



HORIZON STEPPED PROFILE Installation Instructions

REMEMBER.....

Timber is a unique material – one made by nature, not by man.

Much of timbers' warmth and beauty is derived from its distinctive appearance, and specific characteristics naturally developed during the growth cycle.

Because it has a cellular structure, even kiln seasoned timber will respond slightly, exhibiting minor dimensional movement, over Australia's diverse range of seasonal climatic conditions.

**FOR MORE INFORMATION
FREECALL 1800 337 703**

In order to ensure a satisfactory installation of Tilling Timber Horizon-Stepped Profile, the following points should be observed.

STORING ON SITE

Horizon-Stepped Profile should be stored in a dry, protected area. If stored on unsealed ground, place product packs on bearers to give 200mm above ground clearance until ready for use.

ACCLIMATISATION

All Horizon-Stepped Profile boards are kiln seasoned to an "Equilibrium Moisture Content" not greater than 15% and no less than 8%. The boards are sold shrink wrapped to ensure protection during delivery and prevent moisture uptake. As each installation varies slightly from the next, it is advisable to allow the boards to acclimatise to their new environment.

To do this remove the plastic wrapping and separate the boards so that they have free air flow on both sides and leave on site for 24-48 hours before installation.

Note– Boards should not be unwrapped or fixed during periods of excessive dampness.

PREFIXING

Prior to fixing, ensure compliance of boards with the grade specified. Any boards that are not within expressed grade parameters should be set aside and not installed. Product installed is deemed acceptable grade.

If choosing rustic/knotty grades, confirm soundness of knots and saw dock if deemed necessary – chipped/star checked knots can be remedied with a small touch of colour tinted putty prior to finishing. All natural timber and Western Red Cedar in particular will naturally vary in colour from board to board so select and pre-arrange boards in a fixing sequence so as to achieve an aesthetically pleasing end result. If battening is required to present a suitable surface for installation, then the battens should be installed at suitable centres (refer FIXING sections) If the battens are timber, they should be kiln dried and accurately sawn or dressed. After fixing, battens should be appropriately packed out to provide for a true and even surface prior to securing boards.



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EXTERIOR INSTALLATIONS

Only Horizon –Stepped Profiles manufactured using durable Western Red Cedar should be used in an exterior application.

Provide sarking material behind ALL Horizon-Stepped Profile in an EXTERIOR application. Sarking material should be approved 'breather type' (vapour permeable) and fire retardant paper, equivalent to Tyvek by Dupont. If conventional aluminium foil insulation is used as a sarking it must be severely dished back into the framework to minimise any condensation effects.

Note- When fixed horizontally, water will naturally pool on the flat surface of the deeper rebated 26mm Horizon-Stepped Profile which will eventually result in a premature degradation of both finish and product.

It is therefore recommended that, for maximum longevity, only 18mm thick Western Red Cedar profiles be used in exterior horizontal applications (Both thicknesses are fine for vertical applications)
For exterior applications corrosion resistant nails are essential. Tilling Timber recommends the use of silicon bronze or stainless steel nails having annular grooved shanks for added withdrawal resistance. If galvanised nails are used they must be hot dipped. Note- When secret nail fixed in an exterior application, suitable battens will need to be fixed over the sarking to provide a solid base for the adhesive. Adhesive must be rated for exterior use such as HB Fuller Toolbox or similar.

All butt joints should be effectively sealed with a water repellent prior to installation.
If fixing boards in a vertical or diagonal manner, endeavour to use full length boards wherever practical. If butt joints are unavoidable then butt joints in vertical boards should also be angle cut at 45 degrees across ends to minimise moisture uptake in board end grain. When product is fixed vertically, boards should be installed with the tongue facing towards the direction of the prevailing weather.
Where product is fixed diagonally, the direction of fixing shall not cause water to drain into internal corner or stops. At all times, make adequate provision to discharge such water clear of building.
Boards forming external and internal corners shall either be neatly abutted or finished against matching timber stops of suitable sizing.
Ensure adequate and effective flashing at brickwork junctions, joinery frames and the like, so as to avoid penetration of driving rain.

ALL INSTALLATIONS

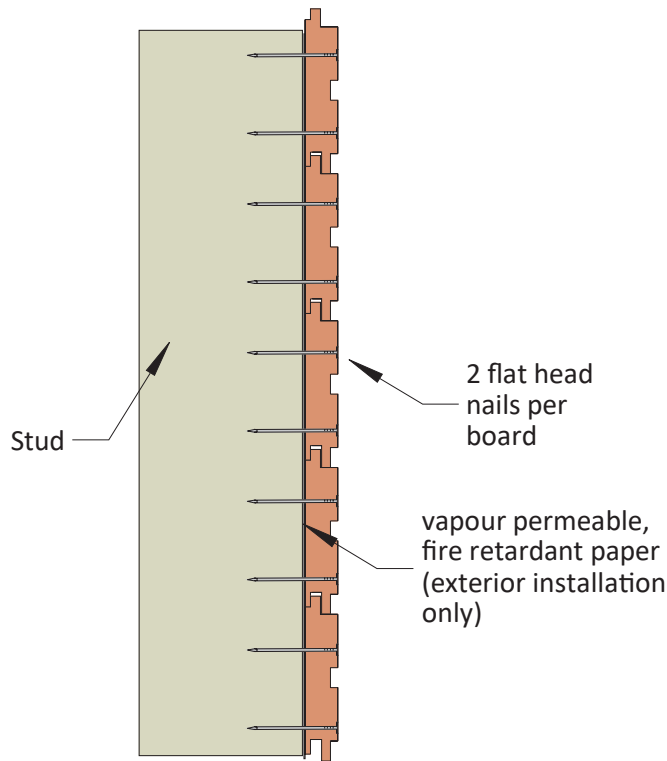
WALLS-FACE FIXING

Product shall be securely fixed with two flat head nails at centres not exceeding 900mm (for interior applications) or 600mm (for exterior applications)

Note: Nails should be of a length to penetrate the framing minimum 30mm.

Use a minimum of 50 X 2.8mm plain shank flat head nails for fixing to hardwood and 50 X 3.15mm annular grooved shank nails for fixing to softwood or equivalent gun nails.(Paslode Cladfast B20225 or similar)
Nails shall be driven with care to avoid damage to face of boards.

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Face fixing Horizon - Stepped Profile (Installed horizontally)

If fixing boards in a horizontal or diagonal manner, start at the lowest point and install with tongue edge uppermost.

As work proceeds, check that the boards are plumb or level (as appropriate), fitting each board snugly to that previously fixed. Avoid over cramping.

WALLS-SECRET NAIL FIXING

Horizon-Stepped Profile boards have a secret nail fixing facility. Product should be fixed using a combined nail and adhesive technique with one bullet head nail at centres not exceeding 900mm (for interior applications) or 600mm (for exterior applications)

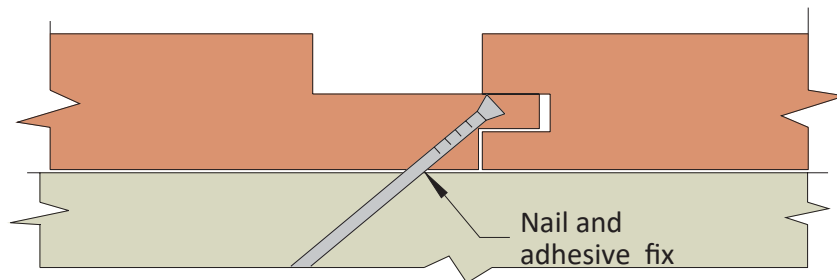
Note: Use a minimum of 50 X 2.8mm plain shank bullet head nails for fixing to hardwood and 50 X 3.15mm annular grooved shank nails for fixing to softwood or equivalent gun nails. (Paslode B20443 or similar). Adhesive should be elastomeric such as HB Fuller Maxbond or similar and when used in an exterior application rated accordingly such as HB Fuller Toolbox or similar. The adhesive manufacturer's instruction for use should be observed for optimum results.

First, apply beads of adhesive to framing (or battens) sufficient for the installation of five (5) boards at any one time.

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Locate the first board and nail. Observing secret nail fixing procedures nail the following boards taking care to drive or punch the nails so as not to obstruct fitting the next board. Secret nail at an oblique angle in a position to conceal the fixing under the overlapping edge of the following board.



Secret Nail Fixing - External Cladding (Generic)

If fixing boards in a horizontal or diagonal manner, start at the lowest point and install with tongue edge uppermost.

As work proceeds, check that the boards are plumb or level (as appropriate), fitting each board snugly to that previously fixed. Avoid over cramping.

CEILING

When Horizon-Stepped Profile is to be installed as a ceiling lining under sheet metal roofing, it is essential to use a breather type sarking between the timber boards and the roof sheeting to minimise condensation effects.

Without such sarking, moisture from condensation on the underside of the metal roof will collect on the ceiling boards and cause swelling and shrinkage to occur, leading to ultimate distortion of the boards affecting visual appearance.

Generally product should be fixed to ceilings using the same methods noted above for fixing to walls. Refer to below table for maximum fixing centres:

Species	Thickness	Across top of exposed rafters	Beneath Rafters or Joists
Western Red Cedar	18mm	1200mm	900mm
	26mm	1200mm	900mm

FINISHING RECOMMENDATIONS-EXTERIOR INSTALLATIONS

When exposed to the elements, all timbers eventually lose their natural toning's and develop a grey colour due to the bleaching effect of the sun's rays and the water soluble nature of those extractives responsible for the colour toning.



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This gradual removal of colours or extractives is in no way detrimental to the natural durability of Cedar and, whilst some may accept this colour loss as a natural occurrence, others may seek to maintain (or introduce) a colour toning-this is readily achieved by application of a penetrating stain or oil finish.

External stains vary considerably in pigment concentration; some stains are heavily pigmented obscuring the grain yet displaying the texture of a sawn surface. Whilst others are semi-transparent, permitting the grain to show through. Generally, the higher the pigmentation level, the longer the service life.

Similarly, on a given species, external stains perform better on sawn surfaces rather than dressed faces and a longer service life will be achieved on kiln seasoned timber compared with unseasoned product. Nevertheless, compared to alternate species, Cedar has exceptional retention properties, even on dressed surfaces. The respective manufacturers' recommendations should be observed at all times.

Recent technology improvements have produced clear acrylic finishes suitable for application to exterior cedar cladding exposed to the weather. These new coatings protect the natural timber surface from the effects of weathering and UV degradation. The service life and long term performance of externally finished timbers can be enhanced by the application of wood preservatives at snugly fitted joints and where cladding boards/siding, tightly abut flashings, brickwork etc.

WEATHERING

Externally exposed Cedar will weather to a "maintenance free" grey toning-however the end result is subject to even weather exposure of the boards and will vary from one climate to another.

As "natural weathering" is dependent upon both incidence of sunlight and rainwater, orientation plays an important factor-north facing walls generally weather out earlier than do other walls.

Should uneven weathering occur, the judicious use of grey penetrating wood stains may be necessary and if extractive discolouration or surface mildew appears on semi-protected walls, washing and scrubbing with a mixture of hot water, mild detergent and household bleach can be an effective remedial measure.

FINISHING RECOMMENDATIONS-INTERIOR INSTALLATIONS

Due to the high risk of adhesion when applying polyurethane finishes in situ it is highly recommended that such finishes are applied PRIOR to installation.

Particular attention should be given to the effective sealing of end grains of boards prior to installation. Any nicks or chips caused during subsequent installation can be lightly touched up in situ.

If finishes are applied after installation then take care to brush off excessive finish from tongues and in grooves to minimise the high risk of board to board bonding which can result in splitting the boards caused by the restraint of normal timber movement.

AVAILABILITY

Tilling Timber architectural wood products are available Australia wide through a network of expert resellers. Further details relating to grade and range are contained within the Tilling Timber products list and related literature. Refer www.tilling.com.au.