Altereco Design

RADIAL INSTALLATION GUIDE

TONGUE AND GROOVE CLADDING
V-JOINT SHIPLAP CLADDING

MARCH 2024

radialtimber
USING WOOD WISELY

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

Architect: Nathan Carr
Construction: Ryzah Homes
Photography: Realtywriters

Radial Timber Tongue and Groove and Vjoint Shiplap Cladding both provide a stylish alternative to traditional softwood or manufactured sheet cladding systems. The shiplap cladding is created by profiling back sawn boards that interlock or overlap to produce a continuous vertical, horizontal or diagonal cladding system with a modern 5mm shadow line, adding depth and texture to the overall appearance of the cladding.

Radial cladding boards are sawn from selected naturally durable regrowth or plantation grown Australian hardwoods all of which have a Class 1 or 2 durability rating, which meets the required durability standard for external apllications. We generally stock a select few hardwood timber species with a BAL rating of BAL 29 which is in the highest rating for natural hardwood timber and is recommended for use in high rated bushfire prone areas.

The shiplap is supplied in two grades, standard and better or discounted rustic (higher feature) grade, both of which are class 1 or 2 durability rated hardwoods and meet the required durability standard in Australia for external facades.

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

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 cladding 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.

Designer: Dot and Pop
Construction: New Living Constructions
Photography: Simon Shiff Says

2.2 MOISTURE CONTROL

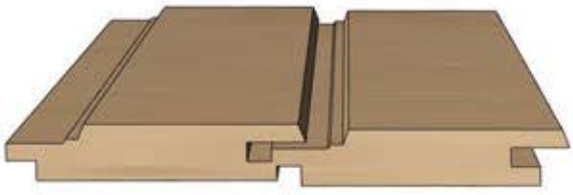
Radial shiplap cladding is kiln dried to 12-14% and will exhibit some seasonal movement (especially on the west side of a building). Timber boards will naturally experiance slight changes in the moisture content once installed, which will be most prevalent in the first 6-12 months. These changes are a result of daily humidity changes which are often small and of no consequence if the cladding is installed correctly.

Avoid installation on inclement days of weather and protect both the timber and cavities from water exposure at all times, this will ensure the preformance and longevity of the external cladding.
It is also advisable to have boards pre oiled on all sides before installation to help regulate the moisture and allow boards to acclimatise.

3.0 PROFILES

Architect: Bespoke Architects
Construction: SOU'east Homes
Photography: LuciLuci

3.1 TONGUE AND GROOVE (CONCEALED FIX PROFILE)



38x19mm (Overall width 50mm)

70x19mm (Overall width 85mm)

90x19mm (Overall width 105mm)

110x19mm (Overall width 125mm)

Grooved 110x19mm (Overall width 125mm)

120x19mm (Overall width 135mm)

Radial Timber Tongue and Groove Cladding is supplied as a series of kiln dried & dressed or fine sawn textured 19mm thick plain end profiles which can be concealed fixed (Depending on cover size).

Available in a range cover widths of 38, 70, 90, 110, and 120mm. We recommend the 110mm and 120mm covers to be face fixed due to the width of board.

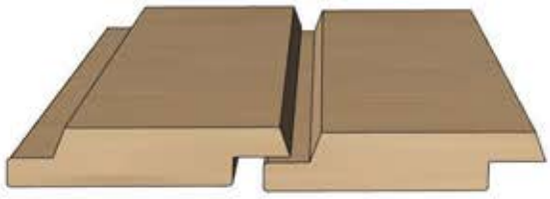
The majority of the shiplap is sold in random lengths (1.0-6.0m) but certain set lengths are available (subject to availability) usually ranging between 3-3.6m (these are sold at a higher surcharge).

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.
Radial Timber can supply these on request.

Architect: Green Sheep Collective
Construction: Elyte Focus
Photography: Emma Cross

3.2 V-JOINT (FACE FIX ONLY PROFILE)



70x19mm (Overall width 85mm)

90x19mm (Overall width 105mm)

Radial Timber V-Joint Shiplap Cladding is supplied as a series of kiln dried & dressed 19mm thick overlapping profiles which must be fixed through the face.

Available in two cover widths of 70 & 90mm. Both require two stainless steel screws through the face of the board.

The majority of the shiplap is sold in random lengths (1.0-6.0m) but certain set lengths are available (subject to availability) usually ranging between 3-3.6m (these are 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
4.5mm-5.5mm x 50mm Stainless steel.
Radial Timber can supply these on request.

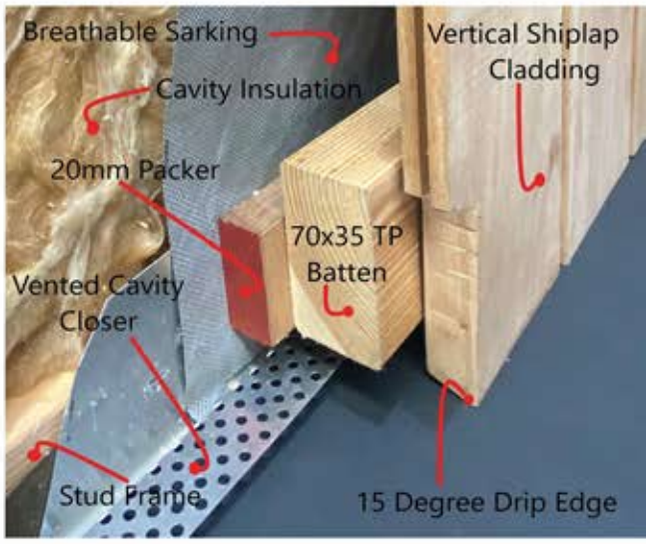
4.0 INSTALLATION

4.1 SARKING

Good quality vapour permeable fabric wall wraps or sarking are additional layers of protection that shield the timber frame from water-related weather damage such as condensation, mould or rot. It also allows moisture to escape from the inside of the structure. Selecting the right wall wrap is an important decision.

4.2 LAYOUT

Preferably tongue and grooved cladding boards should be installed vertically allowing the best runoff for water, The V-joint profile is a better option for horizontal use. It is recommended that boards are fixed to 70x35 treated pine battens (or similar) at spacings of MAX 600mm centers for 38/70/90mm cover boards and MAX 450mm centers for 110/120mm cover boards. To enhance thermal performance and dissipate any moisture between segments, it is advised to use a spacer or packer behind the batten, rather than fixing it directly to the moisture vapour barrier clad wall studs. This allows for some unrestricted airflow.

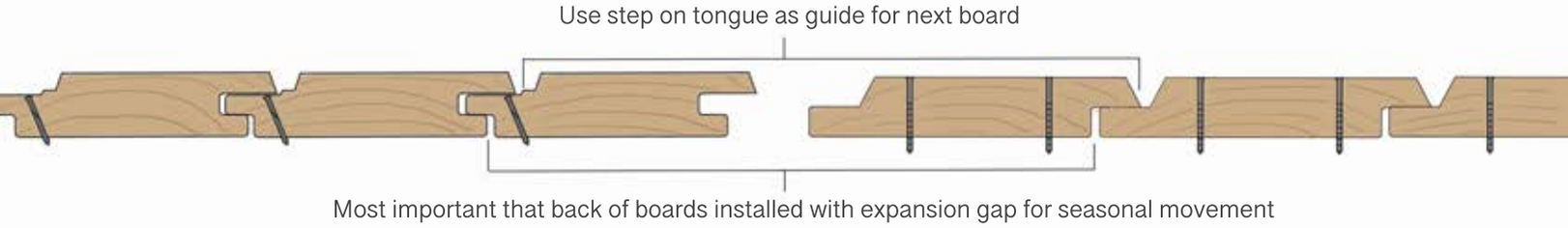


4.3 FIXING

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

· All cladding should be fixed with counter sunk stainless steel screws (304 grade)
· Tongue & groove concealed fix boards should be fixed with a small head 3.5-4.5mm x 50mm counter sunk stainless steel, self-drilling screw.
· Due to the size of the 110 and 120mm wide boards, it is advised at least one face screw should be used in addition to the concealed fixing or use two face fixings with a 3.5-5.5mm x 50mm stainless steel screw.
· When fixing the tongue & groove profile, the screws should be installed on a slight angle so that they sit flush on the tongue, allowing the overlapping board to lock into place against the 5mm shadow line (Do not install next board past this guide line).
· When installing cladding vertically, make sure that the tongue is installed in the direction of prevailing weather.
· Horizontal installation requires the tongue to be facing upwards.
· The V-Joint profile is an overlapping board which should have two 5.5 x 50mm stainless steel screws through the face of the board.
· There is a slightly raised step on the tongue of the cladding which acts as a guide to correctly position the boards side by side. The adjacent board should not be pushed beyond this point, as the step forms part of the 5mm shadow line and acts as an expansion joint to allow for natural movement.
· 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.
· If fixing to steel, ensure that you use the correct fixings with a wing tipped screw.

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

Weatherproofing and flashing are important considerations when installing cladding that will be exposed to the elements. Some key points to keep in mind to ensure the longevity and durability of the timber:

· **Expansion gaps:** Boards that are exposed to the sun and rain (north-northwest elevation) will shrink and swell more than semi-protected boards. It is important to leave recommended expansion gaps to allow for the movement. Additionally, avoid using butt joins and provide some weather protection with eaves or verandas where possible. All cuts/joins should be sealed to avoid moisture intake.

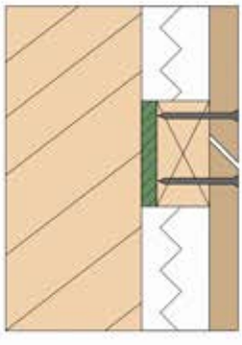
· **Water protection:** Make sure that rain or water cannot get behind the boards during installation. Wall cavities should be protected at all times.

· **Flashing:** Adequate flashing should be installed to standard, around windows or other openings to allow for proper drainage away from timber. This helps to prevent water damage and rot.

· **Ground contact:** The bottom end of boards should not come into contact with the ground. Leave at least a 100-150mm gap to provide ventilation and avoid decay and staining from ground moisture.

· **Vertical installation:** If the shiplap is run vertically, it is advised to undercut the bottom of the boards to form a drip edge. A suitable angled flashing or vented cavity closer should also be installed to ensure proper drainage.

4.5 JOINS

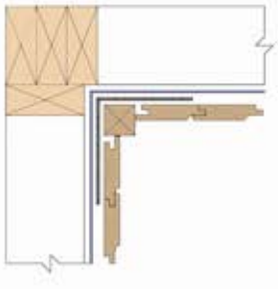


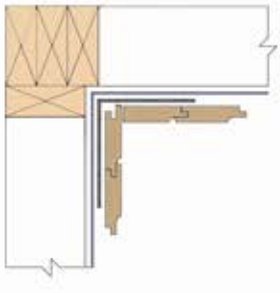
A recommended end vertical joint or connection to make is a mitred cut which should then be fixed over a batten. A commercial flexible construction adhesive such as (SikaBond) can be applied to facilitate a good tight seal and any excess glue squeezed out should be allowed to dry before peeling off so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

Alternatively we can provide the material end matched which may require a longer lead time/cost but it is a good option for longer length runs or horizontal installation.

4.6 CORNER DETAILS

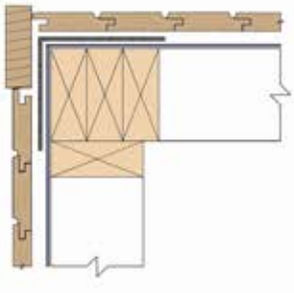
Typical internal corner details

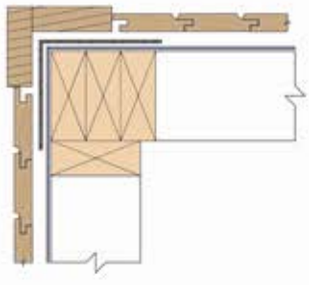


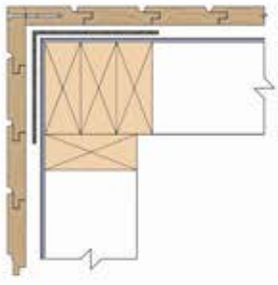


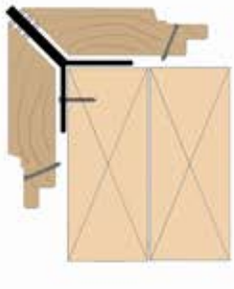
There are a number of ways to finish off internal and external corners. If the cladding is being installed vertically you may rip boards to butt into each other or alternatively use timber stops, a suitable Y flashing or trim for a nice clean finish. Some important factors are to ensure minimal moisture 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









5.0 FINISHING & COATING

5.1 TIMBER OILING AND STAINING

When selecting external finishes for cladding, decking or vertical screening, it's important to strike a balance between aesthetics and durability. Hardwood timbers are best provided with some weather protection while acclimatising to local conditions and to repel and control moisture. This will minimise splitting, cracking and checking that naturally occurs in timber.

There are a variety of timber treatments, stains and coatings available and these should usually be applied on all sides of the board prior to fixing into position especially in the case of interlocking or overlapping boards such as shiplap.

Radial Timber recommends the application of 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.

Some points to consider:

·Care must be taken to well coat any end grain to minimise water absorption or loss.
·Narrower boards reduce the amount of stress placed on the coating system.
·Coatings on timber exposed to the north and west will deteriorate more rapidly than on south facing surfaces or in shaded areas.
·Darker stains may cause more movement due to heat.
·Timber must be sufficiently dry when coated so avoid periods of inclement weather.
·Timber partially sheltered by overhanging eaves will weather at a different rate to more exposed timber.

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

Designer: Dot and Pop
Construction: New Living Constructions
Photography: Simon Shiff Says

Architect: Kennedy Nolan
Construction: Gene Laity
Photography: Derek Swalwell

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.

Beach House Contructions