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CREATE AND CONSTRUCT

CSR CEMINTEL™

ASPECT™ CLADDING



FC:555



EXTERNAL CLADDING

APRIL 2015

Cemintel Aspect™ Cladding utilises a wide shiplapped board with a distinctive horizontal feature to produce a versatile and durable façade to complement both classic or contemporary building styles. Easy to install, Aspect™ cladding is available in 4.2m lengths for wide coverage and offers both face or concealed fixing options.

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DESCRIPTION

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

Cemintel Aspect™ 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™ is fixed flat against stud framing and can be face fixed using a nail gun or fixings can be concealed by 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.



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 AS4055 : 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:

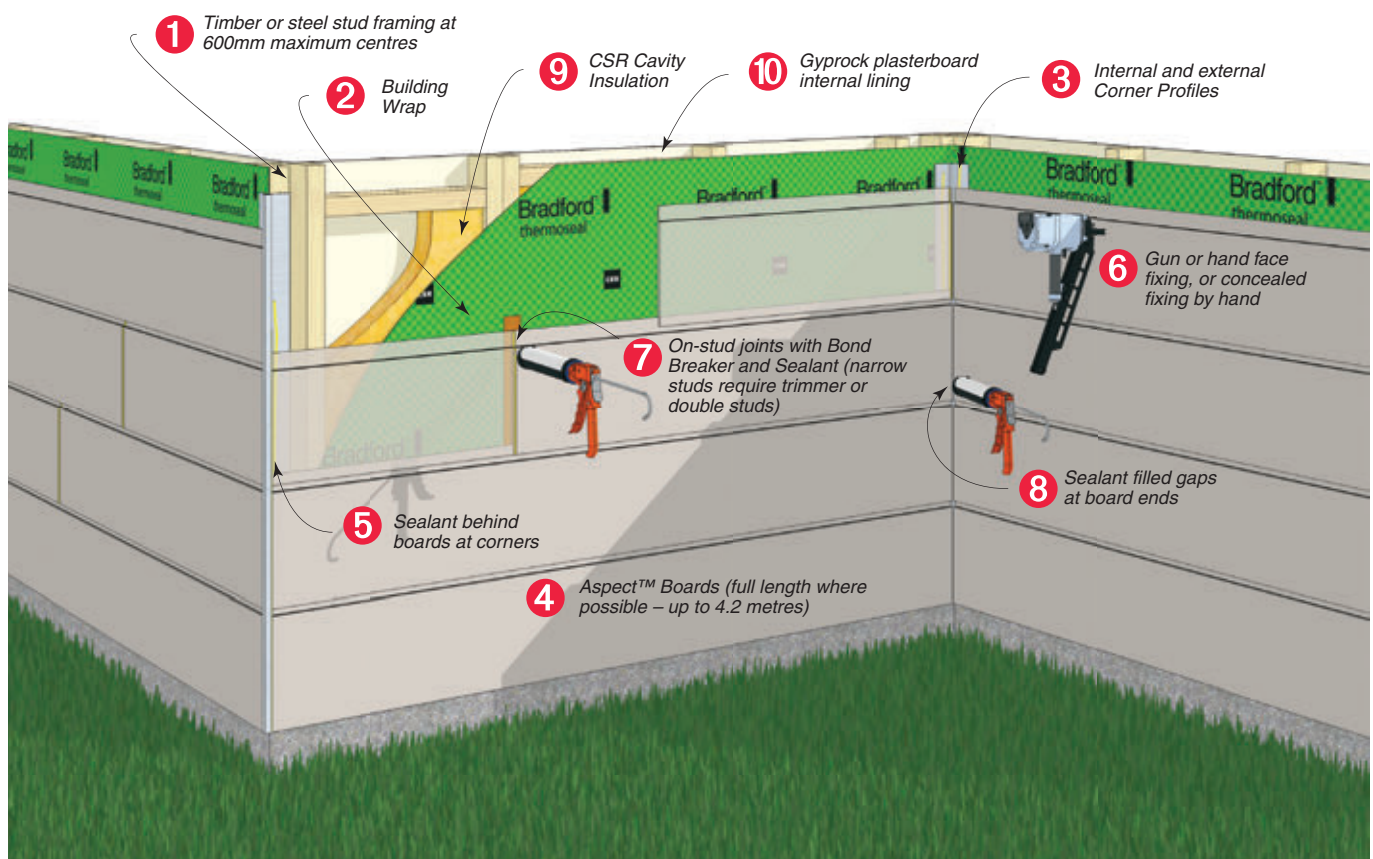
- New homes, town houses and medium density residential construction in stand-alone or composite construction.
- Feature walls, building façades and additions.
- Recladding of existing walls.
- Gable ends.
- Infill panels around windows and doors.
- Cladding for garages and tool sheds.
- Internal feature 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. Concealed or face fixing options.
- Factory sealed board ready for paint finishing.
- Manufactured from highly durable and robust fibre cement.
- Immune to permanent water damage, termite resistant, fire resistant, and resistant to cracking, swelling and warping.

SYSTEM OVERVIEW



DESIGN CONSIDERATIONS

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 Cemintel Aspect™ cladding system is suitable for the particular requirements of any given project.

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 FIG 1.

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 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.

WIND LOADING

Cemintel Aspect™ 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.

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.

Studs spacing and board fixing are to be in accordance with Table 6.

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 sheeted 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 Details'.

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 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, a thermal break is not required.

BUSHFIRE PRONE AREAS

In accordance with AS3959, 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 AS1530.3 and can achieve BAL-40 or FZ>10 when used in conjunction with Gyprock Fyrchek MR plasterboard and installation methods in

accordance with Gyprock fire rated system specifications and details. Please refer to information beginning on page 22.

For additional bush fire requirements, refer to AS3959 Construction of buildings in bushfire prone areas, and to the BCA Volume 1 Part 3.7.4.

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

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

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. Table 1 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 joins 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.

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.

R-values for some systems are given in the Table 2.

Refer to 'Components' for product information.

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.

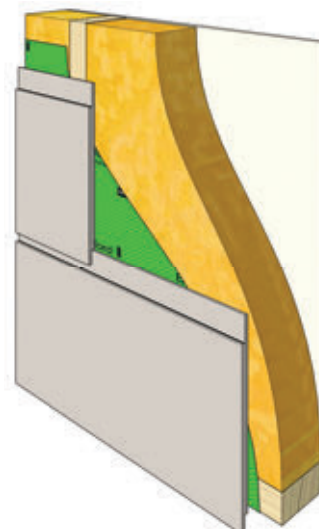
Table 1: Guidance on Wall Wrap/Sarking

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 or
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 > 7MN.s/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.

Table 2: Thermal Performance Selection

CEMINTEL ASPECT™ CLADDING SYSTEM			
<ul style="list-style-type: none"> Cemintel Aspect™ cladding fixed to the outside of framing. Wall Wrap/Sarking as per table below. Studs at 600mm maximum centres – (minimum depth to suit insulation thickness). Thermal break where required for steel framing. Insulation in framing as per table below. 1 layer x 10mm GYPROCK Standard Plasterboard to the inside of framing. 			
Insulation	Wall Wrap/Sarking	Winter Total Wall R-Value	Summer Total Wall R-Value
(a) BRADFORD 70mm Gold Wall Batts R2.1	Bradford Thermoseal Wall Wrap	2.5	2.3
(b) BRADFORD 90mm Gold Wall Batts R2.5	Bradford Thermoseal Wall Wrap	2.9	2.7
(c) Bradford 90mm Gold Wall Batts R2.7HP	Bradford Enviroseal Proctorwrap RW	3.1	2.9
(d) Bradford 90mm Gold Wall Batts R2.7HP	Bradford Thermoseal Wall Wrap	3.1	2.9
(e) NIL	Bradford Thermoseal 733*	0.8	0.7



NOTES: Values calculated in accordance with AS4859.1, and are based on an un-ventilated cavity and using Bradford Thermal Calculator v1.2.

* Bright side of foil facing stud cavity. Bradford Thermofoil 733 is wall wrap/sarking with reflective finish both sides. Using an alternative product with anti-glare finish will REDUCE the stated R-value performance.

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 3 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 3: 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

COASTAL AREAS

Cemintel Aspect™ cladding is suitable for many coastal areas. Corrosivity zones are detailed in AS4312. 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 AS4312.

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.

WASH-DOWN

When cleaning panels, 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 the board joints.

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.

Table 4: Flashing Upstand

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

WINDOW SELECTION

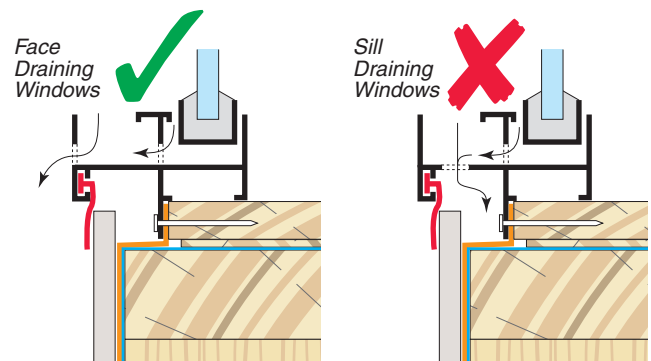
The Aspect™ system is designed to accept standard aluminium or timber framed windows and doors. Aluminium windows **MUST NOT** have sill drain holes which can direct water behind the cladding.

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.

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.

PAINTING

Cemintel Aspect™ cladding is factory sealed and 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. All cut edges should be pre-painted with an exterior sealer (preferably prior to installation) and then finished as for the face.

Where Cemintel Aspect™ cladding is exposed to the elements for more than three months from delivery, CSR recommends the application of a priming coat before applying the decorative coatings.

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 Aspect™ cladding 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.

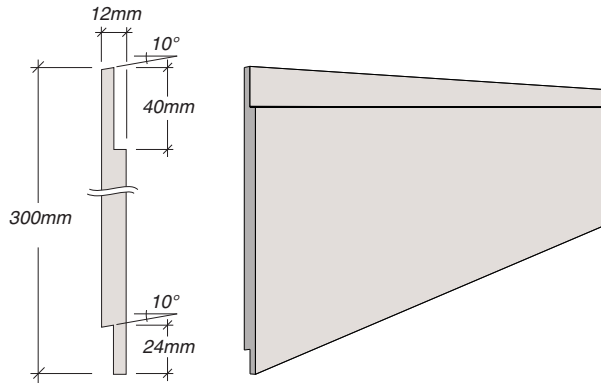
Regularly inspect board surfaces and follow wash-down procedures when required. Refer to requirements for Corrosivity Zones C3 and above detailed in the "Coastal Areas" section of this guide.

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

COMPONENTS

CEMINTEL ASPECT™ CLADDING

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.



Order N°	Pack Qty	Length
130475	1	4200mm

Table 5: Aspect™ 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

MATERIAL PROPERTIES

Cemintel Aspect™ is manufactured to AS/NZS2908.2 Cellulose cement products, Part 2: Flat sheets. Aspect™ is classified as Type A, Category 2.

Specification	Size
Thickness (nominal)	12mm +10%/-0%
Mass (nominal)	4.5 kg/lm
Panel Length	4200mm +0/-2
Overall Height (nominal)	300 +0/-1 mm
Effective Cover (height nominal)	276 ±1
Diagonals (difference max.)	2 mm
Edge Straightness (deviation max.)	1 mm
Thermal Conductivity (at EMC)	0.25 W/m°C
Thermal (R) Value	0.05

FIRE RESISTANCE

In accordance with the Building Code of Australia, Part 3.7.1.2, Cemintel™ Aspect can be used wherever non-combustible material is required by the code.

Fire Hazard Indices (Tested in accordance with AS1530.3)	Index
Ignitability	0
Spread of Flame	0
Heat Evolved	0
Smoke Developed	0-1

FASTENERS

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

Cemintel™ Fibre Cement Nails for fixing Aspect™ Board to timber framing:

- Hand driven nails, flat head, Class 3 hot dip galvanised for softwood and hardwood frames. For Face or concealed fixing.



Order N°	Description	Qty
77258	2.8 x 40mm (for concealed fixing)	2 kg
77259	2.8 x 50mm (for face fixing)	2 kg

- Machine driven D-head nails, 50mm x 2.80, Class 3 galvanised. For face fixing.

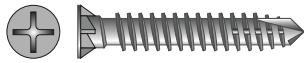
Order N°	Qty
127799	3000



- Machine driven Brad Nails, 50mm x 14G stainless steel. For face fixing. (Supplied by others).

Screws for fixing Aspect™ Board to steel framing:

- Screws, 10G -18 x 30 mm, Phillips drive, Class 4 finish, self embedding head. For steel framing 0.55mm to 1.0mm BMT.



Order N°	Qty
125614	1000 (loose)
118224	1000 (Collated)

- WingTEK™, 8G - 18TPI x 35mm, Class 3 finish, CSK rib head, Phillips drive. For framing 1.0 to 1.6mm BMT.



Order N°	Qty
26626	1000

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.



Order N°	Product
39378	Sikaflex® II FC, 310ml tube

FLEXIBLE SEALANT

- Sikaflex®-PRO polyurethane sealant for gaps around windows, doors and other penetrations. Paintable. Apply to manufacturer's specifications.



Order N°	Qty
11378	1 x 310ml Tube (Grey)

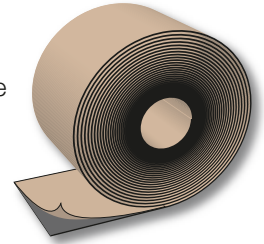
SEALANT PRIMER

- 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.

Order N°	Product
115227	Sika® Primer-3 N 250ml

**BOND BREAKER TAPE**

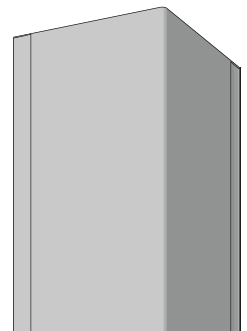
- Used behind panel joints made on framing. Tape is applied to the face of sarking and joints are filled with sealant. Tesa Multiform Tape N°7492, 48 x 3mm polyethylene closed cell foam tape.



Order N°	Qty
13172	1 x 25m

CORNER BACKING ANGLE

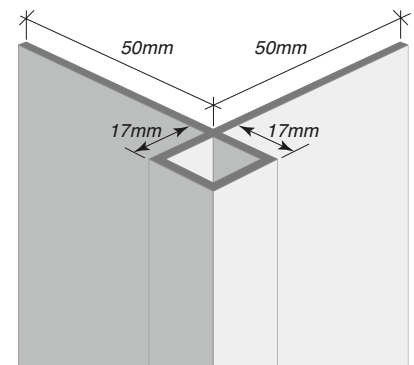
- Metal angle flashing used at some internal and external corners to assist with waterproofing. Manufactured from steel with Galvalume AZ150 corrosion resistant coating. Size 50 x 50 x 3030mm.



Order N°	Length	Qty
111498	3030mm	1

EXTERNAL CORNER PROFILE

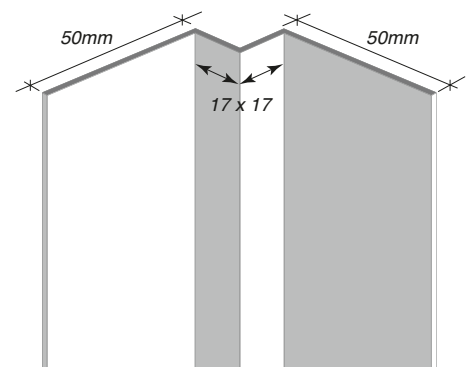
- Aluminium extrusion for external building corners.



Order N°	Length	Qty
131271	3000mm	1

INTERNAL CORNER PROFILE

- Aluminium extrusion for internal building corners



Order N°	Length	Qty
131272	3000	1

WALL WRAP/SARKING



Order N°	Bradford Product	Classification	Water Classification	Quantity
13462 10576	Thermoseal™ Wall Wrap	Non-permeable Reflective	High	1350mm x 20m roll 1350mm x 60m roll
108879 108004 120121	Thermoseal™ Resiwrap	Non-permeable Reflective	High	1350mm x 30m roll 1350mm x 60m roll 1500mm x 30m roll
120923	Enviroseal ProctorWrap™ Residential (RW)	Permeability High	High	1500mm x 50m roll
118593	Enviroseal ProctorWrap™ Commercial (CW)	Permeability High	High	1500mm x 50m roll
81333	Thermoseal™ 733	Non-permeable Reflective	High	1350mm x 60m roll

INSULATION

- Quality Bradford™ glasswool insulation to meet regulatory requirements along with environmental, energy and cost efficiency targets.



Order N°	Bradford™ Product	Size (mm)	Quantity Batts per Pack
105209	Gold Wall Batts R2.1 (70mm)	1160 x 430	6
105206	Gold Wall Batts R2.1 (70mm)	1160 x 580	6
105203	Gold Wall Batts R2.5 (90mm)	1160 x 430	8
105202	Gold Wall Batts R2.5 (90mm)	1160 x 580	8
105205	Gold Wall Batts R2.7 (90mm)	1160 x 430	5
105204	Gold Wall Batts R2.7 (90mm)	1160 x 580	5

CEMINTEL™ EXTERNAL JOINTING COMPOUND

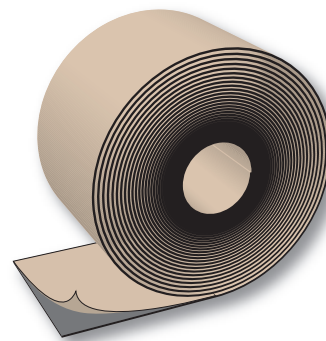
- Used to conceal the countersunk fastener heads, to prevent moisture penetration, and to provide a flat surface for decorative coating. Filler products must be installed to the manufacturer's recommendations.



Order N°	Qty
101548	15kg bucket
101549	6kg bucket

FLASHING TAPE

- Used to seal wall wrap/sarking and flashing at various locations. (Supplied by others).



THERMAL BREAK

- Extruded polystyrene strip to meet R0.2 BCA requirement. Required when directly fixing to steel framing. Contact CSR for details.

FLASHINGS & CAPPINGS*

- Flashings are to be designed and installed in accordance with SAA-HB39 1997 and good building practice. (Supplied by others).

BUILDER'S INSTALLATION CHECKLIST

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

ACTION	COMPLETED
PRE-CLADDING CHECKLIST	
1 Confirm that studs are located in accordance with project specifications.	
2 Confirm that double studs are appropriately located at internal corners where required for board fixing.	
3 Confirm timber framing alignment is in accordance with AS1684, or steel framing is in accordance with AS/NZS4600, and correct if necessary.	
4 Confirm bracing is in place.	
5 Confirm ground clearance to the bottom of the first Aspect™ Board in accordance with Australian Standards. (75mm minimum).	
6 Confirm all window and door flashings are correctly installed.	
7 Confirm that the wall wrap/sarking has been fully and correctly installed, and overlapped and taped at joints and flashings.	
8 Confirm windows are front draining type.	
9 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.	

ACTION	COMPLETED
POST-CLADDING CHECKLIST	
1 Confirm all joints have been neatly filled with recommended sealant.	
2 Confirm all visible screw heads have been countersunk and covered with appropriate compound and finished flush with the surface.	
3 Confirm sealant has been applied to gaps at openings (where appropriate).	
5 Confirm appropriate painting of cladding and all exposed edges.	

INSTALLATION PROCEDURE

HANDLING & STORAGE

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 must be stacked flat, clear of the ground, and supported at 400mm maximum centres on a level platform.

Material must be kept dry, preferably by being stored inside the building. Panels exposed to moisture prior to installation may be subject to shrinkage, and voiding of warranty. Protect from contaminants such as silicone spray. Where it is necessary to store panels outside, they must be protected from the weather.

Panels must be dry prior to fixing, prior to joint sealing and prior to painting.

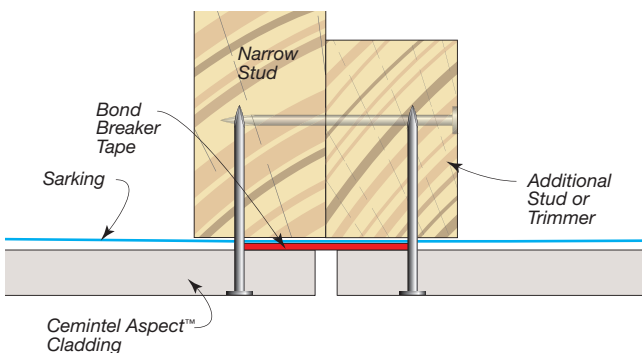
FRAMING PREPARATION

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, (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 FIG 1, FIG 11, FIG 12 and FIG 13.

FIG 1: Framing Detail for Narrow Stud Application



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 Details.

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. Refer to FIG 3 for appropriate fixing methods 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 recommended filler and finish level with surface.

Concealed screws must be driven with the head level with the surface. Refer to FIG 2.

Bond Breaker Tape is required to the face of the sarking behind board end joints. Refer to FIG 4.

Refer to FIG 3, FIG 4 and FIG 5 for installation procedures.

FIG 2: Fastener Driving & Finishing

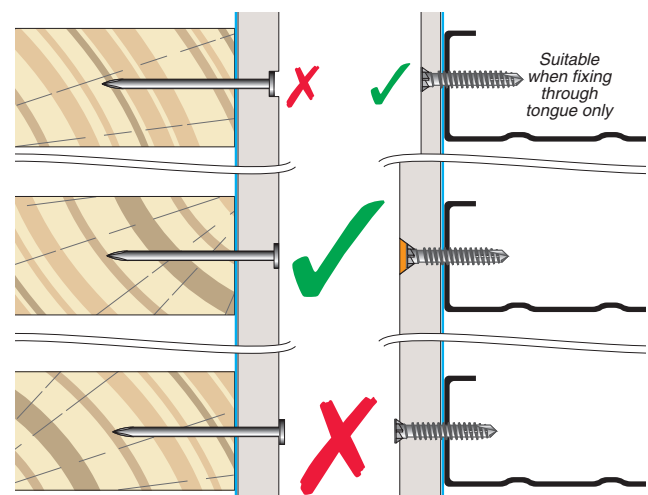


Table 6: Maximum Stud Spacing & Fixing Specifications – Timber or Steel Studs

Wind Classification	Maximum Stud Spacing mm		Fixing Specifications (Minimum fixings to each stud)				
			Timber Framing			Steel Framing (0.55mm BMT minimum)	
	General Zone (mm) ❶	Corner Zone (mm) ❷	Brad Nails	Face Nailing Hand or Gun	Concealed Nailing Hand Only	Face Fixing	Concealed Fixing
N1 or N2	600	600	2 x Brad nails @ 150mm min. cts through face	2 x 50mm nail @ 150mm min. cts through face	1 x 40mm nail through tongue	2 x 50mm nail @ 150mm min. cts through face	1 x screw through tongue
N3/C1	600	450	2 x Brad nails @ 150mm min. cts through face	2 x 50mm nail @ 150mm min. cts through face	N/A	2 x screws (1 through tongue + 1 through face)	N/A
N3/C1	600	600	N/A	2 x 50mm nail @ 150mm min. cts through face	N/A	2 x screws (1 through tongue + 1 through face)	N/A
N4/C2	600	450	N/A	2 x 50mm nail @ 150mm min. cts through face	N/A	2 x screws (1 through tongue + 1 through face)	N/A
N5/C3	450	450	N/A	2 x 50mm nail @ 150mm min. cts through face	N/A	2 x screws (1 through tongue + 1 through face)	N/A
N6/C4	450	300	N/A	2 x 50mm nail @ 150mm min. cts through face	N/A	2 x screws (1 through tongue + 1 through face)	N/A

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.

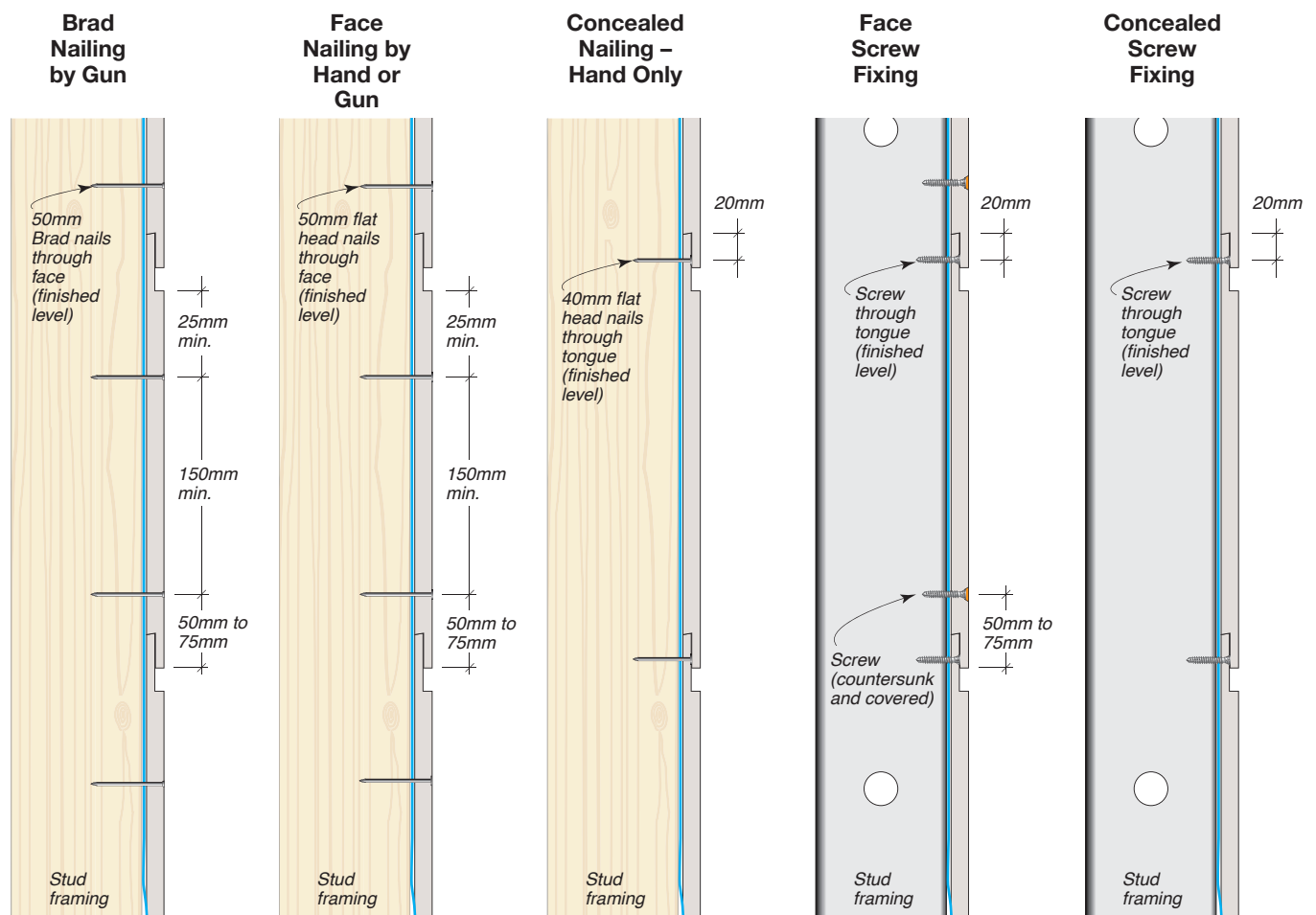
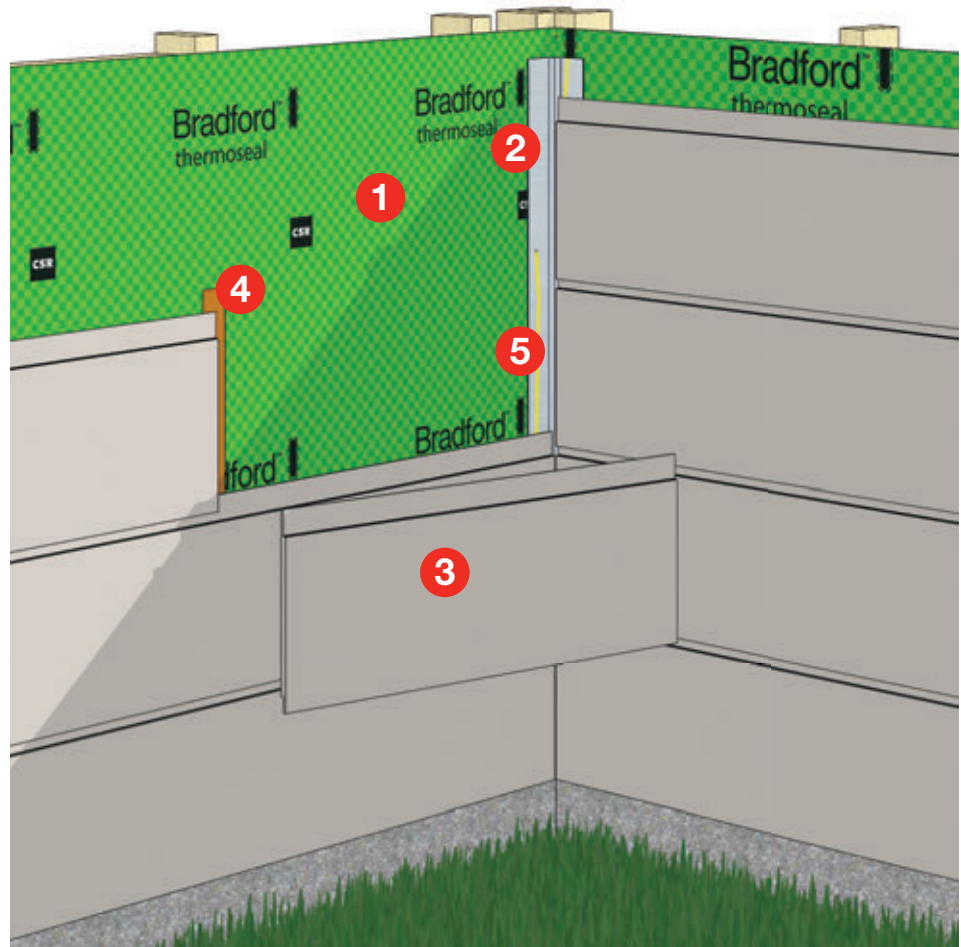
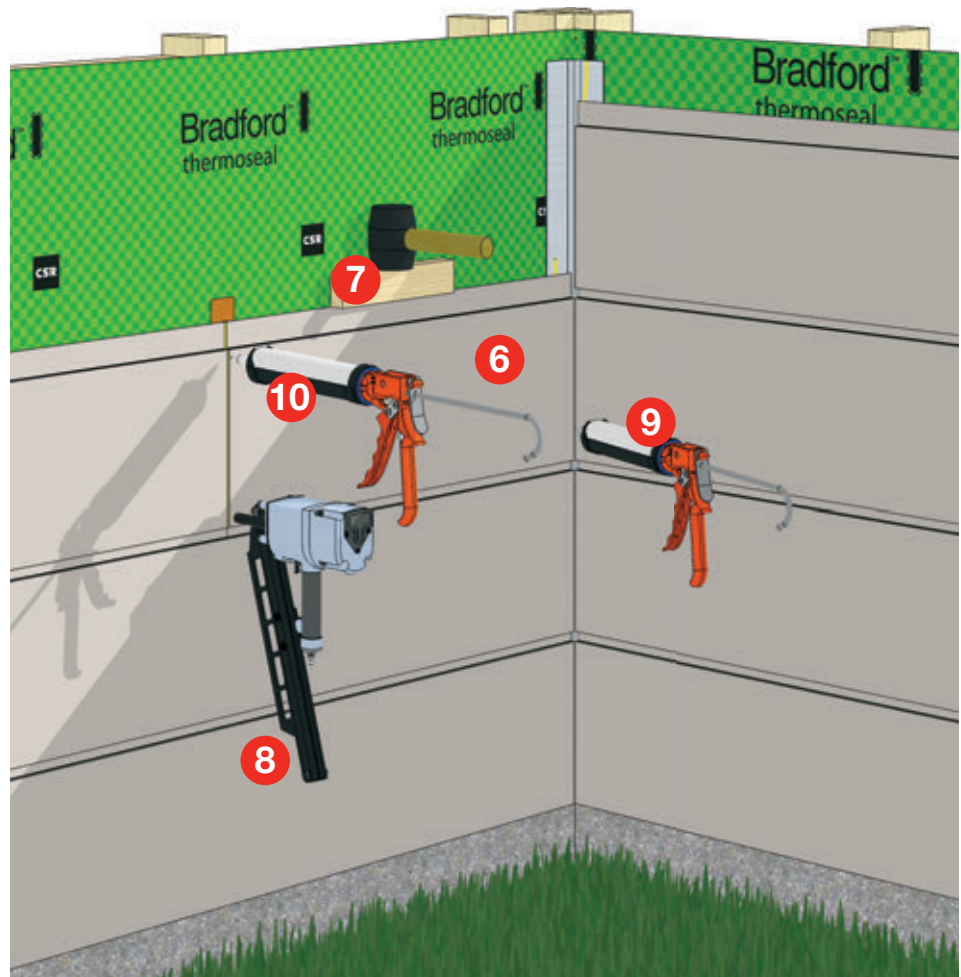
FIG 3: Board Fixing Methods

FIG 4: Installation Procedure

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

**FIG 5: Installation Procedure (continued)**

- ❻ Align boards and bed into sealant leaving 2-3mm gap at each end of the board.
- ❼ Firmly tap board downward to bed into taper of board below.
- ❽ Fix board to studs as per system specification. Refer to Table 6.
- ❾ Fill gap to corner profile with sealant.
- ❿ Fill gap between board ends with sealant.



SAFETY

When cutting, drilling or grinding Cemintel products using power tools, always ensure the work area is well ventilated. An approved dust mask (AS1715 and AS1716) and safety glasses (AS1337) must be worn. CSR recommends that hearing protection be worn.



TOOLS

All saws, drill/drivers, cutting blades, drill bits and hand tools must be maintained in good and clean condition to ensure appropriate cutting and drilling.

CSR recommends the use of following tools in conjunction with appropriate dust reduction methods.



FESTO TS 55 EBQ Plunge Cut Saw with guide rail

Product	Order N°
FESTO TS 55 EBQ Plunge Cut Saw with 1400mm Guide Rail	121400
FESTO Diamond Tipped Blade for TS55 (for cutting CDS Panel, fibre cement sheet, etc.)	112647

NOTCHING

Cut the two sides from the back. Score between the cuts on the front face and snap upwards to remove the piece.

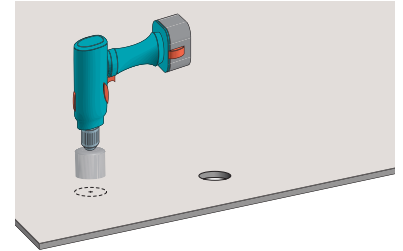
DRILLING

Use high speed masonry drills. Do not use the hammer action.

HOLE FORMING

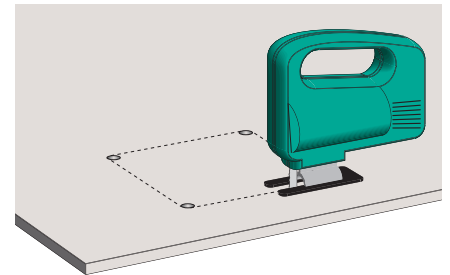
Small holes are formed by using a Hole Saw:

1. Locate the centre of the hole.
2. Form hole with appropriate sized hole saw with centre drill.



Large holes or openings are formed by using a Jig Saw fitted with masonry blade:

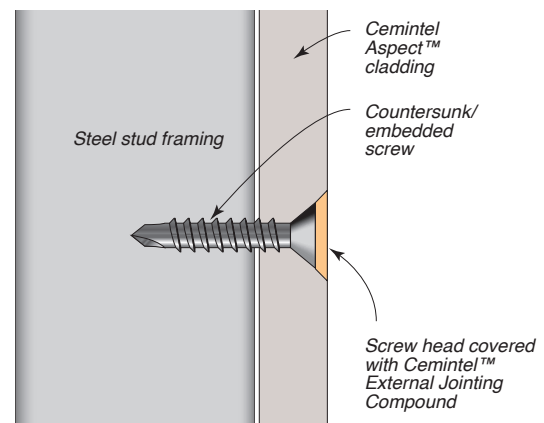
1. Mark the required opening.
2. Drill holes in all corners.
3. Cut along marked lines.



SCREW HEAD COVERING FOR COUNTERSUNK SCREWS

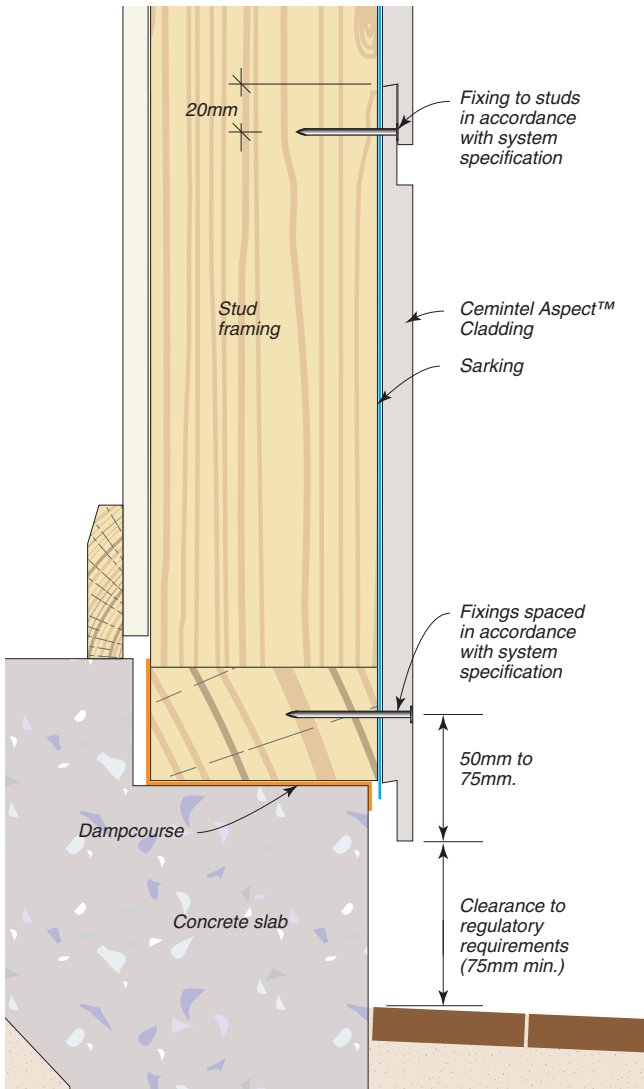
All countersunk screw heads must be covered with Cemintel™ External Jointing Compound and flush finished with the board surface. Compound is to be used in accordance with the manufacturers instructions. Avoid over filling holes, and level off before compound hardens.

FIG 6: Covering Countersunk Screw Heads



INSTALLATION DETAILS

**FIG 7: Typical Base & Concealed Fixing –
Timber Framing – Recessed Concrete Slab Foundation**



**FIG 8: Typical Base & Concealed Fixing –
Steel Framing – Flat Concrete Slab Foundation**

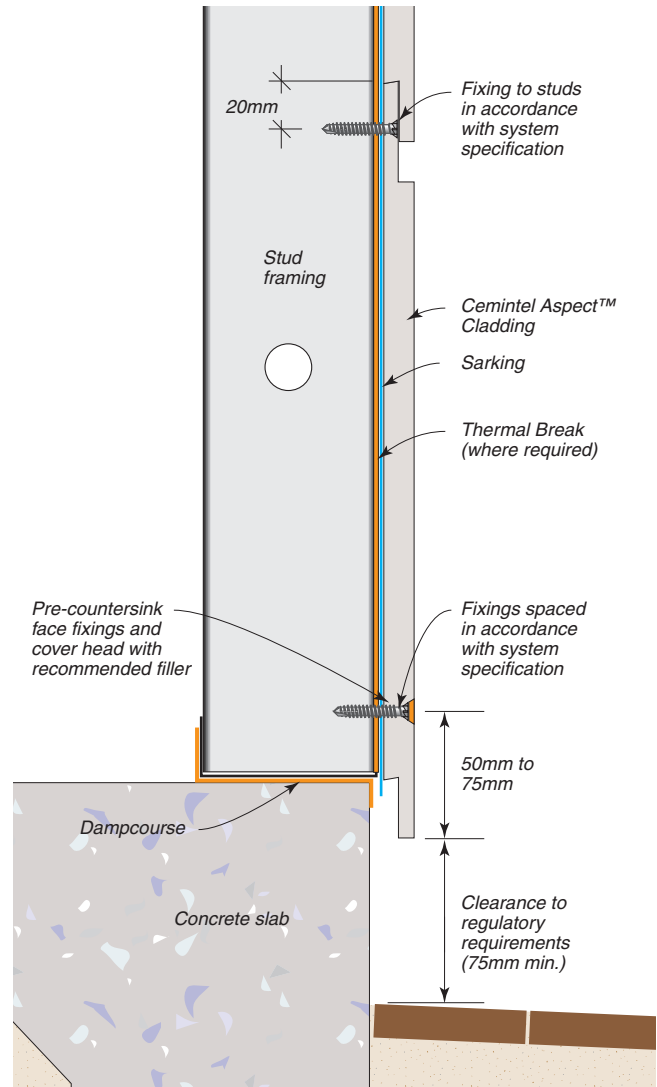


FIG 9: Typical Base & Brad Nail Face Fixing – Timber Sub-floor

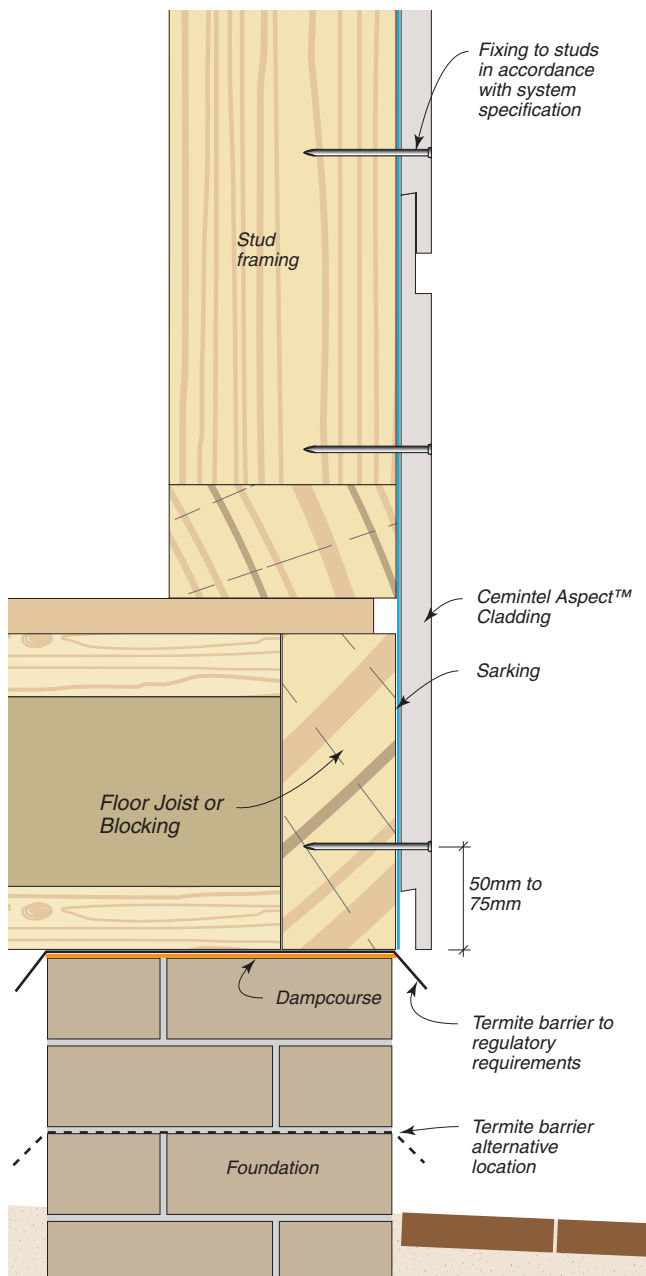


FIG 10: Typical Second Storey Junction with Hebel Panels, Brick Veneer or Masonry Wall – Cantilevered Framing & Face Fixing – Timber Sub-floor

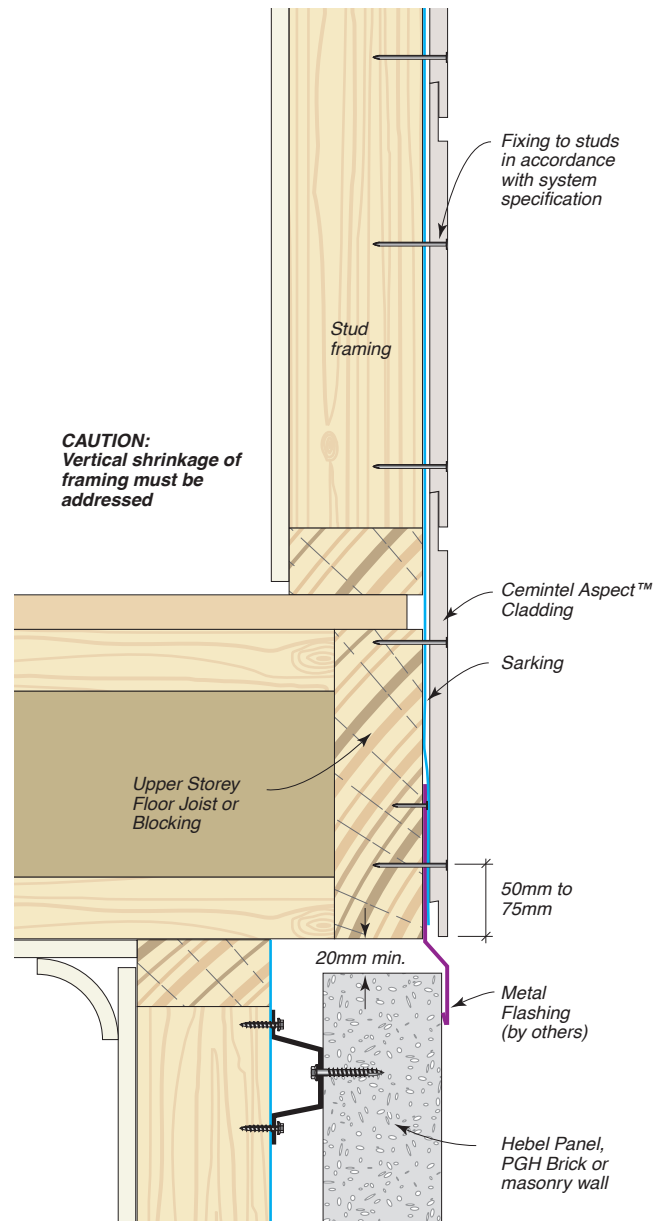


FIG 11: Vertical Joint Detail with Trimmer or Double Studs – Timber Framing – Hand Nailing

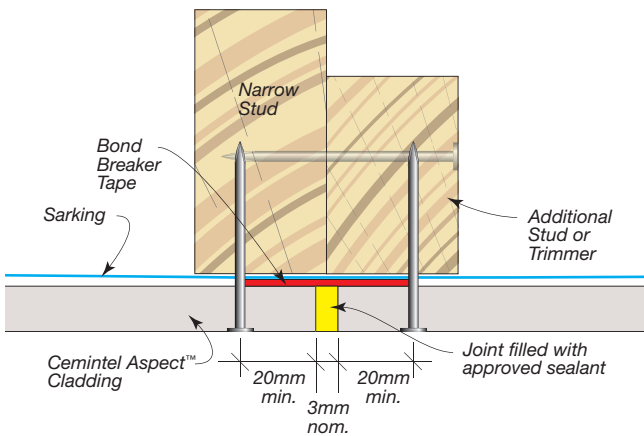


FIG 12: Vertical Joint with 45mm min. Timber Stud Framing – Face Fixing with Brad Nails (skewed)

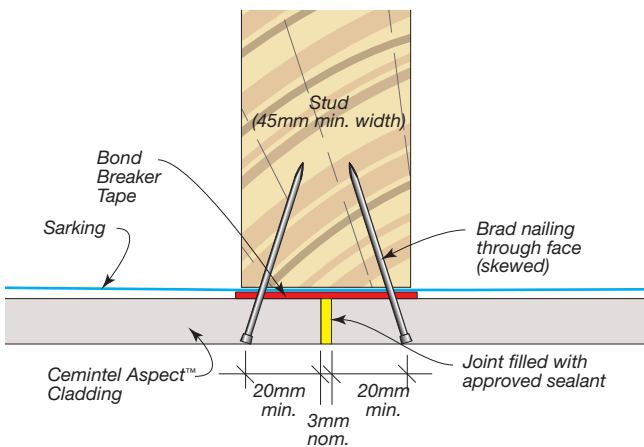


FIG 13: Vertical Joint Detail with Double Studs or Trimmer – Steel Framing – Face Fixing

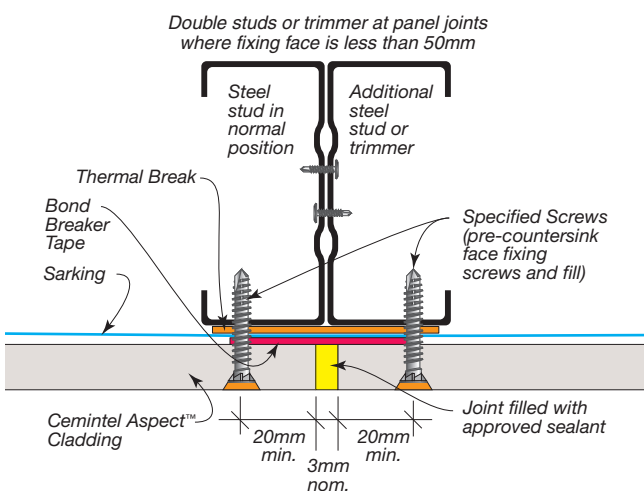


FIG 14: External Corner with Aluminium Profile

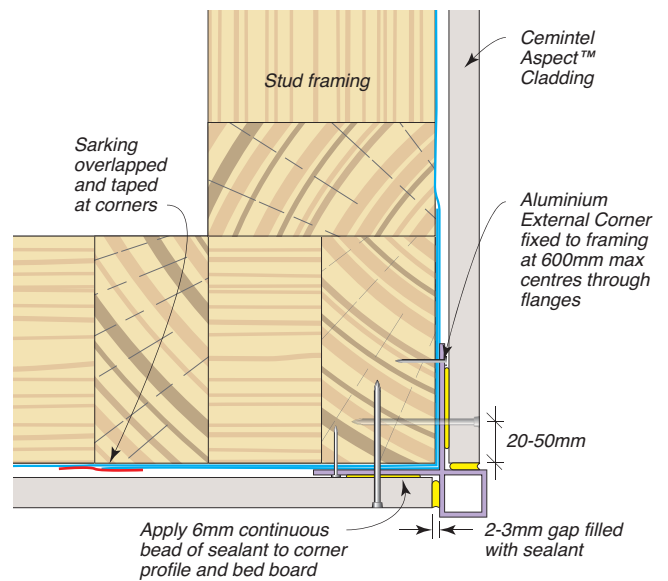


FIG 15: External Corner with Mitred Boards

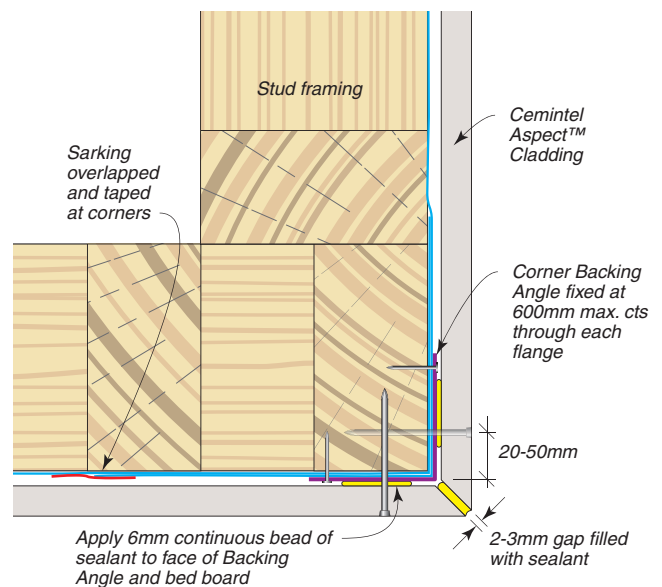


FIG 16: External Corner with Timber Moulding

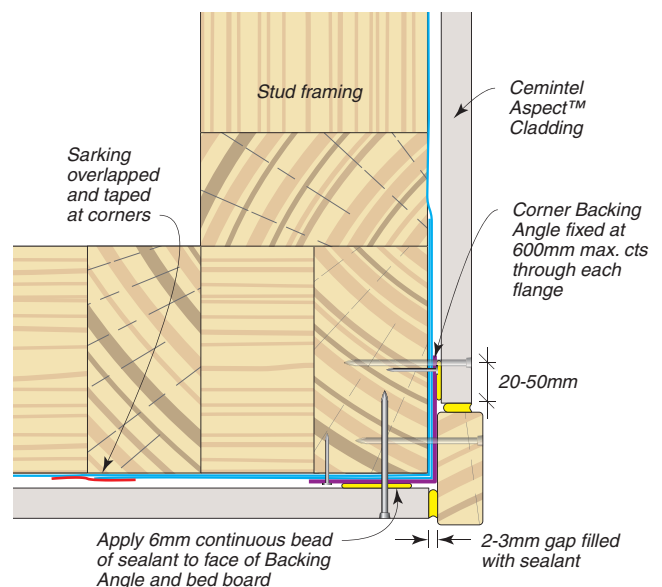


FIG 17: Internal Corner with Aluminium Profile

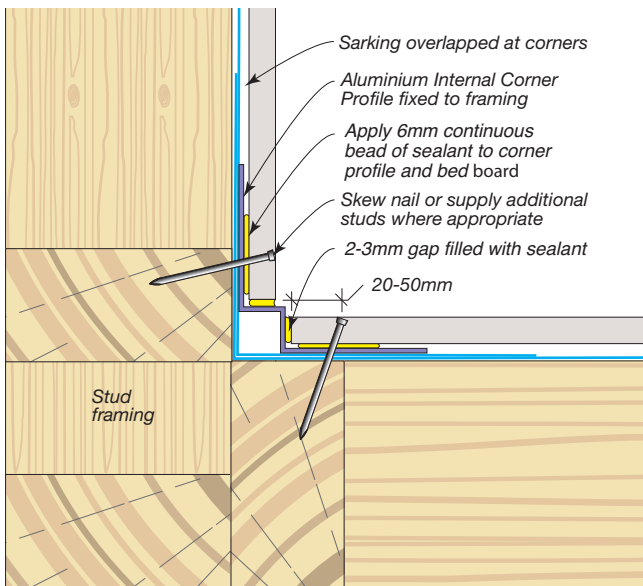


FIG 18: Internal Corner with Mitred Boards

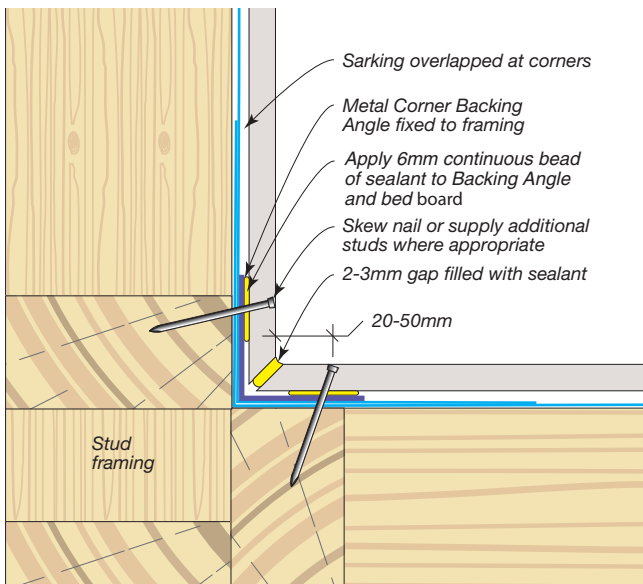


FIG 19: Internal Corner with Timber Moulding

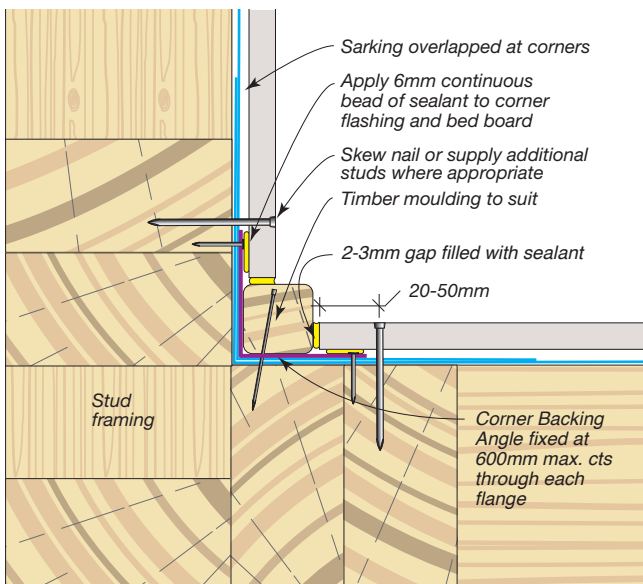


FIG 20: External Corner – Obtuse Angle

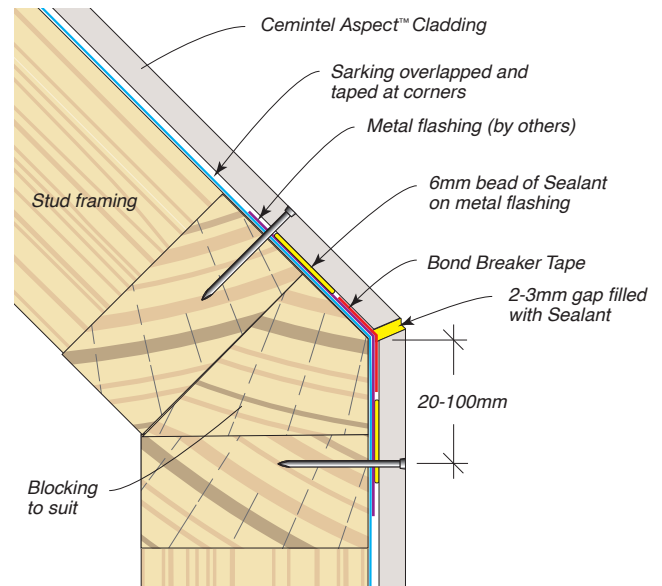


FIG 21: Junction of Aspect™ Cladding System with Alternative Fibre Cement Cladding – Plan View

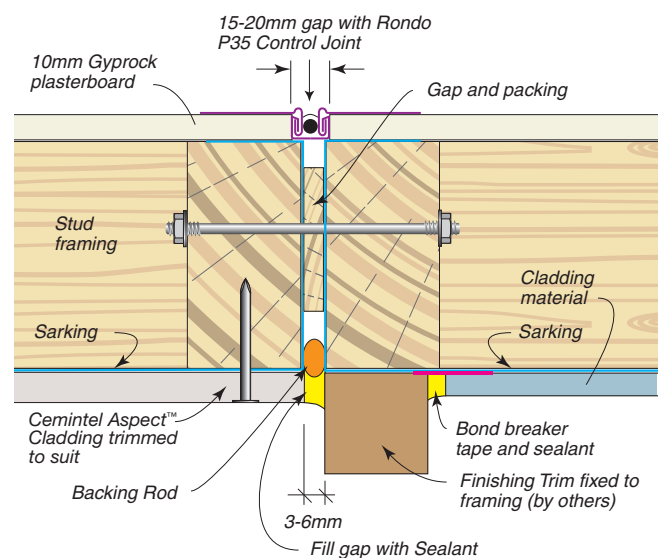
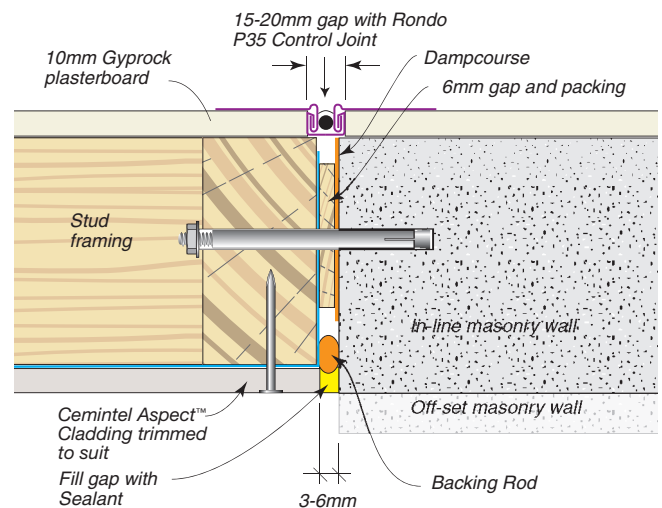


FIG 22: Junction of Aspect™ Cladding System with Offset or In-line Masonry Wall – Plan View



WINDOW & DOOR INSTALLATION

FIG 23: Window Detail – Trend Quantum XP Aluminium Sliding Window with Weatherboard Reveal Clip E482

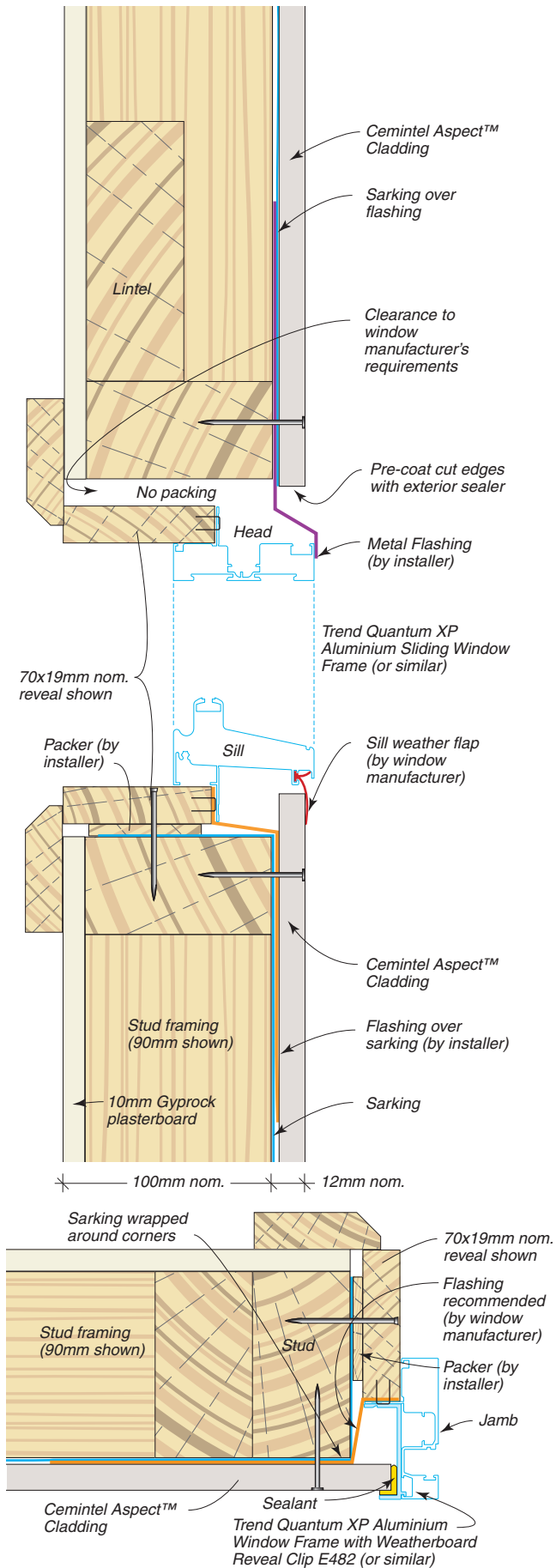


FIG 24: Window Detail – A&L Aluminium Sliding Window with Weatherboard Trim

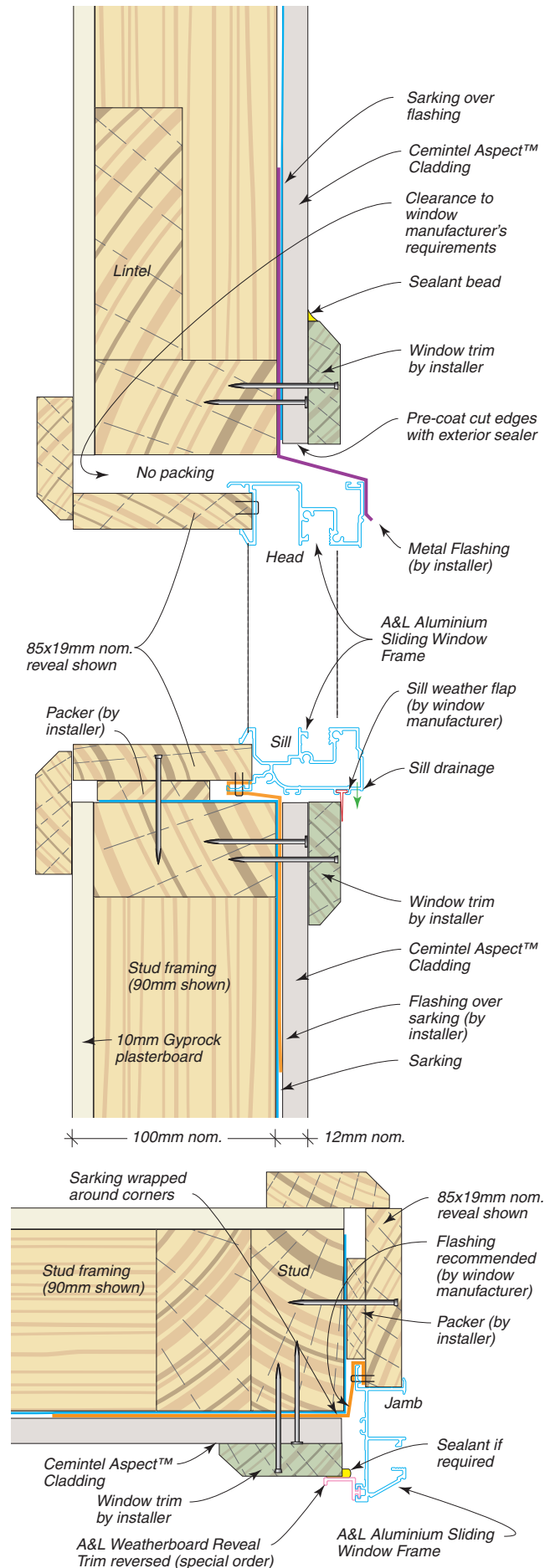


FIG 25: Bradnams Essential Sliding Window Installation – 70mm Framing and 80mm Reveal Shown

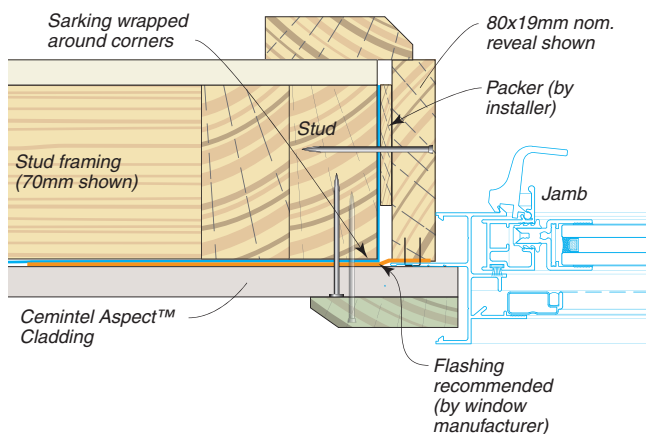
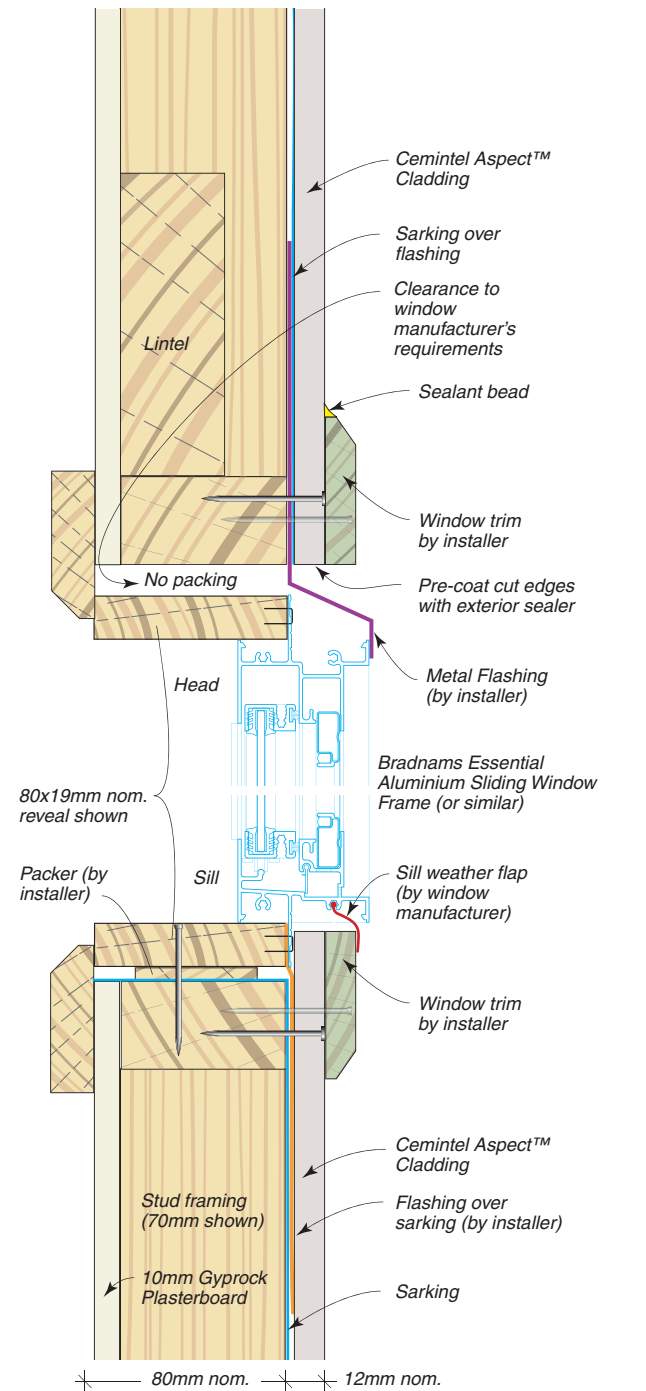
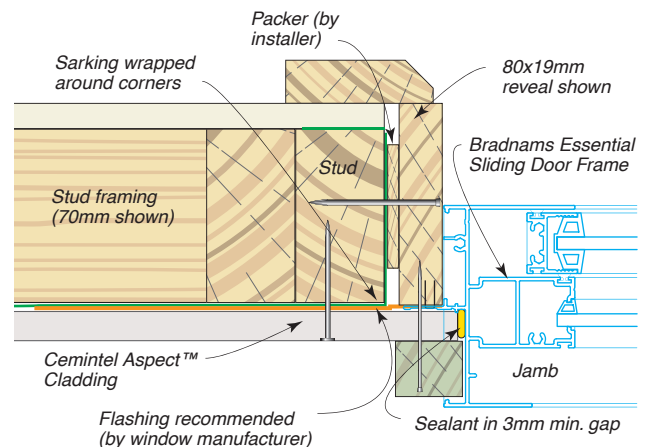
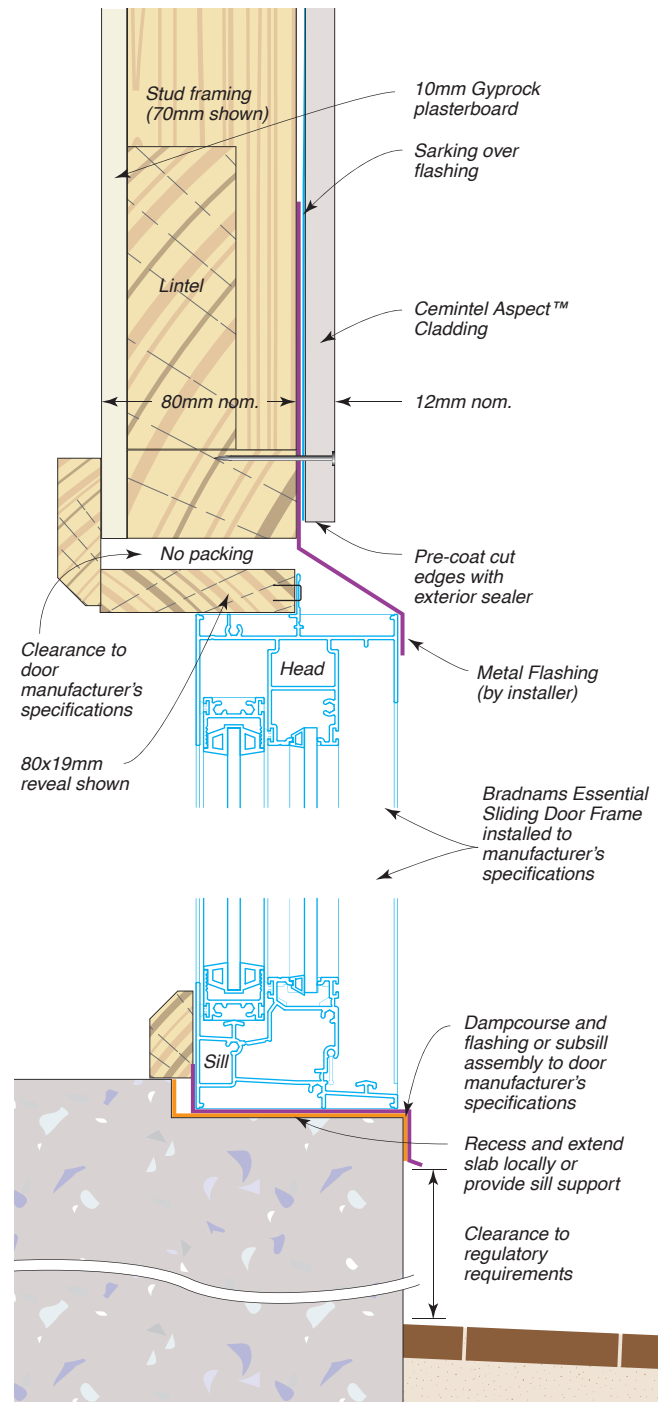


FIG 26: Bradnams Essential Sliding Door Installation – 70mm Framing and 80mm Reveal Shown



FIRE RATED EXTERNAL WALL SYSTEMS

BUSHFIRE PRONE AREAS

In accordance with AS3959, 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 AS1530.3 and can achieve BAL-40 or 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, GYP500 – The Red Book™ Fire & Acoustic Design Guide.

For additional bush fire requirements, refer to AS3959 Construction of buildings in bushfire prone areas, and to the BCA Volume 1 Part 3.7.4.

FRAMING

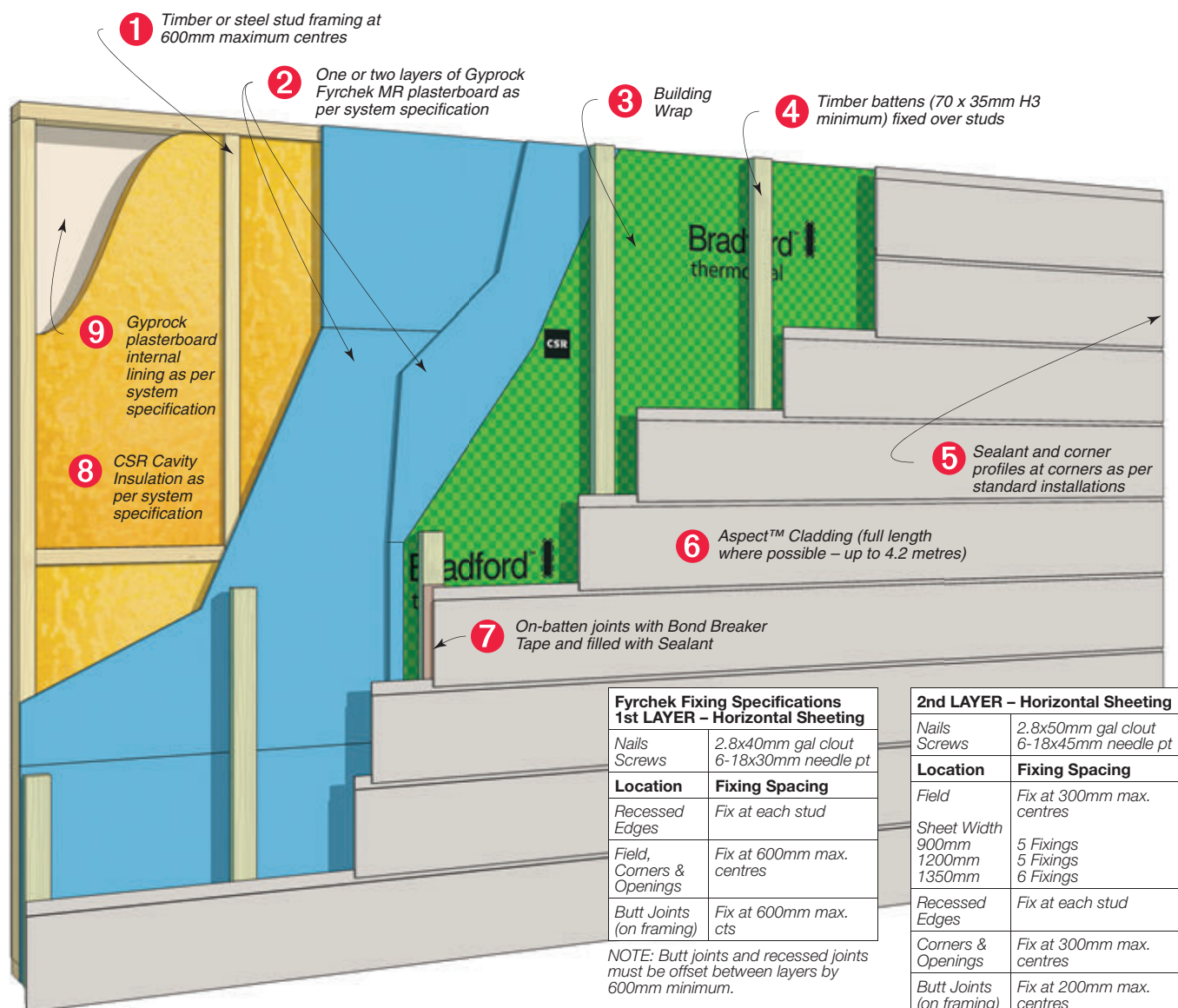
In addition to the standard structural framing, fire rated systems require minimum 70 x 35mm H3 timber battens to be fixed to the face of studs in accordance with Table 7. Vermin proofing which also allows cavity drainage, such as a cavity baffle, is required at the base of the battens.

Table 7: Batten Fixing Specifications for Studs at 600mm max. centres

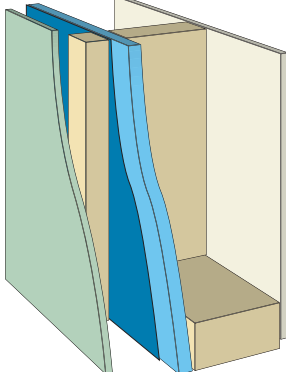
Wind Classification	Spacing of Batten Fixing to Studs (mm max.)
N1, N2	500
N3, C1	400
N4, C2	300
N5, C3	200
N6, C4	150

NOTE: Loads based on AS4055 with Net C_{pi} = -1.3 & 0.7

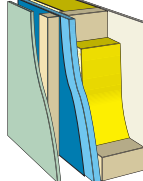
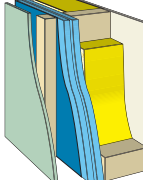
FIG 27: Typical Aspect™ Cladding and Gyprock Plasterboard Fire Rated External Wall System



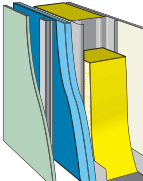
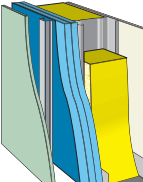
Timber or Steel Frame External Wall Systems – Cladding on Battens

SYSTEM SPECIFICATION	TYPICAL LAYOUT (CSR 900a shown)	ACOUSTIC OPINION
<ul style="list-style-type: none"> External cladding material on 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>		PKA-055

TIMBER FRAMING

FRL Report/Opinion	SYSTEM N°	WALL LININGS	STUD DEPTH mm	90	THERMAL	
			CAVITY INFILL (Refer to Section 'A')	R _w	R _{t(win)}	R _{t(sum)}
60/60/60* (from outside only) *ACR Group 2 FAR 2303	CSR 900 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR plasterboard. INTERNAL WALL SIDE • 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 (based on 35mm depth batten)	163		
90/90/90 from outside only FAR 2303	CSR 907 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR plasterboard. INTERNAL WALL SIDE • 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 (based on 35mm depth batten)	173		

STEEL FRAMING

FRL Report/Opinion	SYSTEM N°	WALL LININGS	STUD DEPTH mm	76	THERMAL	
			CAVITY INFILL (Refer to Section 'A')	R _w	R _{t(win)}	R _{t(sum)}
60/60/60* (from outside only) *ACR 5% FAR2357	CSR 121 	EXTERNAL SIDE OF STUD • 1 x 16mm Gyprock Fyrchek MR plasterboard. INTERNAL SIDE • 1 x 10mm Gyprock Standard Plasterboard.	(a) Nil	36 – 40	0.7	0.7
			(b) 75 Gold Batts™ 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 	EXTERNAL SIDE OF STUD • 2 x 13mm Gyprock Fyrchek MR plasterboard. INTERNAL SIDE • 1 x 10mm Gyprock Standard Plasterboard.	(a) Nil	37 – 41	0.8	0.7
			(b) 75 Gold Batts™ 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		

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



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CREATE AND CONSTRUCT



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ASPECT™ CLADDING



FC:555

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 Aspect™ cladding ("Product") to remain free of defects in material and manufacture for the usual lifetime of the Product (up to 15 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.

Cemintel™, Aspect™ and CSR™ are trademarks of CSR Limited.
FC555.BMS1096.0215 MOD150421

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APRIL 2015

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