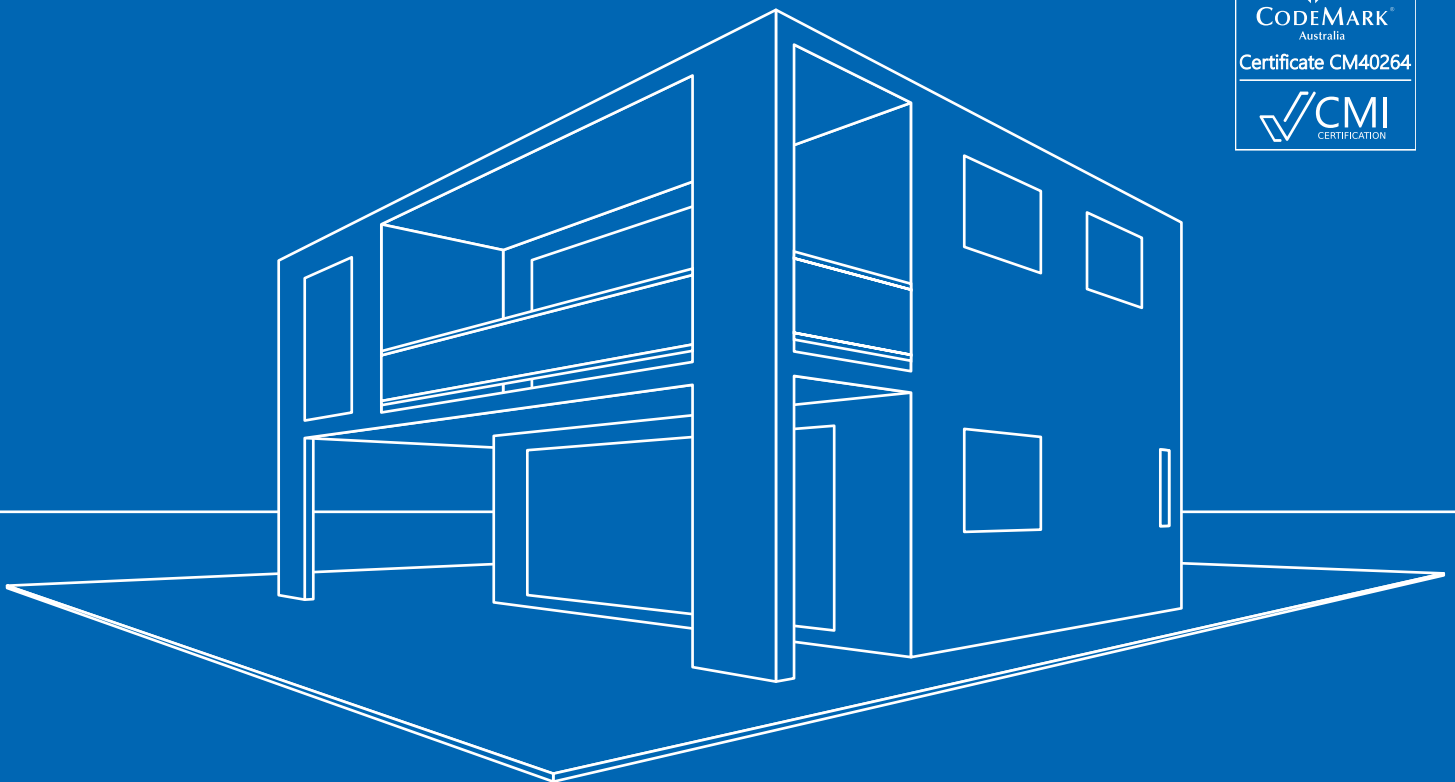


EXSULITE®
THERMAL FACADE CLADDING
**SPECIFICATION &
INSTALLATION MANUAL**

AUSTRALIA • JULY 2023



EXSULITE® SPECIFICATION & INSTALLATION MANUAL

This manual is designed to be read in conjunction with the *Exsulite* Construction Drawings Manual to provide Design Specifications to comply with *Exsulite* CodeMark® Certified Systems and is provided as a source of information intended for guidance. It cannot fulfil the functions of a professional, engineering or design consultancy. Professional advice should be sought to determine the suitability of this product for the intended end use. The use of sound building practices should always be applied and this manual may not contain all the necessary relevant information. Please seek professional advice on all aspects of design, engineering and installation. This manual is to be treated as one document, do not separate and distribute individual pages. Please visit exsulite.com.au for the most current version of *Exsulite* Specification & Construction Drawing manuals.

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NCC Compliance

The Australian Building Code, State Regulators and JAS-ANZ require building products/systems that are *CodeMark* Certified Systems must be installed strictly in accordance with the *CodeMark* Certificate of Conformity and be relevant to the Building Code requirements specific to that job site.

Prior to any system installation, Builders and Installers should check the job requirements against the proposed *Exsulite* System *CodeMark* Certificate of Conformity that is to be installed, to satisfy themselves that the proposed *Exsulite* System is in accordance with the building surveyors' planning approvals for that specific job.

Any failure to follow the *Exsulite* installation guidelines and specifications will mean that the *Exsulite* *CodeMark* Certification is not valid for that installation, and compliance to NCC cannot be claimed for that specific job.

Where the product/system has NOT been installed strictly in accordance with the *CodeMark* Certificate conditions and associated installation guide, the *CodeMark* Certification and National Construction Code (NCC) compliance will be deemed void and non compliant.

Should this occur:

- the installed system will need to be reassessed by the relevant parties and will require an alternative building solution to demonstrate compliance to the National Construction Code (e.g. through a "Performance Solution" approved by a qualified engineer); and
- the *CodeMark* Certificate of Conformity will be withdrawn from that specific job site under the NCC requirements.
- in such circumstances *Exsulite* accepts no responsibility for specifications outside the *Exsulite* *CodeMark* Certified system and confirmation of compliance for any alternate solution is the responsibility of the installer and/or builder.

If you are an Installer

In all circumstances installers must be appropriately licensed to install cladding relative to the governing State Building Authority. Each state and territory has different licensing and registration requirements and it is important that you understand the requirements that apply to you as an individual to hold the appropriate licence or be registered.

Ensure you follow the full *Exsulite* design and installation guidelines provided in conjunction with the relevant *Exsulite* Construction Drawing details. *Exsulite* system components can only be supplied by *Exsulite* or other *Exsulite* Approved suppliers.

Exsulite System Warranty can be issued only when an *Exsulite* Certificate of Installation & Workmanship is completed & signed confirming that the system installation is in accordance with the *CodeMark* Certificate of Conformity.

If you are a Builder

Ensure the installer is suitably qualified and licensed to install cladding relative to the governing State Building Authority. Each state and territory has different licensing and registration requirements and it is important that you understand the requirements that apply to you as a Builder and in respect to contracting cladding installation.

Typical Configuration Drawing



Exsulite Approved Coatings System Specification

This *Exsulite* Installation Manual provides system specifications installation guidance for *CodeMark* compliance for the *Exsulite* Cavity System finished with either an *Acratex*®, *Quikcote*™ or *EZYCOAT* coating systems in accordance with the *CodeMark* Certificate of Conformity. Where manuals refer to or use the words "*Exsulite Approved Coating Specification*" - it refers to use of either *Acratex*, *Quikcote* or *EZYCOAT* coating systems products as specified below.

Coating Specification – For use in NON-BAL & Up to BAL 29 regions

Acratex®

Stage	Product	Spread Rate	Minimum Coating Thickness
Basecoat with Non-Sticky Alkali Mesh	RenderWall® AcraPro™ P400 or AcraPro P200 embedded with 165gsm <i>Exsulite</i> Mesh	2.5m ² - 3m ² /20kg bag	4mm
Texture Coat	<i>Acratex</i> Texture	10m ² – 12m ² Per 15Lt	0.8mm
Protective Topcoat	AcraShield®	70m ² – 75m ² Per 15Lt	0.075mm per coat

Coating Specification – For use in NON-BAL & Up to BAL 29 regions

Quikcote™

Stage	Product	Spread Rate	Minimum Coating Thickness
Basecoat with Non-Sticky Alkali Mesh	<i>Quikcote</i> E.P.S Render embedded with 165gsm <i>Exsulite</i> Mesh	2.5m ² - 3m ² /20kg bag	4mm
Texture Coat	<i>Quikcote</i> Trowel Texture	10m ² – 12m ² Per 15Lt	0.8mm
Protective Topcoat	<i>Quikcote</i> Texture Topcoat	120m ² – 150m ² Per 15Lt	0.040mm per coat

Coating Specification – For use in NON-BAL regions

EZYCOAT

Stage	Product	Spread Rate	Minimum Coating Thickness
Basecoat with Non-Sticky Alkali Mesh	EZYCOAT ECA Render embedded with 165gsm EZYCOAT Mesh	2.5m ² - 3m ² /20kg bag	4mm
Texture Coat	EZYCOAT Acrylic Texture	8m ² – 10m ² Per 15Lt	0.8mm
Protective Topcoat	EZYCOAT Membrane	70m ² – 75m ² Per 15Lt	0.075mm per coat

Coating Specification – For use in areas up to BAL 29

EZYCOAT

Stage	Product	Spread Rate	Minimum Coating Thickness
Basecoat with Non-Sticky Alkali Mesh	EZYCOAT ECA Render embedded with 165gsm EZYCOAT Mesh	1.0m ² - 1.1m ² /20kg bag	10.1mm
Texture Coat	EZYCOAT Acrylic Texture	8m ² – 10m ² Per 15Lt	0.8mm
Protective Topcoat	EZYCOAT Membrane	70m ² – 75m ² Per 15Lt	0.075mm per coat

NOTE: The information within the above the table is provided for general information that can be used as guide. For compliance purposes a BAL 29 test certificate can be provided for regulatory requirements and evidence of compliance in accordance with the *CodeMark* Certificate of Conformity. For product application specification please refer to the relevant individual product data sheets prior to commencing application available via the individual websites.

Section 1 – *Exsulite* Facade Cladding Specification

Light weight wall cladding solutions for specifiers, surveyors and builders

This Specification & Installation Manual is designed to provide fixing guidelines to both timber and steel frame construction as an integrated lightweight cladding system. This Specification & Installation Manual is intended for use by *suitably qualified installers meeting the relevant State Licencing requirements for installation of cladding systems*, builders, specifiers and designers who are involved with the specification and installation of *Exsulite* Thermal Facade Cladding. In all circumstances installers must be appropriately qualified and licensed to install cladding relative to the governing State Building Authority.

1.1.0 Overview

The National Construction Code (NCC) requires appropriate design and installation controls to qualify any alternate solution and ultimate success requires a total system approach integrating design, componentry, installation and performance requirements relative to project specific requirements.

Exsulite Thermal Facade Cladding offers specifiers, surveyors, builders and their clients a total cladding system from wall wrap to finished wall from a single supply source protecting from the risks of mixed componentry and uncontrolled installation.

Exsulite Thermal Facade Cladding is a light weight exterior walling system that provides both weatherproofing and continuous insulation (CI) across framing rather than just insulating between the framing members.

Exsulite Thermal Facade Cladding is designed as a integrated non-load bearing lightweight facade system to deliver a weatherproof external building envelope with a self draining cavity for moisture management whilst providing high thermal performance (R-Value).

***Exsulite* Thermal Facade Cladding is CodeMark certified in various configurations:**

A) *Exsulite* Thermal Facade Cladding

Comprises *Exsulite* Breathable Wrap (or breathable Wall Wrap complying with AS/NZS 4200.1 :2017), M-Grade Blue EPS Panel, Cavity Spacers, *Exsulite* Precoated Starter Piece or Starter Channel with weep holes, Fixing Components / Detail relative to specific Wind Classifications and finished with a *Exsulite* Approved high build weatherproof texture coating system.

B) *Exsulite* Composite Thermal Facade Cladding

Comprises *Exsulite* Breathable Wrap (or breathable Wall wrap complying with AS/NZS 4200.1 :2017), Factory basecoated, M-Grade Blue EPS Panel, Cavity Spacers, *Exsulite* Precoated Starter Piece or Starter Channel with weep holes, Fixing Components / Detail relative to specific Wind Classifications and finished with an *Exsulite* Approved high build weatherproof texture coatings system.

1.2.0 Uses

Exsulite Thermal Facade Cladding is used as a light weight integrated facade system as an alternative to masonry systems in low rise Residential construction.

Suitable for Residential External Walls to NCC Volume Two, Class 1 and 10 buildings with wind loads to either AS/NZS 1170.2 or AS 4055 "Wind loads for housing" for Wind Classifications N1,N2,N3,N4, within the AS 4055 limitations less than 8.5m in height less than 16m in width and where the length does not exceed five times the width and roof pitch does not exceed 35 degrees, fixed to either steel or timber frames.

Exsulite Thermal Facade Cladding provides a CodeMark Certified, weatherproof cladding and insulation system for suitable Residential applications.

1.3.0 Design Considerations

Compliance:

All design and construction must comply with the appropriate requirements of the current Building Code of Australia (BCA). Volume 2: Class 1 & Class 10 Buildings – Housing Provisions.

Exsulite Thermal Facade Cladding is *CodeMark* certified as a integrated facade system in compliance with the Building Code of Australia's performance criteria for:

1. Structural Performance, Wind Resistance
2. Thermal Performance
3. Damp and Weatherproofing
4. Bushfire Attack Levels (BAL)

CodeMark certification provides building certifiers with the confidence that the system performs against these criteria and together with an *Exsulite* Certificate of Installation & Workmanship from a suitably qualified Installer confirms that the build meets the design specification at job completion.

Design details and construction methods need to comply with the relevant job specific NCC regulations. During the design stage the NCC requirements are based on building type and should be considered to ensure conformance is achieved. The information provided in this manual should therefore be used as a guide only. It is then up to the relevant building surveyor / certifier to review the information as provided and to provide sign-off once satisfied that the building conforms to the relevant NCC criteria and specific job requirements. As part of the overall building approval process sign-off should be done prior to installation commencement or job start.

System design should consider factors such as:

- Class of building
- Location – coastal or inland
- Identify NCC performance requirements and any additional project specific needs
- Wind design actions subject to local wind pressures
- Self draining cavity to allow drainage of any moisture ingress or condensation
- Wall wrap – vapour permeable for condensation control and weatherproofing
- Thermal (R-Value) – energy efficiency
- Building Height
- Bush Fire Attack Levels (BAL)
- Acoustics (Rw Ctr values)
- Frame type, layout, design, stud spacing (steel or timber)
- Minimum panel thickness and fixing criteria based on wind design pressure and stud spacings
- Colour selection – Available in most Dulux® colours
- Additional wall insulation to improve energy efficiency
- Control joint installation
- Penetrations and External Fixings
- All building projects are subject to fire control requirements within the NCC and all project designs should be assessed and approved by a Fire Engineer prior to installation.

Benefits of Installing a Drainage Cavity System:

The Drainage Cavity separates the Panel from the frame, creating a second layer of defence that allows air flow to dry out any condensation or moisture / water ingress that may form in the wall or behind the Panel. The drainage cavity is created by installing cavity spacers (typically Vertical EPS battens against each stud or alternatively Horizontal metal Top Hats spanning studs) thus allowing any moisture / water ingress to drain down the back of the panel and out through the bottom of the wall via the *Exsulite* Precoated Starter Piece (with self draining design) or Starter Channel with weep holes. Any remaining condensation or moisture within the cavity can then dry through ventilation provided along the bottom of the cavity and the breathable vapour permeable wall wrap.

A Drainage Cavity System will allow for moisture management as follows:

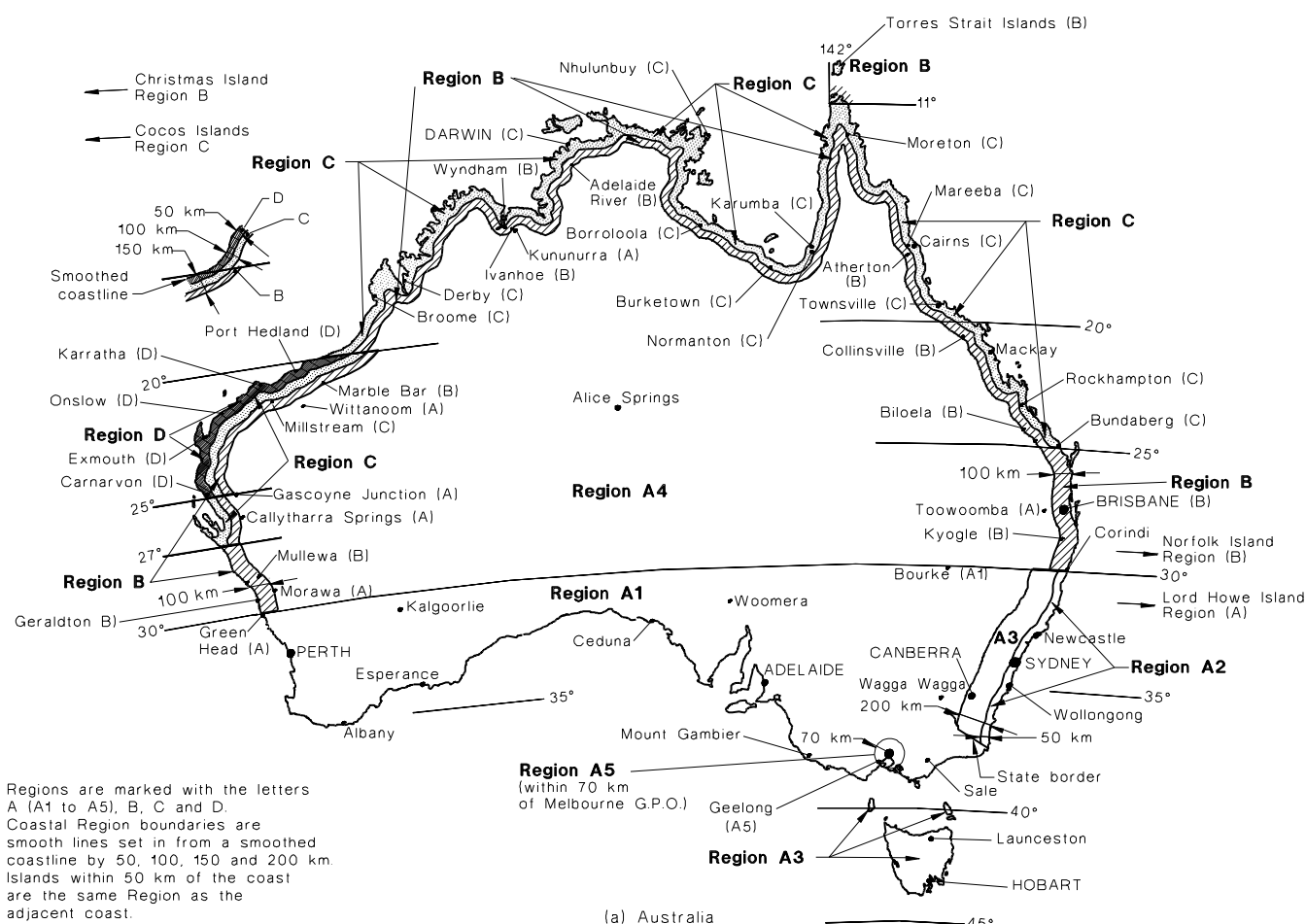
- A) Deflection: This first line of defence against moisture / water ingress. A well designed and constructed Drainage Cavity system will deflect any potential water ingress or condensation away from the vapour permeable wall wrap and frame.
- B) Drainage: A Drainage Cavity provides a second line of defence against condensation and or moisture / water ingress, allowing any build up behind the facade system to drain to the bottom of the wall section and out via the weep holes located in the cavity closer at the base of the wall.
- C) Drying: A Drainage Cavity allows air flow through the bottom of the cavity so any remaining moisture or condensation can be absorbed by the vapour permeable wall wrap and allowed to dry out.

This drainage cavity is not ventilated to the outside air to an extent that would compromise the thermal performance of the systems.

1.3.1 Design Ultimate Wind Pressures

A qualified engineer is to be involved to determine wind pressures based on a buildings geographic location in accordance with the Australian Standard AS 4055 for residential housing or wind pressures determined from AS/NZS 1170.2. Refer to the wind load tables on page 8 and 9 for recommended fixing requirements.

Design ultimate wind pressures must account for such factors as site wind speed, direction, terrain, height, shielding and topography. These project specific considerations should be conducted and approved by a qualified engineer at design stage prior to job commencement to ensure that the final system design is fit for purpose specific to the project and is designed to Australian Standards AS 4055 or AS/NZS 1170.2 for wind loading requirements. The wind load will determine the system specifications.



NCC Volume Two Class 1&10: Residential Housing Construction

AS 4055 has a more simplified method of determining wind loads for domestic housing and assists in determining the minimum panel thickness and fixings requirements. Design ultimate wind pressures, calculated in accordance with AS 4055 "Wind loads for housing" wind classifications N1, N2, N3, N4 for wall framing of up to a 600mm maximum stud spacing for wall framing of up to a 600mm maximum stud spacing.

AS 4055 limitations require buildings designed to this standard to be; less than 8.5m in height; less than 16m in width; where the length does not exceed five times the width; the roof pitch does not exceed 35 degrees. *Exsulte* Thermal Facade Cladding shall be fixed to either steel or timber frames. Class 1 and 10 buildings that fall outside this scope require wind pressures to be calculated from AS/NZS 1170.2 including regions of high pressures at corners.

Panel fixing installation criteria for either vertical battens or horizontal top hats is at a maximum 275mm ctrs and 50mm from edges distance top and bottom) for a 1200mm wide panel for most common applications in low wind suburban locations.

1.3.1A Panel Fixing Specification for Vertical Batten Configuration

**Table One – For Wind Classification to AS 4055
for Wall areas located further than 1200mm from corners**

Wind Classification (AS 4055)	Stud Centres 450mm			Stud Centres 600mm		
	Min Panel Thickness	Fixings per Stud	Fixing Spacings	Min Panel Thickness	Fixings per Stud	Fixing Spacings
N1 & N2	60mm	5	275mm	60mm	5	275mm
N3	60mm	5	275mm	60mm	5	275mm
N4	60mm	5	275mm	75mm	5	275mm

**Table Two – For Wind Classification to AS 4055
for Wall areas located within 1200mm of corners**

Wind Classification (AS 4055)	Stud Centres 450mm			Stud Centres 600mm		
	Min Panel Thickness	Fixings per Stud	Fixing Spacings	Min Panel Thickness	Fixings per Stud	Fixing Spacings
N1 & N2	60mm	5	275mm	60mm	5	275mm
N3	60mm	5	275mm	75mm	6	220mm
N4	60mm	7	180mm	100mm	8	150mm

**Table Three – AS/NZS 1170.2 – Wind Pressure Criteria Design For Buildings That Fall Outside AS 4055
Maximum fixing spacings to satisfy design ultimate wind pressures (kPa)**

Design Ultimate Wind Pressure AS/NZS 1170.2	Stud Centres 450mm			Stud Centres 600mm		
	Min Panel Thickness	Fixings per Stud	Fixing Spacings	Min Panel Thickness	Fixings per Stud	Fixing Spacings
1.0	60mm	5	275mm	60mm	5	275mm
1.5	60mm	5	275mm	60mm	5	275mm
2.0	60mm	5	275mm	60mm	6	220mm
2.5	60mm	6	220mm	75mm	8	150mm
3.0	60mm	7	180mm	75mm	9	130mm
3.5	60mm	8	150mm	100mm	10	120mm
4.0	75mm	9	130mm	100mm	11	110mm
4.5	75mm	10	120mm	–	–	–
5.0	75mm	11	110mm	–	–	–
5.5	75mm	11	110mm	–	–	–

Assumption is based on a panel size of 2400mm × 1200mm panel size. It is acceptable to use a panel thickness equal to or greater than the minimum requirement to satisfy the wind classification and meet thermal requirements. Increased peak pressures occur near the edges of side walls and corners on buildings. Using AS 4055, the size of the building has been assumed and hence the size of these high pressure zones is specified as within 1200mm from wall corners.

1.3.1B Top Hat and Panel Fixing Specification for Horizontal Top Hat Configuration

Top Hat to Stud (Timber or Metal up to 1.8 BMT)	
Fixing Spacing	600mm (max) centres to both sides of Top Hat legs

Top-Hat Spacing					
Wind Classification (AS 4055)	Design Ultimate Wind Pressure AS/NZS 1170.2 (kPa)		Max. Stud Spacing (mm)	Top-Hat Spacing (mm)	
	Over 1200mm from corners	Within 1200mm of corners		Over 1200mm from corners	Within 1200mm of corners
N1 & N2	0.67/-0.62	-1.25	600	600	600
N3	1.05/-0.98	-1.95	600	600	600
N4	1.56/-1.45	-2.90	450	600	450

Table One – AS 4055: Minimum Panel Thickness & Maximum Fixing Spacings Over 1200mm From Corners

Wind Classification (AS 4055)	Top-hat spacing 450mm		Top-hat spacing 600mm	
	Min. Panel Thickness (mm)	Max. Fixing Spacings (mm)	Min. Panel Thickness (mm)	Max. Fixing Spacings (mm)
N1 & N2	60	275	60	275
N3	60	275	60	275
N4	60	275	75	275

Table Two – AS 4055: Minimum Panel Thickness & Maximum Fixing Spacings Within 1200mm Of Corners

Wind Classification (AS 4055)	Top-hat spacing 450mm		Top-hat spacing 600mm	
	Min. Panel Thickness (mm)	Max. Fixing Spacings (mm)	Min. Panel Thickness (mm)	Max. Fixing Spacings (mm)
N1 & N2	60	275	60	275
N3	60	275	60	220
N4	60	180	100	150

**Table Three – AS/NZS 1170.2 – Design Wind Pressure: For Buildings That Fall Outside of AS 4055
Minimum Panel Thickness & Maximum fixing spacings (kPa)**

Design Ultimate Wind Pressure AS/NZS 1170.2 (kPa)	Top-hat spacing 450mm		Top-hat spacing 600mm	
	Min. Panel Thickness (mm)	Max. Fixing Spacings (mm)	Min. Panel Thickness (mm)	Max. Fixing Spacings (mm)
1.0	60	275	60	275
1.5	60	275	60	275
1.95	60	275	60	220
2.5	60	220	–	–
2.9	60	180	–	–

1.3.2 Framing & Substructure

Timber framing must comply with:

AS 1684 National Timber Framing Code.

NOTE: The timber used in the project must be of sufficient standard in terms of durability to meet the local conditions to which the timber will be exposed, such as moisture or insect attack. The force applied to the panels by the wind loading is transferred into the stud frame. The frame must meet the requirements of the relevant Australian Standard. All bracing and hold down requirements should be met by the frame design.

1.3.3 Metal framing compliance

AS 3623 Domestic Metal Framing – A cold-formed steel frame constructed in accordance with NASH Standard for Residential and Low-rise Steel Framing, Part 1: Design Criteria.

NOTE: Structural bracing is to be part of the integral wall frame. *Exsulite* Thermal Facade Cladding doesn't contribute to the structural integrity of the frame.

1.3.4 Slab & Footings

Slab and footings on which the building is situated must be designed and certified by a qualified structural engineer. This should comply in accordance with AS 2870 "Residential Slabs & Footings" and /or AS 3600 Concrete Structures, as appropriate. Slab edge be in accordance with Australian Standard AS 2870-2011.

1.3.5 Ground Clearance & Pest Control

Install *Exsulite* Thermal Facade Cladding with a minimum 75mm clearance (refer to *Exsulite* Construction Drawings for details). Adjacent finished grade must slope away from the building in accordance with local building codes, typically a minimum slope of 50mm over the first metre. Termite management in accordance with manufacturers specifications for installation method where required. **Do not install external cladding in areas where it may remain in contact with standing water or debris. Do not back fill.**

All NCC and local council requirements must be complied with by the builder of the project to ensure adequate protection against pest attack such as termites. The requirements vary across different states in Australia. Refer to the relevant NCC and AS 3660 requirements.

1.3.6 Coastal Areas Recommendation

In coastal areas located within 1km of the shoreline or large exposure to salt air, a protective weatherproof membrane topcoat must be used in all cases. Recommendation is that the facade should be regularly inspected for contamination and pollutants and washed down accordingly.

1.3.7 Colour Selection

Exsulite recommends the use of colours in accordance with NCC 2022 Total Solar Absorptance (TSA) for all monolithic panelised systems. This represents industry best practice advice which in effect means limiting the use of very dark (hot) colours where the resultant temperatures generated will increase thermal stresses and potentially accelerate joint cracking and colour fade. The influence of darker colours absorbing more heat is well known and a factor to be considered in any building application in addition to the aesthetic of the colour choice. The impact a colour may have on any walling element is heavily influenced by other factors such as the site location, design, placement of control joints, build processes and building aspect which should be all be considered when selecting dark colours.

1.3.8 Control Joints

During the life of a building, the building and materials that it is constructed from will move. This movement is due to many factors such as structure movement, thermal expansion and contraction and differential movement between materials. This movement, unless relieved or accommodated for will impart stress on the building and construction materials and lead to cracking. To accommodate for building movement, to relieve stresses and reduce the risk of cracking, movement joints must be installed.

Articulation Joints (A.J.) make the walls more flexible by breaking it into a series of small areas. Differential movement between the facade and adjacent structural elements need to be accommodated for via an (A.J.) joint.

Control Joints (C.J.) are expansion joints to relieve thermal expansion or contraction between *Exsulite* Thermal Facade Cladding and other adjacent building substrate or structures. Good building practice provides for expansion joints at 3m (max) height and 6m (max) wide intervals and at all building weak points or where potential cracking may occur e.g. in line with openings (windows / doors), horizontally between floor levels and at all interfaces of different building construction materials and / or as defined by a responsible Building / Project Engineer. The placement and correct installation of control joints is the responsibility of the Building Engineer / Builder in determining the placement and number of control joints to accommodate any anticipated movement. Typical vertical control joints and horizontal joints filled with a suitable backing rod and approved paintable flexible polyurethane sealant. The project engineer has responsibility for determining where control joints are to be located.

1.3.9 Fire Resistant Levels (FRL) & Bush Fire Attack Level (BAL)

Fire Resistant Levels (FRL)

Exsulite Thermal Facade Cladding has not been tested for FRL. It is not suitable for use where a FRL walling system is specified including allotment boundary walls. Please refer to NCC Volume Two and or your building certifier for job specific requirements and alternative solution.

Bushfire Attack Levels (BAL):

Exsulite Thermal Facade Cladding has been tested for heat intensity and ember attack of bushfires in accordance with AS 1530.8.1: 2018 and AS 3959-2018 and can be used in bushfire prone areas up to BAL A-29 subject to the following design criteria:

BAL A-29: *Exsulite* Thermal Facade Cladding can be used in a BAL A-29 region only when installed with a *Exsulite* Pre-coated Starter Piece and/or *Exsulite* Starter Channel with weep holes in accordance with *Exsulite* Installation & Construction Drawings Manuals and test reports.

AS 3959-2018 for construction in a bushfire prone area.

1.3.10 Exposure to Heat Sources

The *Exsulite* finished surface should not be continuously exposed to temperatures in excess of 80°C due to the risk of damage from softening and shrinkage. Particular care must be taken when installing and operating heat producing appliances e.g. Barbeques, Patio Heaters, Hot Water Services, Heating Units and Air Conditioners to ensure *Exsulite* surfaces do not become damaged by the heat generated by these items.

All heat producing appliances should be installed in accordance with the manufacturer's instructions and comply with the relevant building regulations and Australian Standards e.g. AS/NZS 5601, AS/NZS 3500.4 and AS 3000. Their exhaust vents and flues must be directed away from *Exsulite* finished surfaces to avoid excessive heating.

It is highly recommended that equipment capable of generating high levels of radiant heat such as Barbeques, Patio Heaters etc., should not be operated closer than 1.5 metres from any *Exsulite* finished surface.

1.4.0 System Performance Criteria

The *Exsulite* Thermal Facade Cladding is designed as an integrated non-load bearing lightweight facade system to deliver a NCC compliant weatherproof external building envelope, with a self draining cavity for moisture management whilst providing excellent thermal performance (R-Value).

A) *Exsulite Thermal Facade Cladding*

Comprises *Exsulite* Breathable Wrap (or breathable Wall Wrap complying with ASAS/NZS 4200.1 :2017), M-Grade Blue EPS Panel, Cavity Spacers, *Exsulite* Precoated Starter Piece or Starter Channel with weep holes, Fixing Components / Detail relative to specific Wind Classifications and finished with an *Exsulite Approved* high build weatherproof texture coating system.

B) *Exsulite Composite Thermal Facade Cladding*

Comprises *Exsulite* Breathable Wrap (or breathable Wall wrap complying with ASAS/NZS 4200.1 :2017), Factory basecoated, M-Grade Blue EPS Panel, Cavity Spacers, *Exsulite* Precoated Starter Piece or Starter Channel with weep holes, Fixing Components / Detail relative to specific Wind Classifications and finished with an *Exsulite Approved* high build weatherproof texture coatings system.

Important Notes:

The use of any non-standard or non-approved components may compromise the system and no product warranty will be issued for the system.

Any failure to follow the *Exsulite* installation guidelines and specifications will mean that the *Exsulite CodeMark* Certification is not valid for that installation, and compliance to NCC cannot be claimed for that specific job site.

Where the product/system has NOT been installed strictly in accordance with the *CodeMark* Certificate conditions and associated installation guide, the *CodeMark* Certification and National Construction Code (NCC) compliance will be deemed void and non-compliant.

Where this occurs:

- the installed system will need to be reassessed and will require an alternative building solution to demonstrate compliance to the National Construction Code (e.g. through a "Performance Solution" approved by a qualified engineer); and
- the *CodeMark* Certificate of Conformity will be withdrawn from that specific job site under the NCC requirements.
- In such circumstances *Exsulite* accepts no responsibility for specifications outside the *Exsulite CodeMark* Certified system and confirmation of compliance for any alternate solution is the responsibility of the installer and/or builder.

1.4.1A Exsulite Thermal Facade Cladding components

- Exsulite breathable wall wrap and or Breathable Wall wrap complying with AS/NZS 4200.1:2017
- Cavity Spacers
 - Vertical Battens: “H” Grade EPS or MGP10 H3 Kiln Dried Treated Pine or
 - Horizontal Cold Formed, Zinc Coated, Metal Top Hats (minimum Specification as follows)

Type	Perforated or Non Perforated	
Size (depth)	24mm	35mm
Metal Thickness (min.)	0.42mm BMT	0.55mm BMT
Yield Strength (min.)	550 MPa	270 MPa
Coating Class	AZ150 (ZINCALUME®)	Z275 (GALVABOND®)

- Damp proof course
- Blue EPS M Grade Raw Panel
- Panel Fixing Disks and Corrosion protected Screws
 - 10 Gauge bugle “TRIGARD” screws that are coated using a multi-layer anti-corrosion system known as “Ruspert” for use in in all applications including within 1km of coastal areas
- Top Hat Fixing screws
 - TRIGARD, 12 gauge, Hex Head, Type 17, 35mm (Timber or Metal Stud up to 0.55 BMT)
 - TRIGARD, 12 gauge, Hex Head, Multifix, 40mm (Timber or Metal Stud up to 1.8 BMT)
- Starters
 - Starter Channel with weep holes – placed at the base of the cavity, these function as a cavity closer to drain to the exterior at the bottom of the cavity or
 - Exsulite Precoated Starter Piece
 - Corner angles installed prior to render application
- Self-adhesive flashing tape for weatherproofing around all window frames including sills, doors, openings, penetrations, intersections, connections, heads and jambs – all of which must be flashed prior to panel installation
- Exsulite Approved Adhesive Expanding Foam
- Exsulite Approved Basecoat with a minimum 165gsm Exsulite Approved Alkali Resistant Mesh
- Exsulite Approved Texture Coating
- Sellaes® Flexiseal® or Parchem® Emer-Seal® paintable PU sealant or Exsulite Approved Sealant
- Optional Exsulite Approved weatherproof membrane top coat

1.4.1B *Exsulite* Thermal Facade Composite Cladding components

- *Exsulite* breathable wall wrap and or Breathable Wall wrap complying with AS/NZS 4200.1:2017
- Cavity Spacers
 - Vertical Battens: “H” Grade EPS or MGP10 H3 Kiln Dried Treated Pine or
 - Horizontal Cold Formed, Zinc Coated, Metal Top Hats with sectional properties either

Type	Perforated or Non Perforated	
Size (depth)	24mm	35mm
Metal Thickness (min.)	0.42mm BMT	0.55mm BMT
Yield Strength (min.)	550 MPa	270 MPa
Coating Class	AZ150 (ZINCALUME)	Z275 (GALVABOND)

- Damp proof course
- Composite Panel – Blue EPS M Grade Panel Pre-Rendered incorporating reinforced alkaline resistant 165gsm fibreglass mesh.
- Fixing Disks and Corrosion protected Screws
 - 10 Gauge bugle “TRIGARD” screws that are coated using a multi-layer anti-corrosion system known as “Rusperi” for use in in all applications including within 1km of coastal areas
- Top Hat Fixing screws
 - TRIGARD, 12 gauge, Hex Head, Type 17, 35mm (Timber or Metal Stud up to 0.55 BMT)
 - TRIGARD, 12 gauge, Hex Head, Multifix, 40mm (Timber or Metal Stud up to 1.8 BMT)
- Starters
 - Starter Channel with weep holes – placed at the base of the cavity, these function as a cavity closer to drain to the exterior at the bottom of the cavity or
 - *Exsulite* Precoated Starter Piece
 - Corner angles installed prior to render application
- Self-adhesive flashing tape for weatherproofing around all window frames including sills, doors, openings, penetrations, intersections, connections, heads and jambs – all of which must be flashed prior to panel installation
- *Exsulite* Approved Adhesive Expanding Foam
- *Exsulite* Approved Basecoat with a minimum 165gsm *Exsulite* Approved Alkali Resistant Mesh
- *Exsulite* Approved Texture Coating
- *Selleys Flexiseal* or *Parchem Emer-Seal* paintable PU sealant or *Exsulite* Approved Sealant
- Optional *Exsulite* Approved weatherproof membrane top coat

1.4.2 Moisture Management – Cavity System

The Drainage Cavity separates the Panel from the frame, creating a second layer of defence that allows air flow to dry out any condensation or moisture / water ingress that may form in the wall or behind the Panel.

The drainage cavity is created by installing cavity spacers (typically Vertical EPS battens against each stud or alternatively Horizontal metal TopHats spanning studs) thus allowing any moisture / water ingress to drain down the back of the panel and out through the bottom of the wall via the self draining design of *Exsulite* Starter Piece or weep holes within the Starter Channel. Any remaining condensation or moisture within the cavity can then dry through ventilation provided along the bottom of the cavity and the breathable wall wrap.

1.4.3 *Exsulite* Panel Composition

Blue EPS panel and Composite Blue Panel inner EPS core is manufactured to AS1366 Part 3 ~ 1992. The Blue EPS panel and Composite Blue Panel inner EPS core is produced from expanded polystyrene (EPS) containing Fire Retardant to form a lightweight building panel with insulating properties that can enhance the energy efficiency of a building. The EPS and Composite Panel can be used in Class 1 and 10 building applications and can be fixed to steel, timber and masonry.

EPS building panels contain a fire-retardant but must be considered combustible and should not be exposed to open flame or other ignition sources and may constitute a fire hazard if improperly used or installed.

Fire-retardant EPS panels when in contact with a flame, will burn but collapses on itself and extinguish when the flame source is removed.

Under the National Construction Code, EPS cladding products can be used in Classes 1 and 10 construction relative to system and project design certification such as detailed under the *Exsulite CodeMark* System Certifications covered in this manual.

Panel Specification:

- Blue EPS Panel
- Factory Basecoated Blue Panel
- Standard Thickness: 60mm, 75mm and 100mm

1.4.4 Thermal R-Value Ratings

Timber Frame Construction					
Panel Thickness	Vertical Cavity Spacer (Timber or EPS)	R-Value with Wall Insulation (R2.0 Glasswool)		R-Value without Wall Insulation	
		Summer	Winter	Summer	Winter
60mm	15mm	3.58	3.83	2.05	2.17
75mm	25mm	3.95	4.22	2.41	2.54
100mm	25mm	4.64	4.95	3.10	3.27

Timber Frame Construction					
Panel Thickness	Horizontal Top Hat	R-Value with Wall Insulation (R2.0 Glasswool)		R-Value without Wall Insulation	
		Summer	Winter	Summer	Winter
60mm	25mm or 35mm	3.63	3.89	2.07	2.19
75mm	25mm or 35mm	3.99	4.25	2.42	2.55
100mm	25mm or 35mm	4.68	4.99	3.11	3.28

Steel Frame Construction					
Panel Thickness	Vertical Cavity Spacer (Timber or EPS)	R-Value with Wall Insulation (R2.0 Glasswool)		R-Value without Wall Insulation	
		Summer	Winter	Summer	Winter
60mm	15mm	3.45	3.70	1.99	2.10
75mm	25mm	3.83	4.11	2.35	2.48
100mm	25mm	4.54	4.85	3.03	3.20

Steel Frame Construction					
Panel Thickness	Horizontal Top Hat	R-Value with Wall Insulation (R2.0 Glasswool)		R-Value without Wall Insulation	
		Summer	Winter	Summer	Winter
60mm	25mm or 35mm	3.50	3.76	2.01	2.12
75mm	25mm or 35mm	3.86	4.14	2.35	2.48
100mm	25mm or 35mm	4.58	4.89	3.04	3.21

The above results are combined by area weighting and isothermal planes method to deduce Overall Surface "TOTAL R" to AS/NZS 4859 Parts 1 & 2: 2018. *Exsulite* R-Values are calculated on M Grade EPS manufacture to Australian Standard 1366.3 with a conductivity value of 0.04 W/m².K. as a total walling system from plasterboard to coating. *Thermal Assessment report can be provided upon request.

1.4.5 Impact Resistance

Exsulite Thermal Facade Cladding provides impact resistance to levels similar to that of other common non-masonry materials. Minor damage can be repaired by recoating with *an Exsulite Approved Coating System Specification*. Where additional impact resistant is required *Exsulite* recommend an additional layer of *Exsulite Approved Basecoat* with *Exsulite Approved Mesh* – Refer to *Exsulite Finishing System Application*.

1.4.6 Water Vapour Resistance

Exsulite EPS Panels have one of the highest resistance levels of all materials used for insulation. *Exsulite* EPS Panels have a low water vapour transmission rate, however it is not considered as an adequate vapour barrier. *Exsulite* Breathable Vapour barrier Wall Wrap must be installed in all cases irrespective of the buildings environment and location as part of the full *Exsulite* Thermal Facade Cladding.

1.4.7 Weatherproofing & Water Resistance

Exsulite Thermal Facade Cladding weatherproofing performance complies with the requirements of NCC-2022 Weatherproofing Verification Method H2V1.

1.4.8 Penetrations

Normal industry standards should be followed for the installation of services into the building. In order to avoid disrupting the layout, services should be installed through the frame. All penetrations through *Exsulite* Thermal Facade Cladding must allow for differential movement between the installed system and the services.

All penetrations are a potential source of water ingress and spread of fire and are required to be sealed with *an Exsulite* or head contractor approved paintable PU flexible sealant. Back blocking should occur for items such as downpipe brackets, outside taps, light fittings and other building services to the appropriate locations and apply flashing tape before panel installation.

1.4.9 Waste Management

EPS Panel is a lightweight material that is easily dispersed in windy conditions. All waste and cut offs should be stored in plastic bags, secured and disposed of in accordance with local regulations. Good frame design will minimise the amount of waste generated during the construction process.

Section 2 – *Exsulite* Facade Cladding Installation

2.1.0 Before you Start

2.1.1 State Building Authority Licencing

Each state and territory has different licensing and registration requirements and it is important that the installation is carried out by suitably licensed installers. This is outside the control of *Exsulite* and as such Builders and Installers must ensure they are appropriately licensed to carry out or contract all specified work.

2.1.2 Installer Qualifications

In all cases Installation must be carried by qualified and licensed persons to install cladding relative to the governing State Building Authority.

Exsulite is a *CodeMark* Certified System providing confidence that the system when installed in accordance with the full *Exsulite* design and installation guidelines and relevant *Exsulite* Construction Drawing details meets the specified *CodeMark* defined Building Code requirements.

An *Exsulite* Certificate of Installation & Workmanship from a suitably qualified and licenced Installer should be issued confirming installation in accordance with the defined systems. This is issued to the builder and forms part of the Builders Project Certification processes.

NOTE: *Exsulite* does not approve nor endorse the use of any non-standard system specification and or components and will not be responsible for the performance of a system when installed outside the *CodeMark* accreditation and system limitations and/or when non-standard or non-approved components are used.

Design and installation of any non-standard or non-approved *Exsulite* Thermal Facade Cladding components will not be the responsibility of *Exsulite* and will be a Non Conforming System and void any product warranty or claims in relation to product / system performance.

2.1.3 Quality Control

Exsulite System Warranty can be issued only when a *Exsulite* Certificate of Installation & Workmanship is completed & signed confirming that the system installation is in accordance with the *CodeMark* Certificate of Conformity.

2.1.4 Handling and Storage

Exsulite Thermal Facade Cladding panels and fixing components should be stored elevated, under cover and laid flat. Edges and corners are to be protected at all times. *Exsulite* recommends that the specified finishing system be applied to the panels as soon as possible according to this specification. UV rays don't have an adverse effect on the performance of the EPS or Composite Panels during typical construction timeframes however, if installation is interrupted for any extended periods of time with the possibility of inclement weather, the surface of all panels should be covered in order to provide them with protection.

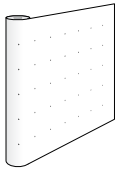
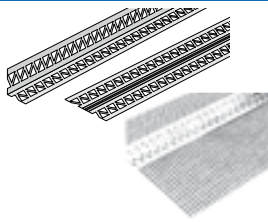
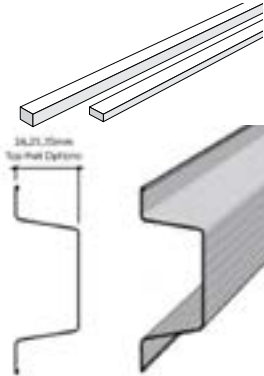
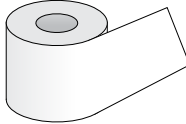
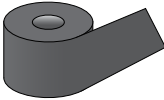
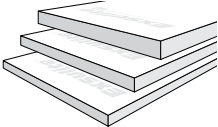
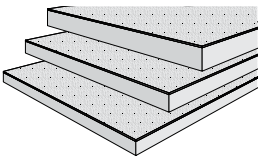
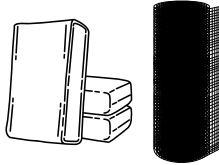
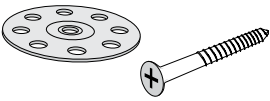
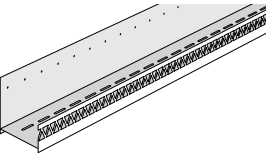
2.1.5 Component Checking

Damaged EPS or Composite Panels or panels that have been in contact with harsh solvents or acids should not be used. EPS or Composite Panels should be stored inside a building where possible. Where outside storage cannot be avoided, the panels should be stacked elevated from the ground and covered with a builders plastic film sheet or weatherproof tarpaulin.

It is the responsibility of the Installer to conduct a stringent quality check of all the *Exsulite* components prior to commencement of work to ensure the correct product items, quantities and colours have been delivered to site in good order and are ready for use.

Exsulite will not be responsible for rectifying potential claims where no evidence of the above following installation and job completion is provided.

2.1.6 Exsulite Facade Cladding Components

Product	Description	Product	Description
	Exsulite breathable wall wrap and or that alternative wall wrap fit for purpose in accordance with AS/NZS 4200.1:2017		Corner angles and expansion beads installed prior to render application. Meshed Corner Angle
	Cavity Spacers: • Vertically installed Battens either: • "H" Grade EPS • MGP10 H3 Kiln Dried Treated Pine or Horizontally Installed Perforated or Non-Perforated Metal Top Hats either • 24mm, 0.42 BMT, YS550, AZ150 ZINCALUME • 35mm, 0.55 BMT, YS270, Z275 GALVABOND		Flashing Tape: self-adhesive flashing tape for weatherproofing around all window frames including sills, doors, openings, penetrations, intersections, connections, heads and jams – all of which must be flashed prior to panel installation
	Damp Proof Course		Exsulite Approved paintable PU expanding foam adhesive
	Blue EPS Raw Panel		Selleys Flexiseal Joint Sealant, Emer-Seal, or as approved by Exsulite
	Blue Composite Pre-coated Panel		Exsulite Approved Basecoat with 165gsm Exsulite Approved Alkali Resistant Mesh
 	Panel Fixings: Exsulite Fixing Disk and 10 Gauge bugle "TRIGARD" screws for use in in all applications including within 1km of coastal areas, Bugle Head Screws Top Hat Fixings: Class 3, 12G, Hex Head, Type 17 or Multifix		Exsulite Approved Texture Coating
	Exsulite Starter Channel with weep holes. Placed at the base of the cavity, these function as a cavity closer to drain to the exterior at the bottom of the cavity.		Optional Exsulite Approved weatherproof membrane top coat
	Exsulite Pre-coated Angled Cavity Starter Piece (SP1)		Exsulite Pre-coated Square Cavity Starter Piece (SP3)
	Exsulite Pre-coated Reveal & Slab Cavity Starter Piece (SP2)		Exsulite Pre-coated Sill Piece (SP4)

2.1.7 Exsulite Facade Cladding – Material Estimate Guide

- Panel (2400mm x 1200mm) = 2.88m²
- Cavity Spacers Vertical Install; "H" Grade EPS Spacer (15mm, 20mm, 25mm thick and 1.2m long)
- Cavity Spacers Horizontal Install : Metal Top Hats 24,25,35mm, 4.8m long

- Calculate total wall area including openings = total m²
- Calculate all openings (doors and windows) = total m²
- Take total wall area (m²) minus all openings (m²) = total (m²) net wall area to be installed.
- Take your net wall area and divide by 2.88 to give you the number of EPS panels required – this excludes wastage. An additional material allowance should be made for wastage and off cuts approximately 10% however this can change due to job design and installation acquiresments

Fixing Disks and 10 gauge, Bugle Head, Corrosion Protected Screws

- Allow minimum 9 of each per m² or 25 of each per Panel
- 10 Gauge bugle "TRIGARD" screws that are coated using a multi-layer anti-corrosion system known as "Ruspert" for use in in all applications including within 1 km of coastal areas

(A): Vertical Batten configuration

Fixing Panel to Stud : 10G, Bugle head screws

- 60mm panel with 15mm Cavity Spacer : 105mm screws¹
- 75mm panel with 25mm Cavity Spacer : 130mm screws¹
- 100mm panel with 25mm Cavity Spacer : 150mm screws¹

Note 1: Minimum penetration into timber frame is 30mm.

Minimum penetration through metal frame is 3 full threads

(B) Horizontal Top Hat configuration

Fixing Top Hat to Stud

- Hex Head, 12G Type 17, 35mm or Multifix, 40mm screws
- 600mm maximum centres to both sides of top hat legs

Fixing Panel to Metal Tophat 0.42 / 0.55 BMT

- 60mm Panel: either 10G Timber or Metal, 3 thread (min) penetration²
- 75mm panel: either 10G Timber or Metal, 3 thread (min) penetration²
- 100mm Panel: either 10G Timber or Metal, 3 thread (min) penetration²

Note 2: ENSURE screw fixings through Top Hat do not penetrate the Wall Wrap

Exsulite Breathable Wrap (or breathable Wall Wrap complying with AN/NZS 4200.1:2017)

Exsulite Starter Piece: Size 2400mm long = measure lineal metres to where they are to be installed

Damp Course – Size: 300mm x 30m

Foam Adhesive = 1 x 750ml per 30m² (approximate only)

Flashing Tape for openings – size: 25m roll

Selleys Liquid Nails® Fast – size: 300ml allow 1 tube per 12 lineal metres of angles (approximate) or an approved construction adhesion by Exsulite

Exsulite Approved Primer (optional)

Selleys Flexiseal Sealant: size: 600ml or an approved paintable PU sealant by Exsulite. Note: polyethylene backing rod is to be installed prior to the paintable PU sealant being applied.

Exsulite Approved Basecoat: Size 20kg = Approximately 3m² @ 4mm thick plus wastage

165gsm Exsulite Approved Alkali Resistant Mesh: Size 50m x 1m = 50m²

Exsulite Approved Texture Coat: Size 15L = Approximately 12m²

Optional Exsulite Approved Topcoat: Size 15L = Approximately 70m²–75m²

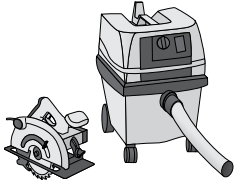
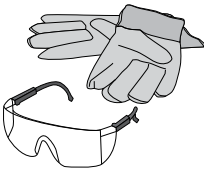
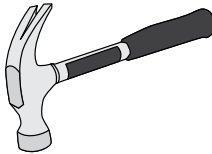
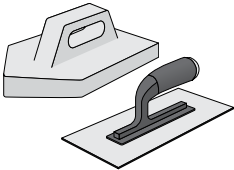
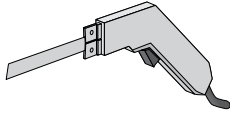
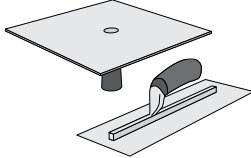
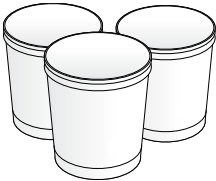
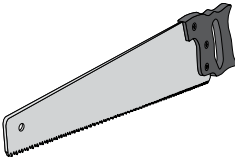
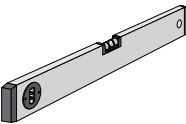
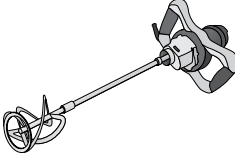
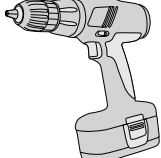
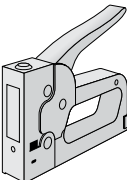
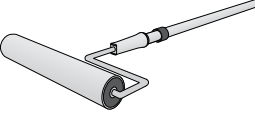
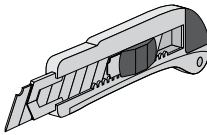
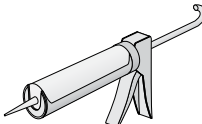
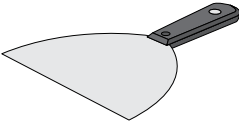
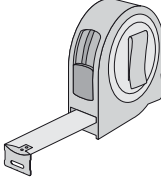
NOTE: The above calculations are a guide only. For project specific requirements please talk to your Exsulite representative.

Material estimate guide for typical job lot based as follows:

Estimate is based on a Blue EPS 75mm Panel and 25mm Vertical EPS Cavity Spacer						
Products	Metres Squared (wall surface)					
	60	80	100	120	140	180
Material quantities are based on a 2400mm x 1200mm panel	Quantity Required					
75mm Blue EPS	20	27	34	40	47	60
Battens H Grade (PK100) – 1200 x 40 x 25	2	2	3	3	4	4
10 Gauge Square Drive (Timber) – 130mm 10 Gauge bugle “TRIGARD” screws that are coated using a multi-layer anti-corrosion system known as “Ruspert” for use in in all applications including within 1km of coastal areas (PK500)	2	2	2	3	3	5
Fixing Washers – 40mm Diameter (PK500)	2	2	2	3	3	5
<i>Exsulite</i> Breathable Wrap (or breathable Wall Wrap complying with AN/NZS 4200.1:2017) 2740 x 30m roll = (82m ²)	1	2	2	2	2	3
Alkali Mesh – 1m x 50m – 5 x 5mm = (50m ²)	2	2	2	3	3	4
EPS Starter 2500 x 300 x 75mm	10	14	16	20	23	26
Flashing tape – 75mm x 25m roll	2	3	3	4	5	5
<i>Selleys Liquid Nails Fast</i> – 300ml Tube or an approved construction adhesion by <i>Exsulite</i>	6	8	10	12	14	18
Foam Adhesive – 750ml Canister	4	6	7	6	8	12
Application Gun – Metal	1	1	1	1	1	1
Gun Cleaner – 300ml Canister	1	1	1	2	2	2

NOTE: The above calculations are a guide only. For project specific requirements please talk to your *Exsulite* representative.

2.1.8 Tools Requirements

 Electric saw with diamond tip blade, fitted with a vacuum extraction appliance where possible	 Safety gloves & safety glasses	 Hammer	 Floats – plastic & foam
 Hot Knife	 Dust mask	 Hawk & trowel	 Empty pails
 Hand saw	 Spirit level	 Mixing drill	 Cordless drill
 Portable work bench	 Staple Gun	 Roller	 Scaffold
 Sharp blade knife	 Caulking gun	 Spatula	 Tape Measure

2.1.9 Compliance

State Regulators, Aust Building Codes Board and JAS-ANZ require building products/systems that are *CodeMark* Certified Systems must be installed strictly in accordance with the *CodeMark* Certificate of Conformity and be relevant to the specific Project Building Code.

Prior to any system installation, you should check the job requirements against the proposed *Exsulite* System *CodeMark* Certificate of Conformity that you are about to install, to satisfy yourself that the proposed *Exsulite* System is in accordance with the building surveyors' planning approvals for that specific job site.

Any failure to follow the *Exsulite* installation guidelines and specifications will mean that the *Exsulite* *CodeMark* Certification is not valid for that installation, and compliance to NCC cannot be claimed for that specific job site.

Where the product/system has NOT been installed strictly in accordance with the *CodeMark* Certificate conditions and associated installation guide, the *CodeMark* Certification and National Construction Code (NCC) compliance will be deemed void and non-compliant.

Where this occurs:

- the installed system will need to be reassessed and will require an alternative building solution to demonstrate compliance to the National Construction Code (e.g. through a "Performance Solution" approved by a qualified engineer); and
- the *CodeMark* Certificate of Conformity will be withdrawn from that specific job site under the NCC requirements.
- In such circumstances *Exsulite* accepts no responsibility for specifications outside the *Exsulite* *CodeMark* Certified system and confirmation of compliance for any alternate solution is the responsibility of the installer and/or builder.

Read the *Exsulite* Thermal Facade Cladding Specification & Installation Manual in conjunction with the project consultant, project specific specification and drawing details to familiarise yourself with the relevant project specific requirements.

Exsulite Thermal Facade Cladding does not contribute to the structural integrity of the frame. All studs and noggings must be checked with a long straight edge for line and face accuracy to ensure the stud wall has a true and accurate outside face, wall frames are defective if they deviate in horizontal or vertical by more than 4mm in any 2M length wall in accordance with the VBA 2015 Guide to Standard Tolerance. The panel will not straighten any warped or defective frames and any warping may be visible at job completion.

It is the responsibility of the appointed contractor to ensure that the substrate / framework to which *Exsulite* Thermal Facade Cladding is to be installed to is properly prepared in strict accordance with the relevant Australian Standards, Building Code of Australia regulations and project specific requirements.

Ensure that all preparation work prior to commencement of system installation has been completed by the relevant trades and that the substrate onto which *Exsulite* Thermal Facade Cladding is to be fixed to is ready for installation work to commence. This includes installation of flashings to brickwork, window and door openings and penetrations. Ensure wall levels have been checked and signed off by project / site supervisor. Where the installer is not satisfied with the substrate standard they are to advise the head contractor prior to commencement of work of these concerns. Once the substrate has been rectified to a standard that meets the site agreed sample work, only then can the work commence.

Pre Job Check should include but be limited to:

- Check that the frame conforms to the relevant BCA regulations and Australian Standards as well as local standards for structural requirements including wind loadings and bracing. Refer to the relevant *Exsulite* wind design criteria for panel and fixing based on project specific wind pressures.
- Check with plumbers and electricians and back-block for any wall mounted services as it is imperative that this is done prior to panel installation.
- Check that all eaves and flashings have been completed by the builder to the requirements of the project specification prior to commencement.
- If Builder installed wall wrap check that the wrap installed is breathable Wall Wrap complying with AN/NZS 4200.1:2017), and if not, advise the builder that the wrap does not conform and will be required to be replaced with *Exsulite* wall wrap.
- Check that correct windows with reveal sizes are fitted in accordance with the project specification. Check that the outside of the reveal is flush with the external frame and 10mm proud on the inside allowing for the internal plasterboard. Make sure that they have been fixed off correctly, level and plumb.
- Check to ensure that the correct damp course has been installed to slab edge and termite treatment has been completed. Where no damp course has been installed by others then it must be installed by the *Exsulite* Installer prior to the wall wrap being installed.

2.1.10 Timber framing must comply with AS 1684 – National Timber Framing Code

Exsulite Thermal Facade Cladding can be fixed to either timber or steel framing. All frames should comply with the relevant building code and/or Australia Standard for the type of construction. Studs should be positioned to a maximum of 600mm centres with noggings at maximum of 1350mm centres. The frame must be constructed correctly to allow the fitting of the panels so that a true and accurate outside face is achieved. If the frame is out of tolerance it should be checked and straightened prior to installation commencing.

2.1.11 Structural bracing is to be part of the integral wall frame

Exsulite Thermal Facade Cladding does not contribute to the structural integrity of the frame. All studs and noggings must be checked with a long straight edge for line and face accuracy to ensure the stud wall has a true and accurate outside face, wall frames are defective if they deviate in horizontal or vertical by more than 4mm in any 2M length wall in accordance with the VBA 2015 Guide to Standard Tolerance.

NOTE: The panel will not straighten any warped or defective frames and any warping may be visible at job completion.

Where wall frame is misaligned the use of Horizontal Top Hat Cavity Spacers installed with packers between the Top Hat and Frame may assist alignment of panel installation (in lieu of vertical Battens).

If packing out of Top Hats is required it is important to ensure 30mm screw thread penetration into timber or 3 threads through steel framing is achieved. Use appropriate length fixings screws of the correct class as required.

2.1.12 Metal framing must comply with AS 3623

AS 3623 Domestic Metal Framing – A cold-formed steel frame constructed in accordance with NASH Standard for Residential and Low-rise Steel Framing, Part 1: Design Criteria.

2.1.13 Window Reveals Details

Panel	Exsulite Cavity Spacer	Window Reveal
75mm	25mm	65mm
100mm	25mm	90mm

The above table is a guide only please refer to the window manufacture for specification requirements.

2.1.14 Placement of Expansion Joints

Good building practice provides for expansion joints at 3m (max) height and 6m (max) wide intervals and at all building weak points or where potential cracking may occur e.g. in line with openings (windows/ doors), horizontally between floor levels and at all interfaces of different building construction materials and /or as defined by a responsible Building / Project Engineer. The placement and correct installation of control joints is the responsibility of the Building Engineer / Builder to determine if the joints are sufficient to accommodate the movement of the specific project building. Typical vertical control joints are 8mm–10mm wide and horizontal joints are 8mm–10mm wide and filled with an approved paintable flexible sealant.

Placement of Expansion / Control Joints	Maximum Distance
Horizontal Wall Areas: Wall length 6 Metres	6 Metres
Vertically: Construction joints between floor levels and gable ends, where the total wall height including gable exceeds maximum distance	3 Metres
Scribed control joints: Above large window and door openings	—

2.1.15 Fixing Guide

Vertical Batten Configuration Fixing Panel to Stud (Timber or Metal ¹)						
Frame Type	Panel Thickness	Cavity Spacer	Minimum Screw Length ²	Class ³	Gauge	Type
Timber or Metal up to 0.55 BMT	60mm	15mm	105mm	3 or 4	10	Bugle, Needle Point
	75mm	25mm	130mm	3 or 4	10	Bugle, Needle Point
	100mm	25mm	155mm	3 or 4	10	Bugle, Needle Point
1. Timber or Metal screw type suitable into metal stud up to 0.55 BMT. Above 0.55 BMT requires Metal screw. 2. Minimum screw penetration is 30mm into timber or 3 threads through metal. 3. 10 Gauge bugle "TRIGARD" screws that are coated using a multi-layer anti-corrosion system known as "Ruspert" for use in in all applications including within 1km of coastal areas.						

Horizontal Top Hat Configuration Fixing Top Hat to Stud	
Screw Type	Timber or Metal Stud up to 0.55 BMT – Class 3, Hex Head, 12G, Type 17, 35mm (min) Timber or Metal Stud up to 1.8 BMT – Class 3, Hex Head, 12G, Multifix, 40mm (min)
Fixing Spacings	600 mm maximum centres fixed both sides of Top Hat legs

Horizontal Top Hat Configuration Fixing Panel to Metal Top Hat						
Top Hat Type	Panel Thickness	Top Hat Height	Minimum Threads penetration ²	Class ³	Gauge	Type
Metal up to 0.55 BMT ¹	60mm	24/35mm	3	3 or 4	10	Bugle, Needle Point
	75mm	24/35mm	3	3 or 4	10	Bugle, Needle Point
	100mm	24/35mm	3	3 or 4	10	Bugle, Needle Point
1. Timber or Metal screw type suitable into metal up to 0.55 BMT. Above 0.55 BMT requires Metal screw. 2. Screw length must provide 3 threads min penetration through Top Hat and NOT penetrate Wall Wrap. 3. 10 Gauge bugle "TRIGARD" screws that are coated using a multi-layer anti-corrosion system known as "Ruspert" for use in in all applications including within 1km of coastal areas.						

General Fixing process

Drive Panel Fixing Screws with 40mm Fixing Disk fitted into the middle of the Stud or Top Hat until the disk just penetrates the panel face. When fastened correctly, the screw head and the 40mm fixing disk should be slightly countersunk in a concave recess on the outer surface of the panel such that the panel retains its original thickness and shape.

General fixing at maximum spacings of 275mm (5 fixings at 275mm spacing / 25 per sheet and within 50mm from panel edges for a 1200mm width panel). Minimum 30mm penetration into timber or 3 threads through metal. Stud spacings at 600mm maximum.

Subject to panel thickness, project specific wind pressures, stud spacings and system specification.
Refer to: Fixing Specification for Wind Pressures tables before commencing job.

IMPORTANT: DO NOT overdrive the fixing as this will strip the plastic fixing disc and the fixing will be ineffective. In Top Hat configurations ENSURE the screw fixing does not penetrate the Wall Wrap.

2.2.0 Installation Procedure

System is to be installed to a properly prepared substrate (frame) in strict accordance with the relevant Australian Standards, Building Code of Australia regulations, and project specific requirements. Ensure that all preparation works prior to commencement of system installation have been completed by the relevant trades and that the substrate onto which *Exsulite* Thermal Facade Cladding is to be fixed to is ready for installation works to commence.

Where the installer is not satisfied with the substrate standard they are to advise the head contractor or builder prior to commencement of works of these concerns, once the substrate has been rectified to a standard that meets the site agreed sample works, only then can the works commence.

NOTE: *Exsulite* Thermal Facade Cladding does not contribute to the structural integrity of the frame.

2.2.1 Wall Wrap

Install *Exsulite* breathable wall wrap and or that alternative wall wrap is fit for purpose in accordance with AS/NZS 4200.1:2017, with a staple gun to a properly prepared frame. Appropriate head flashings over the top of the building wrap must be fitted before a compatible building wrap tape is used to seal the junction of the head flashing and building wrap. If head flashings cannot be used, an acceptable alternative flashing must be provided.

NOTE: Wall wrap is to have neither tears nor break points.

Followed by installation of the *Exsulite* Cavity Spacer where a *Exsulite* cavity system is specified and installed, fixed to each stud.

2.2.2 Weatherproof Flashing Tape

Install *Exsulite* Approved and supplied Flashing Tape; self-adhesive flashing tape for weatherproofing around all windows frames including sills, doors, openings, penetrations, intersections, connections, heads and jambs and must be flashed prior to panel installation. It must cover both wall wrap and substrate to ensure a closed weatherproof seal is achieved.

2.2.3 Cavity Spacer

Vertical Batten installation ("H" Grade EPS or MGP10 H3 Kiln Dried Treated Pine)
Fix battens to each stud and around all windows and doors and to the top edge of roof flashing.
or
Horizontal Top Hat installation (Galv/ZINCALUME Steel)
Fix Tophats horizontally across studs at max 600mm centres and within 50mm of all perimeters

2.2.4 *Exsulite* Starter Channel with Weep Holes

The starter channel must be installed 10mm above metal flashings, roof surface and 10mm above the slab edge and butt joined and sealed on the junction with an approved paintable PU sealant or similar to avoid separation. Apply *Selleys Liquid Nails Fast Grab*, or as approved by *Exsulite*, to the inside base of the starter channel prior to installing the *Exsulite* panel to assist with adhesion of the panel to the starter channel. Once tacked into position, the screwing of the *Exsulite* panels will secure the starter channel into its finishing position at the bottom.

NOTE: Refer to the *Exsulite* Construction Drawings for "over roof or slab edge" details.

When installing the *Exsulite* starter channel and/or *Exsulite* Starter Piece above a deck, flat or pitched roof, ensure a gap is left between the bottom of the *Exsulite* starter channel and Starter Piece and the finished level.

NOTE: Refer to the *Exsulite* Construction Drawings for further details.

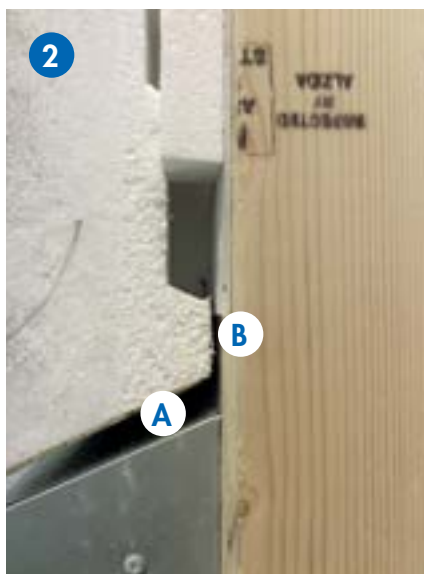
2.2.5A Over Pitch Roof Set Out – *Exsulite* Angled Starter Piece (SP1)

Vertical batten configuration shown

The *Exsulite* Angled Starter Piece (SP1) is to be installed horizontally above roof section and fixed to each stud 50mm and 150mm from top edge.

NOTE: Ensure fixings do not penetrate into metal flashing and ensure that the flat or pitched roof has had the correct flashing installed by others which is fit for purpose and is sloping away from the wall cladding.

When installing the *Exsulite* Angled Starter Piece (SP1) channel above a deck, flat or pitched roof, ensure a gap of is left between the bottom of the *Exsulite* Angled Starter Piece (SP1) and the finished level.



1. Install *Exsulite* Cavity Spacers with galvanised clouts on all studs to top edge of roof flashing.

2. Determine height of *Exsulite* Angled Cavity Starter Piece (SP1).

A) The gap between the bottom of the starter piece and the top of a tiled or metal roof is 10mm from the roof surface to conform to the requirements of NCC-2022 Weatherproof Verification Methods V2.2.1 and F.V.1.

B) Building wrap must terminate 20mm above 2mm gap. A gap no greater than 2mm (max.) between back of panel and metal roof flashing to conform to AS 3959-2009 for construction in bush-fire prone areas.

NOTE: Refer to *Exsulite* Construction Drawings EXS804A and EXS805A for clarity.

2.2.5B Over Pitch Roof Set Out – Angled Aluminium Starter Channel

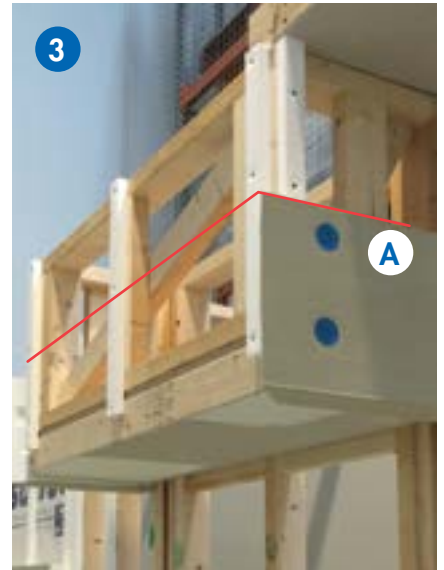
An Aluminium Angled Starter Channel with weep holes can also be used; installed at 10mm above roof surface where the following EPS Panel and Cavity Spacer configuration are specified:

- 15mm Cavity Spacer with 60mm Blue EPS Panel
- 25mm Cavity Spacer with 75mm Blue EPS Panel
- 25mm Cavity Spacer with 100mm Blue EPS Panel

NOTE: Refer to *Exsulite* Construction Drawings EXS806 and EXS807 for clarity.

2.2.6 Bulkhead / Balcony Set out – *Exsulite* Square Cavity Starter Piece (SP3)

Vertical batten configuration shown



1. Mitre cut left side at 45 degrees external corner of *Exsulite* Square Cavity Starter Pieces (SP3).
2. Mitre cut right side at 45 degrees external corner of *Exsulite* Square Cavity Starter Pieces (SP3).
3. Confirm drip edge depth specified. Determine height of *Exsulite* Square Cavity Starter Piece (SP3).
- A) Flick chalk line across cavity spacers from corner to corner.
4. & 5. Completed bulk with drip line.

NOTE: Refer to *Exsulite* Construction Drawings EXS751 for clarity.

2.2.7 Window Reveals & Window Head Set Out – *Exsulite* Reveal Cavity Piece (SP2)

Vertical batten configuration shown



1. Install *Exsulite* Reveal Cavity Pieces (SP2) back to back to form expansion joints, allow 8mm gap between panels for expansion joints. Allow 3mm–5mm gaps between window frame and side panel to allow for caulking.
2. Install *Exsulite* Reveal Cavity Piece (SP2) above window head. Mitre cut at 45 degrees when forming an expansion joint. Allow 3mm–5mm gaps between window frame and side panel to allow for a paintable PU Sealant.

NOTE: Refer to *Exsulite* Construction Drawings EXSE03, EXS700, EXS700.2, EXS700.3 for clarity.

2.2.8 Window Sill Set Out – *Exsulite* Sill Piece (SP4)

Vertical batten configuration shown



1. Install *Exsulite* Sill Pieces (SP4) under window frame with 8mm gap between panels when forming a control joint. Mitre cut at 45 degrees when forming expansion joints.
2. *Exsulite* Sill Piece (SP4) used to form window sill. Mitre cut at 45 degrees when forming expansion joints.

NOTE: Refer to *Exsulite* Construction Drawings EXSE03, EXS700, EXS700.2, EXS700.3 for clarity.

2.2.9 Exsulite Window Opening With Control Joints Set Out

Vertical batten configuration shown

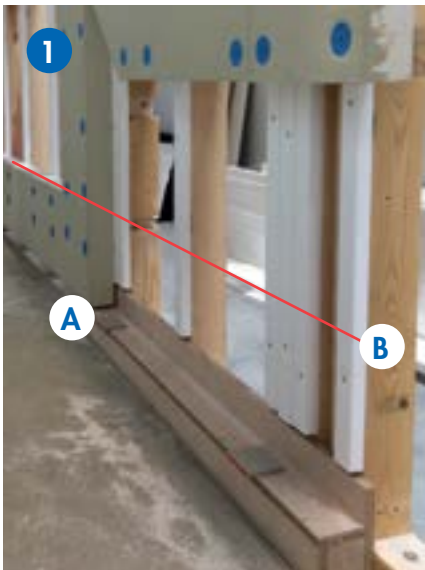


1. Typical window set out with control joint. 8mm gap when forming expansion joint between panels.

NOTE: Refer to *Exsulite* Construction Drawings EXSE03 for clarity.

2.2.10A Slab Rebate Set Out – *Exsulite* Slab Cavity Starter Piece (SP1 or SP3)

Vertical batten configuration shown



1. **A)** Where specified place BAL 40 Weepa at 1200mm maximum centres at bottom of slab edge.
B) Determine height of *Exsulite* Slab Cavity Starter Piece top edge from top of BAL 40 Weepa and flick chalk line across cavity spacers corner to corner.
2. Install *Exsulite* Slab Cavity Starter Piece (SP3) to chalk line. Screw spacings from top edge, 50mm and 150mm. Mitre *Exsulite* Slab Cavity Starter Piece (SP3) when forming a control joint where required.

NOTE: Refer to *Exsulite* Construction Drawings EXSE01 and EXS101B for clarity.

2.2.10B Slab Rebate Set Out – *Exsulite* Starter Channel with Weep Holes

The starter channel must be installed 10mm above metal flashings, roof surface and 10mm above the slab edge and butt joined and sealed on the junction with an approved paintable PU sealant or similar to avoid separation. Apply *Selleys Liquid Nails Fast Grab* or, as approved *Exsulite*, to the inside base of the starter channel prior to installing the *Exsulite* panel to assist with adhesion of the panel to the starter channel. Once tacked into position, the screwing of the *Exsulite* panels will secure the starter channel into its finishing position at the bottom.

When installing the *Exsulite* starter channel and or *Exsulite* Starter Piece above a pitched roof, ensure a gap is left between the bottom of the *Exsulite* starter channel and Starter Piece and the finished level.

NOTE: Refer to *Exsulite* Construction Drawings EXS101E and EXS101F for clarity.

2.2.11 Back Blocking – Set Out

Vertical batten configuration shown



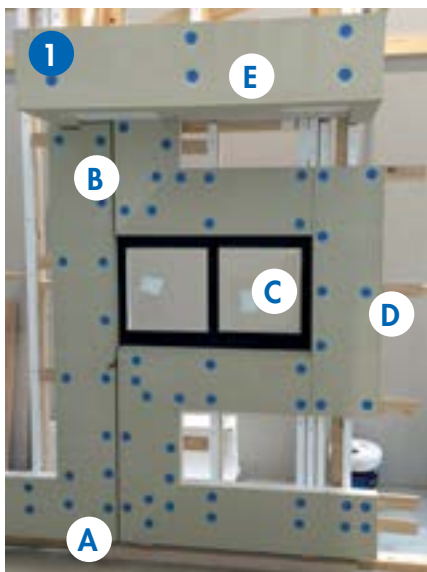
1. Back block ribbons to join off stud.
Ribbons – 400 x 120 x 19mm (minimum)

A) The panel is required to be fixed to the stud, extra supporting (back blocking) members will be required at panel joints so each panel is individually fixed.

Refer to page 43 of this manual for further details on Back Blocking and Panel Joint Detail.

2.2.12 Slab Edge, Control Joint, Window Openings – Set Out

Vertical batten configuration shown



1. Typical set out ready for *Exsulite* EPS Panel installation. Slab edge detail with:

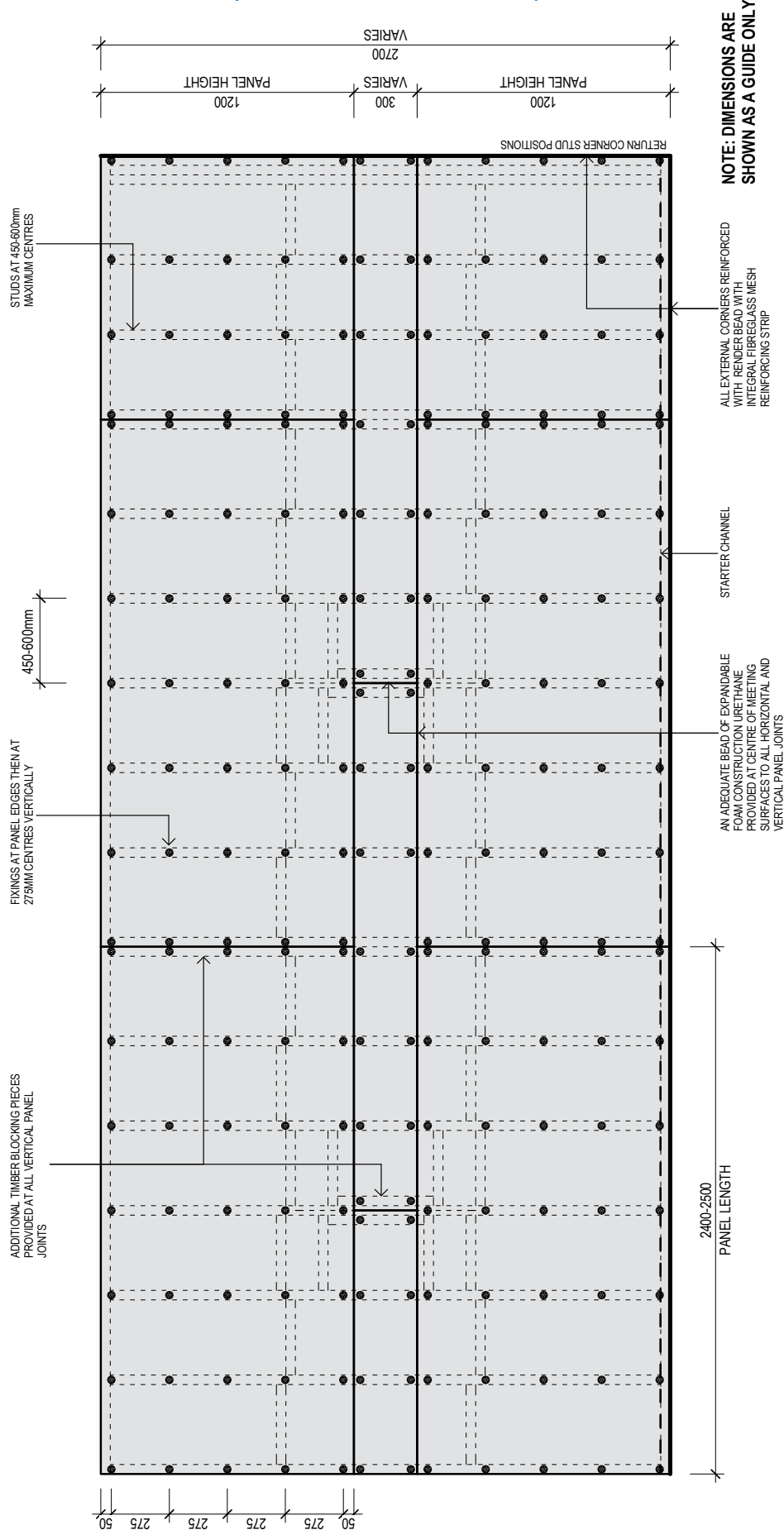
- A) BAL 40 Weepa
- B) Control joint detail with 8mm gap
- C) Window opening detail
- D) Back blocking
- E) Eave and bulkhead

NOTE: Refer to *Exsulite* Construction Drawings EXS-E01A, EXS-E01B, EXS-E01E, EXS-E01F and EXS503 for clarity.

2.2.13 Set Out Drawings

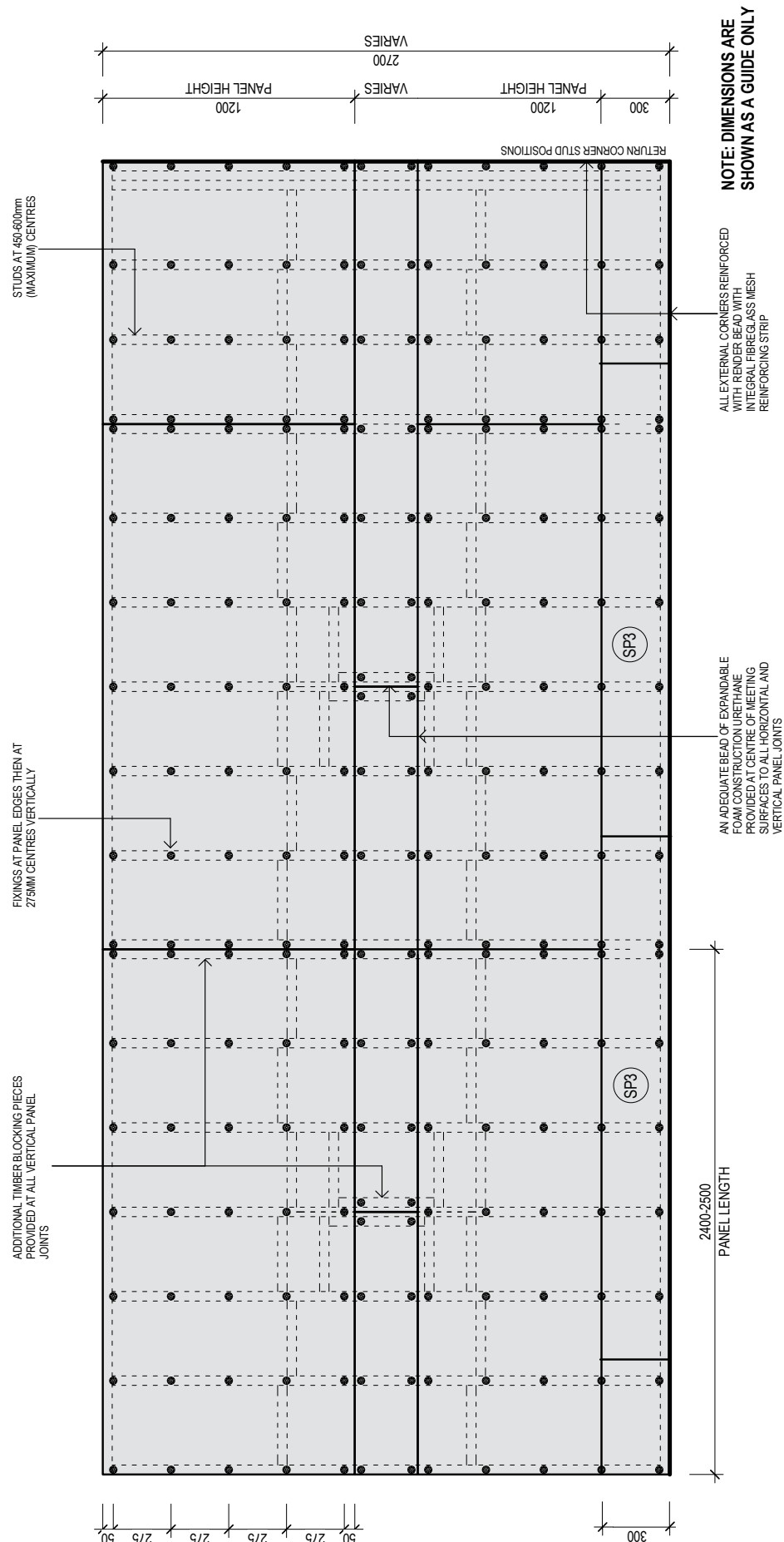
General Set Out for 450 or 600mm Centred Stud Wall
Using Starter Channels for 75 & 100mm EPS Panel

NOTE: for 50 & 60mm EPS Panel only install to 450mm Stud or Top Hats Centres

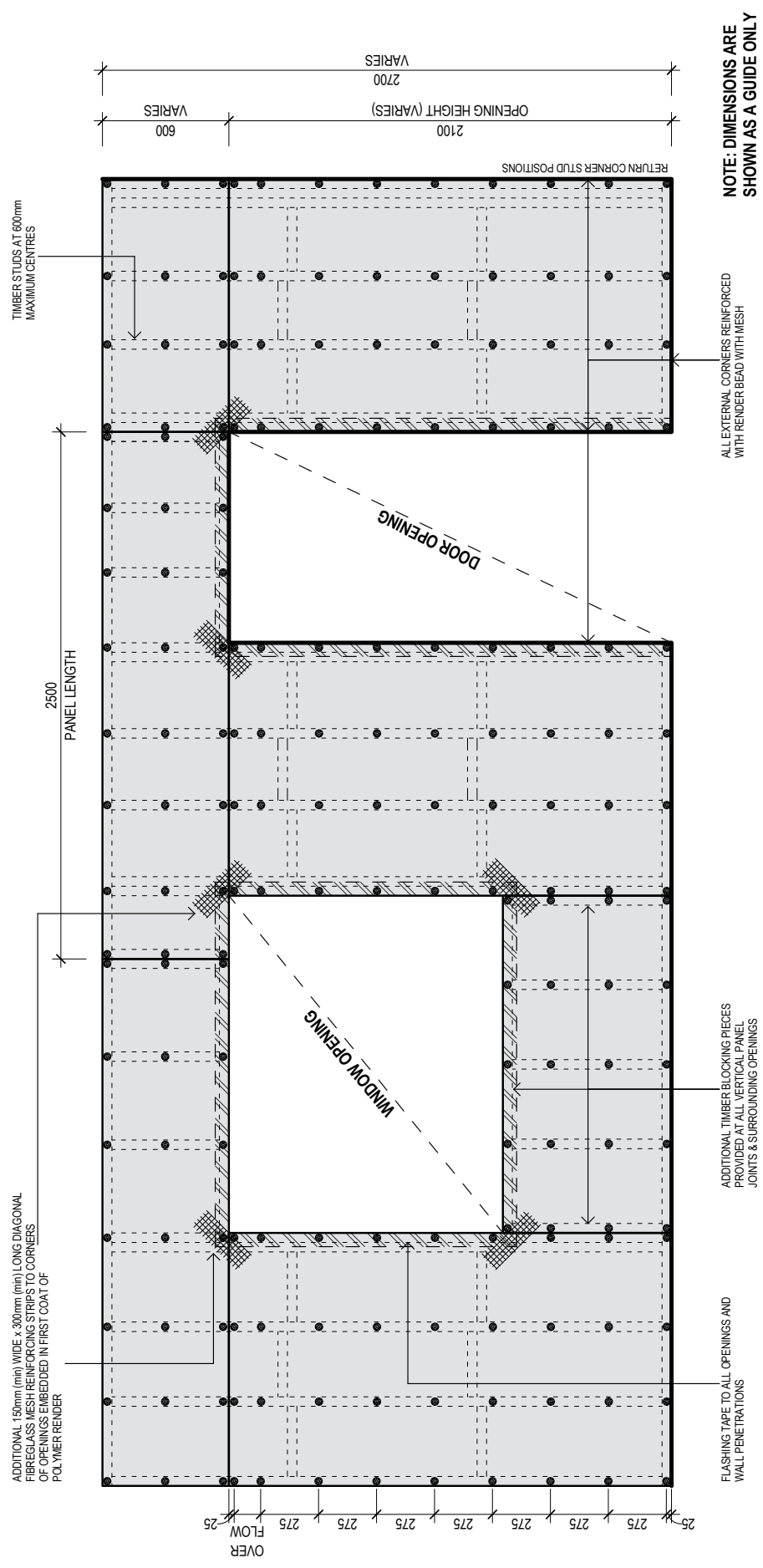


NOTE: DIMENSIONS ARE SHOWN AS A GUIDE ONLY

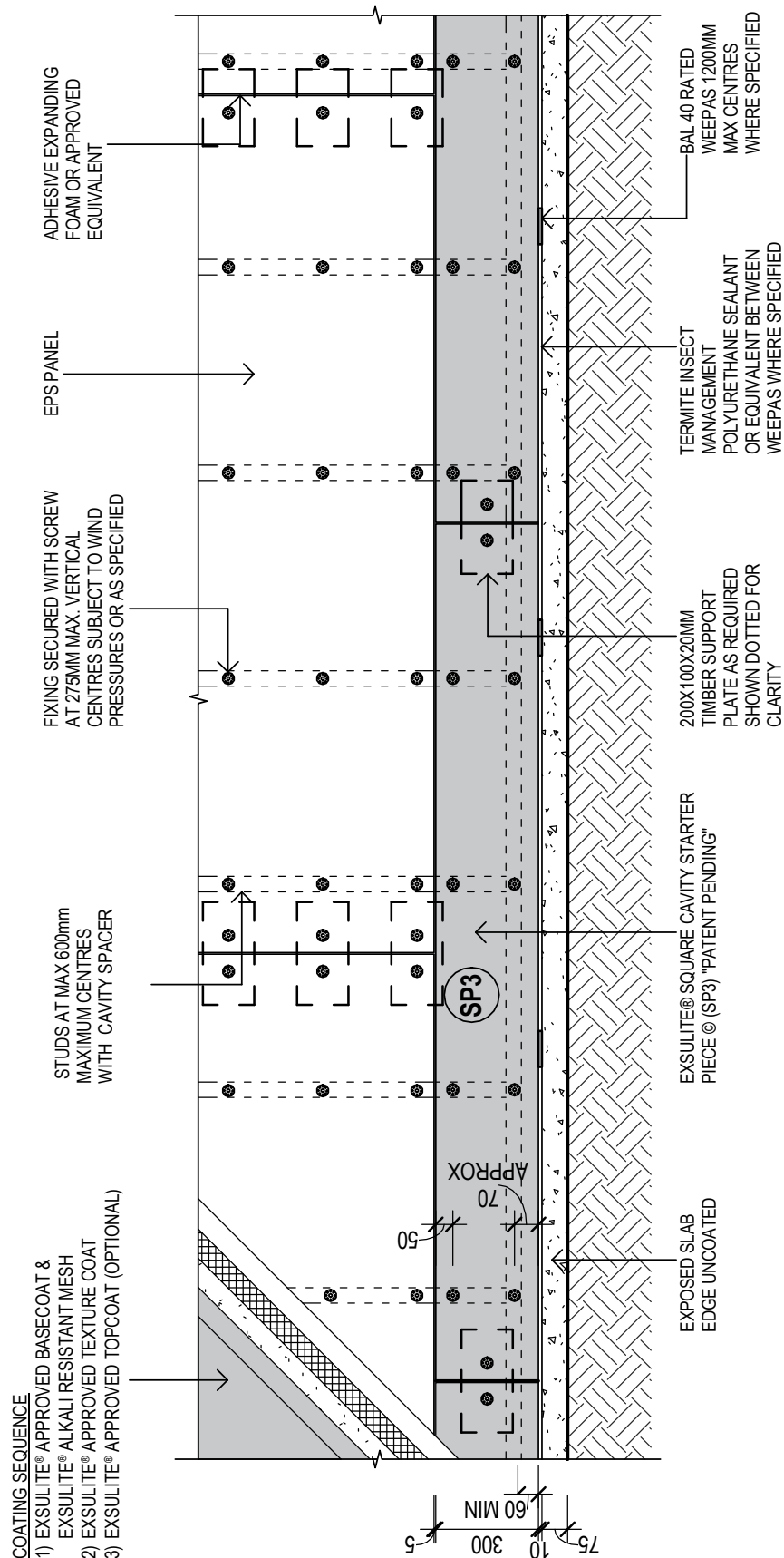
General Set Out for 450 or 600mm Centred Stud Wall:
Using *Exsulite* SP3 Starter Piece – 75 & 100mm *Exsulite* Panel



General Set Out for Openings



Job Set Out using SP3 Starter Piece BAL A-29 & Termite Region

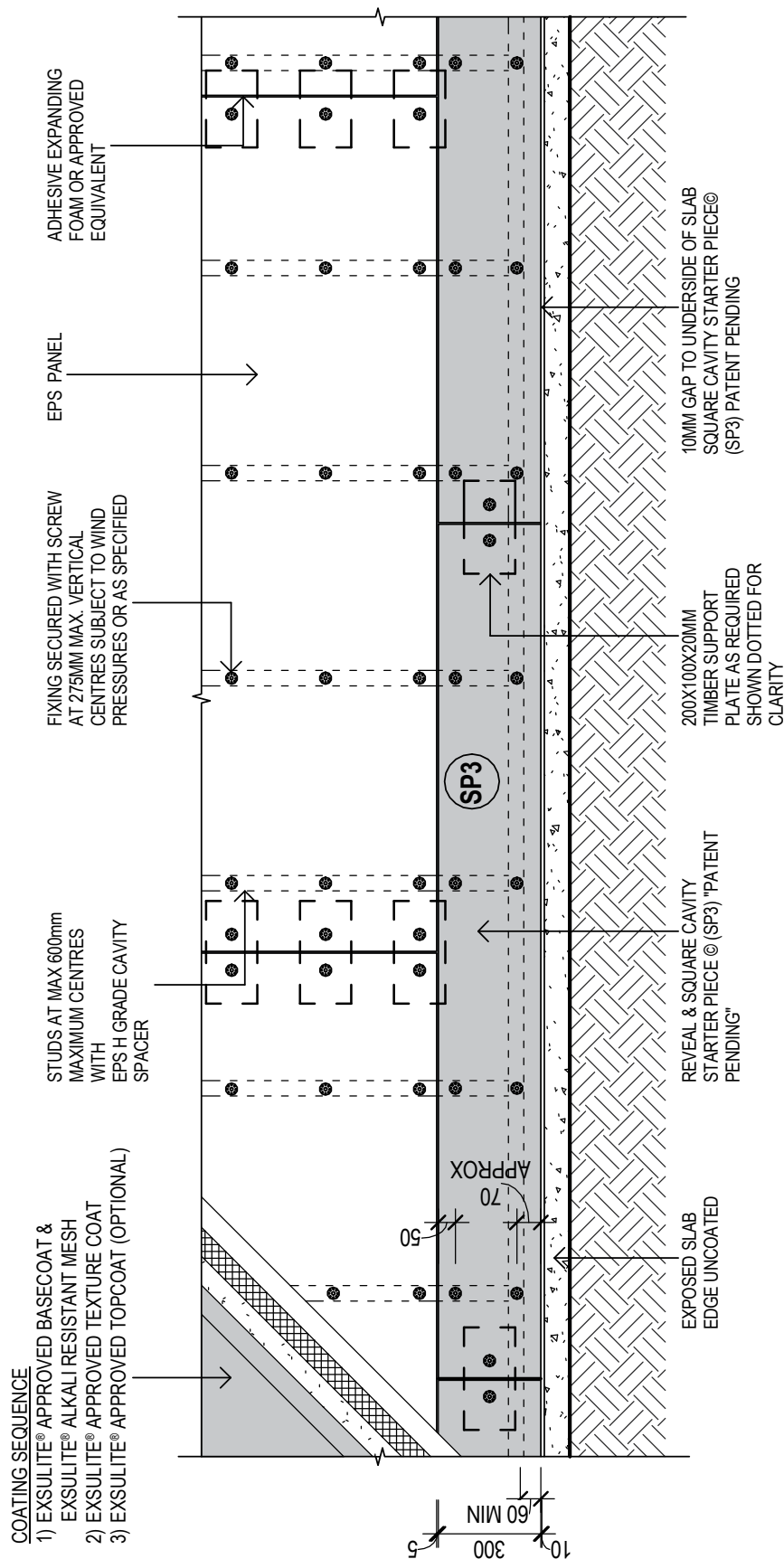


NOTE: DIMENSIONS ARE SHOWN AS A GUIDE ONLY

NOTE: FOR USE IN BAL 29 AND TERMITE REGIONS

Notes: Panels and all system components must be installed strictly in accordance with the current Exsulite® Installation Manual and be in full accordance with all relevant building codes and regulations. Drawings and related notes, are illustrative of typical Exsulite® Cladding Installation and are provided as a guide for construction industry professionals. These drawings do not constitute a specification and should be viewed in the context of the complete cladding or build and installation design and individual product data sheets and instructions. These details may not be modified without approval from the Engineers at Exsulite®. Drawings are not to scale and not intended for engineering designs and plans. Do not scan or copy printed drawings. Refer to www.exsulite.com.au for current drawings. Copyright DuluxGroup 2022. All rights reserved.		Revisions			EXSULITE® THERMAL FACADE CLADDING														
		<table><tr><td>4</td><td>VERSION 4</td><td>01-05-20</td></tr><tr><td>3</td><td>VERSION 3</td><td>01-02-18</td></tr><tr><td>2</td><td>VERSION 2</td><td>01-07-15</td></tr><tr><td>1</td><td>VERSION 1</td><td>01-07-15</td></tr></table>			4	VERSION 4	01-05-20	3	VERSION 3	01-02-18	2	VERSION 2	01-07-15	1	VERSION 1	01-07-15	Drawing Name TYPICAL CAVITY SLAB REBATE STARTER PIECE SYSTEM FRONT ELEVATION FOR BAL & TERMITE REGIONS		
		4	VERSION 4	01-05-20															
3	VERSION 3	01-02-18																	
2	VERSION 2	01-07-15																	
1	VERSION 1	01-07-15																	
<table><tr><th>Issue</th><th>Description</th><th>Date</th></tr><tr><td> </td><td> </td><td> </td></tr></table>			Issue	Description	Date				Scale 1 : 20 @ A4	Drawing Number EXS-E01	Issue 4								
Issue	Description	Date																	

Job Set Out using SP3 Starter Piece Non BAL A-29 & Termite Region



NOTE: DIMENSIONS ARE SHOWN AS A GUIDE ONLY

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Exsulite®

Thermal Facade Cladding

Revisions

4	VERSION 4	01-05-20
3	VERSION 3	01-02-18
2	VERSION 2	01-07-15
1	VERSION 1	01-07-15

Issue	Description	Date
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EXSULITE® THERMAL FACADE CLADDING

Drawing Name

TYPICAL CAVITY SLAB REBATE STARTER PIECE SYSTEM
FRONT ELEVATION FOR NON BAL & TERMITE REGIONS

Scale

1 : 20 @ A4

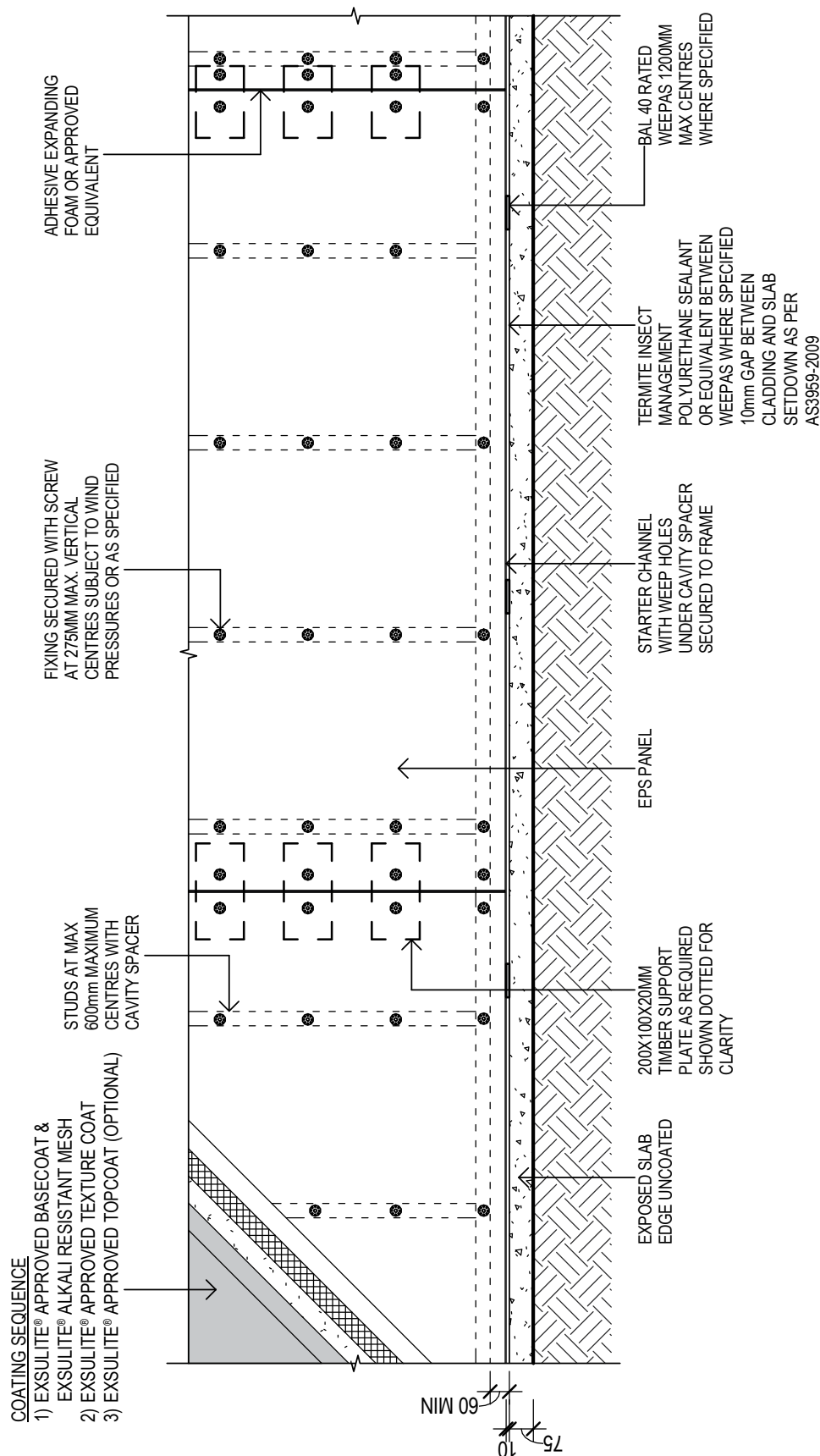
Drawing Number

EXS-E01B

Issue

4

Job Set Out using Starter Channel BAL A-29 & Termite Region

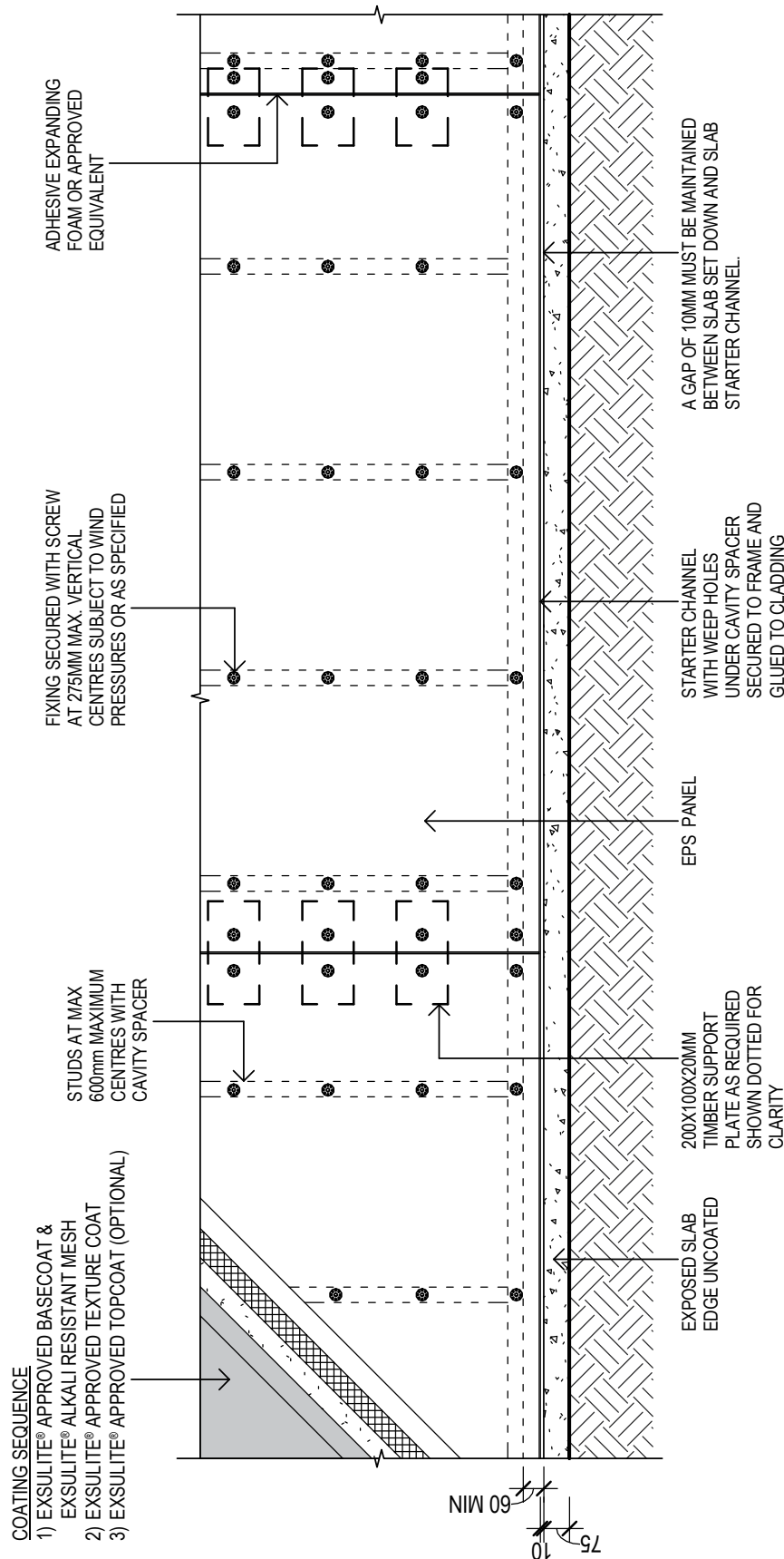


NOTE: FOR USE IN BAL 29 AND TERMITE REGIONS

NOTE: DIMENSIONS ARE SHOWN AS A GUIDE ONLY

Notes: Panels and all system components must be installed strictly in accordance with the current Exsulite® Installation Manual and be in full accordance with all relevant building codes and regulations. Drawings and related notes, are illustrative of typical Exsulite® Cladding Installation and are provided as a guide for construction industry professionals. These drawings do not constitute a specification and should be viewed in the context of the complete cladding or build and installation design and individual product data sheets and instructions. These details may not be modified without approval from the Engineers at Exsulite®. Drawings are not to scale and not intended for engineering designs and plans. Do not scan or copy printed drawings. Refer to www.exsulite.com.au for current drawings. Copyright DuluxGroup 2022. All rights reserved. 			Revisions		EXSULITE® THERMAL FACADE CLADDING			
			Drawing Name TYPICAL CAVITY SYSTEM – SLAB STARTER CHANNEL FRONT ELEVATION FOR BAL 29 & TERMITE REGIONS					
			Scale 1 : 20 @ A4		Drawing Number EXS-E01E		Issue 4	
			4 1		VERSION 4 VERSION 3		01-05-20 01-02-18	
Issue			Description			Date		

Job Set Out using Starter Channel Non BAL A-29 & Termite Region

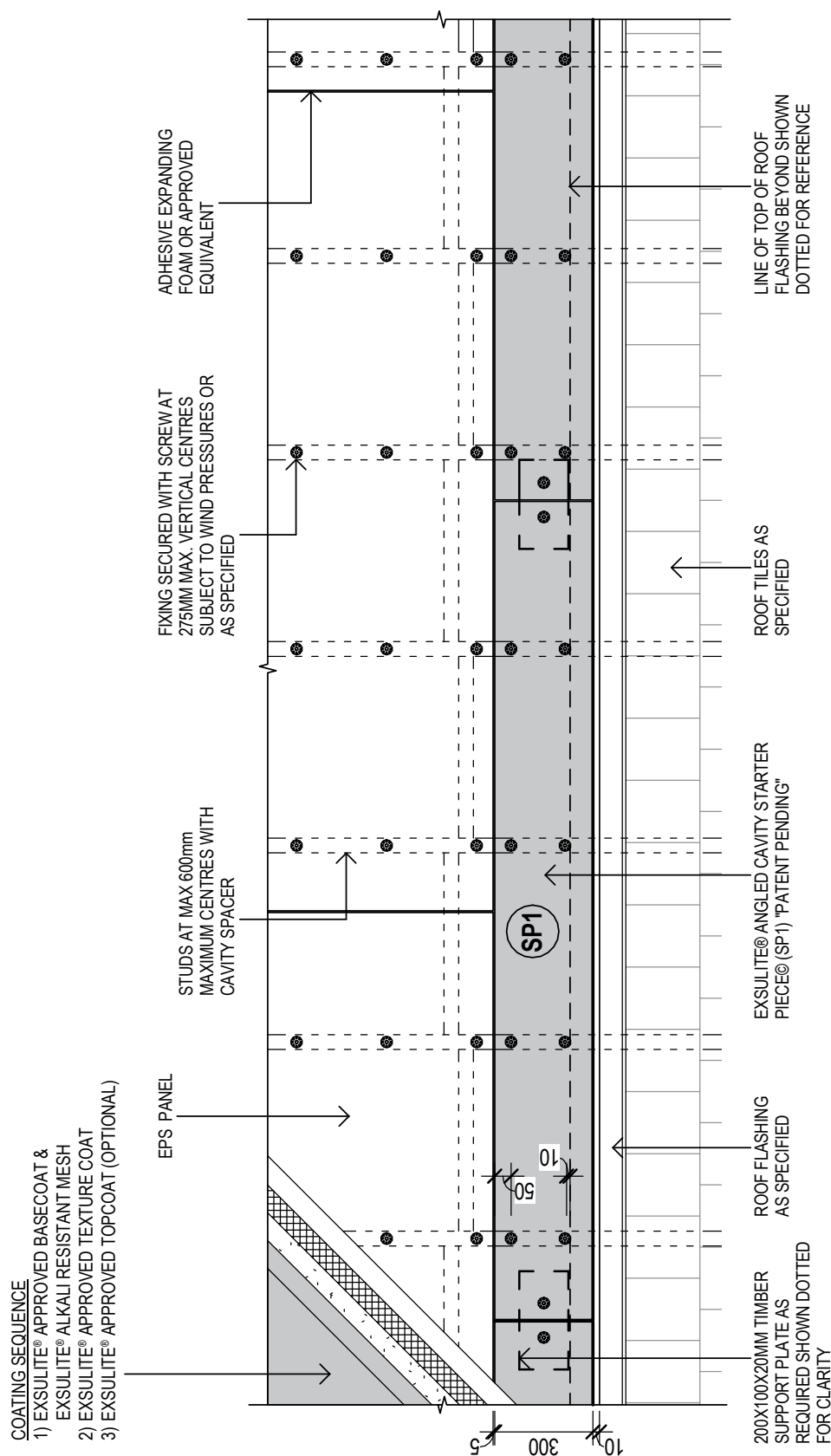


NOTE: FOR USE NON BAL AND TERMITE REGIONS

NOTE: DIMENSIONS ARE SHOWN AS A GUIDE ONLY

Notes: Panels and all system components must be installed strictly in accordance with the current Exsulite® Installation Manual and be in full accordance with all relevant building codes and regulations. Drawings and related notes, are illustrative of typical Exsulite® Cladding Installation and are provided as a guide for construction industry professionals. These drawings do not constitute a specification and should be viewed in the context of the complete cladding or build and installation design and individual product data sheets and instructions. These details may not be modified without approval from the Engineers at Exsulite®. Drawings are not to scale and not intended for engineering designs and plans. Do not scan or copy printed drawings. Refer to www.exsulite.com.au for current drawings. Copyright DuluxGroup 2022. All rights reserved. 	Revisions		EXSULITE® THERMAL FACADE CLADDING							
				Drawing Name TYPICAL CAVITY SYSTEM – SLAB STARTER CHANNEL FRONT ELEVATION FOR NON BAL & TERMITE REGIONS						
	<table><tr><td>4</td><td>VERSION 4</td><td>01-05-20</td></tr><tr><td></td><td>VERSION 3</td><td>01-02-18</td></tr></table>	4	VERSION 4	01-05-20		VERSION 3	01-02-18	Scale 1 : 20 @ A4		Drawing Number EXS-E01F
4	VERSION 4	01-05-20								
	VERSION 3	01-02-18								

Set Out for Angled SP1 Starter Piece over Roof



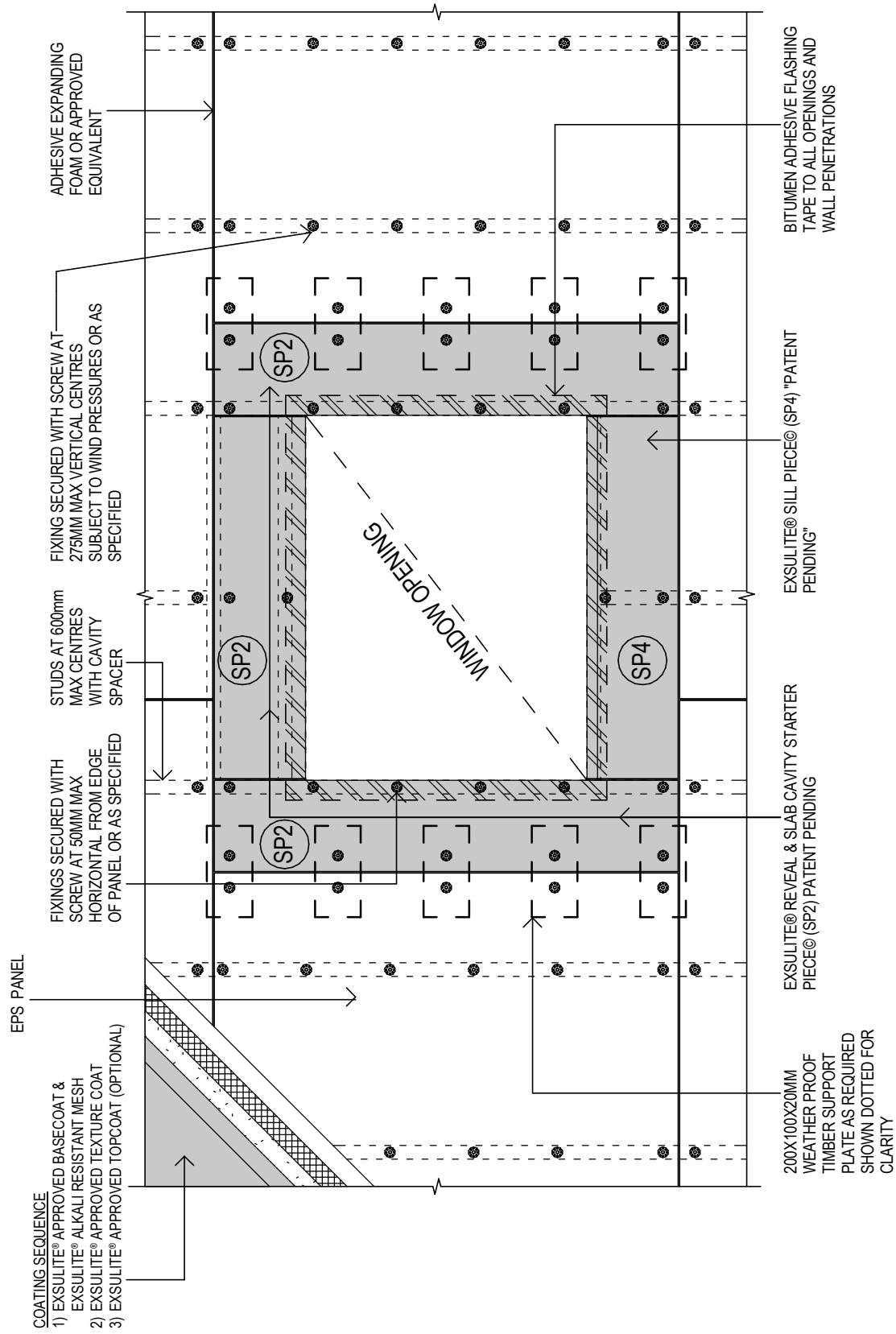
NOTE: DIMENSIONS ARE SHOWN AS A GUIDE ONLY

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Revisions			EXSULITE® THERMAL FACADE CLADDING		
			Drawing Name TYPICAL ANGLED CAVITY STARTER PIECE FRONT SYSTEM - FRONT ELEVATION		
			Scale 1 : 20 @ A4	Drawing Number EXS-E02	Issue 4
4	VERSION 4	01-05-20			
3	VERSION 3	01-02-18			
2	VERSION 2	01-07-15			
1	VERSION 1	01-07-15			
Issue	Description	Date			

Set Out for Window and Wall Openings using SP2 & SP3 Starters



NOTE: DIMENSIONS ARE SHOWN AS A GUIDE ONLY

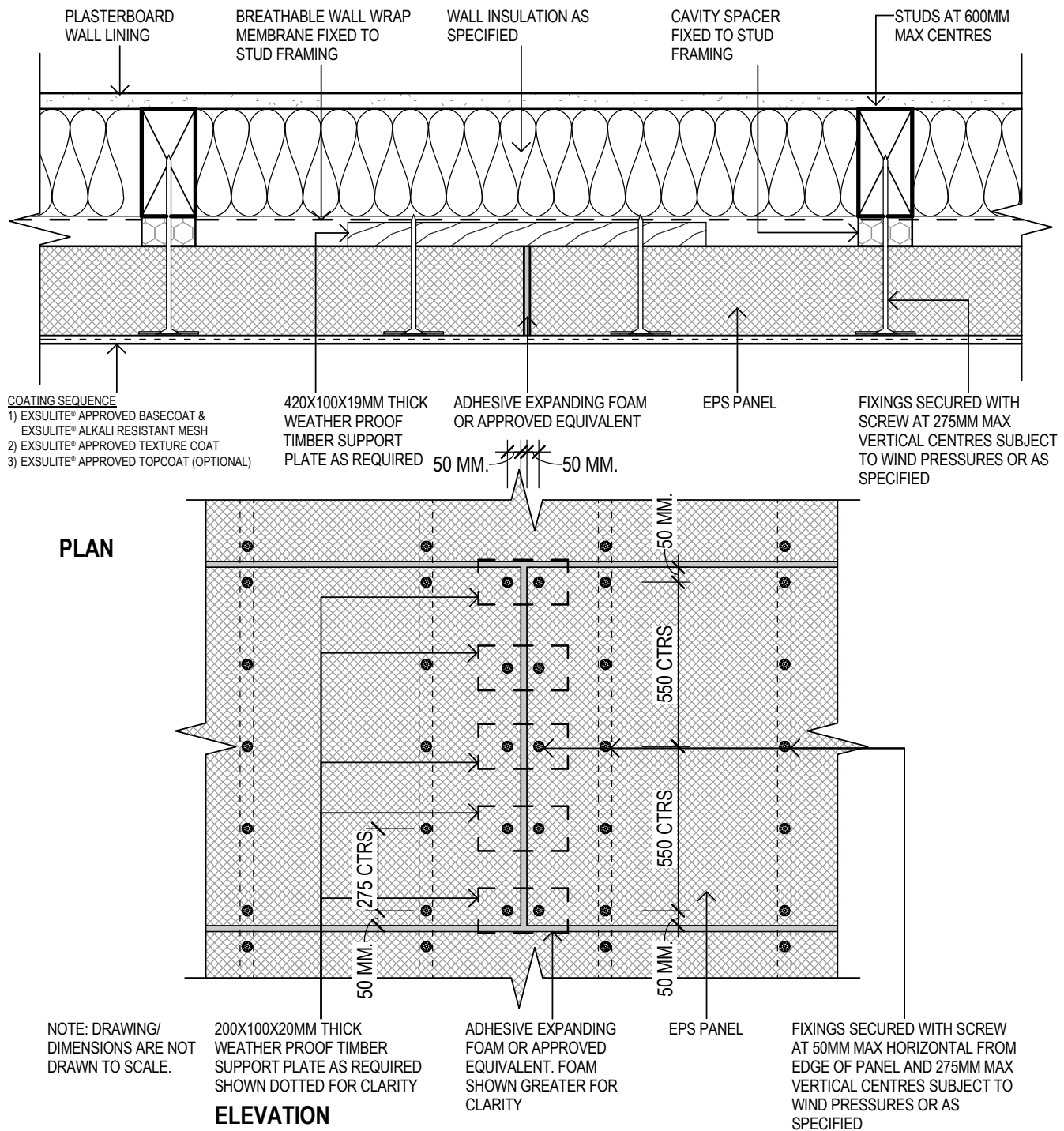
Notes: Panels and all system components must be installed strictly in accordance with the current Exsulite® Installation Manual and be in full accordance with all relevant building codes and regulations. Drawings and related notes, are illustrative of typical Exsulite® Cladding Installation and are provided as a guide for construction industry professionals. These drawings do not constitute a specification and should be viewed in the context of the complete cladding or build and installation design and individual product data sheets and instructions. These details may not be modified without approval from the Engineers at Exsulite®. Drawings are not to scale and not intended for engineering designs and plans. Do not scan or copy printed drawings. Refer to www.exsulite.com.au for current drawings. Copyright DuluxGroup 2022. All rights reserved.

Revisions		
4	VERSION 4	01-05-20
3	VERSION 3	01-02-18
2	VERSION 2	01-07-15
1	VERSION 1	01-01-15

Issue	Description	Date

EXSULITE® THERMAL FACADE CLADDING		
Drawing Name TYPICAL STARTER PIECE SILL & CAVITY SYSTEM - OPENINGS FRONT ELEVATION		
Scale 1 : 20 @ A4	Drawing Number EXS-E03	Issue 4

Back Blocking and Panel Joint Detail



NOTE: DRAWING/
DIMENSIONS ARE NOT
DRAWN TO SCALE.

NOTE: SPACE BETWEEN STUD
FRAMING AND CAVITY SPACER
IS SHOWN GREATER FOR CLARITY.

NOTE: ADHESIVE EXPANDING FOAM TO BE
INSTALLED ONCE ALL EPS PANELS
HAVE BEEN SECURED. ALLOW MAXIMUM
5MM GAP BETWEEN ALL PANEL JUNCTIONS
UNLESS STATED OTHERWISE.

NOTE: DO NOT INSTALL EXTERNAL
CLADDING IN AREAS WHERE IT MAY
REMAIN IN CONTACT WITH
STANDING WATER OR DEBRIS.
DO NOT BACK FILL.

Notes: Panels and all system components must be installed strictly in accordance with the current Exsulite® Installation Manual and be in full accordance with all relevant building codes and regulations. Drawings and related notes, are illustrative of typical Exsulite® Cladding Installation and are provided as a guide for construction industry professionals. These drawings do not constitute a specification and should be viewed in the context of the complete cladding or build and installation design and individual product data sheets and instructions. These details may not be modified without approval from the Engineers at Exsulite®. Drawings are not to scale and not intended for engineering designs and plans. Do not scan or copy printed drawings. Refer to www.exsulite.com.au for current drawings. Copyright DuluxGroup 2022. All rights reserved.



Revisions			EXSULITE® THERMAL FACADE CLADDING	
			Drawing Name	
			TYPICAL BACK BLOCKING AND PANEL JOINT OFF STUD DETAIL	
			Scale	Drawing Number
			1 : 5 @ A4	EXS-901.3
				Issue
				4

2.2.14 Panel Fixing

Measure and cut *Exsulite* panels using a masonry diamond blade in a standard power saw.

The panel to be installed oriented horizontally with a staggered horizontal brick pattern layout and fixed at maximum 275mm centres on stud lines subject to wind pressures. No substitution allowed of non-approved alternative fixings. Fixings should be started at 50mm from the top and bottom of the sheet. Typical fixings should be 8–9 fixings per m² subject site specific wind classification. **NOTE: Minimum EPS infill panel width of 100mm fixed at centre of infill. EPS infill panel over 100mm will require additional fixing. Refer to page 8 & 9 of this manual for details.**

Expanding adhesive foam is to be applied to all panel edges during installation and once all wall area are installed expanding adhesive foam is to be applied to between all panel voids flush with face of panel.

Panels are required to be fixed to the stud or extra support plate members (Back Blocking) will be required at panel joints so each panel is individually fixed. Back blocking allows for joining off stud – refer to *Exsulite* Construction Drawing EXS901.3 on page 43 for clarity. Panels must not protrude beyond the cavity spacer.

NOTE: Adhesive fixed back blocking and merchant grade timber is not allowed. No two panels are to be joined on one stud.

Work upwards to the soffit then from the bottom of the first run of sheets. Fix that run of sheets to the line, leaving a 5mm gap between the two runs of sheets for expansion. Then work down towards the bottom of sheets that have been fitted to the starter channel.

Once the two runs of sheets have been fixed you will be required to cut a piece to fit in between the panels and complete the cladding side of your first wall. Using an *Exsulite Approved* expanding foam adhesive, spray onto all panel edges where the panel is to be joined.

2.2.15 Fixing Disks & Screws

Refer to Fixing Specification relative to Job Specific Wind Classification Tables on pages 8 and 9.

Typically for 600mm stud centres: The required fixings are 5 per stud, fixed at a maximum 275mm centres and 50mm from the top and 50mm from the bottom edge with a minimum 30mm penetration into timber frame. *(Minimum is 25 fixings per panel including sheet ends subject to project requirements and wind design).*

Typically for 450mm stud centres: The required fixings are 5 per stud, fixed at a maximum 275mm centres and 50mm from the top and 50mm from the bottom edge with a minimum 30mm penetration into timber frame. *(Minimum is 25 fixings per panel including sheet ends subject to project requirements and wind design).*

NOTE: The above fixing recommendation can be used as a guide and can vary from by job site, *Exsulite* recommends to consult with your engineer to confirm wind classifications specific to the proposed job site before commencement of installation that will determine job specific fixing and panel specification based on the site specific wind classification and stud spacings. Refer to page 8 & 9 of this manual for fixing specifications by wind classification.

2.2.16 Adhesives

Once the wall panels have been fixed, spray adhesive expanding foam approved by *Exsulite* into all panel joints. Once dry, cut off excess with a knife and then sand all joins flush.

2.2.17 Control Joints

Good building practice provides for expansion joints at maximum 3m height and 6m wide intervals and at all building weak points or where potential cracking may occur e.g. in line with openings (windows / doors), horizontally between floor levels and at all interfaces of different building construction materials and / or as defined by the responsible Building Engineer. The placement and correct installation of control joints is the responsibility of the Building Engineer / Builder relative to the construction design.

2.2.18 Corner Details

Corners are butt joined and glued together with a suitable construction adhesive approved by *Exsulite* being expanding adhesive foam. Refer to *Exsulite Construction Drawings Manual* for corner details.

2.2.19 Window Details

The panel is fixed to the window head and sill as per section details with the reveals finished, with a 5mm minimum gap to allow for coating system to be applied. Followed by installation of an approved paintable polyurethane sealant.

Underneath all windowsills, the fall is to be created by cutting the EPS panel prior to installation creating a minimum of a 15 degree fall in accordance with the construction drawings.

The back of the panel needs to be finished 5mm below the window frame, to allow for the coating system to be applied. Followed by installation of an approved paintable polyurethane sealant.

Where the panel is cut and installed 10–15mm below the frame line a fall is to be created by application of a coatings system to create at least 15 degree fall in accordance with the construction drawings. Followed by installation of an approved paintable polyurethane sealant.

NOTE: Coatings should not be applied over window frames.

2.2.20 Parapet Detail

Metal flashing is the preferred recommendation for waterproofing and should be approved by the project consultant, refer to *Exsulite Construction Drawings Manual* for preferred parapet detail. Where alternative waterproofing detail is required please refer to the *Exsulite Construction Drawings Manual* for alternative parapet details panels.

2.2.21 Balcony & Terraces

Where waterproofing is required, this should be in accordance with the project specification and project principal. Where alternative waterproofing detail is required please refer to the *Exsulite Construction Drawings Manual* for balcony details.

2.2.22 External Beads & Angles

Once all of the wall area has been installed, it is important to go around with a straight edge and make sure that all external corners are plumb and true. Rasp off using sandpaper to make sure that all edges are perfectly straight and ready for installation for corner angles and beading.

Install 3.5mm *Exsulite* external bead with *Selleys Liquid Nails*, or an *Exsulite Approved* construction adhesive, Fast down the centre of both sides and one run of glue in the junction of the bead. Cut a 45 degree angle on both ends of the bead so it finishes flush with the soffit at the top and flush with the starter bead at the bottom. Once fitted check it using a straight edge for straightness and wipe off excess glue protruding through slots in the bead.

NOTE: External beads must be installed where the panels are installed adjacent to another substrate ie. brick and timber.

2.2.23 PU Sealant

Install *Selleys Flexiseal* or *Emer-Seal* paintable PU sealant, or as approved by *Exsulite*, around all window and door frames, all openings, penetrations, electrical meter boxes, ducting, floor and joist penetrations, the gap that appears in between where different substrates meet and all other penetrations including plumbing and electrical conduit.

NOTE: Refer to the manufactures product data sheet for installation guidelines. Priming of non absorbent surface is generally required prior to the application of the backing rod and paintable PU Sealant.

Refer to the paintable PU Sealant Product Data Sheet for installation guidelines and to the *Exsulite* Construction Drawings for details.

2.2.24 Quality Control

Installers shall complete an *Exsulite* Certificate of Installation & Workmanship confirming installation in accordance with *Exsulite* System details and relevant *CodeMark* certificate.

Project Warranty will only be issued when the relevant *Exsulite* Certificate of Installation & Workmanship is completed & signed by the installer.

2.2.25 Weather & Temperature

Weather conditions can affect application and drying time. Hot or dry conditions and limited working time can accelerate drying times and may require adjustments in the scheduling of work to achieve desired results (different to working times in the shade). Cool or damp conditions extend working and drying times and may require added measures of protection against wind, dust, dirt and rain. Refer to product data sheets for application guidelines and conditions prior to work commencing.

2.3.0 Finishing System Application

Refer to individual Product Data Sheets and Application Guides for full product details.

Material consumption will vary depending on surface porosity and application technique and allowance is to be made when estimating material quantities. Spread rates nominated are theoretical rates required to achieve the specified film builds for technical performance.

Exsulite Reinforcement Mesh Specification

- Mesh Grade: 165gsm, 5mm × 5mm aperture, Alkali Resistant, Non adhesive

Mesh Placement – Blue EPS system

- Full Mesh layer across entire panel overlapped by a minimum of 100mm on all edges.

Mesh Placement – Exsulite Composite system

- Minimum 200mm wide strip mesh across all Composite Panel joints
- Full mesh installation is optional but recommended by *Exsulite* for more efficient installation (in lieu of strip mesh across all joints)

Exsulite Approved Basecoat with Exsulite Alkali Resistant Mesh

Refer to page 3 of this manual for system specification.

In a clean 15 litre pail add 3.5–4 litres of clean water, slowly *Exsulite Approved Basecoat* powder while stirring until a trowelable paste is formed. Apply a basecoat layer of *Exsulite Approved Basecoat* by stainless steel trowel to fully cover the panel surface with a 2–3 mm (min.) cover.

Embed *Exsulite Alkali Resistant Mesh* into the 'wet' freshly applied *Exsulite Approved Basecoat* layer, then immediately apply additional *Exsulite Approved Basecoat* mixture to completely cover and encapsulate the mesh with a minimum of 2mm cover and an overall minimum total thickness of 5mm ensuring mesh is "sandwiched" wet on wet between base coat layers.

Do not install mesh directly against or push mesh directly onto the panel surface. Finish the base coat layer by lightly scratching the surface to provide a surface "key" for subsequent levelling coats.

NOTE: Where additional impact resistance is required install a second mesh and basecoat layer.

Texture Coating

Apply one coat of approved *Exsulite Approved Texture Coating* in accordance with the relevant product data and application data sheets.

NOTE: Where texture coating application is to occur within 5–7 days of the *Exsulite Approved Basecoat* application, *Exsulite* recommends priming prior to texture coat application with an *Exsulite Approved Primer* (high alkali resistant primer)

PU Sealant

Install *Selleys Flexiseal* or *Parchem Emer-Seal* paintable PU sealant or other approved sealant around all window and door frames, all openings, penetrations, electrical meter boxes, ducting, floor and joist penetrations, fixings and any gap that appears where different substrates meet and all other penetrations including plumbing and electrical conduit.

NOTE: Joint Sealant can only be applied once the *Exsulite Texture* coating has been completed and before any topcoat application. Priming of non absorbent surface is generally required prior to the application of the backing rod and paintable PU Sealant – refer to manufacturer for further details.

Optional Protective Topcoat (s)

Where specified, apply *Exsulite Approved* Topcoat in accordance with the relevant product data and application data sheets.

2.3.1 Standards Of Finish / Variation / Modifications / Precautions

State Regulators, Aust Building Codes Board and JAS-ANZ require building products/systems that are *CodeMark* Certified Systems must be installed strictly in accordance with the *CodeMark* Certificate of Conformity and be relevant to the Building Code requirements specific to that job site.

Prior to any system installation, Builders and Installers should check the job requirements against the proposed *Exsulite* System *CodeMark* Certificate of Conformity that is to be installed, to satisfy yourself that the proposed *Exsulite* System is in accordance with the building surveyors' planning approvals for that specific job site.

Any failure to follow the *Exsulite* installation guidelines and specifications will mean that the *Exsulite CodeMark* Certification is not valid for that installation, and compliance to NCC cannot be claimed for that specific job site.

Where the product/system has NOT been installed strictly in accordance with the *CodeMark* Certificate conditions and associated installation guide, the *CodeMark* Certification and National Construction Code (NCC) compliance will be deemed void and non compliant.

Where this occurs:

- the installed system will need to be reassessed and will require an alternative building solution to demonstrate compliance to the National Construction Code (e.g. through a "Performance Solution" approved by a qualified engineer); and
- the *CodeMark* Certificate of Conformity will be withdrawn from that specific job site under the NCC requirements.
- in such circumstances *Exsulite* accepts no responsibility for specifications outside the *Exsulite CodeMark* Certified system and confirmation of compliance for any alternate solution is the responsibility of the installer and/or builder.

Design samples approved by the Contractor/Builder are provided as indicative examples only and are not intended as finished examples of onsite application. The appearance of the finished system shall, as near as practicable, match the approved "**onsite sample**" in terms of installation details, texture, colour and uniformity. Permissible variation and due regard shall be given for textural variation owing to multiple applicators, onsite restraints, scaffold limitations and angle or side light or illumination accentuating surface irregularities.

The manufacturers recommendations for installation and application as specified in the installation and application guidelines must be observed at all times. The coating system must not be applied when rain is anticipated. Adequate protection against rain and dust must be provided for the coating during application. During periods of high temperature above +30°C, work needs to be scheduled during the coolest part of the day and away from direct sunlight. During periods of cooler temperatures 10–18°C, work needs to be scheduled during the morning and completed with adequate time to allow the coating to form a coherent film before the temperature falls below 10°C this is particularly important on exposed southern elevations and may require assistance to dry.

2.4.0 Care & Maintenance

The exterior coatings should be cleaned on a regular basis. This will help maintain your coatings aesthetic appearance and preserve your *Exsulite Approved* Texture coating system. Cleaning on an annual basis will remove light soil as well as grime and airborne pollutants. Coastal exposure will have a build-up of salt contamination and a six month wash down is recommended. All joint sealants should be regularly checked to ensure no cracking is evident to allow water ingress. Where cracking is evident, sealant will need to be replaced immediately.

The exterior can be cleaned with a low-pressure water blast (less than 450psi) using a fanjet of cold water at a 45 degree angle from the wall (not perpendicular). The fan of the water blaster should be kept a minimum of 30cm from the surface of the *Exsulite Approved* Texture coating in order to avoid damage.

Localised grime or ingrained dirt should be removed by cleaning with a scrubbing brush along with a solution of detergent and warm water. Under no circumstances should you attempt to remove heavy staining using a high-pressure water blaster.

Check for cracked, loose or missing sealant as part of your regular maintenance inspections. You will find sealant in most areas where different substrates meet ie. Above door openings and windows, pipes, where walls meet the soffit line and where electrical fittings and handrails have been attached to walls. Control joints should also be inspected as part of maintenance inspections. All deteriorated or damaged sealant should be removed and replaced as soon as it is apparent. We recommend that a paintable polyurethane sealant be used.

It is important to monitor areas that are heavily exposed to the elements such as parapets and balcony handrail tops. Due to the minimal slope on these areas it will tend to hold dirt and grime which can potentially lead to mould over time if not regularly washed. These building sections should also be checked for any movement over time due to the extremes of thermal movement so it is critical that they are inspected and maintained.

Any damage to the texture coating needs to be recoated from edge to edge of the effected wall area to ensure texture and colour consistency. If accidental damage occurs please feel free to contact your local *Exsulite* representative or phone *Exsulite* Customer Service on "13 23 77" and they will provide the support or technical expertise required to help solve the problem. Visual cracks may indicate underlying structural problems; a professional should always inspect them.

Temporary repairs can be made to cracks by filling them with polyurethane paintable sealant until the inspection has been completed and permanent repairs undertaken.

During your inspections don't forget to check areas that are cold and dark such as behind heavy foliage. Dirt provides the perfect nutrient for mould and algae growth. The tiny roots that these organisms use to cling to your walls will cause your texture coating to deteriorate very quickly if not regularly cleaned.

Recoating is recommended after a maximum of 10 years to rejuvenate the surface appearance. This can be done by using an *Exsulite Approved* protective membrane coating to a selected colour which will protect from air pollutants, water ingress and dirt accumulation to provide a new low maintenance surface.

2.4.1 Health & Safety

Exsulite recommends safe work practices at all times including the use of personal protective equipment (face mask, safety goggles, safety shoes). Fine dust cuttings can be hazardous and personal protection equipment is recommended at all times. All cutting should be conducted in well ventilated spaces. Power tools should be up to date with "test & tagged" label in accordance with state OH&S regulations and should be fitted with dust extraction systems.

Refer to your local WorkCover or WorkSafe authority websites for your local OH&S regulations prior to commencement of work.

For all product handling procedures refer to the relevant product MSDS prior to work commencing, alternatively contact *Exsulite* on 13 23 77.

Safety Information:

Cutting Outdoors	• Position the cutting area so that the wind will blow the dust away from workers • Use a dust reducing circular saw equipped with vacuum extraction
Drilling / Machining Sanding / Cutting	• Always wear a P2 mask when performing any activity which produces dust • Keep other workers at least 3 metres from the operation
Safety Tips	• Avoid using power saws indoors • Only use saws fitted with vacuum extraction • Always damp dust with water when sweeping • Do not use grinders on this product • Follow tool manufacturers instructions at all times
P2 Respirator	• When performing any activity that produces dust always wear a P2 respirator mask • If you have any concerns please contact a qualified industrial hygienist
Manual Handling	• In order to prevent musculoskeletal injuries, manual handling of heavy panels should be kept to a minimum and where possible mechanical lifting devices should be employed • Where mechanical assistance is not possible, more than one person should assist lifting when necessary • Weights lifted by individuals should be kept to a minimum • Employees should be trained in manual handling techniques • A clean work site and good planning will assist in good general safety on site
Protective Clothing	• The wearing of suitable clothing such as long sleeves and trousers and appropriate gloves is recommended

Exsulte Certificate of Installation & Workmanship

The *Exsulte* Certificate of Installation & Workmanship is to be issued by the Installer of the system to verify that installation has been completed to the nominated job address in accordance with the *Exsulte* Certificate of Conformity and *Exsulte* Specification & Installation and Construction Drawings manuals.

Exsulte System Installed:

CAVITY System   Certificate CM40264	NON-CAVITY System   Certificate CM40266	Date Installation Completed:
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Project Details:

Lot No.: OR Street No.:	Address (Street / Road / Other):	Suburb:
		State:
Builder Business Name:		Builder Contact Name:

Build/Installation Details:

Building Classification:	Class 1	Class 10	Exsulte Wall Area (m²)
Location Region:	BAL-N/A	BAL-12.5	BAL-19
			BAL-29
Wall Wrap Installed:	Exsulte Wall Wrap	Other Breathable Wrap to AS/NZS4200.1:2017	Coating System Installed: Acratex® System Topcoated Quikcote™ System Untopcoated EZYCOAT

Declaration:

We the undersigned certify that the installation of the nominated *Exsulte* System has been carried out in strict accordance with:

- The details and conditions of the *CodeMark* Certificate of Conformity and its respective;
- *Exsulte* Thermal Facade Cladding Specification & Installation Manual, and
- *Exsulte* Thermal Facade Cladding Construction Drawings Manual, and
- We warrant to the Customer that the products and components of the *Exsulte* System have been installed to the project in strict accordance with the instructions and recommendations provided by or available from *DuluxGroup* and will comply with the relevant *DuluxGroup* products and component performance specification(s) will be responsible for any loss or damage caused or contributed to by its faulty installation and/or application of the coating system.

Certifying Installer

Installing Cladding & Finishing	Installing Cladding Only Rendering & Finishing Section must be certified by the Finishing Contractor	Rendering & Finishing Contractor <i>To be completed and Certified by the Contractor where the Finishing is not part of the Certifying Installers contract</i>
Business Name:		Business Name:
Builders / Trade Licence No.:		Trade Licence No.:
Exsulte Reseller / Stockist Materials Purchased from:		Exsulte Reseller / Stockist Materials Purchased from:
Installer Principal (Certifiers Name):		Rendering & Finishing Principal (Certifiers Name):
SIGNATURE:		SIGNATURE:
Installation Certified on this day (Date):		Render/Finishing Certified on this day (Date):

Refer to exsulte.com.au for current *Exsulte* CodeMark Certificates plus Installation & Specification and Construction Drawing Manuals. On completion of this form, it is the responsibility of the Installer to forward to Acratex by email to registrations@acratex.com.au as part of project registration and warranty processes.

For more information go to **exsulite.com.au**
Exsulite Customer Service 13 23 77
1 Jeanes Street, Beverley SA 5009 Australia

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