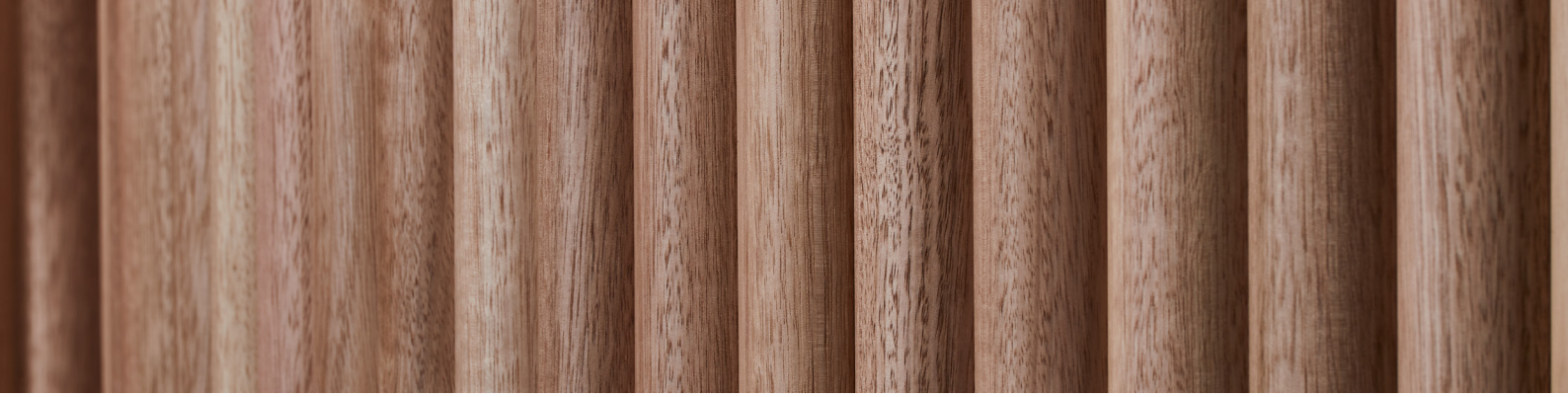
easycraft®

INSTALLATION GUIDE

Contours Timber Lining Boards



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1. Timber

1.1 Precautions – Critical Information

Timber is a natural material that will adjust to the installed environment's moisture conditions.

In persistent moist conditions, for example, tropical/sub-tropical zones or indoor spaces with high amounts of moisture, timber will absorb moisture from the air, which will swell the timber. Conversely, the timber will shrink during drier times with low humidity, for example, in air-conditioned apartments or offices.

Contours timber lining boards feature a tongue and groove system for easy installation. It is critical that adhesive is not placed between the tongue and groove as this area is critical to allow for any timber movement once installed. Failure to adhere to this advice will result in the cracking of the timber post installation.

Colour variations and features are typically found within the same timber species and are what makes timber so appealing. The same species can be grown in a variety of locations, which will impact the colour of the timber. As a result, colour consistency is not a realistic expectation. It is important these natural characteristics are considered when creating design applications.

1.2 Benefits Of Using Timber

- Fights climate change by reducing new carbon emissions
- Stores carbon as trees grow, lowering atmospheric carbon
- Supports health and wellbeing – timber feels good to be around
- Requires less energy to produce and process
- Certified timber is renewable – trees regrow
- Durable when the right timber is selected
- Structurally strong – excellent strength-to-weight ratio
- Naturally insulating
- Quick and efficient to build with
- Naturally beautiful

1.3 Benefits Of Using Timber in the Contours Range

Timber used in the Contours range offers a number of benefits, including;

- Graded to meet Australian Standards
- Certified: FSC® and PEFC™ certified, meaning it has been responsibly harvested and processed in line with sustainable forest management practices, and verified by independent third-party organisations.
- Species variety: Available in Tasmanian Oak, Radiata Pine, Meranti, American Oak and other species, sourced both locally and globally.

1.4 Application Of This Guide

Use this guide for residential and commercial applications. Residential applications are defined in National Construction Code (NCC) Volume 2 as a Class 1 structure (such as detached houses, villas and townhouses) and Class 10 structure (such as garages, sheds and swimming pools) and commercial applications defined by the NCC Volume 1 as Class 2 to 9 structures within deem to satisfy requirements.

2. Design Considerations

Timber lining boards provide a decorative or aesthetic feature to wall and ceilings and also serves to thermally and acoustically insulate a room.

2.1 Aesthetics

Timber lining is chosen for its colour, surface texture, natural timber features and grain pattern.

While the raw timber lining can be painted with a solid coating, the effect of a clear coating or penetrating finish will enhance the natural timber lining.

The application of a suitable surface finish coating will affect the colour and highlight the grain while maintaining the quality of the timber surface and provide the long-term integrity of the timber by protecting against moisture transfer.

The range of naturally good-looking timber lining boards will be enhanced by a water, oil or wax based, clear or tinted coating.

Should your preference be to feature a solid paint colour, a more cost effective option is to use a pre-primed lining board that can be painted in any colour you choose.

2.2 Species and Cutting Style

Both softwood (from cone bearing conifer trees) and hardwood (from flowering angiosperm trees) timbers have varying colour, hardness, density, grain feature and dimensional stability.

The way the timber is cut from the tree log will change the way the timber looks and its stability as a lining.

Quarter-sawn timber features a straight grain while back-sawn timber will highlight the growth rings in an arched or cathedral look.

Lining board profiles moulded from quarter-sawn timber is recommended as it is more stable due to reduced shrinkage across the width when compared to equivalent back-sawn lining.

Figure 1 Quarter and back sawn timber shows the grain through the profile.

Tasmanian Oak is offered as quarter-sawn lining for added stability.

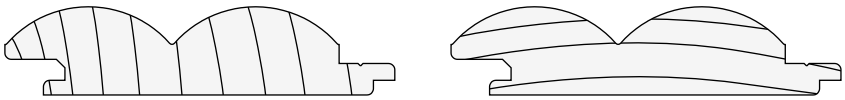


Figure 1 Quarter and back sawn timber shows the grain through the profile.

2.3 Grades

The Contours range is graded to Australian Standards.

Grade levels can range from Select (Hardwood) and Clear (Softwood) with minimal defects, through to High Feature (Hardwood) or Utility (Softwood) which will include a significant range and number of features.

Tasmanian Oak is available in a range of grades from Select grade with minimal feature, to grades which include a higher level of feature such as Utility and High Feature, to accent the lining. The grade of Pine ranges from Clear to Knotty feature lining.

2.4 Profiles

The Contours timber lining board range offers a unique range of shaped profiles which is ideal for residential and commercial projects. The various profiles are designed to be modular, which enables each of the profiles to be interchanged across a wall or ceiling, allowing multiple effects to be created. Additionally, a brad nail alignment line is included on the lining board to speed installation.

The Contours profiles are normally installed vertically or horizontally on a flat surface. When orientated vertically they can be mounted to an internal curved wall down to a 1,000mm radius, with the results varying depending on the profile design.

For tighter curves down to a 300mm radius, matching curved wall beads are available in selected profiles.

Contours Curved Wall Beads are available to complement a number of Contours profiles - Riverine, Wave, Cirque, and Strata. By mounting several of the beads using secret brad nail and/or glue fixing on a 5mm backing lining board, nominated profiles can be used in a variety of curved wall applications. This enables use of these Curved Wall Beads (in a vertical orientation) around an internal or external corner down to a 300mm radius.

Figure 2 Contours Curved Wall Beads.

2.5 Sizes and Lengths

When considering the species, grade and profile of lining board also consider the suitability of the length.

For vertical lining, 2.4m, 2.7m or longer lengths can provide a continuous length to ease and speed up installation.

Random lengths can be a more cost-effective alternative in vertical or horizontal applications yet will require additional joins which will increase the cost of installation.

Shorter, 900mm or 1.2m lengths are available for under bench or bedhead applications.

2.6 Acclimatisation

To minimise the movement of the timber once installed, the lining boards should be installed at, or slightly below, the prevailing relative humidity (equilibrium moisture content - EMC) of the room in which it is to be installed.

Store the lining boards in the space or room condition where they will be installed for as long as practical. This will stabilise the moisture content of the timber to the ambient conditions.

The time required to stabilise the timber depends on the difference between conditions. This will take between 48 hours and at least two weeks. Keep the timber supported and protected from the drying effect of direct sunlight and high drafts during acclimatisation.

If considering installation in a high-risk environment (high or low humidity), an EMC measurement of the room should be taken using a hygrometer. The result will determine if excessive expansion or shrinkage may occur. Readings below 9% or above 13% would be considered extreme.

A moisture meter should take a moisture reading of the timber after the initial acclimatisation period. The result will confirm if the timber has acclimatised to the installation environment.

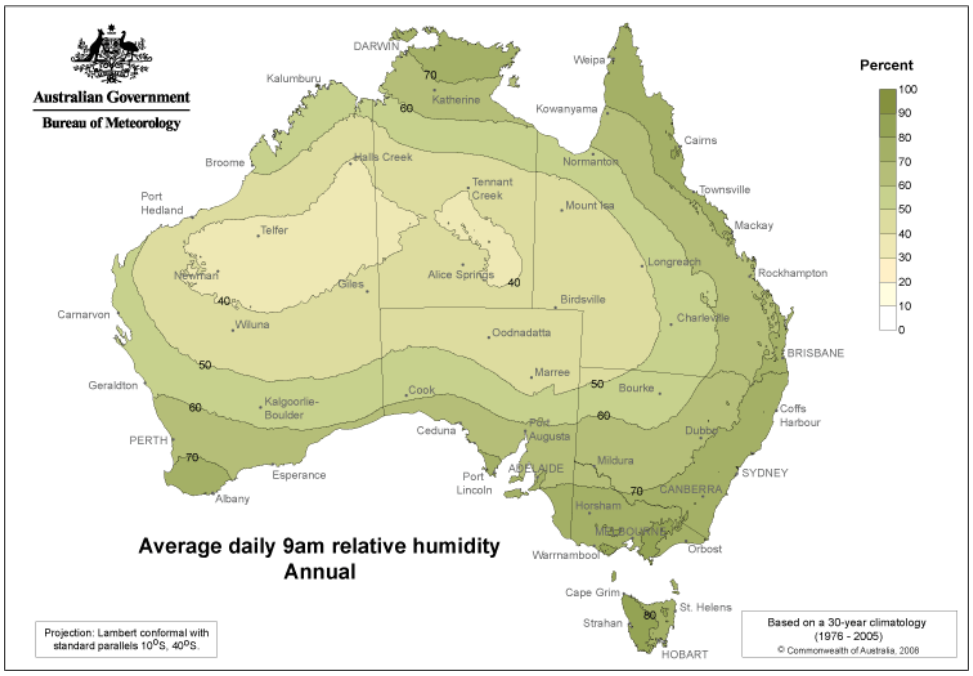


Figure 3 Average relative humidity across Australia.

2.7 Resistance to Termite Attack

Internal applications are less susceptible to termite attack. Yet it is prudent, where there is a concern of termite attack at the site, to use a termite resistant timber species.

Councils have the responsibility to designate areas within their municipal district, in which buildings are likely to be subject to attack by termites. Check with local council to assess the risk.

2.8 Tannin and Resin Bleed

Most hardwood timber species contain varying amounts of water-soluble extractives that provide colour and some natural decay resistance to the timber.

Water-soluble extractives, which includes tannin and resins, may leach to the surface of the timber whenever moisture leaves the timber, even in internal environments. High feature grades are particularly susceptible.

These extractants can pass through and mark surrounding surfaces. Tropical areas and other high humidity environments are particularly susceptible.

Coating timber will reduce bleed from the timber. Yet resin pockets in high feature timber can bleed through surface coatings and may discolour the surrounding area.

Common hardwoods such as spotted gum, tallowwood and ironbark have been known to show surface marking.

Clear grade timber such as Tasmanian Oak Select Grade are less susceptible to bleed.

2.9 Installation Ventilation

The most common cause of cupping movement in timber is moisture held behind the lining. Ensure the space behind the lining is well ventilated to ensure excessive moisture does not occur in the cavity. This is especially critical for ceiling cavities.

2.10 Finishing Systems

Clear polyurethane finishes are the most serviceable for interior applications. However, care is necessary when choosing the finish as some finishes have the potential to bond lining board edges together at the tongue and groove joint. This may result in wide irregular gaps between some lining boards or may cause some lining boards to split. It is highly recommended lining boards are coated before installation as finishes and finish systems can adhere lining boards together.

Oil and wax based finish systems containing a bond breaking sealer are recommended. Pre-finishing is recommended to ensure complete curing of the finish and prevent lining board adhesion.

Oil stains may be used to achieve special colour effects, however, first trial with a number of offcuts to ensure the effect achieved is what is desired. Where a clear finish is used over a stain, it is necessary to check with the manufacturer to ensure the clear finish is compatible with the stain.

Lining boards can 'darken or yellow' if exposed to direct sunlight. Darkening may also occur over a period of years through indirect sunlight which may cause colour variations between various areas.

Finishes should be applied in accordance with the manufacturer's specifications. Check with your coating supplier for specific product information.

2.11 Changes Due to Moisture After Installation

Timber is a natural product that responds to changes in weather conditions. In persistent moist conditions timber will absorb moisture from the air which will swell the timber. Conversely, during drier times when there is low humidity, timber will shrink.

If the moisture content of the lining board when installed is close to the ambient condition at site, the design of the lining board should be able to accommodate this movement.

On larger applications, adequate expansion joints should be included to take up movement. With excessive expansion, 'peaking' may occur.

Exposure to the sun through windows, heat from fireplaces or air-conditioning may cause additional shrinkage and increases in gaps, and if extreme, it may dislodge the lining from the wall. Continual cycling from dry to wet conditions will stress the timber and finishes, which may result in the surface cracking or the coating failing.

Coatings will not stop timber movement due to changes in ambient moisture conditions. Yet a quality coating and application, with appropriate maintenance, will reduce the rate of response and movement of the timber. An initial coating should be applied (before installation) to all surfaces; front, back, edges and especially the end-grain and any opening (protrusions) in the surface. Factory pre-finishing is recommended.

Regular inspection to identify any emerging issues and early treatment such as recoating can minimise significant costs.

2.12 Precautions When Installing in Moisture Effected Areas

Moisture laden air, which can occur in bathrooms and laundries, can adversely affect untreated and inadequately finished timber lining boards.

Contours in any timber species are designed for internal use only. We do not recommend installation in zones where water splash or high moisture levels are present, for example shower recesses or applications where a vessel (bath, basin or tapware) is within 75mm of a wall.

Installation in wet areas must comply with specified requirements according to AS 3740:2021, and NCC Vol 1F2P2 or Vol 2 S26C5. It is important that all edges are sealed with an appropriate sealer and cut outs to install services or other hardware must be sealed to prevent ingress of moisture. Prior to installation in areas of high moisture levels, Contours must be coated with an appropriate water repellent, finish.

When lining boards are installed in moisture effected areas, good ventilation behind the lining is mandatory. Recommended practices for installing lining in these applications are:

- A vapour barrier should be fitted behind the lining board to protect adjacent walls from humid air
- Cut the lining boards to size and dip or completely flood brush with a water repellent coating
- Apply one coat of finish to all surfaces of the lining board (including ends) prior to installation and two to four additional coats of the finish onto the exposed surfaces after installation
- Fix the lining boards using non-corrosive nails such as hot dipped galvanised, silicon bronze or stainless steel

2.13 Straightness and Dimensional Tolerances

Contours hardwood lining is supplied within the requirements of Australian Standard AS 2796.1 'Timber Hardwood – Sawn and milled products Part 1: Product specification', with the maximum spring, bow, twist and dimensional tolerances shown in the tables below.

The grade of timber is supplied to Australian Standard AS 2796.2 'Timber Hardwood – Sawn and milled products Part 2: Grade description'.

Summary:

- Tolerances (width or thickness) ±0.5mm
- Tongue and groove clearance (gap) <1mm & >0.25mm and a maximum mismatch of 0.5mm

WIDTH (mm) LENGTH	19mm
2.4	19
3.0	30
3.6	45
4.2	60
4.8	75
5.4	95

Table 1 Maximum Allowable Bow AS 2082

NOTE Data extrapolated from table data.

WIDTH (mm) LENGTH	90mm	120mm
2.4	13	10
3.0	20	15
3.6	30	22
4.2	40	30
4.8	48	40
5.4	65	50

Table 2 Maximum Allowable Spring AS 2796.1

NOTE Width is total lining board width.

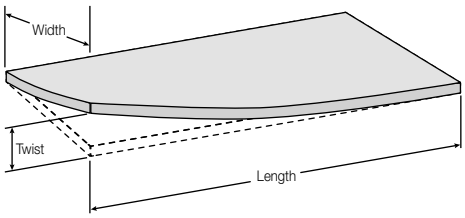


Figure 6 Measurement of Twist

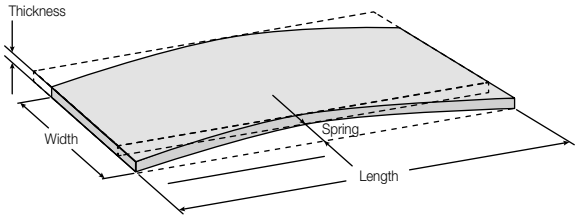


Figure 7 Measurement of Spring

NOTE Spring, Bow, Twist and dimensions can vary dependent on exposure, environment and site conditions, during transit and in storage. Ensure timber when stored is protected correctly to minimise movement.

3. Setting Out

3.1 Pre-Coating and Onsite Sealing

If timber is left uncoated it will be subject to surface checking, warping and loss of dimensional stability to varying degrees. The coating is designed to slow down the rate at which moisture can move in or out of the timber and protect against attack from sunshine which, when combined, will result in a breakdown of the timber and loss of stability.

Pre-coating or factory applied finish protects the timber before it arrives at site. An onsite coating will be required for long term protection.

In particular, cut-end or protrusion must be adequately coated onsite. Timber surfaces affected by sea salt contamination should be washed off with clear water and allowed to dry before commencing site coatings.

End grain of timber lining boards should be coated with a specialised end grain sealer.

3.2 Coating Prior to Installation

It is recommended that the lining board is pre-coated on all faces prior to installation.

All protrusions (cut holes, cut-outs and trimmed ends) should be coated onsite before or during installation of the lining boards.

End grains are particularly susceptible to drying, cracking and leeching of extractants. Where the installation may be affected by high humidity the end grains should be pre-coated with a specialised end-grain sealer.

3.3 Storage of Timber

Lining boards should be delivered to site and be protected from weather exposure and other sources of dampness on site. The timber lining boards should be supplied fully protected wrapped in plastic. This protects against contamination and reduces the change in moisture content during transit and storage. Ensure the lining is fully wrapped on receipt of goods. The builder is responsible to ensure that the lining remains wrapped and is at the appropriate moisture content when installed. Lining boards may be stored on site, provided packs are kept fully wrapped in plastic and protected from weathering. Check to ensure the wrapping has not been damaged which may allow water into the pack. Lining boards should be kept dry, covered from direct sunlight, well ventilated, and adequately supported with a maximum 450mm spacing, at least 150mm off the ground. To prevent moisture uptake lining boards must not be stored in a wet area.

Seasoned lining boards (particularly if not coated) readily absorb moisture. If excessive moisture is taken up the lining boards and they are not dried prior to installation, they may subsequently shrink and create wide gaps between lining boards. This may result in a total failure of the lining boards, with the tongue pulling out of the groove. If the lining boards become wet, problems such as staining, distortion and opening-up of joints may occur. Continued wetting may also promote mould growth or staining.

If the lining board pack becomes wet, separate the lining boards by inserting ventilation strips between layers and store undercover in a dry, well-ventilated area until dry and moisture content has stabilised.

3.4 Moisture Content Prior to Installation

Contours is generally supplied at an average moisture content between 9% and 14%.

A high moisture content suits a ventilated coastal area where the average moisture content of internal timbers is expected to be approximately 12% (when in-service). Where conditions are drier, such as inland areas or an air- conditioned building, a lower average moisture content can be expected, within the range from 8% to 12% (when in-service).

Where the average moisture content of the supplied lining boards differs from the in-service condition, the lining boards should be acclimatised prior to installation.

To acclimatise lining boards, they should be removed from the pack and all surfaces exposed to the installation environment by re-stacking with separating sticks between layers, for a period which is dependent on the difference in conditions between lining boards and the ambient conditions. Check the timber moisture content until it has stabilised to the in-service condition. A period 48 hours to a minimum of two weeks of acclimatisation should be used as a guide, dependent on local conditions.

Movement after installation due to changes in moisture content (swelling on moisture content increase and shrinkage on moisture loss) can be minimised if lining is installed at a moisture content close to the average in- service moisture content.

If considering installation in a high-risk environment (high or low humidity), an EMC measurement of the room should be taken using a hygrometer. The result will determine if excessive expansion or shrinkage may occur. Readings below 9% or above 13% would be considered extreme.

A moisture meter should take a moisture reading of the timber after the initial acclimatisation period. The result will confirm if the timber has acclimatised to the installation environment.

Note: Installation should be avoided during very wet or very dry periods of weather.

3.5 Preparation and Sorting Timber

Contours should be inspected before installation and the following considered.

- Pre-seal all surfaces before installation, seal all end-grains
- Dock out natural defects which are not required
- Sort the colour and grain of timber lining to the desired style or pattern
- Optimise lengths by sorting to suit the application
- Ensure joins are located at batten supports
- Install expansion gaps on wide expanses (greater than 3m wall widths)
- Do not install lining boards excessively tight, especially in dry conditions

3.6 Spacing of Supports

Adequate backing support is an essential requirement for smooth, flat, wall and ceiling lining.

This can be achieved by fixing lining to wall framing, rafters, joists, trusses or battens spaced at no greater distance than shown in **Table 3** 'Maximum Spacing of Supports'.

APPLICATION	LINING BOARD THICKNESS (Minimum Thickness)	SPACING OF SUPPORTS AT 90° TO LINING BOARD
Wall & Ceiling	12mm	450mm

Table 3 Maximum Spacing of Supports

NOTE For lining used as a non-trafficable roof, refer to AS 1684 which may require a reduced spacing of supports.

4. Installation

4.1 Preparing

Ensure the surface the lining board is being fixed to is even, with a maximum tolerance of 3-4mm from flat. Use packers to 'even' the surface if the difference is more than this tolerance.

Cut the lining boards neatly, leaving only enough gaps for expansion. This provides a square edge look and there is no need for an edging trim.

Alternatively cut the lining boards with a gap smaller than the edge bead width at the edges. Affix a timber bead around the perimeter of the lining boards to cover any cuts, chips and edge nails.

Prior to fixing, check that the lining boards are of a suitable grade. Set aside any lining that are not within the required grade and do not install them. If choosing high feature (rustic or knotty) grades, confirm soundness of knots. Cut or dock-out any lining boards which are below grade. When the product is installed it is deemed to be of an acceptable grade.

Chipped or star checked knots can be remedied with a small touch of colour tinted putty prior to finishing.

NOTE All timber will vary in colour and features between individual lining boards. It is the nature of a natural timber product.

Ensure lining boards are acclimatised to the local humidity condition with a stable timber moisture content.

If battening is required to present a suitable surface for installation, these should be installed at suitable centres.

If the battens are timber, they should be kiln dried and accurately sawn or dressed. Where required, fixing battens should be packed out to provide a true and even surface prior to securing lining boards. Introduce expansion gaps in the lining layout at each 3 metre width.

4.2 Fixings

The brad nail type used to fix the lining should be selected to resist the environment and timber where it is used. Corrosion resistant nails should be used in applications when there is a possibility of high ambient humidity.

The brad nail must be selected to suit the specific profile and substrate batten or support lining board. AS 3566 'Self-drilling screws for the building and construction industries; General requirements and mechanical properties' lists four levels of corrosion resistance. AS 2334 'Steel Nails – Metric Series' provides guidance on the requirements for nails and fixing.

The effect of the natural timber resin should be considered when selecting the corrosion resistance level.

If corrosion resistance is required, stainless steel brad nails are available which meet the highest performance standard (AS 3566 Class 4).

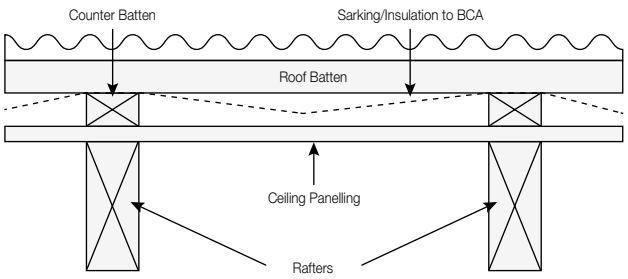
APPLICATION	AS 3566 CORROSION RESISTANCE	PROTECTION TYPE
General Environments	Class 1	Bright Steel
Significant Humidity	Class 2	Electro Galvanised
Treated Timber or Premium Corrosion Resistance	Class 4	Stainless Steel

Table 4 Brad nail selection

4.3 Ceiling Lining Fixed on Top of Rafters

Ceiling lining fixed to the top of rafters (used with exposed rafters) may be exposed to condensation in the roof cavity.

Directly after installation, the lining should be covered with a vapour permeable sarking and the roof installed to protect the lining. If counter battens are used, sarking may be fixed over the counter battens.



Ceiling Lining fixed on top of rafters.

The most common cause of cupping movement in timber is moisture held behind the lining. Ensure the space behind the lining is well ventilated to ensure excessive moisture does not occur in this cavity.

NOTE Installation instructions apply only to lining boards 19-21mm thick.

4.4 Wall Lining and Ceiling Lining Fixed to The Under Side of Rafters

Where the wall or ceiling surface is uneven, use a suitable batten size

LINING BOARD THICKNESS	MINIMUM SIZE OF DRESSED BATTEN	FINISH NAILS SIZE
19 -21mm	42mm x 35mm	50mm x 1.8 (15 gauge)

Table 5 Minimum fixing batten size and finish nail sizes

NOTE Timber wedges or other rigid materials may be used at the fixing points. Installation instructions apply only to lining boards 19-21mm thick.

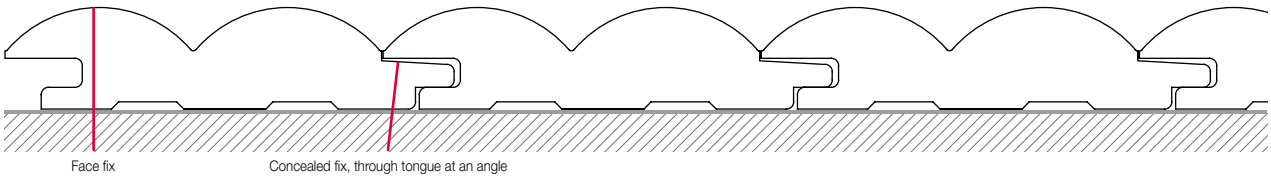
When affixing lining through the face, use two bullet head brad nails, into each support. The heads may be either left flush with the surface or punched and filled with a colour matching wood filler.

Lining boards with cover widths up to 90mm may be secret nailed with one nail at each support. For cover widths up to 135mm, secret fixing may be achieved if both secret nailing and gluing are used in combination.

4.5 Installation

For wall or ceiling installation in either vertical or horizontal layouts, the interior lining should be securely fixed at centres not exceeding 450mm. A diagonal layout should allow for an appropriate fixing spacing support.

Installation can be either Secret Fix (through the tongue) or Face Fix (through the face of the lining board).



Fixing styles

A combined nail and adhesive technique with secure deep drive wire brad can be used. Use a length of brad / nail to suit the product thickness. Some harder timber species may require pre-drilling with a finishing nail. Trial the application before installation.

Alternatively, the lining boards may be fixed directly to wall surfaces by adhesive alone: Ensure the backing surface is structurally sound, even dry, free of dust or soiling, grease and oil. If the backing is painted, remove any loose or flaking paint film. Ensure the glued lining boards are physically supported in place for at least 24 hours to allow the adhesive to cure.

By placing the nail at an angle, it will reduce the risk of splitting the timber. Wider lining boards may require face- fixing to securely fix them. In all cases, it is preferred to fix with adhesive and use nails to secure the lining in place while the adhesive cures. Do not place adhesive between the tongue and groove area of the lining boards as this area is critical to allowing for any movement of timber once installed.

Contours Timber Lining Boards

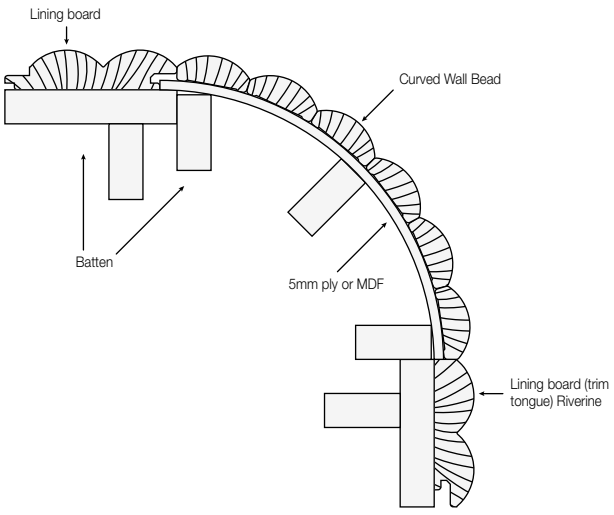
1. Firstly, ensure battens are even, secure and clean. Apply beads of adhesive to framing (or battens) sufficient for the installation of five lining boards at any one time. Locate the first lining board and support in place until the adhesive has cured. Face fixing of the edge lining boards may be necessary. NOTE: Do not place adhesive between the tongue and groove area of the lining boards as this area is critical to allowing for any movement of timber once installed.
2. If secret nailing, nail the lining boards by installing the nail at an oblique angle, in a position to conceal the fixing under the overlapping edge.
3. When fixing lining boards horizontally or diagonally, start at the lowest point and install with tongue edge to the top.
4. Secure the first lining board by nailing through the face of the tongue side of the lining board. If an edge bead is planned, the nails on the groove side may be able to be covered by the bead. Alternatively, recess the nail and fill.
5. Each following lining board will only need to be nailed through the tongue side. Put the tongue nails in accurately and flush with the surface so the next lining board covers the head of the nail.
6. Progressively check lining boards are plumb or level (as appropriate). Fit each lining board snugly and avoid over cramping.
7. If lining boards over a wide wall, introduce an expansion joint at 3 metre spacing, butt together with a suitable spacing and fix on stud or batten.
8. Secure the final lining board by nailing through the face. This lining board should be carefully punched and filled with colour tinted putty prior to finishing.
9. Once all lining boards are installed and dry, fill any exposed punched nails with matching colour tinted putty and sand with a fine paper. Cut and fit any trim mouldings to the lining board prior to sealing the lining boards. Alternatively, if using an 'adhesive only' method, support the lining until the adhesive is fully cured.
10. Follow the recommendations of the fastener and adhesive supplier.

Curved Walls - Contours Curved Wall Beads

Lining boards are suitable for curves down to a 1,000mm radius. For tighter curves down to a 300mm radius, Curved Wall Beads are available in a number of matching profiles.

1. Install 5mm bendy ply on studs, which follow the radius of the curved wall. The back of the ply should be at the same level of adjoining lining board wall surface i.e. mounted on top.
2. Check that the adjoining lining board is trimmed square for the beading to butt to.
3. Apply beads of adhesive to the ply. Locate the first beading and support in place until the adhesive has cured or face fix using a brad and fill any exposed punched nails with matching colour tinted putty and sand with a fine paper, when dry.

External Curve



Internal Curve

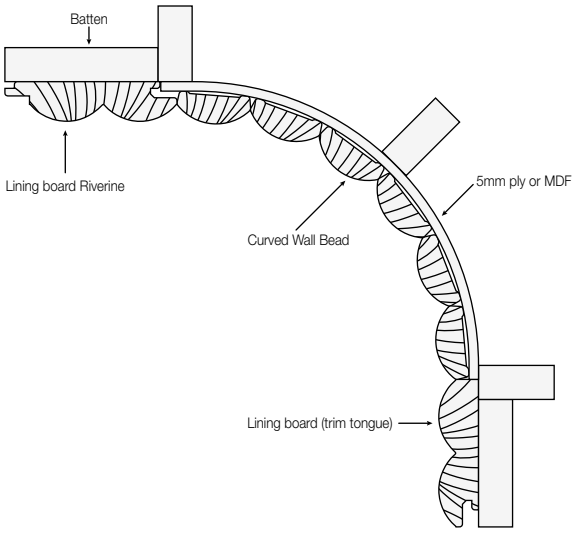


Figure 4 Typical Contours Riverine curved detail schematic

4.6 Corner Detail

Two methods are recommended to detail external and internal corners of the lining board. These involve using corner blocks or mitring corners. These two methods are shown below as external corners below. Use the reverse treatment for internal corners.

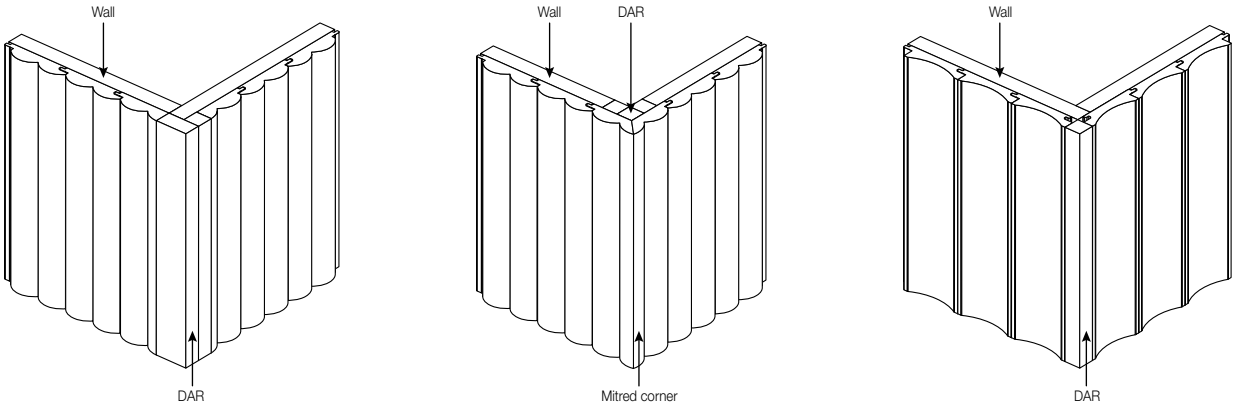


Figure 5 Corner Block details

Block corners can be produced either to sit 'proud' of the lining board profile to create an over-hang or finish under the surface to create a small recess. It is not recommended to finish the block at exactly the same face height as the lining board because a small amount of movement will be noticeable.

Mitred corner detail can look impressive if executed well. A mitred corner detail should only be attempted with seasoned and acclimatised lining boards. A neat finish requires very accurate fixing of the lining boards and subsequent movement of the wood may be obvious.

Flat lining boards or vertically orientated lining may use corner detail which is created with simple square lining boards overlapping the corner.

Moulded timber can be supplied in a suitable species and grade to suit a range of corner block details and match the timber linings.

4.7 Finishing Coatings

In addition to improving the aesthetic appeal of the lining boards, the main function of the finish or coating is to improve the durability of the timber and slow down the rate at which the timber will take up or lose moisture. This will maintain an attractive appearance and dimensional stability of the lining boards. There are several finishing coatings which can be used from a coatings supplier.

Film-forming finishes, such as clear polyurethane and acrylic surface coatings and heavy-bodied stains form a layer on the surface of timber, visually creating a smooth surface and forming a barrier to moisture and can protect against UV attack.

Due to the high risk of adhesion between lining boards and the resultant splitting of lining boards, coating lining boards with film forming finishes after installation requires special care. If it is necessary to apply a finish coating after installation, take care to remove excessive coating from tongues and in grooves.

NOTE When painting lining boards, whether with a standard paint or 2 pack finish, lining boards must be painted separately **prior to installation**. Wet paint that leaks into the tongue and groove area and is allowed to dry will fuse the boards together, restricting timber to move naturally and increase the potential for cracking.

Penetrating finishes such as water repellents, oils and stains penetrate into the surface of the timber and do not form a significant surface film. With proper maintenance these can produce a durable timber finish and allow the lining board to readily move after installation.

Appendix 1 provides typical information for a range of finish types provided for guidance. Check supplier's specific product information for preparation, pre-coating and applications.

In high humidity environments such as North Queensland or where there is a concern about infection, consider using a finish which contains a fungicide to prevent mould or bacterial growth. Seek further advice from your coatings supplier. Information on finishings can be found in Appendix 1.

5. Maintenance

Timber is a natural product and as the timbers ages, small cracks (or checks) are likely to appear on the surface of the lining boards.

Excessive timber movement as a result of changes in ambient conditions and exposure to heat and sunlight, may crack a solid coating or appear as surface cracks. The timber will then be exposed to increased effects of the environment.

This ageing process can be slowed by effective maintenance of the finish coating.

Additionally, the colour of the lining may change to a different shade after exposure to the environment. The colour variation will be different between lining boards and will vary dependant on the variation in exposure to sunlight and heat. Seek further advice from your coatings supplier.

5.1 Care and Lifespan

Lining should be cleaned to prevent build-up of contaminates on the surface. Any coating or oil applied will require subsequent recoating.

Refer to the coating manufacturers maintenance schedule. The period between recoating will be dependent on on-site conditions; humidity, sunlight exposure and local heat sources.

With regular inspection, cleaning and coating maintenance, the lining should meet the life of the building.

6. Warranty

Easycraft warrants that timber supplied by Easycraft will perform in accordance with claims stated in the written literature.

Each piece of timber is unique. Colour and wood grain variation will occur across supplied material. Sample material will provide guidance. Timber can crack due to humidity levels and sudden changes in temperature. Timber undergoes a natural process of oxidation when exposed, which will affect the colour. Easycraft does not warrant the consistency of colour or wood grain, or the stability of supplied timber.

Except where Easycraft has agreed in writing to the contrary, this warranty does not apply unless the timber product is supplied in its final shape and form. Timber must be stored, protected and maintained in accordance with written advice.

This warranty does not apply if the timber supplied by Easycraft has been used for a purpose other than the intended use or installed other than in accordance with Easycraft recommendations and relevant building codes.

This warranty does not exclude any provisions that cannot be excluded under the Australian Consumer Law.

7. Specifying

7.1 Timber

Contours are supplied with PEFC™ or FSC® (as applicable), certification and written product information. Hardwood lining boards shall comply with AS 2796 Section 6: Lining Boards. Softwood lining boards AS 4785.1 Section 5: Lining Boards.

7.2 Fixing

Pre-drilled pilot holes shall be provided on species harder than Janka 10kN.

Include a stable and flat backing. Level batten and spaces shall be used when out-of-flat is greater than 4mm.

7.3 Coatings

Pre-coat all timber components to the manufacturer recommendations. Coat all end-grains with an appropriate end grain sealer.

Any onsite protrusions are to be coated with Teknos Teknoseal 4000 an end-grain sealer, or equivalent. Follow coating suppliers' recommendations.

7.4 Installation

All materials shall be installed in strict compliance with all local codes, ordinances and manufacturers recommendations including specific additional requirements as may be called for in the specifications or shown on the drawings.

8. References

a. Timber Queensland, Timber Panelling, Technical data Sheet 1, February 2004

b. AS 1684.2 Residential timber framed construction Part 2: Non-Cyclonic Areas

c. AS 4785.2 'Timber Softwood Sawn and milled products

d. AS 2796 Timber Hardwood Sawn and milled products

e. AS 3566 Self-drilling screws for the building and construction industries

f. General requirements and mechanical properties

g. AS 2334 Steel Nails – Metric Series

9. Appendix One: Commercially Available Products

The following commercially available products can be used for the installation and maintenance of lining boards. These are provided as guidance only and are not available from Easycraft. Refer to the suppliers' specific product performance, preparation, pre-coating and application information.

9.1 Finish Coatings

	FILM FORMING FINISH			PENETRATING FINISH		
BRAND	**MODIFIED URETHANE**	**WATER BASED URETHANE**	**100% ACRYLIC LACQUER**	**TUNG OIL**	**POLYMERISED LINSEED OIL**	**LINSEED OIL & ISOPARAFFIN WAX**
Cabot / Feast Watson	Cabots Cabothane Clear	Cabots Cabothane Clear Water Based	Feast Watson Wet Look Deck	Feast Watson Tung Oil	Cabots Danish Oil	-
Wattyl	Estapol Interior Polyurethane	Estapol Interior Water-Based Xtra Clear	Colourwood Interior	Estapol Tung Oil	Estapol Danish Oil	-
Haymes	Easy Floor	Aquatic Floor	Aqua GP Clear	Tung Oil	Danish Oil	-
Resene	Qristal Clear	Aquaclear	-	-	Danska Teak Oil	-
Osmo	-	-	-	-	-	Wood Wax Finish
Use on:						
Flooring	✓	✓	✓	✓	✓	✗
Stairs	✓	✓	✗	✗	✗	✗
Furniture	✓	✓	✗	✓	✗	✓
Doors & Windows Frames	✓	✓	✓	✓	✓	✓
Wall Lining & Trim	✓	✓	✓	✓	✓	✓
Bench Tops	✓	✓	✗	✗	✗	✗
Clean-up	Mineral Turpentine	Water	Water	Mineral Turpentine	Mineral Turpentine	Mineral Turpentine
Number of Coats	3	3	2	3	2	1
Finish	Satin or High Gloss	Satin or Gloss	Satin or Gloss	Satin Luster	Natural Matt	Matt
Re-Coat	16hrs	3hrs	3hrs	16hrs	16hrs	12hrs
Odour	Medium	Minimal	Minimal	Medium	Medium	Minimal
Durability	Best	Better	Better	Good	Good	Good
Wear Resistance	Best	Better	Good	Good	Good	Good
Maintenance	Minimal	Minimal	Minimal	Regular	Regular	Minimal
Coating Thickness	Highest	High	Medium	Medium	Low	Low

Table 7 Suppliers' finish coatings and typical performance

NOTE Inspect, sand and recoat when there is visible deterioration in the coating.

BRAND / SUPPLIER	CUSTOMER SERVICE	WEBSITE
Cabots (DuluxGroup)	1800 011 006	http://cabots.com.au/
Feast Watson (DuluxGroup)	1800 252 502	http://www.feastwatson.com.au/
Wattyl (valspar)	132 101	http://www.wattyl.com.au/en/
Hayes	1800 033 431	http://specifiers.haymespaint.com.au/
Resene	1800 738 383	http://www.resene.com.au/
OSMO	03-9464 4252	http://www.osmoaustralia.com.au/

Table 8 Timber coating supplier contact information

Source Industry information including Cabots (DuluxGroup), Feast Watson (DuluxGroup), Wattyl (valspar), Hayes, Resene and OSMO.

9.2 End Grain Sealer

Easycraft recommends the use of Teknos Teknoseal 4000 specialised end-grain sealer.

9.3 Fixing Nails

All fixing brad / nails should be selected to resist the environment where it is used and selected timber species and grade. The effect of the timber resin should be considered when selecting.

The brad nail must be selected to suit the specific profile and substrate batten or support board. Stainless brad nails are available which meet the highest performance standard (AS 3566 Class 4) if corrosion resistance is critical.

Typical brands include: Paslode, Powerfit, Craftright.

If the head of the nail is exposed, it should be punched below the surface and a colour matched putty applied.

9.4 Adhesive

To install lining boards to battens or backing sheets use a general purpose construction adhesive, applied with the use of a caulking gun. Typical brands include:

- Selleys Liquid Nails Original
- Sikabond Construction Adhesive
- Max Bond Original
- Fuller Trade Construction Adhesive

9.5 Curved Wall Beading and Backing Board

For Contours with a matching Curved Wall Bead;

Use the relevant profile Curved Wall Bead (39x16mm) in the matching timber species with a readily flexible 5mm ply such as Bendy Ply from Austral or equivalent products.

BRAND / SUPPLIER	CUSTOMER SERVICE	WEBSITE
Austral Plywoods	07 3426 8666	http://australplywood.com.au/

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stylish solutions for walls and ceilings

www.easycraft.com.au

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www.pefc.org.au

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