



radial timber

USING WOOD WISELY



External Cladding Tongue And Groove Shiplap

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1.0 PRODUCT

Radial tongue and groove shiplap boards provide a stylish and modern alternative to traditional softwood or manufactured sheet cladding systems. The shiplap cladding is profiled from back sawn boards that interlock to produce a continuous vertical or horizontal cladding system.

Shiplap cladding has been used as a feature on: houses, commercial projects, apartments, high end fence finishes, visitor centres, lifesaving clubs, holiday homes & sheds. For images of Shiplap cladding visit:<http://radialtimbers.com.au/gallery/shiplap/>

2.0 SPECIFICATIONS

2.1. Species

Shiplap cladding boards are generally sawn from naturally durable regrowth hardwoods such as Silvertop (Eucalyptus Sieberi) or sometimes Yellow Stringybark (Eucalyptus Muellerae) both of which are Class 2 durability.

NOTE: Silvertop is one of the approved species for use in “high fire danger” areas by Building Control Comm. Practice Note No. 46 (Dec. 2001) and AS3959 – Construction of buildings in bushfire-prone areas and has a BAL 29 exposure rating. Yellow Stringy Bark has a Bal 19 exposure rating.

2.2. Grade & Moisture Content

All timber is supplied as standard and better grade (not select) and dried to maximum moisture content of 14%. Small tight knots, gum veins, splits, ambrosia and other marks are acceptable features that sometimes occur in boards. Timber is graded in accordance with the Australian Standard AS 2796.2-2006 Timber Hardwood Sawn and Milled Products / Part 2 grade description. Also see board examples of board variations on our website.

The moisture content of the timber depends on the relative humidity of the air and also its temperature, which is influenced by the colour of the surface coating. Dark coloured surface coatings absorb more solar energy, resulting in higher temperatures and lower moisture content. If the moisture contents are too low at the time of installation, problems can occur with rebated board profiles if sufficient expansion gaps are not left between the boards.

2.3. Durability

The natural durability rating of a timber species is a rating of the timber's natural resistance to attack by wood destroying fungi and wood destroying insects. The natural durability rating applies only to the heartwood of a timber species and the Silvertop has a rating of Class 2 with approx above ground durability of 25 year plus.

2.4. Sketch/Sections

Virtual samples and auto cad files of profiles are available on the Radial website <http://radialtimbers.com.au/products/secret-fixed-shiplap/>



Figure 1
(Secret Fixed Shiplap boards in cross section)

2.5. Profile

Tongue And Groove Shiplap cladding is supplied as a series of dressed 19mm thick boards (see Figure 1 above) available in four cover widths of 38, 70, 90, 110mm

The 38, 70 and 90mm Radial Shiplap boards interlock and are designed so it can have a **concealed screw fixing** (see figure 2).

The 110mm Shiplap boards interlock but must be **face fixed**.

2.6. Lengths & Availability

Boards are generally supplied in random lengths of between 1.2 and 5.4m but some shorter lengths may also be

included (av. lengths approx. 4.0m). End matching can be done for all cladding boards but please inquire about this as this can occur longer lead times. On occasions set length boards between 3.0 to 3.9m are available but a surcharge is applicable.

3.0 FINISHING

Native timbers should be offered some weather protection while acclimatising to local conditions and to repel and control moisture, hence minimises splitting, cracking and checking that occurs in timber.

3.1 Timber Oiling or Staining

Radial Timber recommends the application of an oil based sealer or quality penetrating timber finish. Timber oiling, coatings or staining will not stop the weathering process, but will slow it down and acts as a sealer and assists in slowing down moisture loss or gain.

There are a variety of timber treatments, stains and coatings available and most should be applied prior to fixing. Care must be taken to well coat any end grain to minimise water absorption or loss. We don't recommend a film coating as this will generally not be breathable and will eventually peel and bubble due to UV and will trap in moisture.

When a true un-pigmented clear timber sealer is required and the owner is okay with allowing the timber to grey off naturally differential weathering between protected and exposed areas can produce colour variations. This can result in marked variations in appearance. (<http://preschem.com/architects-products/radial-timber-sealer.html>)

3.2 Preventative Care To End Grains

All end joints of boards and end grain must be sealed to prevent moisture entry as the end grain is far more absorbent than the face grain. The end grain must be well sealed to prevent rapid moisture uptake and drying out which can cause splitting and movement of the boards. Critical end grain locations are at mitred corners (not recommended for exposed locations) or splayed joints and the top and bottom of vertical boards. Horizontally butted board into corner stops are also an area that needs special attention.

Where sealants are used with the timber cladding, they must be accessible for regular inspection because their durability is less than the cladding. Unnoticed leaks from sealant failure could result in hidden damage to the structure.

3.3 Finishing Points To Consider

Some of the points to consider about the coating selection and durability are: 1) Lighter coloured paint finishes generally last better. 2) Narrower boards reduce the amount of stress placed on the coating system. 3) Coatings on timber exposed to the north and west will deteriorate more rapidly than on south facing surfaces or in shaded areas. 4) Timber must be sufficiently dry when coated. 5) Timber partially sheltered by overhanging eaves will weather at a different rate to more exposed timber.

3.4 Recommended Cleaning

Iron stain, is an unsightly blue-black or grey discoloration and can occur on nearly all woods. The discoloration is caused by a chemical reaction between extractives in the wood and iron in steel products, such as nails, screws, and other fasteners and appendages. This often occurs the first morning after rain or dew, when water enables the extractives and iron to meet and react.

Problems have been associated with traces of iron left on wood from cutting or slicing; cleaning the surface with steel wool, wire brushes. Iron dust from metalworking and even plant fertilizers can be sources of iron. To clean off the majority of all staining it's best to clean all boards down with a 5% solution of oxalic acid after installation to obtain a clear timber surface (Radial Timber can supply oxalic acid).

4.0 PERFORMANCE

4.1 Maintenance

The long term performance of cladding 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 finish manufacturer's specifications.

4.2 Seasoning & 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 is best not to have any horizontal or vertical joints on the random length boards).

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. The timber used in this above ground product has natural durability and when used in conjunction with good building practices, should generally not require additional treatment against decay.

4.3 Timber Leaching

It is also normal for hardwoods to leach red/brown extractives (tannins) during heavy rain periods. Extractives tend to be less prominent in lighter species but it is advisable to cover or protect walls and paving until all extractives have leached (can vary depending on rainfall but will generally continue for up to 6 months). The tannin staining can be cleaned with a diluted bleach/water mix.

5.0 STORAGE & INSTALLATION OF TOUNGE & GROOVE SHIPLAP

5.1 Storage

Packs should be stored up off the ground on bearers and under cover or protected with an additional tarp to prevent swelling. When the cladding is delivered wrapped in plastic, it is important to check that the wrapping is not damaged and likely to allow water to be trapped within the stack. If wetting does occur, separate the timber with strips between each

layer. Place in a well-ventilated area under cover and allow a minimum of 48 hours for timber to dry before fixing. Radial Timber will not be held responsible for incorrect storing of the timber.

5.2 Setting up

Shiplap cladding is typically installed in a regular pattern with the tongues and grooves of adjacent boards fitted together (see Figure1). **Seasoned Shiplap boards will exhibit minimal shrinkage and will actually swell slightly in wetter regions or exposed areas (especially the west side of a building) making it essential to ensure boards have an approved gap to allow this movement.** Tongue & Groove shiplap has a slightly raised shadow line which will act as a guide. The neighbouring board should not be pushed beyond this point. Noggings, fixing battens or studs should be spaced at max. 600mm centres. If shiplap is run vertically a fixing batten may make installation easier.

Try to have the tongues of the shiplap facing into the direction of the prevailing winds as this will minimise moisture pressure being swept sideways during high winds into the rebated board

5.3 Installation & Layout

Preferably layout of the boards should be in a vertical position for better water runoff especially in very exposed locations such as near the coast. Boards can be fixed directly to breathable moisture vapour barrier clad walls however a better option is to use fixing battens on the studs. Use 75x35 treated pine batten fixed directly to the moisture vapour barrier clad stud walls, this also allows for good ventilation between the back of the boards and the moisture vapour barrier. It is also advisable to use a plastic horseshoe packing shim under the batten to alleviate and ventilate any build up between moisture vapour barrier and timber cladding (refer to technical drawings on our shiplap page on the website). Allowances must be made for the extra width cavity wall when it comes to windows, doorways etc.

If fixed horizontally, the tongues of each Shiplap board should face up to prevent water from being trapped inside joints but the preferred recommendation is for this secret shiplap to be run vertically. On long runs, boards may have to be butt or splayed joined over battens with the use of a flexible glue/sealer on the joined ends. A better option is to use end matched boards, alternatively walls can be broken up into smaller panels by inserting a flashing or vertical/horizontal timber stops. Special Aluminium or timber stop profiles can also be used on external and internal corners and these are available from radial timber.

5.4 Board Spacing & Weatherproofing

Boards must be installed with a 5mm gap between them which is indicated by the shadow line which is a very slight raised section on the tongue (All boards have a 5mm gap). This spacing will allow for movement of the timber as ambient humidity and conditions change.

Boards exposed to the sun and rain (north – northwest elevation) will shrink and swell more than semi protected boards. Recommended expansion gaps are critical on these exposed elevations as is eliminating any butt joints (end matched options might be a better option to consider) and where possible provide some weather protection with eaves, veranda, or similar.

Do not allow rain or water to get behind boards during installation. Wall cavity must be protected at all times. It's important that all flashing around windows or other openings are adequately installed to allow for proper drainage away from the timber (refer to diagrams). If the shiplap is run vertically at the bottom of the boards make sure the boards are undercut to form a drip edge or a suitable angled flashing is installed.

Care and attention should also be taken to avoid pooling of water when fixing other structures such as pergolas to the cladding as well.

5.5 Fixing Recommendations

38, 70 & 90mm shiplap boards can be fixed with small headed 50mm long 7 gauge (3.8mm) counter sunk stainless steel (304, A2 or 316 grade) screws and the wider 110 shiplap boards require a face fix only, standard 10 gauge (4.8mm) counter sunk decking screw as these don't degrade like other metals. Care should be taken close to ends by predrilling to avoid splitting. (Radial can supply these self-countersinking stainless steel screws fixings). The screws 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 shadow line. Holes can either be predrilled or self-drilling screws can be used into pine battens for the 38, 70 & 90 boards. If using the wider 110mm board, two 10 gauge screws are needed through the face of the board. Predrilling will need to occur for the wider 110 board and the hardwood battens.

