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# **RADIAL** INSTALLATION GUIDE **DECKING**

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# 1.0 INTRODUCTION

Radial Timber Decking can transform any outdoor living area into a beautiful and functional space. Radial Decking is very versatile and can provide a stylish solution to suit all styles and applications. Often used in entertainment areas of dwellings or as a feature in apartments, public projects, visitor centres and holiday homes.

Radial Decking is available in our unique bevelled edge and boardwalk profiles that feature smooth dressed or sawn face finishes.

Radial Timber decking 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 applications. 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 decking can be 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 decking.





# 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 currently 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 environmental endeavours include our new Bioenergy and LVL peeling plant both due to be commissioned in 2024/25.





## 2.0 PRE-PLANNING

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### 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 decking 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.





## 2.2 MOISTURE CONTROL

Radial decking boards are kiln dried to 12-14% and will exhibit some seasonal movement (especially on the west side of a building). Timber boards will naturally experience 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 decking is installed correctly.

Avoid installation on inclement days of weather and protect the timber from water exposure at all times, this will ensure the performance and longevity of the timber decking. 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



BKK Architects

## 3.1 DECKING PROFILES

Dressed kiln dried bevelled edged decking

55x19mm BE



80x19mm BE



Dressed kiln dried boardwalk decking

130 x 32mm Boardwalk (subject to availability)



Radial Timber decking is supplied in kiln dried in either 80x19mm and 55x19mm bevelled edge profile or a 130x32mm square edged, pencil round boardwalk profile. All decking profiles are dressed with the option of a fine sawn face available in the bevelled profiles (subject to availability).

Decking boards are available either in random (1.0m-6.0m average length 3.0m) or common set lengths such as 1.2, 1.5, 1.8, 2.1, 2.4 or 3.0m. These set lengths are not precision docked and will be slightly longer. All lengths are subject to availability.

(A surcharge and additional lead times will be applicable to all set lengths orders).

A cost effective, kiln dried, discounted rustic grade timber with higher feature is also available. We can also supply a sawn face decking with various coloured options (subject to availability)

Recommended screw size for the 55x19mm and 80x19mm  
3.5mm (7g) - 5.5mm (10g) x 50mm Stainless steel.



Recommended screw size for the 130x32mm boardwalk  
12-14g x 60-70mm Bugle batten screws.

# 4.0 INSTALLATION

## 4.2 LAYOUT AND FIXING

The information provided outlines the recommended methods for preparing your deck for installation. By following these guidelines and best practices, you can help to ensure a more durable and long-lasting deck. Remember to follow any local building codes and regulations regarding deck construction, as requirements may vary depending on your location.

**Drainage:** Never allow water to pool under or on the deck. It is best to ensure drainage is dealt with before installing the sub floor. Proper drainage or a fall so that water can escape is essential. It is a preference not to use Radial decking around a pool unless it has clearance from the waters edge, its very well ventilated with good drainage and has a generous gap spacing between boards. Decking around pools will not perform as well and this should be considered in the design stage.

**Ventilation / enclosing the sides:** When constructing a deck, proper ventilation is important to ensure it's durability and performance. Adequate airflow underneath the deck helps to prevent moisture build up which can lead to rot, decay and movement and cupping of boards. Make sure your deck has good ventilation underneath with at least partially open sides ensuring adequate airflow. This will need to be taken into account if you are considering the use of a decorative skirting around the outside. Decks should be a minimum 400mm off the ground to ensure optimal ventilation and performance. If the deck is lower than 400mm, the performance cannot be guaranteed, however, larger gaps may help in these applications.

**Joist spacing and protection:** Standard joist spacing of no more than 450mm centres is recommended. Consider the use of a weatherproof strip on top of the joists which will act as a barrier between the deck and the joists, protecting the boards from moisture ingress and assist in preventing decay. Alternatively, you could use a brush on application of timber preserver.

**Gap spacing:** Keep an appropriate gap spacing between the boards to allow for movement during wet weather. Wider boards will tend to experience more movement than narrower boards. The amount of movement will vary depending on the width of the board, the species of timber and local climatic conditions. **Below are recommended minimum spacings:-**

55 x 19 – 5mm gap between board edges

80 x 19 – 6-8mm gap allowance

130 x 32 – 8-10mm gap allowance

**Fixing:** Radial decking boards should be laid with the wide face upwards. All decking should be pre-drilled and fixed with a Stainless Steel screw, do not use nails.

55 x 19 boards require one 3.5-5.5mm x 50mm Stainless Steel screw per board per joist

80 x 19 boards require two 3.5-5.5mm x 50mm Stainless Steel screw per board per joist

130 x 32 boardwalk require two Stainless Steel bugle batten screws at 12-14g x 60-70mm

Care should be taken close to the ends to avoid splitting. When installing with multiple screws per board, per joist it is recommended to offset the screws or drive them at opposing angles to help distribute the load and reduce the risk of compromising the joists.

**BAL rated areas:** If you are in a BAL rated area, there may be restrictions on the gap spacing you can have. If the gap recommendations can't be followed, an alternative product or the use of ember guard mesh underneath boards may be an option. You are best to check with local building authorities. Do not install decking under the minimal gap recommendations outlined above.

**Coating:** Pre-oiling timber prior to installation on all four sides is recommended as it helps to create a protective barrier. All end cuts should be sealed.

**Maintenance:** Decks require ongoing maintenance to ensure longevity. Regular maintenance helps to protect the deck from damage caused by weather, wear and tear and ageing.

By addressing drainage concerns, maintaining appropriate gap spacing and ensuring good ventilation, you can help minimise water related issues and extend the longevity of your deck.



# 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.

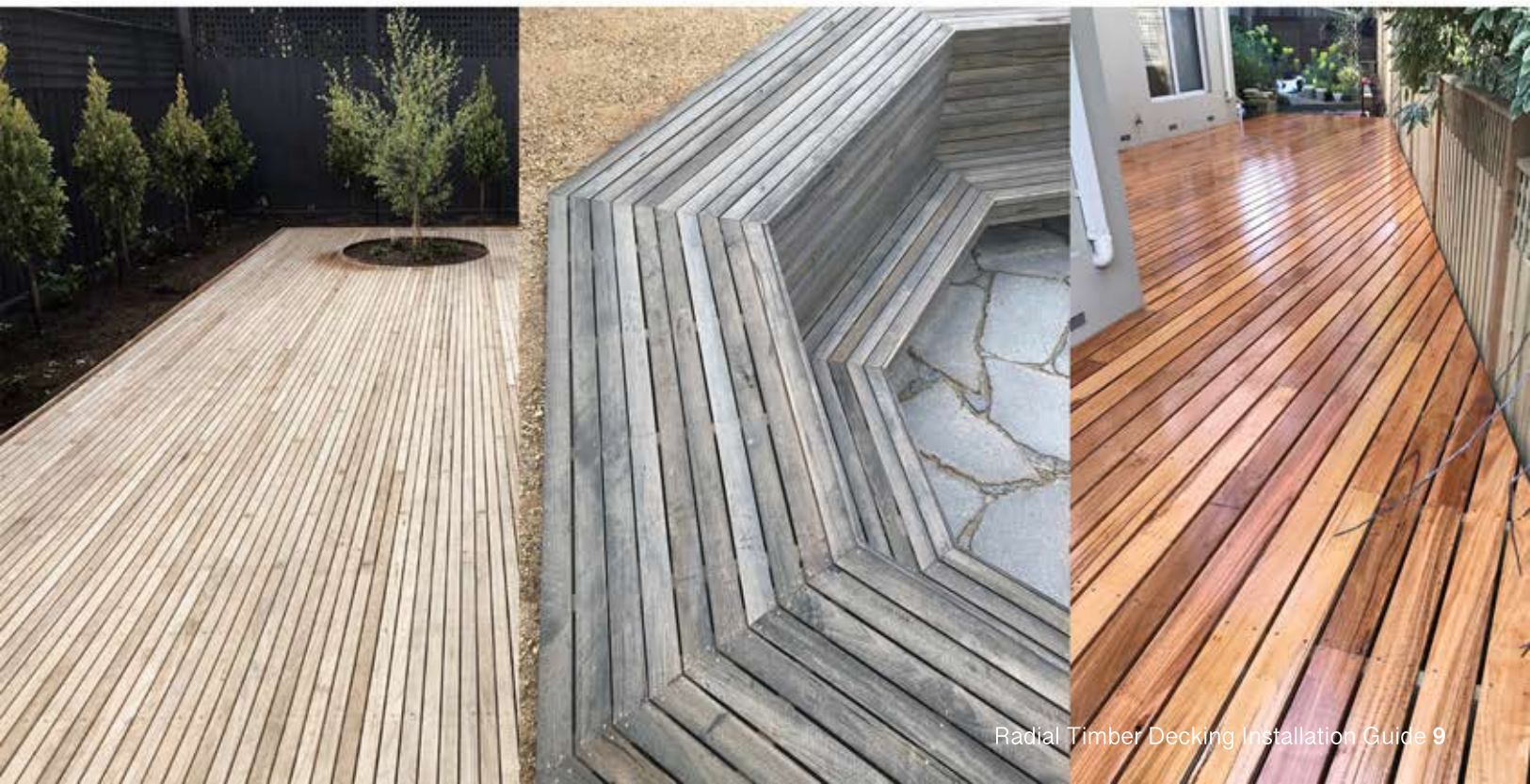
There are a variety of timber treatments, stains and coatings available and these should usually be applied on all sides of the board prior to fixing into position especially in the case of interlocking or overlapping boards such as shiplap.

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.





# 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](http://www.radialtimbers.com.au). You can also call the office on (03) 9768 2100 or email [sales@radialtimbers.com.au](mailto:sales@radialtimbers.com.au) anytime to discuss any installation queries.