



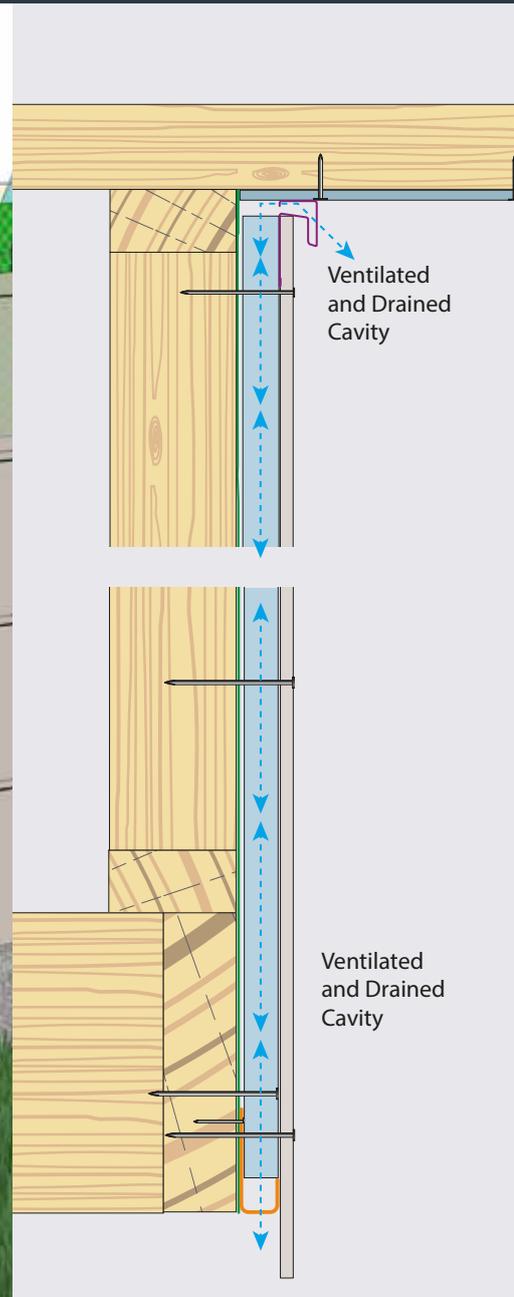
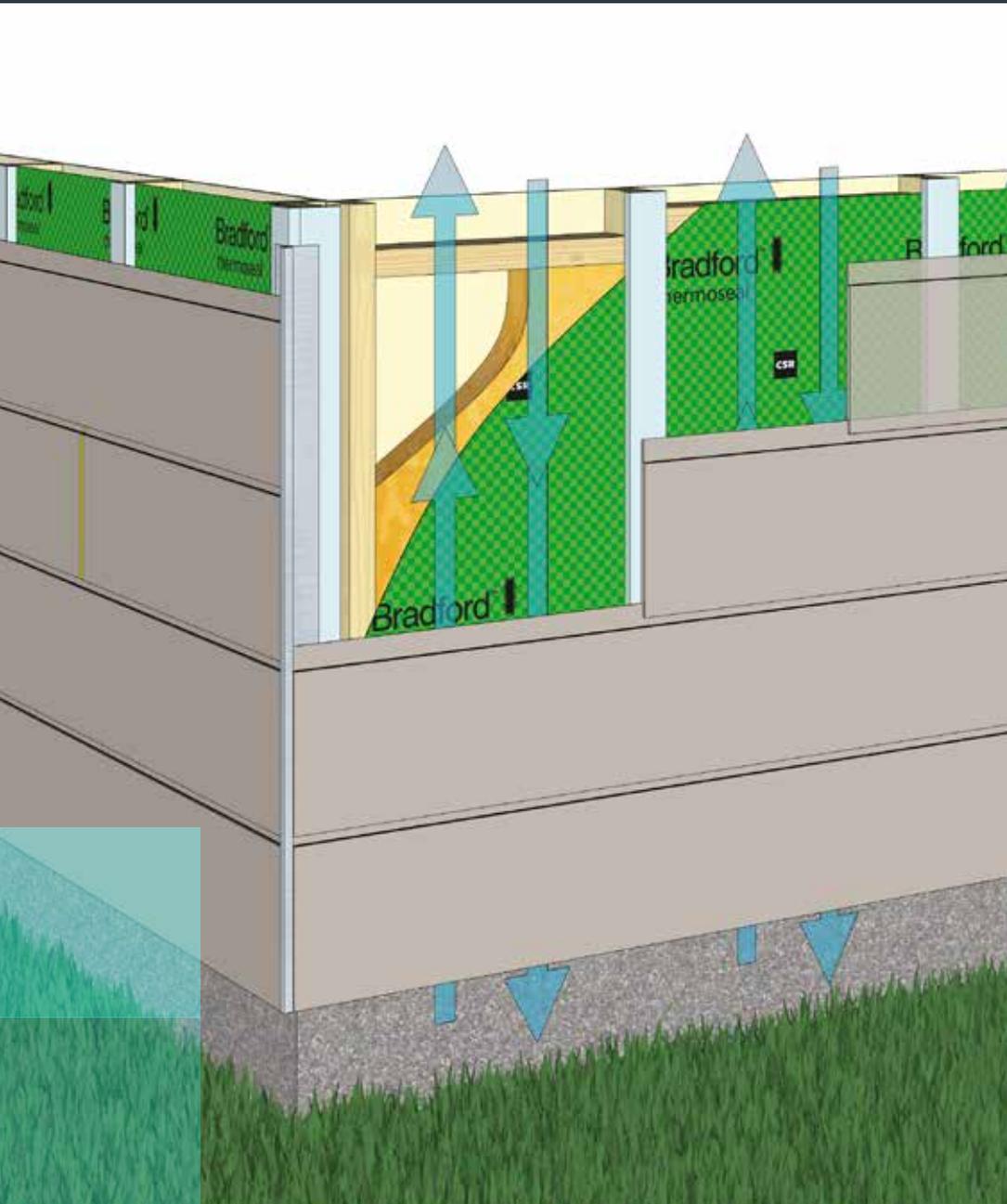
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CSR CEMINTEL™

CAVITY WALL CLADDING SYSTEMS

FC:152



CONSTRUCTION GUIDE FOR CAVITY WALL CLADDING SYSTEMS

MAY 2015

Cemintel™ Cladding systems utilises various board and panel products to provide attractive and durable building façades. Ensuring the weather tightness of these systems is the result of ongoing research, testing and development. This guide outlines the general methods for construction of Ventilated and Drained Cavity Framing for Cemintel™ Façade Systems.

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INTRODUCTION

This guide represents good practice, though it is not intended as an exhaustive statement of all relevant information. It remains the responsibility of the building designer to verify that the chosen Cemintel™ Cladding System is suitable for the particular requirements of any given project.

CSR Cemintel™ recommends that a comprehensive risk assessment of the building weatherproofing be conducted prior to selection of the installation system. Assessment should be based on current NCC Weatherproofing Verification methods. Refer to "WEATHERPROOFING" in this guide for detailed information.

CLADDING SYSTEM TYPES

A cladding system essentially covers the exterior walls of a building and is a key component in providing weather resistance, acoustic, thermal and fire resisting properties. A fundamental requirement of a cladding system is that water does not leak through it into the building, and there are a number of system options available to achieve this:

Ventilated and Drained Cavity

A ventilated and drained cavity or "Rainscreen" is an open jointed, rear-ventilated (vented primarily at the head and base) cladding system. These systems reduce the risk of moisture entering the cavity by means of pressure equalisation. Any water which does enter will be effectively drained away, or evaporate due to the constant airflow throughout the cavity.

Direct Fix System with Face Sealing

In many Australian residential applications, cladding is fixed directly to the frame. A degree of sealing is required at joints and gaps to prevent water ingress. Although not as effective as ventilated and drained cavity systems, direct fix systems can be an effective means of weatherproofing low risk buildings, i.e., in low rise buildings in low wind pressure areas.

Unique System

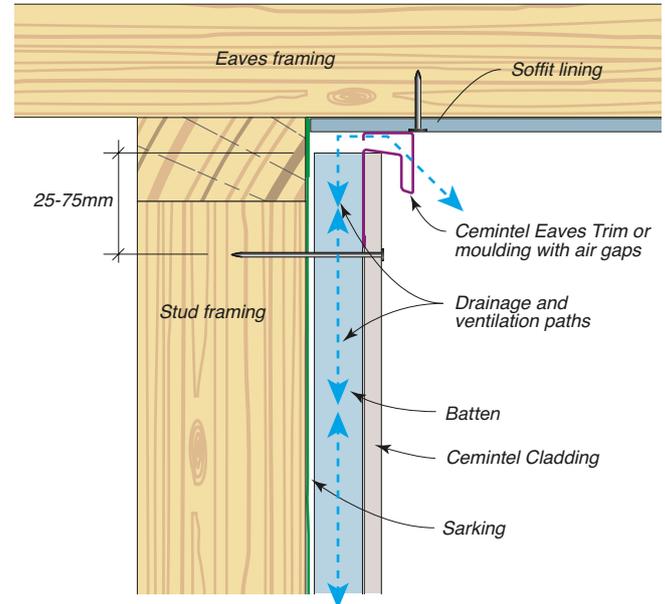
A unique system uses methods or a combination of methods of achieving weatherproofing other than described above.

VENTILATED & DRAINED CAVITY SYSTEMS

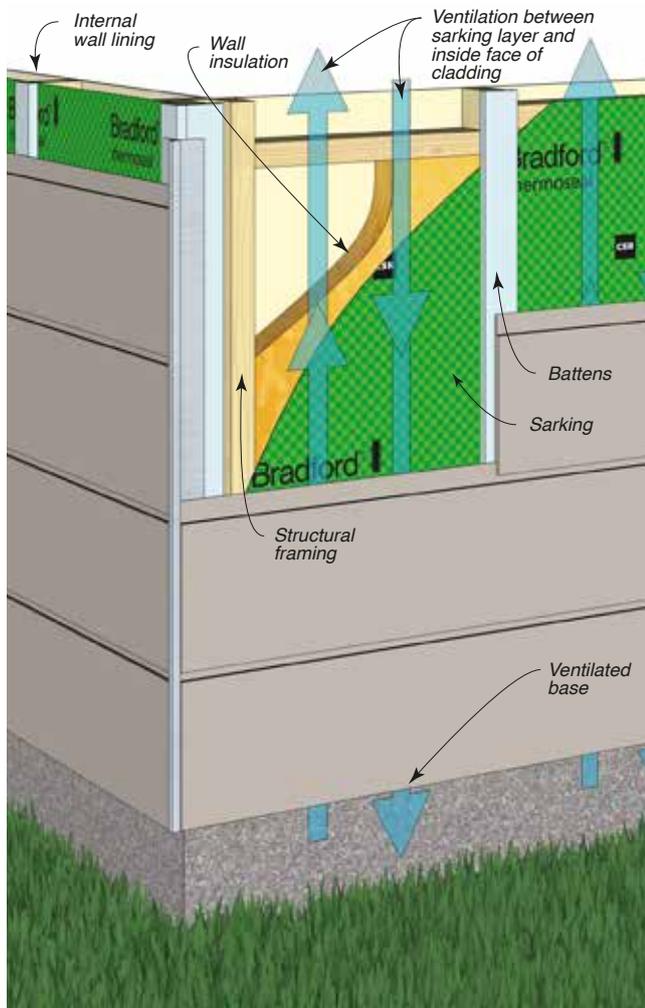
OVERVIEW

- Structural framing is constructed to industry standard format in either timber or steel.
- Battens are fixed to the face of studs. Cemintel™ cavity systems are designed for 18-20mm thickness battens.
- Cladding is fixed through battens to structural framing. (Some products may be fixed to structural battens).
- A Cemintel™ J-track is used at the base of battens to provide air flow, drainage and vermin protection.
- Ventilation is also required at the top of walls, and this may be provided by use a Cemintel™ Eaves Trim or by leaving a minimum 5mm gap between the top of the cladding and soffit sheets, and between the cladding face and any dress mouldings.
- Corners, joints, junctions, penetrations (window and door openings), etc., require various treatments to suit the chosen cladding. Typical details are provided in this guide.

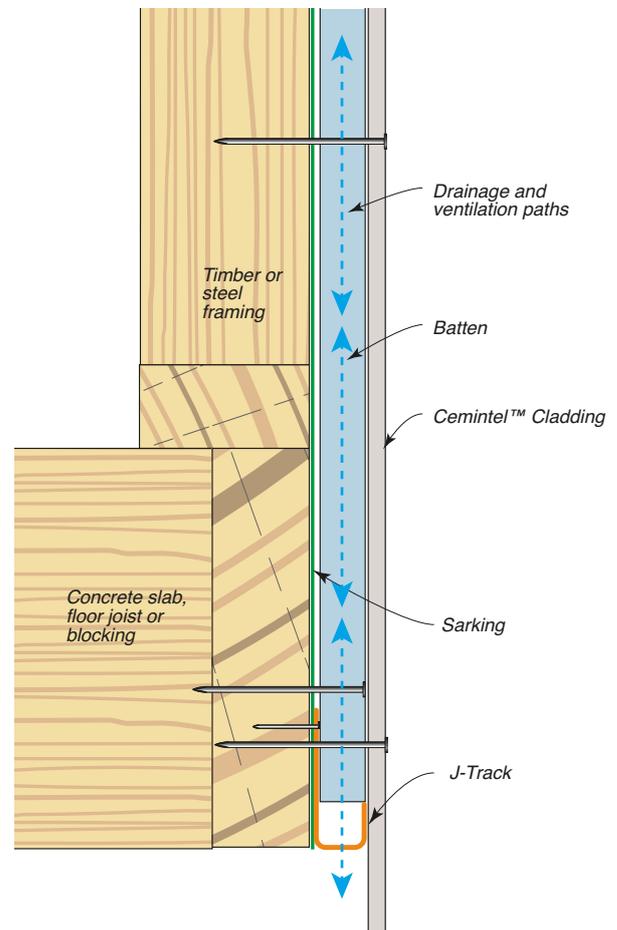
Typical Ventilated Head – Eaves with Cemintel Trim



Typical Wall & Ventilation Path



Typical Ventilated & Drained Base



DESIGN CONSIDERATIONS

INSTALLATION SYSTEM REQUIREMENTS

Clause P2.2.2 of the 2015 National Construction Code (NCC) includes a test method to verify that a cladding system meets stipulated weatherproofing requirements. Cemintel cavity systems have been independently certified by AECOM that they meet the performance requirements of the NCC based on tests carried out to the NCC method for cavity systems, in Wind Categories up to N5/C3 (max. 2.96kPa).

Direct fixed cladding may be appropriate for some buildings. Refer to relevant literature and BCA requirements.

CEMINTEL CAVITY SYSTEMS

CSR Cemintel™ offers a diverse range of cladding systems with a range of installation options. Please refer to Table 1 and Table 2 for an overview of the alternative cavity systems currently available.

Table 1: Cemintel™ Cavity Systems with Timber Stud Framing

Cemintel™ Product	Timber Stud Framing		
	Batten Type	Fixing of Cladding	Maximum Wind Category
Headland™ Weatherboards	18-20mm non-structural	Paslode 60mm Nails into stud framing	N5/C3
Scarborough™ Weatherboards	18-20mm non-structural	Paslode 60mm Nails into stud framing	N5/C3
Plank	18-20mm non-structural	Paslode 60mm Nails into stud framing	N5/C3
Endeavour™ Weatherboards	18-20mm non-structural	Paslode 60mm Nails into stud framing	N5/C3
Aspect™	18-20mm non-structural	Paslode 60mm Nails into stud framing	N5/C3
Edge™	18-20mm non-structural	Paslode 60mm Nails into stud framing	N5/C3
Mosaic™	Cemintel™ FC	25mm Brad Nails into battens	N5/C3
Cladding Sheet	18-20mm non-structural	Paslode 60mm Nails into stud framing	N5/C3
Texture System (Texture Base Sheet)	18-20mm non-structural	Paslode 60mm Nails into stud framing	N5/C3

WEATHERPROOFING

The control of water ingress to a building is the responsibility of the building designer. All framing, sarking, flashings, damp proof courses and sealants must be installed in accordance with this manual, the relevant product manufacturer's instructions, applicable standards and building codes.

The selection of the appropriate installation system is based on many factors, but particular attention must be paid to weatherproofing to ensure adequate long-term performance. Therefore an assessment based on NCC Weatherproofing Risk Factors should be undertaken prior to selection of the installation system. Refer to Table 3.

Cavity systems are the best method for weather proofing walls and should be considered for high risk designs. Table 3 is a method used by the BCA to determine a buildings risk. A score of 13 – 20 is considered to be a high risk design.

Table 2: Cemintel™ Cavity Systems with Steel Stud Framing

Cemintel™ Product	Steel Stud Framing		
	Batten Type	Fixing of Cladding	Maximum Wind Category
Headland™ Weatherboards	N/A	–	–
Scarborough™ Weatherboards	N/A	–	–
Plank	N/A	–	–
Endeavour™ Weatherboards	N/A	–	–
Aspect™	N/A	–	–
Edge™	N/A	–	–
Mosaic™	Cemintel™ FC over thermal break	25mm Brad Nails into battens	N5/C3
Cladding Sheet	N/A	–	–
Texture System (Texture Base Sheet)	N/A	–	–

Table 3: Weatherproofing Risk Factors (NCC 2015 BCA Vol 2, Table V2.2.1)

Risk Factor	Category	Risk Severity	Risk Score	My Score
Wind Region	Region A (AS/NZS 1170.2)	Low to Medium	0	
	Region B (AS/NZS 1170.2)			
	Region C (AS/NZS 1170.2)	High		
	Region D (AS/NZS 1170.2)	Very High		
Number Of Storeys	One storey	Low	0	
	Two storeys in part	Medium	1	
	Two storeys	High	2	
	More than two storeys	Very High	4	
Roof/Wall Junctions	Roof-to-wall junctions fully protected	Low	0	
	Roof-to-wall junctions partially exposed	Medium	1	
	Roof-to-wall junctions fully exposed	High	3	
	Roof elements finishing within the boundaries formed by the external walls	Very High	5	
Eaves Width	Greater than 600 mm for single storey	Low	0	
	451-600 mm for single storey; or greater than 600 mm for two storey	Medium	1	
	101-450 mm for single storey; or 451-600 mm for two storey; or greater than 600 mm for above two storey			
	0-100 mm for single storey; or 0-450 mm for two storey; or less than 600 mm for above two storey	High	2	
		Very High	5	
Envelope Complexity	Simple shape with single cladding type	Low	0	
	Complex shape with no more than two cladding types	Medium	1	
	Complex shape with more than two cladding types	High	3	
	As for high risk but with fully exposed roof-to-wall junctions	Very High	6	
Decks, Porches And Balconies	None; or timber slat deck or porch at ground level	Low	0	
	Fully covered in plan view by roof; or timber slat deck attached at first or second floor level			
	Balcony exposed in plan view at first floor level; or balcony cantilevered at first floor level	Medium	2	
	Balcony exposed in plan view at second floor level or above; or balcony cantilevered at second floor level or above			
		High	4	
		Very High	6	
BUILDING TOTAL RISK SCORE				

Notes:

1. Eaves width is measured horizontally from the external face of any wall cladding to the outer edge of any overhang, including fascia and external gutters.
2. Barriers to prevent falling and parapets are considered as 0 mm eaves.

FRAMING

Cemintel cladding products can be fixed to timber or steel framing with studs at 600mm maximum centres and a minimum face width of 35mm.

Studs at vertical sheet/board joints often require a wider minimum face fixing width to provide adequate edge distances for fixings. In these cases, double studs, trimmers and/or wider battens must be provided behind vertical sheet joints. Refer to appropriate construction details for your chosen product.

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

- AS1684 – Residential timber-framed construction.
- AS/NZS4600 – Cold-formed steel structures.
- AS3623 – Domestic metal framing.

- AS4055 – Wind loads for housing.
- The Building Code of Australia (BCA).

Timber Framing

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.

Steel Framing

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 cladding to thicker cold rolled members or to hot rolled steel.

BATTENS

Cemintel drained cavity systems have been designed to suit battens 18 to 20mm thick. They are to have a minimum 35mm face width and are to be fixed to studs at appropriate centres.

Wider battens or side-by-side battens may be required behind vertical sheet/board joints in some cases. Refer to appropriate construction details.

The Cemintel™ Fibre Cement cavity batten should be used where a structural grade batten is required and where additional durability is preferred. Timber with a minimum H3 protective treatment may be used in non-structural applications. For steel framing, the Cemintel™ batten is used over a thermal break. Refer to Table 1, Table 2 and Table 4.

Battens for cladding support are to be fixed vertically to stud framing. Where additional backing is required for flashings etc, a short spacer batten may be used and must be fixed with a minimum fall of 5° to the horizontal to allow drainage of any moisture.

FIG 1: Batten Joining

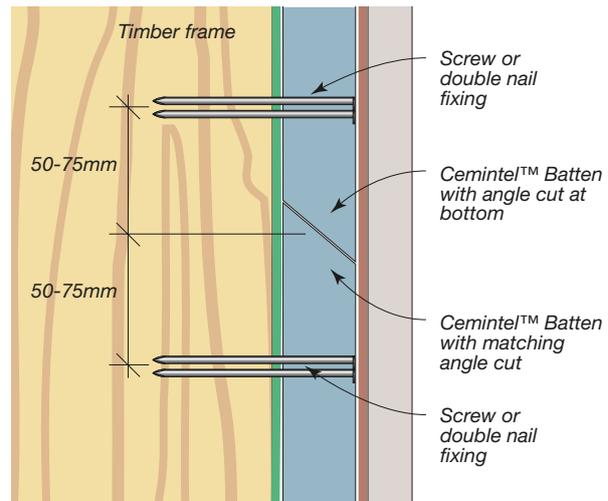


Table 4: Maximum Fastener Spacing for Fixing Structural Battens to Timber or Steel Framing – On-stud Fixing

NOTE: This table applies to the Cemintel™ FC Batten when used for fixing cladding to the batten. When cladding is fixed through the battens and into the structural framing, then battens only require nominal fixing to hold in-place during cladding installation.

Batten Spacing (mm)	Wind Category	Cemintel™ Batten (Fibre Cement)			
		Timber Framing		Steel Framing	
		Nails (2 x 2.8x50)	Screw (8G-10x50)	0.5 BMT	0.75 BMT
				Screw FibreTEKS® (10G-18x30)	Screw FibreTEKS® (10G-18x30)
Maximum Fixing Centres					
600	N1	650	650	650	650
	N2	550	550	550	550
	N3/C1	400	450	450	450
	N4/C2	250	350	300	350
	N5/C3	180	300	200	300
450	N1	700	700	700	700
	N2	650	650	650	650
	N3/C1	500	500	500	500
	N4/C2	350	400	400	400
	N5/C3	200	350	250	350
300	N1	800	800	800	800
	N2	800	800	800	800
	N3/C1	600	600	600	600
	N4/C2	500	500	500	500
	N5/C3	350	400	400	400

THERMAL BREAK – STEEL FRAMING

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

The thermal break is applied to the face of the frame to meet the deemed to satisfy requirements of the BCA. The thermal break is used to ensure that the thermal performance of the wall is comparable to that of a timber framed wall. For systems with timber battens 20mm or thicker, no additional thermal break is required.

WIND LOADING

Cemintel™ cladding is suitable for buildings within the geometric limits of AS4055 – 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. Cemintel™ cladding is also suitable for buildings outside this code in non-cyclone areas.

For appropriate stud spacing and board fixing specifications, refer to the relevant Cemintel installation guide for your chosen product. It is the responsibility of the building designer to determine the wind classifications of the building and the suitability of the system.

LIMITATIONS

Cemintel™ claddings are unsuitable for the following applications: non-vertical framing (e.g. parapet capping); water features; chimney cladding; exposure to temperatures over 50°C; contact with standing snow or ice. Other restrictions may exist, please refer to appropriate product installation guides.

STRUCTURAL BRACING

Cemintel™ 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™ cladding must be sheathed to maintain a uniform fixing plane. Note that window set-out will be affected.

CONTROL JOINTS

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 Details'.

Movement joints provided in framing should be carried through the cladding.

Additional vertical control joints may be required in the some cladding systems such as Cemintel Texture System. Please refer to the details in the relevant product installation guide.

For two storey construction, a horizontal control joint should be provided at the upper floor level unless specifically stated to the contrary in the relevant product installation guide. Frame shrinkage also requires consideration by the building designer in all cases.

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 BCA, AS3660 : Termite management, and your local building authorities for more information about the requirements for the design of a suitable termite management system.

SERVICES

Cemintel™ cladding systems 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™ cladding 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

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. Table 5 provides guidance on recommended wall wrap/sarking selection. 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/NZS4200.1: Pliable building membranes and underlays – Materials, and be installed in accordance with AS/NZS4200.2: Pliable building membranes and underlays – Installation requirements.

Whilst the requirement to seal joints and penetrations may vary depending upon BCA 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.

Table 5: Guidance on Wall Wrap/Sarking

Climate	Guidance on wall wrap/sarking to be used behind the cladding	Performance Criteria	Recommended Product
Cold Climates*	In cold climates where the risk of condensation is high, vapour permeable membranes should always be installed on the cold external side of the insulation.	Vapour Permeability > 2.5µg/N.s	Enviroseal ProctorWrap RW or CW
Temperate and inland climate zones	It is recommended to use vapour permeable membranes to avoid creating a seasonal moisture trap and to allow drying in either direction – interior or exterior.	Vapour Permeability > 2.5µg/N.s	Enviroseal ProctorWrap RW or CW
Warm humid coastal and tropical climates	Where vapour flow is typically inward, such as where the building is air-conditioned, membrane should be non-permeable.	Vapour Resistance > 7MNs/g	Thermoseal Resiwrap or Thermoseal Wall Wrap or Thermoseal 733

* For alpine areas and buildings that have high internal levels of humidity (such as indoor swimming pool areas), please contact CSR Bradford for project specific technical advice.

INSULATION

Energy efficiency requirements for buildings are set out in the BCA 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.

It is recommended that insulation values above the minimum be chosen for energy conservation and occupant comfort. Insulation also improves the acoustic performance of the wall against outside noise.

The level of insulation provided in a wall is described by its R-value. The higher the R-value the greater the insulation provided.

Refer to relevant Cemintel Installation Guides and/or The Gyprock Red Book for thermal performance values.

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.

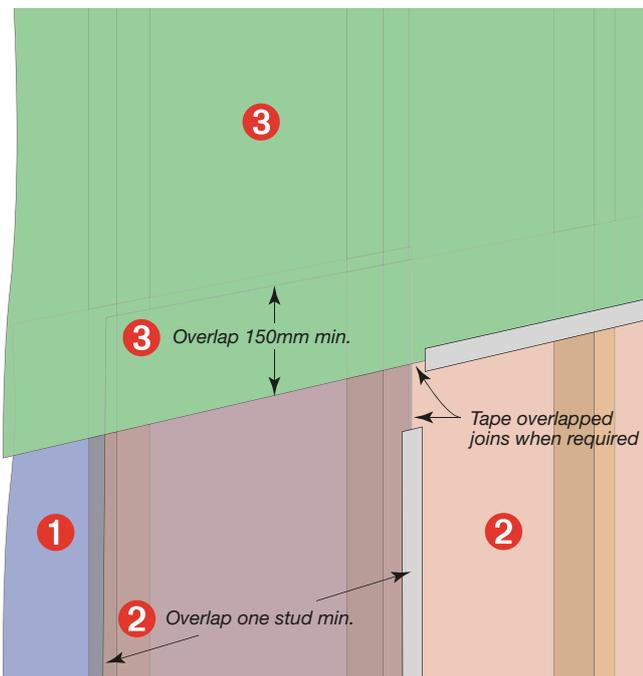
Cemintel™ cladding is not designed to be in contact with snow or ice build-up, such as is experienced in alpine areas subject to snowdrifts. When used in freeze/thaw conditions, Cemintel™ cladding must be painted prior to exposure to freezing conditions.

INSTALLATION OF SARKING

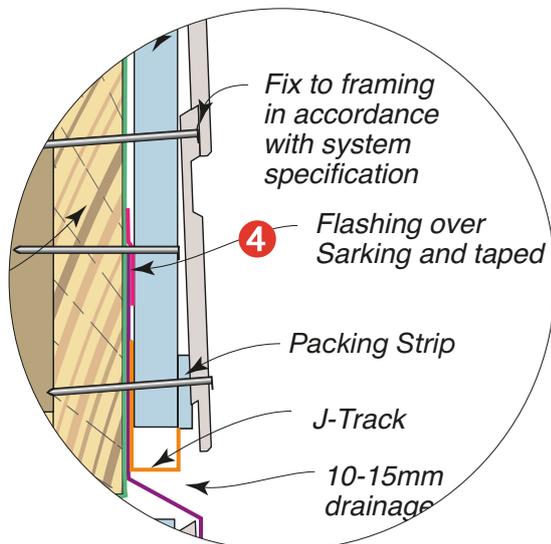
- 1 Install wall wrap/sarking to outside face of wall framing. Temporary fixing or sarking to framing may be by double sided tapes or other approved methods. Refer to the sarking manufacturer's specifications.

If the membrane is used to provide a continuous air tight layer, all overlaps should be sealed with tape.

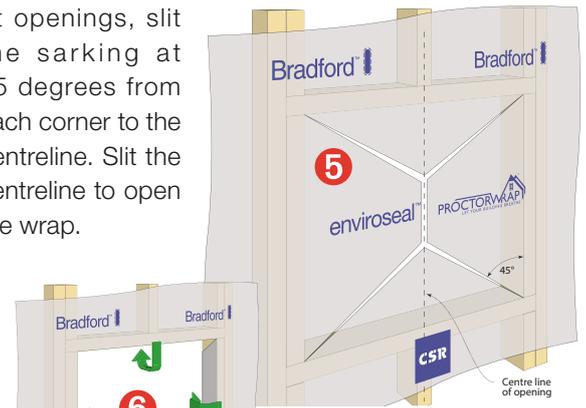
- 2 Vertical laps (including corners) should overlap by one stud spacing minimum and should be staggered between adjacent layers.
- 3 Upper layers should overlap lower layers by 150mm minimum to ensure that water is always shed towards the outside of the membrane and building.



- 4 Horizontal flashings such as at the head of doors and windows, horizontal storey junctions and at the wall base (when used) must be taped to the sarking to ensure water is always shed towards the outside.

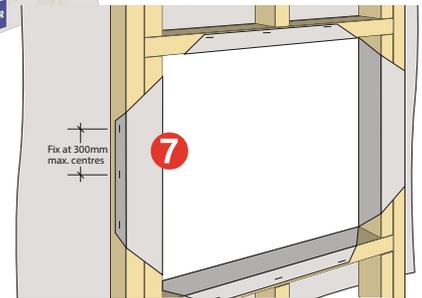


- 5 At openings, slit the sarking at 45 degrees from each corner to the centreline. Slit the centreline to open the wrap.



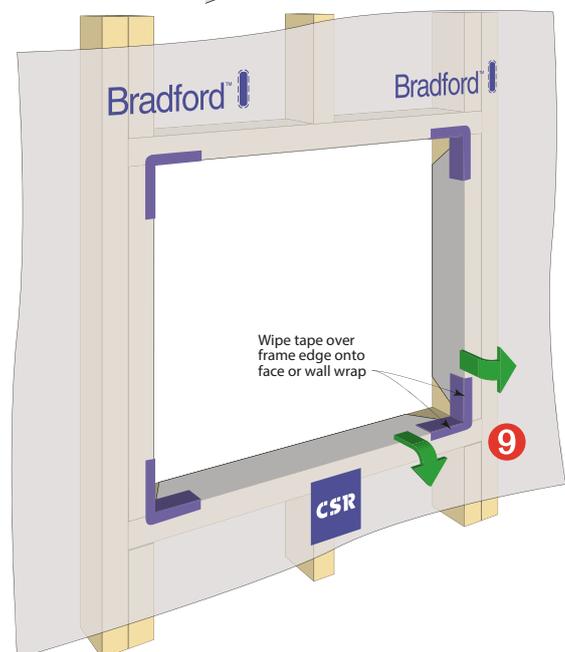
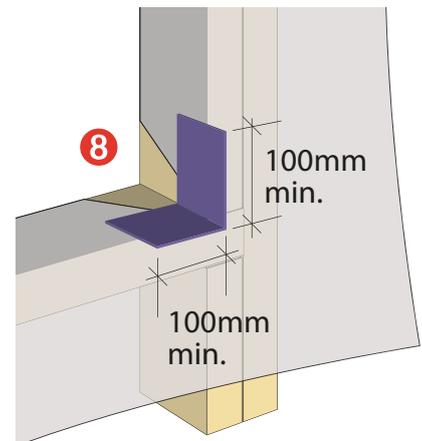
- 6 Wrap the tabs around the framing.

- 7 Fix sarking to the rear of the framing with staples at 300mm maximum centres.



- 8 Apply Enviroseal ProctorWrap tape to the corners of openings.

- 9 Wipe tape over the frame edge onto the face of the wall wrap.



INTERNAL LININGS

Internal linings are to be designed for the applicable pressures calculated in accordance with AS4055. For Gyprock Standard Plasterboard linings, the arrangements in Table 6 may be used. Sheet fixing details are to be in accordance with GYP547 Gyprock Residential Installation Guide. For other lining materials, consult the manufacturer.

Table 6: Internal Lining Design

Wind Category	Internal Pressure (kPa)	Lining	Sheet Orientation
N1, N2, N3	0.45	10mm Gyprock SP*	Horizontal or Vertical
N4, N5, N6, C1	1.33	10mm Gyprock SP*	Horizontal
C2, C3	2.30	13mm Gyprock SP*	Horizontal
C4	3.11	2 x 10mm Gyprock SP*	Horizontal

* Gyprock SP = Gyprock Standard Plasterboard

CORROSIVITY CATEGORIES/COASTAL AREAS

Corrosivity categories are as described in AS4312 - Atmospheric corrosivity zones in Australia. The code has methods for determining categories as well as maps and tables of major population centres. It is recommended that the building designer assess the site in accordance with the standard and local conditions.

The following is a summary of the BCA description.

C1: Very Low

Generally inside buildings, semi-sheltered locations away from marine or industrial influence, and some alpine regions.

C2: Low

Dry, rural areas, away from the coast or sources of pollution. Most areas of Australia at least 50 kilometres from the coast, which can extend to within one kilometre from quiet, sheltered seas. Most inland towns, such as Canberra, Ballarat, Toowoomba and Alice Springs, and suburbs of cities on sheltered bays (Brisbane, Melbourne, Hobart) that are more than one kilometre from the sea. Adelaide suburbs more than 6 kilometres from the coast in the southern suburbs, through to 3 kilometres from the coast in the northern suburbs.

C3: Medium

Coastal areas with low salinity, extended by factors such as wind, topography and vegetation. Sheltered areas such as Port Phillip Bay 50 metres from the shoreline to about one kilometre inland. Around less sheltered bays such as Adelaide to about 3 to 6 kilometres inland. Along ocean front areas with breaking surf and significant salt spray extending from about one kilometre inland to between 10 and 50 kilometres inland, depending on the strength

of prevailing winds and topography. Includes much of the metropolitan areas of Wollongong, Sydney, Newcastle and the Gold Coast, most of the Yorke Peninsula South Australia, and from Victor Harbour to the Victorian border, extending between 30 and 70 kilometres inland. Urban and industrial areas with low pollution levels, and for several kilometres around large industries such as steelworks and smelters.

C4: High

Around sheltered bays up to 50 metres inland from the shoreline. Areas with rough seas and surf, extending from several hundred metres inland to about one kilometre inland and depends on winds, wave action and topography. Up to 1.5 kilometres downwind of large industrial plants.

C5: Very High

Offshore and on the beach front 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. Aggressive industrial areas where the environment may be acidic with a pH of less than 5.

Table 7: Requirements for Corrosive Environments

Corrosivity Category (AS4312)	Fixings (minimum)
C1 : Very Low C2 : Low	Class 3 or Class 4 stainless steel fixings
C3 : Medium	Class 3 or Class 4 stainless steel fixings
C4 : High	Class 3 countersunk head screws filled and finished level with Cemintel External Joint Compound or Class 4 stainless steel fixings
C5 : Very High	Not Suitable

WASH-DOWN

Walls are to be washed down using fresh water at least 2 times per year. When cleaning cladding, use no more than 700psi (50kg/cm²) of water pressure at 3m to 3.5m distance from the face. Water pressure should be applied downward to avoid forcing water into openings.

FLASHINGS & CAPPINGS

In general, flashings shall be designed and installed in accordance with SAA-HB39 1997 - Installation code for metal roofing and wall cladding. All flashings are supplied by others.

WINDOW SELECTION

The Cemintel™ cladding systems are designed to accept standard aluminium or timber framed windows and doors that comply with AS2047. 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 required in all cases, and for ease of installation, these should be included when ordering windows.

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.

PAINTING

All products should be painted within three months of delivery to site. CSR recommends a minimum of two coats of exterior grade acrylic paint be applied to the manufacturer's specifications. A priming coat may also be required. Refer to paint manufacturer's recommendations.

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.

All cut edges should be pre-painted with an exterior sealer (preferably prior to installation) and then finished as for the face.

Prior to the application of the external coating, wash down all walls with clean fresh water to remove salt spray build-up from boards and fixings. Boards must be allowed to dry before coating.

MAINTENANCE

The durability of Cemintel™ cladding systems can be enhanced by periodic inspection and maintenance. Inspections should include examination of the coatings, flashings, and sealants. Any cracked or damaged finish or sealants which would allow water ingress, must be repaired immediately by resealing the affected area, or by replacing the affected area. Any damaged flashings, boards or sealants must be replaced as for new work.

Regularly inspect board surfaces and follow wash-down procedures when required. Refer to requirements for Corrosivity Zones C3 and above detailed in the "Corrosivity Categories/Coastal Areas" section of this guide.

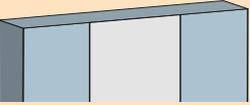
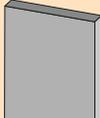
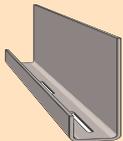
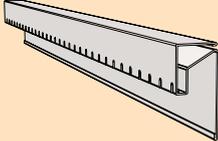
Ensure ventilation and drainage gaps between cladding and flashings are kept clear of any debris.

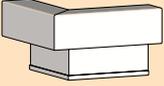
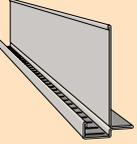
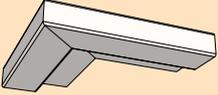
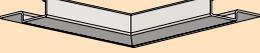
COMPONENTS

NOTE: In high corrosion zones (C4), Class 4 or Stainless Steel fasteners are required. Refer to "Coastal Areas". Supplied by others.

Some components suit only specific cladding products, and are noted in the 'To Suit' column.

E = Endeavour. H = Headland. S = Scarborough. P = Plank. A = Aspect. Ed = Edge. M = Mosaic. C = Cladding Sheet. T = Texture Base Sheet

Product	Description	To Suit	Size	Qty	Order Code
	<ul style="list-style-type: none"> • Batten fixing Nails – Machine driven D-head, Class 3. Used for fixing battens to timber framing. 	ALL	2.80 x 50mm	3000	127799
	<ul style="list-style-type: none"> • Batten fixing Screw– Class 3, countersunk ribbed head, phillips drive, treated pine screw. Used to fix battens to timber framing. 	ALL	8G-10 x 50mm	1000	127801
	<ul style="list-style-type: none"> • Batten fixing Screw– Otter (SLEG+) CSK rib head, Phillips drive, GAL Class 3 finish. Used to fix battens to steel framing of 0.5 to 1.0mm BMT over Thermal Break. 	M	10G x 40mm	Supplied by others	
	<ul style="list-style-type: none"> • Cemintel™ FC Batten – Advanced lightweight fibre cement structural grade batten. Battens are fixed to structural framing to create a 19mm deep drained cavity system. 	ALL	19 x 70mm x 2700mm	1	125431
	<ul style="list-style-type: none"> • Timber H3 Batten – Or other suitable material. Battens are fixed to structural studs to create a drained cavity system. (Minimum 20mm required on steel framing for thermal break). 	ALL	18-20mm x 35mm minimum	Supplied by others	
	<ul style="list-style-type: none"> • Thermal Break – Extruded polystyrene strip with R = 0.22. Used with steel stud framing to achieve thermal performance. 	ALL	6.4mm x 38mm x 15.3m	3 bundles x 10 strips in each	129333
	<ul style="list-style-type: none"> • Cladding Nails – Machine Driven Brad Nails, Class 3, Hot Dipped Galvanised (HDG) or Stainless Steel (S/S). Used for fixing Cemintel™ cladding products to timber stud framing over 18/20mm battens. • Paslode 60 x 2.5 HDG • Paslode 60 x 2.7 Screw HDG Dome 15° • Paslode 60 x 2.7 Ring HDG Dome 15° • Paslode 60 x 2.7 Screw S/S Dome 15° • Paslode 60 x 2.7 Ring S/S Dome 15° 	ALL	60mm	Supplied by others	
	<ul style="list-style-type: none"> • Cladding Nails – C25 machine driven Brad nails, Class 3 or Stainless Steel. Used for fixing some products to Cemintel™ FC Batten. 	M	16G x 25mm	Supplied by others	
	<ul style="list-style-type: none"> • J-Track (Batten Closer) – PVC extrusion fitted at base of battens to provide drainage, air flow and vermin proofing. 	ALL	19 x 19 x 70mm x 3000mm	1	134845
	<ul style="list-style-type: none"> • Cemintel™ Eaves Trim – Provides an attractive finish at eaves junction and provides cavity ventilation. Powder coat finish on 0.35mm BMT steel with Galvalume AZ150 corrosion resistant coating. Suits all products up to 16mm thickness. Colour – White. 	ALL	60 x 26mm x 3030mmL	1	134451

Product	Description	To Suit	Size	Qty	Order Code
	<ul style="list-style-type: none"> • Cemintel™ Eaves Trim External Corner – Provides an attractive joint at eaves trim corner. Powder coat finish on 0.35mm BMT steel with Galvalume AZ150 corrosion resistant coating. Colour – White. 	ALL	100 x 100mm	1	134426
	<ul style="list-style-type: none"> • Cemintel™ Eaves Trim Internal Corner – Provides an attractive joint at eaves trim corner. Powder coat finish on 0.35mm BMT steel with Galvalume AZ150 corrosion resistant coating. Colour – White. 	ALL	150 x 150mm	1	134429
	<ul style="list-style-type: none"> • Cemintel™ Soffit Trim – Provides an attractive finish at soffit edge as well as cavity ventilation and cavity closure below battens. Powder coat finish on 0.35mm BMT steel with Galvalume AZ150 corrosion resistant coating. Colour – White. 	ALL	66 x 18mm x 2000mmL	1	134452
	<ul style="list-style-type: none"> • Cemintel™ Soffit Trim External Corner – Provides an attractive joint at soffit trim corner. Powder coat finish on 0.35mm BMT steel with Galvalume AZ150 corrosion resistant coating. Colour – White. 	ALL	76.5 x 76.5mm	1	134426
	<ul style="list-style-type: none"> • Cemintel™ Soffit Trim Internal Corner – Provides an attractive joint at soffit trim corner. Powder coat finish on 0.35mm BMT steel with Galvalume AZ150 corrosion resistant coating. Colour – White. 	ALL	91.5 x 91.5mm	1	134429
	<ul style="list-style-type: none"> • Backing Rod – Used to enable correct filling of some joints with sealant. Also used as an air seal at window openings and construction junctions. The diameter of backing rod must be appropriate for the width of the gap being filled. 	ALL	10mm dia. x 50m roll	1	11177
	<ul style="list-style-type: none"> • Sealant Bond Breaker Tape – Used behind board joints made on framing. Tape is applied to the face of sarking or batten and joints are filled with sealant. Tesa Multiform Tape N°7492, polyethylene closed cell foam tape. Self adhesive back. 	ALL	48 x 3mm x 25m	1	13172
	<ul style="list-style-type: none"> • Self Adhesive Foam Backing Tape – Used as a backing behind board joints in stepped board systems to fill gaps at the back of boards and assist with joint filling. Self adhesive back. 	H P S	30 x 10mm x 9.1m	1	134783
	<ul style="list-style-type: none"> • Sealant/Adhesive – Sikaflex® 11FC. To be used where specified, i.e., at all board end joints, at corners and control joints. Paintable. Apply to manufacturer's specifications. 	ALL	310 ml tube	1 x Grey	39378
	<ul style="list-style-type: none"> • Flexible Sealant – Sikaflex®-PRO polyurethane sealant for gaps around windows, doors and other penetrations. Paintable. Apply to manufacturer's specifications. 	ALL	310 ml tube	1 x Grey 1 x Black	11378 39488
	<ul style="list-style-type: none"> • 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. 	ALL	250 ml	1	115227

FIRE RATED EXTERNAL WALL SYSTEMS

BUSHFIRE RESISTANT WALLS

In accordance with AS3959, Cemintel™ cladding products are suitable as an external wall lining for buildings in bushfire zones. Refer to Table 8 for product suitability.

Bushfire zone walls also require specific treatments such as mesh coverings at wall head, base, all gaps, eaves and junctions with roofs, etc., to ensure appropriate fire and ember resistance. Refer to the BCA and AS3959 for additional requirements and further details.

Also refer to the publication Bushfire Roofing Systems Design Guide for assistance with roofing designs – available at www.bradfordinsulation.com.au.

FIRE RATED EXTERNAL WALL SYSTEMS

In accordance with the fire safety requirements of the BCA, walls within close proximity to the property boundary or when exposed to a fire source are required to have a Fire Rating Level (FRL). Walls may include:

- External walls within a Bushfire Attack Level - Flame Zone (BAL-FZ),
- External walls to Class 1 buildings within 900mm of the boundary including Zero-Lot walls,
- External walls adjacent an external fire source (such as an Electrical Sub-Station).

Cemintel™ systems are available to achieve various FRLs. Refer to Table 8, Table 9, Table 10 and FIG 2. For additional assistance, contact CSR DesignLINK.

For more detailed fire system information, please refer to Gyprock publication, GYP500 – The Red Book™ Fire & Acoustic Design Guide.

Refer to the BCA for additional requirements and further details.

Table 8: Cemintel™ Bushfire & Fire Rated External Wall Systems Specifications

Cemintel™ Product	Bushfire Zone Walls		Fire Rated External Wall Systems	
	System Specifications	Cladding Fixed Over Sarking and Battens + 1 x 10mm Gyprock Standard Plasterboard to internal face	Refer to Table 9 & Table 10	Refer to Table 9 & Table 10
	Thickness (mm nom.)	Bushfire Attack Level (BAL max.)	FRL	
Scarborough™ Weatherboard	12	BAL-40	BAL-FZ [Ⓢ] 30/30/30 (from outside only)	60/60/60 (from outside only)
Headland™ Weatherboard	10	BAL-LOW		
Endeavour™ Weatherboard	10	BAL-LOW		
Plank	7.5	BAL-29		
Aspect™	12	BAL-40		
Edge™	9	BAL-29		
Mosaic™	8	BAL-29		
Cladding Sheet	6	BAL-29		
Texture System (Texture Base Sheet)	7.5	BAL-29		
Rendaline™	8	BAL-29		
Designer Series™	16	BAL-40		
Expresswall™	9	BAL-40		

NOTE: [Ⓢ] BAL-FZ walls must have a minimum setback distance of 10 m from classified vegetation. Also refer to local building regulations.

FIRE RATED WALL INSTALLATION

In addition to the standard structural framing, fire rated systems require battens to be fixed to the face of studs in accordance with the details for Drained Cavity Systems provided in this guide.

It is important to maintain the ventilation at the head and base of walls, but also to reduce the risk of ember penetration. All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or butt-jointed to prevent gaps greater than 3mm. Vents in external walls shall be screened with a mesh with a maximum aperture of 2mm, made of corrosion-resistant steel or bronze, except where they are less than 3mm.

Refer to the BCA and AS3959 for additional requirements and further details.

FIG 2: Typical Cemintel™ Cladding and Gyprock Plasterboard Fire Rated External Wall System

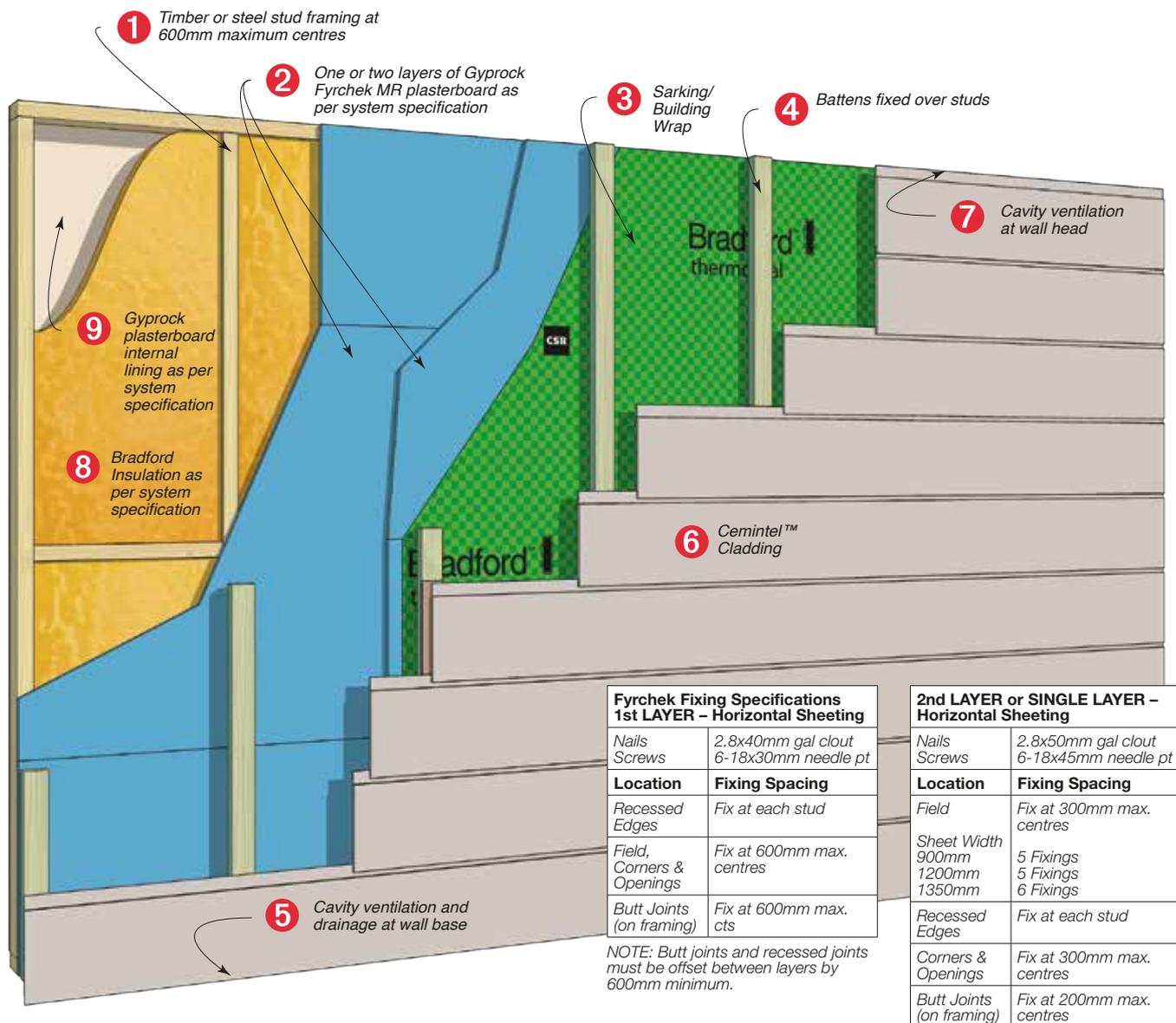
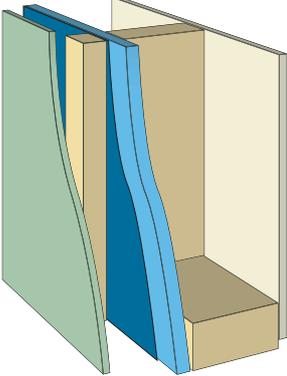
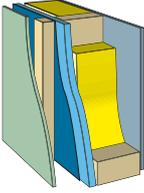
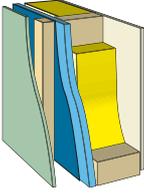
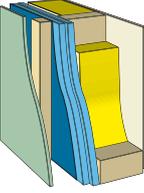


Table 9: Fire Rated External Wall Systems – Any Cemintel Cladding on Any Battens – Timber Framing

SYSTEM SPECIFICATION	TYPICAL LAYOUT (CSR 900a shown)	ACOUSTIC OPINION
<ul style="list-style-type: none"> Any Cemintel external cladding material on any battens. Sarking. Lining material as per system table to external side of studs. Timber or Steel studs at 600mm maximum centres. Cavity insulation as per system table. Lining material as per system table to internal side. <p>NOTES:</p> <p>*ACR = Axial Capacity Reduction. (Refer to Notes).</p> <p>Acoustic performance valid for 35mm wide timber studs or 0.80 BMT steel studs at 600mm centres.</p>		<p>PKA-055</p>

TIMBER FRAMING

FRL Report/Opinion	SYSTEM N°	WALL LININGS	STUD DEPTH mm	90	THERMAL	
			CAVITY INFILL <small>(Refer to Bradford Insulation)</small>	R _w	R _{t(win)}	R _{t(sum)}
30/30/30 from outside only FAR 2303	CSR 906 	<i>EXTERNAL WALL SIDE</i> • 1 x 16mm GYPROCK FYRCHEK MR plasterboard. <i>INTERNAL WALL SIDE</i> • 1 x 6mm CeminSeal™ Wallboard.	(a) Nil	35	1.0	0.9
			(b) 75 Gold Batts™ 1.5	38	2.4	2.2
			(c) 75 Soundscreen™ 2.0	39	2.9	2.7
			TYPICAL WALL THICKNESS mm <small>(based on 35mm depth batten)</small>	154		
60/60/60* <small>(from outside only)</small> * ACR Group 2 FAR 2303	CSR 900 	<i>EXTERNAL WALL SIDE</i> • 1 x 16mm Gyprock Fyrchek MR plasterboard. <i>INTERNAL WALL SIDE</i> • 1 x 10mm Gyprock Standard Plasterboard.	(a) Nil	36	0.7	0.7
			(b) 75 Gold Batts™ 1.5	39	2.1	2.0
			(c) 70 Soundscreen™ 2.0	40	2.7	2.4
			TYPICAL WALL THICKNESS mm <small>(based on 35mm depth batten)</small>	163		
90/90/90 from outside only FAR 2303	CSR 907 	<i>EXTERNAL WALL SIDE</i> • 2 x 13mm Gyprock Fyrchek MR plasterboard. <i>INTERNAL WALL SIDE</i> • 1 x 10mm Gyprock Standard Plasterboard.	(a) Nil	38	0.8	0.7
			(b) 75 Gold Batts™ 1.5	41	2.2	2.0
			(c) 70 Soundscreen™ 2.0	42	2.7	2.5
			TYPICAL WALL THICKNESS mm <small>(based on 35mm depth batten)</small>	173		

NOTES: *ACR Group 2 Timber Studs: 90 x 45mm = 0%; 90 x 35mm = 10%; 70 x 45 = 25%; 70 x 35mm = 35%.

Table 10: Fire Rated External Wall Systems – Any Cemintel Cladding on Any Battens – Steel Framing

SYSTEM SPECIFICATION		TYPICAL LAYOUT (CSR 121a shown)				ACOUSTIC OPINION	
<ul style="list-style-type: none"> External cladding material on timber or steel battens. Sarking. Lining material to external side as per system table. Steel studs at 600mm maximum centres. Lining material to internal side as per system table. <p>NOTES: Acoustic performance valid for studs of 0.80 BMT. *ACR = Axial Capacity Reduction.</p>						<p>PKA-055</p>	
STEEL FRAMING							
FRL Report/Opinion	SYSTEM N°	WALL LININGS	STUD DEPTH mm	76	THERMAL		
			CAVITY INFILL (Refer to Bradford Insulation)	R _w	R _{t(win)}	R _{t(sum)}	
30/30/30 (from outside only) FAR2357	CSR 118 	<i>EXTERNAL SIDE OF STUD</i> <ul style="list-style-type: none"> 1 x 13mm GYPROCK FYRCHEK MR plasterboard. <i>INTERNAL SIDE</i> <ul style="list-style-type: none"> 1 x 10mm GYPROCK Plasterboard CD. 	(a) Nil	33 – 37	1.0	1.0	
			(b) 75 Gold Battens™ 1.5	39 – 43	2.4	2.2	
			(c) 70 Soundscreen™ 2.0	40 – 44	2.9	2.7	
			TYPICAL WALL THICKNESS mm (based on 18mm depth batten)	132			
60/60/60* (from outside only) *ACR 5% FAR2357	CSR 121 	<i>EXTERNAL SIDE OF STUD</i> <ul style="list-style-type: none"> 1 x 16mm Gyprock Fyrchek MR plasterboard. <i>INTERNAL SIDE</i> <ul style="list-style-type: none"> 1 x 10mm Gyprock Standard Plasterboard. 	(a) Nil	36 – 40	0.7	0.7	
			(b) 75 Gold Battens™ 1.5	39 – 43	2.1	2.0	
			(c) 70 Soundscreen™ 2.0	40 – 44	2.7	2.4	
			TYPICAL WALL THICKNESS mm (based on 18mm depth batten)	132			
90/90/90 (from outside only) FAR2357	CSR 119 	<i>EXTERNAL SIDE OF STUD</i> <ul style="list-style-type: none"> 2 x 13mm Gyprock Fyrchek MR plasterboard. <i>INTERNAL SIDE</i> <ul style="list-style-type: none"> 1 x 10mm Gyprock Standard Plasterboard. 	(a) Nil	37 – 41	0.8	0.7	
			(b) 75 Gold Battens™ 1.5	43 – 47	2.2	2.0	
			(c) 70 Soundscreen™ 2.0	44 – 48	2.7	2.5	
			TYPICAL WALL THICKNESS mm (based on 18mm depth batten)	142			

GENERIC INSTALLATION DETAILS OF CEMINTEL STEPPED & OVERLAPPED WEATHERBOARDS – HEADLAND™, PLANK & SCARBOROUGH™

Table 11: Fixing Requirements for Cemintel Headland™ Weatherboard to Structural Framing through Any Batten

NOTE: ✓ = fixing by the methods shown in FIG 3 is permitted.

Stud & Batten Spacing (mm)	Wind Category	Timber Framing	
		General Zone ❶	Corner Zone ❷
		Fixings Arrangement as per FIG 3	
600	N1	✓	–
	N2	✓	–
	N3/C1	–	–
	N4/C2	–	–
	N5/C3	–	–
450	N1	✓	✓
	N2	✓	✓
	N3/C1	✓	–
	N4/C2	✓	–
	N5/C3	–	–
300	N1	✓	✓
	N2	✓	✓
	N3/C1	✓	✓
	N4/C2	✓	✓
	N5/C3	✓	✓

❶ GENERAL ZONE – Wall areas greater than 1200mm from an External Building Corner.

❷ CORNER ZONE – Wall areas less than 1200mm from an External Building Corner.

FIG 3: Fixing Headland™ – Timber Frame

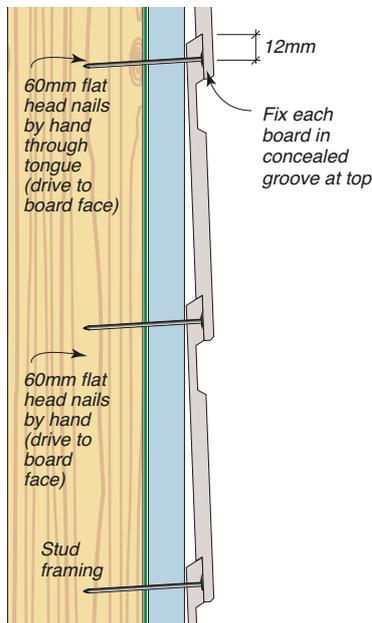


Table 12: Fixing Requirements for Cemintel™ Plank to Structural Framing through Any Batten

NOTE: ✓ = fixing by the methods shown in FIG 4 is permitted.

Stud & Batten Spacing (mm)	Wind Category	Timber Framing			
		230mm Plank		300mm Plank	
		General Zone ❶	Corner Zone ❷	General Zone ❶	Corner Zone ❷
Fixings Arrangement as per FIG 4					
600	N1	✓	✓	✓	✓
	N2	✓	✓	✓	✓
	N3/C1	✓	–	✓	–
	N4/C2	✓	–	–	–
	N5/C3	–	–	–	–
450	N1	✓	✓	✓	✓
	N2	✓	✓	✓	✓
	N3/C1	✓	✓	✓	–
	N4/C2	✓	–	✓	–
	N5/C3	✓	–	–	–
300	N1	✓	✓	✓	✓
	N2	✓	✓	✓	✓
	N3/C1	✓	✓	✓	✓
	N4/C2	–	–	✓	–
	N5/C3	–	–	✓	–

❶ GENERAL ZONE – Wall areas greater than 1200mm from an External Building Corner.

❷ CORNER ZONE – Wall areas less than 1200mm from an External Building Corner.

FIG 4: Fixing Cemintel™ Plank – Timber Frame

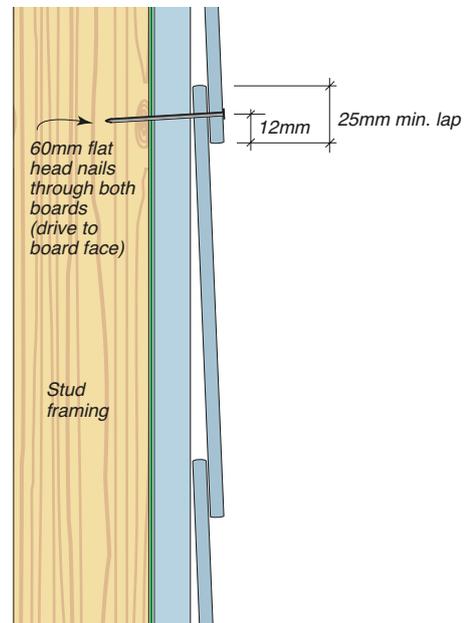


Table 13: Fixing Requirements for Scarborough™ Weatherboard to Structural Framing through Any Batten

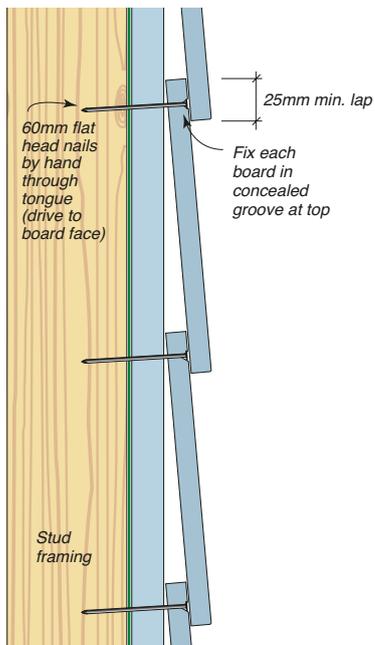
NOTE: ✓ = fixing by the methods shown in FIG 5 is permitted.

Stud & Batten Spacing (mm)	Wind Category	Timber Framing	
		General Zone ①	Corner Zone ②
		Fixings Arrangement as per FIG 5	
600	N1	✓	✓
	N2	✓	✓
	N3/C1	✓	✓
	N4/C2	✓	✓
	N5/C3	✓	-
450	N1	✓	✓
	N2	✓	✓
	N3/C1	✓	✓
	N4/C2	✓	✓
	N5/C3	✓	✓
300	N1	✓	✓
	N2	✓	✓
	N3/C1	✓	✓
	N4/C2	✓	✓
	N5/C3	✓	✓

① GENERAL ZONE – Wall areas greater than 1200mm from an External Building Corner.

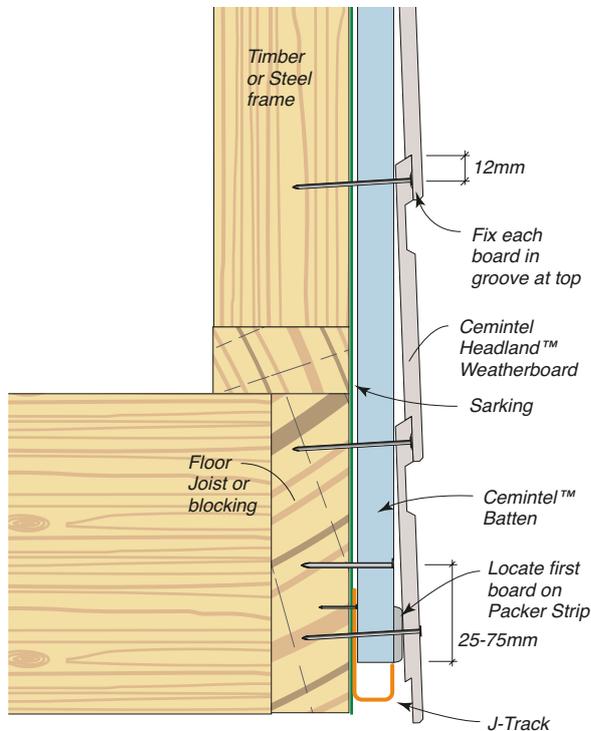
② CORNER ZONE – Wall areas less than 1200mm from an External Building Corner.

FIG 5: Fixing Scarborough™ Weatherboard – Timber Frame



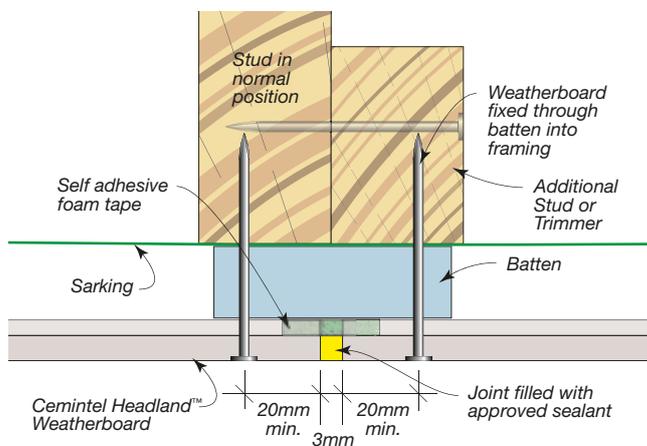
TYPICAL BASE DETAILS – HEADLAND/ PLANK/SCARBOROUGH

FIG 6: Base – Timber Frame



TYPICAL VERTICAL BOARD JOINT – HEADLAND/PLANK/SCARBOROUGH

FIG 7: Vertical Joint with Trimmer or Double Studs – Timber Framing



TYPICAL HEAD/SOFFIT DETAILS – HEADLAND/PLANK/SCARBOROUGH

FIG 8: Head – Eaves with Timber Trim

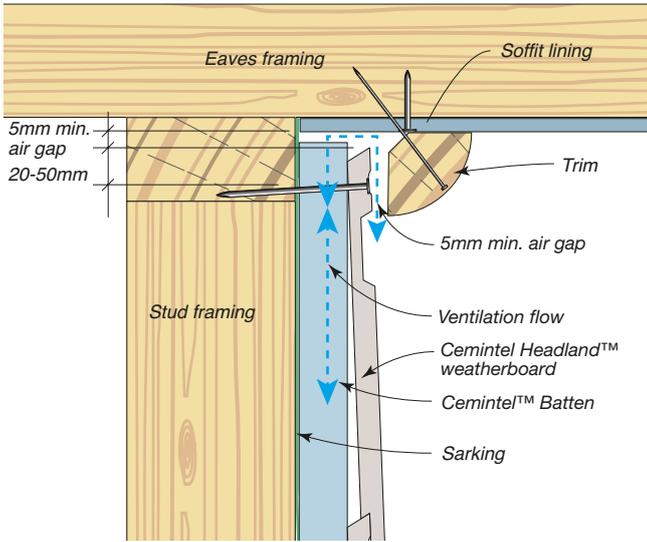


FIG 9: Head – Eaves with Cemintel Eaves Trim

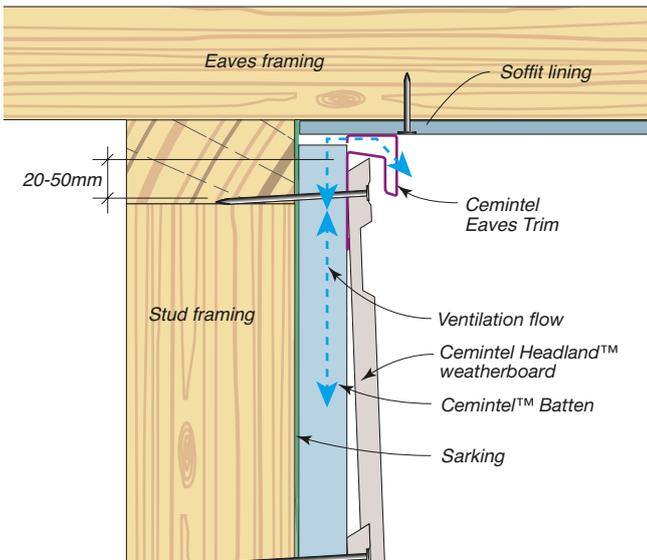
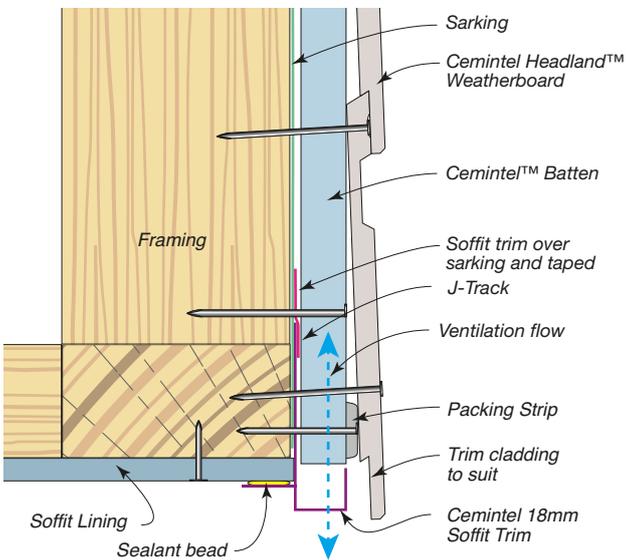


FIG 10: Soffit – With Cemintel Soffit Trim



TYPICAL CORNER DETAILS – HEADLAND/PLANK/SCARBOROUGH

FIG 11: External Corner with Aluminium Profile

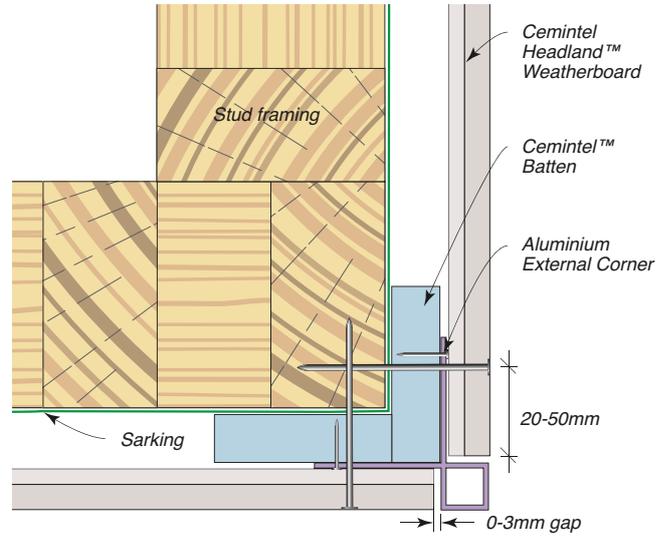


FIG 12: External Corner with Two-piece Aluminium Corner

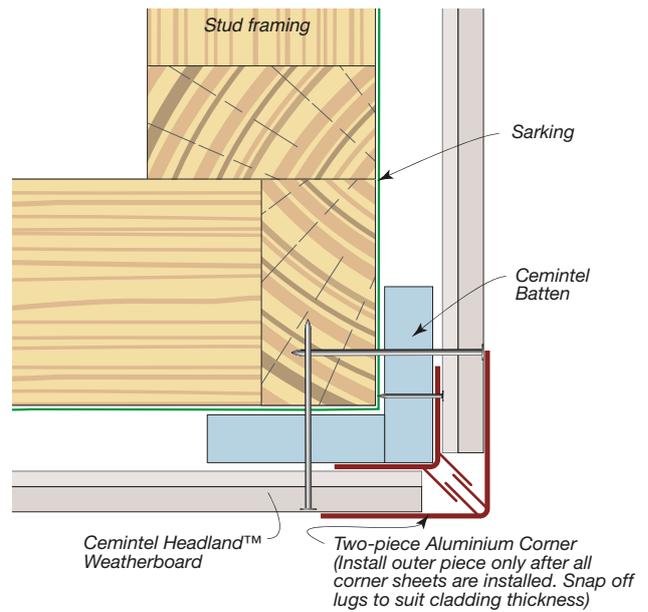


FIG 13: External Corner with Timber Stop

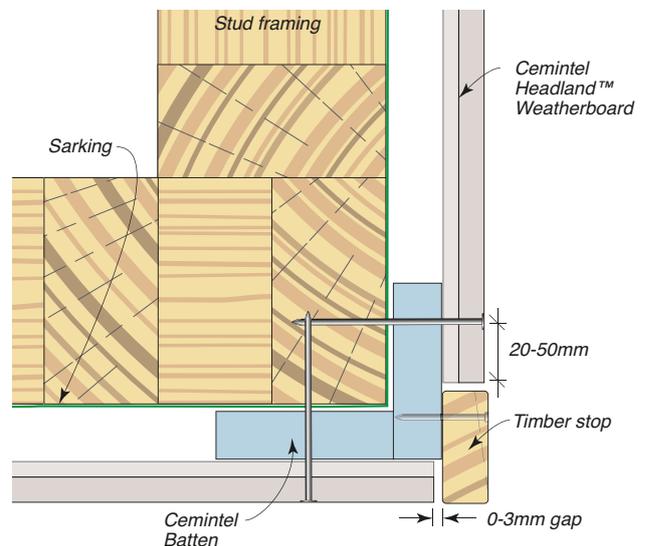


FIG 14: Internal Corner with Aluminium Profile

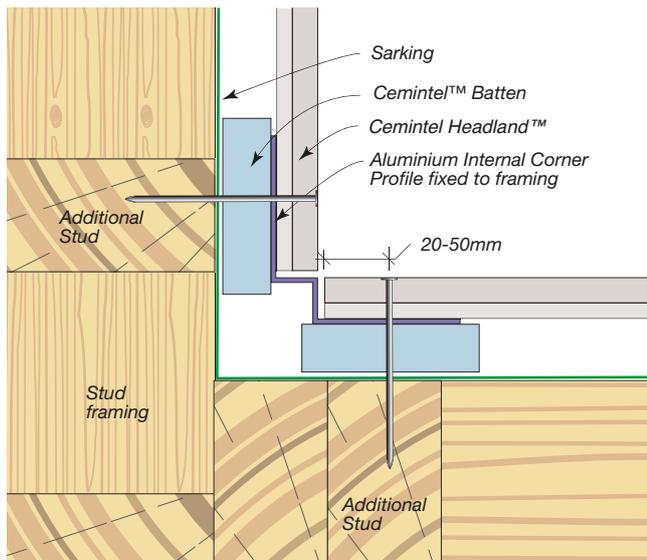


FIG 15: Internal Corner with Two-piece Aluminium Corner

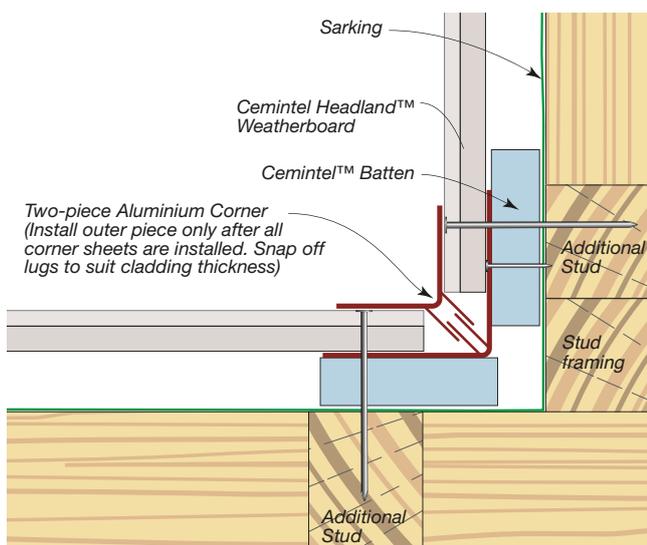


FIG 16: Internal Corner with Timber Moulding

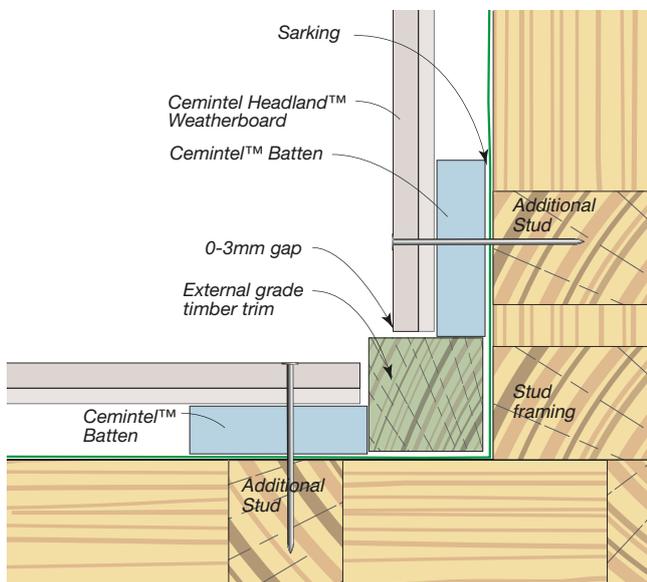
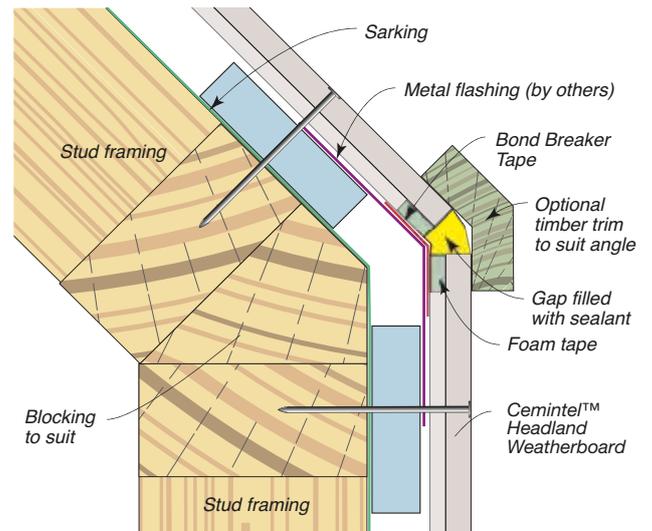


FIG 17: Obtuse Angle Corner



TYPICAL JUNCTION DETAILS – HEADLAND/PLANK/SCARBOROUGH

FIG 18: Junction of Weatherboard with Alternative Fibre Cement Cladding

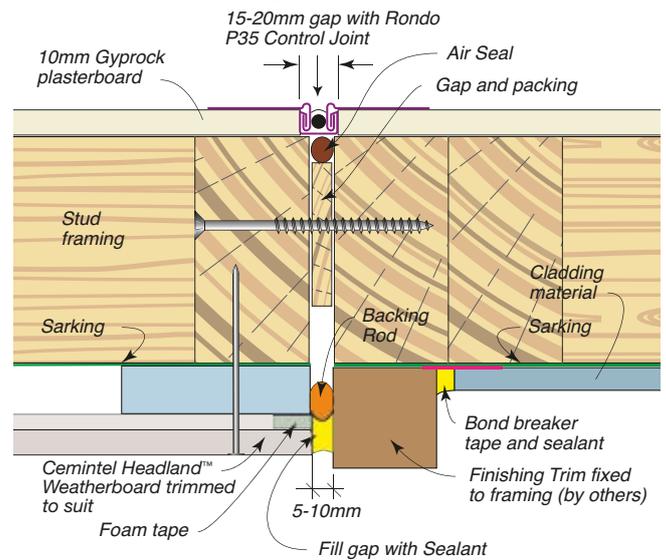
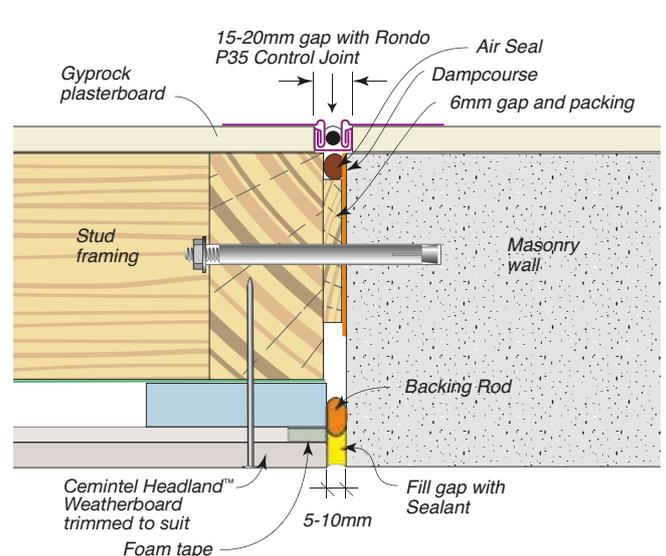


FIG 19: Junction of Weatherboard with Offset or In-line Masonry Wall



TYPICAL JUNCTION DETAILS – HEADLAND/PLANK/SCARBOROUGH

FIG 20: Second Storey Junction with Hebel Panels, Brick Veneer or Masonry Wall – Cantilevered Framing

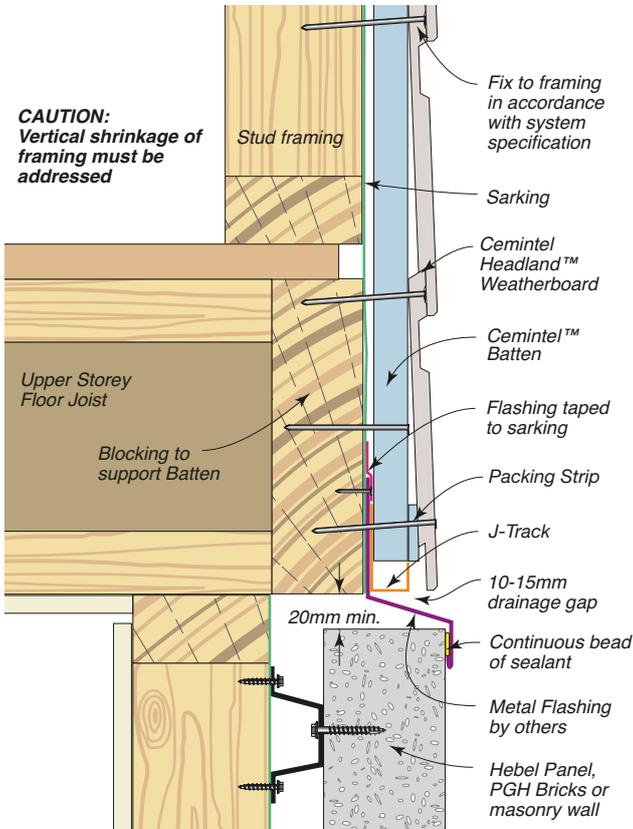


FIG 21: Second Storey Junction with Masonry, Brick Veneer or Hebel Panels

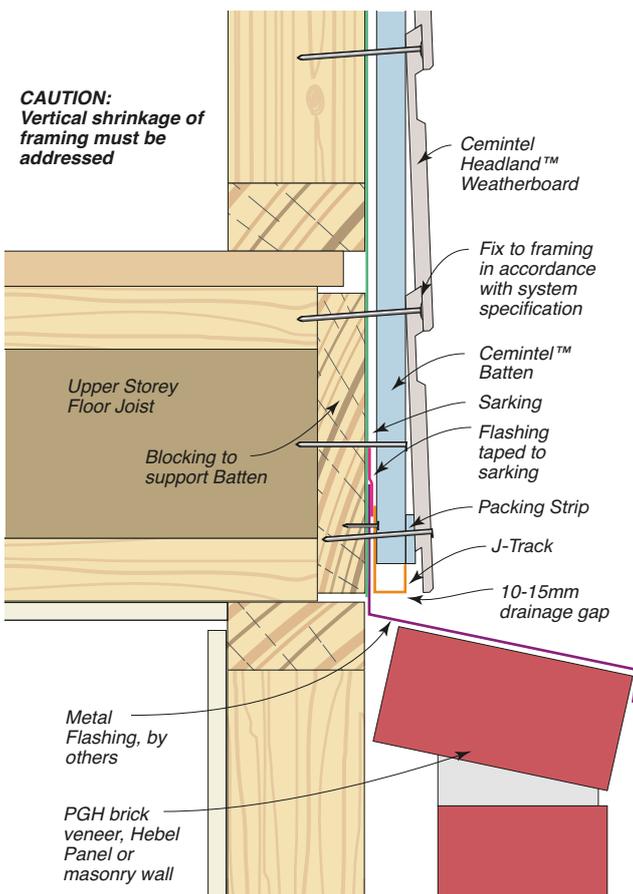


FIG 22: Second Storey Horizontal Junction

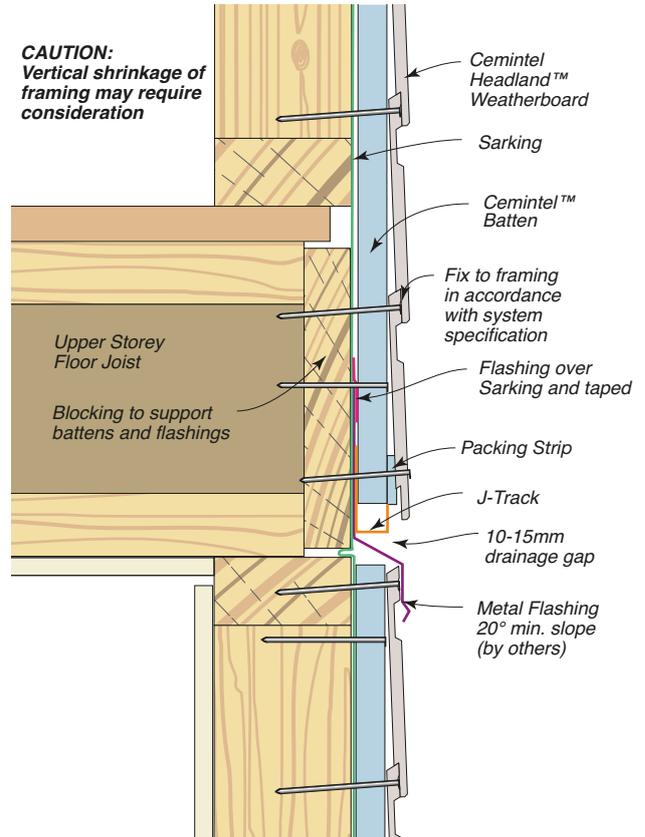


FIG 23: Horizontal Parapet

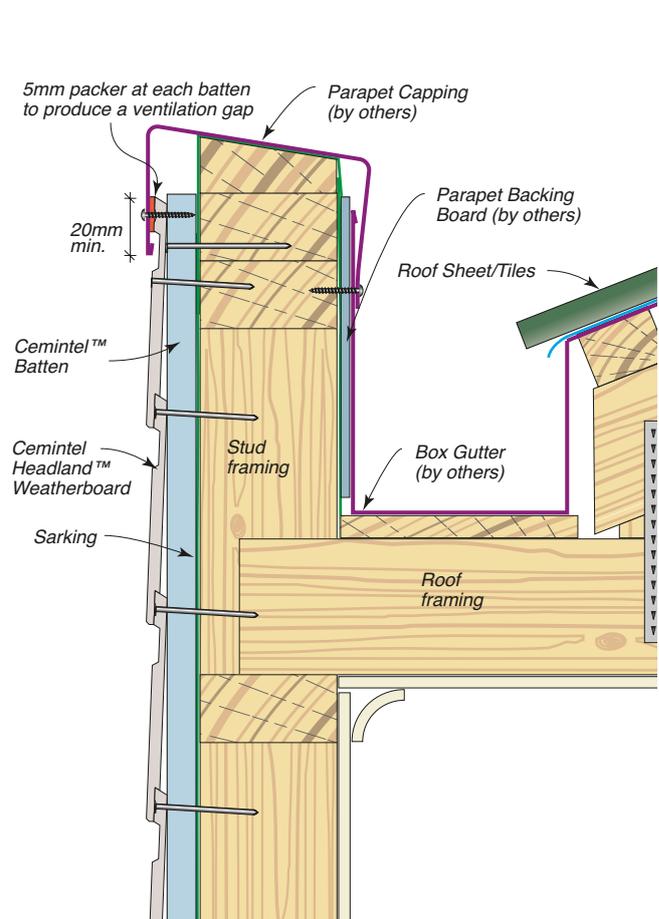


FIG 24: Junction of Cladding with External Roofing

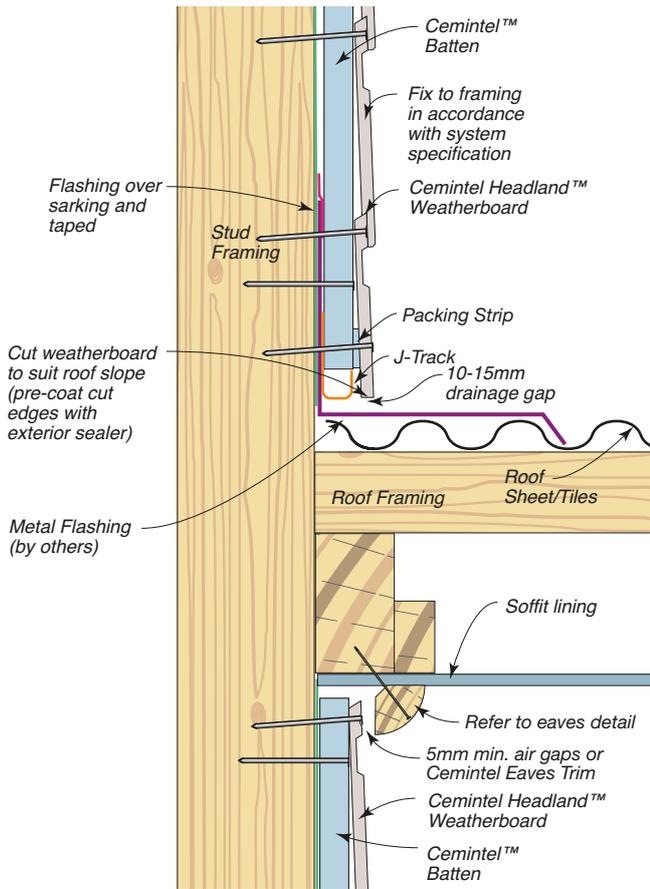


FIG 26: Window Detail – A&L Aluminium Sliding Window with Weatherboard Trim shown

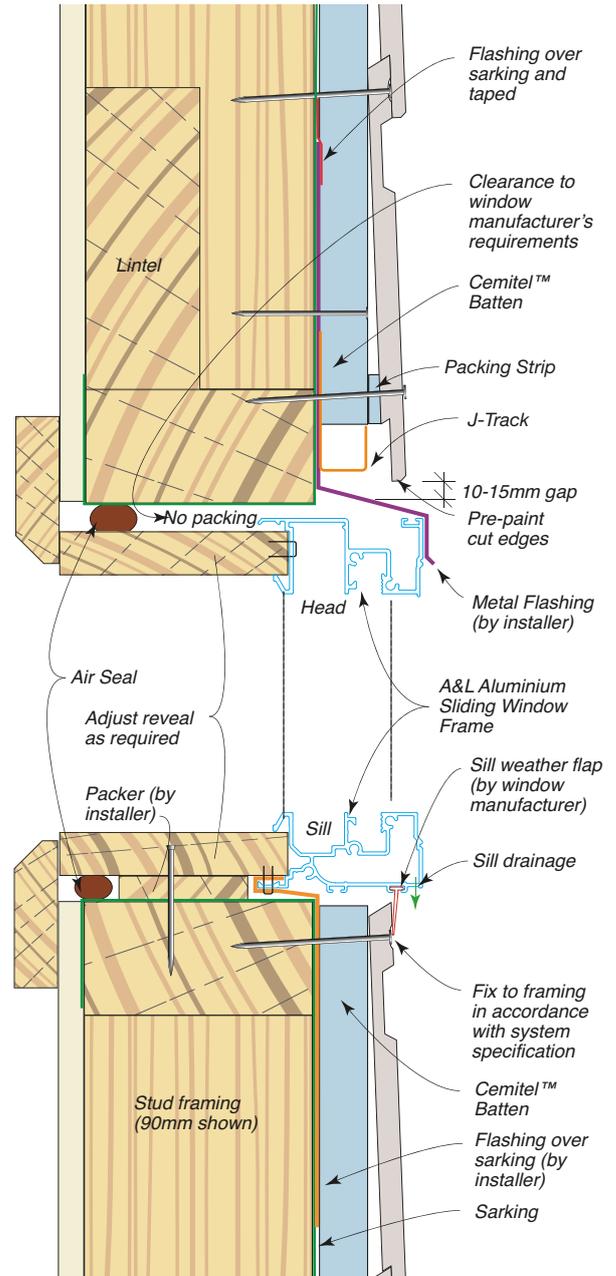


FIG 25: Junction of Cladding with External Roofing

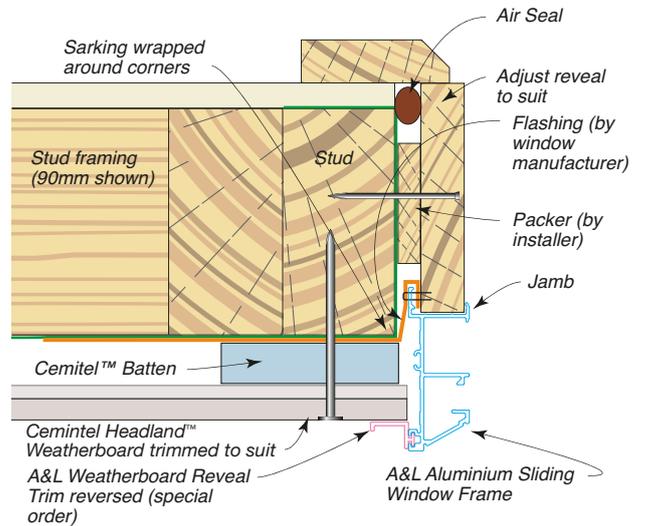
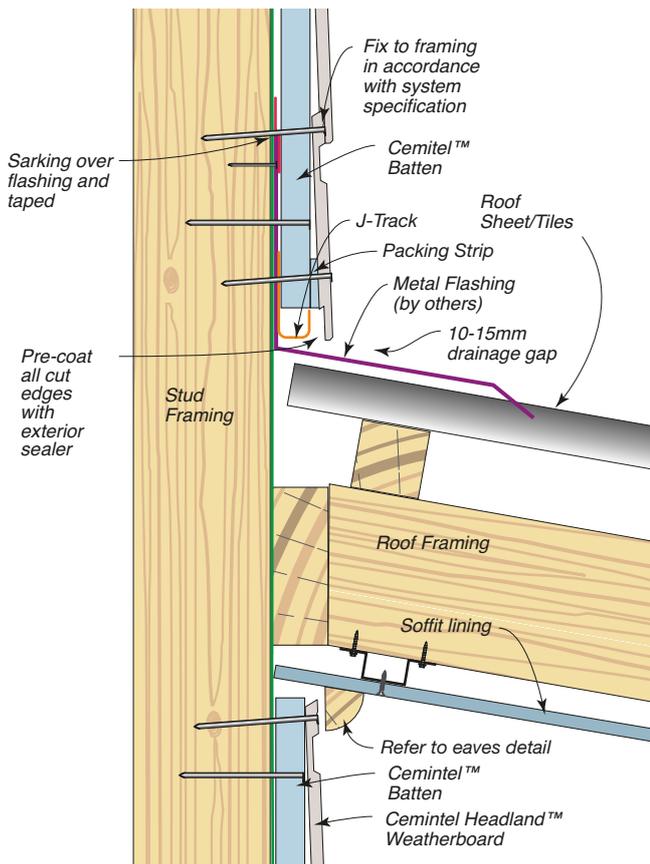
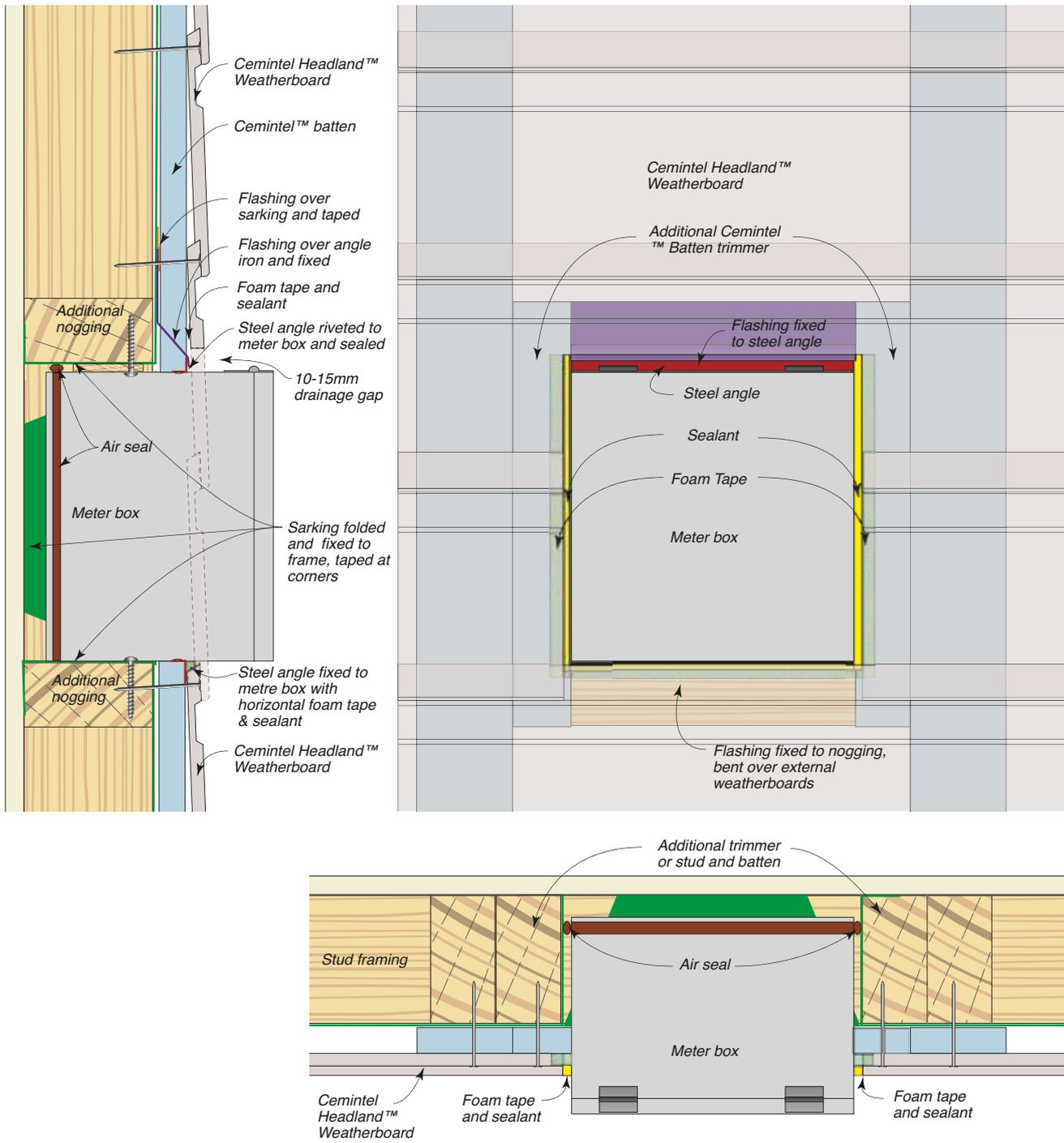


FIG 27: Power Meter Box Installation



GENERIC INSTALLATION DETAILS OF CEMINTEL SHIPLAPPED WEATHERBOARDS – ENDEAVOUR™ & ASPECT™

Table 14: Fixing Requirements for Cemintel Endeavour™ Weatherboard to Structural Framing through Any Batten

NOTE: ✓ = fixing by the methods shown in FIG 28 is permitted.

Stud & Batten Spacing (mm)	Wind Category	Timber Framing	
		General Zone ①	Corner Zone ②
		Fixings Arrangement as per FIG 28	
600	N1	✓	–
	N2	✓	–
	N3/C1	–	–
	N4/C2	–	–
	N5/C3	–	–
	N5/C3	–	–
450	N1	✓	✓
	N2	✓	✓
	N3/C1	✓	✓
	N4/C2	✓	–
	N5/C3	–	–
	N5/C3	–	–
300	N1	✓	✓
	N2	✓	✓
	N3/C1	✓	✓
	N4/C2	✓	✓
	N5/C3	✓	✓

① GENERAL ZONE – Wall areas greater than 1200mm from an External Building Corner.

② CORNER ZONE – Wall areas less than 1200mm from an External Building Corner.

FIG 28: Fixing Endeavour™ – Timber Frame

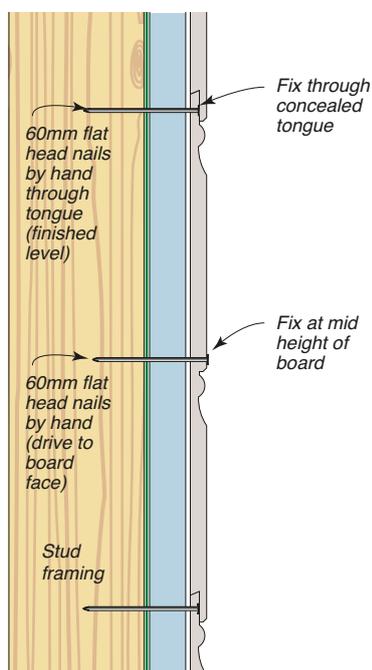


Table 15: Fixing Requirements for Cemintel Aspect™ Weatherboard to Structural Framing through Any Batten

NOTE: ✓ = fixing by the methods shown in FIG 29/FIG 30/FIG 31 is permitted.

Stud & Batten Spacing (mm)	Wind Category	Timber Framing					
		General Zone ①	Corner Zone ②	General Zone ①	Corner Zone ②	General Zone ①	Corner Zone ②
		Fixings Arrangement as per FIG 29		Fixings Arrangement as per FIG 30		Fixings Arrangement as per FIG 31	
600	N1	✓	✓	✓	✓	✓	✓
	N2	✓	✓	✓	✓	✓	✓
	N3/C1	✓	–	✓	✓	–	–
	N4/C2	–	–	✓	–	–	–
	N5/C3	–	–	–	–	–	–
	N5/C3	–	–	–	–	–	–
450	N1	✓	✓	✓	✓	✓	✓
	N2	✓	✓	✓	✓	✓	✓
	N3/C1	✓	✓	✓	✓	–	–
	N4/C2	–	–	✓	✓	–	–
	N5/C3	–	–	✓	✓	–	–
	N5/C3	–	–	–	–	–	–

① GENERAL ZONE – Wall areas greater than 1200mm from an External Building Corner.

② CORNER ZONE – Wall areas less than 1200mm from an External Building Corner.

FIG 29: Fixing Aspect™ – Timber Frame

Brad Gun Nailing

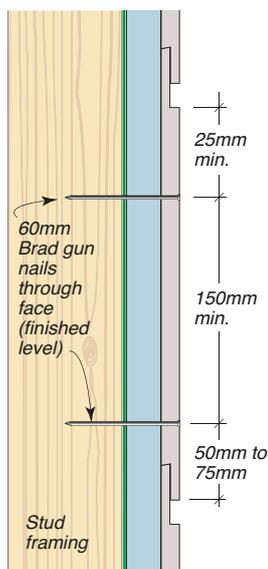


FIG 30: Fixing Aspect™ – Timber Frame

Face Nailing – Hand or Gun

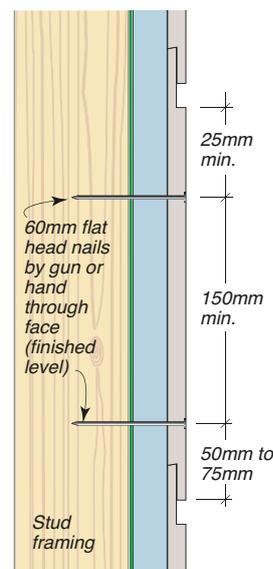
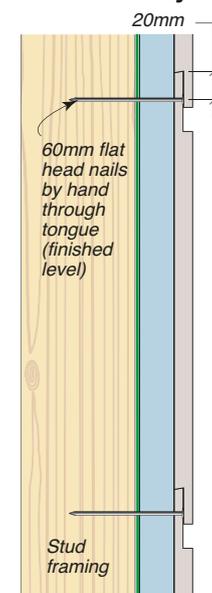


FIG 31: Fixing Aspect™ – Timber Frame

Concealed Nailing – Hand Only



TYPICAL HEAD, BASE & VERTICAL BOARD JOINT DETAILS – ENDEAVOUR/ASPECT

FIG 32: Base – Timber Frame

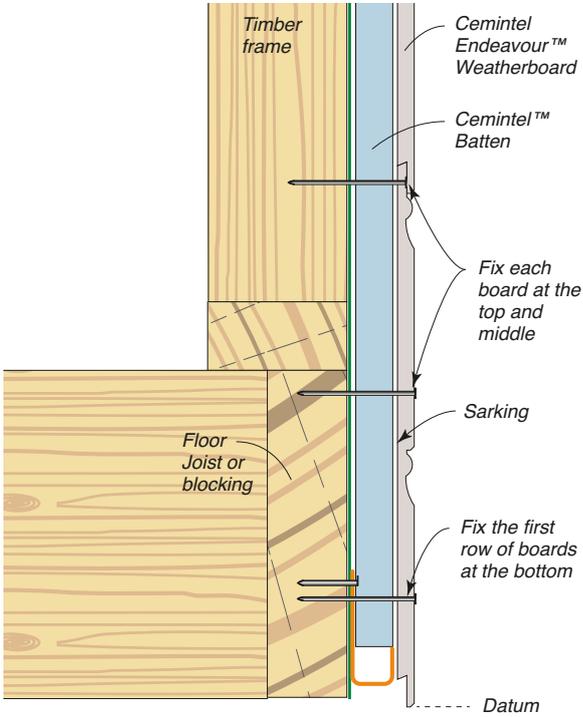


FIG 33: Vertical Joint with Trimmer or Double Stud – Timber Framing

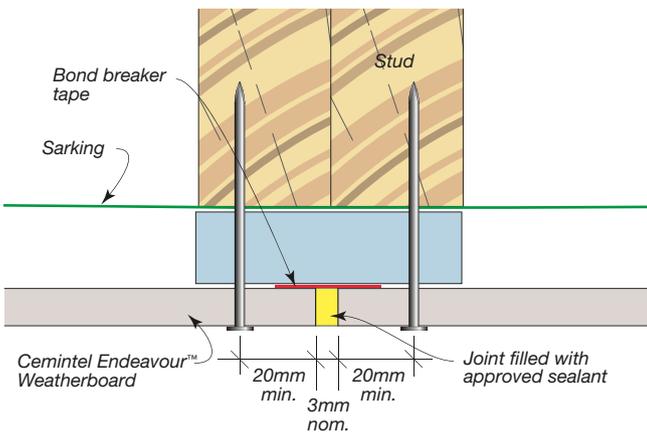


FIG 34: Head – Eaves with Timber Trim

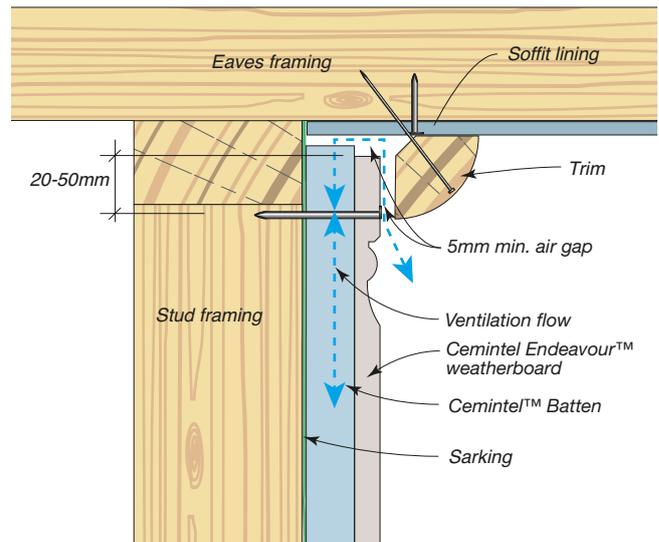


FIG 35: Head – Eaves with Cemintel Trim

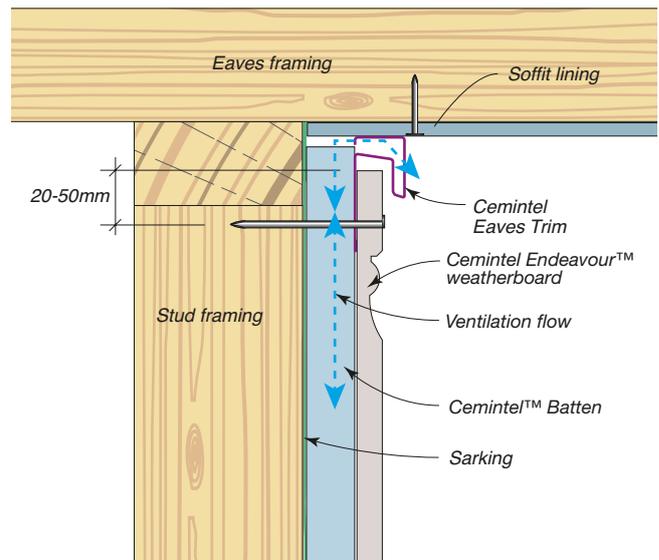
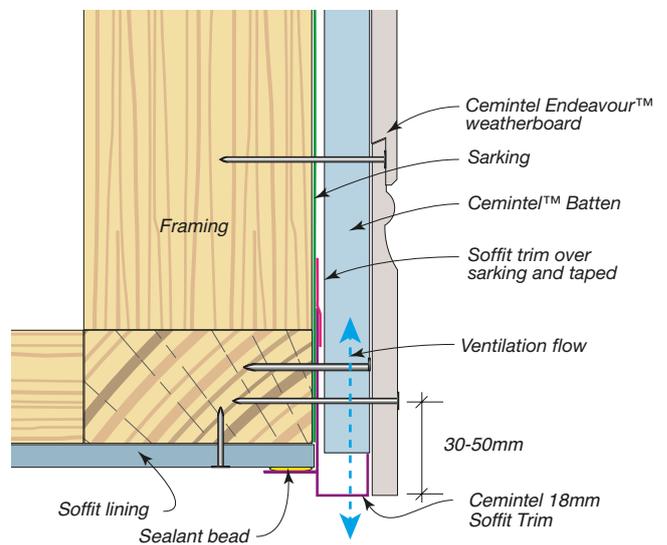


FIG 36: Soffit – With Soffit Trim



TYPICAL CORNER DETAILS – ENDEAVOUR/ASPECT

FIG 37: External Corner with Aluminium Profile

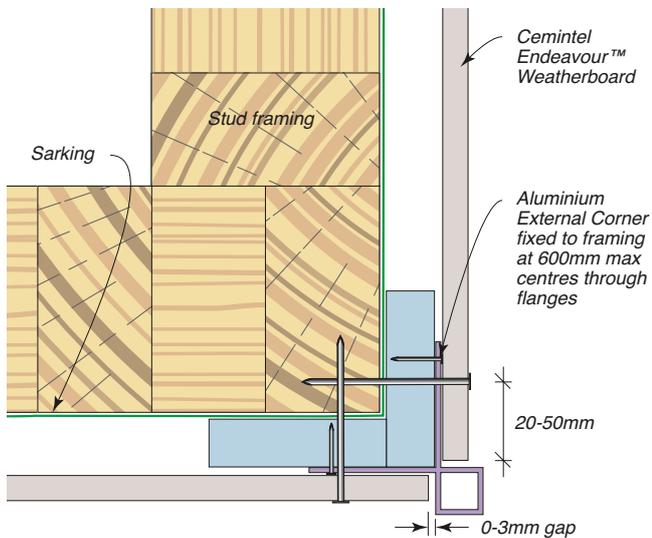


FIG 38: External Corner with Two-piece Aluminium Corner

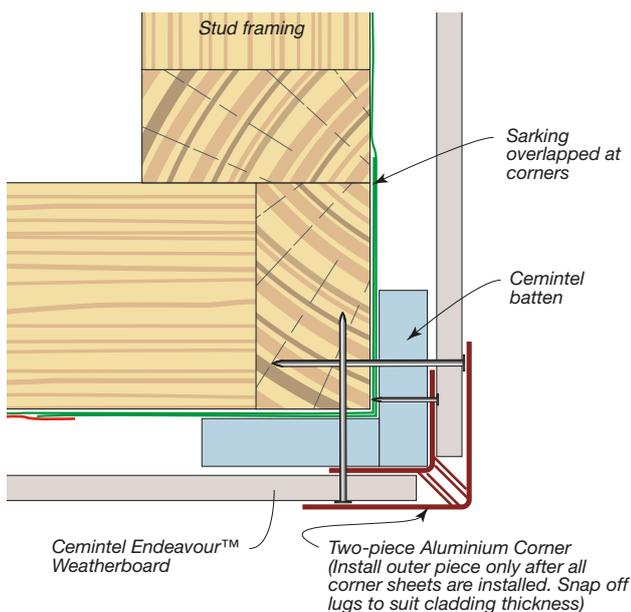


FIG 39: External Corner with Timber Stop

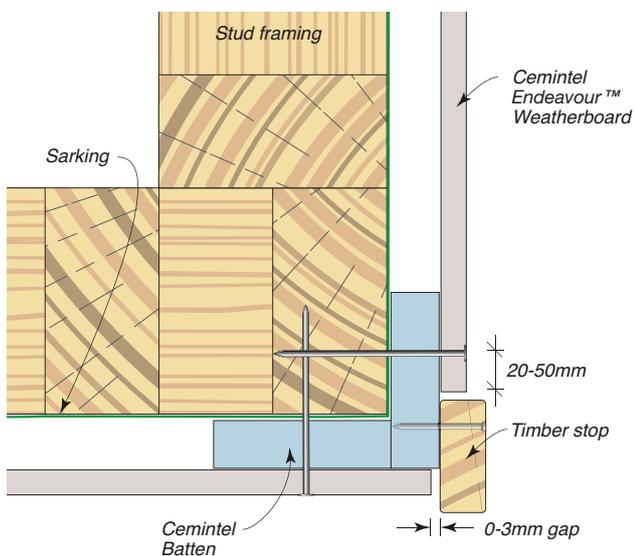


FIG 40: Internal Corner with Aluminium Profile

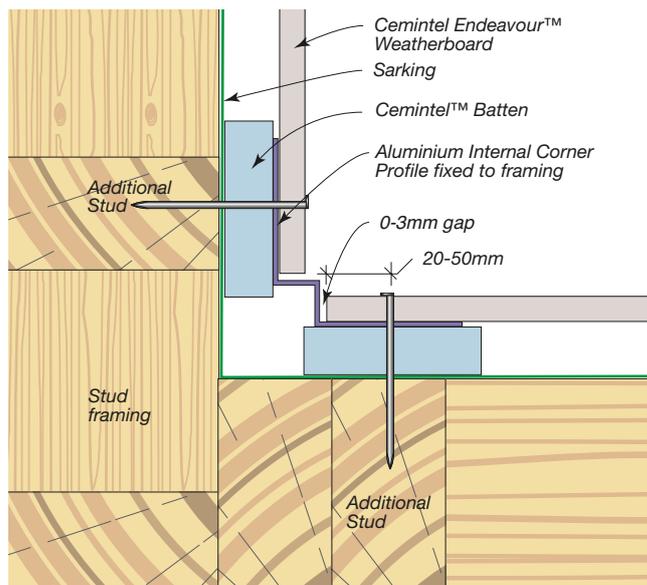


FIG 41: Internal Corner with Two-piece Aluminium Corner

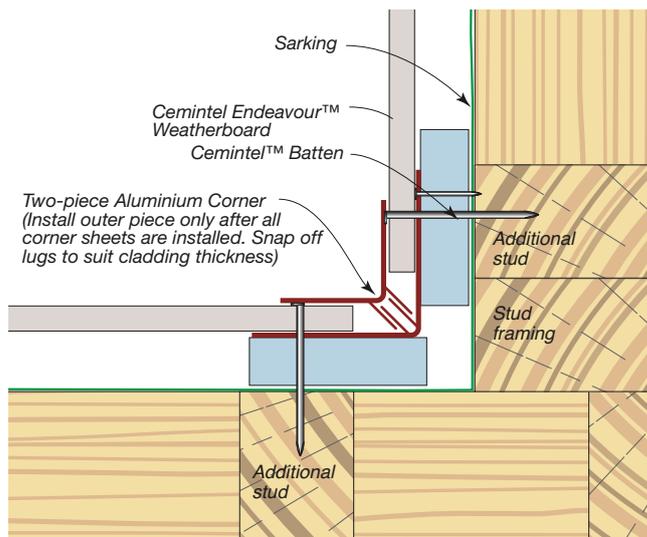


FIG 42: Internal Corner with Timber Moulding

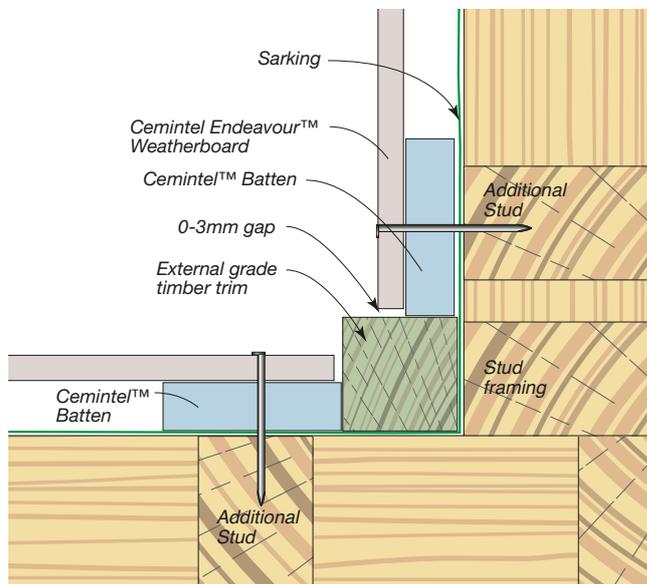
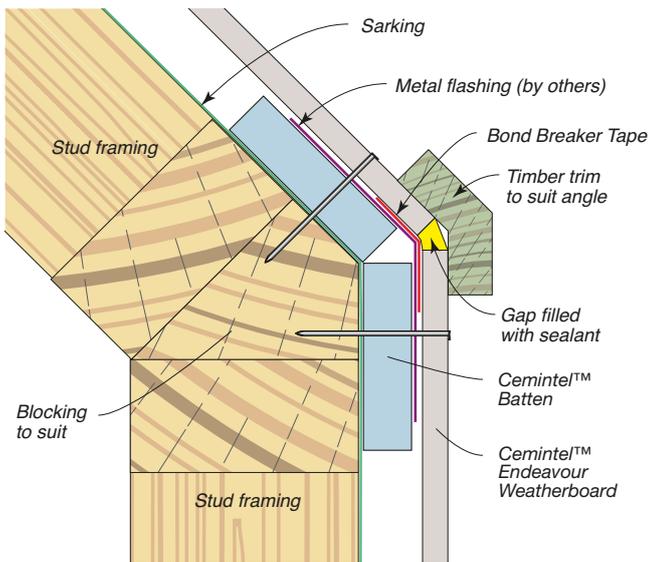


FIG 43: Obtuse Angle Corner



TYPICAL JUNCTION DETAILS – ENDEAVOUR/ASPECT

FIG 44: Junction of Weatherboard with Alternative Fibre Cement Cladding

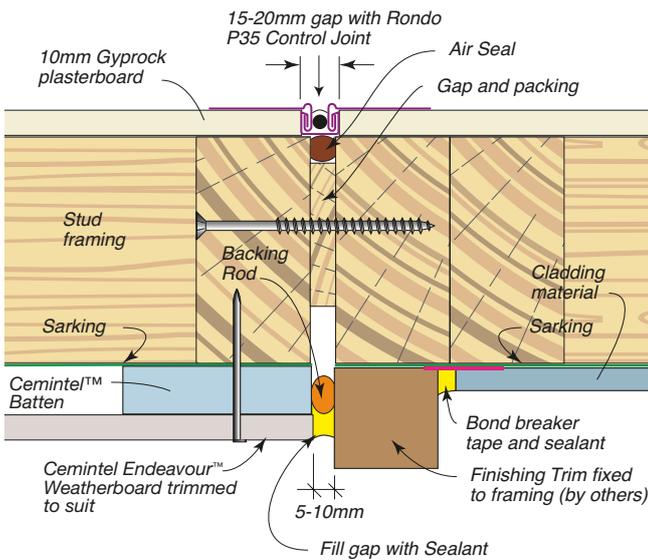


FIG 45: Junction of Weatherboard with Offset or In-line Masonry Wall

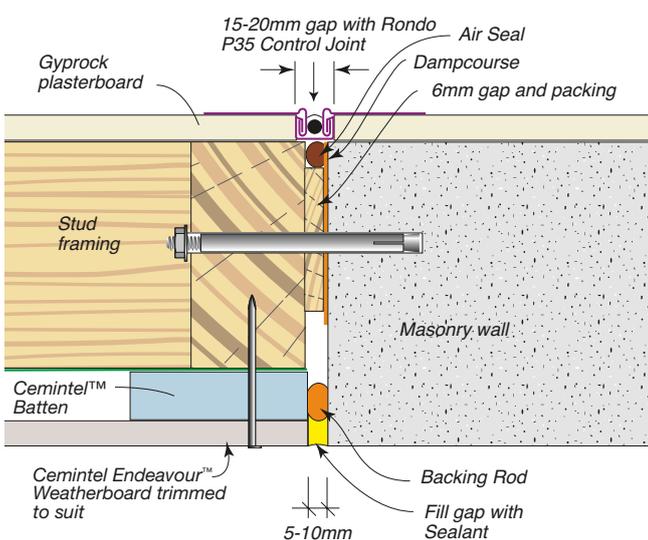


FIG 46: Second Storey Junction with Hebel Panels, Brick Veneer or Masonry Wall – Cantilevered Framing

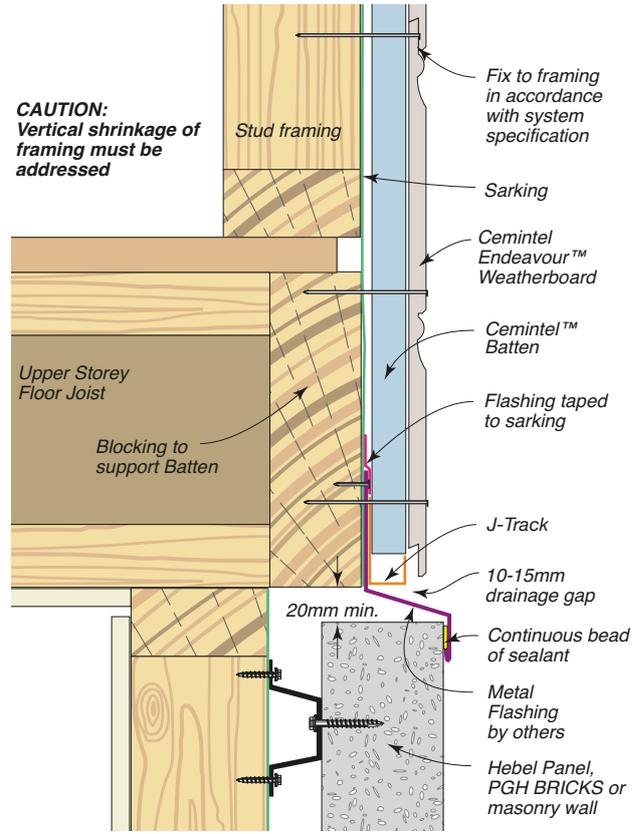


FIG 47: Second Storey Junction with Masonry, Brick Veneer or Hebel Panels

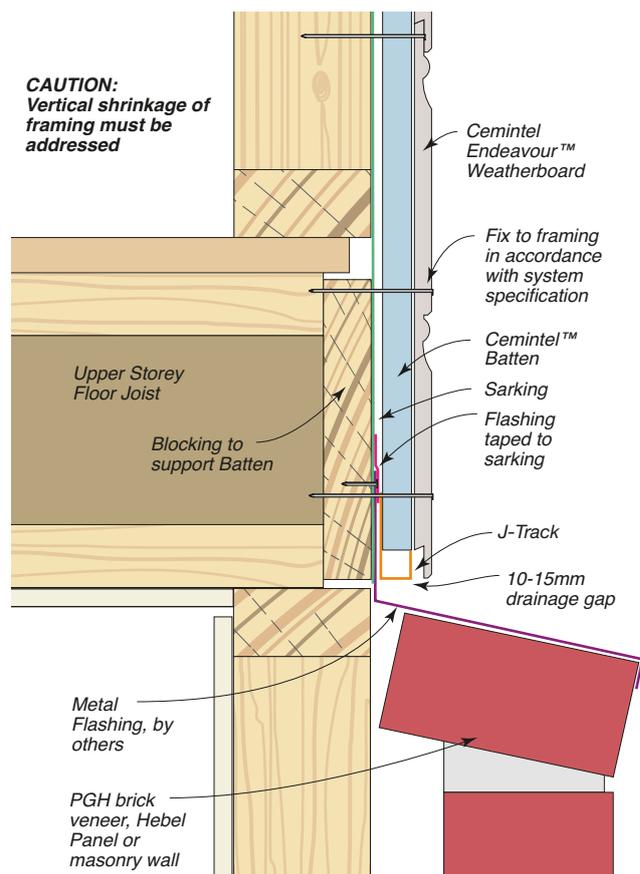


FIG 48: Second Storey Horizontal Junction

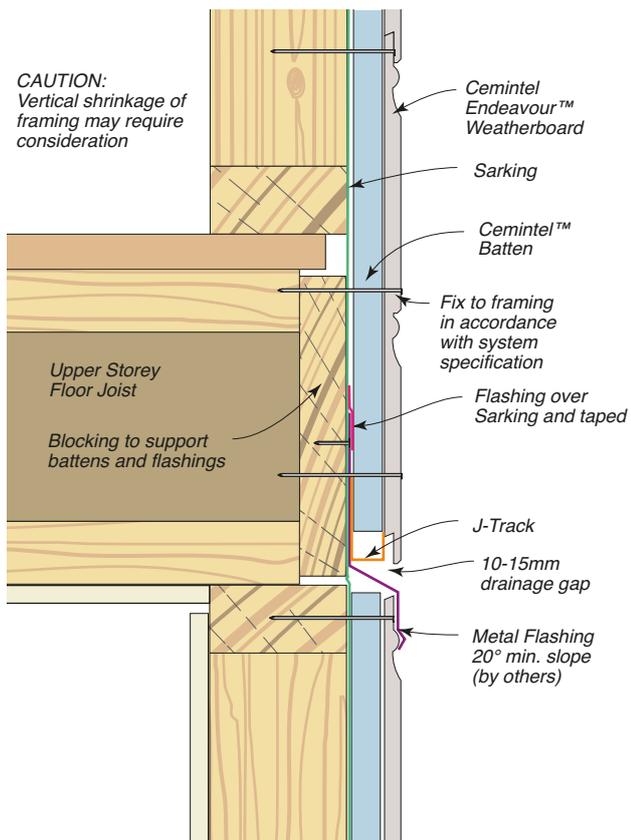


FIG 50: Junction of Cladding with External Roofing

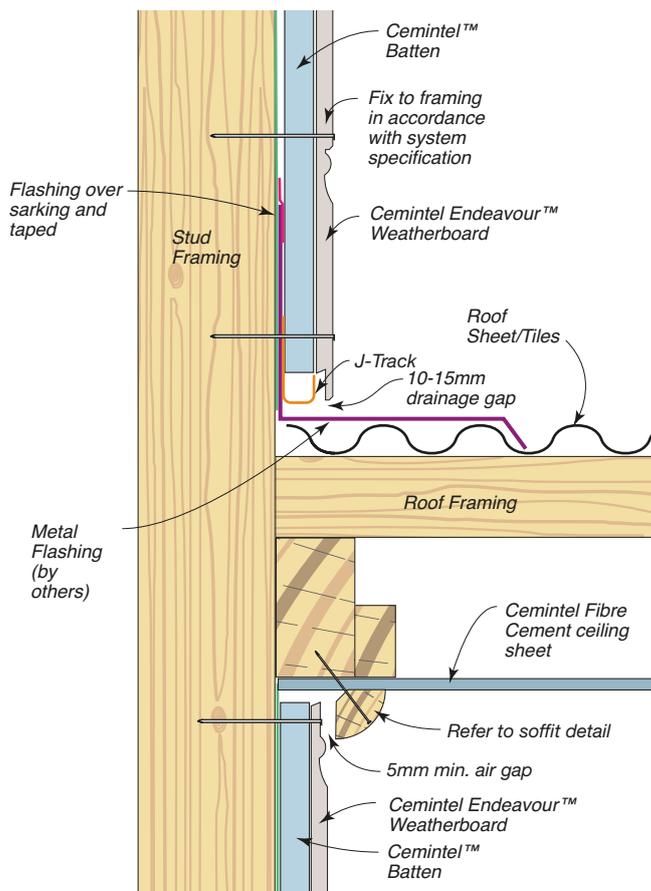


FIG 49: Horizontal Parapet

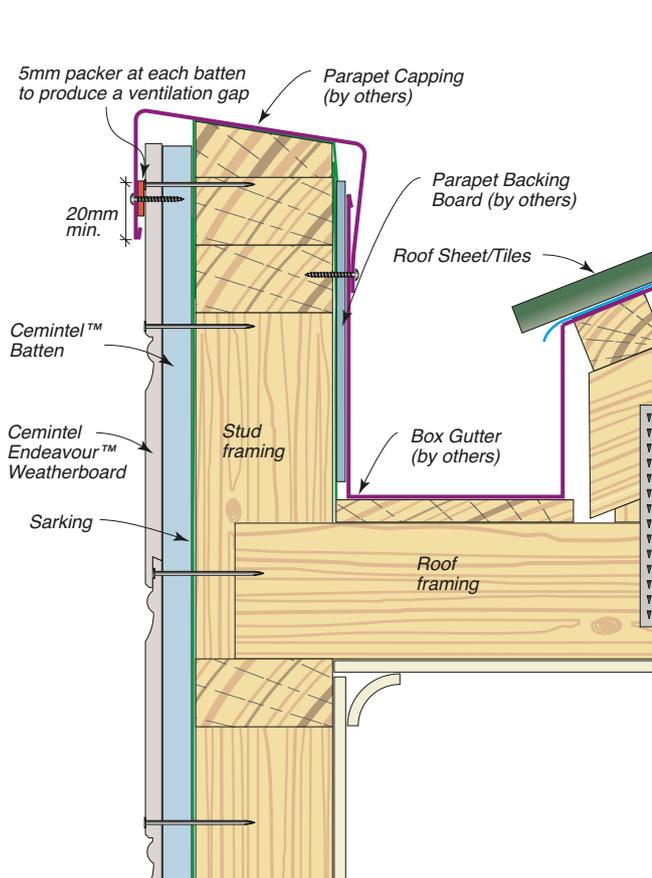


FIG 51: Junction of Cladding with External Roofing

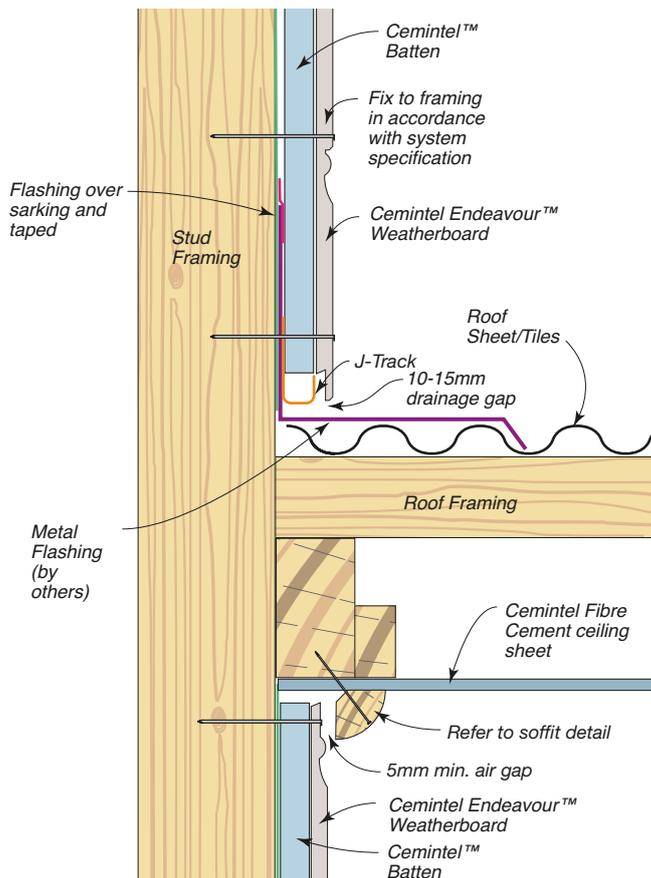


FIG 52: Window Detail – A&L Aluminium Sliding Window with Weatherboard Trim shown

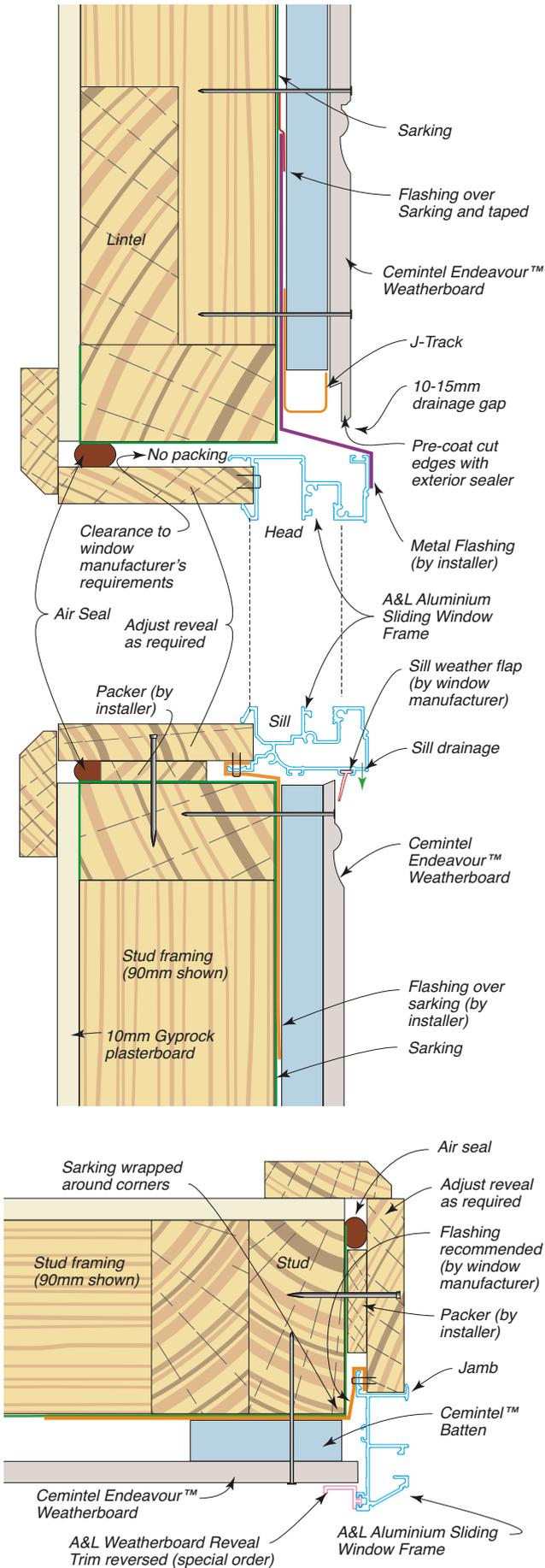
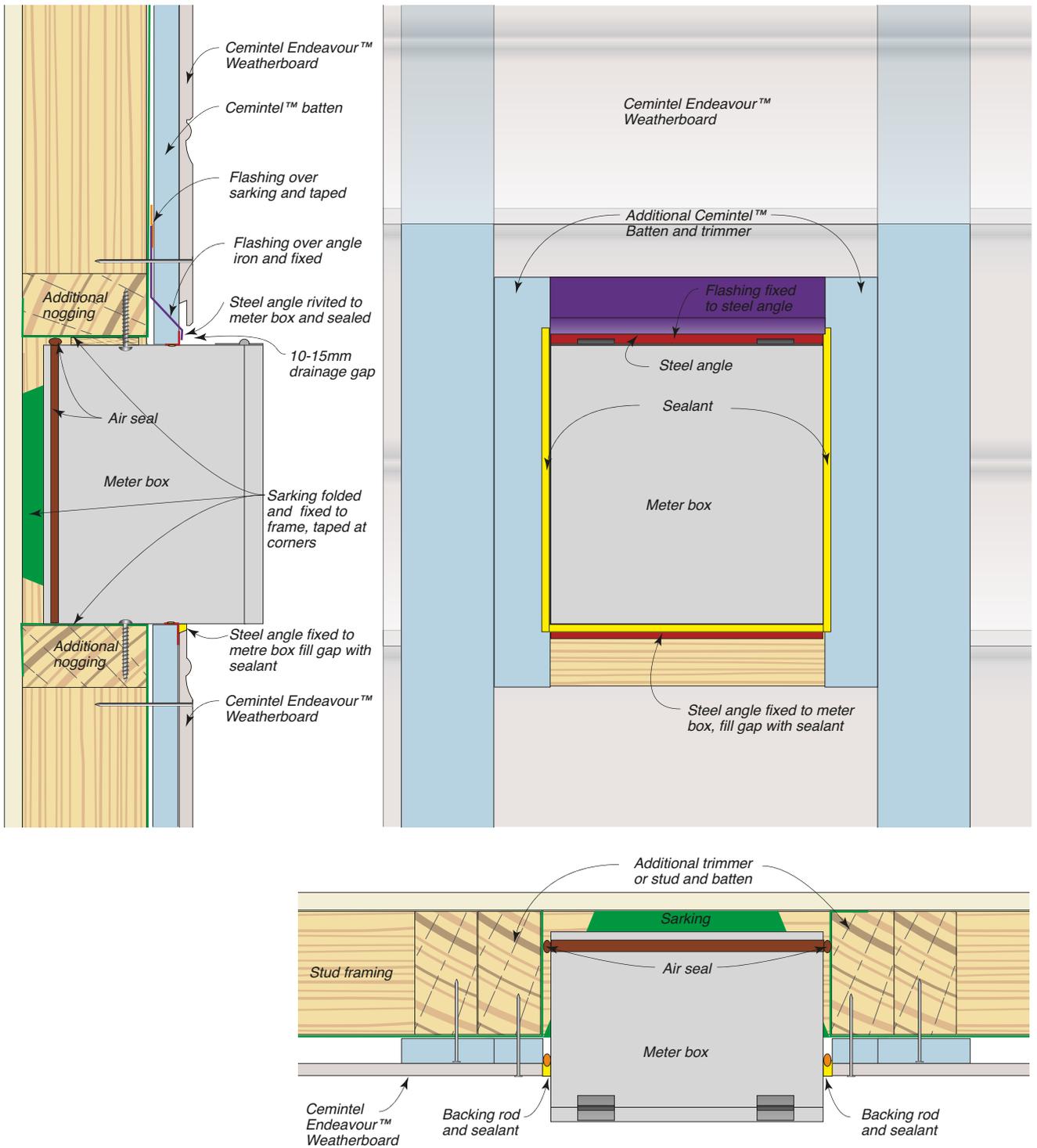


FIG 53: Power Meter Box Installation



GENERIC INSTALLATION DETAILS OF CEMINTEL SHEET CLADDING PRODUCTS – CLADDING SHEET, EDGE™, MOSAIC™ & TEXTURE SYSTEM

Table 16: Fixing Requirements for Cemintel Edge™ Cladding on 18-20mm Batten

Stud & Batten Spacing (mm)	Wind Category	Timber Framing	
		General Zone ①	Corner Zone ②
		Fixings Arrangement as per FIG 54	
Maximum Fastener Spacing (mm)			
600	N1	300	–
	N2	300	–
	N3/C1	300	–
	N4/C2	–	–
	N5/C3	–	–
400	N1	300	300
	N2	300	300
	N3/C1	300	260
	N4/C2	300	–
	N5/C3	220	–
300	N1	300	300
	N2	300	300
	N3/C1	300	300
	N4/C2	300	260
	N5/C3	300	175

- ① GENERAL ZONE – Wall areas greater than 1200mm from an External Building Corner.
- ② CORNER ZONE – Wall areas less than 1200mm from an External Building Corner.

FIG 54: Fixing & Base – Timber Frame – Edge™

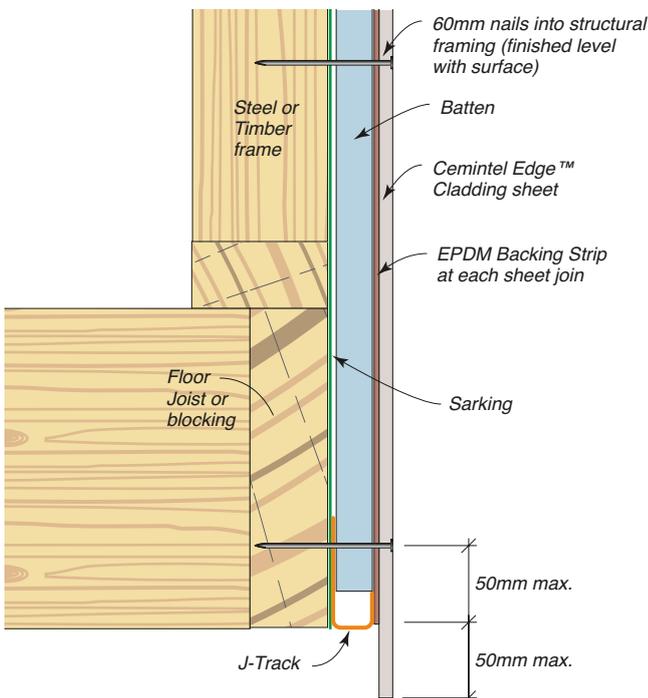


Table 17: Fixing Requirements for Cemintel 6mm Cladding Sheet on 18-20mm Batten

Stud & Batten Spacing (mm)	Wind Category	Timber Framing	
		General Zone ①	Corner Zone ②
		Fixings Arrangement as per FIG 55	
Maximum Fastener Spacing (mm)			
400/450	N1	300	300
	N2	300	300
	N3/C1	300	–
	N4/C2	–	–
	N5/C3	–	–
300	N1	300	300
	N2	300	300
	N3/C1	300	300
	N4/C2	300	260
	N5/C3	300	–

- ① GENERAL ZONE – Wall areas greater than 1200mm from an External Building Corner.
- ② CORNER ZONE – Wall areas less than 1200mm from an External Building Corner.

FIG 55: Base – Timber Frame – Cladding Sheet & Texture System

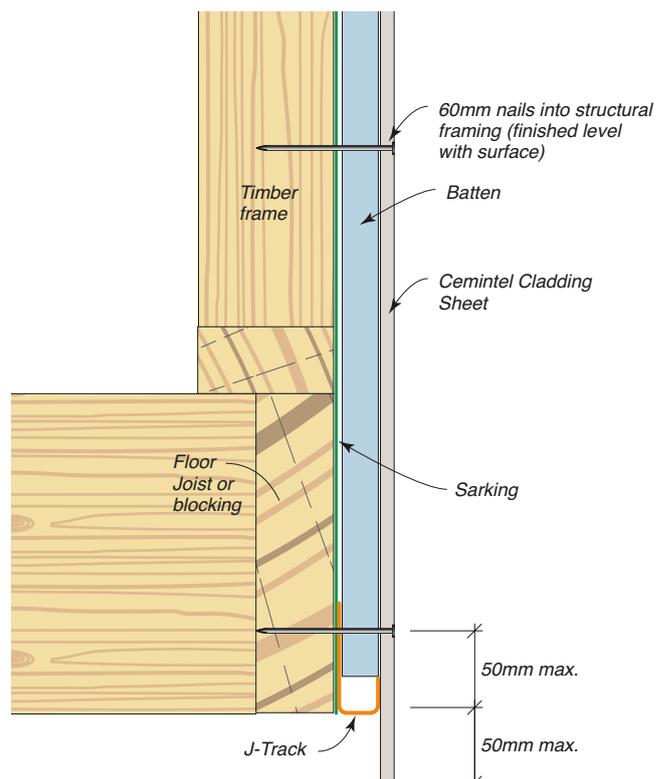


Table 18: Fixing Requirements for Cemintel Mosaic™ Cladding to Cemintel FC Batten

NOTES: Battens must be Cemintel™ FC Batten fixed in accordance with Table 4 on page 6.

Stud & Batten Spacing (mm)	Wind Category	C25 Brad Nail Fixing		Screws 8-15 x 30mm Type 17	
		General Zone ①	Corner Zone ②	General Zone ①	Corner Zone ②
		Fixings Arrangement as per FIG 56 or FIG 57		Fixings Arrangement as per FIG 56 or FIG 57	
Maximum Fastener Spacing (mm)					
600	N1	300	200	200	300
	N2	300	150	150	200
	N3/C1	200	-	-	-
	N4/C2	150	-	-	-
	N5/C3	-	-	-	-
450	N1	300	300	300	300
	N2	300	200	200	300
	N3/C1	200	150	150	200
	N4/C2	200	100	100	150
	N5/C3	100	-	-	-
300	N1	300	300	300	300
	N2	300	300	300	300
	N3/C1	300	200	200	300
	N4/C2	200	150	150	200
	N5/C3	200	-	-	150

① GENERAL ZONE – Wall areas greater than 1200mm from an External Building Corner.

② CORNER ZONE – Wall areas less than 1200mm from an External Building Corner.

FIG 56: Fixing & Base – Timber Frame – Mosaic™

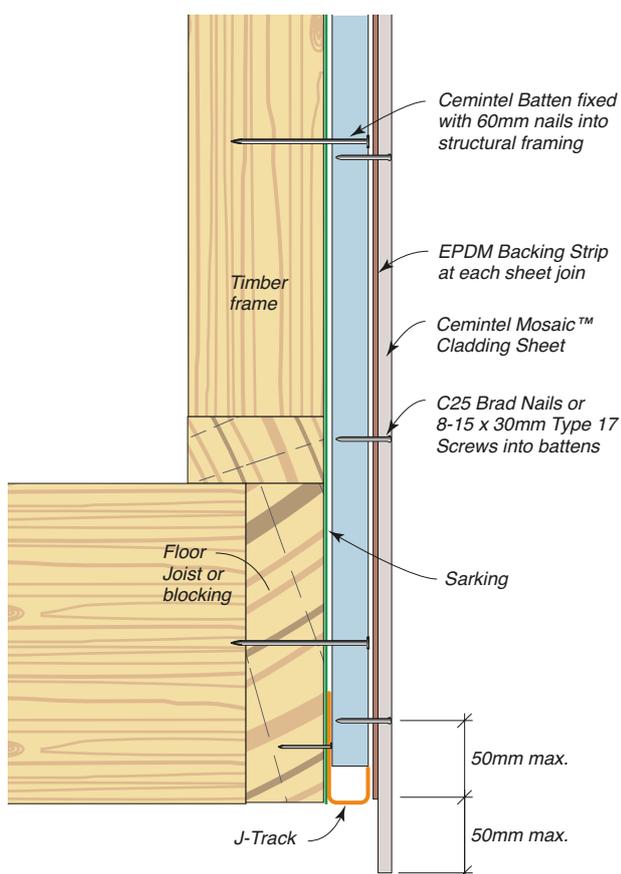


FIG 57: Fixing & Base – Steel Frame – Mosaic™

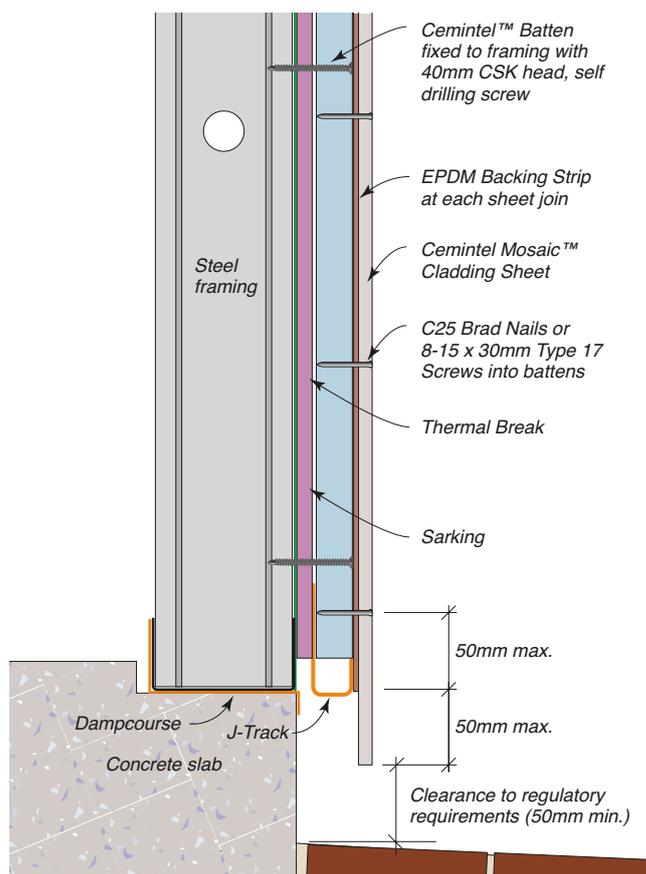


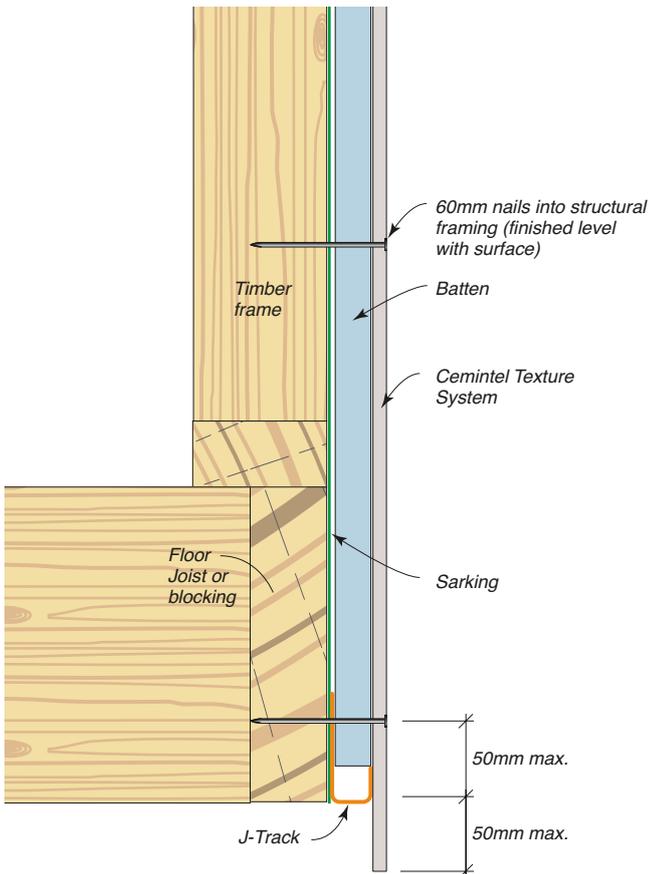
Table 19: Fixing Requirements for Cemintel Texture Base Sheet to Timber Framing with 18-20mm Batten

Stud & Batten Spacing (mm)	Wind Category	Timber Framing	
		General Zone ❶	Corner Zone ❷
		Fixings Arrangement as per FIG 58	
Maximum Fastener Spacing (mm)			
600	N1	300	–
	N2	300	–
	N3/C1	300	–
	N4/C2	–	–
	N5/C3	–	–
400/450	N1	300	300
	N2	300	300
	N3/C1	300	260
	N4/C2	300	–
	N5/C3	–	–
300	N1	300	300
	N2	300	300
	N3/C1	300	300
	N4/C2	300	260
	N5/C3	300	175

❶ GENERAL ZONE – Wall areas greater than 1200mm from an External Building Corner.

❷ CORNER ZONE – Wall areas less than 1200mm from an External Building Corner.

FIG 58: Fixing & Base – Timber Frame – Texture System



TYPICAL HEAD DETAILS – EDGE/MOSAIC/CLADDING SHEET/TEXTURE SYSTEM

FIG 59: Head – Eaves with Timber Trim

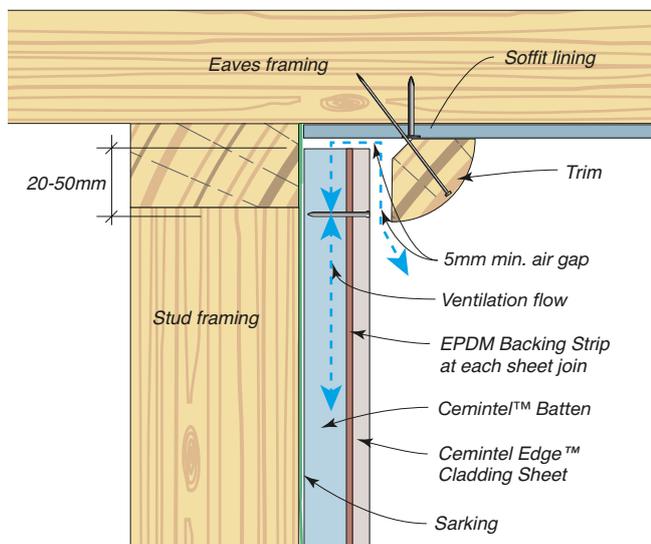


FIG 61: Soffit – With Soffit Trim

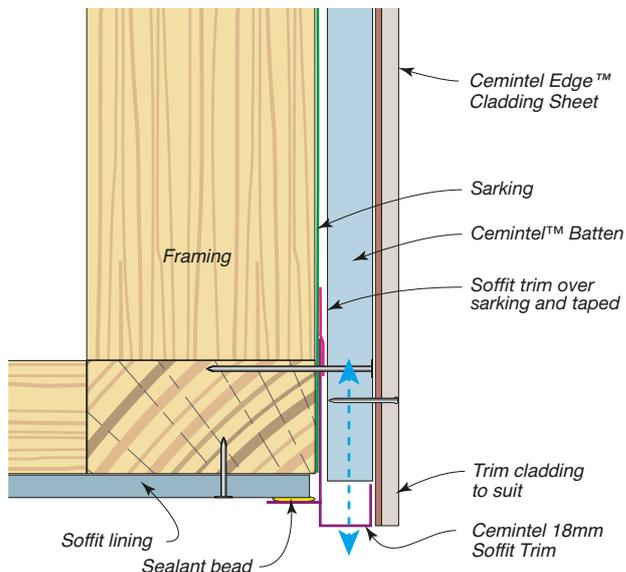
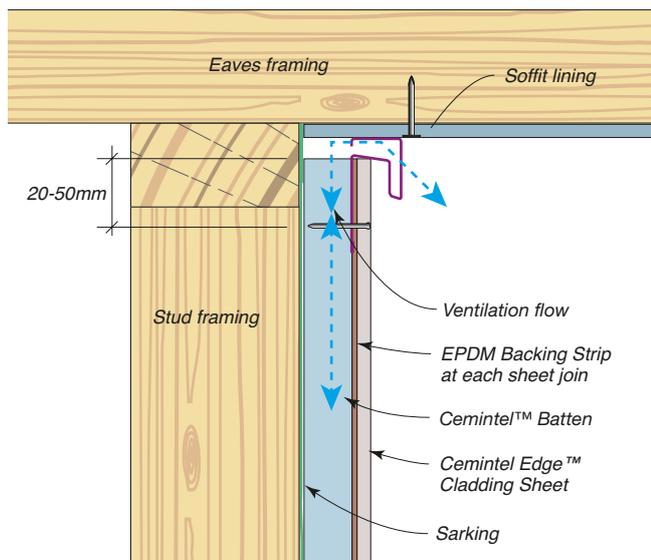


FIG 60: Head – Eaves with Cemintel Trim



TYPICAL VERTICAL SHEET JOINT DETAILS – EDGE/MOSAIC/CLADDING SHEET/TEXTURE SYSTEM

FIG 62: Vertical Joint – Timber Framing – Edge™ Cladding only

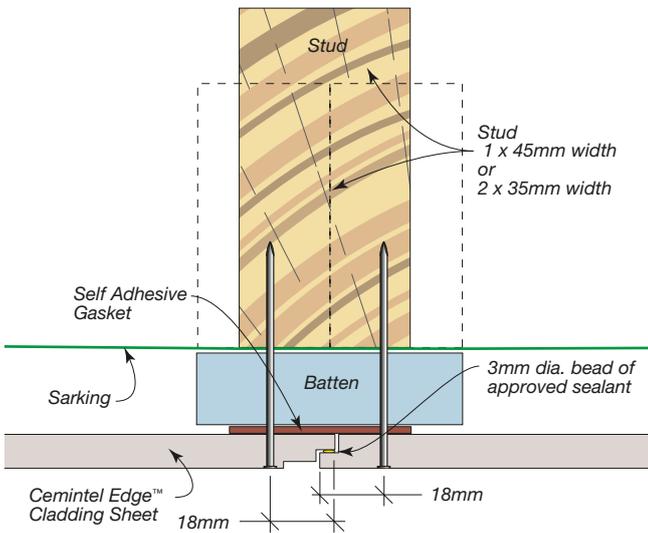


FIG 63: Vertical Joint – Timber Framing – Mosaic™ Cladding only

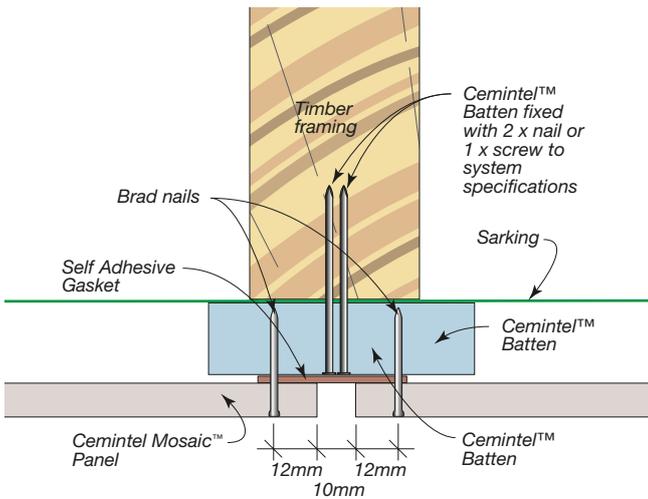


FIG 64: Vertical Joint – Steel Framing – Mosaic™ Cladding only

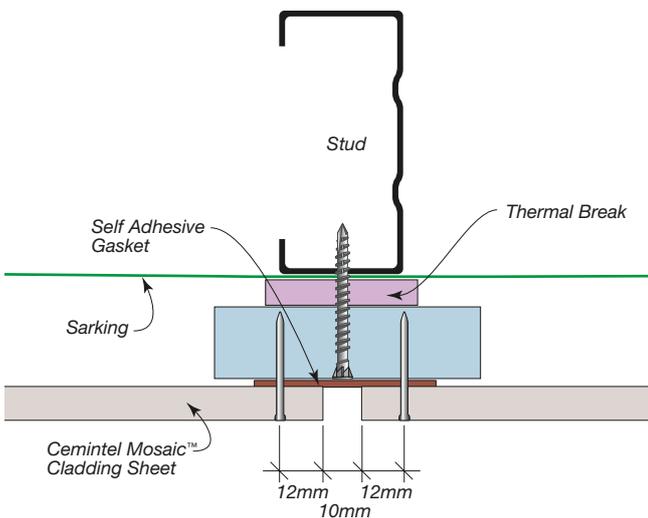


FIG 65: Vertical Joint – Timber Framing – Cladding Sheet only

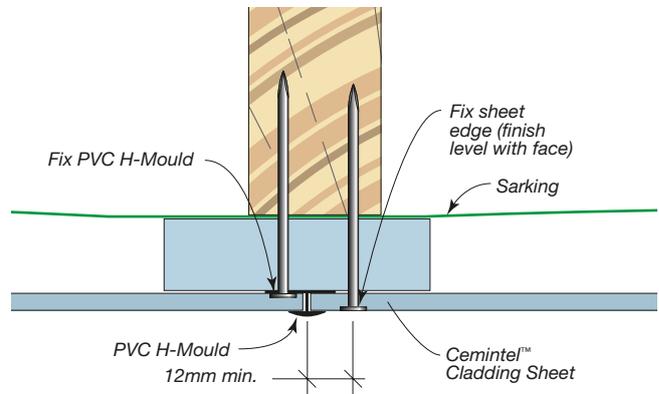
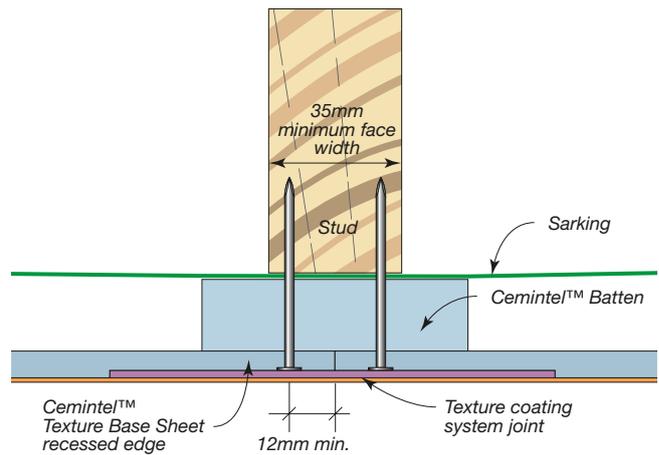


FIG 66: Vertical Joint – Timber Framing – Texture System only



TYPICAL JUNCTION DETAILS – EDGE/MOSAIC/CLADDING SHEET/TEXTURE SYSTEM

FIG 67: External Corner with Timber Moulding – Edge™

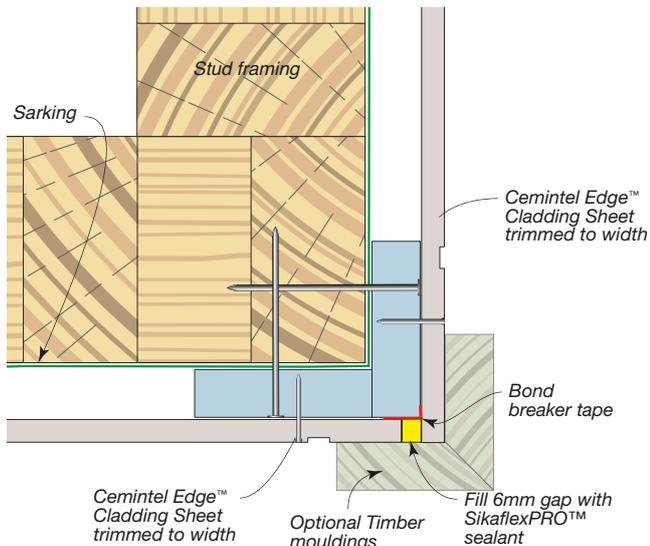


FIG 70: Internal Corner With Timber Moulding – Edge™

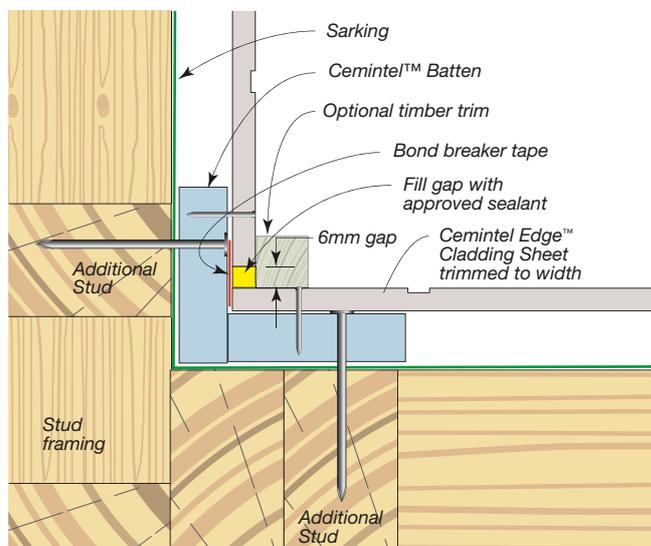


FIG 68: External Corner with Two-piece Aluminium Corner – Edge™

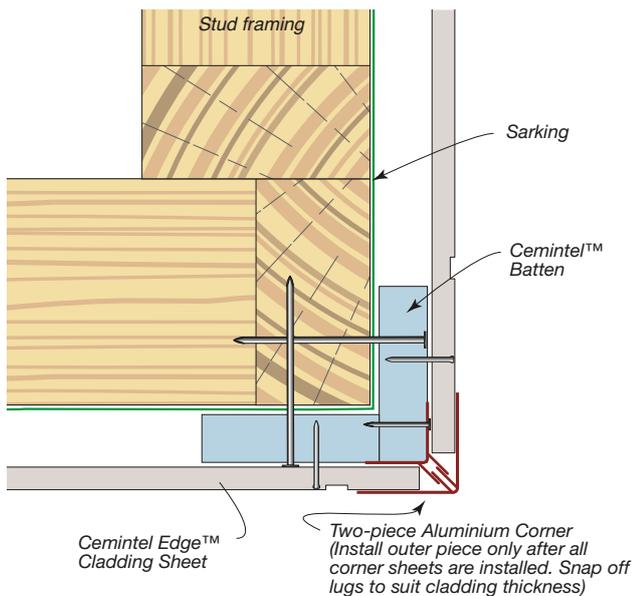


FIG 71: Internal Corner with Two-piece Aluminium Corner – Edge™

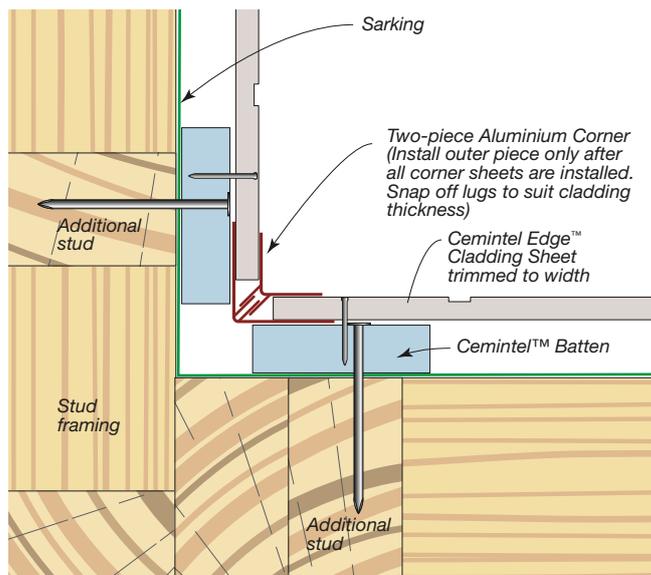


FIG 69: Obtuse Angle Corner Detail – Edge™

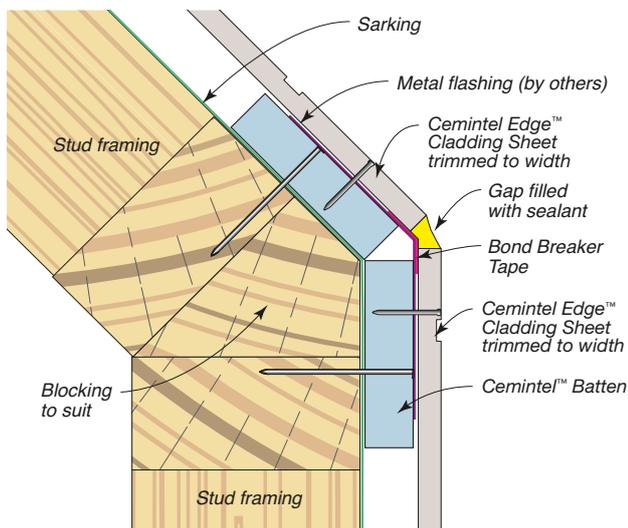


FIG 72: External Corner – Mosaic™

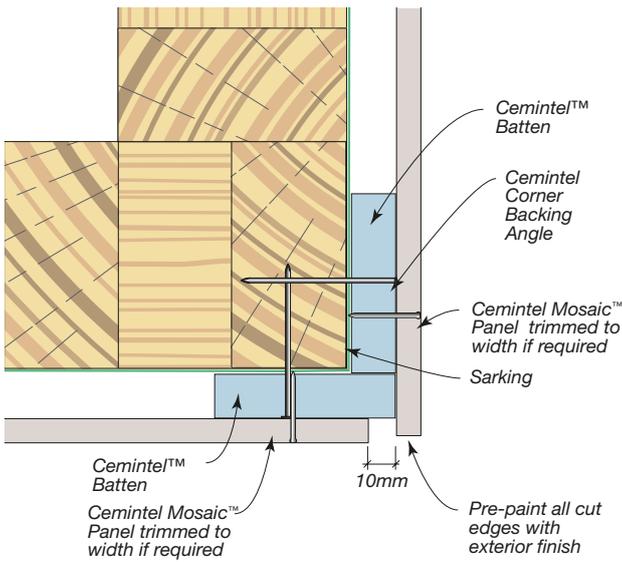


FIG 75: Junction of Mosaic™ Cladding System with Offset Masonry Wall – Mosaic™

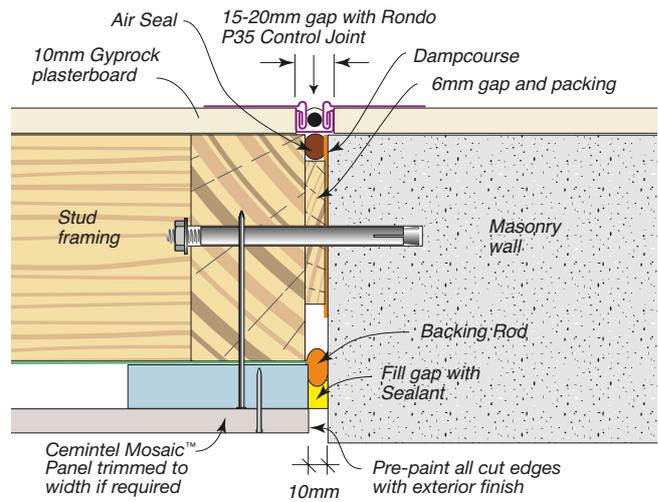


FIG 73: Internal Corner – Mosaic™

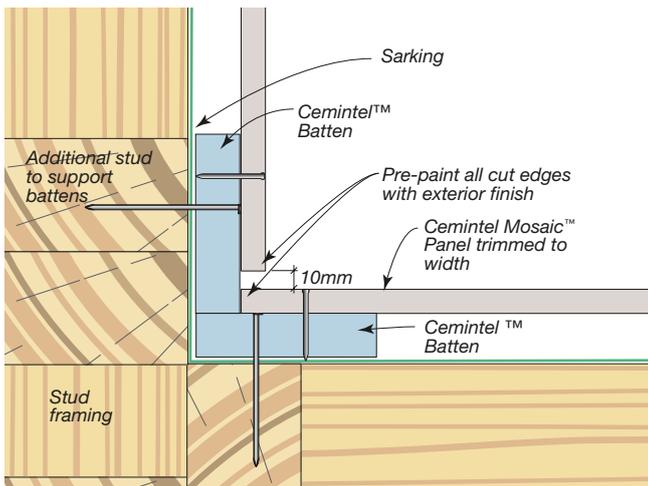


FIG 76: Junction of Mosaic™ Cladding System with Alternative Fibre Cement Cladding – Mosaic™

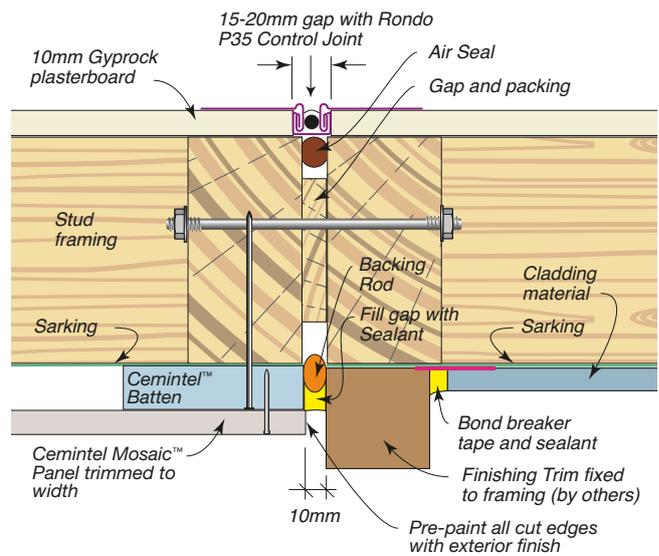


FIG 74: Obtuse Angle Corner – Mosaic™

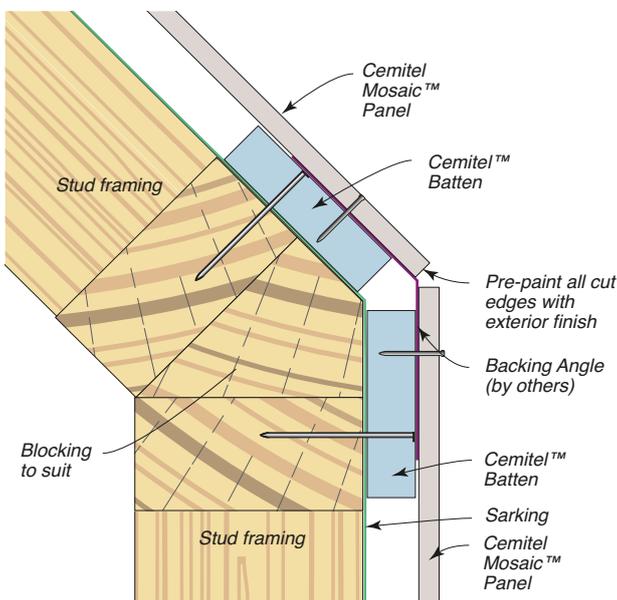


FIG 77: Control Joint with Trim-Tex Bead – Texture System only

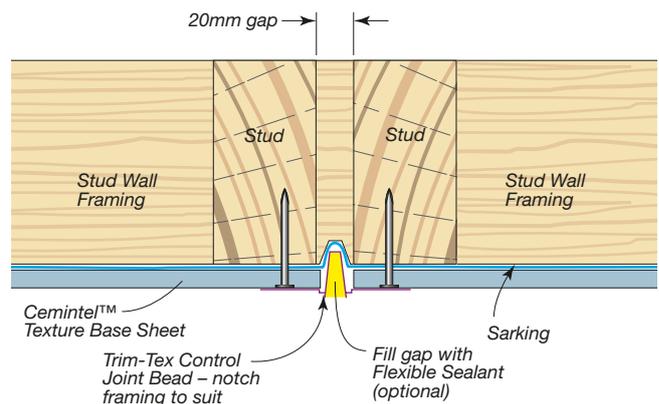


FIG 78: Junction of Cladding System with Alternative Fibre Cement Cladding – Edge™, Cladding Sheet & Texture System

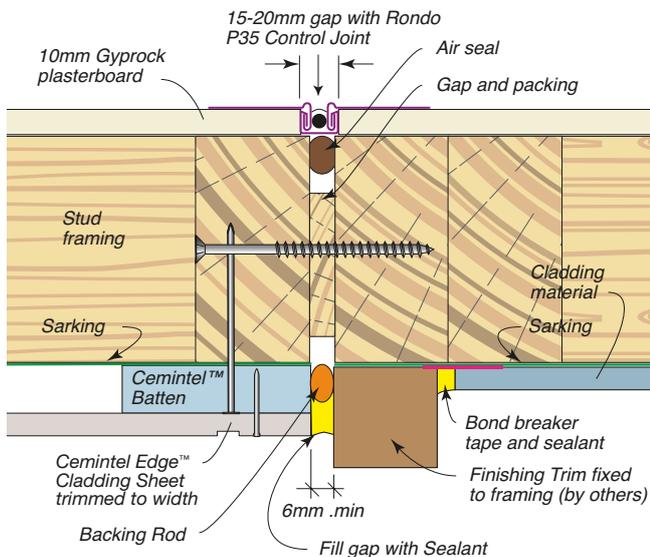


FIG 79: Junction of Cladding System with Offset Masonry Wall – Edge™, Cladding Sheet & Texture System

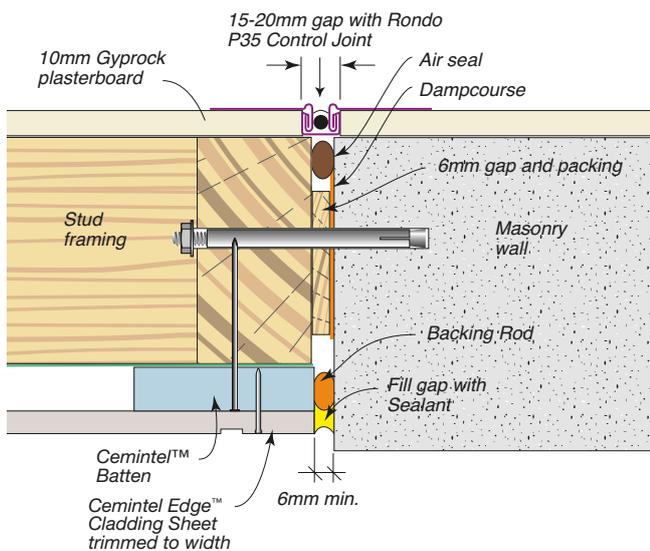


FIG 80: External Corner – Texture System

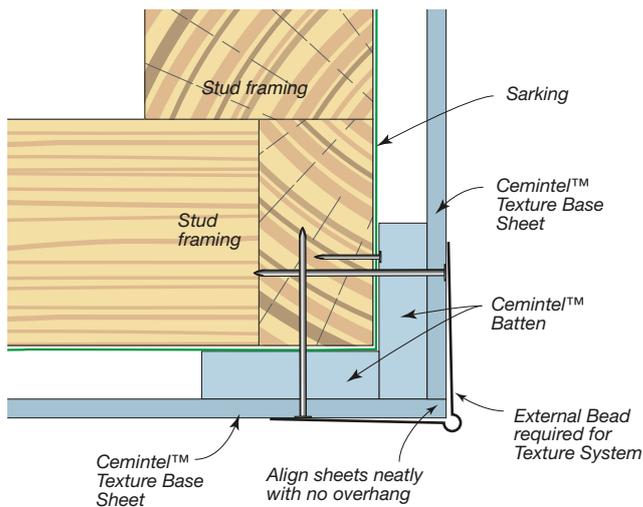


FIG 81: Internal Corner – Texture System only

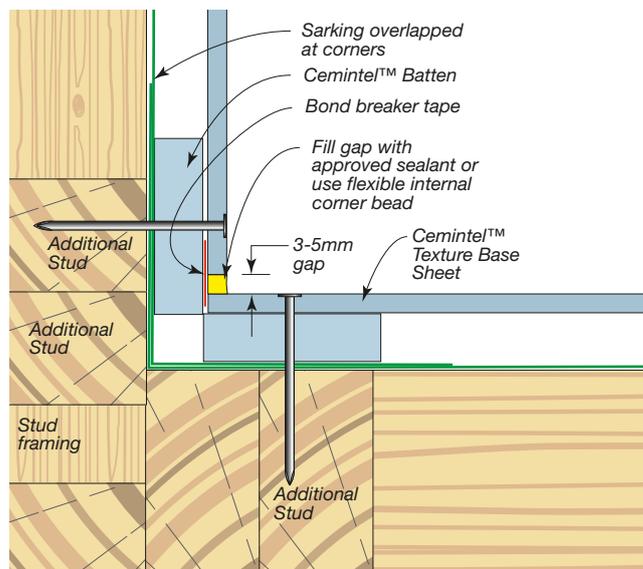
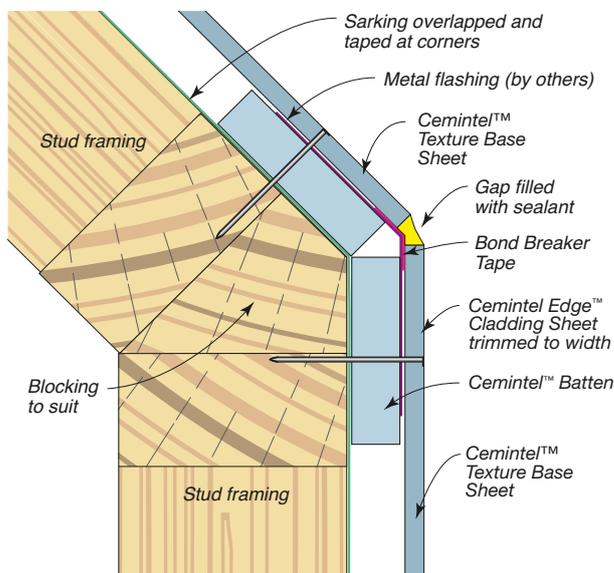


FIG 82: Obtuse Angle Corner Detail – Texture System only



TYPICAL JUNCTION DETAILS – EDGE/MOSAIC/CLADDING SHEET/TEXTURE SYSTEM

FIG 83: Second Storey Junction with Hebel Panels, Brick Veneer or Masonry Wall – Cantilevered Framing

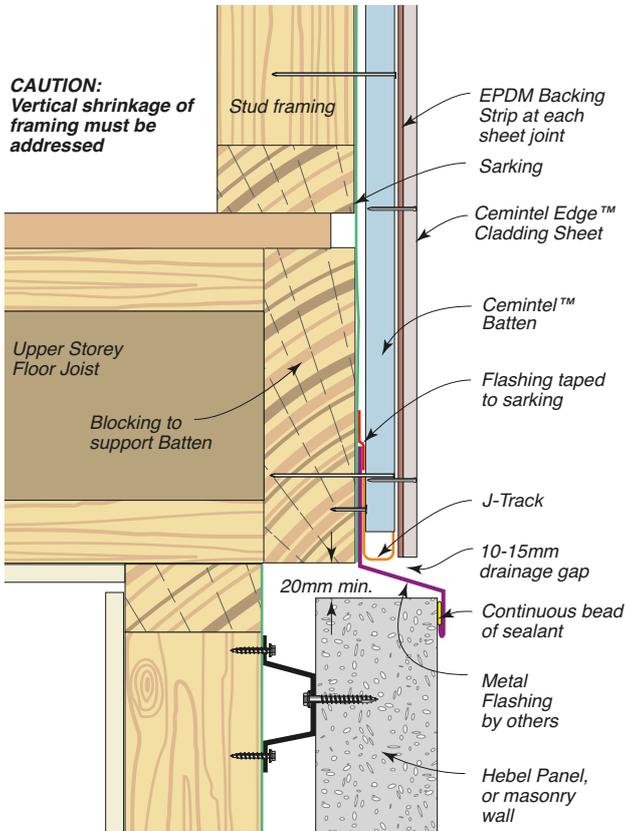


FIG 85: Second Storey Junction with Masonry, Brick Veneer or Hebel Panels

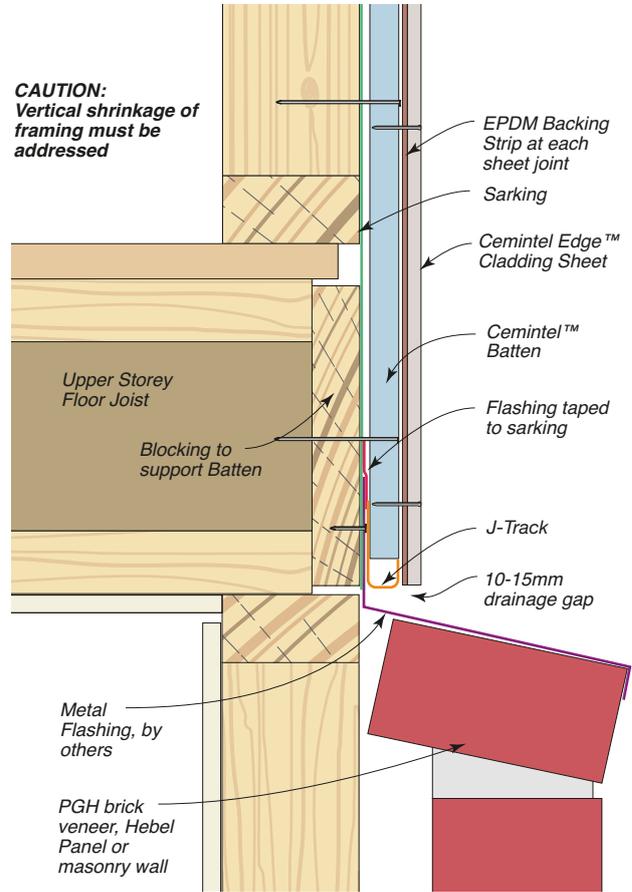


FIG 84: Second Storey Horizontal Junction

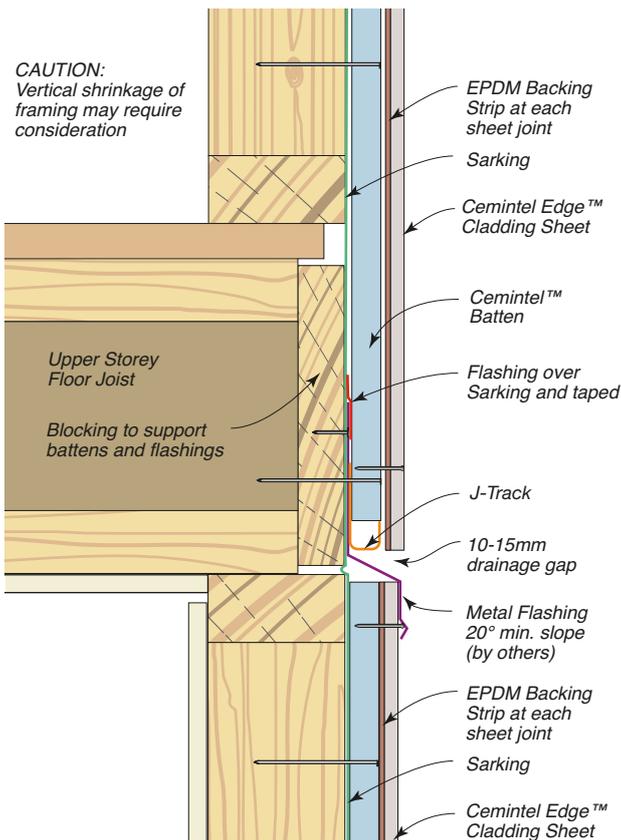


FIG 86: Horizontal Parapet

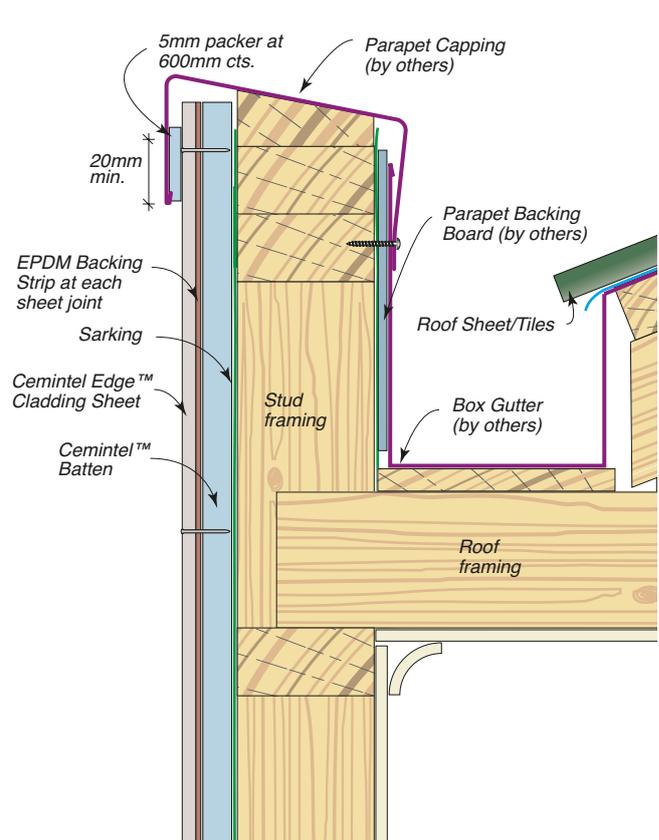


FIG 87: Junction of Edge™ Cladding with External Roofing

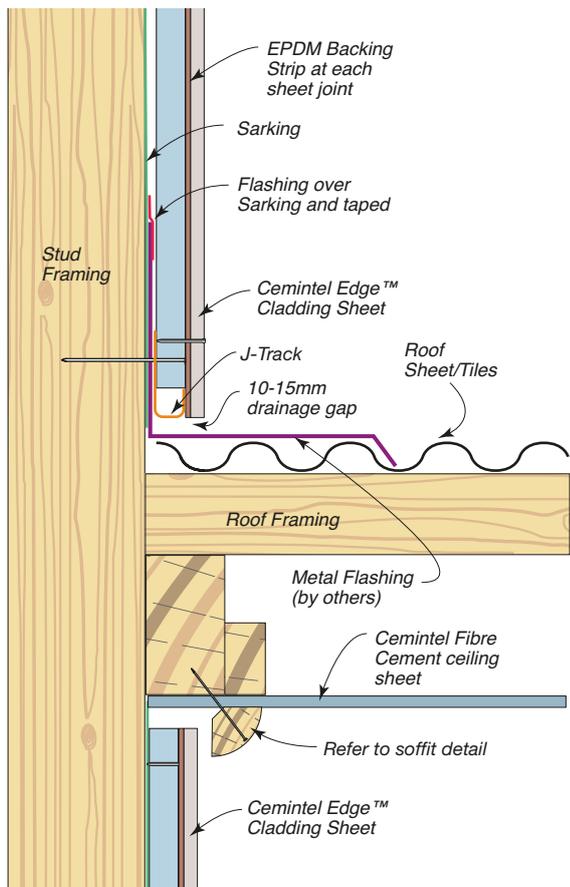


FIG 88: Junction of Edge™ Cladding with External Roofing

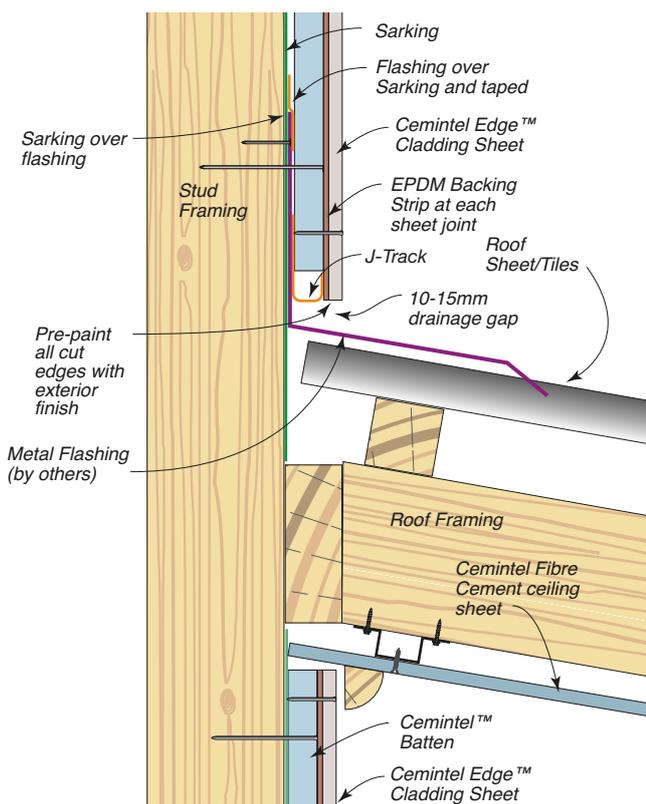


FIG 89: Window Detail – A&L Aluminium Sliding Window with Cladding Trim

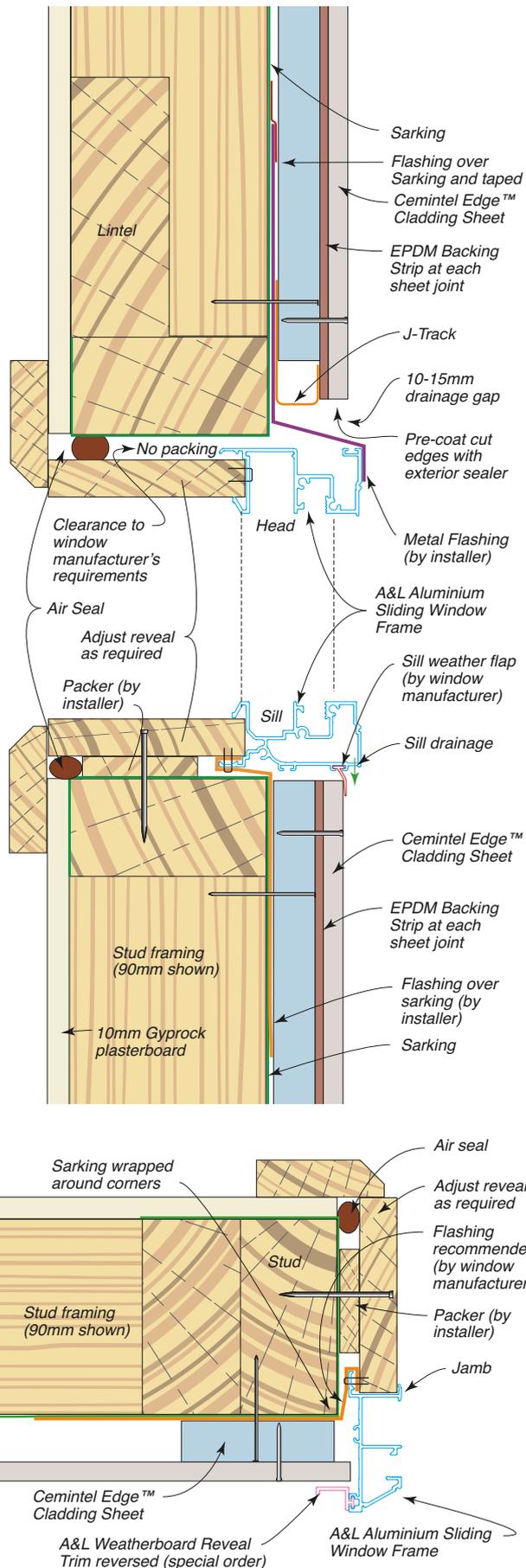
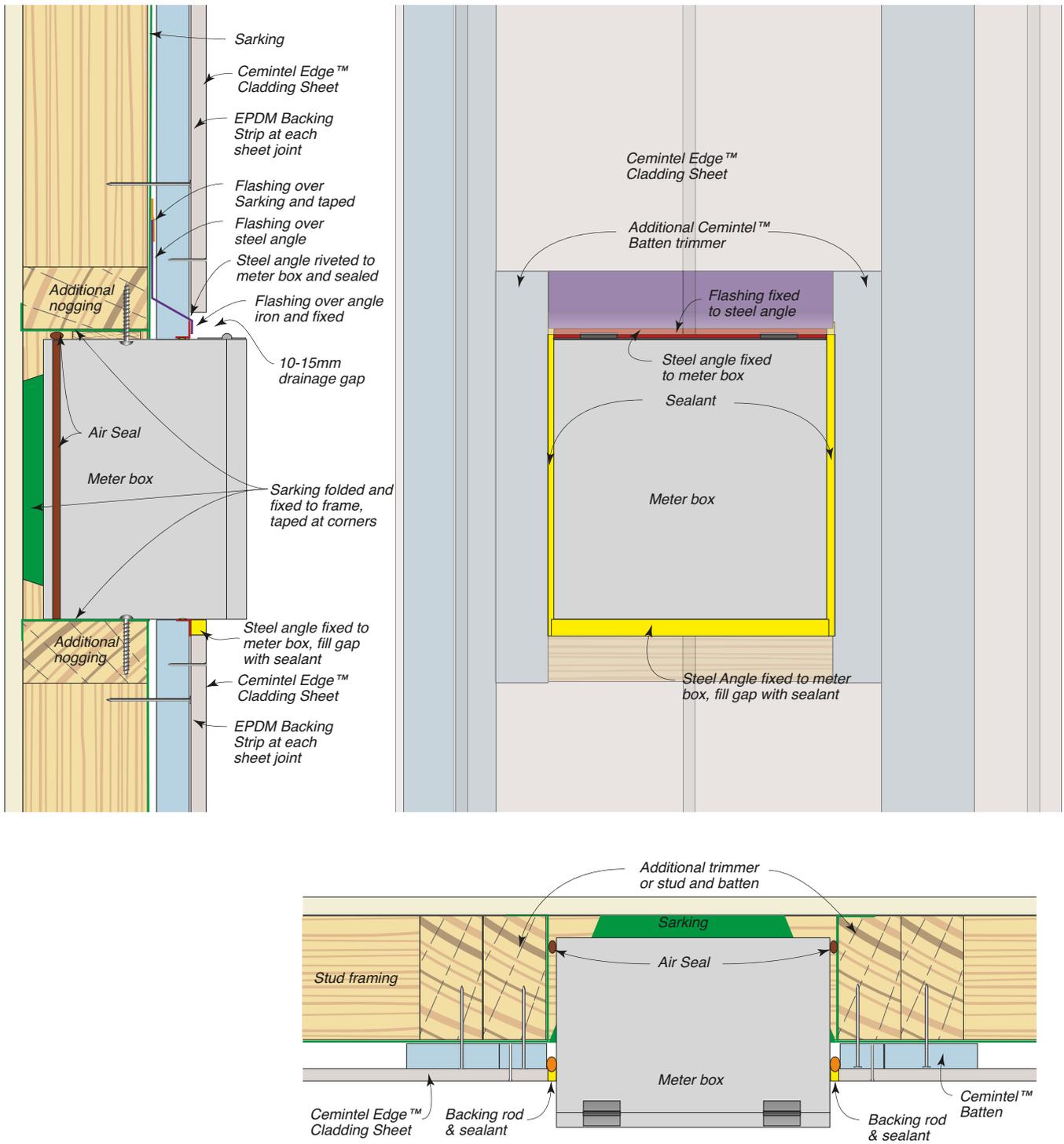


FIG 90: Power Meter Box Installation





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CAVITY WALL CLADDING SYSTEMS

HEALTH & SAFETY

WARNING

Fibre Cement products contain crystalline silica. Repeated inhalation of fibre cement dust may cause lung scarring (silicosis) or cancer. Do not breathe the dust. When cutting sheets, use the methods recommended in this brochure to minimise dust generation. If power tools are used, wear an approved dust mask (respirator). These precautions are not necessary when stacking, unloading or handling fibre cement products.

For further information and for a Material Safety Data Sheet, phone 1800 678 068.

WARRANTY

CSR Building Products Limited ("CSR") warrants its Cemintel cladding ("Product") to remain free of defects in material and manufacture for the usual lifetime of the Product. Mosaic[™] & Edge[™] – up to 10 years. Aspect[™] – up to 15 years. Cladding, TBS, Scarborough[™], Headland[™] & Endeavour[™] Weatherboards – up to 25 years.

In the event of any failure of the Product caused by the direct result of a defect in the material or manufacture of the Product, CSR will at its option replace or repair, supply an equivalent product, or pay for doing one of these.

This warranty does not apply where the Product has been used in any manner not in accordance with the manufacturer's instructions, nor the reuse of the Product after its initial installation. This includes installation and maintenance in accordance with the relevant Cemintel technical manual, current copies are available at cemintel.com.au/installation or by contacting 1300 CEMINTEL. CSR recommends that only those products, components and systems recommended by it be used and the project must be designed and constructed in strict compliance with all relevant provisions of the current Building Code of Australia, regulations and standards. All other products, including coating systems, applied to or used in conjunction with the Product must be applied or installed and maintained in accordance with the relevant manufacturer's instructions and good trade practice. CSR will need to be satisfied that any defect in its Product is attributable to material or manufacture defect (and not another cause) before this warranty applies.

Without limiting the foregoing, CSR will not be liable for any claims, damages or defects arising from or in any way attributable to poor

workmanship, poor design or detailing, settlement or structural movement and/or movement of materials to which the Product is attached, incorrect design of the structure, high levels of pollution, acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions, efflorescence or performance of paint/coatings applied to the Product or normal wear and tear.

Other than as expressly set out in this warranty, and the guarantees that can not be excluded under The Australian Consumer Law (Schedule 2 of the Competition and Consumer Act 2010 (Cth)) (and any other law), CSR excludes all other warranties and guarantees with regard to the Product including all guarantees and warranties that may apply at law.

To the extent that it is able to do so, CSR excludes all liability for loss and damage (including consequential loss) in connection with the Product. This exclusion does not apply where the Product is sold to a consumer and is a good of a kind ordinarily acquired for personal, domestic or household use or consumption.

The following statement is provided where the Product is supplied to a buyer who is a "consumer" under the Australian Consumer Law: Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. The benefits of this warranty are in addition to other rights or remedies of the consumer under law in relation to the goods or services to which the warranty relates.

Notification of a warranty claim must be made to CSR prior to any return of the Product. Failure to allow CSR to examine an alleged faulty Product in-situ may result in the voiding of this warranty.

To make a claim under this warranty, you must contact CSR on 1300 CEMINTEL, or write to one of our state offices, cemintel.com.au/contact-us. All expense of claiming the warranty will be borne by the person making the claim. CSR may require documentation supporting the claim to be provided.

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