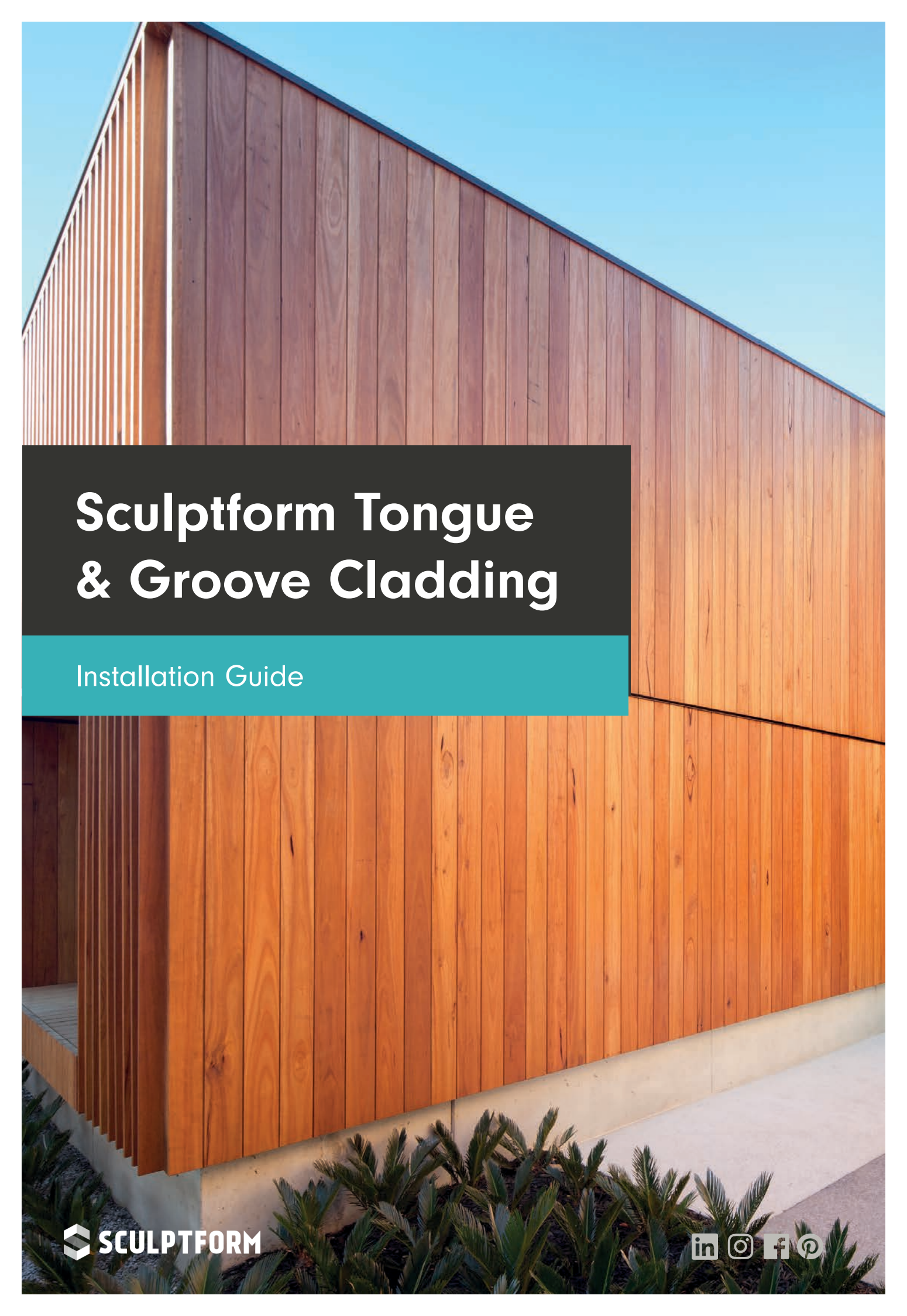




Sculptform Tongue & Groove Cladding

Installation Guide

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This design and installation manual is intended to provide information that will enable designers, builders and owners to execute their projects effectively. Not all project types, design requirements and installation scenarios will be covered, so the Sculptform team is happy to assist with project-specific solutions.

Product recommendations throughout the manual are based on proven performance, however this does not mean that alternative uses are not possible. Differing expectations of what is considered “good performance” will vary, and Sculptform takes no responsibility for what may be considered “product failure.” It is important for designers, builders and owners to fully understand the product before making final selections.



1.0 INTRODUCTION

1.1 How to use this Manual

It is the responsibility of designers, builders and owners to ensure that the information in this manual is current, by checking with Sculptform or referring to our website. As new technology is introduced or industry standards are altered, Sculptform reserves the right to alter existing specifications and delete product without notice.

For a concise and visual overview of this system refer to our website: sculptform.com.au

The use of this manual does not:

- › guarantee acceptance or accreditation of a design, material or building solution by any entity authorised to do so under law;
- › mean that a design, material or building solution complies with the National Construction Code; or
- › absolve the user from complying with any local, State, Territory or Government legal requirements.



Sculptform cladding is a tongue and groove joined cladding with hidden screw fixings. It can be used as a weatherproof external facade cladding, a lining to exterior soffits or as a lining to interior walls and ceilings.

It can be used vertically, horizontally or diagonally and has been finely detailed to accommodate timber movement.



2.0 WHAT IS TONGUE & GROOVE CLADDING

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2.1 Allowing for Timber Movement

Timber expands and contracts as moisture is retained and lost within the cell walls. Movement in timber is inevitable: it cannot be avoided, it must be accepted and accounted for. Only Tongue & Groove Cladding is profiled to allow for natural timber movement.



Applying evidence-based design, Sculptform developed a series of tongue-and-groove timber cladding profiles that allow for the right amount of shrinkage and expansion.



2.2 The Fourth Dimension

Tongue & Groove Cladding is amazingly flexible and functional, but here at Sculptform we never rest on our laurel's. We had to ask ourselves: how can we double-down on what made Tongue & Groove Cladding so popular in the first place? How can we expand on the already vast range of options and make it more versatile than ever?

Turns out the answer is deceptively simple: what about the fourth dimension? With our range of shapes sizes adding depth to our standard profiles, Tongue & Groove Cladding has entered the fourth dimension.

Now you can add ribs, furrows, and varied depths right across your cladding. Used vertically or horizontally, this new dimension of depth can be combined with board widths, timbers, and finishes to create a signature cladding texture that is all your own. The sky is truly the limit.



2.3 The Screw

Sculptform supply a quality German-made stainless steel screw, to be screwed into timber substrate, with all timber cladding orders. A tough 304 stainless steel, the screw is designed to predrill and countersink in one easy motion. Sculptform can supply tek screws for steel substrates.



2.4 Environmental Statement

Timber harvested responsibly is the most sustainable building material. We understand that responsible forest management involves aspects such as fair wages, monitored regrowth, benefit to the local economy, and natural habitat preservation. A holistic view of the whole ecosystem is required.

Our timber is sourced from all over the globe: Australia, United States, Eastern Europe, and the Oceanian islands. Sculptform are certified to provide Chain of Custody (CoC)* timber under the FSC (Forestry Stewardship Council), PEFC (Programme for the Endorsement of Forest Certification), and AFS (Australian Forestry Standard) schemes. Where these programmes are not available, Sculptform works with local suppliers to investigate the sustainability of the timber in question.

Chain of custody (CoC) certification provides a guarantee about the production and source of FSC certified products. To obtain points under all green building programs, the timber needs to have CoC. The only certification scheme recognised by green building councils is FSC, with the exception of the Australian GCBC, which accepts PEFC CoC.

2.4.1 Timbers Available with a Chain of Custody FSC**

- › American Oak

2.4.2 PEFC and AFS**

- › Spotted Gum

Please note: If Chain of Custody is required this must be included in the designer’s specification. Chain of Custody can not be obtained once order has been placed or goods have been shipped. Lead-times 3-4 months.

3.0 THE RANGE

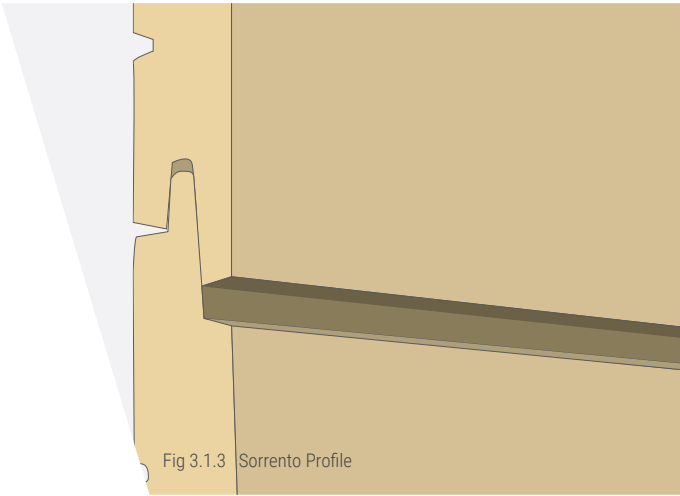
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3.1 Profile

3.1.1 Sorrento Profile

The slim, symmetrical and gently tapering lines of Sorrento, suit virtually any architectural style. From heritage to contemporary, this versatile Sculptform-designed profile has become an industry standard in shadowline design. The gentle taper allows for water run off, making it suitable for multiple applications.

Suitable for vertical or horizontal applications in exteriors and interiors.



Sorrento Profile

IE = Interiors and Exteriors.

Overall Width	Thickness		
	19mm	26mm	32mm
68mm (cover width 48.5mm)	✓ IE		✓ IE
88mm (cover width 68.5mm)	✓ IE		
138mm (cover width 118.5mm)	✓ IE		



3.2 Timber Species

Please refer to the species data sheets on the Sculptform website for further information on colour, markings, origin, sustainability, movement characteristics, durability etc.

We recommend that you request product samples before final selection. Whilst our products are produced as consistently as possible, each species has their own natural variations of colour, features and characteristics. Product samples may or may not fully reflect the colour variation that will occur on the project.

All timbers recommended for exterior use are Durability Class 1 (AS 5604), ensuring peace of mind that the timber will remain durable for a minimum of 40 years.

See our website for full details.

3.3 Coating Finishes

Pre-finishing eliminates the process of finishing on-site prior to installation, protecting the timber during construction and saving on preparation time and costs. Working with market leaders in timber coatings, we use the latest technology water-based coatings for safety and sustainability. Sculptform can create virtually any finish type, from smooth to wire-brushed textures.

3.3.1 Interior Finishes

Our pre-finishing for interiors employs water-based coatings, a process that creates time and labour-saving efficiencies with the bulk of preparation completed prior to delivery on-site. Pre-finishing for interiors delivers a sophisticated matte result and is available from a selected range of colours.



Fig 3.3.1

3.3.2 Exterior Finishes

Factory pre-finishing for exterior timber cladding is a relatively new concept. Our range for exteriors includes oil and film coatings, and we are proud to lead the way with Dulux, Australia's most-advanced paint company. The savings are significant, moving the bulk of preparation to the factory and leading to increased efficiency on-site.

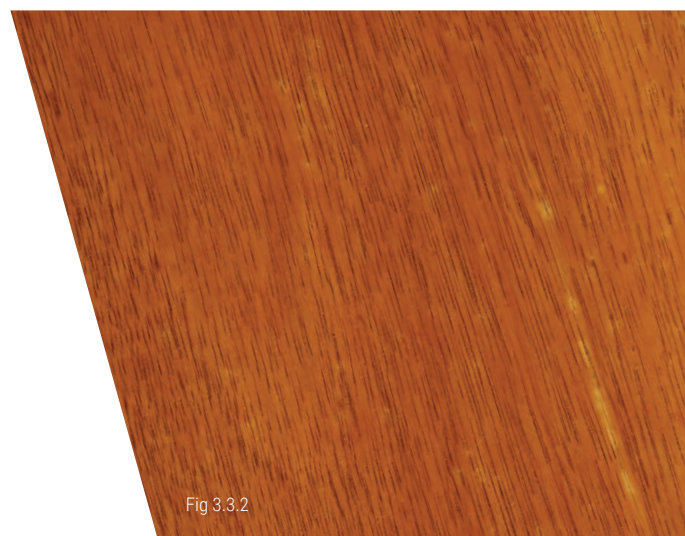


Fig 3.3.2

3.4 Corner and Installation Components

Sculptform has a wide range of corner solutions in aluminium and timber for internal, external and end stop junctions.

Important note: all our aluminium components are anodised in 'natural', and can be ordered in any powdercoat colour as required. By default, timber corner stops are supplied in the same species as the cladding, and all corner stops are supplied in 3.6 metre lengths. All corner stops are supplied with rubber gasket. Sealant is supplied by the installer.

Board End Protection: Aluminium L-Profile
See 10.9 for installation details.

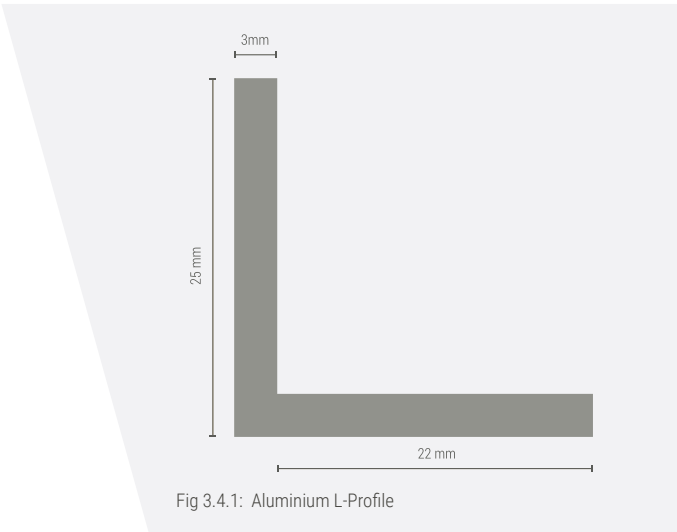


Fig 3.4.1: Aluminium L-Profile

Internal Corners: Aluminium Internal Corner
See 10.7 for installation details.

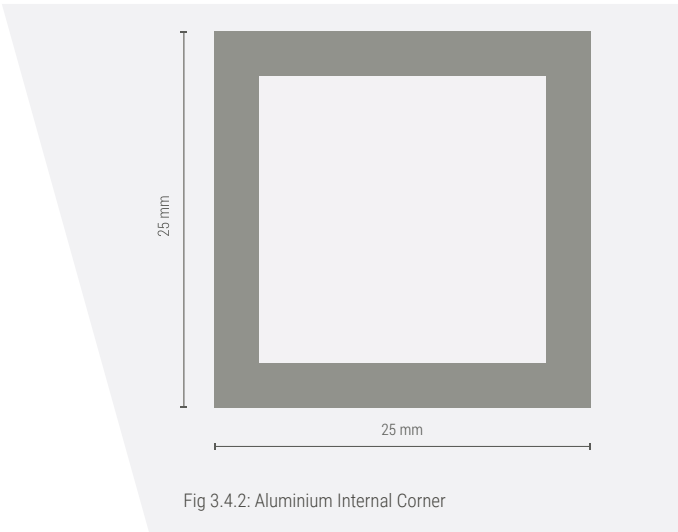


Fig 3.4.2: Aluminium Internal Corner

Express Joints: Aluminium T-Profile
See 10.8 for installation details.

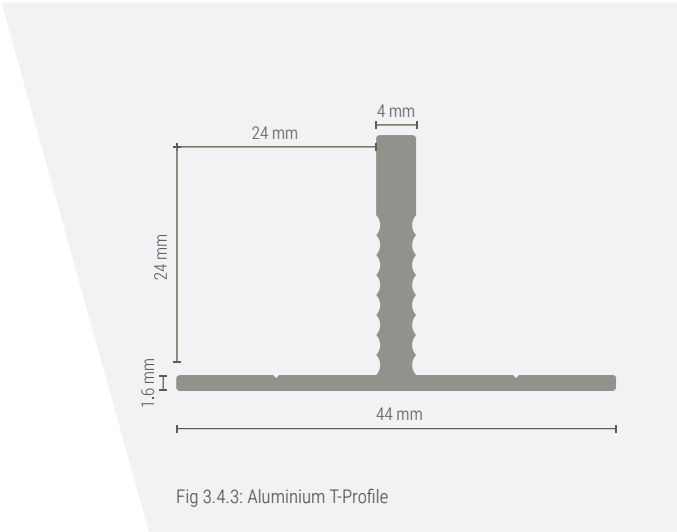


Fig 3.4.3: Aluminium T-Profile

Starter Board
See 10.10 for installation details.

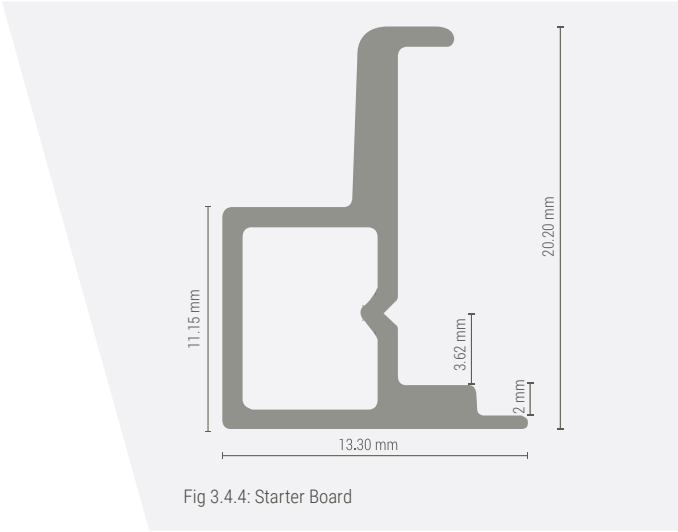
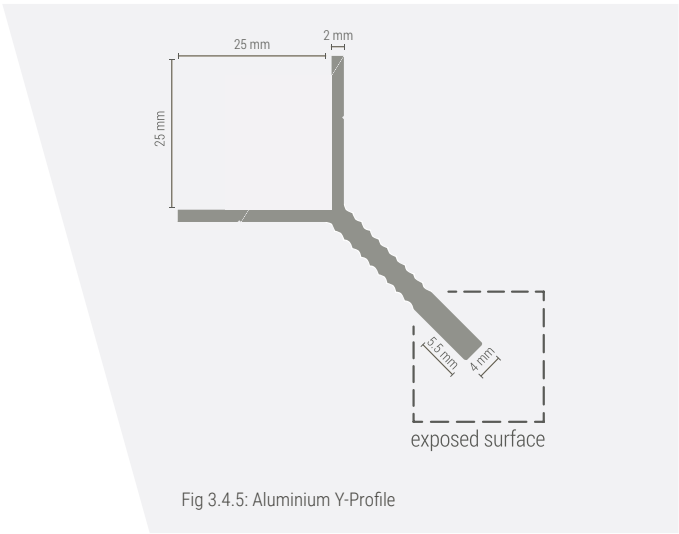
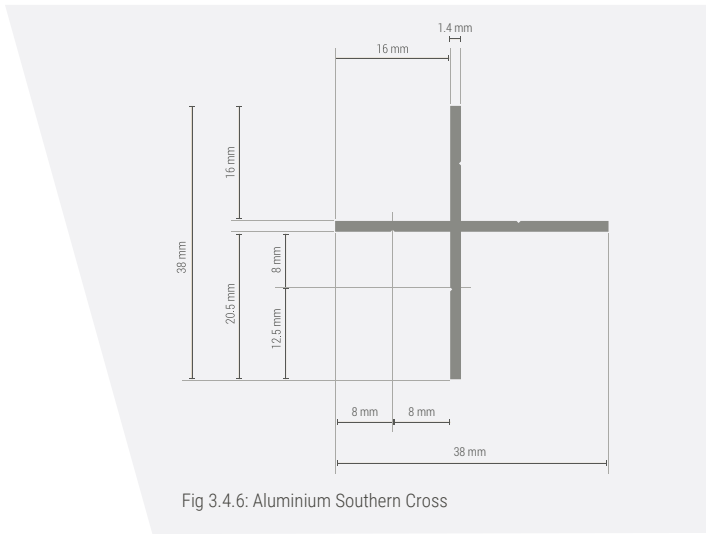


Fig 3.4.4: Starter Board

External Corners: Aluminium Y-Profile
See 10.4 for installation details.



External Corners: Aluminium Southern Cross
See 10.5 for installation details.



External Corners: Timber Southern Cross
See 10.6 for installation details.



3.5 End-Matching

Tongue & Groove Cladding end-matching was designed so boards could be joined off-stud, a time and labour-saving innovation that removes the need for measuring and cutting on the stud.

End-matching cuts wastage from 10% down to 5%*, and the design facilitates water run-off when boards are installed vertically.

3.5.1 Standard End-Matching

Standard end-matching can be used with all profiles and performs the role of creating a neat, seamless linear effect.



Fig 3.5.1: Standard End-Matching

4.0 SPECIFYING

A specification is the minimum benchmark for both aesthetic and functional outcomes in your project. This is why we place such emphasis on the quality of specification and making sure you include the correct elements.

4.1 Example Specification _____ 22

4.1 Example Specification

A quality specification is integral to the success of your project, for aesthetics and reliability. The points provided below are essential to this success: we recommend you contact our technical team to guide you through the selection process, ensuring the best product for your application. Contact 1800 008 828 or support@sculptform.com.au

Product Name:

Sculptform Tongue & Groove Cladding

Profile:

E.g. Sorrento

Timber:

E.g. Spotted Gum

Board Size(s):

Specify width x thickness

Sequence:

E.g. 138mm x 19mm, 68mm x 32mm, 88mm x 19mm

Finish:

E.g. To be pre-finished by manufacturer with Intergrain Light Oak

Note:

Product must be installed strictly in accordance with the Tongue & Groove Cladding – Design + Installation Manual

Moisture Content:

Kiln dried between 9% and 13%

Fixing:

Concealed fixed with 8g x 50mm stainless steel screw

Corners:

All corners require proprietary corner stops with EPDM closed cell gasket and sealant. (Designer to specify corner profile type. Gasket and sealant not applicable to interiors)

Grade:

Natural Select (refer AS2796.2-2006)

Butt Joints/Board Ends:

All butt joints to be end-matched and sealed with a quality exterior grade sealant (sealant is not required for interior applications)

5.0 ESTIMATING AND ORDERING

Due diligence and ticking the right boxes when quoting and ordering material can be the make or break of a project. Sculptform always encourages builders and installers to contact us as early as possible to work through quoting and ordering so we can help you make your project a success.

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 - 5.1 Pricing _____ 24
 - 5.2 Placing the Order _____ 24
 - 5.3 Delivery and Logistics _____ 24

5.0 Estimating and Ordering

Planning is key, from estimating through to delivery. Our team of estimators can work through options to ensure you have a winning edge while still meeting the specification requirements. Place the order as early as possible, so our logistics team can work with you on your construction schedule, so your goods are delivered on time.

5.1 Pricing

Sculptform can send you an itemised cost estimate based on your quantities. However, in the interests of accuracy our preferred method is to measure your drawings in PDF, which we will then return to you fully marked up with the estimate.

It is important that the entity placing the order thoroughly reviews the estimate for completeness, quantities, finishes, etc.

5.2 Ordering and Lead Times

Careful consideration should be given to lead time from placement of order to delivery on-site. Some products may be more custom in nature or the size of a project may require source timber to be ordered. Please check the estimate as well as check with Sculptform Customer Happiness Team.

5.3 Delivery and Logistics

Once your order has been confirmed our logistics team will contact you to discuss delivery dates, project logistics and payment details.

6.0 ON-SITE CARE

On-site storage is an important consideration. Adequate storage conditions can sometimes be difficult to ensure. However, failure to address this short-term challenge can lead to long-term issues such as excessive timber movement. On very large projects, it is sometimes necessary to stagger your deliveries.

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6.1 Storage and Acclimatisation

Sculptform takes care to kiln dry its timber to the midpoint of the average moisture content annual cycle in Australia: as such, it is generally unnecessary to acclimatise our timber prior to installation. The optimal time to install is directly after machining, so that timber maintains its accuracy and straightness.

It's preferred that the cladding be kept in its original packaging until installation. If a partially used pack needs to be re-packed it's important to mimic the original packaging to maintain straightness.

Ensure that timber packs are stored with at least 50mm clearance to ground, and in a cool dry place out of the weather.

6.2 Construction Care

Special care needs to be taken during construction to ensure that the integrity of the timber and construction is not diminished. The extra steps are not a lot of extra work, but they can affect the timber and construction integrity over the long term.

6.2.1 Temporary Flashing

This is a step that needs to be taken when rainfall is expected. If the permanent flashing hasn't been installed yet, you need to put a waterproof over the top of the wall so when it rains, water doesn't get into the cavity between the cladding and sarking (or blockwork). If water does get into the cavity, the cladding will move, including cupping and expansion.

6.2.2 Coating Protection

Mainly relevant when we have timber coated in a film coating such as Intergrain or our water-based polyurethane. Care needs to be taken not to scratch the surface. Sculptform does supply extra touch-up tins, but you won't get the same perfect consistency of finish.

6.2.3 Uneven Weathering from Scaffolding

This occurs when the scaffolding is up for long periods of time. The shadows created by the scaffolding and any other large apparatus will actually leave an effect on the wall when the apparatus is removed.

6.2.4 Dirt and Dust

Mainly relevant to interior finishes, but there is a lot of dust and dirt during construction. Some of this can tend to stick to the coating in certain conditions. The timber should be covered as much as possible during construction.

MY NOTES & SKETCHES

7.0 DESIGN AND INSTALLATION CHECKLIST

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7.1 Interior Lining

This checklist is intended to provide a basic guide only, and will not cover all project types. It is the responsibility of the specifier and builder to ensure suitable product selection, and to ensure correct detailing and installation.

7.1.1 Fire

Our consultants can assist with meeting Group 3-4* requirements in a lift lobby, or compliance with spread of flame index. Data sheets can be downloaded from our website on each timber species, which contain more detailed information.

7.1.2 Traffic and Human Impact

Wear and tear from human traffic is a consideration in public projects, with repairability and impact-resistance ranking high in priority.

7.1.3 Finishing

Because the interior environment is protected from the natural elements, the scope in the different types of effects and finishes you can use increases. Sculptform have the ability to realise virtually any effect.

7.1.4 Sustainability

If Green Star points and environmental impact are on the agenda, Sculptform has CoC (chain of custody) certification and resources that can assist. Also refer to section 12.6.

7.1.5 Cost

To ensure your vision is realised, cost needs to be considered in the early design phase. Our estimating team can assist; from basic m² rates to fully itemised project costings.

7.2 External Cladding

The exterior of any building type is one of the most challenging environments for solid timber. We've provided some points below to act as a simple guide for using timber outside. Please refer to other parts of the manual for more detailed information. If you have any specific enquiries we suggest you contact our technical team.

7.2.1 Fire

BAL (Bushfire Attack Level*) is the most common fire code/regulation that designers have to contend with. See AS 3959-2009 for additional information.

7.2.2 Leaching

Leaching is a common problem when using timber outside. More detailed information can be found in 12.1.3.

7.2.3 Maintenance and Finishing

Obtaining client commitment to your desired aesthetic is vital to long-term success.

7.2.4 Waterproofing

Sealing the end grain and minimising water penetration is vital to long-term durability.

7.2.5 Movement

Timber is a porous material and will move, so it's important to consider board size, elevation and timber type early on, even though Tongue & Groove Cladding is designed to allow for movement.

7.2.6 Cost

To ensure your vision is realised, cost needs to be considered in the early design phase. Our estimating team can assist; from basic m² rates to fully itemised project costings.

7.2.7 Water Drainage

Good drainage is vital to ensure that water is never allowed to pool on timber, as it causes cupping and extreme movement. See 9.1.4 for more information.

7.2 External Cladding (continued)

7.2.8 Breathable Air Cavities

To ensure long-term durability, air cavities must be allowed so that timber is able to breathe and be kept dry. You can read more about in section 9.1.3.

7.2.9 Minimum Height off the Ground

We recommend timber cladding be a minimum of 75mm above the ground, to avoid moisture, mould growth and dirt impacting on the finish.

7.2.10 Starter Boards

Starter boards are used mainly for horizontal applications: screw the aluminium to the stud at the bottom of the wall (ensure it's level) and continue installing the cladding as normal. More information found in section 10.10.1.

7.2.11 Top Capping

Correct top capping is crucial because it's a common area for water to penetrate. There are a wide variety of options, and some typical examples can be found in section 10.3.1.

7.2.12 End-Match Orientation

When running boards vertically the tongue must always be installed face up to ensure water run-off. More information can be found in section 10.1.

7.2.13 Sarking

We recommend using a quality breathable sarking to minimise the chance of water penetration into interiors. Sculptform deem Tyvek Breathable Home Wrap to be the only sarking to be used with Tongue & Groove Cladding.

8.0 TYPICAL WALL TYPES

This section shows the two main wall types (masonry and framework) as well as the two board orientations (vertical and horizontal) in a visual and simple way so that the specifier and installer can understand typical set outs and elements.

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8.1 Vertical Tongue & Groove Cladding over Stud Framework

Refer to the design and installation checklist in section 7.0.

Timber cladding on a framework structure provides only one protective layer against the natural elements, which is why it's important to use a good quality homewrap between them. Sculptform deem Tyvek Breathable Home Wrap to be the only sarking to be used with Tongue & Groove Cladding.

Please note: Read section 7.2 before commencing installation.

- A. Before starting, measure the wall length so you can have the first and last board the same size.

B. Line wall with breathable sarking.

C. Install battens at 450mm centres. See section 9.6 for further details.
- D. Install any corner stops such external, internal or end stops. See sections 10.3 – 10.9.

E. Install cladding taking cover width into consideration (this allows the correct expansion gaps). See section 10.10 for starter and finishing board details.

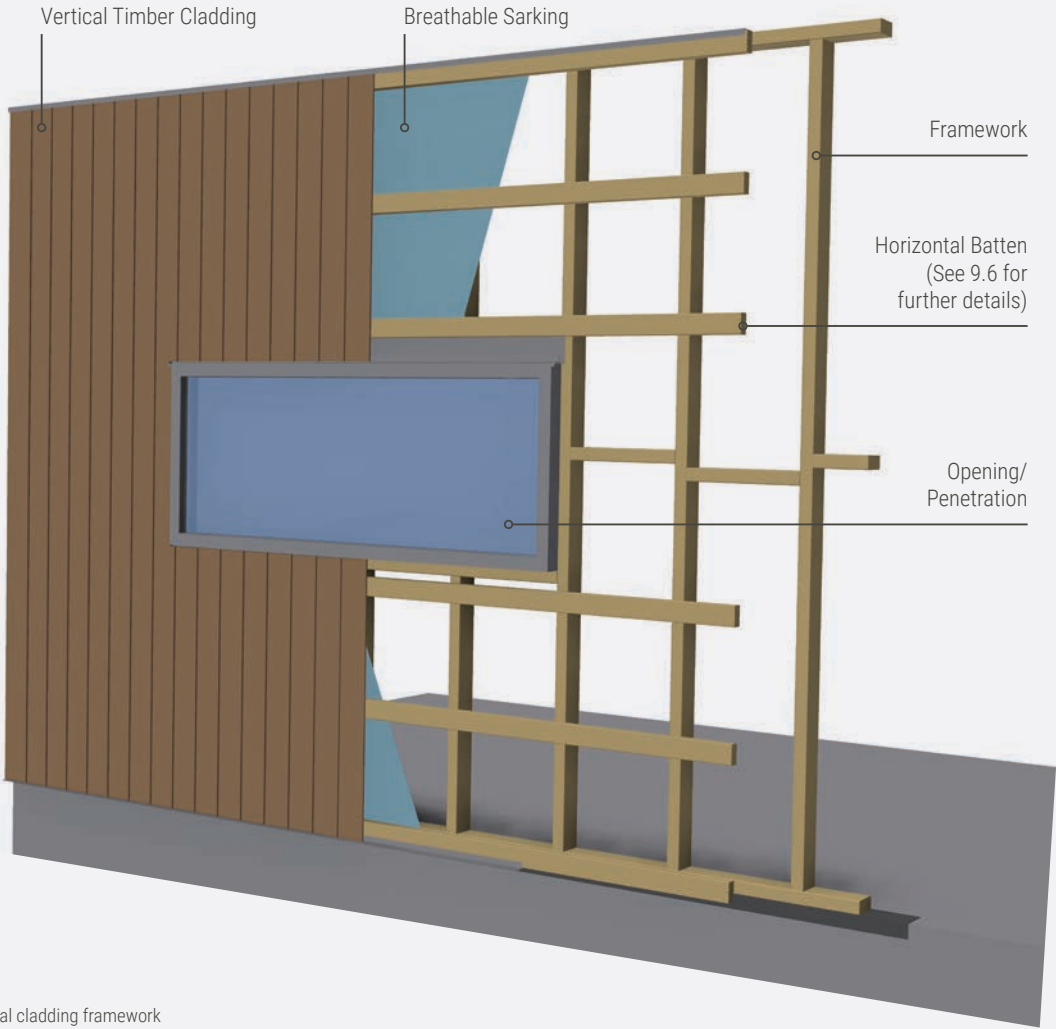


Fig 8.1.1: Vertical cladding framework

8.2 Vertical Tongue & Groove Cladding over Blockwork

A masonry wall can be FC sheet, blockwork or brick, and is its own weather protection. Generally, the purpose of timber cladding over a masonry surface is primarily for aesthetics.

Please note: Read section 7.2 before commencing installation.

- A. Before starting, measure the wall length so you can have the first and last board the same size.
- B. Install battens at 450mm centres. See section 9.6 for further details.
- C. Install any corner stops such as external, internal or end stops. See sections 10.3 – 10.9.
- D. Install cladding taking cover width into consideration (this allows the correct expansion gaps). See section 10.10 for starter and finishing board details.

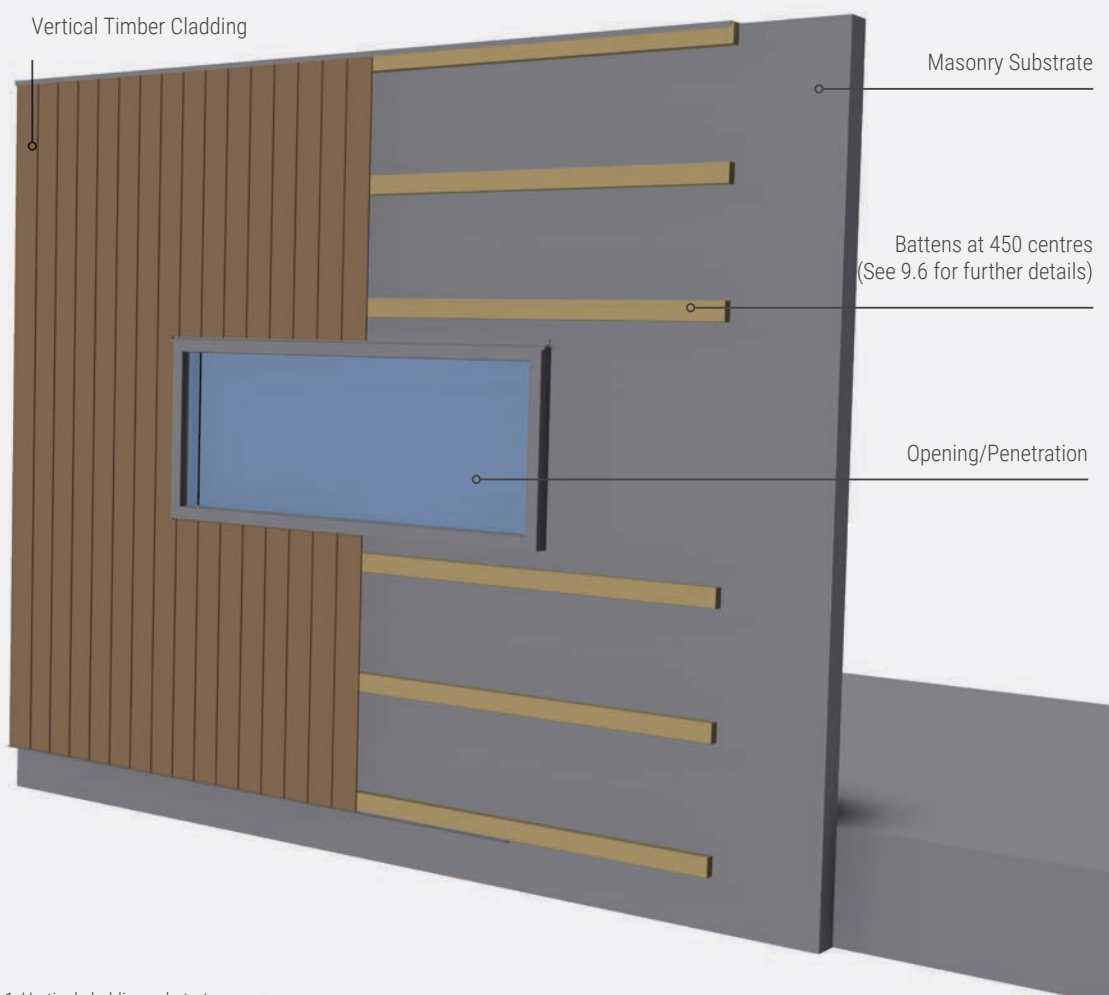


Fig 8.2.1: Vertical cladding substrate

8.3 Horizontal Tongue & Groove Cladding over Stud Framework

Timber cladding on a framework structure provides only one protective layer against the natural elements, which is why it's important to use a good quality homewrap between them. Sculptform deem Tyvek Breathable Home Wrap to be the only sarking to be used with Tongue & Groove Cladding.

Please note: Read section 7.2 before commencing installation.

- A. Check studs are straight
(buzz down or pack out accordingly).

B. Line the wall with breathable sarking.
- C. Install any corner stops such as external, internal or end stops. See sections 10.3 – 10.9.

D. Install cladding taking cover width into consideration (this allows the correct expansion gaps). See section 10.10 for starter and finishing board details.

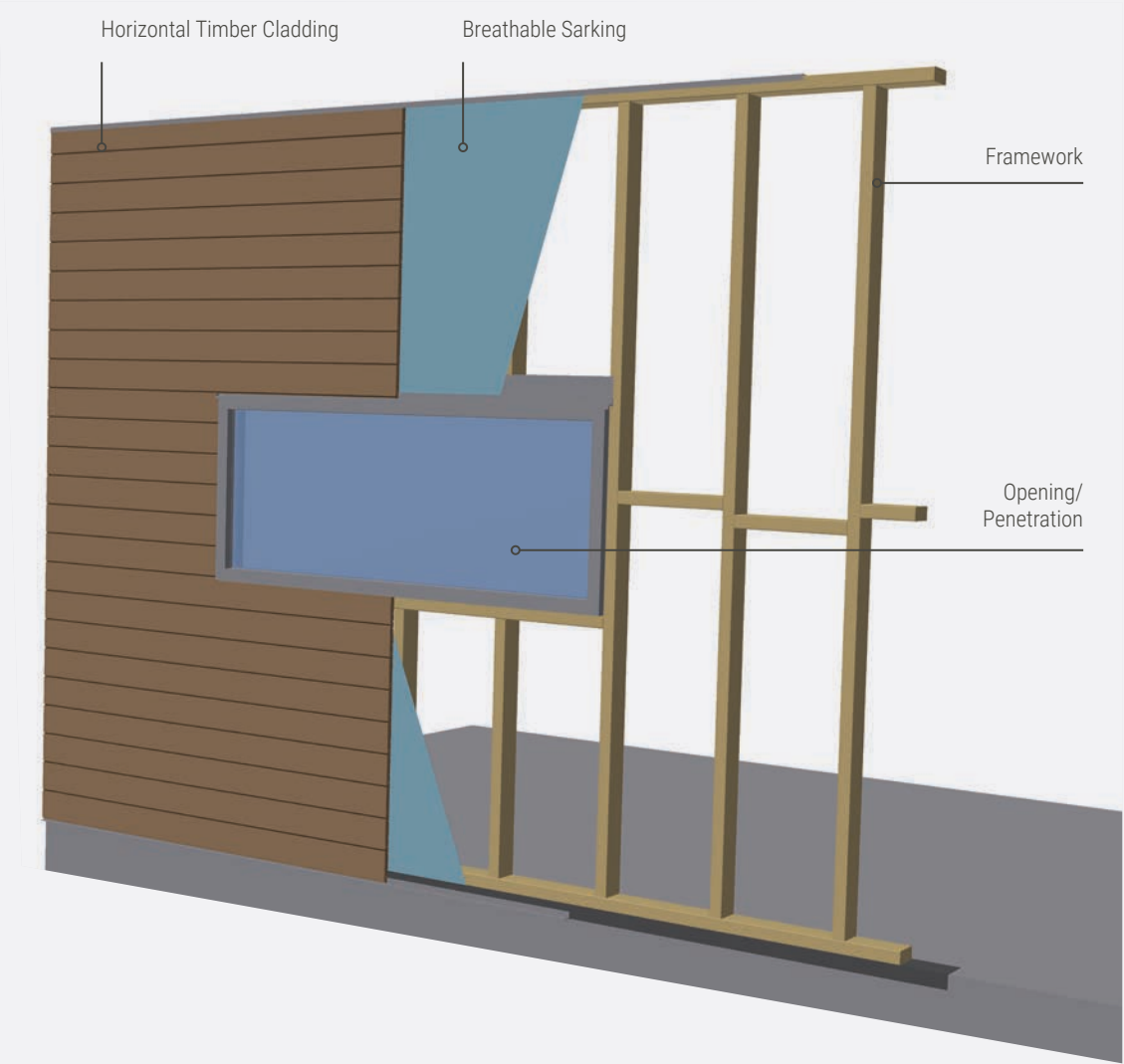


Fig 8.3.1: Horizontal cladding framework

8.4 Horizontal Tongue & Groove Cladding over Blockwork

A masonry wall can be FC sheet, blockwork or brick, and is its own weather protection. Generally, the purpose of timber cladding over a masonry surface is primarily for aesthetics.

Please note: Read section 7.2 before commencing installation.

- A. Install battens at 450mm centres. See section 9.6 for further details.
- B. Check battens are straight (buzz down or pack out accordingly).
- C. Install any corner stops such as external, internal or end stops. See sections 10.3 – 10.9.
- D. Install cladding taking cover width into consideration (this allows the correct expansion gaps). See section 10.10 for starter and finishing board details.

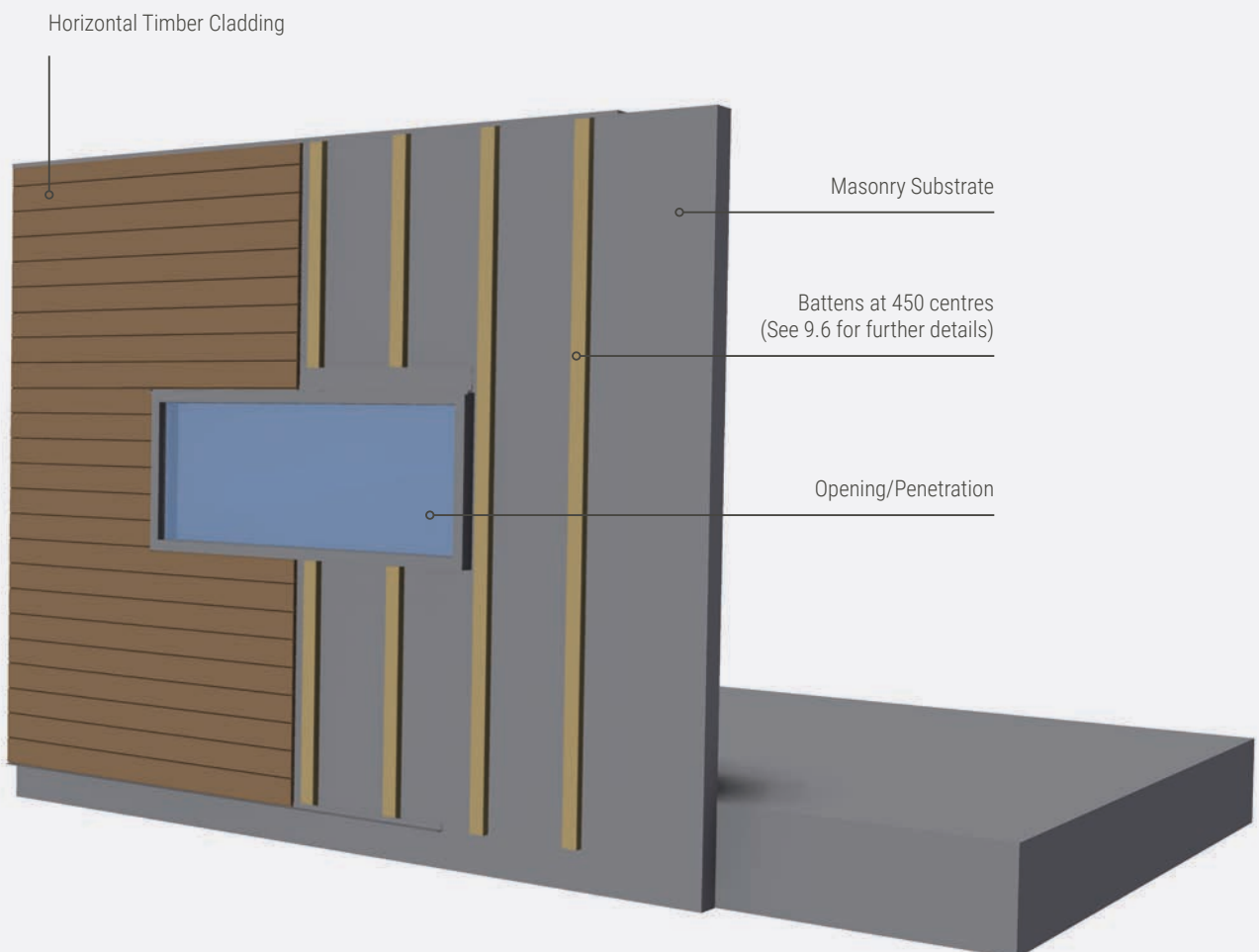


Fig 8.4.1: Horizontal cladding masonry

MY NOTES & SKETCHES

9.0 LIGHTWEIGHT WALL CLADDING DESIGN

By understanding what a 'lightweight wall' is, you will understand its purpose and expected levels of performance. Once you understand the concept, you will have the ability to make realistic decisions in the context of long-term performance.

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- 9.6 Battens on Framework and Blockwork ____ 40

9.0 Lightweight Wall Cladding Design

Lightweight cladding is a non-load bearing skin or layer attached to the outside of a building to shed water and protect the building from the effects of weather.

9.1 Its Primary Role

The primary roles of cladding are to control the infiltration of weather elements and the egress of water vapour while providing a durable, aesthetically pleasing appearance.

9.2 Sarking

Sarking acts as a second weather barrier for added protection. Good sarking will breathe and prevent water penetration. Tyvek Breathable Home Wrap is the only product suitable for Tongue & Groove Cladding.

9.3 Air Cavities

Air cavities are used to allow the cladding to breathe, and to prevent the timber from sweating. This helps maintain long-term durability.

9.4 Holes

Water from capillary action, condensation, damage or accidental flooding needs to escape. Weep holes are common in tropical and subtropical areas of Australia, and are particularly effective in monsoonal storms. (Tongue & Groove Cladding has water release grooves.)

9.5 Ventilation

Mildew, dry rot and damp reduce the life of the internal wall studs and other building materials without adequate ventilation, and is the leading cause of 'Leaky Building Syndrome.'

9.6 Battens on Frame and Blockwork

Stud Framework – 70mm x 35mm timber battens at 450 centres (the 70mm x 35mm battens can stretch across 600 centres) or 40mm metal top hat.
Blockwork – 35mm x 35mm (70mm x 35mm ripped in two) or 30mm metal top hat.

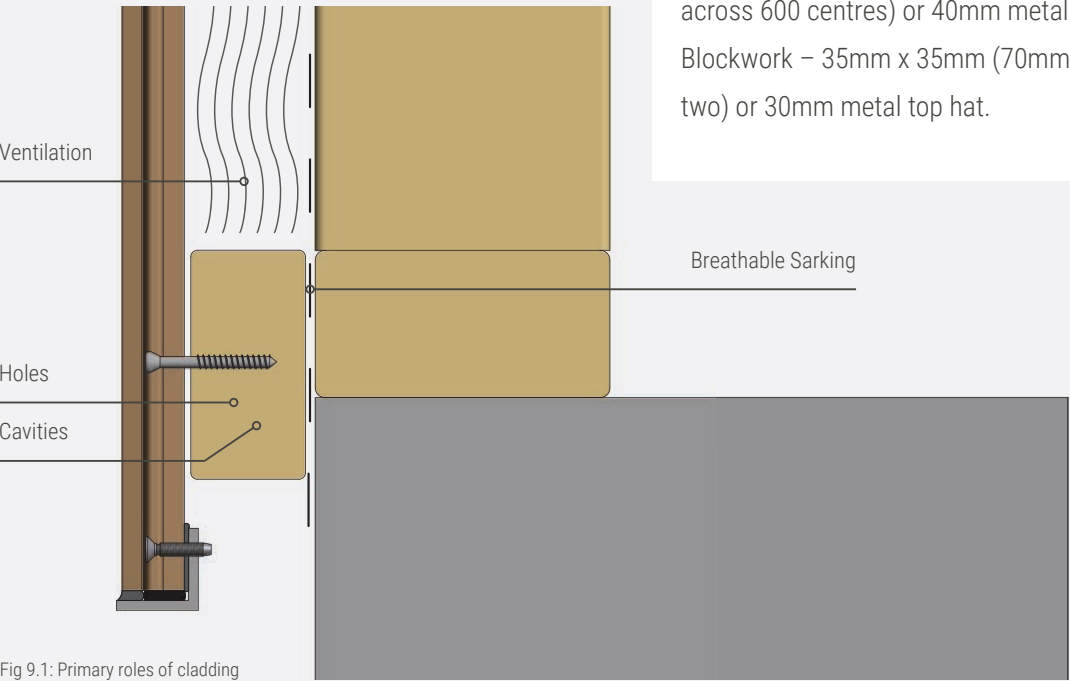


Fig 9.1: Primary roles of cladding

10.0 CONSTRUCTION DETAILS

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10.1 End-Matching

Ordering Tongue & Groove Cladding with end-matching allows you to join the boards end-to-end away from the studs or battens. The unique Tongue & Groove Cladding end-match is a deep mitred tongue and groove, allowing for the boards to align easily and seamlessly.

This feature ensures a high quality join for long-term performance and results in huge savings in installation time and wastage. The installation method for end-matching is the same whether the cladding is vertical or horizontal.

- A. Fill groove with sealant.
- B. Slide board into place and screw to nearest stud or batten.
- C. Allow excess sealant to dry.
- D. When dry, scrape off excess sealant with a blade.

IMPORTANT NOTES:

Vertical end-matching: It is vital that the tongue faces up and the groove faces down. The deep mitre and quality sealant creates an impenetrable bond, allowing the water to run past the connection.

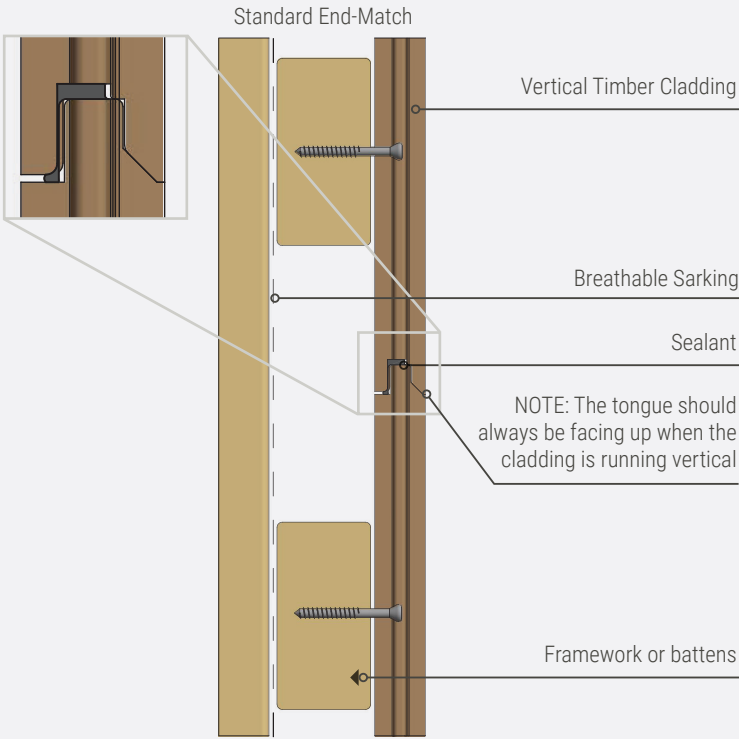


Fig 10.1.1: Installation method for End-Matching

10.2 Z Flashing

Waterproofing is one of the most important aspects in building design. When the detailing and construction of waterproofing is done correctly, it significantly enhances the building’s durability.

This section provides generic solutions to some of the typical scenarios that designers and installers face when installing timber cladding.

Please note: Z Flashing is not supplied by Sculptform.

Z Flashing is used when the designer intends to express the joint or certain lengths are unachievable. It will often follow lines such as the tops of windows and doors.

When installing cladding the boards will run up to the set point desired, then the Z Flashing will be secured to the stud frame. The top boards are next to be installed, followed by sealant placed under the boards as they meet the Z Flashing.

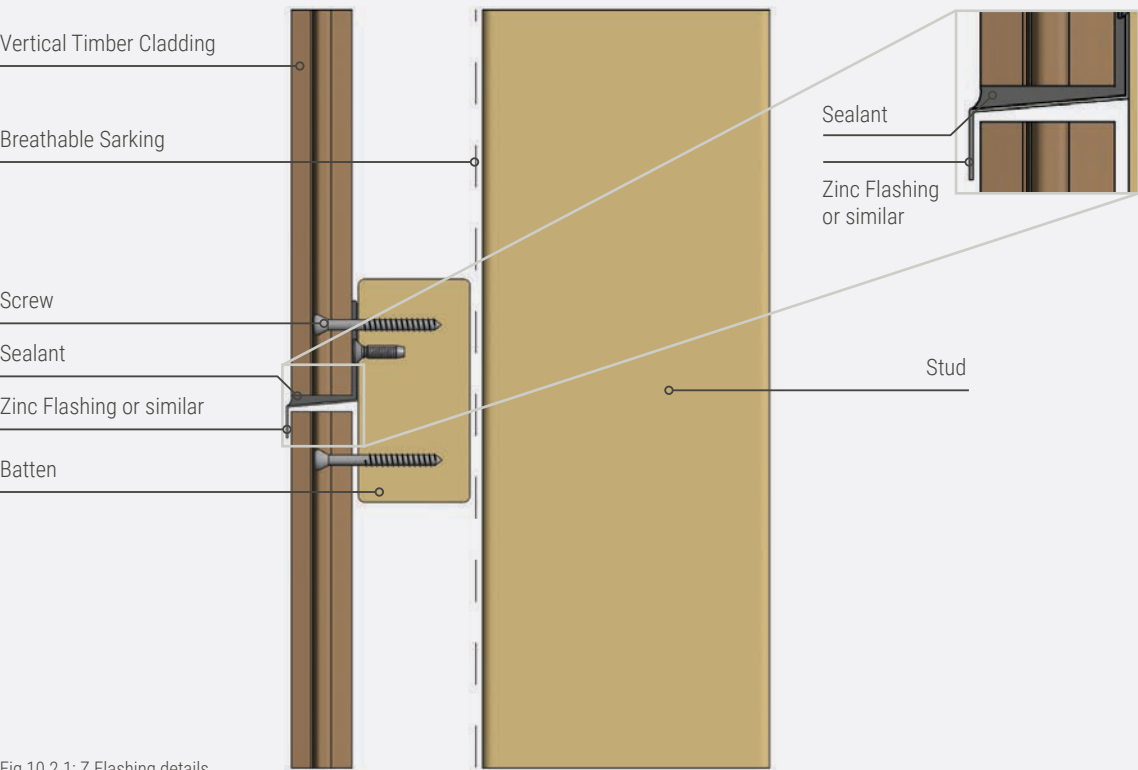


Fig 10.2.1: Z Flashing details

10.3 Capping

The purpose of capping is to prevent water penetrating the gap at the top of the wall. The material used is generally zinc or colourbond. We suggest a minimum overhang of 20mm and a minimum gap of 5mm. Alternative details are at the discretion of the designer and or installer.

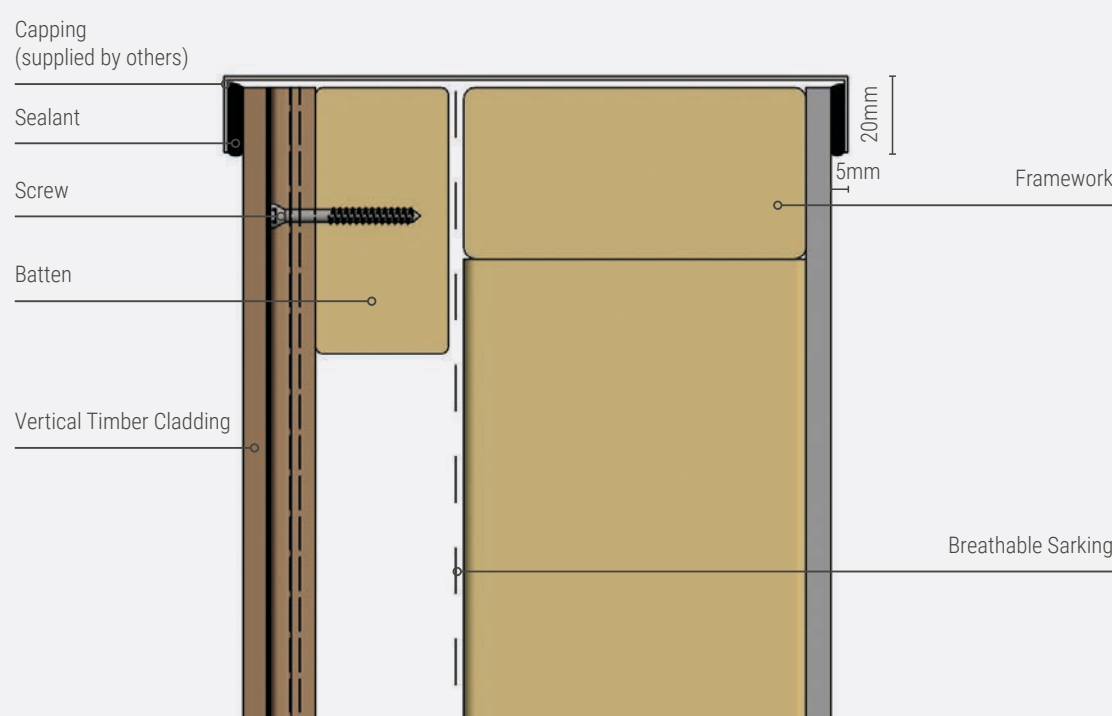


Fig 10.3.1: Top capping prevents water penetrating the gap at the top of the wall.

10.4 External Corner: Y-Profile

The Y-Profile has two primary functions: (1) to enable a high-quality construction detail for the long term (this is achieved by using the aluminium as a substrate for the sealant to achieve good timber end-grain protection) and (2) to provide architects with a crisp aesthetic finish to the corner (if an aluminium finish is not desirable, it can be powder coated black for a contemporary finish). As part of the proprietary system, the Y-Profile is a clear specification for the architect and provides reliability during the installation process.

- A. Screw the Y-Profile to the battens over the breathable sarking prior to installing the cladding.
- B. Peel the backing off the sticky 12mm x 3mm rubber gasket and stick to the aluminium profile as close to the base of the trunk as possible (as shown).
- C. Mitre cut or rip cladding boards, and install using self-drilling screws. Use the gasket to maintain a 3mm gap between the timber boards and the aluminium profile.
- D. Apply the sealant to the gap, using the gasket as a backstop. If preferred, apply bead of

sealant prior to installation of board. Ensure adequate amount of sealant to fill the gap. Once dry, cut off any excess sealant.

Horizontal Cladding: The installation procedure is the same as vertical cladding, but minus the battens.

IMPORTANT NOTES:

For vertical board installation use mitre cut to remove tongue or groove and achieve full depth mitre. Depending on the remaining width of this board, additional fixings may be required to secure effectively. Refer Image 10.4.1.

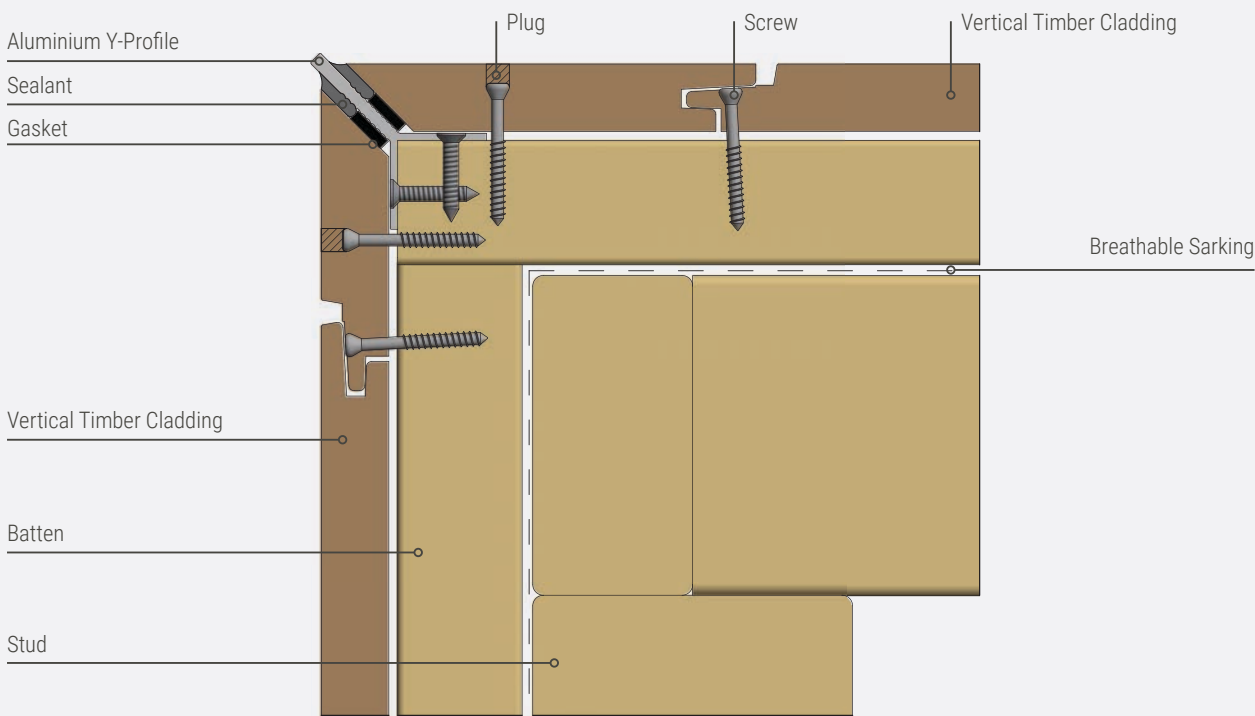


Fig 10.4.1: External Y-Profile minimises the external corner

10.5 External Corner: Aluminium Southern Cross

Aluminium Southern Cross is the same detail and aluminium section used in the Timber Southern Cross detail, but in reverse. Available in Natural Anodised (this can be powder coated to virtually any colour), this profile was designed to turn the external corner into a statement.

Screw the Aluminium Southern Cross to the battens over the breathable sarking prior to installing the cladding.

- A. Once stud frame or substrate is prepared, secure the Aluminium Southern Cross to the corner (shorter legs of the Aluminium Southern Cross), using countersunk screws as required.
- B. Peel the backing off the sticky 12mm x 3mm rubber gasket and stick to the aluminium profile as close to the centre of the Aluminium Southern Cross as possible (as shown).

- C. Install cladding boards using self-drilling screws (refer to section 2.3). Use the gasket to maintain a 3mm gap between the timber boards and the aluminium profile.

- D. Apply the sealant to the gap, using the gasket as a backstop. If preferred, apply bead of sealant prior to installation of boards. Ensure adequate amount of sealant to fill gap. Once dry, cut off any excess sealant.

Horizontal Cladding: The installation procedure is the same as vertical cladding, but minus the battens.

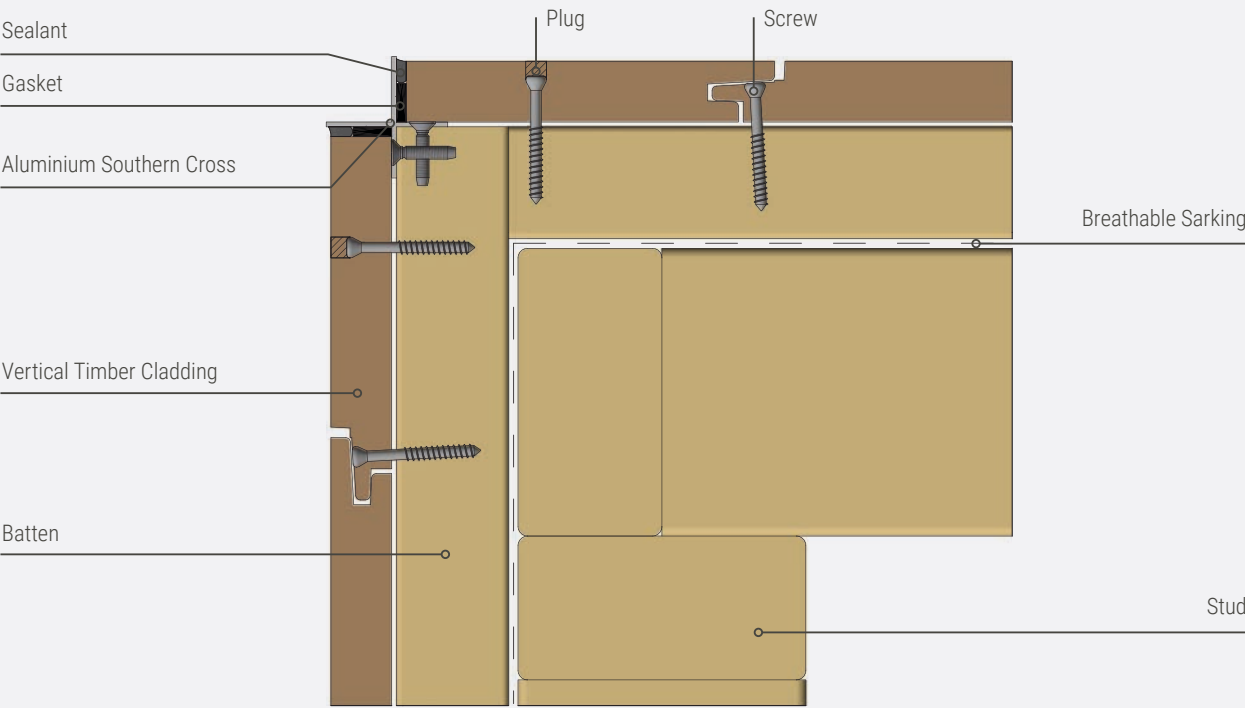


Fig 10.7.1: Aluminium Southern Cross reverse angle

10.6 External Corner: Timber Southern Cross

Timber Southern Cross is a re-release of the old traditional timber stop. The new corner stop has the following benefits: hidden fixings, more durable and weatherproof, and it has a variety of sizes for thicker cladding. The timber stop sizes available are 22mm (19mm thick cladding), 29mm (26mm thick cladding) and 35mm (32mm thick cladding).

Screw the Aluminium Southern Cross to the battens over the breathable sarking prior to installing the cladding.

- A. Once stud frame or substrate is prepared, secure the Aluminium Southern Cross to the corner (longer legs of the Aluminium Southern Cross), using countersunk screws as required.
- B. Locate the timber corner. Infill into the other side of the Aluminium Southern Cross and secure using countersunk screws as required.
- C. Peel the backing off the sticky 12mm x 3mm rubber gasket and stick to the aluminium profile as close to the base of the trunk as possible (as shown).

D. Install cladding boards using self-drilling screws (refer to section 2.3). Use the gasket to maintain a 3mm gap between the timber boards and the aluminium profile.

E. Apply the sealant to the gap, using the gasket as a backstop. If preferred, apply bead of sealant prior to installation of board. Ensure adequate amount of sealant to fill the gap. Once dry, cut off any excess sealant.

Horizontal Cladding: The installation procedure is the same as vertical cladding, but minus the battens.

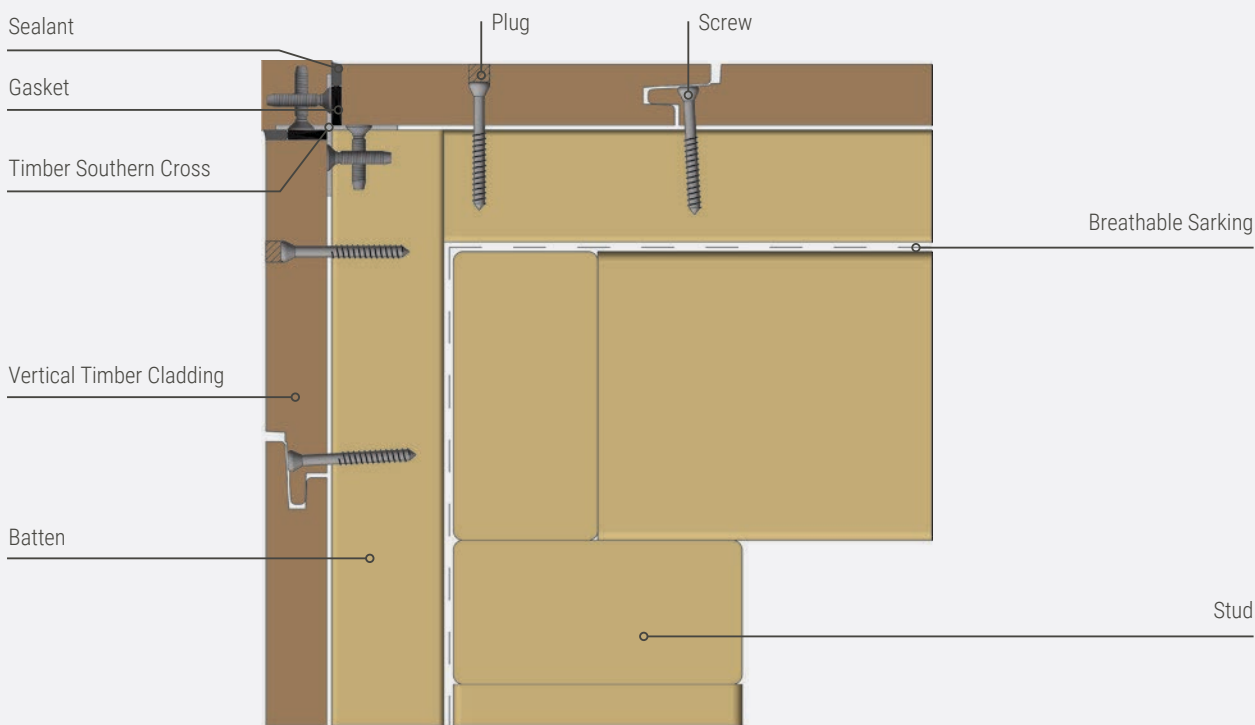


Fig 10.6.1: Southern Cross Corner Profile

10.7 Internal Corners

The aluminium internal corner piece was designed for exterior applications where the timber cladding joins at an internal corner. (A solid piece of timber can also be used, instead of the aluminium.) This application is quite rare. For interior applications, designers often advocate an internal mitre cut.

Screw the square-profile to the battens over the breathable sarking prior to installing the cladding.

- A. Once stud frame or substrate is prepared, secure the aluminium square tube to the corner using countersunk screws as required.
- B. Peel the backing off the sticky 12mm x 3mm rubber gasket and stick to the aluminium profile as close to the base of the trunk as possible (as shown).

- C. Install cladding boards using self-drilling screws. Use the gasket to maintain a 3mm gap between the timber boards and the aluminium profile.

- D. Apply the sealant to the gap, using the gasket as a backstop. If preferred, apply bead of sealant prior to installation of board. Ensure adequate amount of sealant to fill the gap. Once dry, cut off any excess sealant.

Horizontal Cladding: The installation procedure is the same as vertical cladding, but minus the battens.

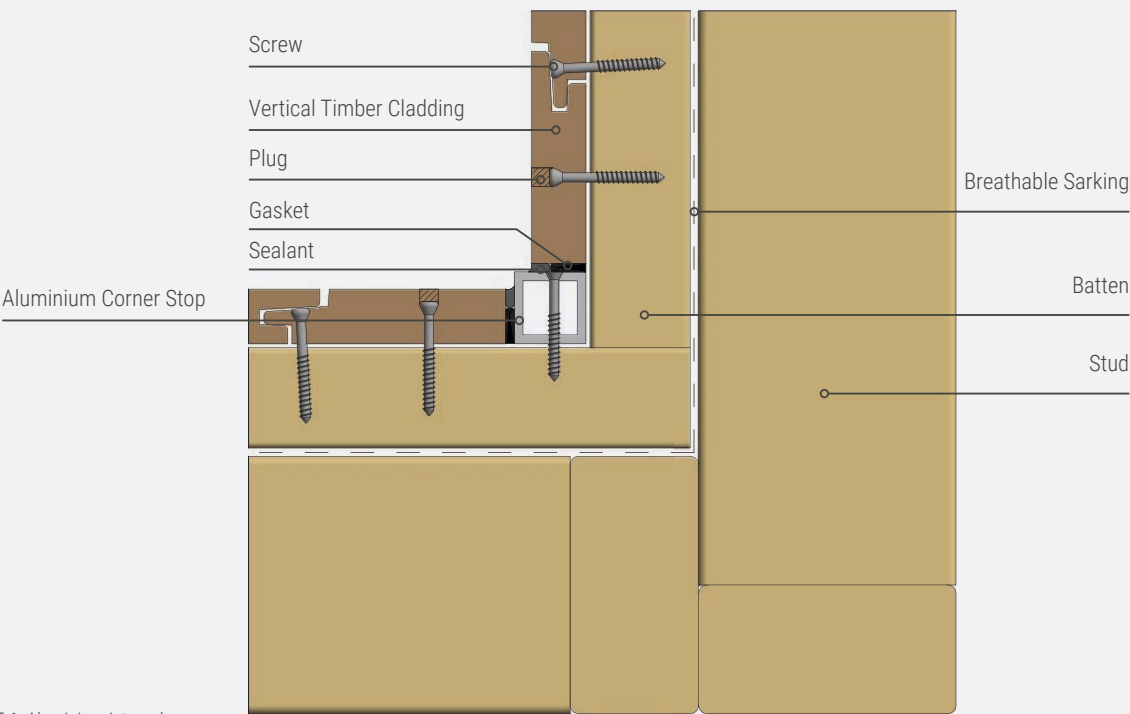


Fig 10.5.1: Aluminium internal corner

10.8 T-Profile

Available in Natural Anodised (this can be powder coated to virtually any colour), the T-Profile was designed so large walls could be broken up into sections, creating breaks along the facade.

Screw the Aluminium T-Profile to the stud over the breathable sarking prior to installing the cladding.

- A. Once stud frame or substrate is prepared, secure the Aluminium T-Profile using countersunk screws as required.
- B. Peel the backing off the sticky 12mm x 3mm rubber gasket and stick to the aluminium profile, as close to the base as possible (as shown).

- C. Install cladding boards using self-drilling screws (refer to section 2.3). Use the gasket to maintain a 3mm gap between the timber boards and the aluminium profile.
- D. Apply the sealant to the gap, using the gasket as a backstop. If preferred, apply bead of sealant prior to installation of boards. Ensure adequate amount of sealant to fill gap. Once dry, cut off any excess sealant.

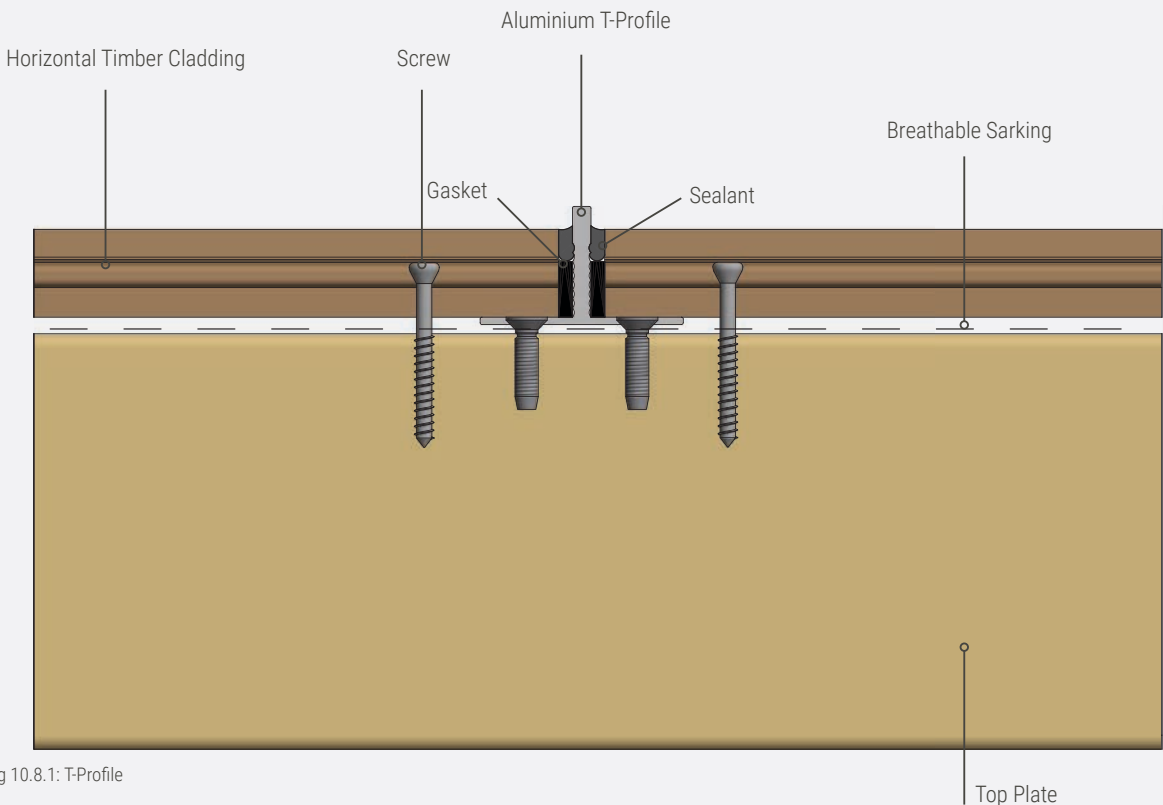


Fig 10.8.1: T-Profile

10.9 Aluminium L-Profile

The L-Profile is used at wall ends, divider between the cladding and another material, against window frames, bottom of walls and many other applications.

Screw the aluminium L-Profile to the stud over the breathable sarking prior to installing the cladding.

- A. Once stud frame or substrate is prepared, secure the aluminium L-Profile using countersunk screws as required.
- B. Peel the backing off the sticky 12mm x 3mm rubber gasket and stick to the aluminium profile as close to the base as possible (as shown).

C. Install cladding boards using self-drilling screws (refer to section 2.3). Use the gasket to maintain a 3mm gap between the timber boards and the aluminium profile.

- D. Apply the sealant to the gap, using the gasket as a backstop. If preferred, apply bead of sealant prior to installation of boards. Ensure adequate amount of sealant to fill gap. Once dry, cut off any excess sealant.

Horizontal Cladding: The installation procedure is the same as vertical cladding, but minus the battens.

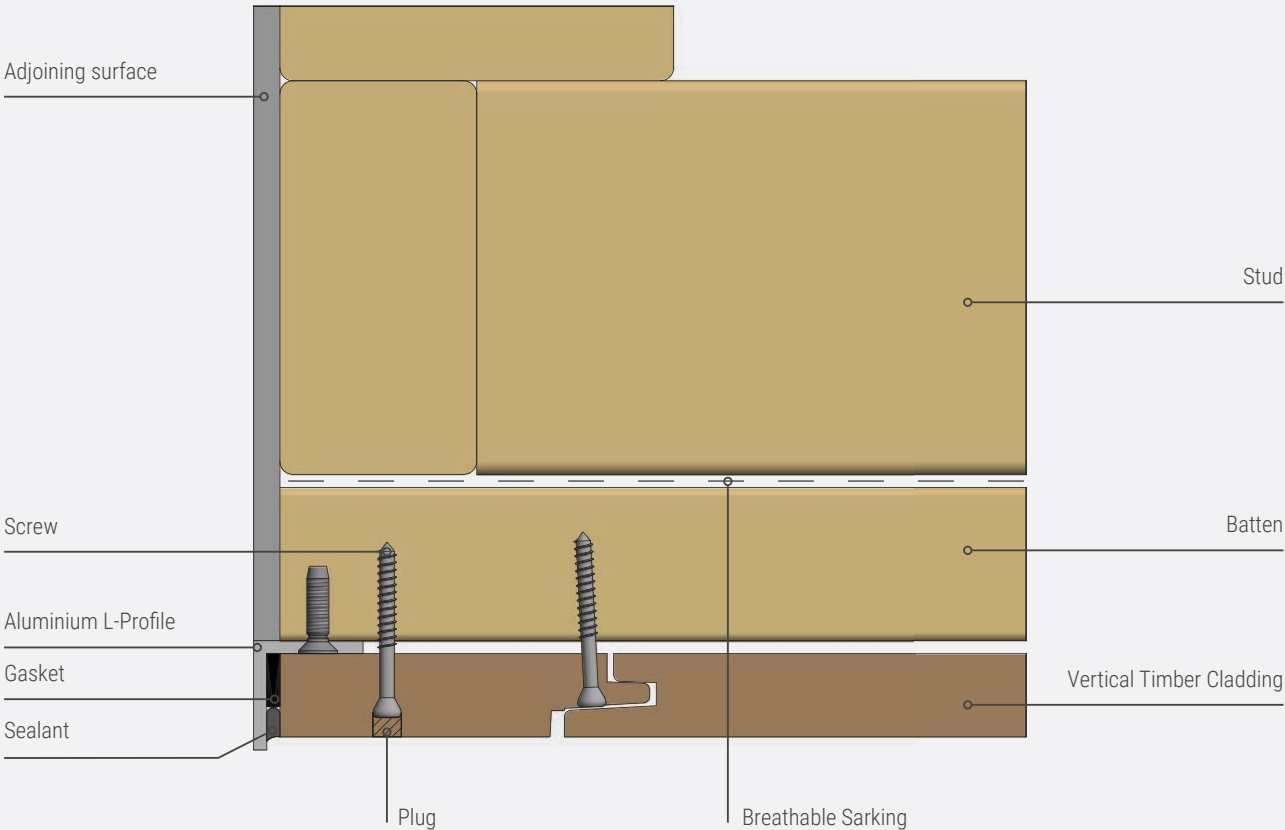


Fig 10.9.1: L-Profile junction

10.10 Base Details

The newest trim to be added to the range, the aluminium starter piece is used at the bottom of the wall, so that the first board can be concealed fixed. The trim is used when running your cladding boards horizontally, and is designed to fit into the groove of the Tongue & Groove Cladding profile.

10.10.1 Horizontal Cladding (Starter Boards)

- A. Fix 1mm spacer onto studwork to allow moisture to drain out.
- B. Screw-fix the starter extrusion (make sure it lines up with the bottom stud).
- C. Place the timber cladding onto the aluminium starter extrusion (make sure to allow for the timber cladding board movement) and screw in place.

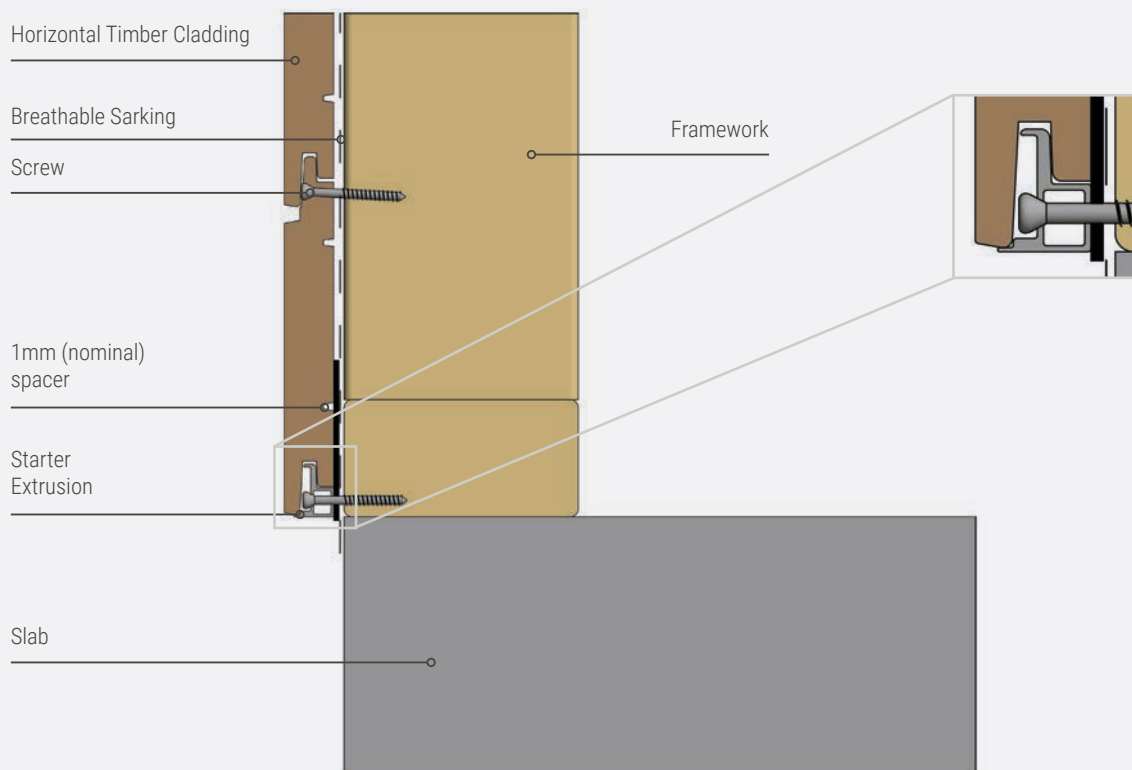


Fig 10.10.1: Starter board

10.10 Base Details (continued)

Sealing the end grain well is a critical detail to ensure the long-term constitutional and aesthetic integrity of the cladding. If the end grain is not correctly sealed, water will soak up the end grain causing the timber to expand, mould to grow, and blackness to appear.

For first and last boards on vertical cladding, see 10.4, 10.6, 10.7 and 10.9.

10.10.2 Vertical Cladding

- A. Install first cladding board

B. Put gasket onto the L-Profile

C. Put sealant onto the bottom of the cladding board
- D. Drill through the tongue of the cladding board and secure L-Profile

Note: There should be 1 screw into the L-Profile every 450mm.

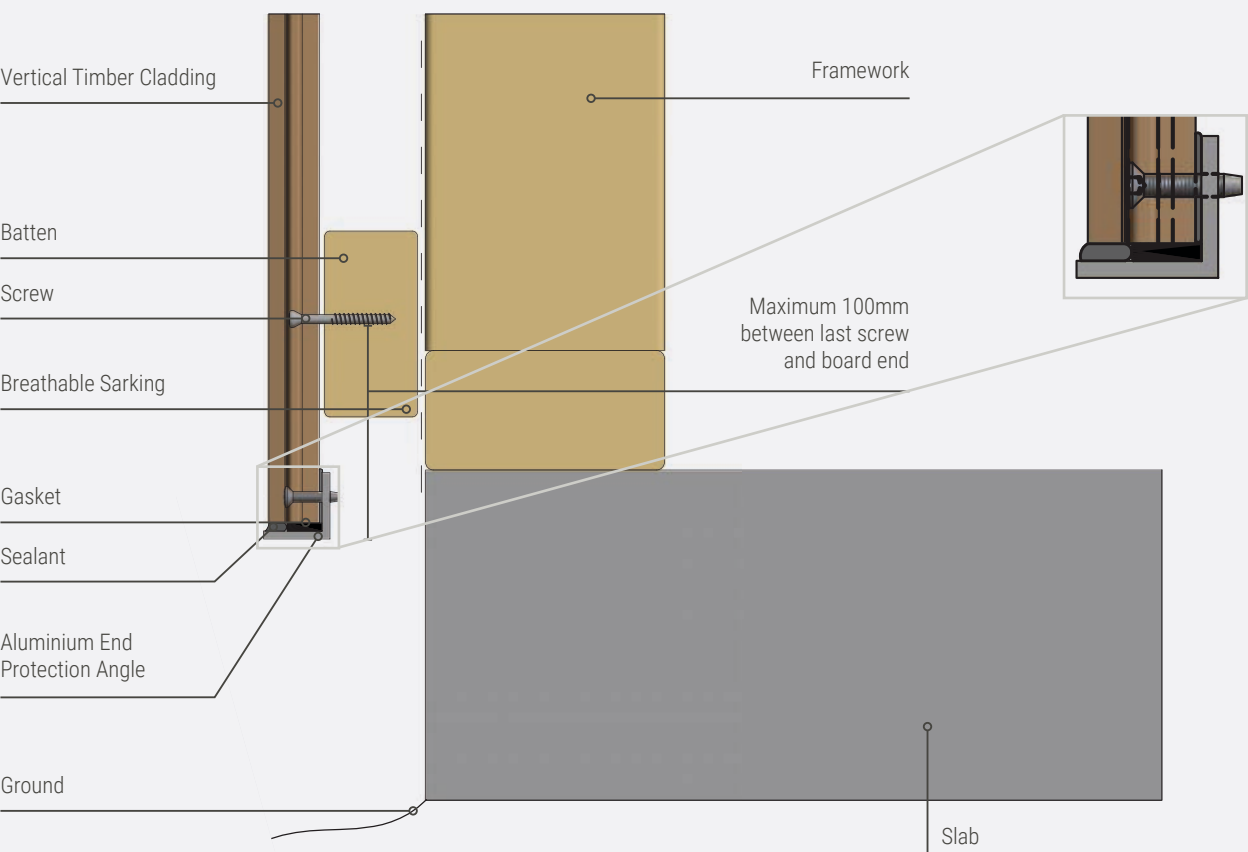


Fig 10.10.2: Vertical Cladding Base Detail

10.11 Curved Walls

First ensure the framing is set-up suitably, to allow for curved fixing battens. The centres of the stud work may have to be reduced excessively, depending on the radius.

With curved walls it's better to limit the board size to one of smaller width, particularly if the radius is tight. Careful attention must be paid to the distance between the opening of the tongue and groove in external application. When the opening creates waterproofing concerns, run a sealant down the groove during installation and neatly cut off excess once dry.

10.11.1 Tightest Radiuses for each Size Board

Board Size	Convex	Concave
68mm	475mm	nil
88mm	650mm	nil
138mm	1200mm	nil

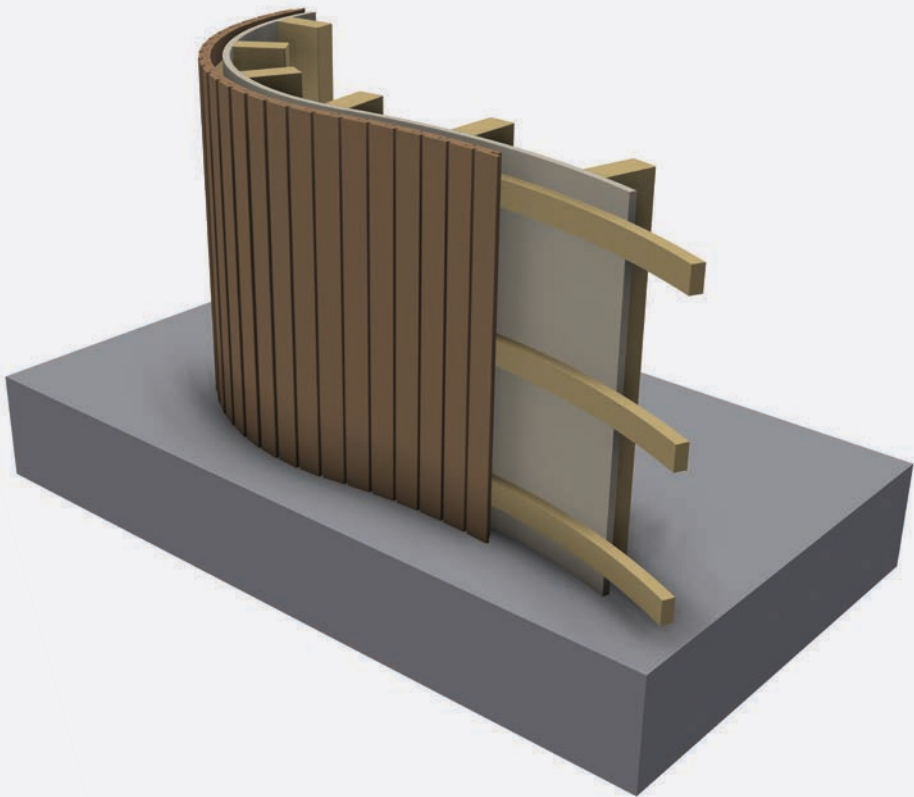


Fig 10.11.1: Curved wall

10.12 Penetrations

Penetrations to cladding need a secure fixing point. Where the cladding meets a door, window, etc. framing should be available to secure the cladding. Smaller penetrations such as lights, pipes, etc. may not need a fixing point. Sealant should be used in these situations for appearance and external waterproofing.

Window and door penetrations could use our L-Profile to neaten the detail.

Header – Window/Penetration

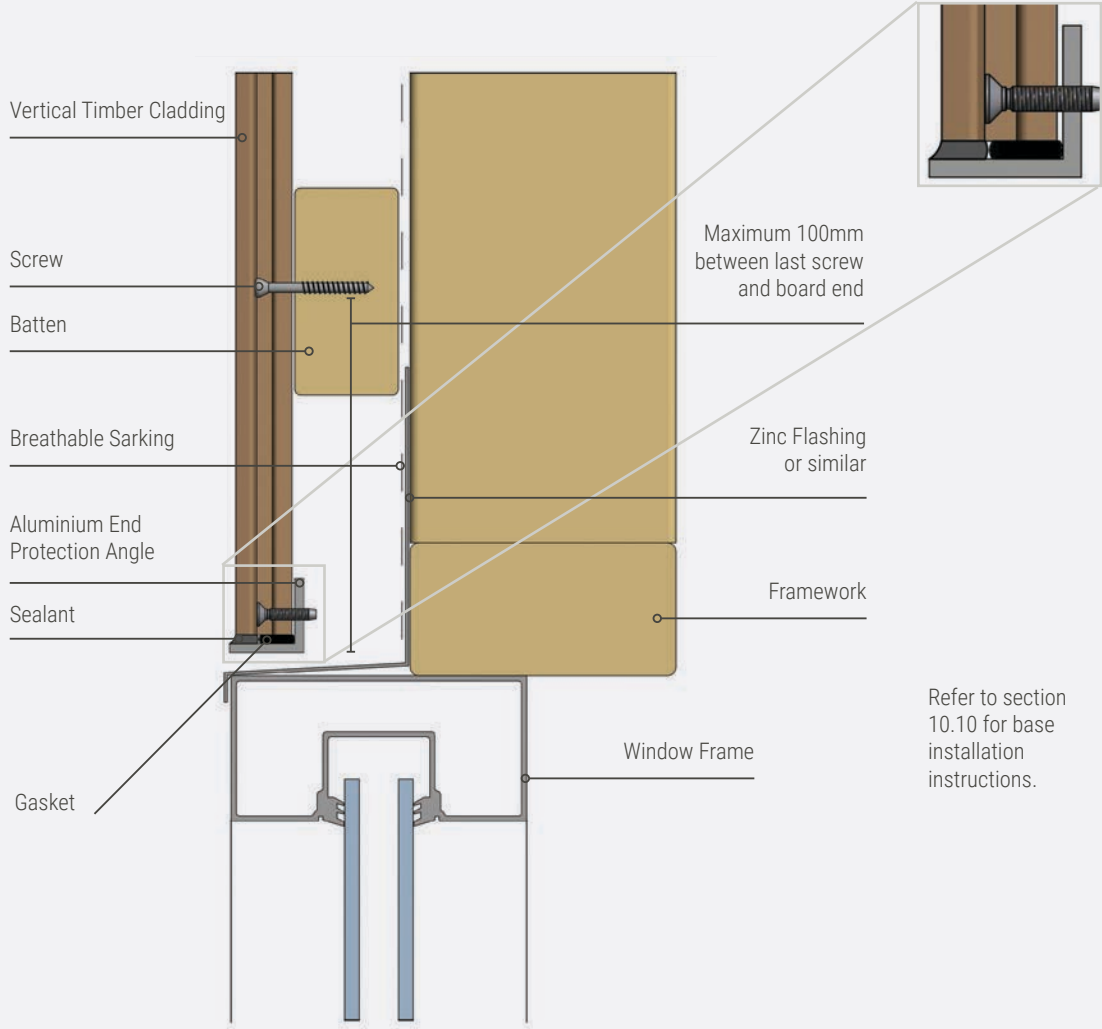


Fig 10.12.1: Header – Window/Penetration detail

10.12 Penetrations (continued)

Base – Window/Penetration

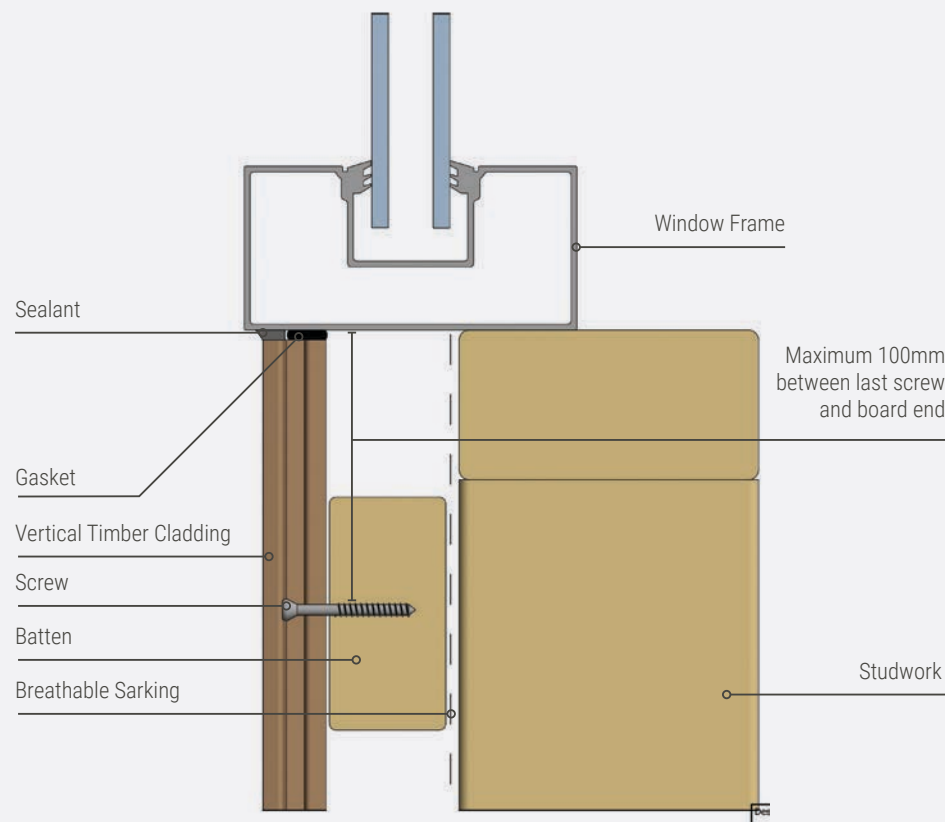


Fig 10.12.2: Base – Window/Penetration detail

Side – Window/Penetration

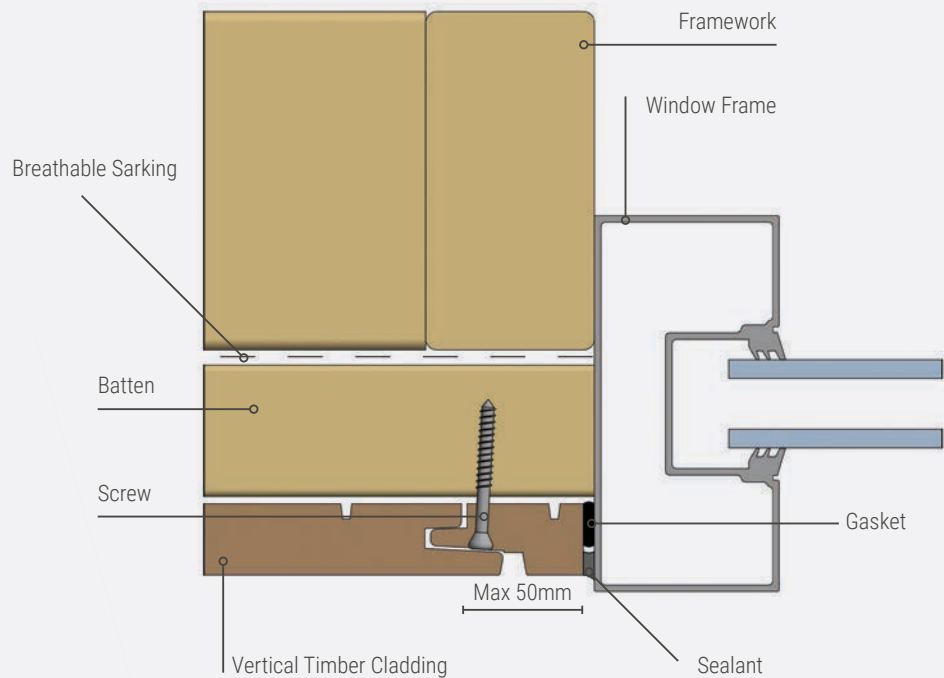


Fig 10.12.3: Side – Window/Penetration detail

10.13 Doors

Weight is a major consideration when applying solid cladding to doors, as the hinges need to be strong enough to hold the weight. Stronger hinges can also be more bulky and unsightly, so we recommend selecting a quality hinge that fits in with the desired aesthetic.

10.13.1 Solid Doors

When Cladding a solid door it is critical measures are taken to minimise the likelihood of moisture getting behind them especially in exterior applications. For this reason it is necessary to trowel adhesive to the door prior to Cladding installation. Ensure end grain is sealed where appropriate.

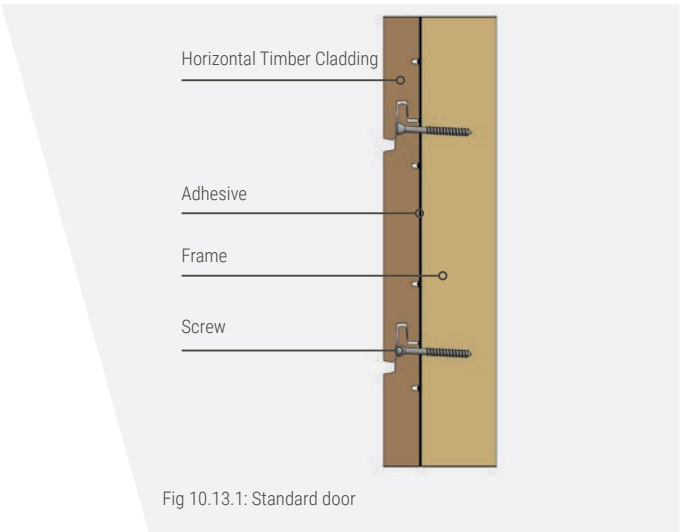


Fig 10.13.1: Standard door

10.13.2 Frame Doors

Cladding a framed door will likely require a custom made frame – not supplied by Sculptform. It is essential that the 450mm cladding board fixing points are maintained. Ensure end grain is sealed where appropriate.

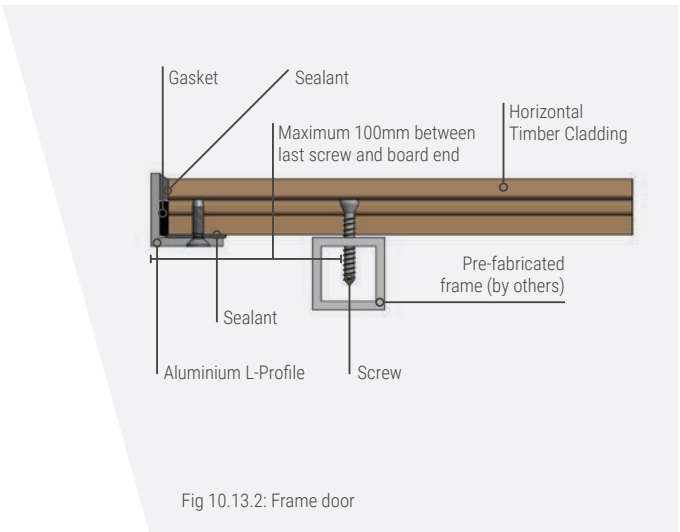


Fig 10.13.2: Frame door





12.0 UNDERSTANDING WOOD

Like humans, timber is a living organism. By learning and getting a basic understanding of the timber’s inherent structure, you will be able to work with the timber and know how to best utilise it.

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12.0 Understanding Wood

Understanding the tendencies of the oldest building material in the world will ensure you enjoy a lifetime's worth (and beyond) of its organic warmth and natural beauty. All species of timber, if left uncoated, will naturally weather after a few years if exposed to sunlight and moisture. Whether or not you prefer your timber cladding to retain its original patina or to silver gracefully will dictate the course of its periodic maintenance. Movement in timber should also be accepted as an unavoidable reality; therefore, it is essential to systematically provide allowances for this movement during installation.

12.1 Molecular Structure

To use a simple analogy, a piece of timber is like a cluster of cardboard straws held to together very tightly. Each straw represents a cell in the timber.

When the tree/log is cut into rough sawn boards, there is a large amount of moisture within the cell walls, this moisture in the cell walls is reduced by kiln drying the timber.

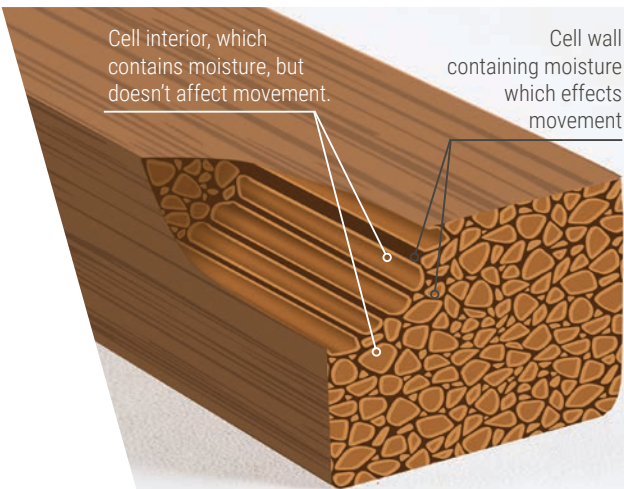


Fig 12.1: Molecular structure

12.2 Movement

As explained in "Molecular Structure," a piece of timber is like a bundle of cardboard straws: when the walls of the straws get wet, the straw grows outward. Multiply this by millions of 'little straws' and the timber will expand or contract across the width.



Fig 12.2: Movement

12.3 Maintenance and Finishing

Silvered/Weathered

Timber should receive one extra coat of clear oil soon after installation, to ensure mould growth, timber movement and surface checking are minimised. Further coats of clear oil should be applied periodically to ensure the timber is kept hydrated. Actual time periods vary from project to project.



Fig 12.4.1: Silvered/Weathered timber

Pristine/New

Keeping your timber looking 'new' requires regular maintenance. Regularity of maintenance will depend on the level of sun exposure, which varies between projects. Intergrain EnviroPro is a finish which Sculptform pre-finishes their cladding with, and is the ideal coating when you want maximum natural character and long periods between maintenance coats.

For an extensive overview on understanding maintenance and coatings, please refer to our Exterior Finishes Manual.



Fig 12.4.2: Pristine/New timber

Internal

Key considerations when it comes to maintaining internal timber systems are frequency of human contact and exposure to direct sunlight. A way to minimise maintenance is to apply a coating while not compromising the natural beauty of the timber. Tongue & Groove Cladding can be finished before dispatch to eliminate double handling, ensure ease of installation, and save significant time and resources on-site. For interior applications, we recommend Natural Accent as the best solution. Natural Accent is water based, and has a matt acrylic finish with good scruff resistance and film-forming properties, resulting in a smooth, even finish.

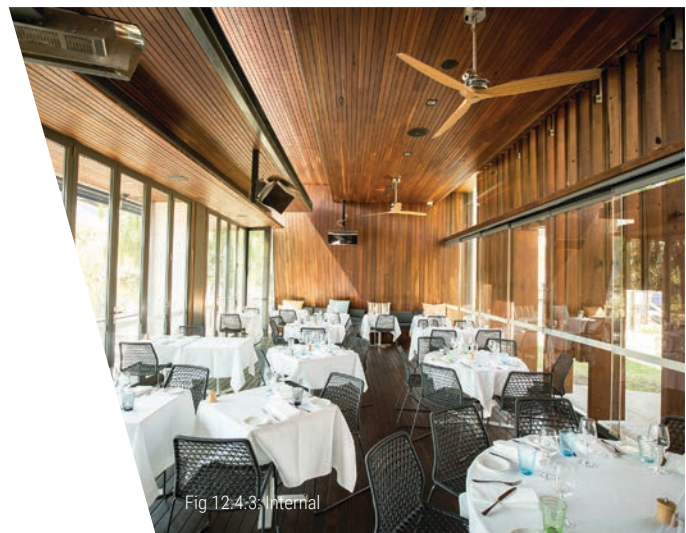


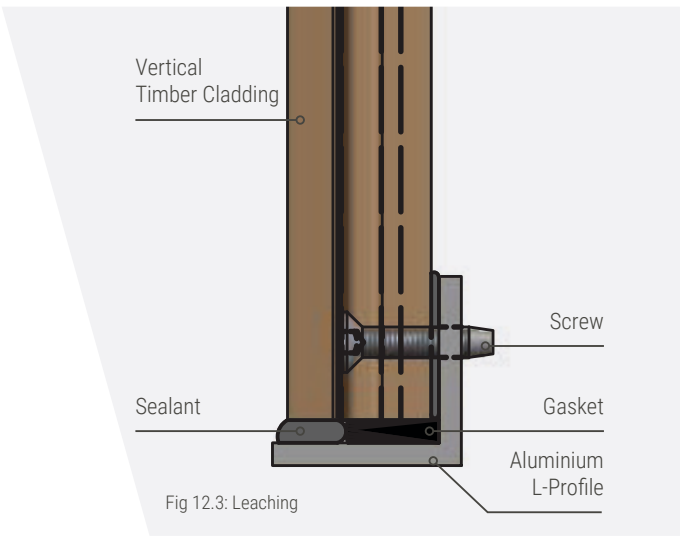
Fig 12.4.3: Internal

**The effect of maintenance on timber movement and durability can vary greatly depending on a number of factors. We suggest contacting one of our technical consultants to discuss your specific project requirements.*

12.0 Understanding Wood (continued)

12.4 Leaching

Leaching is the release of tannins from within the cell walls, which means the majority will come from the ends of the boards. Predominantly an aesthetic concern, it can be removed with tannin stain remover and dwindles over time.



12.5 Fire

BAL (Bushfire Attack Level) AS3959-2009

“This Standard is primarily concerned with improving the ability of buildings in designated bushfire-prone areas to better withstand attack from bushfire, thus giving a measure of protection to the building occupants (until the fire front passes) as well as to the building itself.”

Under this, standard solid timber can be used for 4 of the 6 levels: LOW, 12.5, 19 and 29.

For LOW, any timber can be used.

For 12.5 and 19 any solid timber can be used that has “a density of 750 kg/m³ or greater.” Typical species include Blackbutt and Spotted Gum. (See AS3959-2009, Appendix E, Table E1).

29 requires testing of each species. Some species which are listed as satisfying BAL 29 are Blackbutt and Spotted Gum.

It must be noted that the information above is referencing section 5.4.1, 6.4.1 and 7.4.1 of AS3959-2009.

C1.10 – Fire Hazard Properties for Floors, Walls and Ceilings

Covering a wide range of building types and areas within the buildings, this standard requires a material to meet Group 1, 2, 3 or 4.

Currently no solid wood will meet a Group 1 or 2, and all solid timbers meet Group 3 and 4.

The information above is intended to provide a quick understanding of the ‘typical’ fire codes or standards. It is your responsibility to engage a certified fire consultant to sign off on your design.

12.6 Sustainability

Sculptform is committed to sustainable building practices to ensure the long-term survival of our planet with minimal environmental impact. Responsibly harvested timber from carefully managed resources is one of the most sustainable building products known to man.

13.0 WARRANTIES AND DISCLAIMERS

Sculptform is the first Australian company to offer a warranty on its timber cladding (and components). This unprecedented move demonstrates how much we value quality and craftsmanship.

13.1 Warranties 64

13.2 Disclaimers 64

13.0 Warranties and Disclaimers

13.1 Warranties

Sculptform offers an exclusive warranty on timber cladding. Terms of the warranty are project-specific and are available on request during the early design stages. These can be found on our website sculptform.com.au

We supply above the Australian Standard. Sculptform apply the Natural Select standard: a minimum of 2/3 of volume from select-grade timbers and the remaining maximum of 1/3 from standard grade of timber, adding natural features for texture and visual interest.

13.2 Disclaimers

This manual is offered as a general guide to assist users of our products in selecting the right solution, and in correctly installing the product for long-term integrity. Every project has its own unique set of requirements and the advice given here is of a general nature only. Should you have any questions we strongly recommend contacting our technical department to assist you in finding a project-specific solution.

As new technology is introduced or industry standards are altered, Sculptform reserves the right to alter existing specifications and to delete product without notice.

All colours and images are reproduced as accurately as possible.

The design considerations in section 7 are a guide only, and do not take into account all factors in every application.

MY NOTES & SKETCHES

