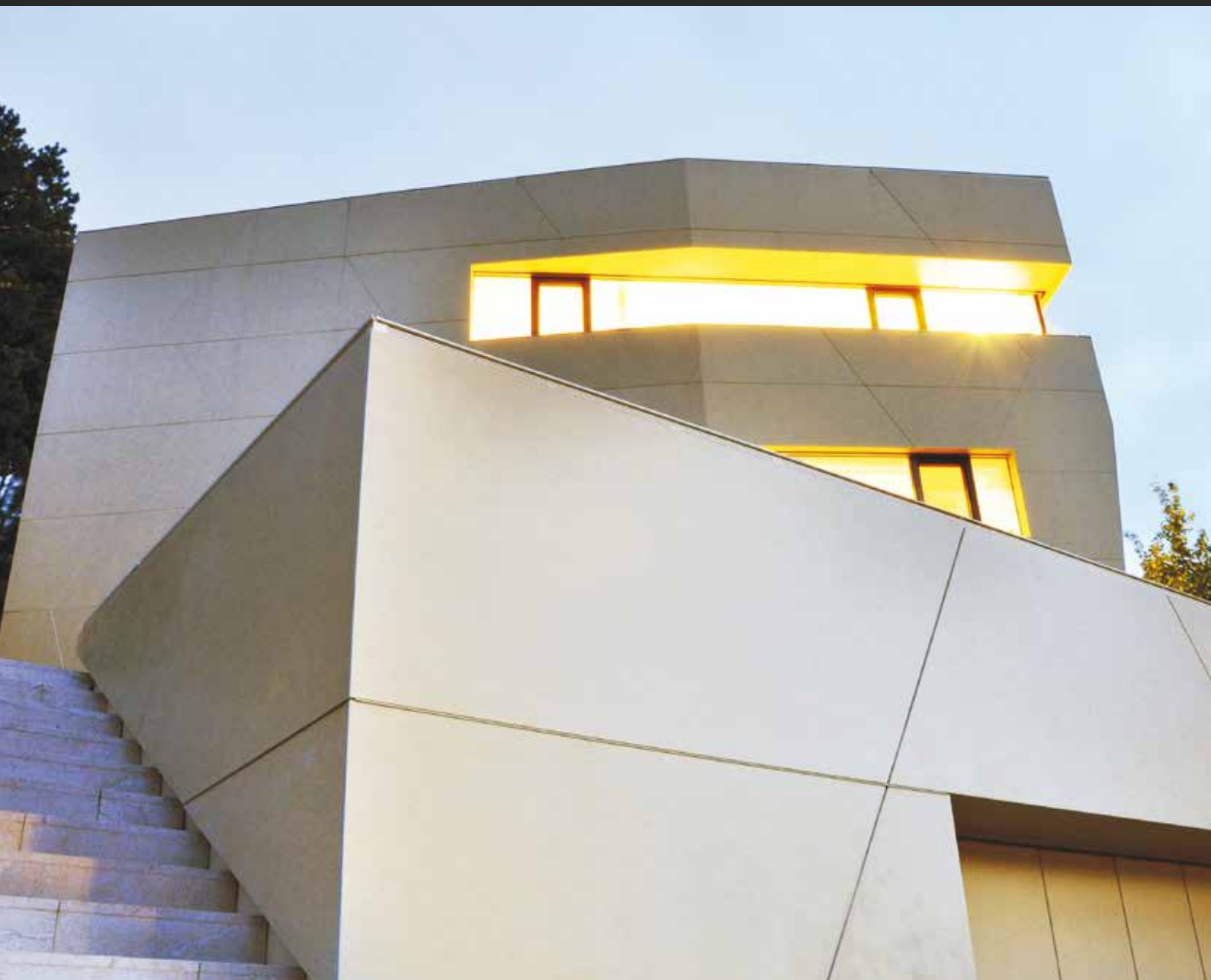


CEMINTEL®

DESIGN AND INSTALLATION GUIDE



INTRODUCTION

TABLE OF CONTENTS

01 INTRODUCTION	1	06 SYSTEM ENGINEERING	23
Introduction	1	Design, Detailing and Performance	
02 PRODUCT OVERVIEW	2	Responsibilities	24
Panel Information	3	Span Tables / Wind Loads	25
Colour Palette	4	Top Hat Spans/Spacings	27
03 SYSTEM OVERVIEW	5	Panel Fixing Setouts	29
Applications	7	Corrosivity Categories	32
Benefits of the Cemintel Terrain System	7	Climate Zones for Thermal Design	33
Product Specifications/System Solutions	7	07 INSTALLATION	41
04 DESIGN + AESTHETIC CONSIDERATIONS	8	Prior to Installation	42
General	9	Installation Set-Out	43
Control Joints	11	Installation for Timber and Steel Framing	43
Panel Layout	12	08 CONSTRUCTION DRAWINGS + DETAILS	47
Structural	13	09 SAFETY, HANDLING + GENERAL CARE	55
Weatherproofing	14	Health, Safety and PPE	56
Wall Wrap/Sarking Moisture Management	15	Handling & General Care	56
Insulation and Energy Efficiency	16	10 WARRANTY, CLEANING + MAINTENANCE	59
Extreme Climate Conditions	16	Warranty	58
Other Design Considerations	17	Wash Down Process	58
05 COMPONENTS + ACCESSORIES	18	Inspection, Repair and Maintenance	58

Introduction

Cemintel's Surround walling system combines a prefinished surface with a simple installation system that can be used externally or internally for residential and commercial buildings.

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

exhaustive guide of all possible scenarios. It is the responsibility of the architect, designer and various engineering parties to ensure that the details in this Design and Installation Guide are appropriate for the intended application.

Surround can be installed either horizontally or vertically, externally or internally. This guide refers to **external installations** only as components differ depending on the installation.

Refer to the 'Design and Installation Guide for Cemintel Surround Internal Installation' for instructions regarding internal applications.

02

PRODUCT OVERVIEW

Panel Information

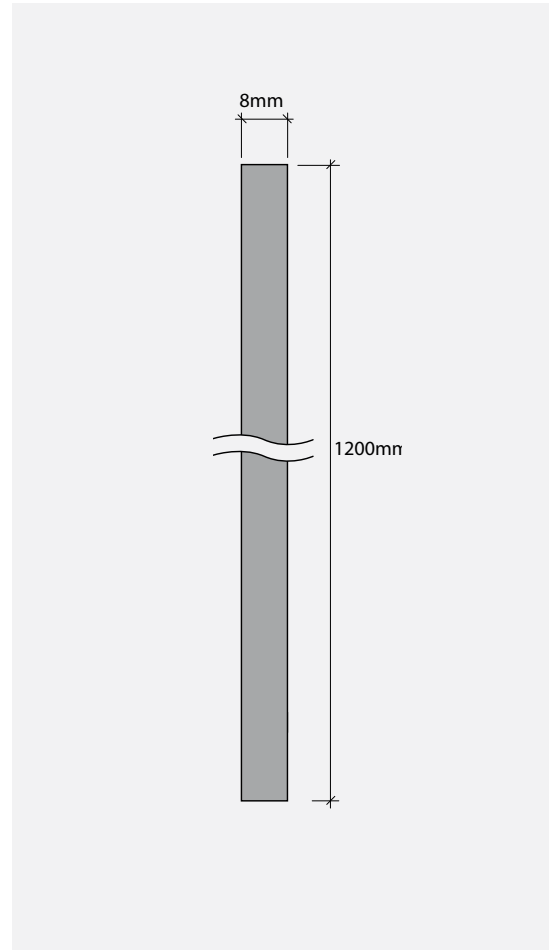
Cemintel Surround panels are prefinished, fibre cement panels that are colour bodied delivering a more natural appearance and depth of colour than can be achieved with a standard surface painted finish. They come trimmed and sealed in a standard 1200 x 3000 x 8mm size*.

Consisting primarily of Portland Cement, wood pulp, reinforcement fibres, air and water, panels have undergone a longer, natural air curing process and offer superior performance in terms of strength, density and durability, making them an excellent choice for commercial applications subject to higher wind loads.

The range comprises 5 colour groups. Each group has a foundation 'Base' colour and 4 complementary textures/patterns featuring a matte finish. There is also a 'Secondary' palette with colours that work across each range. Panels come with a range of colour matched rivets to provide a more seamless aesthetic finish.

Panels feature a UV protective coating applied during the manufacturing process. Rain water washes contaminants away entailing minimal maintenance, ongoing good looks and superior durability.

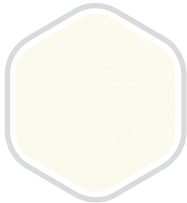
*Lengths up to 3050mm are available as special orders.



PRODUCT OVERVIEW

**Colour Palette**

As Surround is a prefinished product, product images may vary from the actual product in regard to colour and surface finish.

Whiteish

Base



String



Leather



Metal



Marl

Greyish

Base



String



Leather



Metal



Marl

Blackish

Base



String



Leather



Metal



Marl

Greenish

Base



String



Leather



Metal



Marl

Blueish

Base



String



Leather



Metal



Marl



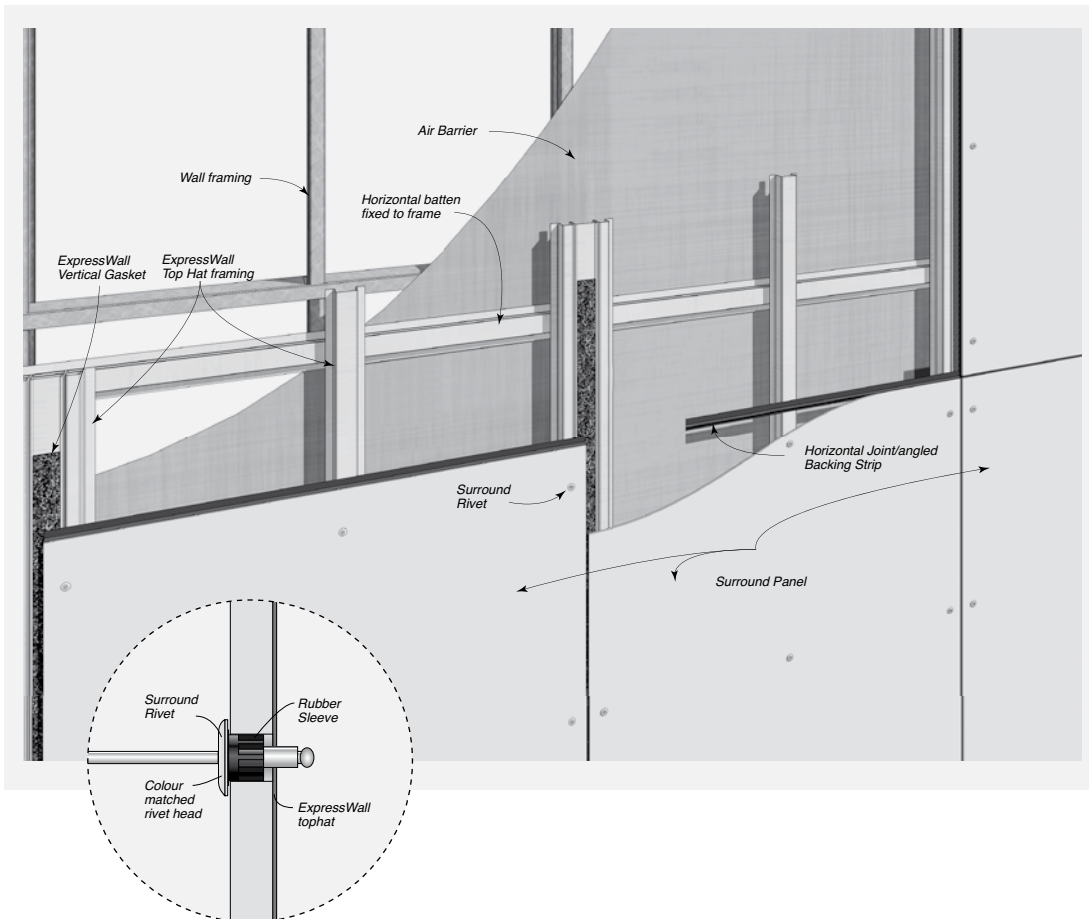
03

SYSTEM OVERVIEW

SYSTEM OVERVIEW



Cemintel Surround is installed over an air barrier onto ExpressWall™ top hats using Surround rivets. This creates a pressure equalised cavity system which enhances weather resistance.



Surround is designed to be installed as part of a pressure equalised cavity system. Air circulation and drainage is facilitated by openings around the base and top of the wall. This reduces the risk of moisture penetration and prevents moisture build up, allowing the building shell to dry out, creating a healthier, more breathable building.

The system requires an air barrier in the form of either a wall wrap/sarking or a rigid air barrier.

Cemintel Surround panels are pre-drilled and then fixed onto supporting metal top hats using unique, colour matched, stainless steel rivets.

The Surround system uses only one rivet type which allows a subtle “sliding” movement across the panel. This reduces the complexity of installation and reduces the stresses created where panels are installed with rigid “fixed” points.

Panels are installed to give an express jointed appearance. A vertical gasket tape is placed on the vertical top hat to provide added weather resistance and an angled backing strip is placed at horizontal joints to encourage water run-off.

03

SYSTEM OVERVIEW



Applications

Cemintel Surround is suitable for all building classes where metal top hats can be fixed to framing, however site environmental factors such as wind and corrosivity zones need to be taken into account to determine its suitability for a particular environment.

The panels and system have been tested to withstand wind pressures up to 7kPa and cyclonic conditions up to 7kPa.

Benefits of the Cemintel Surround System

- Low maintenance
- No requirement for additional painting costs
- Potential to speed up the construction process
- Large format, lightweight panels are designed to be fixed to top hats which can be fixed to industry standard steel, timber or masonry structural frames
- Pressure equalised cavity system minimises water ingress and allows air flow and drainage.
- Cemintel's express jointed fixing system is widely recognised for its high performance. The ExpressWall™ top hat has a wider fixing surface for increased installation tolerance, allowing panel movement with changes in wind pressures, thermal movement etc.
- The unique Surround rivet with pre-assembled rubber sleeve allows slight movement across the panel thereby reducing the stresses created where panels are installed with "fixed" points.
- Panels are easy to cut for openings e.g. around windows and power boxes
- Termite resistant
- Durable and weather resistant
 - Provides effective protection against wind, rain and temperature extremes, mould and mildew
 - Panels will not rot, swell or warp when correctly installed and maintained
- Purpose designed drilling, centring and rivet tools allow for fast and accurate preparation and installation
- Fire Resistance – Fibre Cement sheets can be used where non-combustible material is required under the BCA provisions.
- Systems are available for thermal, acoustic and fire requirements as part of an overall solution
- Can be used in conjunction with other CSR products such as insulation and air barriers.

Product Specifications/System Solutions

A technical Data Sheet can be downloaded from cemintel.com.au

Dimensional/Geometrical Characteristic	Specification (trimmed panel)	Manufacturing Tolerance	Relevant Standard
Panel Width	1200mm	+ / - 1.5mm	EN 12467
Panel Length	3000mm*	+ / - 1.5mm	EN 12467
Panel Thickness	8mm	+ / - 0.8mm	EN 12467
Panel Mass (EMC)	15.7kg/m ²		
Fire Resistance Limits (FRLs)	Up to 120/120/120, -/180/180		Refer to System Engineering section or Gyprock® The Red Book™
Bushfire Construction	BAL 29 (Construction for Bushfire Attack Level 29 for an external wall)		AS 3959 – 8
Weatherproofing	Has passed testing at a serviceability wind pressure of +2.5kPa and -2.7kPa, and an ultimate wind pressure of +7kPa and -7kPa (Rigid Air Barrier required for pressures above 1.5kPa)		AS 4284
Cyclonic Conditions	Passed at 7kPa		AS 4040.3

*Lengths up to 3050mm are available as special orders.

04

DESIGN + AESTHETIC
CONSIDERATIONS

DESIGN + AESTHETIC CONSIDERATIONS

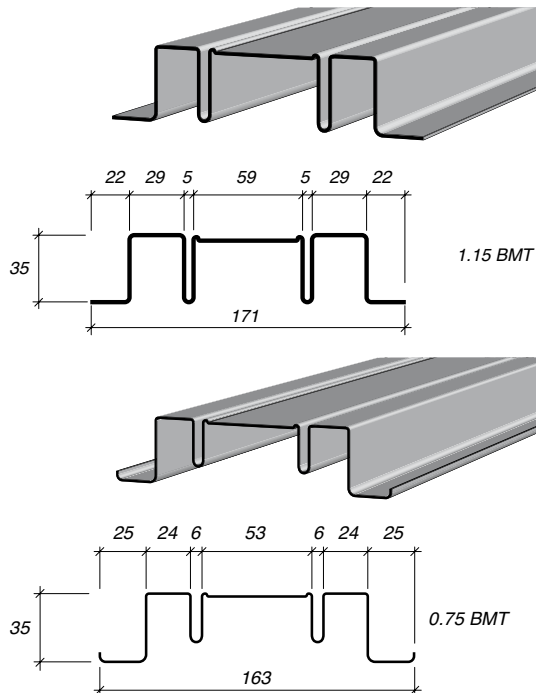
This section outlines some important areas for consideration in determining whether Cemintel Surround is suitable for the required application. The following points are not exhaustive. It is the responsibility of the Architect / building designer to ensure the design conforms to BCA requirements and other relevant building standards that may exist for that location. This guide should be read in conjunction with the BCA.

Panels, top hats and structural framing are required to resist wind loads that are specific to the building site. Additional "local pressure factors" apply to the panels and top hats in accordance with the wind code AS1170.2. It is recommended that the architect/building designer assigns the responsibility for the façade design to the project engineer.

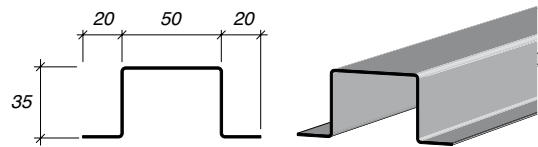
Once wind loads have been determined, top hat spans, fastener spacings, and sheet fixing details may be selected from the appropriate tables in the System Engineering Section of this guide. It is also the responsibility of the architect/building designer to select the appropriate corrosivity category.

Top Hats

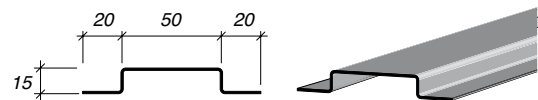
Cemintel's Commercial ExpressWall™ Top Hat is a purpose designed rolled steel section for supporting the vertical edges of the panels. The unique profile acts to accommodate movement of the sheets at the vertical joints. It is designed to be used in conjunction with the ExpressWall™ Vertical Gasket for added weather resistance. The ExpressWall™ Top Hat is manufactured from galvanised (Z275) steel and is the subject of patent No 2004240142. It is available in 1.15 BMT or 0.75 BMT.



Intermediate Top Hat is used to support the panels at intermediate locations in between ExpressWall™ Top Hats. The Intermediate Top Hat is a rolled steel section which is manufactured from galvanised (Z275) steel of 1.15mm BMT.



H515 Top Hat is installed horizontally to the face of steel or timber stud framing to support the ExpressWall™ Top Hats and Intermediate Top Hats. Top Hat H515 is a Rondo rolled steel section which is manufactured from galvanised (Z275) steel of 1.15mm BMT.



DESIGN + AESTHETIC CONSIDERATIONS



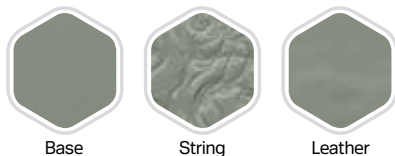
Panel Finish

All Surround panels are colour bodied (also known as colour through). This works to enhance and give added depth to the surface colour of the panel. It also means that any chips or damage to the panels are less evident.

Base, String and Leather

Surround's Base, String and Leather finishes have an opaque coating applied to the surface and colour variation between panels is minimal. This allows for mixing and matching from a design perspective.

Note: String and Leather have a three dimensional surface texture. They should be laid in the same direction (ie either horizontal or vertical) rather than in mixed directions.



Base

String

Leather

Marl

Marl has a more transparent coating which showcases the inherent cement and fibre nature of the underlying product. There is a visible difference between production runs so this product is batched.



Marl

Metal

Metal displays a subtle metallic sheen when light reflects off the surface from different viewpoints. Like Marl, there is a visible difference between production runs so this product is batched.



Metal

Because of variations between batches, particular attention needs to be taken to order extra stock of Marl or Metal products. Allow enough for cuts and extra sheets should be set aside in case panels have to be replaced in the future.

Pre-Drilling Panel Holes

Holes for rivets must be pre-drilled into panels using a 9.5mm carbide tipped drill bit with centering tip. This activity can be done off-site prior to installation.

Face Fixings

Pre-drilled panels are fixed to top hats using the Surround colour matched rivet. Rivets are manufactured from stainless steel consisting of V4A (equivalent to 316 grade) stainless steel mandrels and V2A (equivalent to 304 grade) stainless steel sleeves.

The Surround rivet, with its unique rubber sleeve, is integral to the Surround fixing system and must be used with the Surround panel. It allows a very slight movement across the whole panel thereby reducing the stresses created where panels are installed with "fixed" points. Note: Use of standard rivets and gun heads is NOT ACCEPTABLE.

Window & Door Openings

Cemintel Surround is compatible with industry standard aluminium windows. Aluminium windows MUST NOT have sill drain holes that can direct water into the wall cavity.

With the cavity created by the Top Hat system, particular attention needs to be given to the set out of windows and doors.

The depth of the window needs to be taken into account in the design of the building frame so that the front face of the panel is properly aligned with the window and that the flashing is installed correctly.

If using a rigid air barrier, the thickness of this also needs to be accounted for to achieve a flush finish when determining window set out and reveal depths.

Cemintel recommends installing a sub frame with all windows.

Refer to typical window detail drawing in 'Construction Drawings and Details' section of this guide.

Eaves Junction

Air is circulated at the eaves through a perforated spacer. It is not recommended that air be vented into the roof space.

04

DESIGN + AESTHETIC CONSIDERATIONS

Control Joints**Movement Control Joints**

Control joints provided in the panel layout should be aligned with movement control joints provided in the framing.

When undertaking building additions, a movement control joint must be installed at the junction of the existing framing and the new framing. Cladding systems must be discontinuous at this joint (refer to the “Construction Drawings & Details” section).

When setting out panels, design consideration should be given to the location of joints to ensure that minimum panel lengths are observed.

Horizontal Control Joints

A horizontal control joint is required beneath every slab junction to accommodate any deflection. The magnitude of the deflection must be verified by the project engineer (refer to the “Construction Details” section).

Where frame shrinkage may be a concern, Cemintel recommends creating a horizontal break in the panelling at the first floor level or by incorporating a balcony or other design element to create discontinuous panelling.

Vertical Control Joints

Vertical control joints to allow for differential movement are required at the supports of fascia trusses and at the junction of structural elements of different stiffness, such as between concrete columns and stud frames (refer to the “Construction Drawings & Details” section).

A control joint must also be installed when a masonry wall adjoins framed construction, and at the junction of framed additions or existing buildings, to allow for differential movement. Refer to ‘Construction Drawings & Details’ section.

Vertical joints in panels must be aligned and extend for the full height of continuous panelling, although additional joints may be placed over openings for ease of installation. As the joints are expressed, consideration to the positioning of joints is important for aesthetic reasons. Placing joints at sides or above openings, or the use of full height windows can reduce the visual impact of joints.

ExpressWall™ Top Hats in both 1.15BMT and 0.75BMT have been designed to elastically deform when pressure is applied during panel fixing. They have a recessed area to accept a vertical gasket tape which is made from closed cell foam with good weathering and UV resistance. It has a low compression set and water permeability.

DESIGN + AESTHETIC CONSIDERATIONS

04

Panel Layout

In addition to considering control joint locations, panel layout should take into account the following:

- Aesthetic design
- Top hat spacing to allow for expressed joint widths (ref Fig 4.01)
- Type of structural support
- Openings – size and location
- Building size

Panel layout can be in a grid pattern where vertical and horizontal joints are continuous (ref Fig. 4.02 & 4.03). In these layouts, construction joints may be positioned behind any vertical or horizontal sheet joint (refer to “Construction Drawings & Details” section).

Panel layout can also be in a vertical or horizontal half-bond pattern where some joints are discontinuous (ref Fig. 4.04 & 4.05).

Note: String and Leather have a three dimensional (3-D) surface texture. They should be laid in the same direction (ie either horizontal or vertical) rather than in mixed directions.

FIGURE 4.02 Horizontal Sheeting Aligned Grid Pattern

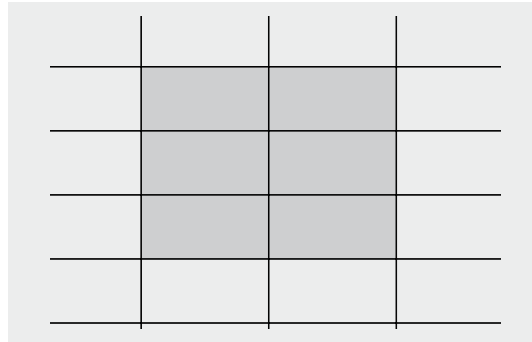


FIGURE 4.03 Vertical Sheeting Aligned Grid Pattern

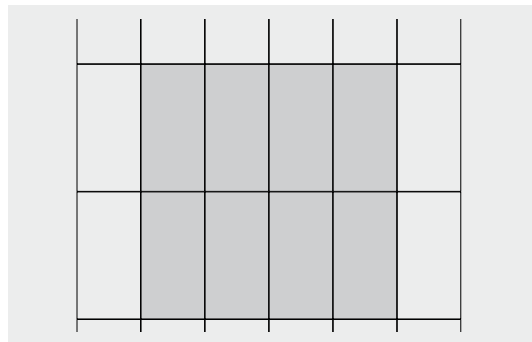


FIGURE 4.01 Typical Top Hat set-out - 1200mm Width Vertical Panels with 8mm Joints shown

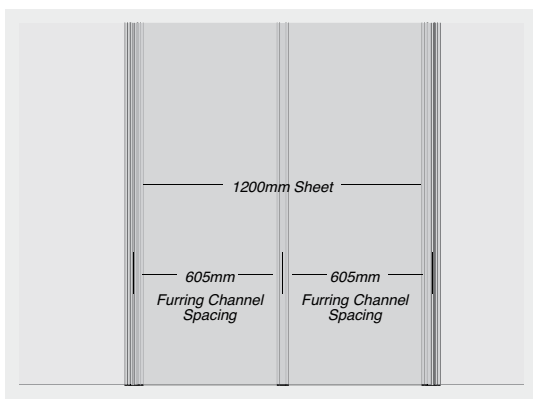


FIGURE 4.04 Horizontal Sheeting Half-bond Pattern

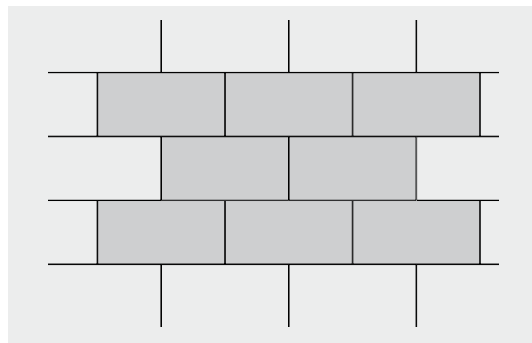
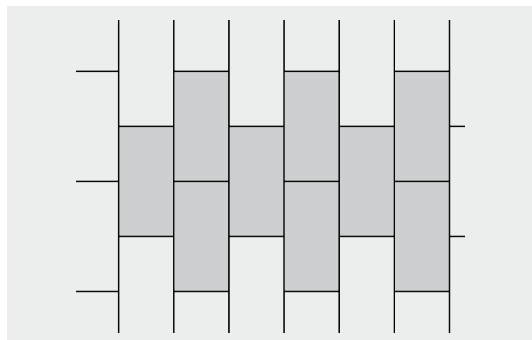


FIGURE 4.05 Vertical Sheeting Half-bond Pattern



04

DESIGN + AESTHETIC CONSIDERATIONS

Structural**Framing and Substrate Options**

Surround panels can be fixed to timber or steel framing, as well as to masonry substrates.

For timber and steel framing, the minimum requirement shall be in accordance with the following standards:

- AS1684 – Residential Timber-Framed Construction.
- AS/NZS4600 – Cold-Formed Steel Structures.

Structural Support

Cemintel Commercial ExpressWall™ Top Hats and Intermediate Top Hats must be installed vertically on horizontal H515 Top Hats, supported by a primary structural system (ie timber, steel or masonry/concrete).

Alternatively ExpressWall™ framing can be fixed to appropriately designed steel framing. The frame must be designed to support the top hats.

The connection of the Top Hats to the frame requires engineering design. It is the responsibility of the project engineer to specify the connection of the top hats to the support structure.

The Surround installation has been evaluated for use in all Australian wind zones up to and including N6 and Cyclonic C4 in accordance with AS4055, and for wind pressures up to 7kPa under AS1170.2.

In highly corrosive environments, appropriate measures should be taken to protect the frame and metal components from corrosion. Refer to Corrosive Zones table in 'System Engineering' section.

It is critical that the frame is true and plumb. Industry best practice for framed tolerance is 5mm misalignment over 3000mm. Retrofitting Surround to pre-existing walls must be assessed with the squareness of the substrate.

AS/NZS1170.0 Table C1 suggests that support framing be designed for a maximum deflection of span/250. Span tables are located in 'System Engineering' section.

Note: Depending on the chosen panel layout, double studs may be required. Refer to 'System Engineering' section.

Structural Bracing

Cemintel Surround panels are indirectly attached to the structural framing by way of metal Top Hats. As a consequence, they are not designed to provide wall bracing.

Bracing must be provided in the structural framing as per the BCA with methods such as sheet or strap bracing. Where sheet bracing is used, the entire wall framing to be clad with Surround panels must be sheathed to maintain a uniform fixing plane. Note: window setout will be affected.

If the building requires a rigid air barrier for weatherproofing purposes (ie higher wind load areas), it is possible to use 6mm fibre cement sheeting as part of the bracing system. Contact Cemintel for options.

Termite Management

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.

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.

DESIGN + AESTHETIC CONSIDERATIONS

04

Weatherproofing

- The Surround range has been weather tested to AS4284 to successfully withstand water ingress for serviceability wind loads of up to +2.5kPa and -2.7kPa and to withstand ultimate wind loads of +7kPa and -7kPa. A specific air barrier is required and options are available with wall wraps/sarking (ultimate wind load up to 1.5kPa) and with a rigid air barrier. Refer to 'System Engineering' Section and Cemintel's Design and Installation Guide for Air Barriers for further information.
- The EPDM vertical joint gasket tape fixed onto the vertical top hats provides added weather protection for vertical joints. It has a low compression set and water permeability (ref Fig. 4.06).
- Panels are generally installed with a nominal 8mm wide express joint, both horizontally and vertically
- An angled aluminium backing strip is installed at horizontal joints to allow for water runoff down the face of the façade (ref Fig. 4.07). The backing strip allows a gap of 8-10mm between panels allowing a neat and consistent express jointed appearance across the façade.
- Windows must be a front draining style and have appropriate flashing to prevent moisture ingress.
- It is important to seal any cut edges to protect against moisture penetration into the panel.

FIGURE 4.06 Vertical Gasket Compression

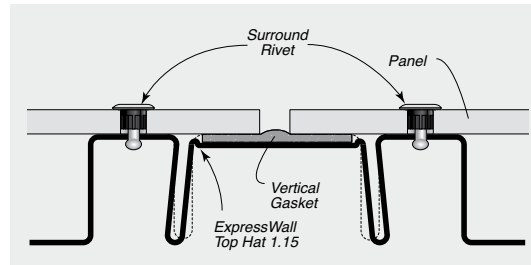
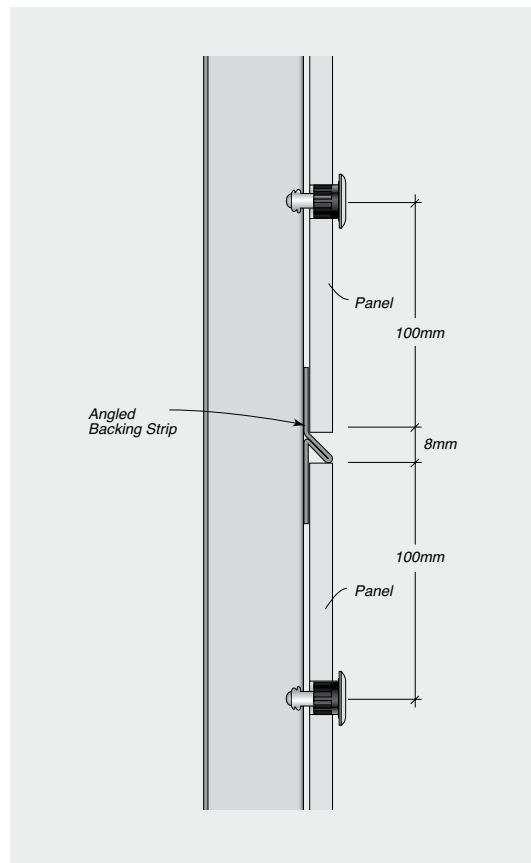


FIGURE 4.07 Angled Backing Strip Location



Wall Wrap/Sarking for Moisture Management

Weather resistance assessment for Class 2 to 9 buildings requires that an air barrier be installed. This may be wall wrap/sarking, fibre cement or masonry. Installation of both wall wrap/sarking and fibre cement is detailed in the Cemintel Air Barrier Design and Installation Guide. Masonry substrates must be sealed to act as an air barrier for an effective waterproofing system. For residential buildings Class 1 and 10, wall wrap/sarking may be used (install as per manufacturer's requirements).

Installation of a wall wrap or sarking is required over the structural frame before the panels are fixed. Where the building is required to withstand ultimate wind loads in excess of 1.5kPa, a rigid air barrier is required in lieu of sarking. 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). Selection of the right wall wrap/sarking needs to consider the local climate, building use and orientation, material R-value of the insulation, as well as the degree and location of ventilation.

Weather Barrier

Wind loads can produce lower air pressures within buildings than on the outside, forcing water through small gaps in the building envelope around penetrations and joints, even at low wind speeds.

Careful selection of a wall wrap/sarking with the appropriate level of vapour permeability or vapour resistance is one key factor in reducing condensation risk.

Key selection characteristics for a suitable wall wrap/sarking are as follows –

- The wall wrap/sarking must have a “high” water barrier classification – an “unclassified” rating is not suitable.
- Wall wrap/sarking must meet the requirements of AS/NZ4200.1 Pliable building membranes and underlays – Installation requirements.

Cemintel 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 4.01 Cemintel recommends CSR Bradford sarking products as follows:

Climate	Guidance on wall wrap/sarking to be used behind Surround	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, CW/CW-IT or HTR
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, CW/CW-IT or HTR
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 building that have high internal levels of humidity, please contact CSR Bradford for project specific technical advice.

DESIGN + AESTHETIC CONSIDERATIONS



Insulation and Energy Efficiency

Thermal and acoustic performance can be achieved by installing appropriate insulation in the wall cavity.

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 Thermal Performance Selection (see 'System Engineering' section & Gyprock® The Red Book™).

Cemintel recommends CSR Bradford and CSR Gyprock products to achieve the required performance.

Solar Reflectance/Absorptance

In some states, it is a requirement to provide solar values for coloured product.

Cemintel Terrain has been tested by the University of New South Wales to determine Solar Absorption and Reflectance as required by the BCA. The products have been tested to ASTM E 903-96 'Standard Test Method for Solar Absorptance, Reflectance and Transmittance of Materials Using Integrating Spheres'.

Current values are included in the Technical Data Sheet.

Extreme Climate Conditions

Bushfire Zones

In accordance with the BCA deemed to satisfy provisions, Fibre Cement sheeting may be used wherever a non-combustible material is required. However, protection against bushfire attack requires a comprehensive and systematic approach that includes the specification of fire resistant internal linings, external walls and insulation materials.

When installed according to regulations and combined with appropriate insulation materials, Surround panels comply with the requirements of AS3959 Section 8 'Construction of Bushfire Attack Level 29 (BAL-29) for an external wall. For additional bushfire requirements, refer to the BCA.

Corrosive Zones

Consideration of corrosivity zones should be taken into account. While Surround panels are not subject to corrosion, consideration needs to be made regarding the impact of climate conditions on system components such as rivets and metal framing.

Corrosivity zones are detailed in AS4312 and set out in the 'System Engineering' section.

The Surround range may be used in zones up to and including C3 – Medium. When used in Category C3, all walls which are protected by soffits must be washed down twice per year to remove salt and debris build up, particularly around window/door openings.

Note that additional coating can be considered for Top Hats in C4 corrosive zones. Contact Cemintel for further information. The building designer is responsible for assessing the site in accordance with the standard and local conditions.

Cemintel Surround 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 kilometer from the coast. It also includes aggressive industrial areas where the environment may be acidic with a pH of less than 5.

Cyclonic Zones

Cyclonic testing on Surround resulted in panels withstanding positive/negative wind pressures of up to 7kPa when installed using the specified Surround rivets.

Temperature Extremes

Cemintel Surround is not warranted for use in freezing conditions or extremely hot conditions (that is above 50°C).

04

DESIGN + AESTHETIC CONSIDERATIONS

Other Design Considerations**Services**

The Surround fixing system will accommodate services that are run through the framing.

Any notches or holes formed must be considered in the framing design.

Renovations

When undertaking building renovations, remove all cladding, wall wrap/sarking and insulation from the original wall framing. Ensure the condition of the framing is in accordance with current requirements and is as true and as plumb as possible (within accepted industry tolerances of 5mm misalignment over 3000mm).

Install additional framing, insulation, air barrier and flashing as required.

Fire Rating

Cemintel Surround can be used as part of a system to achieve a fire rated wall construction. Systems may be selected from the 'System Engineering' section.

In Class 2 to 9 buildings, it may be a requirement to contain the spread of fire through a cavity. Cemintel recommends installing horizontal cavity barriers to reduce the risk of fire spread via the façade. Cavity barriers must not block water drainage or air flow paths.

It is the responsibility of the building designer to meet these requirements.

Limitations

Surround is not recommended and not warranted for the following applications:

- Panels with non-vertical face (e.g. parapet capping)
- Wet areas such as bathrooms
- Chimney cladding
- Exposure to temperatures greater than 50°C
- Non vented parapet cladding
- Contact with standing snow or ice
- Fixing of tiles or other materials to the face of the panel
- The face is painted.

The above listing is not intended to be comprehensive. If in doubt, please contact Cemintel.

05

COMPONENTS + ACCESSORIES

COMPONENTS + ACCESSORIES

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

Cemintel Surround Panels and Colour Matched Accessories

Description	Panel Code	Colour Matched Rivet
BLUEISH Base 1200X3000X8mm	162666	162687
BLUEISH Leather 1200X3000X8mm	162671	162687
BLUEISH String 1200X3000X8mm	162676	162687
BLUEISH Marl 1200X3000X8mm	162643	162687
BLUEISH Metal 1200X3000X8mm	162681	162687
BLACKISH Base 1200X3000X8mm	162667	162689
BLACKISH Leather 1200X3000X8mm	162672	162689
BLACKISH String 1200X3000X8mm	162677	162689
BLACKISH Marl 1200X3000X8mm	162662	162689
BLACKISH Metal 1200X3000X8mm	162682	162689
GREENISH Base 1200X3000X8mm	162668	162688
GREENISH Leather 1200X3000X8mm	162673	162688
GREENISH String 1200X3000X8mm	162680	162688
GREENISH Marl 1200X3000X8mm	162663	162688
GREENISH Metal 1200X3000X8mm	162683	162688
GREYISH Base 1200X3000X8mm	162669	162686
GREYISH Leather 1200X3000X8mm	162674	162686
GREYISH String 1200X3000X8mm	162678	162686
GREYISH Marl 1200X3000X8mm	162664	162686
GREYISH Metal 1200X3000X8mm	162684	162686
WHITEISH Base 1200X3000X8mm	162670	162644
WHITEISH Leather 1200X3000X8mm	162675	162644
WHITEISH String 1200X3000X8mm	162679	162644
WHITEISH Marl 1200X3000X8mm	162665	162644
WHITEISH Metal 1200X3000X8mm	162685	162644

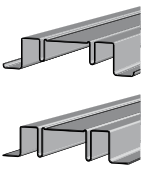
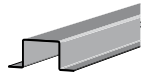
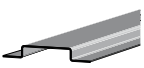



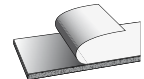


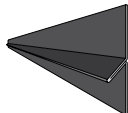




*Lengths up to 3050mm are available as special orders.

COMPONENTS + ACCESSORIES

05

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




Other Accessories/Tools

Accessories	Description	Size / Colour	Quantity	Product Code
	ExpressWall™ Top Hat – is a purpose designed rolled steel section for supporting the vertical edges of the panels. The unique profile also acts to accommodate movement of the panels at the vertical joints. It is designed to be used in conjunction with the ExpressWall Vertical Gasket.			
	ExpressWall Top Hat 0.75BMT – mass = 1.97kg/m	6000mm	1 each	84746
	ExpressWall Top Hat 1.15BMT – mass = 3.25kg/m	6000mm	1 each	39124
	Intermediate Top Hat – is used to support the panels at locations other than vertical joints. Intermediate Top Hat is a Rondo rolled steel section which is manufactured from galvanised (Z275) steel of 1.15BMT.			
	Intermediate Top Hat 1.15BMT – mass = 1.38kg/m	3600mm	1 each	21086
	Intermediate Top Hat 1.15BMT – mass = 1.38kg/m	7200mm	1 each	21083
	Top Hat H515 – is fixed to structural steel framing to support the ExpressWall and Intermediate Top Hats. Top Hat H515 is a Rondo rolled steel section which is manufactured from galvanised (Z275) steel of 1.15mm BMT.			
	Top Hat H515 15x50x15mm 1.15BMT – mass = 0.91kg/m	3600mm	1 each	12884
	Top Hat H515 15x50x15mm 1.15BMT – mass = 0.91kg/m	7200mm	1 each	100896
	Surround Rivet – for fixing Surround panels to Top Hat framing. Each rivet comes with an already assembled EPDM (TPS-SEBS) gasket. Rivet heads are colour matched to the panel. Rivets are manufactured from stainless steel consisting of V4A (equivalent to 316 grade) stainless steel mandrels and V2A (equivalent to 304 grade) stainless steel sleeves. Note: Use only the Cemintel Rivet and Rivet Gun Head. Standard rivets and gun heads are NOT ACCEPTABLE.	Blueish Blackish Greenish Greyish Whiteish 4x18mm	100 per pack	162687 162689 162688 162686 162644
	Hex Head Screws – for fixing top hats to steel framing in non-cyclonic areas. Hex head self drilling screw 12-14Gx20mm, Class 3. Pack of 1000.	14g x 20mm	1000 per pack	84882
	Hex Head Screws Type 17 – for fixing top hats to timber framing in non-cyclonic areas. Hex head self drilling type 17 screw 12gx25mm, Class 3.	Sourced by others		
	ExpressWall Vertical Gasket - Gaska 1510 self-adhesive tape is made from EPDM closed cell foam which has high UV resistance. The gasket has adhesive on one side (with a release paper) and is adhered to the ExpressWall Top Hat to prevent moisture entry at vertical points.	3.2mmx48mm 23m		
		Black	1 each	133978
	Horizontal Spacer – used at the head (behind metal trim) to assist ventilation.	5mm x 50mm x 1200mm	1 each	129266
	Corner Backing Angle – metal angle flashing used in some corners. Manufactured from steel with Galvalume AZ150 corrosion resistant coating.	50mm x 50mm x 3030mm	1 each	111498
	Surround Angled Backing Strip – a rolled aluminium section designed to deflect water and create an attractive expressed joint appearance at horizontal joints. Suitable only where a non-sealed façade system is appropriate.	3040mm	1 each	132681
	Adhesive – for fixing spacer at head junction. Sikaflex 11FC Grey	310mL tube	1 each	39378
	Sealant – is used to seal joints for control joints, junctions etc. Sikaflex Sealant PRO-2HP Grey	310mL tube	1 each	11378
	Surround L form Cavity Vent – used at parapet and horizontal control joints to provide air flow while maintaining vermin proofing. Has self-adhesive EPDM tape for fixing into flashing/capping and compressible foam filler attached internally.	12mm x 27/32mm x 1200mm	1 each	129750
	Backing Rod – for sealant backing – used to enable correct filling of 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.	10mm diameter x 50m roll	1 each	11177

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COMPONENTS + ACCESSORIES

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






	Cemintel Edge Sealer – for sealing panel edges after on-site cutting.	200ml	1 each	100166
Flashing & Capping – flashings are to be designed and installed in accordance with SAA-HB39 1997 and good building practice.		Supplied by others		
	Thermoseal™ Wall Wrap	1350mm – 30m roll	1 roll	107458
	Classification – Non-permeable Reflective	1350mm – 60m roll	1 roll	10576
	Water Classification – High			
	Thermoseal™ Resiwrap	1350mm – 30m roll	1 roll	116531
	Classification – Non-permeable Reflective	1350mm – 60m roll	1 roll	116532
	Water Classification – High	1500mm – 30m roll	1 roll	120121
	Enviroseal ProctorWrap™ Residential (RW)	1500mm – 50m roll	1 roll	120923
	Classification – Permeable High			
	Water Classification – High			
Enviroseal ProctorWrap™ Commercial (CW)	1500mm – 50m roll	1 roll	118593	
	Classification – Permeable High			
	Water Classification – High			
Enviroseal ProctorWrap™ Commercial (CW-IT)	1500mm – 50m roll	1 roll	153675	
Enviroseal ProctorWrap™ High Tensile Roof (HTR)	1500mm – 50m roll	1 roll	122933	
Thermoseal 733	1350mm – 60m roll	1 roll	86166	
	Classification – Non-permeable Reflective			
	Water Classification – High			
	Enviroseal ProctorWrap Hightack Tape – used to seal wall wrap/sarking at overlap joins, around openings and at flashings. Black, single sided, aggressive adhesive tape with a high initial grab and flexible carrier.	60mm x 25m	1 roll	160950
	Enviroseal ProctorWrap SLS Flexi Tape – used to tape corners of openings	60mm x 5m	1 roll	124872
	Bradford Gold Wall Batts – R1.5 (75mm)	1160mm x 430mm	22 pack	113938
		1160mm x 580mm	22 pack	113939
	Bradford Gold Wall Batts – R2.0 (HP) (75mm)	1160mm x 420mm	12 pack	153643
		1160mm x 570mm	12 pack	153648
	Bradford Gold Wall Batts – R2.5 (90mm)	1160mm x 430mm	8 pack	105203
		1160mm x 580mm	8 pack	105202
	Bradford Gold Wall Batts – R2.7 (90mm)	1160mm x 430mm	5 pack	105205
		1160mm x 580mm	5 pack	105204
Tools – Cemintel requires Surround rivets to be fixed with the following rivet tools to ensure a high level of accuracy.				
	Surround Drill Bit Ø 9.5mm – for drilling accurate holes in the Surround panel to accept the Surround rivet. Fits standard 10mm drill chuck.		1 each	132673
	Surround Rivet Centralising Tool – for drilling accurate rivet holes in the top hats. Fits a 10mm drill chuck to ensure that the 4.1mm rivet hole is perfectly centred in the pre-drilled panel.		1 each	132674
	Surround Drill Bit Ø 4.1mm – for use with Rivet Centralising Tool to drill accurate rivet holes into the Top Hats		1 each	132675
	Cemintel Blind Rivet Gun – Cemintel recommends the use of the GESIPA® Accubird Battery Operated Blind Rivet Gun		1 each	133332
	Surround Rivet Gun Nose Piece – required to achieve the correct rivet fixing and offset. Attaches to the Gesipa Accubird battery operated, blind rivet gun and ensures the correct spacing of the rivet head from the panel face. Also designed to seat the larger rivet head correctly and prevent damage to the coloured rivet head. Note: Standard rivet gun nose piece is NOT ACCEPTABLE		1 each	132676

COMPONENTS + ACCESSORIES

05

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

Other Tools

Product	Description	Size	Quantity	Product Code
	Makita Plunge Saw Kit (1300W) includes 1400mm guide rail and bonus 165mm fibre cement saw blade – excellent for cutting cement based sheets	165mm	1	165485
	Makita 165mm Fibre Cement Saw Blade – ideal for use with the Makita Plunge saw and other 165mm circular saws fitted with vacuum extraction systems	165mmx20x4T	1	165486
	FESTOOL DSC-AGP 125 – Diamond Blade Cutting and Grinding Tool. Used to provide neat and accurate bevelled edges	125mm	1	107207
	FESTOOL TS 55 EBQ Plunge Cut Saw – with 1400mm Guide Rail. Precise plunge cuts in materials up to 55mm thick.	160mm	1	121400
	FESTOOL Diamond Tipped Blade for TS 55 – for cutting all fibre cement sheet products	160mm	1	112647
	Cemintel Power Saw Blade – specifically designed for cutting pre-finished cement based sheets. Ideal for use with dustless circular saws fitted with vacuum extraction systems. 15000 RPM max.	125mm	1	134449



SYSTEM ENGINEERING

SYSTEM ENGINEERING



Design, Detailing And Performance Responsibilities

Cemintel engages independent testing laboratories to test and report on the performance of a wall in accordance with the relevant Australian Standards. Consultants use these reports as the basis for opinions (estimates of laboratory performance) they issue for variations or different arrangements to the tested system, and also to design and specify walls that meet appropriate criteria for a particular project. Using their experience, the consultant will make judgement about on-site installed performance of various walls. The performance levels of walls documented in this guide are either what is reported in a test or the documented opinion of consultants. Performance in projects is typically the responsibility of:

Project Consultants (Structural, Fire, Accoustic, Etc.)

These consultants are typically responsible for the following:

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

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

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

Project Certifier and/or Builder

These professionals are typically responsible for:

- Identifying the performance requirements for the project in accordance with the BCA and clearly communicating this to the relevant parties.
- Applicability of any performance characteristics supplied by Cemintel including test and opinions for the project.
- The project consultant's responsibilities detailed above if one is not engaged in the project.

Cemintel does not provide consulting services. Cemintel only provides information that has been prepared by others and therefore shall not be considered experts in the field.

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

It is the responsibility of the architectural designer and engineering parties to ensure that the details in this design guide are appropriate for the intended application.

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

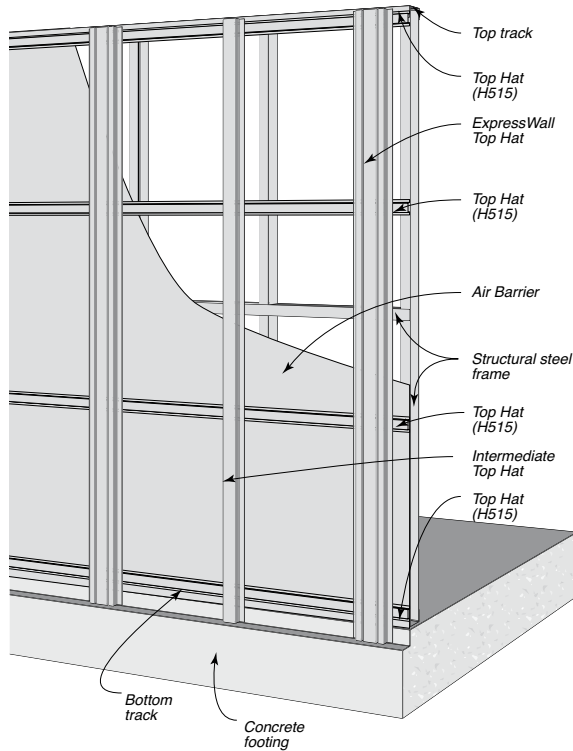
Cemintel is not responsible for the performance of constructed walls, including field performance, and does not interpret or make judgements about performance requirements in the BCA.



SYSTEM ENGINEERING

Vertical spacing of H515 Top Hats

Span Tables / Wind Loads



ExpressWall™ top hats can be fixed to appropriately designed timber or steel framing. This is commonly used for small walls and buildings. The frame must be designed to support top hats at the top and bottom of the wall, and at cross members within the span of the wall. This can be achieved by installing H515 top hats horizontally over designed framing.

Timber & Steel Framing – RESIDENTIAL – BCA Classes 1 and 10 – General Zones

TABLE 6.01

Wind Classification (AS4055)	Vertical Spacing of H515 Top Hats – Horizontal Top Hats fixed to Three or More Studs - General Zones					
	Vertical Spacing of H515 Top Hats (mm)					
	Stud Spacing (mm) – Studs 0.75BMT			Stud Spacing (mm) – Studs 1.15BMT or Timber Studs		
	300	450	600	300	450	600
N1	1768	1920	1473	2537	1974	1769
N2	1768	1920	1473	2537	1974	1769
N3/C1	1179	1280	982	1691	1316	1179
N4/C2	884	960	737	1268	987	885
N5/C3	707	768	589	1015	790	708
N6/C4	505	549	421	725	564	505

Note: Top Hat to stud connection is 2 x No12G screws through top hat legs.

Top Hat serviceability deflection < Span / 240.

Stud frame design by others.

SYSTEM ENGINEERING



Timber & Steel Framing – RESIDENTIAL – BCA Classes 1 and 10 – Corner Zones

TABLE 6.02

Wind Classification (AS4055)	Vertical Spacing of H515 Top Hats - Horizontal Top Hats fixed to Three or More Studs - Corner Zones					
	Vertical Spacing of H515 Top Hats (mm)					
	Stud Spacing (mm) – Studs 0.75BMT			Stud Spacing (mm) – Studs 1.15BMT or Timber Studs		
	300	450	600	300	450	600
N1	1768	1920	1473	2537	1974	1769
N2	1179	1280	982	1691	1316	1179
N3/C1	884	960	737	1268	987	885
N4/C2	589	640	491	846	658	590
N5/C3	393	427	327	564	439	393
N6/C4	295	320	246	423	329	295

Note: Top Hat to stud connection is 2 x N°12G screws through top hat legs.

Top Hat serviceability deflection < Span / 240.

Stud frame design by others.

Timber and Steel Framing – COMMERCIAL – BCA Clases 2-9 – Vertical Spacing of H515 Top Hats – Horizontal Top Hats Fixed to Three or More Studs

TABLE 6.03

Wind Load kPa	Vertical Spacing of H515 Top Hats (mm)					
	Stud Spacing (mm) – Studs 0.75BMT			Stud Spacing (mm) – Studs 1.15BMT or Timber Studs		
	300	450	600	300	450	600
1.00	1768	1920	1473	2537	1974	1769
1.50	1179	1280	982	1691	1316	1179
2.00	884	960	737	1268	987	885
2.50	707	768	589	1015	790	708
3.00	589	640	491	846	658	590
3.50	505	549	421	725	564	505
4.00	442	480	368	634	494	442
4.50	393	427	327	564	439	393
5.00	354	384	295	507	395	354
5.50	322	349	268	461	359	322

Note: Top Hat to stud connection is 2 x N°12G screws through top hat legs. Wind loads are Ultimate Limit State.

Top Hat serviceability deflection < Span / 240.

Stud frame design by others.



SYSTEM ENGINEERING

Top Hat Spans/Spacings

The design capacities of the Cemintel Surround façade system are in limit state format and intended for use with AS/NZS1170.2.

To obtain equivalent permissible load capacity, divide the “ultimate wind capacity” in Table 6.04 or Table 6.05 by 1.5.

The Top Hat capacities have been calculated in accordance with AS4600: Cold Formed Steel Structures and are applicable for 0.75BMT and 1.15BMT ExpressWall™ Top Hats and for 1.15BMT Intermediate Top Hats. The deflection of the top hats as detailed in these tables is no more than span/250 when subjected to serviceability wind load of 68% of ultimate wind loads.

Top Hat Spacing will vary depending on wind loads and whether panels are to be installed with Single Spans or Double Spans.

Ultimate Wind Capacity

TABLE 6.04 Single Span Installation

Top Hat Span (mm)	Nominal Top Hat Spacing*	
	Ultimate Wind Capacity (kPa)	
	400mm	600mm
900	7.00	3.00
950	7.00	3.00
1000	7.00	3.00
1100	6.17	3.00
1200	5.18	3.00
1300	4.41	2.94
1400	3.81	2.54
1500	3.32	2.21
1600	2.85	1.90
1700	2.38	1.59
1800	2.00	1.34
1900	1.70	1.14
2000	1.46	0.97
2100	1.26	0.84
2200	1.10	0.73

TABLE 6.05 Double Span Installation

Top Hat Span (mm)	Nominal Top Hat Spacing*	
	Ultimate Wind Capacity (kPa)	
	400mm	600mm
900	7.00	3.00
950	7.00	3.00
1000	6.45	3.00
1100	5.53	3.0
1200	4.79	3.0
1300	4.20	2.80
1400	3.71	2.47
1500	3.30	2.20
1600	2.91	1.94
1700	2.58	1.72
1800	2.30	1.54
1900	2.07	1.38
2000	1.87	1.24
2100	1.69	1.13
2200	1.54	1.03

* Nominal top hat spacings have an allowance up to a 10mm gap at sheet joints. For panels fixed to a minimum of three top hats, with top hat spacing of 400mm nominal (410mm max.), and with single or double top hat span of up to 900mm, the ultimate wind capacity is 7.0kPa.

FIGURE 6.01 Single Span Installation

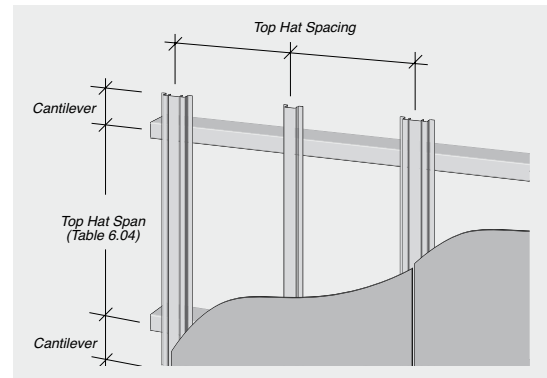
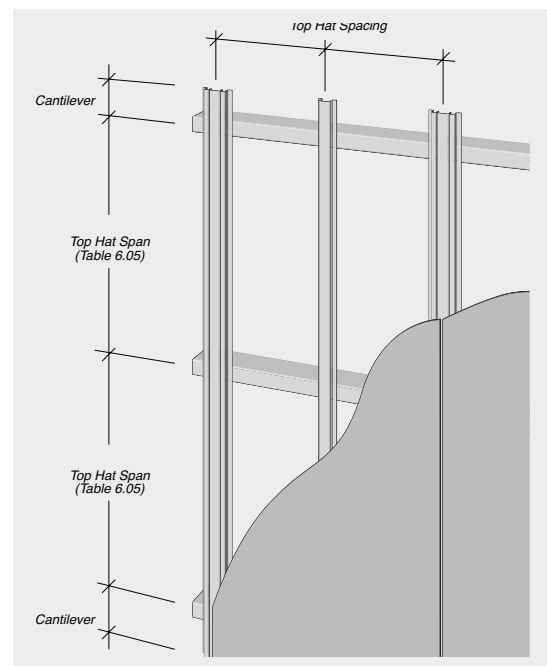


FIGURE 6.02 Double Span Installation



SYSTEM ENGINEERING

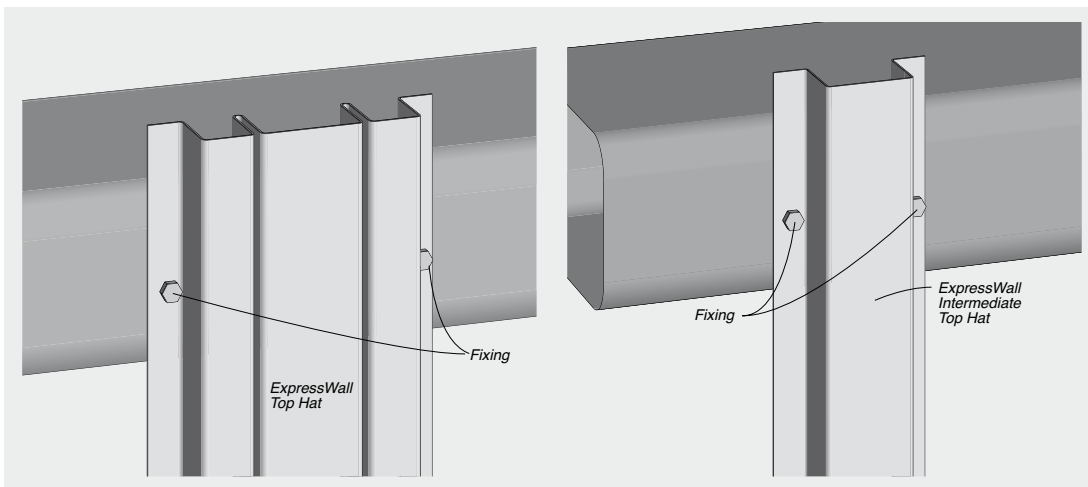


It is the responsibility of the project engineer to specify the connection of the top hats to the support structure.

Each fastener is required to have a minimum 14mm diameter head, such as a 12g hex head screw, for satisfactory top hat performance. If adjacent spans differ by more than 25% then single span values must be adopted.

Maximum Cantilever = 0.2 x Adjacent Top Hat Span.

FIGURE 6.03 Top Hat Fixing





SYSTEM ENGINEERING

Panel Fixing Set-outs

Panels must be fixed in accordance with the following table. Appropriate panel fixing layout should be selected for the project design wind pressures, top hat spacing and panel fixing type.

Rivets need to be fixed 100mm from the top and bottom edges of the panel and 40mm in from the side of the panels.

FIGURE 6.04 Horizontal Panel Fixing Set-out

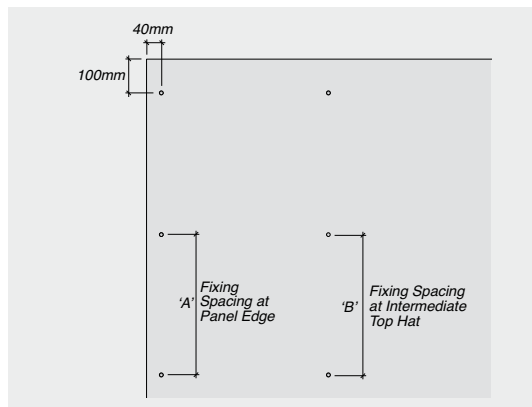
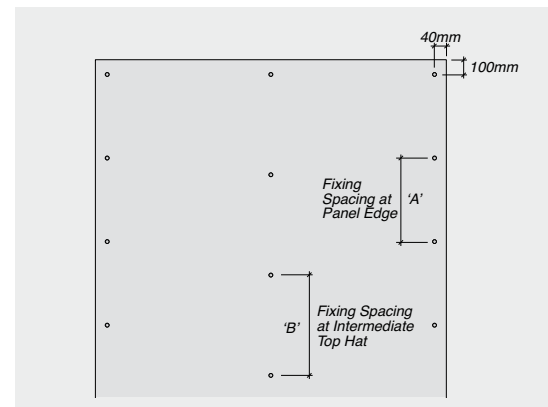


FIGURE 6.05 Vertical Panel Fixing Set-out



Top Hat Framing – RESIDENTIAL – BCA Classes 1 and 10 – General Zones

TABLE 6.06

Wind Classification (AS4055)	Panel Fixing Requirements & Max Top Hat spacings - General Zones			
	Max. Top Hat Spacing (mm)		Max. Fixing Spacing (mm)	
	Stud Spacing (mm) – Studs 0.75BMT		Stud Spacing (mm) – Studs 1.15BMT or Timber Studs	
	Panel Fixed to Two Top Hats	Panel Fixed to Three or more Top Hats	At Panel Edge 'A'	At Intermediate Top Hat 'B'
N1	600	600	600	600
N2	600	600	600	600
N3/C1	600	600	600	600
N4/C2	600	600	600	550
N5/C3	500	600	400	400
N6/C4	400	400	350	300

Note: Top Hat to stud connection is 2 x No12G screws through top hat legs.

SYSTEM ENGINEERING



Top Hat Framing – RESIDENTIAL – BCA Classes 1 and 10 – Corner Zones

TABLE 6.07

Wind Classification (AS4055)	Panel Fixing Requirements & Max Top Hat spacings - Corner Zones			
	Max. Top Hat Spacing (mm)		Max. Fixing Spacing (mm)	
	Stud Spacing (mm) – Studs 0.75BMT		Stud Spacing (mm) – Studs 1.15BMT or Timber Studs	
	Panel Fixed to Two Top Hats	Panel Fixed to Three or more Top Hats	At Panel Edge 'A'	At Intermediate Top Hat 'B'
N1	600	600	600	600
N2	600	600	600	550
N3/C1	500	600	450	450
N4/C2	400	600	400	350
N5/C3	400	400	300	300
N6/C4	300	400	250	250

Note: Top Hat to stud connection is 2 x No12G screws through top hat legs.

Top Hat Framing – COMMERCIAL – BCA Classes 2 and 9

TABLE 6.08

Design Wind Pressure (Ultimate) (kPa)	Max Top Hat Spacing (mm)		Max. Fixing Spacing (mm)	
	Panel Fixed to Two Top Hats	Panel Fixed to Three or more Top Hats	At Panel Edge 'A'	At Intermediate Top Hat 'B'
1.0	600	600	600	600
1.5	600	600	600	550
2.0	500	600	450	450
2.5	500	600	400	400
3.0	400	600	400	350
3.5	400	400	350	300
4.0	400	400	300	300
4.5	400	400	300	300
5.0	400	400	300	250
5.5	300	400	250	250
6.0	300	400	250	250
6.5	300	400	250	200
7.0	300	400	250	200

*Nominal top hat spacing has an allowance for up to 10mm gap at sheet joins.

FIGURE 6.06 Panel Fixed to Two Top Hats Only

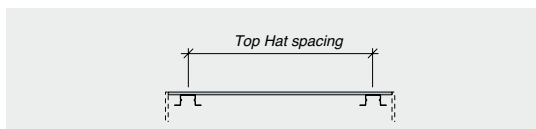
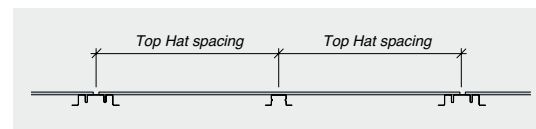


FIGURE 6.07 Panel Fixed to Three or More Top Hats





SYSTEM ENGINEERING

FIGURE 6.08 Fixings for 1200mm Vertical Sheeting with Top Hats at 600mm cts

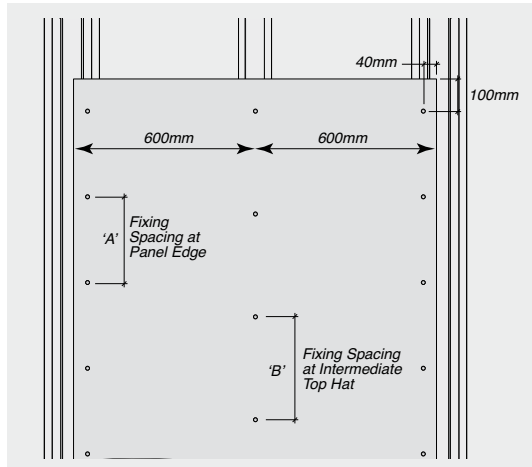


FIGURE 6.10 Fixings for 1200mm Vertical Sheeting with Top Hats at 400mm cts

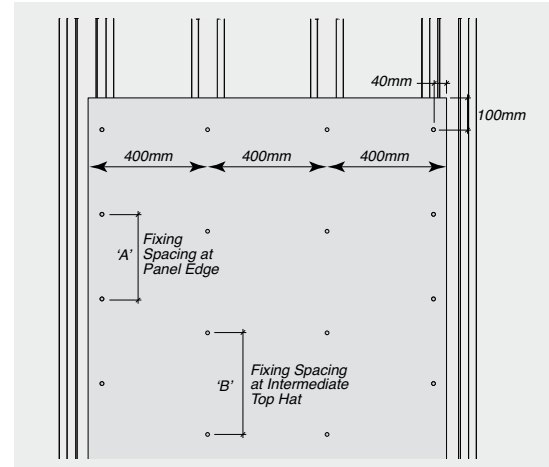


FIGURE 6.09 Fixings for 1200mm Horizontal Sheeting with Top Hats at 600mm cts

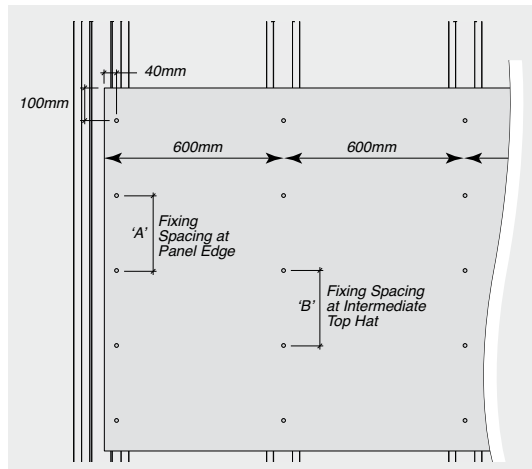


FIGURE 6.11 Fixings for 1200mm Horizontal Sheeting with Top Hats at 400mm cts

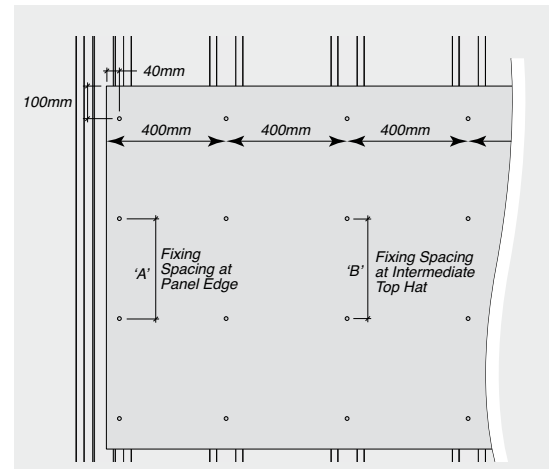


TABLE 6.09 Fixing spacings for 600mm cts Top Hats (mm)

(kPa)	1.0	1.5	2.0	2.5	3.0
'A' (mm)	600	600	450	400	400
'B' (mm)	600	550	450	400	350

TABLE 6.10 Fixing spacings for 400mm cts Top Hats (mm)

(kPa)	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
'A' (mm)	350	300	300	300	250	250	250	250
'B' (mm)	300	300	300	250	250	250	200	200

SYSTEM ENGINEERING



Corrosivity Categories

ISO 9223 has suggested five corrosion zones based on the first year corrosion rate of mild steel. Refer to AS4312 – 2008 for details regarding Australian Atmospheric Corrosivity Categories (the below highlights some general statements from this document).

TABLE 6.11

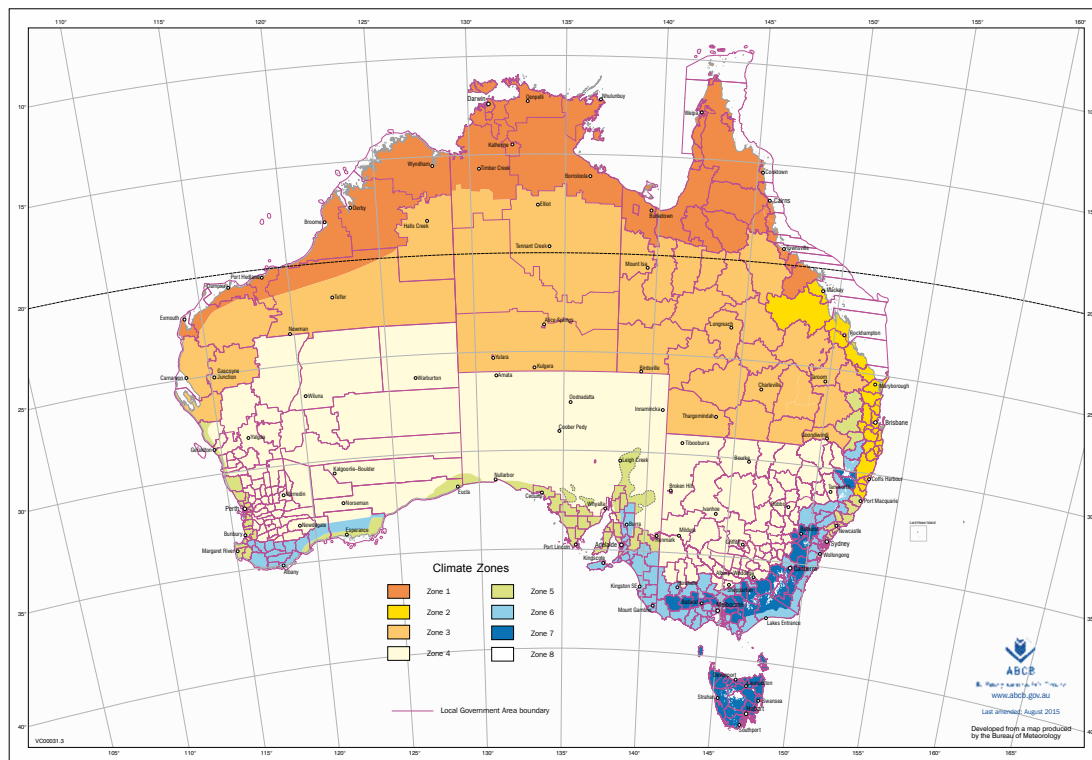
ISO 9223 category	Corrosivity	Steel Corrosion rate $\mu\text{m/y}$	Typical environment
C1	Very low	<1.3	Dry indoors
C2	Low (most areas of Australia at least 50km from the coast or at least 1km from sheltered bays would be in this category)	1.3-25	Arid/urban inland
C3	Medium (from 1km to 10-50km from breaking surf – much of metropolitan Wollongong, Sydney, Newcastle and Gold Coast are in this category)	25-50	Coastal or industrial
C4	High (primarily coastal areas - from several hundred metres to about 1km inland from breaking surf or from the shoreline to around 50m for sheltered bays)	50-80	Sea shore (calm)
C5	Very high (industrial or marine) – common offshore and on the beachfront in regions of rough seas and surf beaches – can extend inland for several hundred metres (in some areas of Newcastle extends around 500m)	80-200	Sea shore (surf)



SYSTEM ENGINEERING

Climate Zones for Thermal Design

The following map and tables show the performance levels required for walls (and floors) under the NCC and BCA.



Step 1: Determine which climate zone your project is located in Australia from the adjacent map.

Step 2: From Table 11, determine the design conditions ('Summer' heat flow in or 'Winter' heat flow out) according to the building class and climate zone for your project. (Note building classes are defined by the NCC.)

Step 3: Refer to the roof, wall or floor system applicable to your construction type to determine Total R-Value.

Note: Some applications may achieve Total R-Values sufficient to comply with the minimum performance levels of the Deemed-to-Satisfy requirements contained in the Energy Efficiency Provision of the NCC.

TABLE 6.12 Climate Zones for Thermal Design (Source: NCC)

Climate Zone	1	2	3	4	5	6	7	8
	Below 300metres				Above 300metres			
Class 1-10,23,4,9c	Summer				Winter			
Class 5,6,7,8,9a,9b					Summer		Winter	
Class 1-10	Summer				Winter			
Class 2,3,4,5,6,7,8,9b,9c	Summer				Winter			

SYSTEM ENGINEERING

**Thermal, Fire & Accoustic Performance Tables**

- 1 layer Surround panel fixed to ExpressWall™ top hat framing system
- Horizontal H515 Top Hats
- Insulation and Wall Wrap/Sarking as per system table
- Steel Studs (90mm min.) at 600mm maximum centres
- 1 layer x 10mm Gyprock® standard plasterboard fixed to the inside of framing

Insulation	Wall Wrap/Sarking	Winter Total Wall R-Value	Summer Total Wall R-Value
Nil	Bradford Thermoseal Wall Wrap under top hats	1.1	1.0
Nil	Bradford Thermofoil 733* under top hats	1.8	1.6
Bradford 75mm Gold batts R1.5	Bradford Thermoseal Wall Wrap under top hats	2.1	1.9
Bradford 75mm Gold Wall Batts R2.0	Bradford Thermoseal Wall Wrap or Enviroseal ProctorWrap RW, CW/CW-IT or HTR	2.6	2.3
Bradford 90mm Gold Wall Batts R2.5	Bradford Thermoseal Wall Wrap or Enviroseal Proctorwrap RW, CW/CW-IT or HTR	3.1	2.8
Bradford 90mm Gold Wall Batts R2.7HP	Bradford Enviroseal Proctorwrap RW, CW/CW-IT or HTR	3.3	3.0
Bradford 90mm Gold Wall Batts R2.7HP	Bradford Thermoseal Wall Wrap or Resiwrap	3.3	3.0

Notes:

- * 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.
- Values calculated in accordance with AS4859.1, and are based on an un-ventilated cavity and using Bradford Thermal Calculator v1.2.
- All Bradford wall wrap/sarking products detailed above have a Flammability Index of ≤ 5 to AS/NZS1532 Part 2, making them suitable for Bushfire and Fire Rated wall systems.
- FRL/Thermal/Accoustic Systems information courtesy of Gyprock The Red Book.

Wall Wrap/Sarking or Rigid Air Barrier – Commercial – BCA Classes 2-9

Wall Wrap/Sarking is suitable for the following wind load situations:

TABLE 6.13

Description	Wind Loading (Ultimate) (kPa)
Bradford Enviroseal ProctorWrap CW or CW-IT	1.2
Bradford Enviroseal ProctorWrap High Tensile Roof (HTR)	1.5

Rigid Air Barrier to be installed in the following wind load situations

Rigid air barrier sheet to be installed in the vertical direction

TABLE 6.14

Stud Centres (mm)	Wind Loading (Ultimate) (kPa)
600	1.4
400	3.2
300	5.7

Rigid air barrier sheet to be installed in the horizontal direction

TABLE 6.15

Stud Centres (mm)	Wind Loading (Ultimate) (kPa)
600	2.2
400	5.0
300	7.0

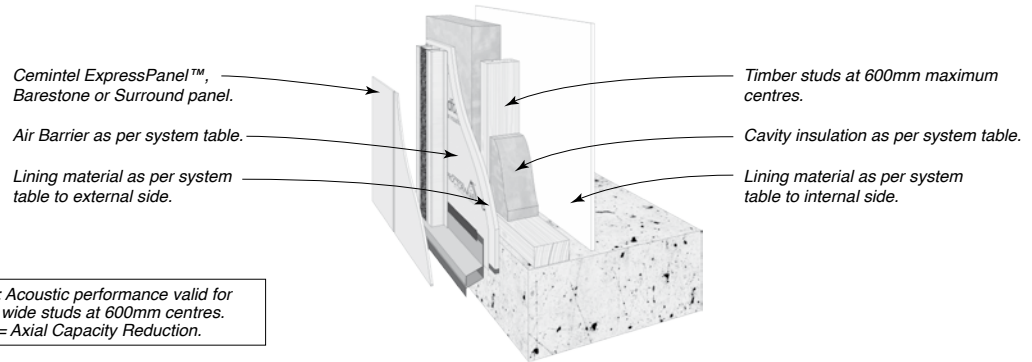
Note: For specific installation information, refer to the Cemintel Air Barrier Design and Installation Guide

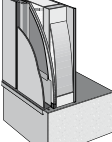
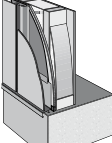
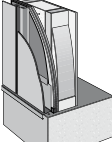
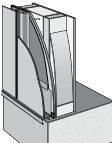
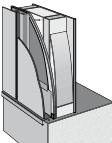



SYSTEM ENGINEERING

Fire, Acoustic & Thermal Solutions

TABLE 6.16 Timber Frame Cemintel Expressed Joint Façade – With Cavity



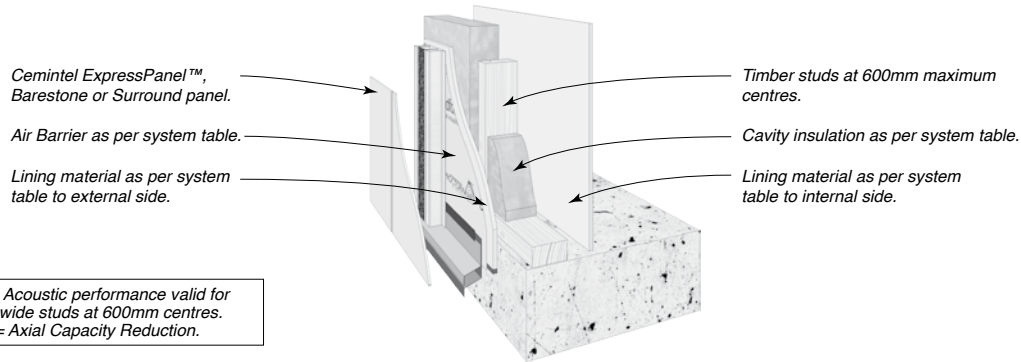
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FRL Report/Opinion	SYSTEM No	WALL LININGS	STUD DEPTH mm	90	THERMAL			
			CAVITY INFILL (Refer to Section B)	Rw / Rw+Ctr	ProctorWrap Rt(SUM)	Wall Wrap XP Rt(WIN)	ProctorWrap Rt(SUM)	Wall Wrap XP Rt(WIN)
30/30/30 (from outside only) FAR2303	CSR 5851 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(a) 75 Gold Batts R1.5	46/36	2.0	2.2	2.5	2.7
			(b) 90 Gold Batts R2.0	46/36	2.3	2.5	2.8	3.1
			(c) 90 Gold Batts R2.5	47/37	2.8	3.1	3.3	3.6
			Wall Thickness mm	155				
30/30/30 (from both sides) FAR2303	CSR 5854 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) 75 Gold Batts R1.5	45/34	2.1	2.2	2.5	2.8
			(b) 90 Gold Batts R2.0	45/34	2.4	2.6	2.9	3.2
			(c) 90 Gold Batts R2.5	46/35	2.9	3.1	3.3	3.7
			Wall Thickness mm	159				
90/90/90 (from outside only) FAR2303	CSR 5858 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Gold Batts R1.5	46/35	2.1	2.3	2.6	2.9
			(b) 90 Gold Batts R2.0	46/35	2.5	2.6	2.9	3.2
			(c) 90 Gold Batts R2.5	47/36	2.9	3.2	3.4	3.8
			Wall Thickness mm	169				
60/60/60* (from outside only) *ACR Group 2 FAR2303	CSR 5860 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Gold Batts R1.5	43/32	2.1	2.2	2.5	2.8
			(b) 90 Gold Batts R2.0	43/32	2.4	2.6	2.9	3.2
			(c) 90 Gold Batts R2.5	44/33	2.7	3.1	3.3	3.7
			Wall Thickness mm	159				
60/60/60* (from outside only) *ACR Group 2 FAR2303	CSR 5862 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Gold Batts R1.5	45/34	2.1	2.2	2.5	2.8
			(b) 90 Gold Batts R2.0	45/34	2.4	2.6	2.9	3.2
			(c) 90 Gold Batts R2.5	46/35	2.7	3.1	3.3	3.7
			Wall Thickness mm	159				
60/60/60 (from both sides) FAR2303	CSR 5865 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) 75 Gold Batts R1.5	47/37	2.1	2.2	2.5	2.8
			(b) 90 Gold Batts R2.0	47/37	2.4	2.6	2.9	3.2
			(c) 90 Gold Batts R2.5	48/38	2.9	3.1	3.3	3.7
			Wall Thickness mm	165				

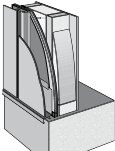
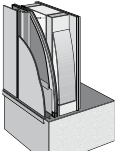
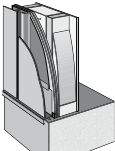
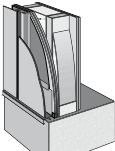
SYSTEM ENGINEERING



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TABLE 6.17 Timber Frame Cemintel Expressed Joint Façade – With Cavity



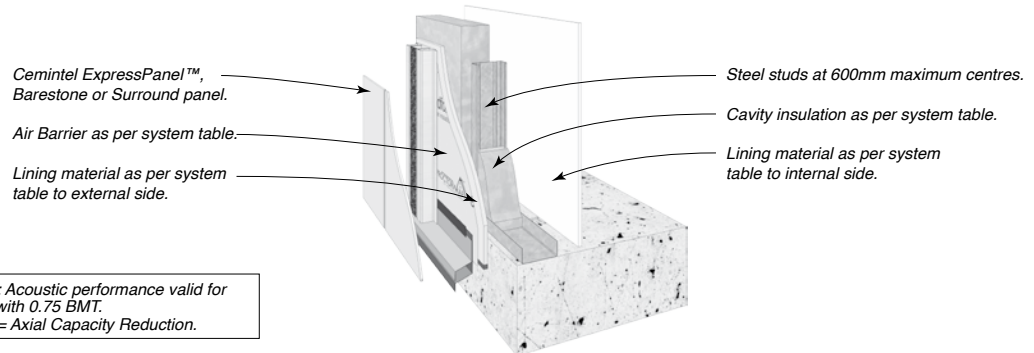
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FRL Report/Opinion	SYSTEM NO	WALL LININGS	STUD DEPTH mm	90	THERMAL			
			CAVITY INFILL (Refer to Section B)	Rw / Rw+Ctr	ProctorWrap Rt(SUM) Rt(WIN)		Wall Wrap XP Rt(SUM) Rt(WIN)	
60/60/60 90/90/90* (from both sides) *ACR Group 3 FAR2303	CSR 5868 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. • 1 x 6mm CeminSeal Wallboard. (against frame) INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) 75 Gold Batts R1.5	49/39	2.1	2.2	2.6	2.8
			(b) 90 Gold Batts R2.0	49/39	2.4	2.6	2.9	3.2
			(c) 90 Gold Batts R2.5	50/40	2.9	3.1	3.4	3.7
			Wall Thickness mm	171				
90/90/90* (from both sides) *ACR Group 3 FAR2303	CSR 5870 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. • 1 x 6mm CeminSeal Wallboard. (against frame). INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 75 Gold Batts R1.5	51/42	2.2	2.3	2.6	2.9
			(b) 90 Gold Batts R2.0	51/42	2.5	2.7	3.0	3.3
			(c) 90 Gold Batts R2.5	52/43	3.0	3.2	3.4	3.8
			Wall Thickness mm	181				
120/120/120 (from outside only) FAR2303	CSR 5872 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Gold Batts R1.5	47/36	2.1	2.3	2.6	2.9
			(b) 90 Gold Batts R2.0	47/36	2.5	2.6	2.9	3.2
			(c) 90 Gold Batts R2.5	48/37	2.9	3.2	3.4	3.8
			Wall Thickness mm	175				
120/120/120 (from both sides) FAR2303	CSR 5874 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 75 Gold Batts R1.5	52/43	2.4	2.6	2.4	3.1
			(b) 90 Gold Batts R2.0	52/43	2.7	2.9	3.2	3.5
			(c) 90 Gold Batts R2.5	53/44	3.0	3.3	3.5	3.8
			Wall Thickness mm	197				

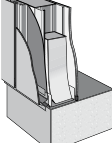
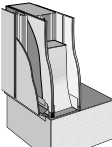
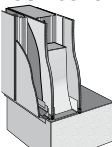
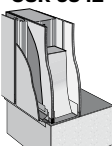
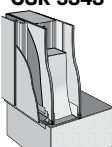


SYSTEM ENGINEERING

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TABLE 6.18 Steel Frame Cemintel Expressed Joint Façade – With Cavity



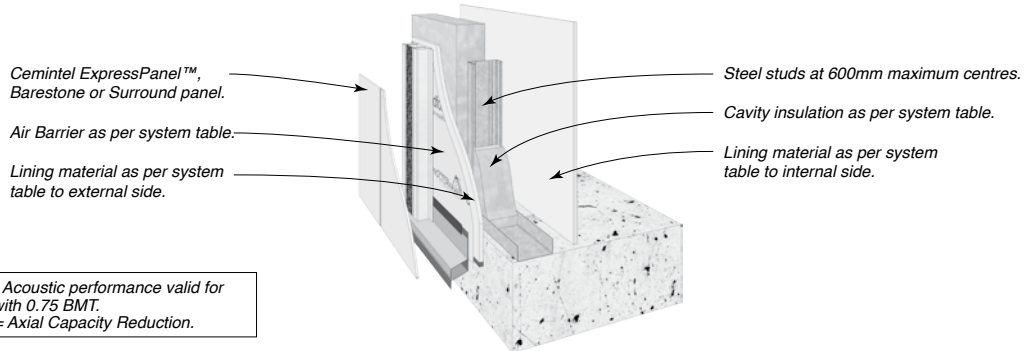
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FRL Report/Opinion	SYSTEM No	WALL LININGS	STUD DEPTH mm	90	THERMAL			
			CAVITY INFILL (Refer to Section B)	Rw / Rw+Ctr	ProctorWrap		Wall Wrap XP	
					Rt(SUM)	Rt(WIN)	Rt(SUM)	Rt(WIN)
- / - / -	CSR 5327 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard R1.7	48/39	2.2	2.3	2.2	2.9
			(b) 90 Acoustigard R2.2	49/40	2.5	2.7	3.0	3.3
			(c) 90 Acoustigard R2.5	49/40	2.8	3.0	3.3	3.6
			Wall Thickness mm	146				
30/30/30 (from outside only) FAR2357	CSR 5332 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard R1.7	43/32	2.3	2.4	2.3	3.0
			(b) 90 Acoustigard R2.2	44/33	2.6	2.8	3.0	3.4
			(c) 90 Acoustigard R2.5	44/33	2.9	3.1	3.3	3.7
			Wall Thickness mm	156				
30/30/30 (from outside only) FAR2357	CSR 5340 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(a) 75 Acoustigard R1.7	48/38	2.3	2.4	2.3	3.0
			(b) 90 Acoustigard R2.2	49/39	2.6	2.8	3.0	3.4
			(c) 90 Acoustigard R2.5	49/39	2.9	3.1	3.3	3.7
			Wall Thickness mm	155				
60/60/60* (from outside only) *ACR 5% FAR2357	CSR 5342 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard R1.7	44/33	2.3	2.4	2.3	3.0
			(b) 90 Acoustigard R2.2	45/34	2.6	2.8	3.0	3.4
			(c) 90 Acoustigard R2.5	45/34	2.9	3.1	3.3	3.7
			Wall Thickness mm	159				
60/60/60* (from outside only) *ACR 5% FAR2357	CSR 5343 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard R1.7	47/36	2.3	2.4	2.3	3.0
			(b) 90 Acoustigard R2.2	48/37	2.6	2.8	3.0	3.4
			(c) 90 Acoustigard R2.5	48/37	2.9	3.1	3.3	3.7
			Wall Thickness mm	159				

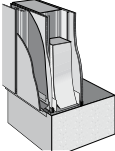
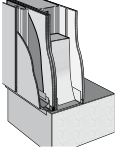
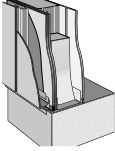
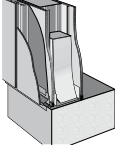
SYSTEM ENGINEERING



Fire, Accoustic & Thermal Solutions

TABLE 6.19 Steel Frame Cemintel Expressed Joint Façade – With Cavity



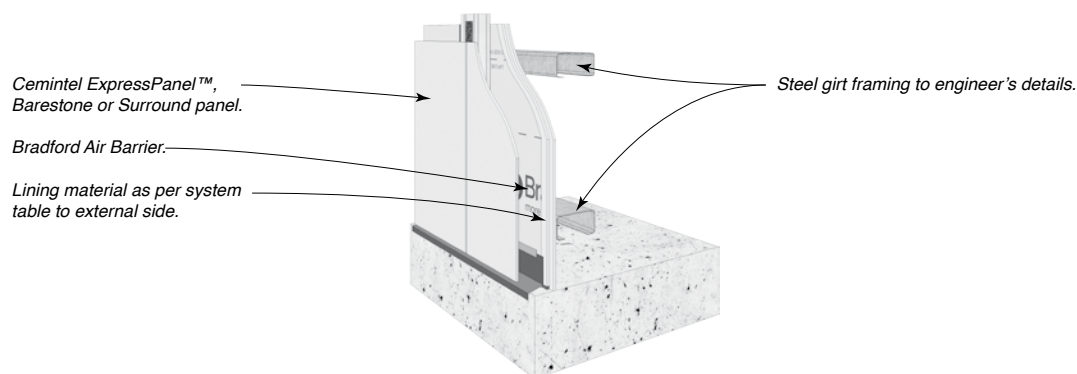
SYSTEM SPECIFICATION			ACCOUSTIC OPINION PKA-A119					
FRL Report/Opinion	SYSTEM NO	WALL LININGS	STUD DEPTH mm	90	THERMAL			
			CAVITY INFILL (Refer to Section B)	Rw / Rw+Ctr	ProctorWrap Rt(SUM)	Rt(WIN)	Wall Wrap XP Rt(SUM)	Rt(WIN)
60/60/60 90/90/90* (from both sides) *ACR 5% FAR2357	CSR 5345 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) 75 Acoustigard R1.7	50/40	2.3	2.4	2.3	3.0
			(b) 90 Acoustigard R2.2	51/41	2.6	2.8	3.1	3.4
			(c) 90 Acoustigard R2.5	51/41	2.9	3.1	3.3	3.7
			Wall Thickness mm	165				
90/90/90 (from outside only) FAR2357	CSR 5346 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard R1.7	48/37	2.3	2.5	2.3	3.1
			(b) 90 Acoustigard R2.2	49/38	2.6	2.9	3.1	3.4
			(c) 90 Acoustigard R2.5	49/39	2.7	2.9	2.7	2.9
			Wall Thickness mm	169				
120/120/120 (from outside only) FAR2357	CSR 5347 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard R1.7	49/38	2.3	2.5	2.3	3.1
			(b) 90 Acoustigard R2.2	50/39	2.6	2.9	3.1	3.4
			(c) 90 Acoustigard R2.5	50/39	2.9	3.2	3.4	3.8
			Wall Thickness mm	175				
120/120/120 -/180/180 (from both sides) FAR2357	CSR 5349 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 75 Acoustigard R1.7	55/46	2.4	2.6	2.4	3.1
			(b) 90 Acoustigard R2.2	56/47	2.7	2.9	3.2	3.5
			(c) 90 Acoustigard R2.5	56/47	3.0	3.3	3.5	3.8
			Wall Thickness mm	197				

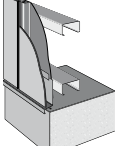
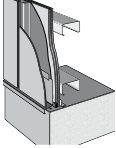
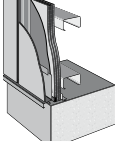
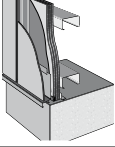


SYSTEM ENGINEERING

Fire, Accoustic & Thermal Solutions

TABLE 6.20 Steel Girt Frame Cemintel Expressed Joint Façade – With Cavity



SYSTEM SPECIFICATION			ACCOUSTIC OPINION PKA-A119		
FRL Report/Opinion	SYSTEM NO	WALL LININGS	Maximum Girt Spacing (mm)	STUD DEPTH mm CAVITY INFILL (Refer to Section B)	Rw / Rw+Ctr
- / - / -	CSR 5360 	EXTERNAL WALL SIDE • Nil	-	Nil	33/30
60/60/60 (from outside only) FAR2357	CSR 5365 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	600	Nil	38/28
90/90/90 (from outside only) FAR2357	CSR 5368 	EXTERNAL WALL SIDE • 3 x 13mm Gyprock Fyrchek MR Plasterboard.	600	Nil	41/31
120/120/120 (from outside only) FAR2357	CSR 5371 	EXTERNAL WALL SIDE • 3 x 16mm Gyprock Fyrchek MR Plasterboard.	600	Nil	42/32

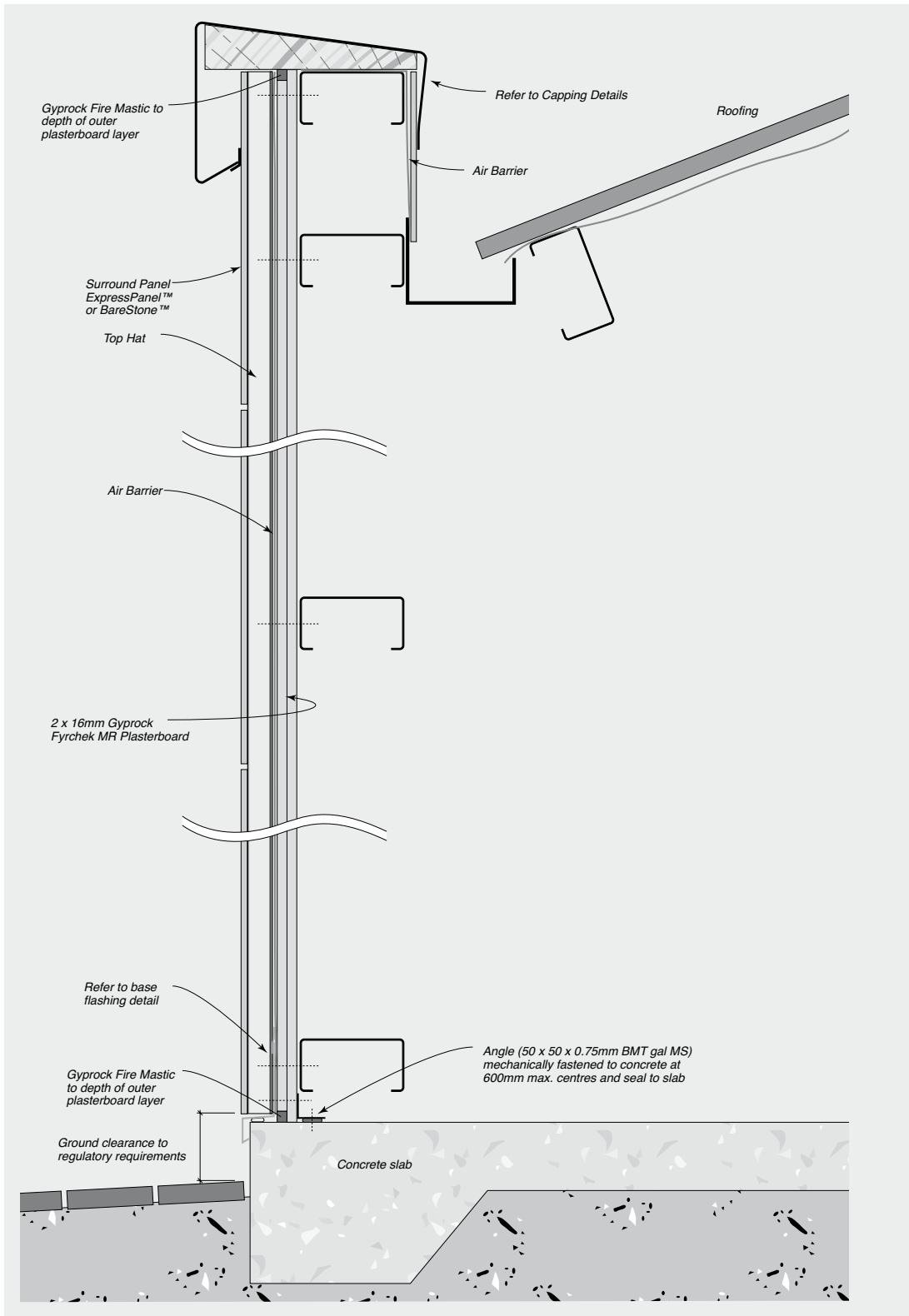
In Class 2 to 9 buildings, it may be a requirement to contain the spread of fire through a cavity. Cemintel recommends installing horizontal cavity barriers to reduce the risk of fire spread via the façade. Cavity barriers must not block water drainage or air flow paths.

It is the responsibility of the building designer to meet these requirements.

SYSTEM ENGINEERING



FIGURE 6.12 Typical Surround Fire Rated Installation. (FRL 60/60/60 from outside only)



07

INSTALLATION

INSTALLATION

07

CHECKLIST – Prior to Installation

The following pre-install checklist may assist to ensure you have the best possible outcome when using Cemintel Surround.

- ☐ Ensure substrate is straight and plumb. Pack studs to straighten if necessary (timber frames as per AS1684, steel frames as per AS/NZS4600). Industry best practice for frame tolerance is 5mm misalignment over 3000mm.
- ☐ Ensure studs are correctly located and of the appropriate thickness.
- ☐ Confirm bracing is in place. Where sheet bracing is used behind panels, the entire wall area needs to be braced or bracing sheet packers fixed to the frame to ensure a uniform fixing plane.
- ☐ Remove any concrete that may foul the cladding line, particularly at steps in slabs and isolated columns.
- ☐ Ensure there is adequate ground clearance to the bottom edge of the Surround panels as per regulatory requirements (including for water/rain runoff and termite management). These can vary from 50-150mm depending on type of ground and termite requirements.
- ☐ Confirm your panel layout to determine the location of joints and identify where additional studs are required.
- ☐ Flashings, membranes and air barrier should be correctly installed, overlapped and taped at joints, prior to fixing panels.
- ☐ Install windows so that the back of the front face of the window (or any other protrusions including doors or meter boxes) will be flush with the face of the panels.
- ☐ Fit Head flashings over windows, doors and other penetrations.
- ☐ Confirm the chosen eaves/soffit details and prepare accordingly.
- ☐ Consider the need for structural support for fixtures such as pergolas and balconies. No loads may be carried by the cladding.
- ☐ Confirm membranes and flashings for balcony areas have been installed in accordance with manufacturers' specifications.
- ☐ Arrange for a pre-cladding inspection by the appropriate local building authority if required.



Check quality and quantity of panels and components before installing. If there is any sign of damage or visible defects in panels, or the colour/finish is not in keeping with the owners aesthetic requirements **DO NOT INSTALL**. Contact Cemintel to address any issues.



Installation Set-Out

Appropriate panel fixing layout and top hat spacing should be selected for the project design wind pressure. Rivets need to be fixed 100mm from the top and bottom edges of the panel and 40mm in from the side of the panels.

FIGURE 7.01 Horizontal Sheet Fixing

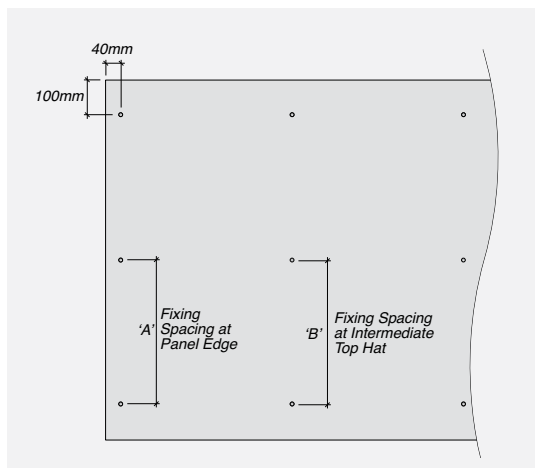
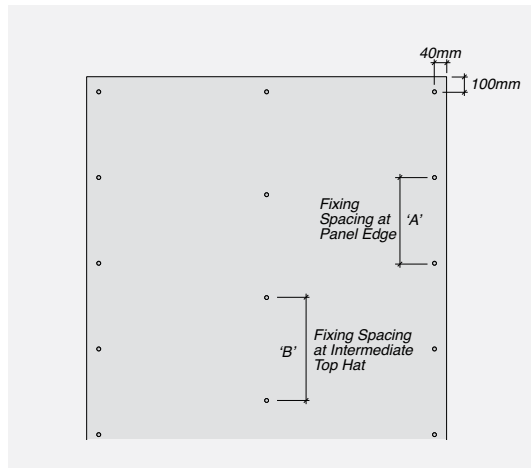


FIGURE 7.02 Vertical Sheet Fixing



Panels must be fixed in accordance with the tables set out in 'System Engineering' Section. This provides fixing Requirements and Maximum Top Hat Spacings for 1200mm wide panels based on 2 top hats or 3 or more top hats.

Installation for Timber and Steel Framing

Refer to 'System Engineering' and 'Construction Drawings and Details' sections for specific fixing information.

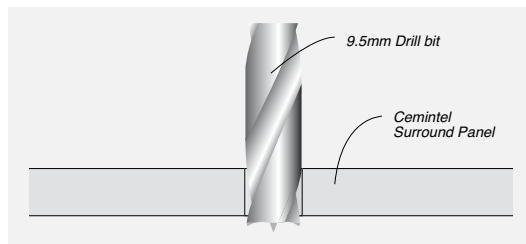
Step 1 – Fix base flashing to base of wall over air barrier (sarking or rigid air barrier), taping top edge of flashing to air barrier.

Step 2 – Fix Top Hats. Fix H515 Top Hats horizontally to substrate as per 'System Engineering' section requirements. Fix ExpressWall™ and Intermediate Top Hats vertically to H515 framing as per 'System Engineering' section requirements.

Step 3 – Prepare Panels. Cut panels as required. Run a fine sandpaper block along the edge of the cut panel (taking care not to scratch the panels surface). Seal cut edges with Cemintel's recommended edge sealant to protect against moisture entering the panels.

Step 4 – Pre-drill Panel Holes. This should be done prior to lifting panels into place and can be done off site. Panel holes need to be drilled a minimum 100mm from the horizontal edge and a minimum of 40mm from the vertical edge (refer to 'System Engineering Section'). Use the recommended Cemintel 9.5mm carbide tipped drill bit with centring tip.

FIGURE 7.03 Pre-drilling Panels



The size of the hole drilled is designed to match the size of the rivet rubber sleeve. The use of other tools for this purpose may reduce fixing capacity and reduce the weather resistance of the system. DO NOT use hammering action when drilling. For efficiency you can neatly stack 3 or 4 sheets and drill through all at the same time. Take care to avoid damaging the panel with the drill chuck when approaching the end of the hole by using a timber block. Clean/sweep away any dust from holes as this can stick to the panel.

INSTALLATION

07

Step 5 – Install Vertical gaskets to the ExpressWall™ Top Hats for the full extent of panels. Take care not to stretch the gasket when installing (ref Fig 7.04). When joining gasket, cut ends cleanly and push together before adhering. When top hat is discontinuous, butt ends together tightly and continue gasket over the joint. If a gap is present, install a steel strip to support the gasket (ref Fig 7.05).

FIGURE 7.04 Vertical Gasket

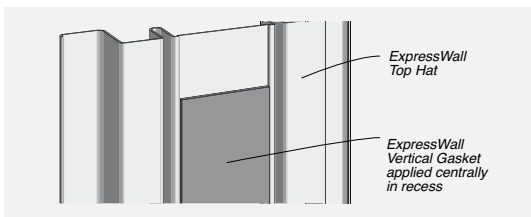
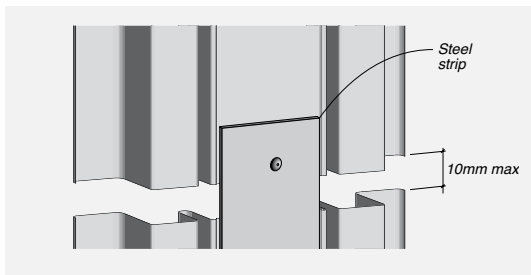


FIGURE 7.05 Gasket Support at Discontinuous Joint



At the beginning and end of a vertical joint, such as with sheets installed in a half-bond pattern, continue the vertical gasket past the horizontal joint by 100mm minimum (ref Fig 7.06).

FIGURE 7.06 Vertical Gasket and Fixing Detail for Half-bond Panel Layout

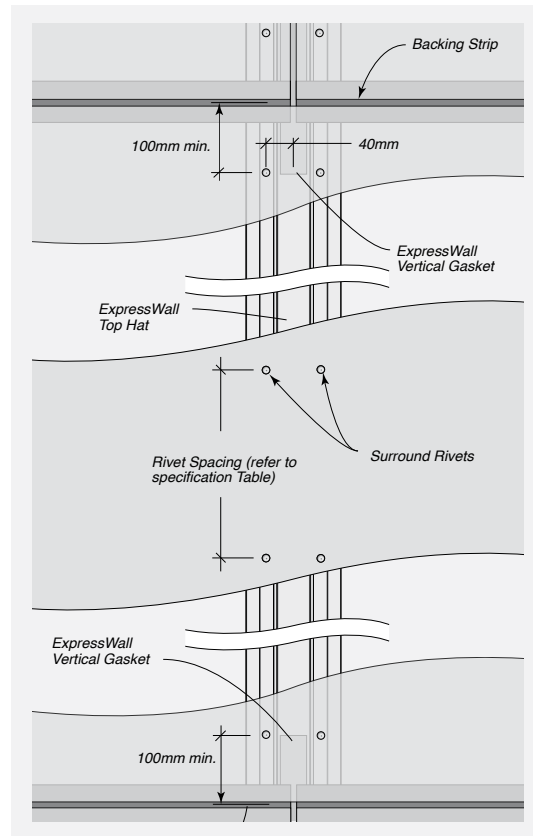
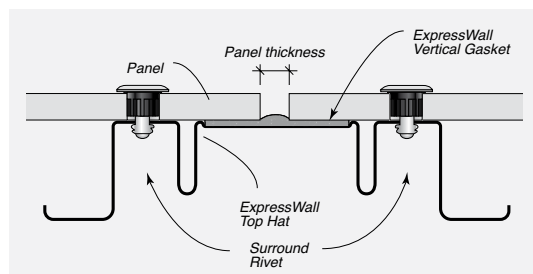
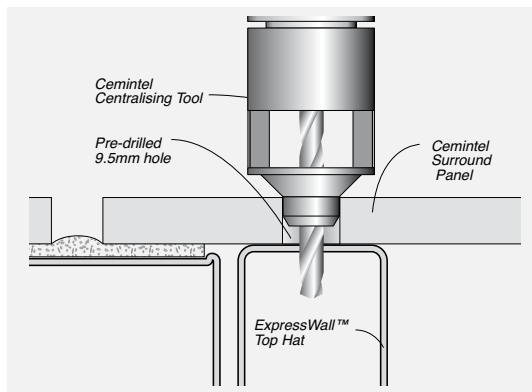


FIGURE 7.07 Vertical Joint Detail



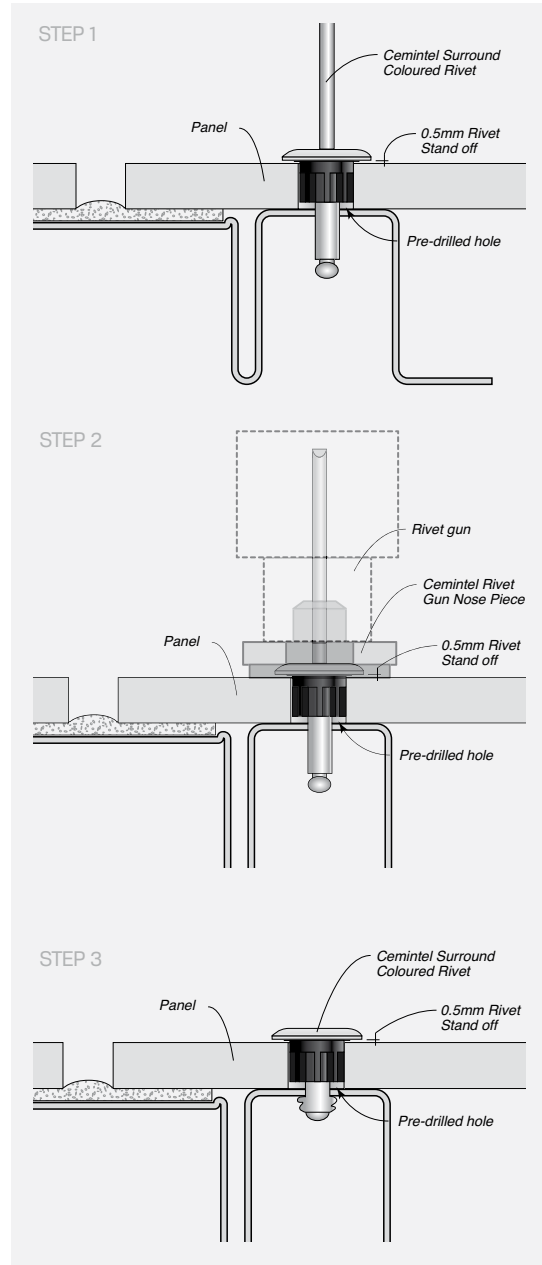
Step 6 – Install wall panels. Lift panel into place, clamp down level to identify horizontal and vertical planes. Using the Rivet Centralising Tool, drill 4.1mm rivet holes through the pre drilled panel holes into the top hats. This specialised tool creates a rivet hole, which matches the size of the shaft of the Cemintel rivet, precisely in the centre of the panel hole (ref Fig 7.08).

FIGURE 7.08 Cemintel Centralising Tool



Fix Panel using rivets – Install Rivet Gun nose piece onto the Gesipa Accubird battery operated blind rivet gun. The nose piece has a slight concave shape which serves to create a small (0.5mm) clearance between the panel face and the rivet flange. This enables a slight movement across the panel which allows for expansion and contraction cycles and differential movement of the frame while reducing damage to the panel face (ref Fig 7.09). Fix panel starting at the top corner. Place the rivet gun with the rivet gun head onto the rivet shaft. Push the panel firmly against the framing/gaskets and operate the gun to pull the rivet through panel hole into the predrilled top hat.

FIGURE 7.09 Fixing with Rivets



INSTALLATION

07

Step 7 – Insert Backing strip along horizontal joint. Clip corners at an angle and bend. Surround Panels are generally installed with a nominal 8mm wide expressed joint in both horizontal and vertical directions (a small cut piece of panel can be used as a spacer to easily measure joint widths and ensure consistency). Once positioned, fasten bottom row of rivets.

Step 8 – Finishing at the Soffit. Install a metal trim to soffit. Slide the top panel behind the metal trim at the soffit junction and rivet into place. To facilitate ventilation, adhere a strip of spacer to the back of the metal profile.

FIGURE 7.10 8mm Horizontal Joint Detail with Easy-Fit Backing Strip

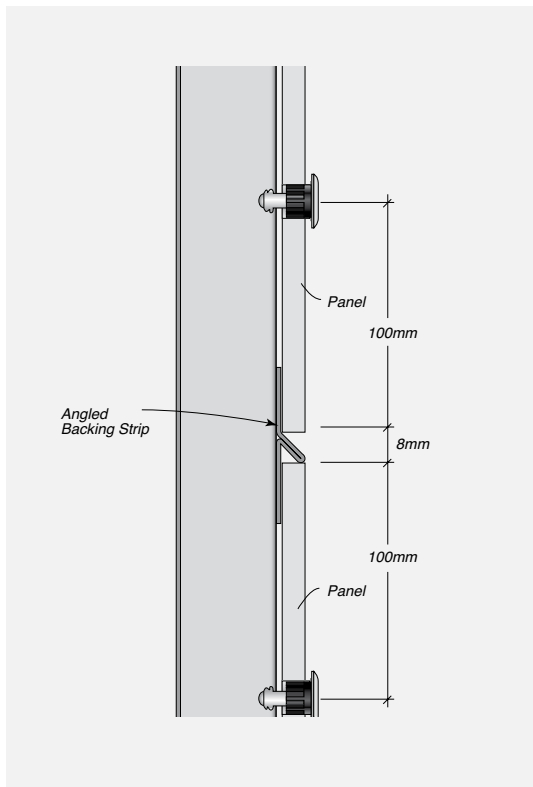
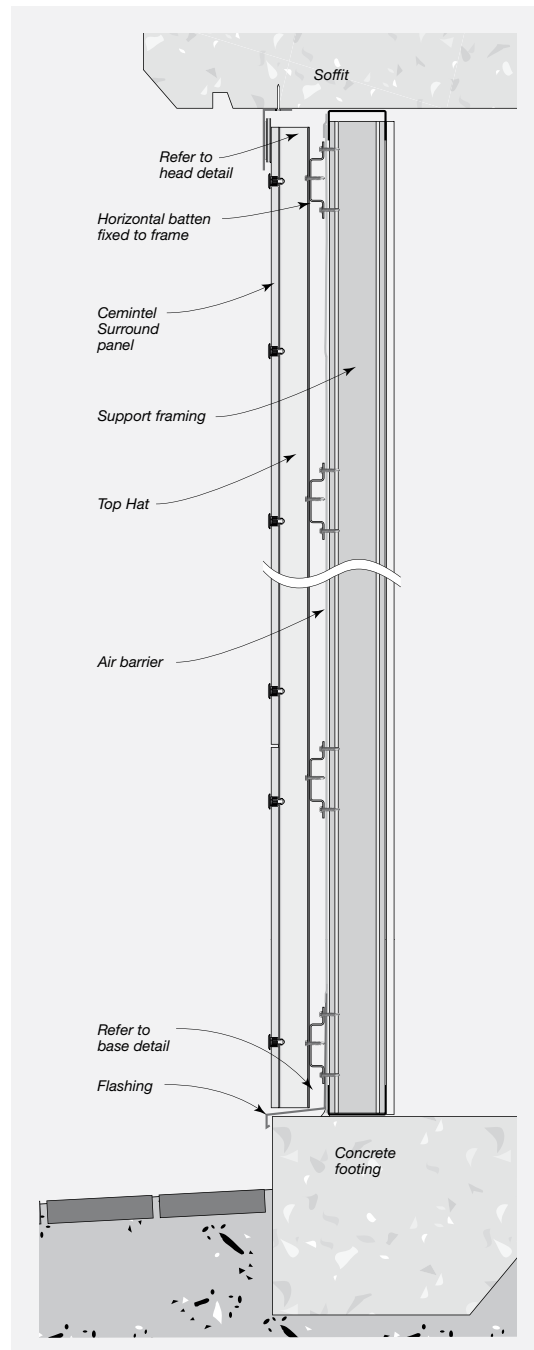


FIGURE 7.11 Typical Surround System Cross Section for Steel Framing – Elevation





CONSTRUCTION
DRAWINGS + DETAILS

Drawings Index

SECTION	DESCRIPTION	FIGURE REFERENCE	PAGE NUMBER
Base Details	Base Detail for Inline Slab	8.01	49
Corner Details	External Corner	8.02	49
	Internal Corner	8.03	49
	External Pre-formed Corner (Special Order Only)	8.04	50
	External Corner – Obtuse Angle	8.05	50
Junction Details	Framed Soffit	8.06	51
	Eaves/Deflection Head – Ventilated	8.07	51
	Vertical Joint	8.08	51
	Horizontal Joint	8.09	51
	Abutment Detail	8.10	52
Window Details	Typical Window Installation	8.11	52
	Parapet Capping	8.12	53
	Parapet Wall Junction	8.13	53
Balcony Details	Balcony Base	8.14	53
Power/Meter Box Details	Typical Power/Meter Box	8.15	54
Drain	Typical Drain	8.16	54

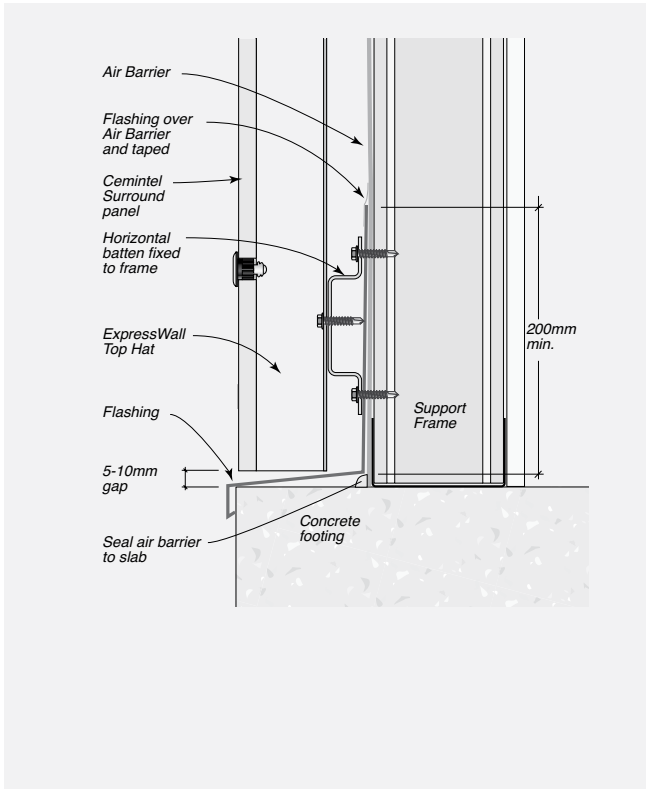


CONSTRUCTION DRAWINGS AND DETAILS

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

Base Details

FIGURE 8.01 Base Detail for Inline Slab



Corner Details

FIGURE 8.03 Internal Corner Detail

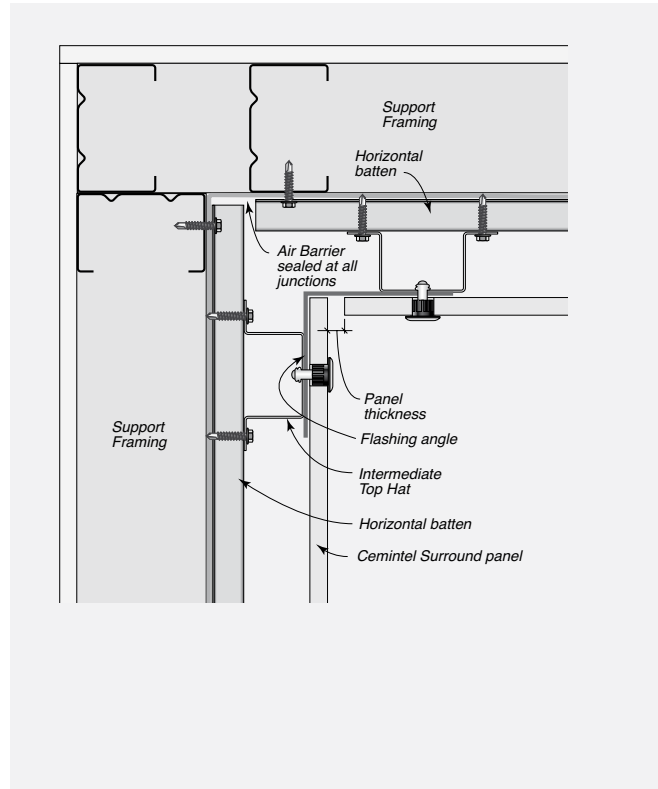
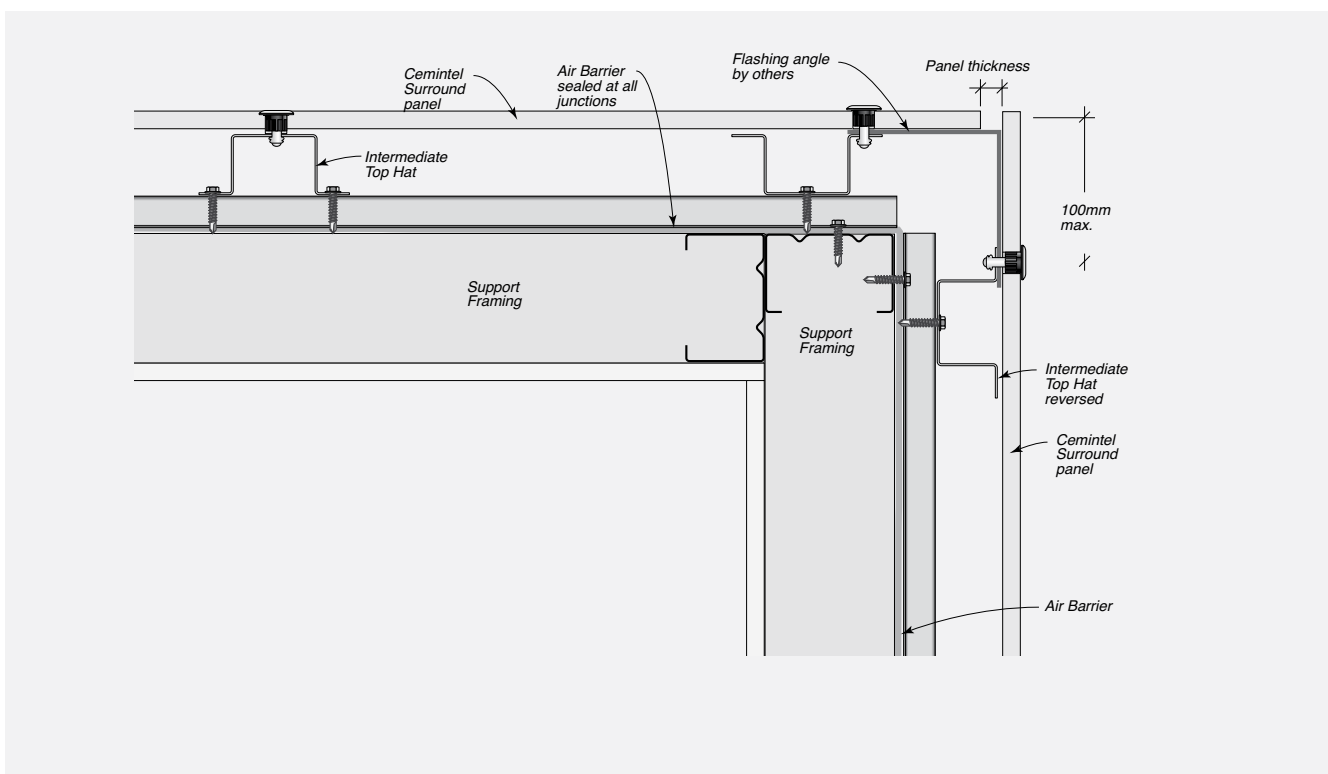


FIGURE 8.02 External Corner Detail



CONSTRUCTION DRAWINGS AND DETAILS



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

Corner Details

FIGURE 8.04 External Pre-formed Corner (Special Order Only)

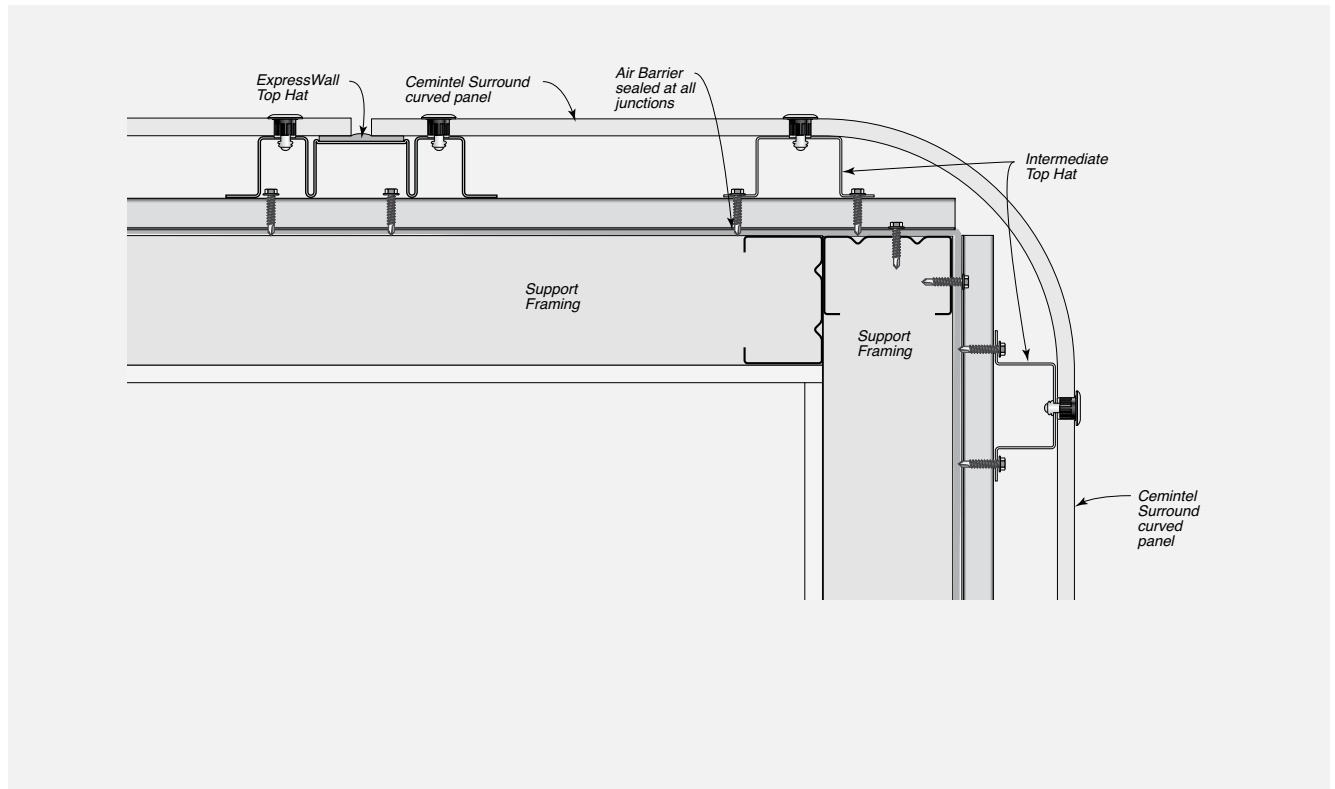
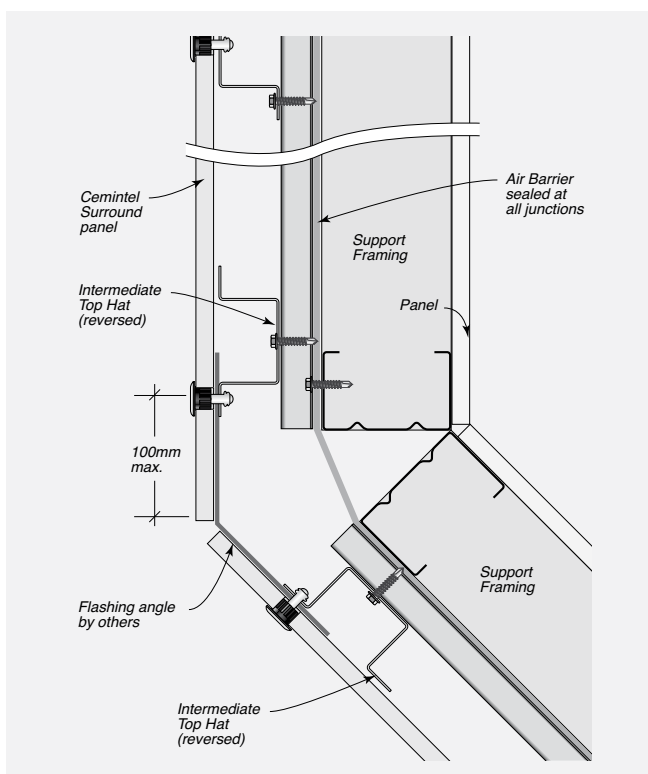


FIGURE 8.05 External Corner - Obtuse Angle





CONSTRUCTION DRAWINGS AND DETAILS

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

Junction Details

FIGURE 8.06 Framed Soffit

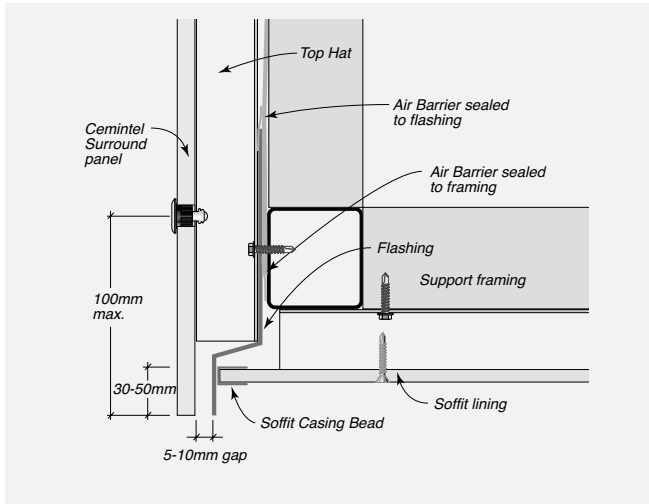


FIGURE 8.08 Control Joint - Vertical

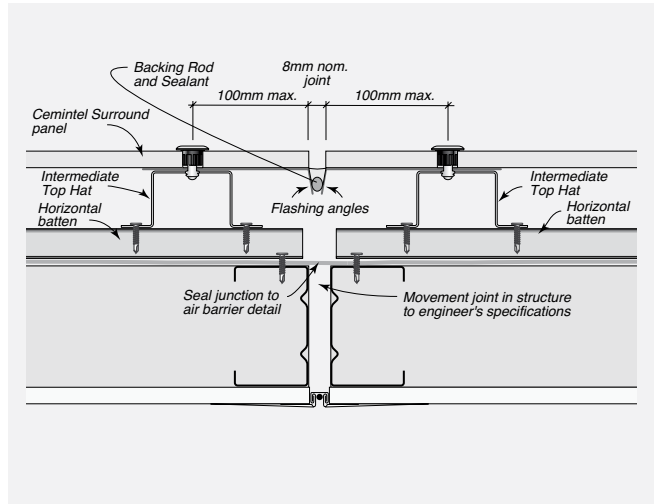


FIGURE 8.07 Eaves/Deflection head - Ventilated

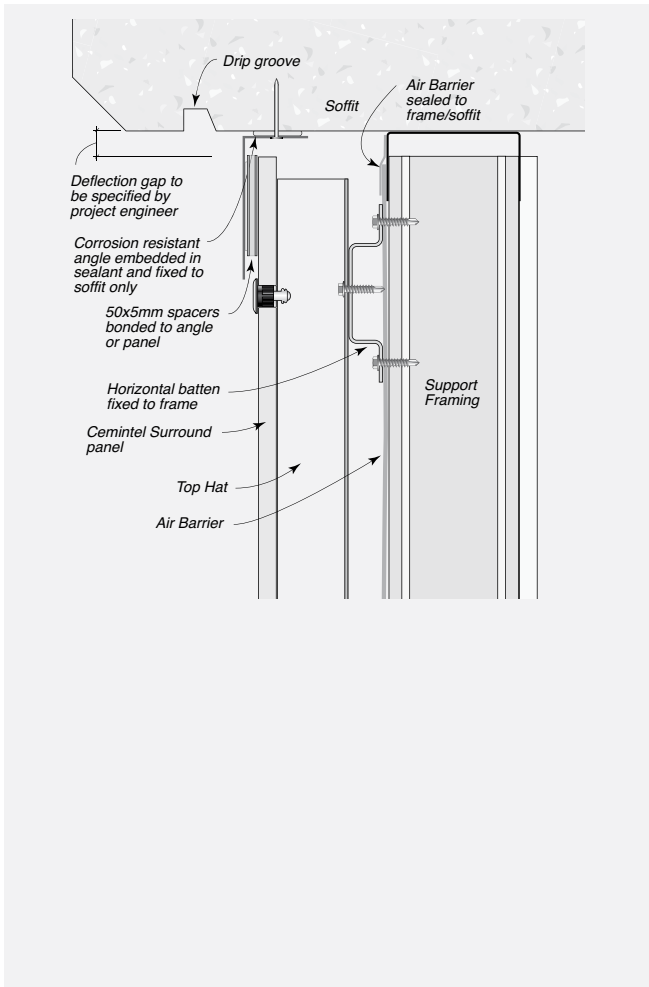
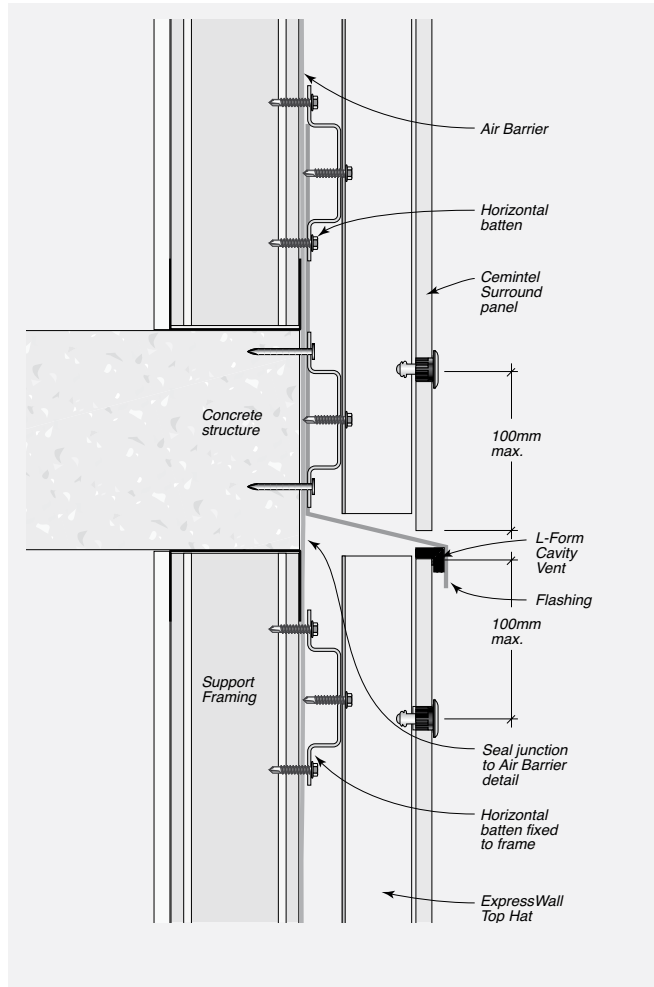


FIGURE 8.09 Control Joint - Horizontal



CONSTRUCTION DRAWINGS AND DETAILS



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

Window Details

FIGURE 8.10 Abutment Detail

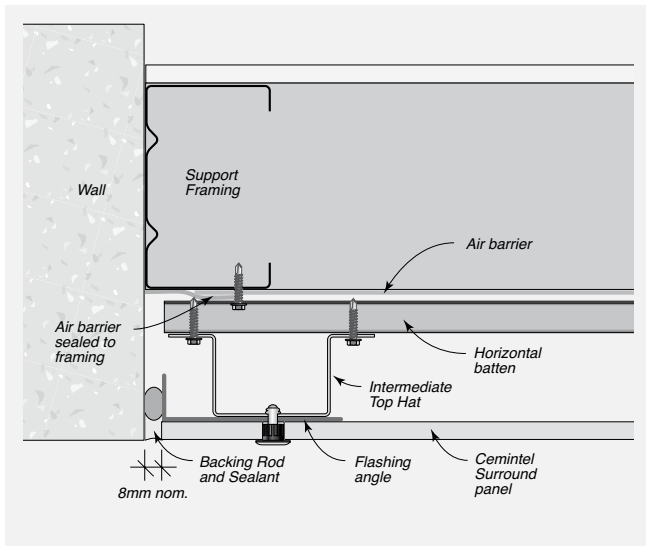
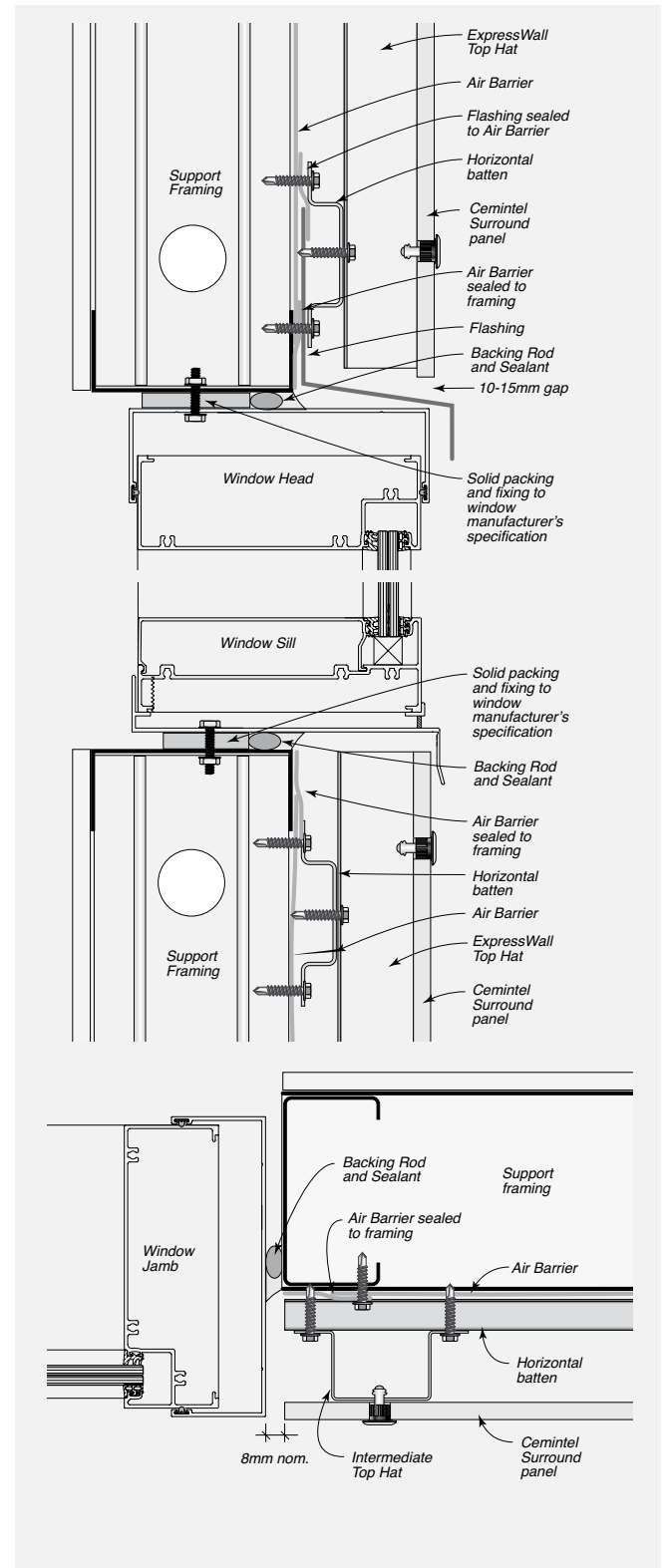


FIGURE 8.11 Typical Window Installation





CONSTRUCTION DRAWINGS AND DETAILS

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

Parapet Details

FIGURE 8.12 Parapet Capping

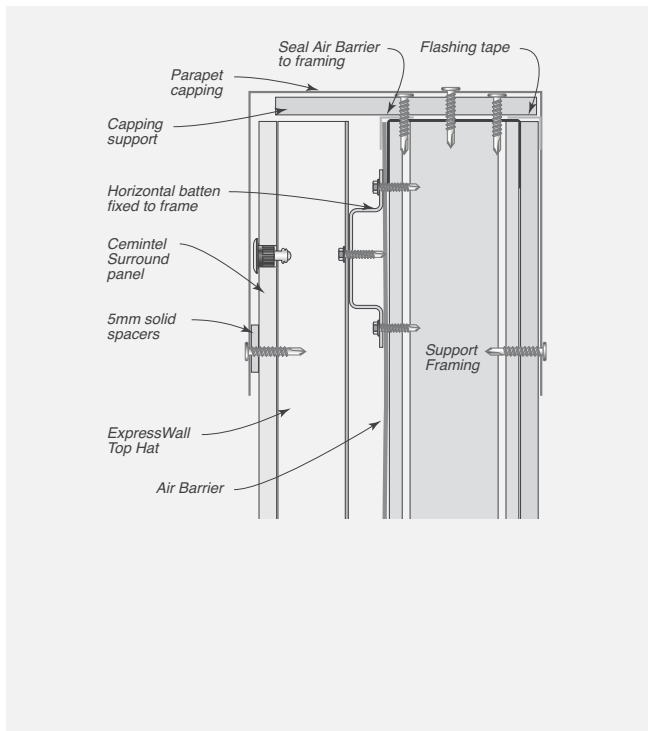
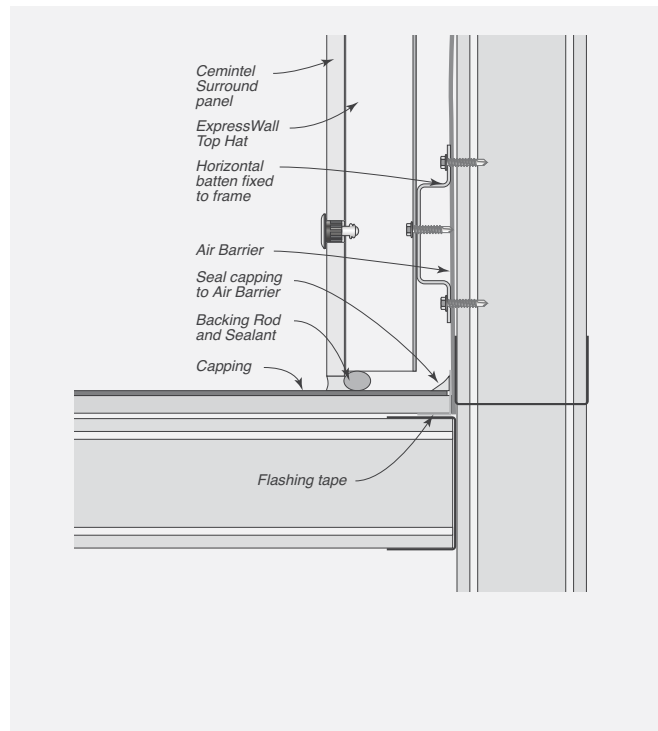
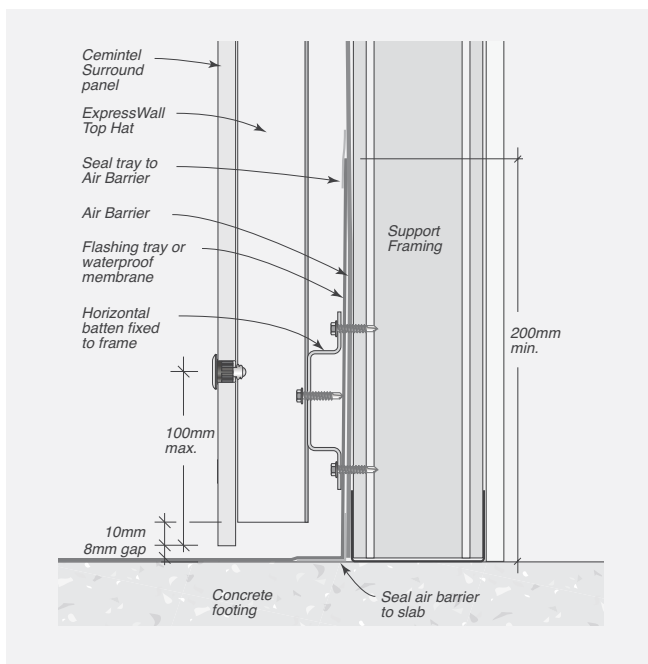


FIGURE 8.13 Parapet Wall Junction



Balcony Details

FIGURE 8.14 Balcony Base



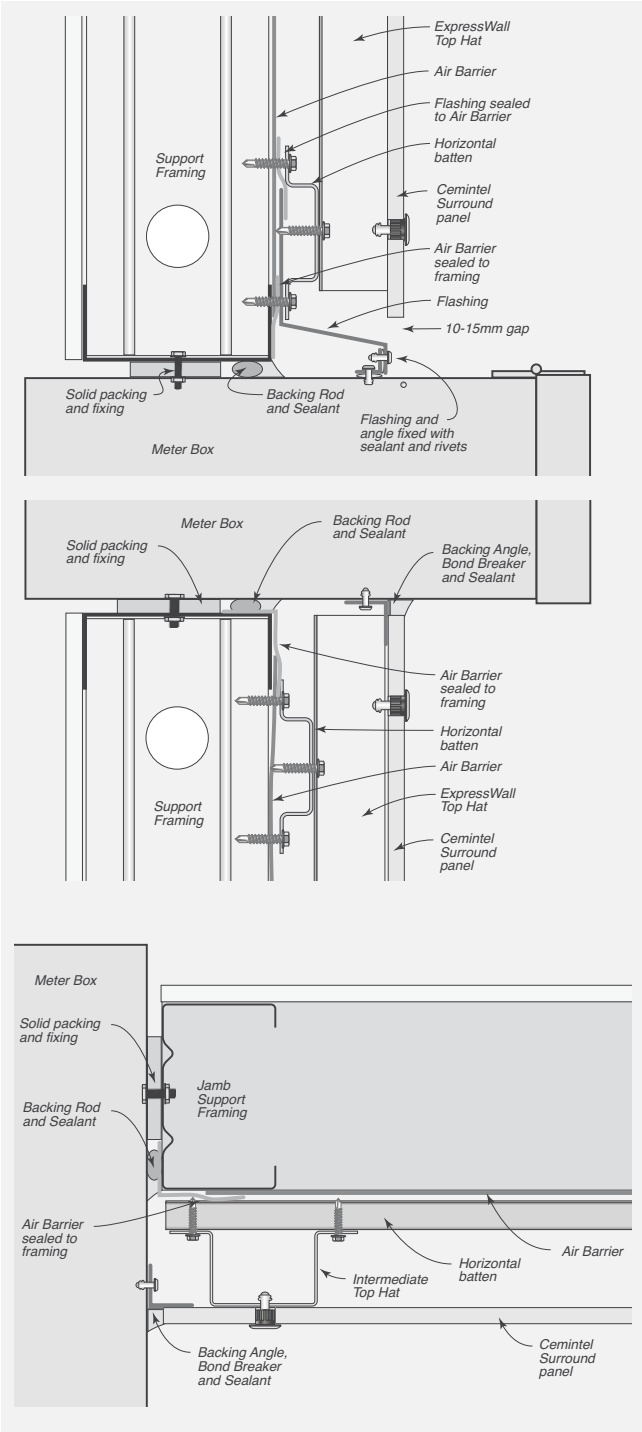
CONSTRUCTION DRAWINGS AND DETAILS



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

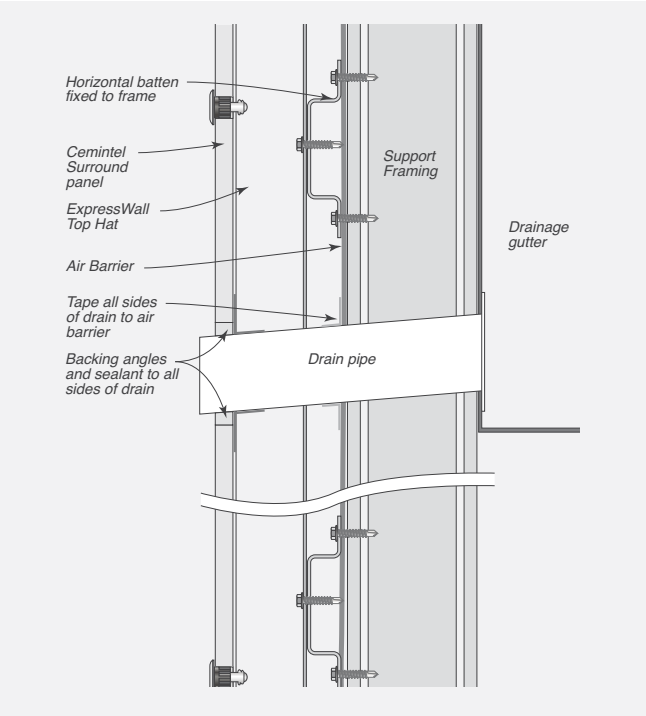
Power/Meter Box Details

FIGURE 8.15 Typical Power/Meter Box



Drain

FIGURE 8.16 Typical Drain





SAFETY, HANDLING
+ GENERAL CARE

SAFETY, HANDLING + GENERAL CARE



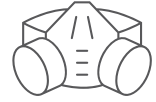
Health, Safety and Personal Protection Equipment (PPE)

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

When cutting, drilling or grinding Surround panels using power tools, always ensure the work area is properly ventilated. An approved dust mask (AS1715

and AS1716) and safety glass (AS1337) must be worn. Cemintel recommends that hearing protection also be worn.

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



Recommended Safe Working Practices

Cutting Outdoors	<ol style="list-style-type: none"> 1. Position cutting station so wind will blow dust away from the user or others in the working area. 2. Use a dust reducing plunge saw equipped with a dust extraction system.
Sanding/Drilling/Other Machining	When sanding, drilling or machining, you should always wear a P1 or P2 dust mask and warn others in the immediate area.
Important Reminders	<ol style="list-style-type: none"> 1. NEVER use a power saw indoors. 2. NEVER use a saw blade that is not purpose-made for cutting fibre cement products. 3. NEVER dry sweep. 4. ALWAYS follow tool manufacturers' safety recommendations. 5. ALWAYS maintain tools in a clean condition.

Handling & General Care

Storage

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

Handling

Surround panels and corners are pre-finished products and must be treated with care during handling so as to avoid damage to edges, ends and pre-finished surface. Panels should be carried horizontally on edge by at least two people.

As the Surround range is a pre-finished product, consideration should be given to the activity of other tradespeople, in particular, a brick cleaner. It is highly recommended that installation of Surround should always be held off until the process of brick cleaning has been completed so as to avoid damage.

Cutting

Panels should be cut from the back using a power saw. Cemintel recommends using the FESTO TS 55 EBQ Plunge Cut Saw with guide rail and appropriate blade.

All exposed cut edges **MUST BE SEALED TO PREVENT MOISTURE ABSORPTION**. Refer to 'Components' table for appropriate materials.

Mitreing of Panels

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

Penetrations

Penetrations in panels may be cut or drilled prior to installation. Cut from the back or drill from the front. Cut penetrations oversize by 8-10mm all around. Mask, prime and fill gaps with sealant in accordance with recommended methods and products.

Bevelled Edges

The top edge of panels at window sill level may require bevelling. Cemintel recommends using the FESTO DSC-AGP 125 Diamond Blade Cutting & Grinding Tool.



WARRANTY, CLEANING
+ MAINTENANCE

WARRANTY, CLEANING + MAINTENANCE

10

Warranty

The Cemintel Surround External panels have a product warranty of 10 years.

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

Wash Down Process

Panels have been coated with a factory finish. Consequently, where sufficiently exposed, rain can perform a natural wash down of the wall and ongoing maintenance should be limited to occasional rinse down or using a soft cloth or soft brush (like a dust pan brush).

Walls which are protected by soffits above must be washed down twice per year to remove salt and debris build up particularly at joints.

When cleaning the panels the following is recommended –

- Normal dirt can be removed with a soft brush and warm water up to 50degrees, to which a small amount of dishwashing liquid or soap has been added. The panels should be rinsed with clear water before they dry.
- Calcifications should be removed with a 5% sulfamic acid solution or with a commercial lime remover. The façade should be rinsed with clear water after cleaning.
- Panels discoloured by algal growth should be treated with an algicide without bleaching agents. This application should be allowed to take effect for several days. Afterwards, clean the panels using the 'normal dirt' procedure above.
- When rinsing down panels, use no more than 700 psi (50kh/cm²) of water pressure at a minimum of 3m distance from the face of the wall. Water pressure should be applied downward to avoid forcing water into joints.
- Use neutral detergent with a soft cloth or soft brush when removing dirty spots from a panel. When diluting the neutral detergent, follow the manufacturer's instructions and use the weakest solution possible.

Inspection, Repair and Maintenance

The durability of the Cemintel Surround range can be enhanced by periodic inspection and maintenance.

Inspections should include examination of the coatings, flashings and seals. Any cracked or damaged finish or seals which would allow water ingress must be repaired immediately by resealing the affected area, or by removing the panel and replacing sealant. Any damaged flashings, sheets or sealant must be replaced as for new work.

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

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

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



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