

CEMINTEL®



ASPECT CLADDING®
Residential Façade Cladding
Direct Fix Cladding System Installation Guide

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Introduction

Cemintel Aspect Cladding® provides a versatile and durable façade with a modern style for timber or steel frame residential buildings.

Cemintel Aspect Cladding is a 300mm wide, 12mm thick board with a machine profiled shiplapped joint. It has a recessed overlap providing a 16mm horizontal joint feature providing a similar aesthetic to a decorative render.

Cemintel Aspect Cladding is fixed flat against stud framing and can be face fixed using a nail or screw gun, or hand nailing. Boards are 4.2m long for maximum coverage and factory sealed to easily accept exterior grade paints.

Manufactured from fibre cement Cemintel Aspect Cladding is resistant to cracking, warping and swelling, creating a highly durable and stable façade solution.

This Design and Installation Guide recommends good building practice methodology and has been prepared as a general guide of design considerations, system engineering information and installation procedures for common external applications. It assumes that the user has an intermediate knowledge level of building design and construction. In no way does it replace the services of the building professionals required to design projects, nor is it an exhaustive guide of all possible scenarios.

It is the responsibility of the architect, designer and various engineering parties to ensure that the details in this Design and Installation Guide are appropriate for the intended application. For further design information this guide should be read in conjunction with the Cemintel® Facades and Cladding – Design Guide and CSR Gyprock® The Red Book™ publications.



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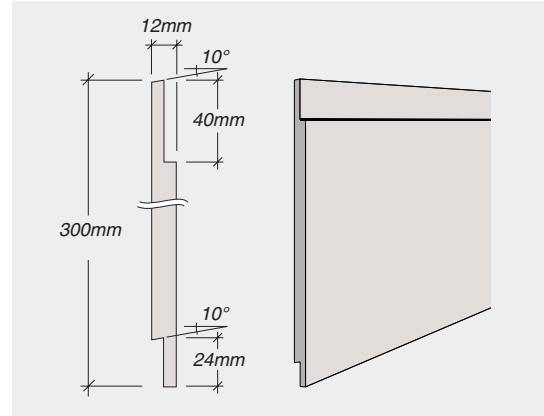
PRODUCT OVERVIEW

Panel Information

Cemintel Aspect is a 12mm thick by 300mm high fibre cement board with a smooth face. Shiplap style overlapping edges produce a regular 16mm recessed groove.

Cemintel Aspect is manufactured to AS/NZS 2908.2 Cellulose-cement products, Part 2: Flat sheets. Aspect is classified as Type A, Category 3.

In accordance with the NCC 2022 C2D10 [2019: C1.9] and NCC 2022 H3D2 [2019: 3.7.1], Cemintel Aspect Cladding can be used wherever non-combustible material is required by the code.



Product Code	Thickness (mm)	Width (mm)	Length (mm)
130475	12	300	4200

Product Specifications

Property	Specification	Manufacturing Tolerance	Relevant Standard
Panel Width	300mm	+ 0.0mm / - 3.0mm	AS/NZS 2908.2
Panel Length	4200mm	+ 0.0mm / - 4.0mm	AS/NZS 2908.2
Panel Thickness	12mm	+ 10% / - 0%	AS/NZS 2908.2
Overall Height (nominal)	300mm	+ 0.0mm / - 3.0mm	
Effective Cover (height nominal)	276mm	+ 0.0mm / - 3.0mm	
Diagonal (difference max.)	3mm		
Thermal Conductivity (at EMC)	0.270 W/m°C		
Panel Weight (nominal)	5.5kg/m		AS/NZS 2908.2

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SYSTEM OVERVIEW

03

SYSTEM OVERVIEW



Applications

Cemintel Aspect Cladding is suitable for both external façades and internal feature linings.

The Cemintel Aspect Cladding may be used on timber or steel framed buildings of up to two storeys that meet the geometric limits of AS 4055 : Wind loads for housing. When used as an external cladding it is suitable for Class 1 and Class 10 buildings only in wind classifications up and including N6/C4.

Cemintel Aspect Cladding can be used in many residential external and internal applications including:

- New homes, town houses and medium density residential construction in stand-alone or composite construction.
- Feature walls, building façades and additions.
- Recladding of existing walls.
- Gable ends.
- Infill panels around windows and doors.
- Cladding for garages and tool sheds.
- Internal feature walls. (Not suitable for wet areas).

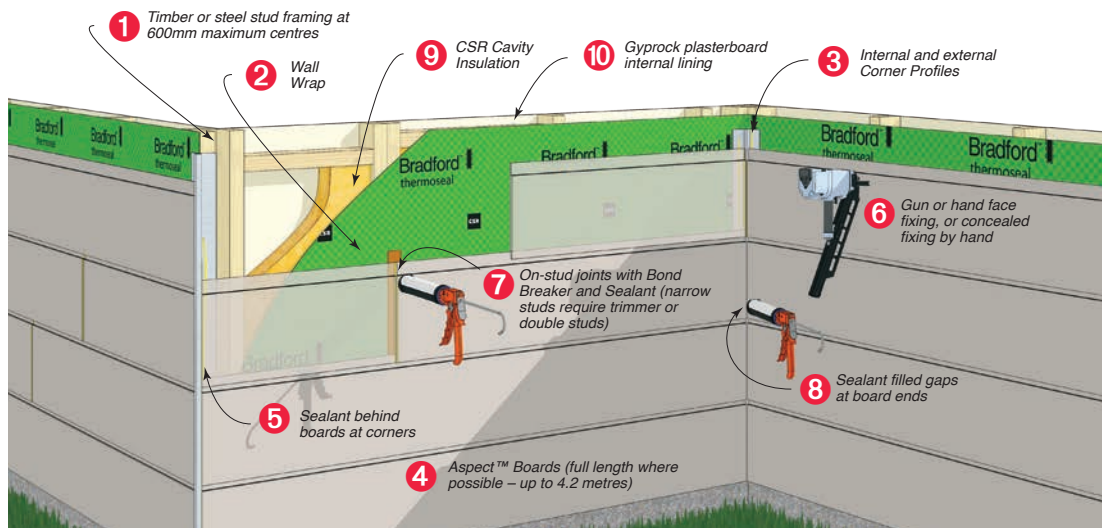
Advantages

The Cemintel Aspect Cladding system features include:

- Achieves the natural look of a wide timber board with long-term stability and minimal maintenance requirements.
- Wide 300mm board with shiplap joining provides attractive façade with 16mm high horizontal expressed grooves.
- Simple installation with direct fixing to stud framing over wall wrap/sarking.
- Nail fixing by gun or hand to timber framing or screw fixing to steel framing.
- Factory sealed board ready for paint finishing.
- Termite resistant.
- Manufactured from highly durable and robust fibre cement – panels will not rot, swell or warp when correctly installed and maintained.
- Weather resistance – provides effective protection against wind, rain and temperature extremes, mould and mildew.
- Fire – fibre cement sheets can be used where non-combustible material is required under the NCC provisions.
- Suitable for Bushfire Attack Level up to 29 (BAL-29) when constructed in accordance with AS 3959.

Direct Fix Cladding Systems

Aspect Cladding wall systems have overlapping boards to create a strong shadowline appearance. In many Australian residential applications (where homes are low rise and subject to low wind pressures), cladding is fixed directly to the frame. The boards are easily fixed to timber or steel frames using common fasteners. A degree of sealing is required at joints and gaps to prevent water ingress. Direct fix systems can be an effective means of weatherproofing low risk buildings.



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DESIGN + AESTHETIC
CONSIDERATIONS

This guide provides detailed installation information for external wall systems clad with Aspect Cladding in Timber and steel framed construction. This section outlines some important areas for consideration in determining an appropriate design of the Aspect Cladding facade. The following points are not exhaustive. It is the responsibility of the architect / building designer to ensure the design conforms to NCC requirements and other relevant building standards that may exist for that location. It is recommended that the architect/building designer assigns the responsibility for the façade design to the project engineer.

This installation guide should be read in conjunction with the NCC, and design information presented in the CSR Cemintel® Facades & Cladding – Design Guide and CSR Gyprock The Red Book publications.

Design Considerations – Façades and Cladding Systems

CSR recommends that a comprehensive assessment of the performance requirements for facades and external wall cladding systems be undertaken and is discussed in further detail in the 'Cemintel Facades & Cladding Design Guide' addressing areas including:

- **Structural Design** – framing and substrate options, direct fix and cavity fix installation requirements, earthquake loading, wind loading, stud set-out, cyclonic zones, structural bracing, internal linings and curved walls;
- **Weatherproofing;**
- **Moisture Management** – condensation risk, wall wrap/sarking selection and air barriers;
- **Energy Efficiency/Thermal Design** – thermal performance, thermal break requirements, building envelop sealing and thermal bridging;
- **Climates Zones for Thermal Design;**
- **Fire Resistance Performance** – fire rated external wall systems, supplementary fire zone protection, wall framing fire resistance, framing and lining, spread of fire, bushfire prone zones and roof & eaves design;
- **Acoustic Performance;**
- **Extreme Climate Conditions** – coastal areas, corrosive zones/categories and temperature extremes;
- **Other Design Considerations** – window selection, services, renovations, termite management, specialist profiles and product limitations.

Framing

The Cemintel Aspect Cladding can be fixed horizontally to timber or steel framing with studs at 600mm maximum centres. Studs at board end joints must have a minimum face fixing width of 45mm for timber or 50mm for steel to provide sufficient support for fixings. Where smaller framing is used, double studs, trimmers or battens must be provided at vertical sheet joints to ensure fasteners have suitable edge distances. Refer to Figure 7.02.

As a minimum requirement, framing shall be in accordance with the following applicable standards:

- AS 1684 – Residential timber-framed construction.
- AS/NZS 4600 – Cold-formed steel structures.
- AS 3623 – Domestic metal framing.
- AS 4055 – Wind loads for housing.
- National Construction Code (NCC).

Timber shall be seasoned or have reached an equilibrium moisture content of 16% or less at the time of framing. Unseasoned timber is not recommended.

The design and construction of the steel frames should be considered in conjunction with the advice from the manufacturer. In highly corrosive environments, appropriate measures should be taken to protect the frame from corrosion. Steel framing must be a minimum 0.55mm BMT to a maximum 1.6mm BMT. Do not fix Cemintel Aspect Cladding to thicker cold rolled members or to hot rolled steel. Vertical timber or metal battens may be used over these members. Refer to framing manufacturer for appropriate products.

DESIGN + AESTHETIC CONSIDERATIONS



Wind Loading

Cemintel Aspect Cladding is suitable for buildings within the geometric limits of AS 4055 – Wind Loads for Housing. These limits include a roof height less than 8.5m, eaves height less than 6m, and a building width less than 16m.

Stud spacing and board fixing specifications are provided for wind classifications N1 to N6 and C1 to C4 for timber and steel framing. It is the responsibility of the building designer to determine the wind class of the building and the suitability of the system.

Limitations

Aspect Cladding is unsuitable for the following applications: panels with non-vertical face (e.g. parapet capping); internal wet areas; water features; chimney cladding; exposure to temperatures over 50°C; contact with standing snow or ice.

Structural Bracing

Cemintel Aspect Cladding is not designed to provide wall bracing. Bracing must be provided in the structural framing in the normal manner by using methods such as strap bracing or sheet bracing. Where sheet bracing is used, the entire wall framing to be clad with Cemintel Aspect Cladding must be sheathed to maintain a uniform fixing plane. Note that window set-out will be affected.

Control Joints

As Cemintel Aspect Cladding has multiple horizontal joints and random positioned end joints, no additional control joints are required. Movement joints provided in framing should be aligned to joints in the boards.

A control joint must be installed when a masonry wall adjoins framed construction, and at the junction of framed additions or existing buildings, to allow for differential movement. The current and new framing and cladding systems must be discontinuous at this control joint. Refer to 'Installation' section.

For two storey construction, frame shrinkage may require consideration by the building designer.

Thermal Break

A thermal break is required where Cemintel Aspect Cladding is fixed directly to steel framing of walls enclosing habitable or usable spaces. For detailed information refer to the NCC.

The thermal break is applied to the face of the frame to meet the deemed to satisfy requirements of the NCC. The thermal break is used to ensure that the thermal performance of the wall is comparable to that of a timber framed wall.

Bushfire Prone Areas

In accordance with AS 3959, Aspect Cladding is suitable as an external wall lining for buildings assessed as BAL-19 or lower, and where the wall includes sarking, for buildings up to BAL-29.

Cemintel Aspect has been tested to AS/NZS 1530.3 and can achieve BAL-40 or BAL-FZ (with 10m vegetation set-back) when used in conjunction with Gyprock Fyrchek MR plasterboard and installation methods in accordance with Gyprock fire rated system specifications and details. For more detailed fire system information, please refer to Gyprock publication, The Red Book O1 Design Guide.

For additional bush fire requirements, refer to AS 3959 Construction of buildings in bushfire prone areas, and to Volume Two of NCC 2022 Part H7 [2019: Part 2.7].

In addition to the standard structural framing, fire rated systems require minimum 70 x 35mm H3 timber battens to be fixed to the face of studs in accordance with details outlined in the Cemintel Facades and Cladding guide. Vermin proofing which also allows cavity drainage, such as a cavity baffle, is required at the base of the battens.

Termite Protection

As there is a wide variety of methods for managing termite entry to buildings, and selecting the appropriate method for any structure depends on specific risk factors and the form of construction, measures for termite management have not been addressed in this guide.

Refer to your local pest management service, the NCC, AS 3660: Termite management, and your local building authorities for more information about the requirements for the design of a suitable termite management system.

Services

The Cemintel Aspect Cladding system will accommodate services that are run through the framing. Any notches or holes formed must be considered in the framing design.

Penetrations

Penetrations in the Cemintel Aspect Cladding system panels must be neatly cut using appropriate tools such as a saw, drill or hole saw. Penetrations should be prepared with a clearance of 5mm all around and the gap must be fully sealed with sealant.



DESIGN + AESTHETIC CONSIDERATIONS

Water Resistance

The control of water ingress to a building is the responsibility of the designer. All flashings, damp proof courses and sealants must be installed in accordance with the relevant instructions, standards and building codes.

Wall Wrap/Sarking Selection

To ensure occupant comfort and protection of the building frame, the following factors should be considered during the selection of the correct wall wrap/sarking.

- **Condensation Risk:** This is a complex problem and can occur under a variety of conditions (not just in cold and tropical climates) so selection of the right wall wrap/sarking needs to consider the local climate, building use and orientation, material R-Value of the insulation, as well as the degree and location of ventilation.
- **Weather Barrier:** Wind loads can produce lower air pressures within buildings than on the outside, forcing water through small gaps in the building envelope around penetrations and joints, even at low wind speeds.

Careful selection of a wall wrap/sarking with the appropriate level of vapour permeability or vapour resistance is one key factor in reducing condensation risk. Key selection characteristics for a suitable wall wrap/sarking are as follows:

- The wall wrap/sarking must have a 'high' water barrier classification – an 'unclassified' rating is not suitable.
- Wall wrap/sarking must meet the requirements of AS 4200.1: Pliable building membranes and underlays – Materials, and be installed in accordance with AS 4200.2: Pliable building membranes and underlays – Installation requirements.

Whilst the requirement to seal joints and penetrations may vary depending upon NCC and/or state requirements, CSR recommends sealing the external wall wrap/sarking to maintain vapour performance and draught proofing effectiveness, as well as to ensure water barrier integrity. As there are a number of factors that need to be considered in assessing and managing condensation risk, it is recommended that designers undertake a condensation risk analysis prior to wall wrap/sarking selection as part of the building design. Additional literature on this subject is available from CSIRO/BRANZ/ASHRAE/ ABCB and CSR DesignLINK can help with this assessment.

Condensation

Condensation occurs as warm, moist air cools and contacts cold surfaces that are below the air's dew point. Absorptive materials such as brick, cement sheet and timber are permeable and act as a buffering material until they become saturated, whilst nonabsorptive materials such as steel and glass reach saturation quickly. Water can then accumulate and must be allowed to dry or drain away. Moist surfaces can result in health issues for occupants and lead to degradation of building materials and loss of structural integrity.

The likelihood and severity of condensation is largely a function of:

- Climate (primarily temperature and humidity including seasonal and diurnal variations).
- Occupancy and building use.
- Material properties of the building envelope (including insulation material type and R-Value).
- Passive and mechanical ventilation.
- Air tightness.
- The building envelope's ability to allow or prevent the movement of vapour.
- The building envelope's ability to act as a water barrier behind the primary cladding element.
- The drying potential provided by a building envelope.

CSR recommends that architects/designers undertake a condensation risk analysis prior to selecting vapour control membranes. A rigid air barrier may be required where buildings are subject to higher wind loads, and in some climate zones may require the incorporation of a vapour control membrane in addition to the rigid air barrier. Greater use of insulation, better sealing to restrict air movement, and increased use of air conditioning leads to larger differences between the temperature and water vapour content of indoor environments and adjacent outdoor areas and greatly increases the risk of condensation at surfaces and interstitial spaces.

The Australian Building and Construction Board (ABCB), "Condensation in Buildings Handbook", 3rd Edition 2019, discusses the condensation risks and provides guidance on managing condensation. This guidance includes review of Bureau of Meteorology climate statistics (including maximum and minimum average monthly temperatures together with average monthly dew point temperatures). This highlights the likelihood of condensation which occurs when minimum temperature falls below the dew point, and identifies the daytime drying potential.

DESIGN + AESTHETIC CONSIDERATIONS

**TABLE 4.01** Maximum framing centres for plasterboard and wallboard linings on internal walls

Linings (horizontal or vertical sheet orientation)	Maximum Stud Spacing (mm)			
	Design Ultimate Limit State Load (kPa)			
	0.25	0.50	0.75	1.00
10mm Gyprock Plus	600	600	450	450
Other 10mm Gyprock plasterboards	600	600	450	450
13mm and 16mm Gyprock plasterboards	600	600	600	600
6mm CeminSeal Wallboard	600	600	450	450
9mm CeminSeal Wallboard	600	600	600	600

Note: Contact CSR DesignLINK stud spacing requirements for design wind pressures in excess of 1.0kPa and finishes other than paint, such as tiling.

Insulation

Energy efficiency requirements for buildings are set out in the NCC as performance requirements and acceptable construction practices, and are dependant on geographical climate zones. To meet the requirements, it is recommended that CSR Bradford insulation be installed in the wall framing. Check with local building authorities for minimum insulation requirements.

Cold Climates

In cold climates where condensation in the wall cavity is possible, a vapour barrier is also recommended between any internal linings and the framing.

Cemintel Aspect Cladding is not designed to be in contact with snow or ice build-up, such as is experienced in alpine areas subject to snowdrifts. When used in freeze/thaw conditions, Aspect Cladding must be painted prior to exposure to freezing conditions.

Internal linings

Internal linings are to be designed for the applicable pressures calculated in accordance with AS 4055. For Gyprock Standard Plasterboard linings, the arrangements in Table 4.01 may be used. Sheet fixing details are to be in accordance with Gyprock publication The Red Book 02 Residential Installation Guide. For other lining materials, consult the manufacturer.

Coastal Areas

Cemintel Aspect Cladding is suitable for many coastal areas. Corrosivity zones are detailed in AS 4312. Cemintel Aspect Cladding may be used in zones up to and including C4 - High. In C4 corrosivity zones, face fixings that are not countersunk and covered with recommended filler must be Class 4 or

stainless steel. It is recommended that the building designer assess the site in accordance with the standard and local conditions.

Cemintel Aspect Cladding is NOT suitable for Corrosivity Zone C5 - Very High. This includes the beachfront in regions of rough seas and surf beaches, and inland for several hundred metres, e.g. around Newcastle extending over half a kilometre from the coast. It also includes aggressive industrial areas where the environment may be acidic with a pH of less than 5.

Consideration must also be given to local weather and topographical features that can cause an increase in the distance that salt spray can travel beyond the limits detailed in AS 4312.

In Category C3 and above, salt laden air must be excluded from the wall cavity, for instance by lapping and sealing vapour barriers and flashings at corners, penetrations and joins. All walls which are protected by soffits above should be washed down twice per year, to remove salt and debris build-up, particularly around window/door openings.

Flashings and Cappings

In general, flashings shall be designed and installed in accordance with SA HB 39:2015 - Installation code for metal roofing and wall cladding. All flashings are supplied by others.

TABLE 4.02 Flashing Upstand

Wind Classification	Flashing Upstand Minimum (mm)
N1, N2, N3/C1	150
N4/C2	200
N5/C3	300
N6/C4	350

Window Selection

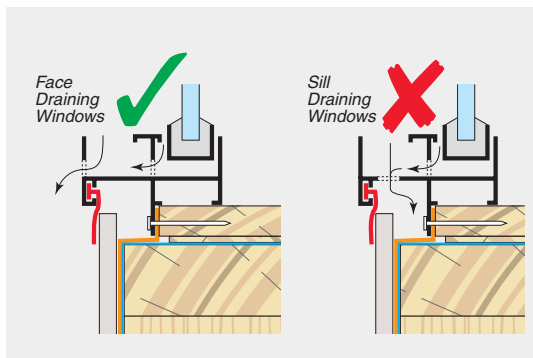
The Aspect Cladding system is designed to accept standard aluminium or timber framed windows and doors. Aluminium windows **MUST NOT** have sill drain holes which can direct water behind the cladding.

Consideration must be given to the total depth of the wall to ensure the required clearance is provided at the window jamb to accommodate the cladding. As per normal industry practice, reveal depth is usually varied to adjust the window location.

Elements that affect window/door installations include the depth of the stud framing, the thickness of internal linings, the depth and design of the chosen window frame, the depth of the timber reveal and the total depth of the cladding system. Refer to typical window installation details later in this guide.

Jamb flashing is recommended in all cases, and for ease of installation, these should be included when ordering windows.

TABLE 4.03 Window Drainage



Building Renovations

When undertaking building renovations, remove all cladding and wall wrap/sarking from the original wall framing. Ensure the condition of the framing is in accordance with current applicable requirements. Install additional studs where required and prepare framing, wall wrap/sarking and flashings as per details in this publication.

Jointing Solutions & Surface Finish

All products should be painted within three months of delivery to site. Cladding Sheet and Eaves Lining Sheet do not have a priming coat which may be required when coating. All cut edges should be pre-painted with an exterior paint sealer.

Where Cemintel cladding products are exposed to the elements for more than three months from delivery, CSR recommends the application of a priming coat before applying the decorative coatings. Refer to the coating manufacturer's recommendations.

It is important to seek advice from the paint coating manufacturer to ensure you select the most appropriate products for Cladding Sheet and Eaves Lining Sheet. Considerations should include:

- Prior to the application of the external texture coating system, walls must be washed down with clean fresh water to remove salt spray build-up from sheets and fixings. Sheets must be allowed to dry before coating. Refer to 'Wash Down Process' section;
- The straightness of the substrate framing;
- Sheet layout around openings to minimise visibility of sheet jointing;
- The movement joint systems for use with Cladding Sheet and Eaves Lining Sheet systems are appropriate for external use, e.g., UV stabilised;
- The coating systems suitable for use with Cladding Sheet and Eaves Lining Sheet systems are usually 100% acrylic, exterior grade, high performance, elastomeric membrane weatherproofing coating, e.g., Dulux Acratex 955 or Wattyl GranolImpact or similar;
- Paint finishes must be maintained in accordance with the manufacturer's recommendations. Any cracked or damaged flashings or seals that would allow water ingress must be repaired immediately. Any damaged sheets must be replaced;
- Colour – light colours are more forgiving. They also do not absorb as much heat so there is less stress on the jointing system; and
- Level of gloss – spectral reflectivity is lower with matt finishes than gloss finishes. Cemintel recommends low gloss or matt finishes as light is diffused and there is less chance of visual phenomena like patchiness, undulations etc.

Refer to coating manufacturer to determine suitable coatings. Cemintel recommends using trained applicators that are approved by the coating manufacturer. It is the responsibility of the applicator to use the appropriate components and compounds sufficient to eliminate cracking under normal building conditions.

DESIGN + AESTHETIC CONSIDERATIONS



Wash Down Process

An external coating system must be applied and maintenance of the coating system shall be in accordance with coating manufacturer's recommendation. The following is recommended as a minimum maintenance regime:

- Where sufficiently exposed, rain can perform a natural wash down of the wall and ongoing maintenance should be limited to occasional rinse down or using a soft cloth or soft brush (like a dust pan brush).
- Walls which are protected by soffits above must be washed down twice per year to remove salt and debris build up particularly at joints.
- Normal dirt can be removed with a soft brush and warm water up to 50 degrees, to which a small amount of dishwashing liquid or soap has been added. The weatherboards should be rinsed with clear water before they dry.
- Calcifications should be removed with a 5% sulfamic acid solution or with a commercial lime remover. The façade should be rinsed with clear water after cleaning.
- Weatherboards discoloured by algal growth should be treated with an algicide without bleaching agents. This application should be allowed to take effect for several days. Afterwards, clean the weatherboards using the 'normal dirt' procedure above.
- When rinsing down weatherboards, use no more than 700 psi (50kg/cm²) of water pressure at a minimum of 3m to 3.5m distance from the face of the wall. Water pressure should be applied downward to avoid forcing water into joints and gaps.
- Use neutral detergent with a soft cloth or soft brush when removing dirty spots from a weatherboard. When diluting the neutral detergent, follow the manufacturer's instructions and use the weakest solution possible.

Inspection, Repair and Maintenance

The durability of the Aspect Cladding wall system can be enhanced by periodic inspection and maintenance. Inspections should include examination of the coatings, flashings and seals. Any cracked or damaged finish or seals which would allow water ingress must be repaired immediately by resealing the affected area, or by removing the weatherboard and replacing sealant. Any damaged flashings, sheets or sealant must be replaced as for new work.

Regularly inspect weatherboard surfaces and follow wash-down procedures when required.

Ensure ventilation and drainage gaps between weatherboard and flashings are clear of any debris.

It is recommended storing additional weatherboards in case any weatherboards are damaged in the future.

05

COMPONENTS + ACCESSORIES








COMPONENTS + ACCESSORIES

05

Note: Codes can change from time to time. Refer to the website for the current list of components prior to ordering.

Accessories



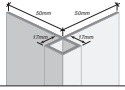
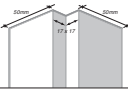





Note: The length of the fixings will need to be increased to ensure the same or greater embedment depth is obtained when additional layers are added, such as a Rigid Air Barrier (RAB), fire-rated linings, and/or thermal break materials. Nail fixing through multiple layers can be difficult and screw fixings are the preferred method of construction.

Product	Description	Size/Colour	Quantity	Product Code
CLADDING FIXINGS				
NOTE: In high corrosion zones (C4), Class 4 or Stainless Steel fasteners may be required. Refer to "Coastal Areas". Supplied by others.				
	Face Fixing Cladding Nails for Timber Stud Framing – Hand and machine driven nails. Class 3 Hot Dipped Galvanised (HDG) or, Class 4 Stainless Steel (S/S). Used for direct fixing Aspect Cladding to timber stud framing.			
	• 2.8mmø x 50mm Gal. Fibre-cement nail	2.8mmø x 50mm	2kg	77259
	• 2.8mmø x 50mm D Head nail	2.8mmø x 50mm	3000pcs	127799
	• ND50 Brad Nail S/S	14G x 50mm	Supplied by others	
	Face Fixing Cladding Screws for Steel Stud Framing – Used for direct fixing Aspect Cladding to steel stud framing over a thermal break. To suit 0.55mm BMT G550 framing.			
	• Buildex FibreTeks self-embedding CSK Rib head, Phillips drive, Climaseal 4 finish	10-18 x 30mm (M4.8-18 x 30mm)	Pack of 1000 (loose)	125614
	• Buildex WingTeks self-embedding CSK Rib head, Phillips drive, Climacoat finish	8-18 x 35mm	Pack of 1000 (loose)	26626
WALL WRAPS/SARKING				
	Thermoseal™ Wall Wrap – Non-permeable, reflective. High water resistance classification	1350mm x 30m 1350mm x 60m	1 roll	107458 10576
	Enviroseal Residential (RW) - High permeability, High water resistance classification	1500 x 50m	1 roll	120923
	Enviroseal Commercial (CW) - High permeability, High water resistance classification. Available with integrated tape (CW-IT)	1500 x 50m	1 roll	CW118593 CWIT153675
	Thermoseal™ Commercial (CW-IT)			
	Enviroseal Hightack Tape – used to seal wall wrap/sarking at overlap joins, around openings and at flashings. Black, single sided, aggressive adhesive tape with a high initial grab and flexible carrier.	60mm x 25m	1 roll	160950
	Enviroseal SLS Flexi Tape – used to tape corners of openings	60mm x 5m	1 roll	124872
INSULATION				
	Bradford Gold Wall Batts – R1.5 (75mm)	1160mm x 420mm 1160mm x 580mm	22 pack 22 pack	113938 113939
	Bradford Gold Wall Batts – R2.0 (75mm)	1160mm x 420mm 1160mm x 570mm	12 pack 12 pack	153643 153648
	Bradford Gold Wall Batts – R2.5 (90mm)	1160mm x 420mm 1160mm x 570mm	8 pack 8 pack	153646 153651
	Bradford Gold Wall Batts – R2.7 (90mm)	1160mm x 420mm 1160mm x 570mm	5 pack 5 pack	153647 153652
OTHER				
	Sealant/Adhesive – Sikaflex® 11FC. To be used at all board end joints and at corners to seal behind cladding. Paintable. Apply to manufacturer's specifications.	310mL tube	1 each	39378
	Flexible Sealant – Sikaflex®-PRO polyurethane sealant for gaps around windows, doors and other penetrations. Paintable. Apply to manufacturer's specifications.	310mL tube	1 each	11378
	Sealant Primer – Sika® Primer-3 N should be applied to surfaces prior to sealant to improve the long-term performance of joints. Apply to manufacturer's specifications.	250mL	1 each	115227

05

COMPONENTS + ACCESSORIES

Note: Codes can change from time to time. Refer to the website for the current list of components prior to ordering.

Product	Description	Size/Colour	Quantity	Product Code
	Bond Breaker Tape – Used behind panel joints made on framing. Tape is applied to the face of sarking and joints are filled with sealant. Tesa Multiform Tape N°7492, 48 x 3mm polyethylene closed cell foam tape.	25m	1 each	13172
	Corner Backing Angle – Metal angle flashing used at some internal and external corners to assist with waterproofing. Manufactured from steel with Galvalume AZ150 corrosion resistant coating. Size 50 x 50 x 3030mm.	3030mm	1 each	111498
	External Corner Profile – Aluminium extrusion for external building corners.	3000mm	1 each	131271
	Internal Corner Profile – Aluminium extrusion for internal building corners	3000mm	1 each	131272
	Edge Sealer – For sealing panel edges after onsite cutting.	200mL 2000mL	1 each 1 each	100166 180928
	Thermal Break – Extruded polystyrene strip to meet R0.2 minimum NCC requirement. Required when directly fixing to steel framing. Contact CSR for details.	7 x 38 x 1250mm 330 strips	1 each	466163
	Flashing Tape – Used to seal wall wrap/sarking & flashing at various locations.		Supplied by others	
	Flashings & Cappings – Flashings are to be designed and installed in accordance with SA HB 39:2015 and good building practice. (Supplied by others)		Supplied by others	
TOOLS				
	Makita Plunge Saw Kit (1300W) includes 1400mm guide rail and bonus 165mm fibre cement saw blade – excellent for cutting cement based sheets. Must be used with a dust extraction system.	165mm	1	165485
	Makita 165mm Fibre Cement Saw Blade – ideal for use with the Makita Plunge saw and other 165mm circular saws fitted with vacuum extraction systems.	165mm x 20 x 4T	1	165486

006

SYSTEM ENGINEERING



SYSTEM ENGINEERING

Design, Detailing and Performance Responsibilities

Cemintel engages independent testing laboratories to test and report on the performance of a wall in accordance with the relevant Australian Standards. Consultants use these reports as the basis for opinions (estimates of laboratory performance) they issue for variations or different arrangements to the tested system. Using their experience, the consultant will make judgement about on-site installed performance of various walls.

Project Consultants (Structural, Fire, Acoustic, Façade etc.)

These consultants are typically responsible for the following:

- Opinions on expected laboratory performance of wall configurations that vary from actual test configuration, such as substitution of products and components;
- Judgements about expected field performance using laboratory test reports and practical experience;
- Design, specification and certification of structural, fire, acoustic, durability, weather tightness and any other required performance criteria for individual projects.

The design and selection of building elements, such as wall and floors and their integration into the building considering the following:

- Interface of different building elements including the structure/substrate;
- Wall and floor junctions;
- Penetrations;
- Flashing issues;
- Room / building geometry; and
- Acoustic and water penetration field-testing.

Design Responsibility

Cladding, air barrier, battens and top hats, and structural framing are required to resist wind and earthquake loads that are specific to the building and the site. Additional 'local pressure factors' can apply to cladding and the supporting battens and top hats in accordance with the Australian Standard AS 4055 - Wind loads for housing or AS/NZS 1170.2 - Wind actions. It is recommended that the Architect/ Building Designer assigns the responsibility for the façade design to the Project Engineer. Once loads have been determined, the battens and top hat spans, fastener spacing, air barrier construction

details, and cladding fixing details may be selected from the appropriate tables in this guide and in the 'Cemintel Facades & Cladding Design Guide'. It is also the responsibility of the Architect / Building Designer to select the appropriate corrosivity category. Refer to appropriate details in this guide.

The performance levels of walls documented in this guide the 'Cemintel Facades & Cladding Design Guide' and CSR Gyprock® The Red Book™ series are either what is reported in a test or the documented opinion of consultants. Performance in projects is typically the responsibility of:

Project Certifier and/or Builder

These professionals are typically responsible for:

- Identifying the performance requirements for the project in accordance with the NCC and clearly communicating this to the relevant parties;
- Applicability of any performance characteristics supplied by Cemintel including test and opinions for the project.

Cemintel does not provide consulting services. Cemintel provides technical information that has been prepared in consultation with third party subject expert consultants for the presentation of information presented in this guide. This guide may be subject to amendment or change as required or as deemed necessary. The most up to date version of this guide should be referred to and shall be available at the Cemintel website cemintel.com.au.

Any party using the information contained in this guide or supplied by Cemintel in the course of a project must satisfy themselves that it is true, current and appropriate for the application, consequently accepting responsibility for its use.

It is the responsibility of the building designer, architect, engineer and project consultants to ensure that the information and details in this guide and the performance of the Balmoral Weatherboard wall system is suitable for the intended project application.

The recommendations in this guide are formulated along the lines of good building practice but are not intended to be an exhaustive statement of all relevant data.

Cemintel is not responsible for the performance of constructed walls, including field performance, and does not interpret or make judgements about performance requirements in the NCC.

SYSTEM ENGINEERING

**Design Fixing Table**

The Project Engineer/ Frame Designer is responsible to specify the connection of the structural noggings to the structural framing for any off-stud battens or top hats. It is also the responsibility of the project

engineer to calculate the wind loads and earthquake loads for the cladding, air barrier and support framing of the façade on a project.

TABLE 6.01 Maximum Stud Spacing & Fixing Specifications – Timber or Steel Stud Framing

Wind Classification	Maximum Stud Spacing (mm)		Fixing Specifications (Minimum fixings 'through face' to each stud)*		
	General Zone ①	Corner Zones ②	Timber Framing (MGP10 minimum)		Steel Framing (0.55mm BMT minimum)
			Brad Nails	Hand or Gun Nails	Screws
N1 or N2	600	600	2 x Brad Nails @ 150mm min. cts. through face	2 x 50mm Nails @ 150mm min. cts. through face	2 x Screws @ 150mm min. cts. through face
N3	600	450	2 x Brad Nails @ 150mm min. cts. through face		
N3/C1	600	600	N/A	2 x 50mm Nails @ 150mm min. cts. through face	2 x Screws @ 150mm min. cts. through face
N4/C2	600	450	N/A	2 x 50mm Nails @ 150mm min. cts. through face	2 x Screws @ 150mm min. cts. through face
N5/C3	450	300	N/A	2 x 50mm Nails @ 150mm min. cts. through face	2 x Screws @ 150mm min. cts. through face
N6/N4	450	300	N/A	2 x 50mm Nails @ 150mm min. cts. through face	2 x Screws @ 150mm min. cts. through face

N/A Not applicable

① General Zones Walls areas further than 1,200mm from an External Corner of the building.

② Corner Zones Walls areas within 1,200mm from an External Corner of the building.

* 'through face' indicates the fixings are installed through the thickest part of the board.

07

INSTALLATION

Checklist – Installation

The following builder's checklist can assist in making the Cemintel Aspect Cladding installation process run smoothly.

PRE-CLADDING CHECKLIST	
Action	Completed
01	Confirm that studs are located in accordance with project specifications.
02	Confirm that double studs are appropriately located at internal corners where required for board fixing.
03	Confirm timber framing alignment is in accordance with AS 1684, or steel framing is in accordance with AS/NZS 4600, and correct if necessary.
04	Confirm bracing is in place.
05	Confirm ground clearance to the bottom of the first Aspect Cladding board in accordance with Australian Standards and regulatory requirements.
06	Confirm all window and door flashings are correctly installed.
07	Confirm that the wall wrap/sarking has been fully and correctly installed, and overlapped and taped at joints and flashings.
08	Confirm windows are front draining type.
09	Confirm that window placement provides the appropriate clearance for board installation.
10	Confirm adequate structural support for fixtures such as pergolas and decks has been provided. No loads may be carried by the cladding.
11	Confirm membranes and flashings for deck areas have been installed in accordance with manufacturer's specifications.
12	Arrange for a pre-cladding inspection by the appropriate local building authority.

POST-CLADDING CHECKLIST	
Action	Completed
01	Confirm all joints have been neatly filled with recommended sealant.
02	Confirm all visible screw heads have been countersunk and covered with appropriate compound and finished flush with the surface.
03	Confirm sealant has been applied to gaps at openings (where appropriate).
04	Confirm appropriate painting of cladding and all exposed edges.

Installation Considerations

Framing Preparation

Inspect the frame carefully for bowed, warped, or twisted studs, and for alignment of all framing members. Check alignment of all framing with a long straight-edge. The maximum misalignment should not exceed 4mm over 3,000mm, or 3mm over 1,200mm, or 2mm over 600mm, when checked both horizontally and vertically. Ensure all noggings are flush.

Studs are to be spaced in accordance with Table 6.01 (600mm max. centres).

Studs at board joints must have a minimum fixing face width of 45mm for timber or 50mm for steel to provide sufficient support for fixing. Otherwise, additional trimmers or studs may be used to ensure fasteners have suitable edge distances. Refer to Figure 8.03, Figure 8.04 and Figure 8.06.

Panel & Joint Layout

Panels must be installed with horizontal shiplap joints. All edges must be supported at openings and perimeters. Add extra framing members as required.

Plan panel layout so that, where possible, a full height board occurs above and/or below openings. If a board has been reduced in height, provide a joint to at least one side of the opening. Refer to 'Installation' section.

When a window or door opening exceeds 1800mm width, it is necessary to have a joint above and below the opening for both full and reduced height boards to allow for movement.

Joints at ends of boards should be located randomly throughout the wall to reduce visual impact.

Board joints must be formed framing. Depending on the stud width and fixing method chosen, additional blocking or studs may be required at joints to provide sufficient edge distances for fixings.

Board Fixing

Board ends should be cut square. Treat cut ends with a primer that is compatible with the joint sealant to be used.

Fasteners are to be positioned as specified in Table 6.01. Refer to Figure 7.01 for appropriate fixing locations for the chosen fasteners.

Nail heads must be driven flush with the sheet surface.

Exposed screw fixings should be countersunk/ embedded to allow screw heads to finish up to 2mm below board surface. Cover screw heads with fibre cement compatible, exterior filler compound and finish level with surface. Refer to Figure 7.02 and Figure 7.03.

Bond Breaker Tape is required to the face of the sarking behind board end joints. Refer to Figure 7.04.

Refer to Figure 7.04 for installation procedures.

TABLE 7.01 Aspect Cladding Board Coverage Calculator
300mm Full Board Height = 276mm nominal cover per row.

Aspect Board Rows	Coverage for Full Boards (mm nominal)
25	6924
24	6648
23	6372
22	6096
21	5820
20	5544
19	5268
18	4992
17	4716
16	4440
15	4164
14	3888
13	3612
12	3336
11	3060
10	2784
9	2508
8	2232
7	1956
6	1680
5	1404
4	1128
3	852
2	576
1	300

FIGURE 7.01 Board Fixing Location

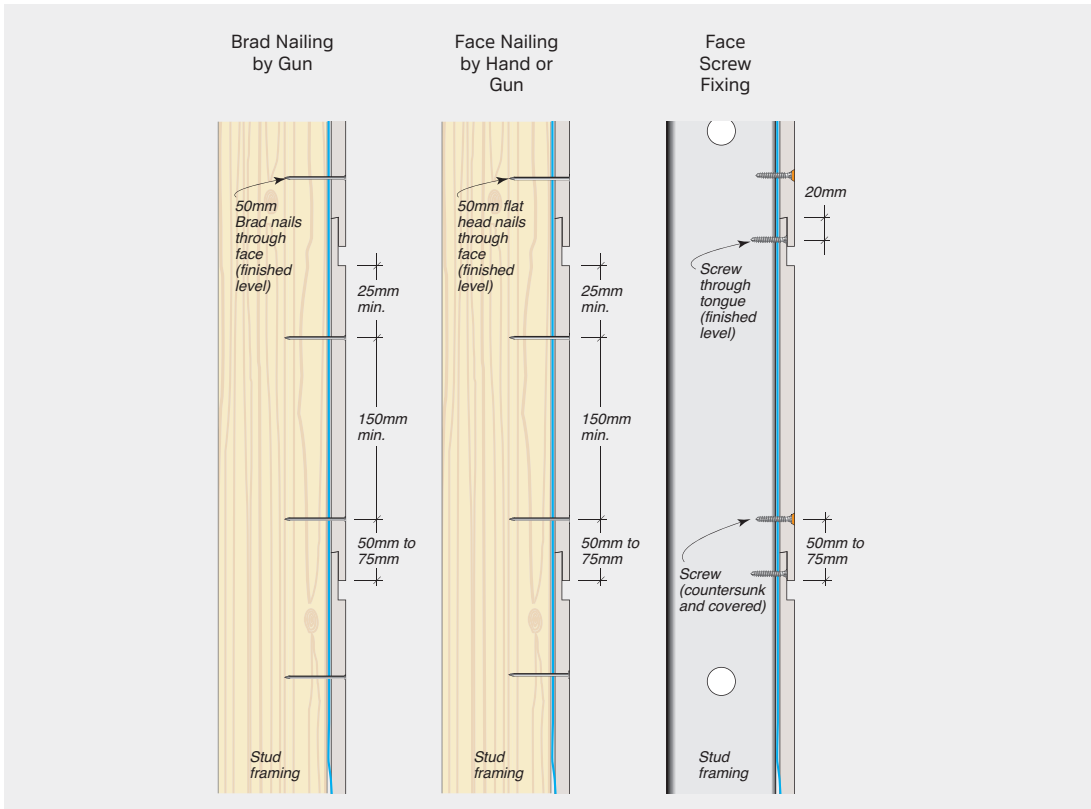


FIGURE 7.02 Framing Detail for Narrow Stud Application

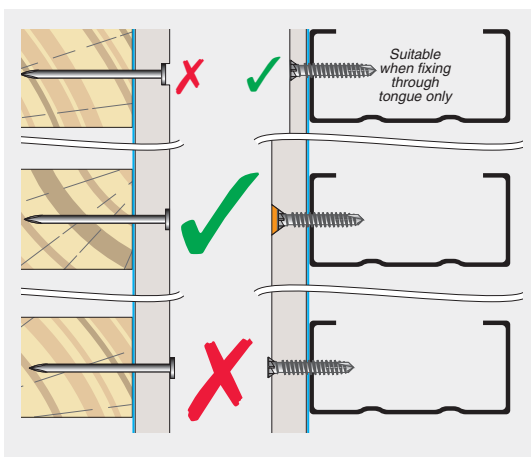


FIGURE 7.03 Covering Countersunk Screw Heads

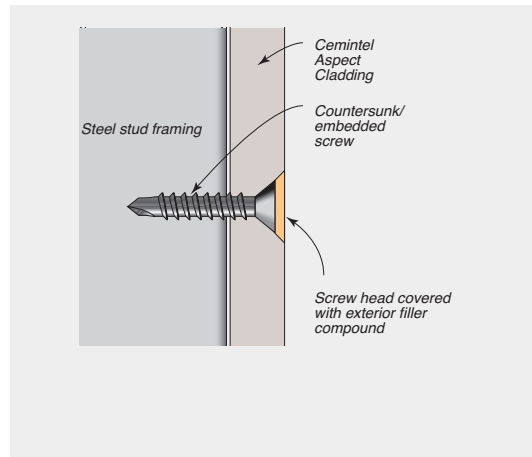
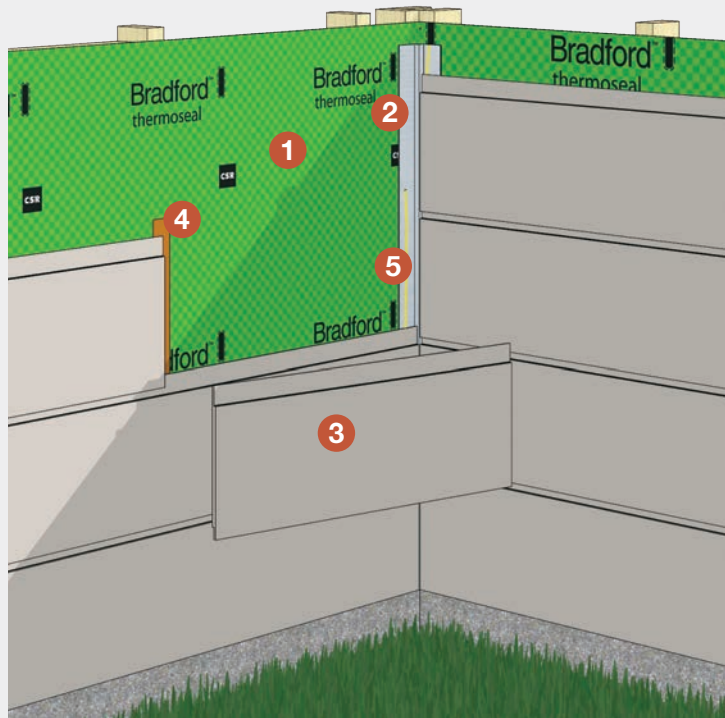
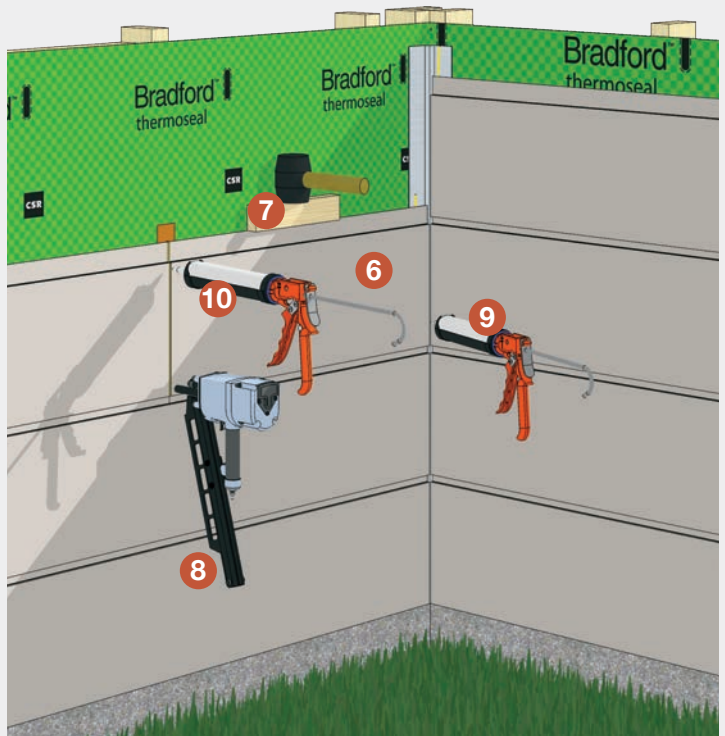


FIGURE 7.04 Installation Procedure – Aspect Cladding – Direct Fix System

- ① Install wall wrap/sarking.
- ② Install corner profiles, and fix to framing at 600mm maximum centres.
- ③ Cut board to length allowing 2-3mm gaps each end. Apply sealer to cut edges.
- ④ Apply Bond Breaker Tape to sarking behind board junction.
- ⑤ Apply 6mm diameter bead of sealant to corner profile behind board.



- ⑥ Align boards and bed into sealant leaving 2-3mm gap at each end of the board.
- ⑦ Firmly tap board downward to bed into taper of board below.
- ⑧ Fix board to studs as per system specification. Refer to Figure 7.01.
- ⑨ Fill gap to corner profile with sealant.
- ⑩ Fill gap between board ends with sealant.





CONSTRUCTION DETAILS



CONSTRUCTION DETAILS

Note: Drawings are interchangeable for timber or steel substrates with the exception of the fasteners.

Drawings Index – Direct Fix

SECTION	DESCRIPTION	FIGURE REFERENCE	PAGE NUMBER
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CONSTRUCTION DETAILS



Note: Drawings are interchangeable for timber or steel substrates with the exception of the fasteners.

Direct Fix

FIGURE 8.01 Typical Base & Brad Nail Face Fixing – Timber Sub-floor

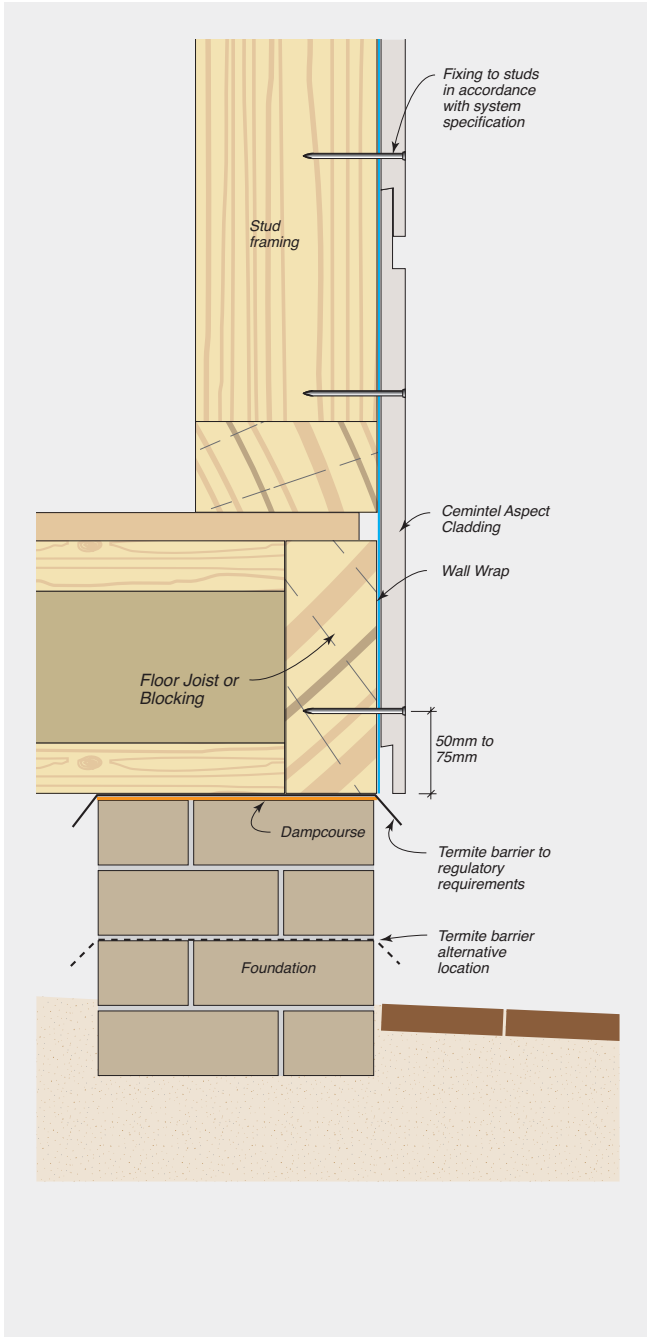
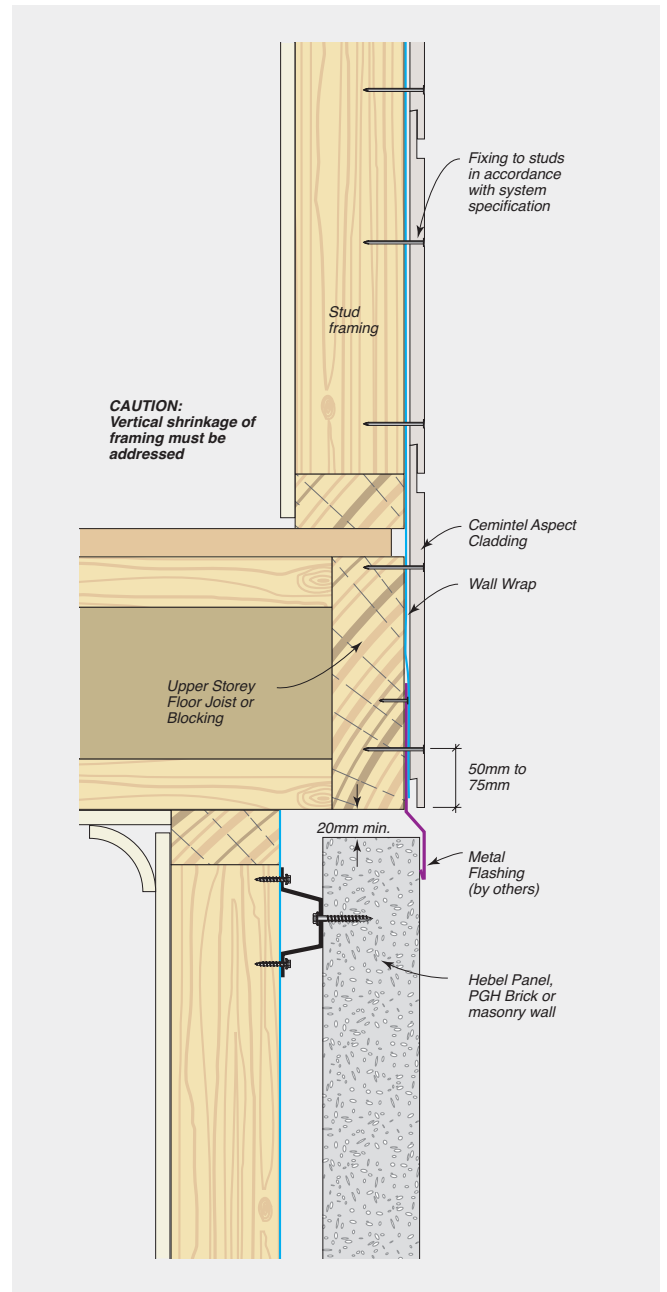


FIGURE 8.02 Typical Second Storey Junction with Hebel Panels, Brick Veneer or Masonry Wall – Cantilevered Framing & Face Fixing – Timber Sub-floor





CONSTRUCTION DETAILS

Note: Drawings are interchangeable for timber or steel substrates with the exception of the fasteners.

Direct Fix

FIGURE 8.03 Vertical Joint Detail with Trimmer or Double Studs – Timber Framing – Hand Nailing

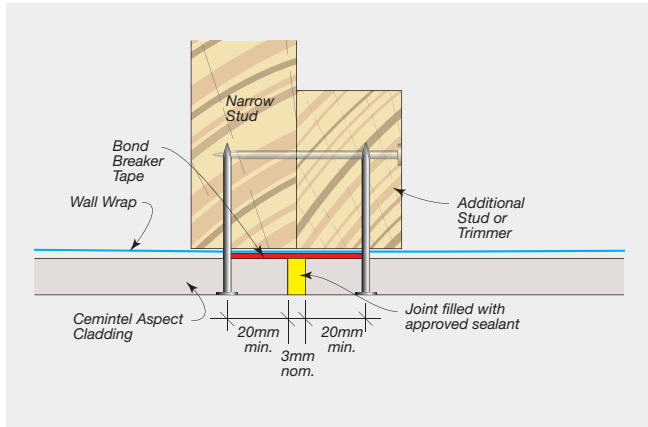


FIGURE 8.04 Vertical Joint with 45mm min. Timber Stud Framing – Face Fixing with Brad Nails (skewed)

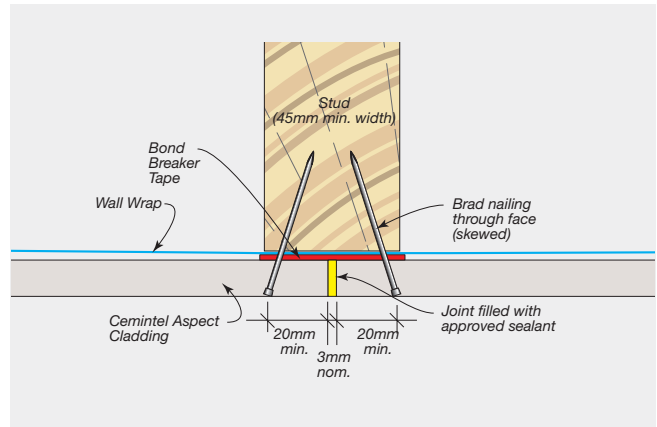


FIGURE 8.05 Vertical Joint Detail with Double Studs or Trimmer – Steel Framing – Face Fixing

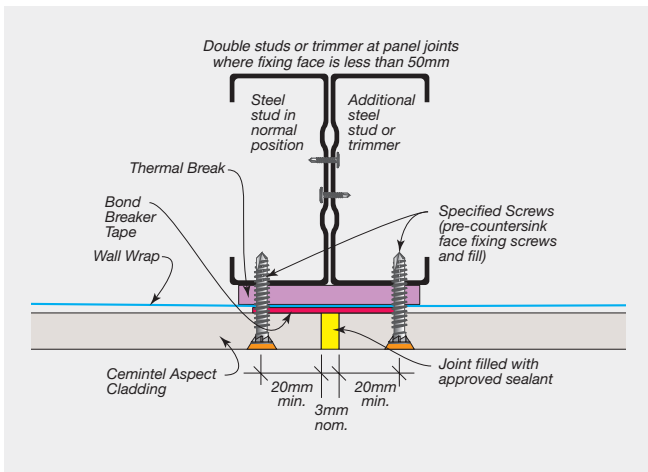


FIGURE 8.06 External Corner with Aluminium Profile

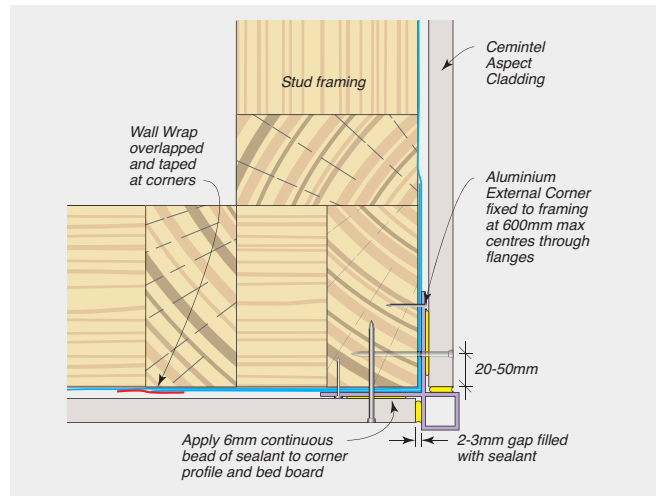


FIGURE 8.07 External Corner with Mitred Boards

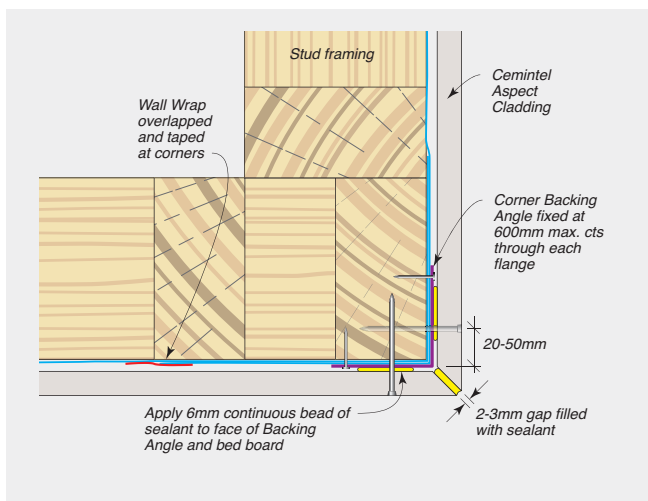
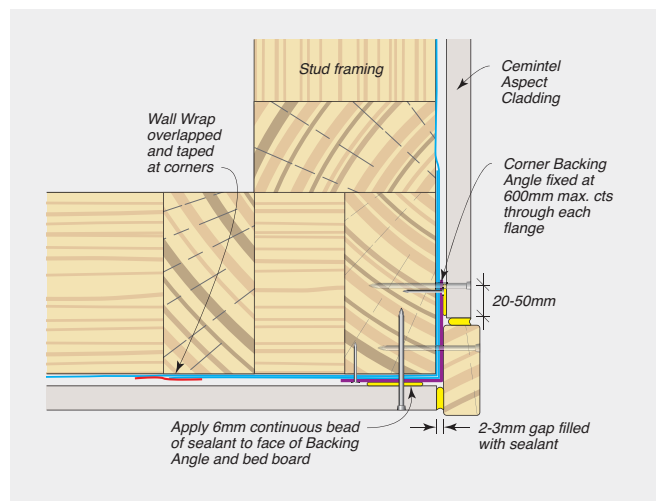


FIGURE 8.08 External Corner with Timber Moulding



CONSTRUCTION DETAILS



Note: Drawings are interchangeable for timber or steel substrates with the exception of the fasteners.

Direct Fix

FIGURE 8.09 Internal Corner with Aluminium Profile

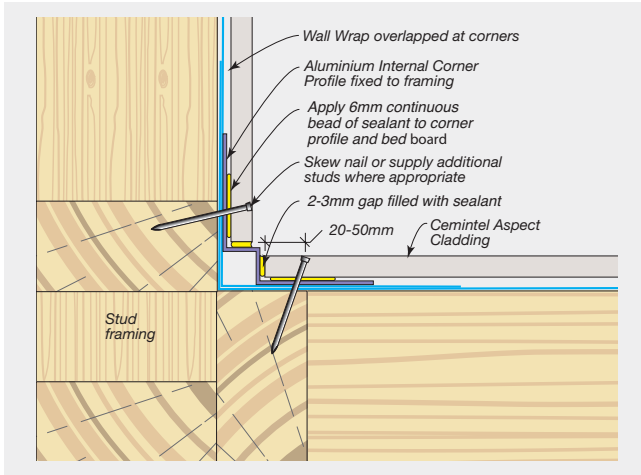


FIGURE 8.10 Internal Corner with Mitred Boards

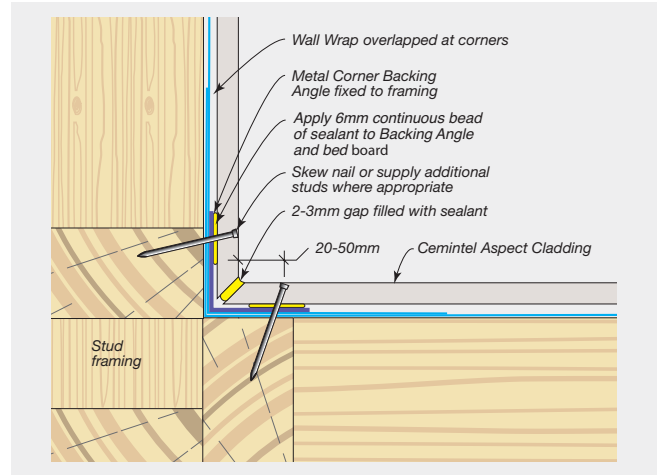


FIGURE 8.11 Internal Corner with Timber Moulding

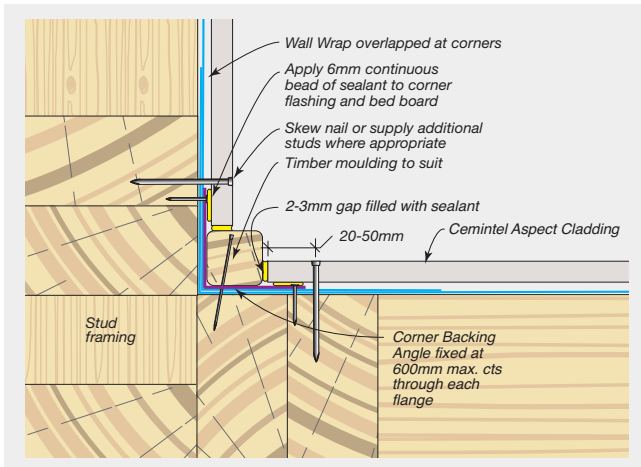


FIGURE 8.12 External Corner – Obtuse Angle

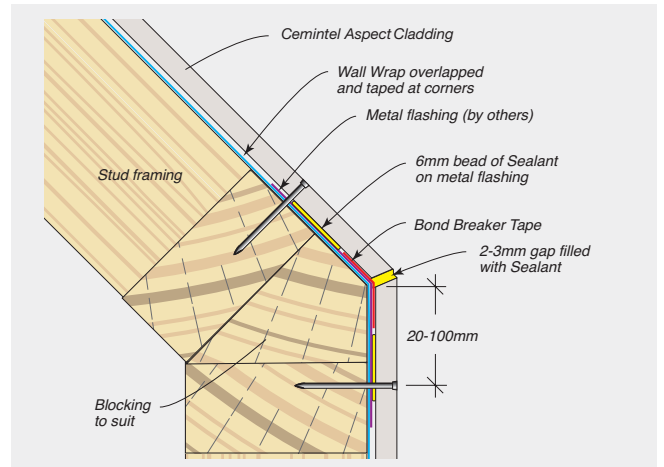


FIGURE 8.13 Junction of Aspect Cladding System with Alternative Fibre Cement Cladding – Plan View

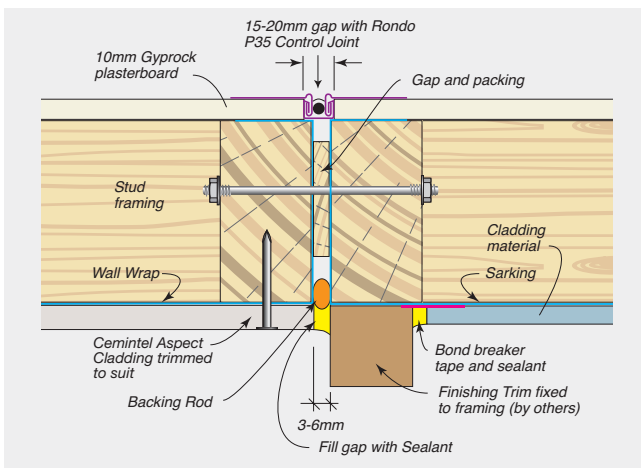
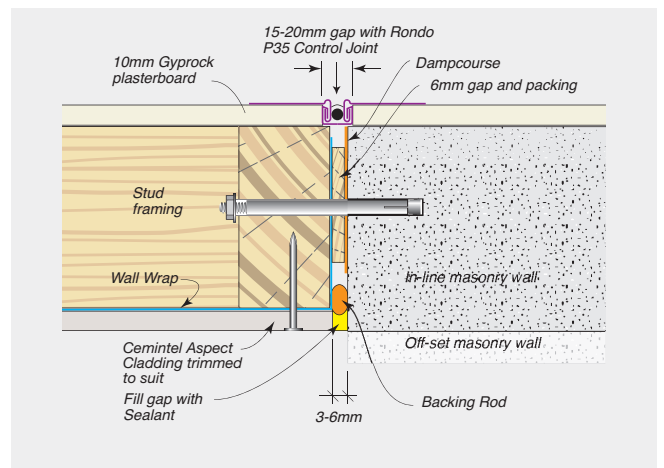


FIGURE 8.14 Junction of Aspect Cladding System with Offset or In-line Masonry Wall – Plan View





CONSTRUCTION DETAILS

Note: Drawings are interchangeable for timber or steel substrates with the exception of the fasteners.

Direct Fix

Window & Door installation

FIGURE 8.15 Window Detail – Trend Quantum XP Aluminium Sliding Window with Weatherboard Reveal Clip E482

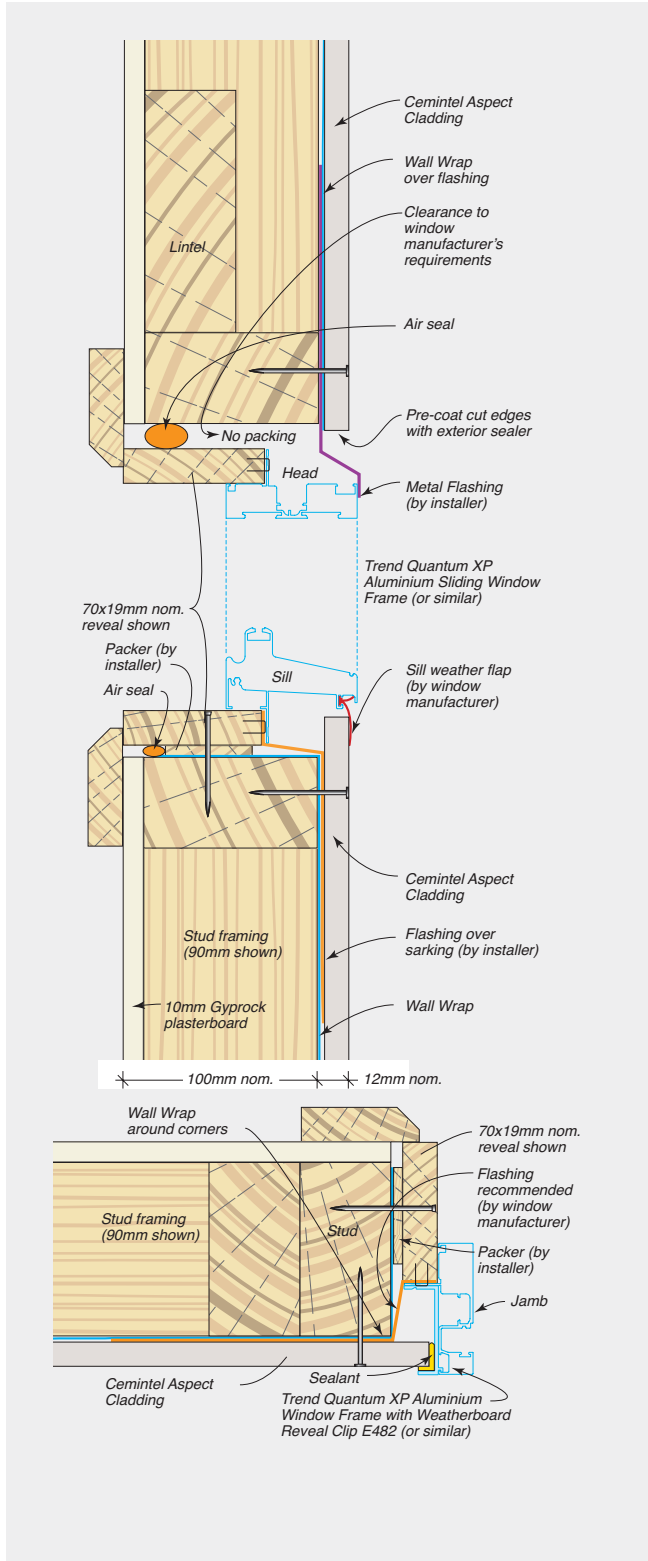
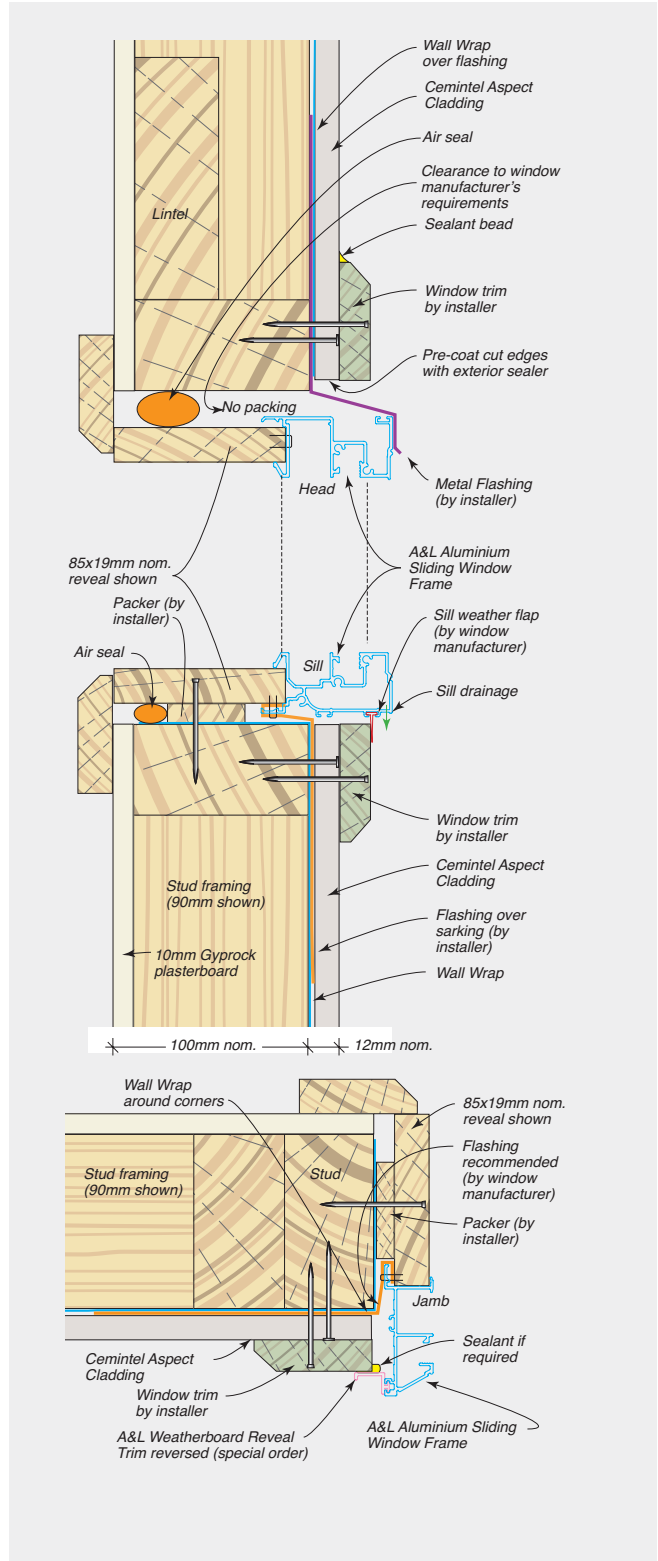


FIGURE 8.16 Window Detail – A&L Aluminium Sliding Window with Weatherboard Trim



CONSTRUCTION DETAILS



Note: Drawings are interchangeable for timber or steel substrates with the exception of the fasteners.

Direct Fix

FIGURE 8.17 Bradnams Essential Sliding Window Installation - 70mm Framing and 80mm Reveal Shown

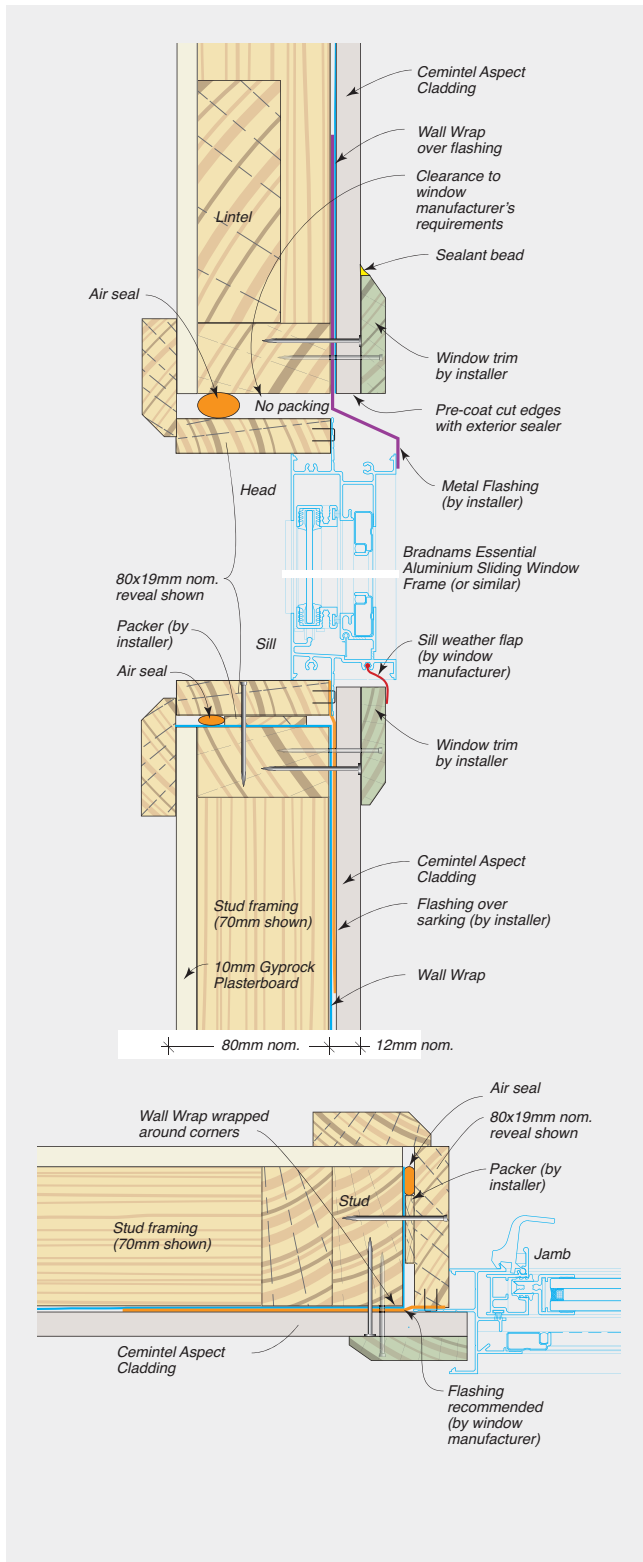
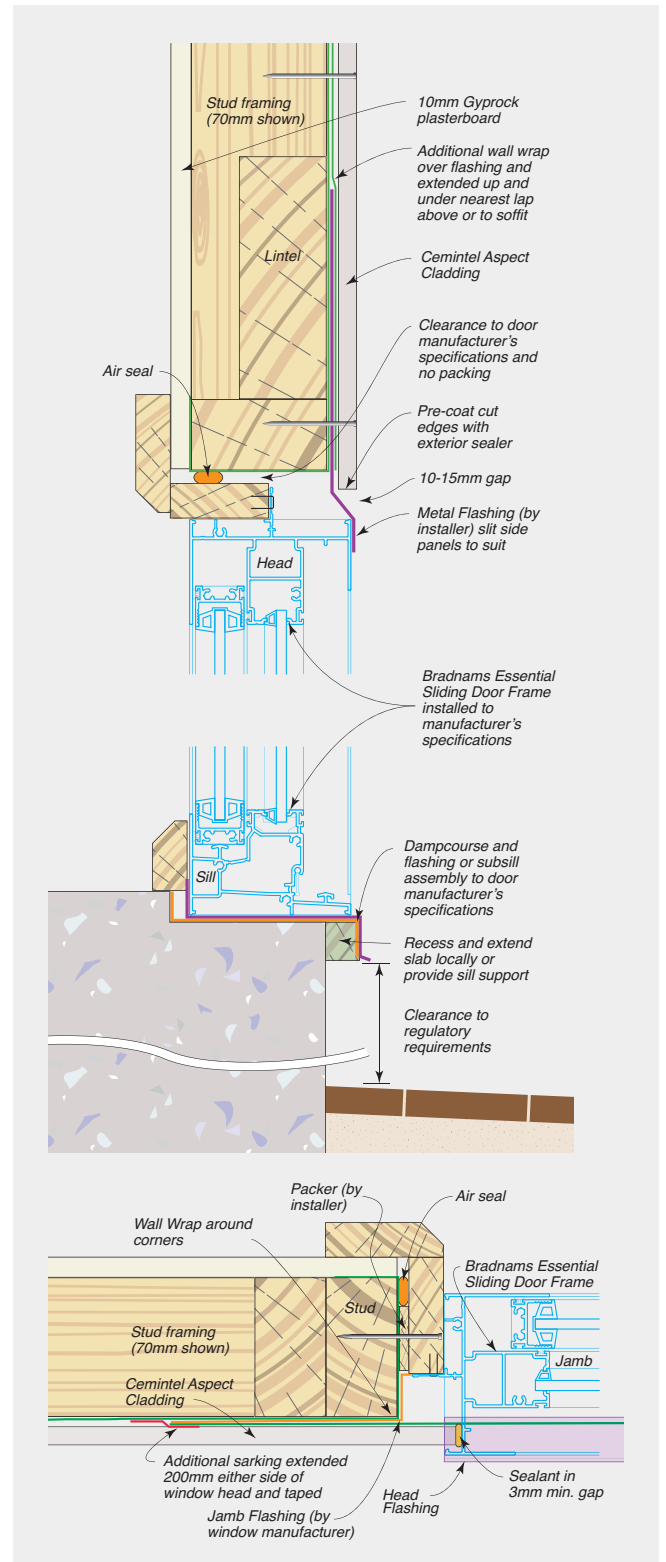


FIGURE 8.18 Bradnams Essential Sliding Door Installation - 70mm Framing and 80mm Reveal Shown





**SAFETY, HANDLING, GENERAL CARE
+ WARRANTY**

SAFETY, HANDLING, GENERAL CARE + WARRANTY



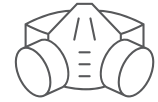
Health, Safety and Personal Protection Equipment (PPE)

Fibre Cement contain silicas that are harmful if inhaled. Protective clothing and breathing equipment should be worn when cutting products.

When cutting, drilling or grinding fibre cement panels using power tools, always ensure the work area is properly ventilated.

An approved dust mask (AS/NZS 1715 and AS/NZS 1716) and safety glasses (AS/NZS 1337) must be worn. Cemintel recommends that hearing protection also be worn.

Safety Data Sheet information is available at www.cemintel.com.au



Managing Respirable Crystalline Silica Dust

Crystalline Silica is everywhere. It is found naturally in stone, rocks, sand, gravel and clay. Sand is one of the raw materials in Fibre Cement. Respirable Crystalline Silica dust is the fine dust that's created when you use power tools to cut, drill, grind, chip or sand materials and products that contain crystalline

silica. This dust is of concern due to its size as it gets caught deep in your lungs and can cause long term damage.

IF YOU USE THE CORRECT SAFETY EQUIPMENT AND PPE, FIBRE CEMENT IS SAFE TO USE.



Cemintel Safety Requirements

1 - Cut Outdoors*	The ventilation outdoors is greater than that indoors, and therefore should reduce exposure.
2 - Use On-Tool Dust Extraction	Use on-tool dust extraction when using power tools to drill and cut Fibre Cement, with a vacuum that contains a HEPA M Class filter.
3 - Correct Saw and Blade	Use a plunge saw with a specifically designed Fibre Cement blade.
4 - Don't Sweep, Vacuum instead	When completing your work vacuum with a HEPA M Class filter, rather than a broom as sweeping creates more dust.
5 - Use Correct Respirator	Use a half face P1 or P2 respirator. It is essential that the respirators are Fit Tested and workers are cleanly shaven to obtain a good seal.

* Even though not recommended, indoor cutting can be completed when using an onsite cutting room with exhaust ventilation and a M class filter at a minimum, on-tool dust extraction with a vacuum with a HEPA M Class filter, a Full Face P2 respirator and conducting local occupational and static air monitoring to validate effectiveness of control measures.

Safety, Handling and Maintenance

Storage

All Cemintel Aspect Cladding boards must be stacked flat, clear of the ground and supported at 300mm maximum centres on a level platform. Panels must be kept dry, preferably stored inside the building. Panels must be dry prior to fixing, hence if it is necessary to store outside, the product must be protected from the weather.

Handling

Cemintel Aspect Cladding boards must be treated with care. During handling, avoid damage to edges, ends and surfaces. Panels must be carried on edge.

Panels exposed to moisture prior to installation may be subject to shrinkage, and voiding of warranty. Protect from contaminants such as silicone spray.

Panels must be dry prior to fixing, Cutting

Panels should be fully supported and cut from the back using a power saw. Cemintel recommends using the Makita Plunge Cut Saw with guide rail and appropriate blade, together with the appropriate dust extraction system. All exposed cut edges **MUST BE SEALED WITH CEMINTEL EDGE SEALER TO PREVENT MOISTURE ABSORPTION.**

Mitres

It is not recommended to mitre panel edges as this can cause delamination of the face.

Penetrations

Penetrations in panels may be cut or drilled prior to installation. Cut from the back or drill from the front. Mask, prime and fill gaps with sealant in accordance with recommended methods and products.

Warranty

Cemintel Aspect Cladding panels have a product warranty of 15 years.

The full product warranty is available for download at cemintel.com.au

NOTES

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NOTES

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