IMPORTANT: There is a slightly raised step on the tongue which will act as a guide to correctly position the boards side by side. The neighbouring board should not be pushed beyond this point as the step forms part of the 5mm shadow line and acts as an expansion joint. You may find it helpful to use a 5mm packer to push the adjacent board up against to give you the correct 5mm shadow line.



4.4 WEATHERPROOFING AND FLASHING

With the lining boards generally being positioned under cover they usually do not require any additional weatherproofing or flashing except in the case of lining used on a protected garage door.

4.5 JOINS

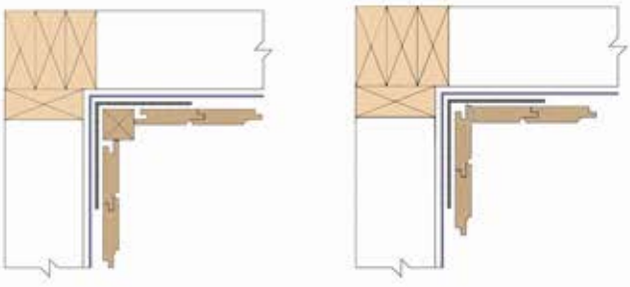


A recommended end vertical joint or connection to make is a mitred cut which should then be fixed over a batten. A commercial flexible construction adhesive such as (SikaBond) can be applied to facilitate a good tight seal and any excess glue squeezed out should be allowed to dry before peeling off so as to avoid smudging into wood grains.

Alternatively you can order set lengths (subject to availability) at a higher surcharge to avoid joins.

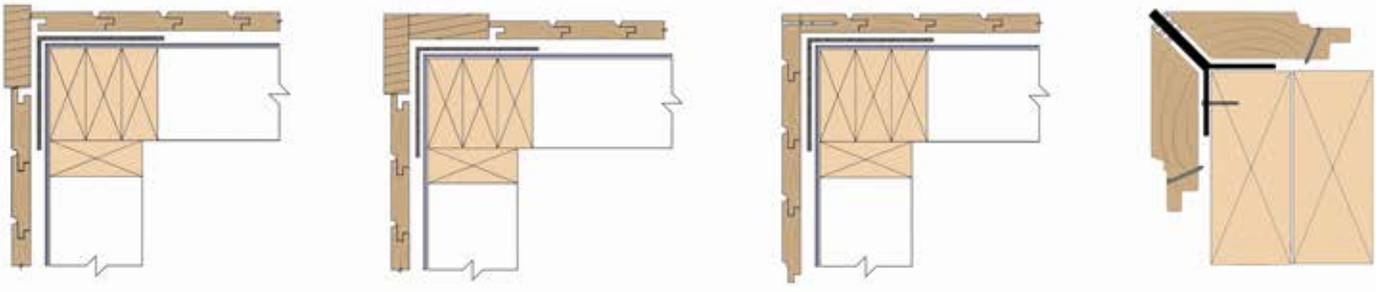
4.6 CORNER DETAILS

Typical internal corner details



There are a number of ways to finish off internal and external corners. If the lining is being installed vertically you may rip boards to butt into each other or alternatively use timber stops, a suitable Y flashing or trim for a nice clean finish. Some important factors are to ensure minimal moisture can get in the joins, use a suitable flexible sealant and flashing behind the boards. For more information visit our website construction drawings.

Typical external corner details



Tha Constructions

Figr Architects

Beach house constructions

5.0 FINISHING & COATING

5.1 TIMBER OILING AND STAINING

When selecting internal finishes for lining, it is important to strike a balance between aesthetics and durability. Using the lining in protected areas or internally usually means the weather will not break down the coating and need reapplying in future like exterior applications.

There are a variety of timber treatments, stains and coatings available and the manufactures guidelines should always be followed. If using glue during installation, the backs of the board should not be oiled to allow for a strong adhesive bond.

As in most applications the internal lining board is fully protected from weather, the possibilities of what look you can achieve are endless. You could leave the timber raw for a neutral look or you may decide to use tinted stains/oils and change the colour of the timber to your desired finish. It is important to think about the wear on walls that may have objects or people brushing up against it.

For protected external (garage door) applications Radial Timber recommends a high quality oil or water based penetrating sealer which is equipped to handle the Australian elements and movement of timber caused by moisture variations. We don't recommend a film coating as this will generally not breathe adequately and be susceptible to peeling down the track.

Radial Timber can offer a cost-effective in-house tinted oil, clear sealer or various coloured options prior to despatch.

Figure Ground Architects

Solomon Troup Architects

Bkk Architects
Grenville Architecture Construction
Photography; Scott Burrows

6.0 TIMBER CARE & ADVICE

6.1 MAINTENANCE OF FINISHES

The long-term performance of a timber finish is dependent on regular and effective maintenance. The frequency of maintenance will depend on the type of finish and the degree of exposure to the weather. Recoating and any further preparations should be carried out in accordance with the coating manufacturer's specifications.

6.2 SEASONING AND WEATHERING

Some minor surface checking may occur when the timber is exposed to the weather but these non-structural cracks are typical in most Australian hardwoods (NOTE: unprotected west facing walls may be subject to extreme temperature changes and therefore, timber is more likely to check or move). On these walls it's best to try and avoid any joins on the random length boards or consider another product

All exposed, externally fixed cladding will tend to fade to a silver-grey colour if left uncoated. The degree of greying will vary depending on the amount of exposure to sun, wind and rain.

6.3 TANNIN LEACHING FROM TIMBER

It is normal for hardwoods to leach red/brown tannins during heavy rain periods.
Tannins tend to be less prominent in lighter species but it is advisable to cover or protect walls and paving until all tannins have fully leached (can vary depending on rainfall but will generally continue for up to 6 months). If tannin staining occurs on other surfaces it can generally be cleaned back with a diluted bleach/water mix or mild oxalic acid wash.

6.4 IRON STAINING AND CLEANING

Iron stain, is an unsightly blue, black or grey discolouration and can occur on nearly all woods. The discolouration is caused by a chemical reaction between tannins in the wood and iron in steel products. Problems have been associated with traces of iron left on wood from cutting or slicing, or more commonly iron dust from metalworking. This often occurs after rain or dew, when water
enables the tannins and iron to meet and react. Its very important that no metal work or grinding happens near timber as the filings will cause this contamination. The majority of this staining can be cleaned off by washing with a 5% solution of oxalic acid. This should revert the timber back to its near original clean timber appearance. (Radial Timber can supply oxalic acid).

7.0 ADDITIONAL INFORMATION

7.1 ADDITIONAL INFORMATION

Additional information such as specs, blogs , videos and full construction drawings can be found on our website at **www.radialtimbers.com.au** You can also call the office on **(03) 9768 2100** or email **sales@radialtimbers.com.au** anytime to discuss any installation queries.

Solomon Troup Architects