



## DIRECT FIX AND CAVITY CLADDING



# Technical Data Manual



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### NOTE:

**As AUSBLOX continually tests, validates, and improves its range of insulation products, the information presented in this technical brochure may have been updated since it was last printed. For the most up to date version of the AUSBLOX Orange Board® Technical data Manual please visit the AUSBLOX website at [www.orangeboard.com.au](http://www.orangeboard.com.au)**

# AUSBLOX

Version 3.2 - September 2023

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# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM

## INTRODUCTION

### Basic Description

AUSBLOX Orange Board<sup>®</sup> is an Australianmade and distributed exterior insulation and finishing system (EIFS) and is manufactured from EPS<sup>®</sup>. AUSBLOX Orange Board<sup>®</sup> has been independently tested by accredited testing laboratories to meet and exceed relevant Australian Standards for external buildinginsulation cladding products.

AUSBLOX Orange Board has been approved and accredited by the Victorian Building Regulations Advisory Committee (BRAC) under BRAC certificate number V10/03A.

AUSBLOX EPS<sup>®</sup> is a closed cell EPS (Expanded Polystyrene) material that is a resilient, light- weight rigid cellular plastic.

### AUSBLOX Orange Board<sup>®</sup> Appraisals

AUSBLOX Orange Board<sup>®</sup> building panels have been subjected to extensive testing and comply with relevant Australian building practices. Testing was completed under the family name EPS<sup>®</sup>.

Refer to page 30 for Referenced Document.

### Standard panel sizes and weight

The standard panel sizes are 2500mm x 1200mm and 5000mm x 1200mm in nominal standard thicknesses of 75mm and 100mm.

Table 1: Nominal Surface Mass (kg/m<sup>2</sup>)

	75mm	100mm
AUSBLOX Orange Board <sup>®</sup>	1.43	1.90

Table 2: Panel Weight (kg)

	75mm	100mm
AUSBLOX Orange Board <sup>®</sup>	4.30	5.70

## DESIGN CRITERIA

### Direct Fix or Cavity Installation & Design

All design, installation, erection and fixing requirements must be in accordance with details contained in this manual and any relevant requirements of your local Building Authority.

AUSBLOX Orange Board® may be installed as a Direct Fix to frame cladding system, or as a Ventilated & Drained Cavity cladding system using EPS cavity battens between the rear of the cladding boards and the wall underlay.

### Frame structure

The frame structure must be built in accordance with the Building Code of Australia (BCA) and with the relevant Australian Standards, for instance, AS 1684.2:2010, AS1684.3:2010, AS 1684.4:2010 Timber Frame, AS 3623-1993 and AS/NZS 4600-2018 (Cold formed steel structures).

### Fasteners

Each fastener is composed of:

- 1 screw
- 1 washer

Details of each component are given in Table 3.

**Table 3: Fixing Components Details**

Fasteners	Timber frame	Steel frame
<b>Screw</b> (75mm panel)	10G x 105mm CSK Head Coarse Ribbed Class 3	10G x 90mm Wing Tek Class 3
<b>Screw</b> (100mm panel)	10G x 125mm CSK Head Coarse Ribbed Class 3	10G x 115mm Wing Tek Class 3
<b>Washer</b>	40mm diameter plastic AUSBLOX Orange Board® washer	

**NOTE:** Screw length is dependent on the thickness of the panel used. As a guide the screw should be minimum 25mm longer than the panel thickness for timber frame construction and 15mm longer than the panel thickness for steel frames.

For cavity construction, add an allowance of 25mm to screw lengths for inclusion of cavity battens.

### Wind pressure design

The capacity of the AUSBLOX Orange Board® external insulated cladding system, evaluated in accordance with the relevant Australian Standards (AS 4040.0, AS 4040.2, AS 4040.3), to resist against different categories of wind from Regions A, B (Non-Cyclonic) and C and D (Cyclonic) as requested by the BCA and defined according to AS/NZS 1170.2:2011, AS/NZS 1170.0:2002 and AS 4055-2012 was obtained by several tests performed in accredited laboratories (ref. 2,3,4, 6 and 10 - ref page 30).

AUSBLOX Orange Board® is part of the EPS® family of panels marketed under the family name EPS®.

The limitations of the following fixing provisions are:

- Building height to eaves or ridge < 10m
- Buildings built in terrain categories 1 to 3

The provisions of fixing for the different wind categories in Regions A, B, C and D are defined in Table 4.

**Table 4: Minimum Stud & Fastener Spacing for AUSBLOX Orange Board® in accordance with AS/NZS 4055-2012**

Wind category	Non-Cyclonic Regions (A&B)						Cyclonic Regions (C&D)			
	N1	N2	N3	N4	N5	N6	C1	C2	C3	C4
<b>Panel Thickness (mm)</b>	40, 60, 75, 100						75, 100			
<b>Stud spacing (mm)</b>	450 or 600				450		300		300	
<b>Fastener spacing (mm)</b>	300 (150 at perimeter of wall)	300 (150 at perimeter of wall)	300 (150 at perimeter of wall)	200 (150 at perimeter of wall)	200 (150 at perimeter of wall)	200 (150 at perimeter of wall)	200 (150 at perimeter of wall)	200 (150 at perimeter of wall)	200 (150 at perimeter of wall)	200 (150 at perimeter of wall)
<b>Number of fasteners/m<sup>2</sup></b>	12	12	12	18	18	18	18	18	18	18



# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM

## INSTALLATION GUIDELINES

### Cutting of panels

For a clean, fast, accurate and no mess cut, we recommend using a standard diamond masonry blade or fibre cement blade. For more intricate cuts a hot knife or handsaw can be used.

### Planning

Prior to installing AUSBLOX Orange Board<sup>®</sup> panels, liaise with the builder to enable solidblocking to be installed where fixtures are to be fitted to the finished construction, e.g. balustrades, handrails, clothes lines, large light fittings, hot water services, air-conditioning units, etc.

### Orientation & Method of Fixing

AUSBLOX Orange Board<sup>®</sup> panels can be installed either vertically or horizontally and may be screwed directly to the frame or using cavity battens to create an external cavity. Screw heads and washers should be screwed flush to the surface of the panel.

All joints between AUSBLOX Orange Board<sup>®</sup> sheets should be glued with AUSBLOX Orange Board<sup>®</sup> Bosman PU Adhesive or equivalent.

**Sheets should not be bonded (glued) to studs. This allows the frame to flex without stressing the external render coating.**

Refer to Fastener Positioning detail on pages 10, 11, 24, 25 & 26. Typical Corner and Joint details shall be adhered to refer to pages 12, 13, 14, 27, 28 & 29.

### Back Blocking of off stud joints

Where sheet sides or ends do not finish on a stud, solid back blocking must be installed to strengthen and align joints.

Back blocks are cut from off cuts of stud material. The back blocks can be placed aligned with the joint or placed at 300mm centres perpendicular to the joint. Back blocks are to be nailed securely to the frame.

AUSBLOX Orange Board<sup>®</sup> panels are to be fixed to back blocks in the same manner as fixing panels to the stud frame. Refer to Fastener Positioning detail on page 10 and 11.

### Corner beading

All corners must be protected with PVC or aluminium beading. Any exposed edges (roof line, windows, doors, edge of concrete slab, etc.) should be covered with glass fibre mesh and finished with a cover bead, which will protect the panel from moisture and provide a clean line for coatings.

Starter channels should include drainage weep holes to allow moisture to escape. Aluminium Beading and Aluminium Starter Channels are required for use in Bushfire prone areas, subject to Bushfire Attack Level (BAL) compliance.

### Expansion (control) joints

Prior to installation determine expansion joint placement by consulting with a Design Engineer to calculate the deformation/stress due to soil/structure movement and to specify location of expansion/control joints.

This technical manual provides some practical details to perform the expansion joint. Refer to pages 13 and 14.

### Curved wall applications

AUSBLOX Orange Board<sup>®</sup> can be used in curved wall applications. Please refer to Table 5.

**Table 5: Curved Wall Specifications**

AUSBLOX Orange Board <sup>®</sup>	Radius
75mm	>4000mm

### Render and Sealers

As per AUSBLOX Orange Board<sup>®</sup> render application (pages 23-28), two coats of an approved acrylic render system with embedded glass fibre mesh is to be applied. One coat of AUSBLOX Orange Board<sup>®</sup> primer sealer (or equivalent) is then applied to final finish coating of the system. For further technical details, please refer to pages 23-28.

### Approved Sealants

Any sealant that is approved by the sealant manufacturer to adhere to polystyrene may be used.

### Wall Wrap / Building Membrane

AUSBLOX Orange Board® expanded polystyrene has a very low rate of water vapour transfer. For enhanced weatherproofing however, a flexible building membrane (wall wrap / sarking) must be installed directly behind AUSBLOX Orange Board® panels.

Flexible building membrane (wall wrap / sarking) materials compliant with AS4200.1, shall be classified as a Water Barrier and achieve a Flammability Index of “Low” or < 5 (when tested to AS1530.2). All building membranes shall be installed in accordance with AS4200.2.

Compliance with the relevant condensation provisions of the NCC, shall determine whether the Vapour Control Classification (as determined in accordance with AS4200.1) of the building membrane is required to be Class 1 or 2 (Vapour Barrier) or Class 3 or 4 (Vapour Permeable).

Vapour barriers are more commonly required in hot, humid & tropical climates, whereas Vapour permeable construction is required in cooler, temperate and mixed climates.

Perforated (non-air barrier) membranes are not recommended for use in walls using AUSBLOX Orange Board® cladding.

### AUSBLOX EPS Cavity Battens

For wall installations with external cavities, 40mm x 25mm EPS cavity battens (or equivalent) are installed vertically at each stud, cavity battens may be nailed directly to studs.

Screw fixing of panels through the cavity battens into the studs with minimum embedment into the stud is required (refer to page 3 section on screw fasteners and lengths).

Direct Fix system details are included on pages 10 – 22.  
Cavity system details are included on pages 23 – 39.

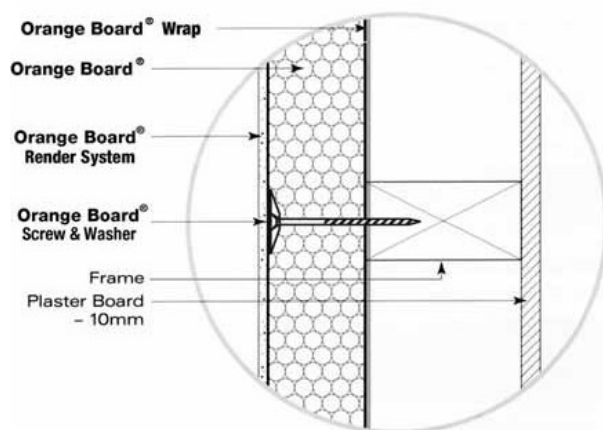


Figure 1: Example of the Orange Board® Insulated Cladding System

### Handling AUSBLOX Orange Board® Panels

Sheets should be stored elevated, under cover and laid flat. Edges and corners are to be protected at all times. The AUSBLOX Orange Board® cladding wall panels should be rendered as soon as possible after installation. Prolonged exposure to elements should be avoided, including exposed edges.

As Expanded Polystyrene (EPS) foam will begin to soften and shrink when exposed to elevated temperatures above 80°C, the AUSBLOX Orange Board® product range of panels and render finished AUSBLOX Orange Board® cladding wall facades should not be continuously exposed to temperatures in excess of 80°C as expansion and blistering of panels and or rendered wall may occur.

Thus, it is highly recommended that any equipment that generates high levels of radiant heat such as outdoor barbecues or outdoor patio gas heaters etc., should be kept at a minimum of 1.5 metres away from any exposed AUSBLOX Orange Board® cladded wall.

Continuous exposure to the elements of the AUSBLOX Orange Board® cladding panels may result in deterioration causing minor fretting of the exposed edges of the panels. Therefore, if the AUSBLOX Orange Board® cladding panels are to be stored outside for extended periods of time prior to installation, the individual panels or panel stacks should be completely covered by canvas or UV resistant type material. Under no circumstances however should a clear plastic cover be used to cover the panels.

When handling or installing the AUSBLOX Orange Board® cladding panels in windy conditions particular care should be taken. Unsecured panels can be severely damaged.

# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM

## TECHNICAL SPECIFICATIONS

### Thermal Insulation

**Table 6: R value of AUSBLOX Orange Board<sup>®</sup> Panel**

Thickness (mm)	75	100
Thermal conductivity at 23°C (W/m.K)	0.038	
R value at 23°C (m <sup>2</sup> .K/W)	1.97	2.63

### AUSBLOX OrangeBoard<sup>®</sup>

#### Insulated Cladding System Thermal Performance

From calculations in accordance with AS/NZS 4859.1:2018, the AUSBLOX Orange Board wall system thermal performance are shown in Tables 7 & 8.

**Table 7: R value of AUSBLOX Orange Board<sup>®</sup> Insulated Cladding System**

Thickness (mm)	Total R value (m <sup>2</sup> .K/W)
75	2.45
100	3.10

**Table 8: R value of AUSBLOX Orange Board<sup>®</sup> Insulated Cladding System (cavity) with reflective sarking**

Thickness (mm)	Total R value (m <sup>2</sup> .K/W)
75	2.86
100	3.54

### Acoustics

**Table 9: AUSBLOX Orange Board<sup>®</sup> Weighted Sound Reduction Index (Rw) Performance**

Panel Thickness (mm)	Construction	Rw
75	Panel only	12dB
75	Panel +5mm render	27dB
75	Panel +5mm render +10mm plaster Full Wall System	38dB

**Table 10: Perceived Change in Decibel Level**

Change in Sound Level	Perceived Change to the Human Ear
±1dB	Not Perceptible
±3dB	Threshold of Perception
±5dB	Clearly Noticeable
±10dB	Twice (or Half) as Loud
±20dB	Fourfold (4x) Change

**Table 11: AUSBLOX Orange Board<sup>®</sup> Weighted Sound Reduction Index (Rw) Performance**

Panel Thickness <small>Thickness x Length x Width</small>	Panel Weight (Kg)-nominal
75mm x 2500mm x 1200mm	4.2 kg
100mm x 2500mm x 1200mm	5.7 kg
75mm x 2500mm x 1200mm	8.5 kg
100mm x 2500mm x 1200mm	11.4 kg
Tolerance L and W = +/-2mm	
Tolerance L and W = +/-1mm	

## TECHNICAL SPECIFICATIONS

### BAL Bush fire Attack Level.

After the Canberra bushfires in 2003, the Australian Standard relating to building was reviewed and a new Australian Standard (AS 3959) was introduced nationally in 2009 and updated in 2018.

The new building standard has six risk levels (Bushfire Attack Levels-BALs). There are increasing construction requirements that range from ember protection at the lower levels to direct flame contact protection at the highest. The new building standard increases the construction requirements on residential buildings, so they are better bushfire protected.

Products used in external construction of houses should have a BAL rating which ensures that the construction is undertaken in such a way that risk to people and property is minimised.


It is a requirement that a person or organisation who has suitable qualifications and experience undertakes the BAL assessment.

AUSBLOX commissioned EXOVA Warringtonfire, a NATA accredited testing authority, specialising in BAL testing and certification to undertake their BAL 29 conformance testing.

To meet the BAL 29 conformance requirements as tested by EXOVA Warringtonfire, AUSBLOX Orange Board® render must be used and applied at a minimum thickness of 8mm.

PLEASE NOTE: The use of an approved acrylic render system equivalent to AUSBLOX Orange Board® render, applied at minimum thickness of 8mm, may meet the requirements of the BAL 29 certification. It would be expected that similarly formulated render products would deliver the same test results however AUSBLOX cannot validate this as it has not tested other render systems.

The results of the BAL 29 testing are summarised in the test certificate as shown below. **Note. When constructing in Bushfire prone areas, sealants used must be fire rated.**

Exova Warringtonfire Aus Pty Ltd Suite 2002b, Level 20 44 Market Street Sydney, New South Wales 2000 Australia Postal Address: Suite 2002b, Level 20 44 Market Street Sydney, New South Wales 2000 Australia		T: +61 (0)2 8270 7600 F: +61 (0)2 9239 8076 W: www.exova.com			
Testing, Advising, Assuring.			CERTIFICATE No: SFC 27710-01		
EWFA CERTIFICATE OF ASSESSMENT			Page 1 of 1		
Report Sponsor	Certificate Issue Date	Product Name			
RMAX 2-4 Mephan Street Marbyrnong VIC, 3032	17/09/2012	RMAX Orange Board RMAX ThermoWall RMAX ThermoWall Plus RMAX ThermoWall Silver RMAX ThermoWall Plus Silver			
Assessment Report Reference	Referenced Standard	Report Issue Date	Report Validity Date		
EWFA 27710-00	AS 1530.8.1-2007	14/09/2012	30/09/2017		
Introduction The element of construction described below was assessed by this laboratory on behalf of the report sponsor in accordance with the stated test standard and achieved the results stated below. Refer to the referenced test report(s) or Regulatory Information Reports for a complete description of the assessed construction.					
Assessed Framed Wall system description and performance					BAL
Framed wall Description Wall system consisting of timber framing at least 70mm deep. Wall system consisting of light gauge steel framing at least 70mm deep. Unexposed side faced with 10mm Gyprock plasterboard. Exposed side with 8.2mm RMAX Orange Board® render system coated over 75mm and 100mm thick RMAX Orange Board, RMAX ThermoWall Board, RMAX ThermoWall Plus Board, RMAX ThermoWall Silver Board, RMAX ThermoWall Silver Board or RMAX ThermoWall Plus Silver Board.					BAL A-29
Refer the referenced report for a complete description of the assessed construction.					
Concisions/Validity THIS CERTIFICATE IS PROVIDED FOR GENERAL INFORMATION ONLY AND DOES NOT COMPLY WITH THE REGULATORY REQUIREMENTS FOR EVIDENCE OF COMPLIANCE.					
<ul style="list-style-type: none"> <li>Reference should be made to the relevant test report or regulatory information report to determine the applicability of the test result to a proposed installation. Full details of the constructions and justification for the conclusions given along with the validity statements, are given in the assessment reports.</li> <li>The assessment report or short form assessment report does not provide an endorsement by Exova Warringtonfire Aus Pty Ltd of the performance of the actual products supplied. It is intended to provide a brief outline of the above referenced assessment reports and not to replicate them.</li> <li>The conclusions in this certificate of assessment relate to the configurations as detailed, and should not be applied to any other configuration. The conclusions expressed in this document assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all conditions.</li> <li>Full copies of the assessment and relevant test reports may be obtained from the sponsor.</li> </ul>					
TESTING AUTHORITY Address Phone / Fax ABN Email / Home Page Authorisation		Exova Warringtonfire Aus Pty Ltd Suite 2002b, Level 20, 44 Market Street, Sydney NSW 2000, Australia +61 (0)2 8270 7600 / +61 (0)2 9239 8076 81 050 241 524 www.exova.com Prepared By:  S. Hu			
		Reviewed By:  K. G. Nicholls			

# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM

## TECHNICAL SPECIFICATIONS

### Early fire hazard properties (AS/NZS 1530.3-1999)

From tests conducted by AWTA, Division of Building Material - NATA Accreditation # 1356, the following indices given in Table 12 have been determined.

**Table 12: Early Fire Hazard properties of AUSBLOX Orange Board<sup>®</sup>**

Material	Ignitability Index (0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Produced Index (0-10)
<b>AUSBLOX Orange Board<sup>®</sup></b>	0	0	0	4
An Australian Hardboard (4.75mm)				
-Bare	14	6	7	3
-Impregnated with fire retardant	4	0	0	7
An Australian Softboard (12.70mm)				
-Bare	16	9	7	3
-Impregnated with fire retardant	4	0	0	7
T&G Boarding (25 x 100mm)				
-Bluegum	11	0	3	2
-Oregon	13	6	5	3
Plywood, Coachwood Veneer (4.75mm)				
-Bare	15	7	7	4
-Impregnated with fire retardant	12	0	3	5

**Note:** the core material in AUSBLOX Orange Board<sup>®</sup> is expanded polystyrene. As with all other organic material, insulation products must be considered combustible and to constitute a fire hazard if improperly used or installed. The material contains a flame retardant additive to inhibit accidental ignition from small fire sources.

### Chemical resistance

AUSBLOX Orange Board<sup>®</sup> cladding wall panels are chemically resistant to most water-based materials. Resistance to diesel fuel, paraffin oils and vegetable oils however is limited, thus prolonged contact should be avoided. AUSBLOX Orange Board<sup>®</sup> EPS will however be attacked by hydrocarbons, ketones, esters and solvents. Exposure to these chemicals should be completely avoided.

### Impact resistance

The AUSBLOX Orange Board<sup>®</sup> EIFS cladding system when installed according to the AUSBLOX specifications and installation manual will provide resistance to most impact loads that are likely to occur in normal residential operating conditions.

Where a building or structure is likely to be exposed to high impact loads, the use of the AUSBLOX Orange Board<sup>®</sup> EIFS cladding system may not be appropriate and a design engineer should be consulted.

## INSTALLATION AND FIXING DETAILS

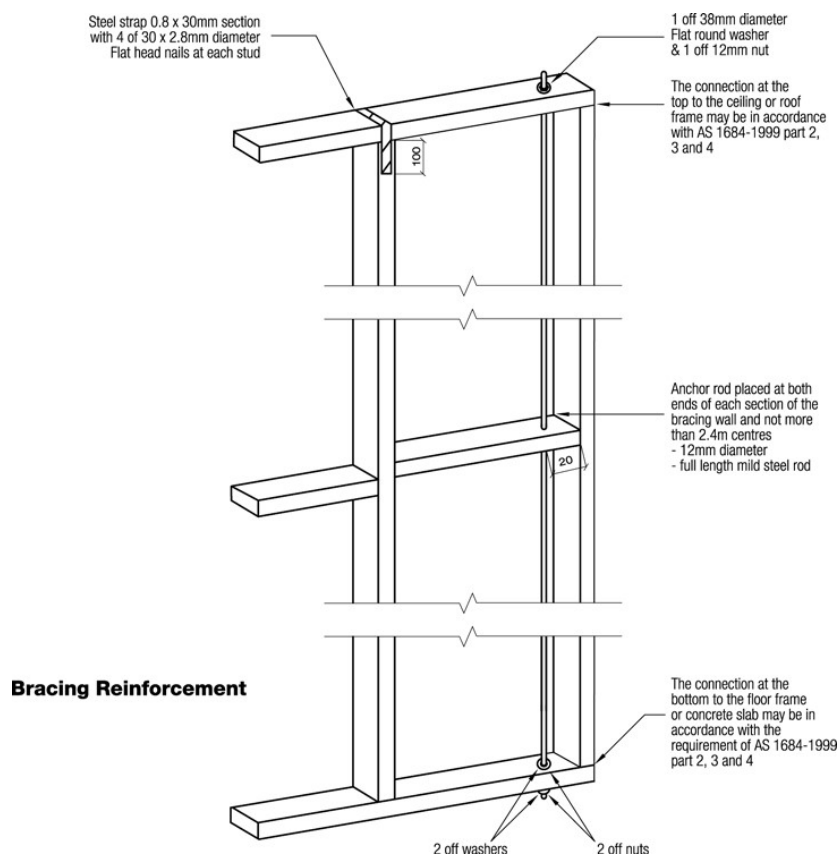
### Structural Bracing Capacity

The AUSBLOX Orange Board<sup>®</sup> insulated cladding external wall system was tested in racking tests in accordance with AS 4040.0-1992, AS 4040.2-1992 and AS 4040.3:2018 for non-cyclonic and cyclonic conditions (Regions A, B, C & D) by an accredited Laboratory (ref. 10 Refer page 30).

The obtained bracing capacity at 2.70m (as defined in AS 1684.2:2010 “Residential timber-framed construction” - Part.2: Non-cyclonic areas; Part.3: Cyclonic areas and Part.4; Simplified - Non-cyclonic areas), in serviceability conditions are summarised in Table 13.

**Table 13: Structural Bracing Capacity (kN/m at 2.70m height) of Wall Systems Applicable in Regions A & B (Non-cyclonic) and Regions C & D (Cyclonic)**

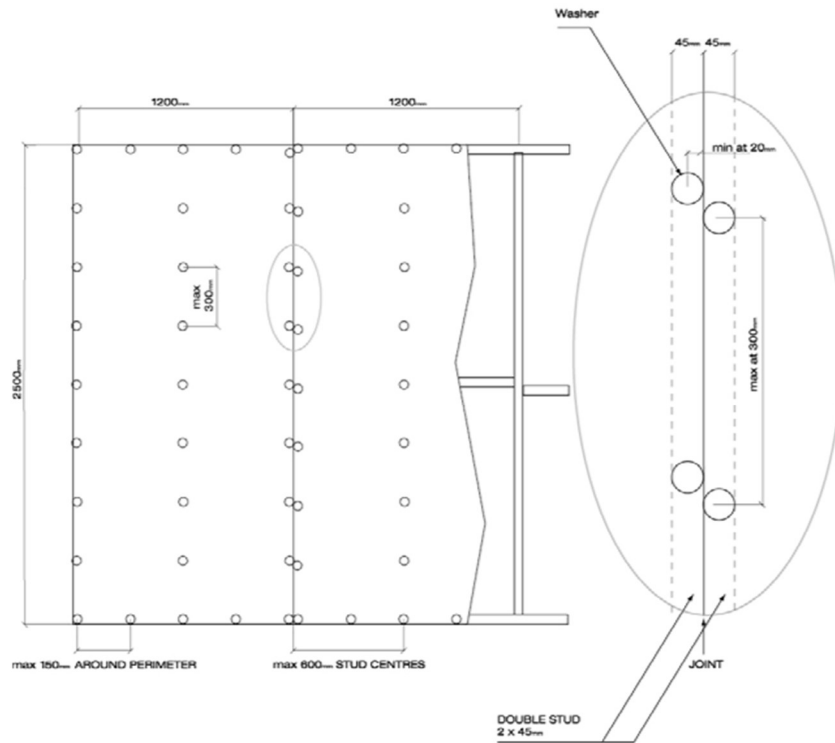
Material	Frame reinforcement	Stud spacing (mm)	Fastner spacing (mm)				
			300	200	150	120	100
AUSBLOX Orange Board <sup>®</sup>	Nil	450 or 600	1.15	1.35	1.40	1.50	1.55
AUSBLOX Orange Board <sup>®</sup>	Bracing Reinforcement vertical 12mm diam. steel rod at at 500mm from the corner where the racking force is applied. Galvanised straps at the top only.	450 or 600					3.85



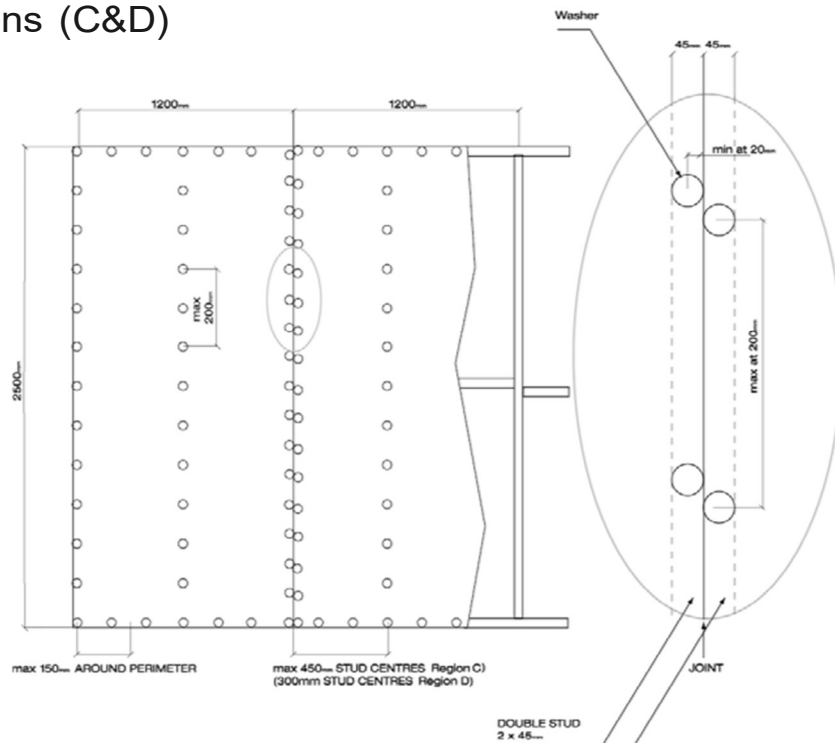
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## INSTALLATION AND FIXING DETAILS – Non Cavity in Non Cyclonic Regions (A&B)



## INSTALLATION AND FIXING DETAILS – Non Cavity in Cyclonic Regions (C&D)

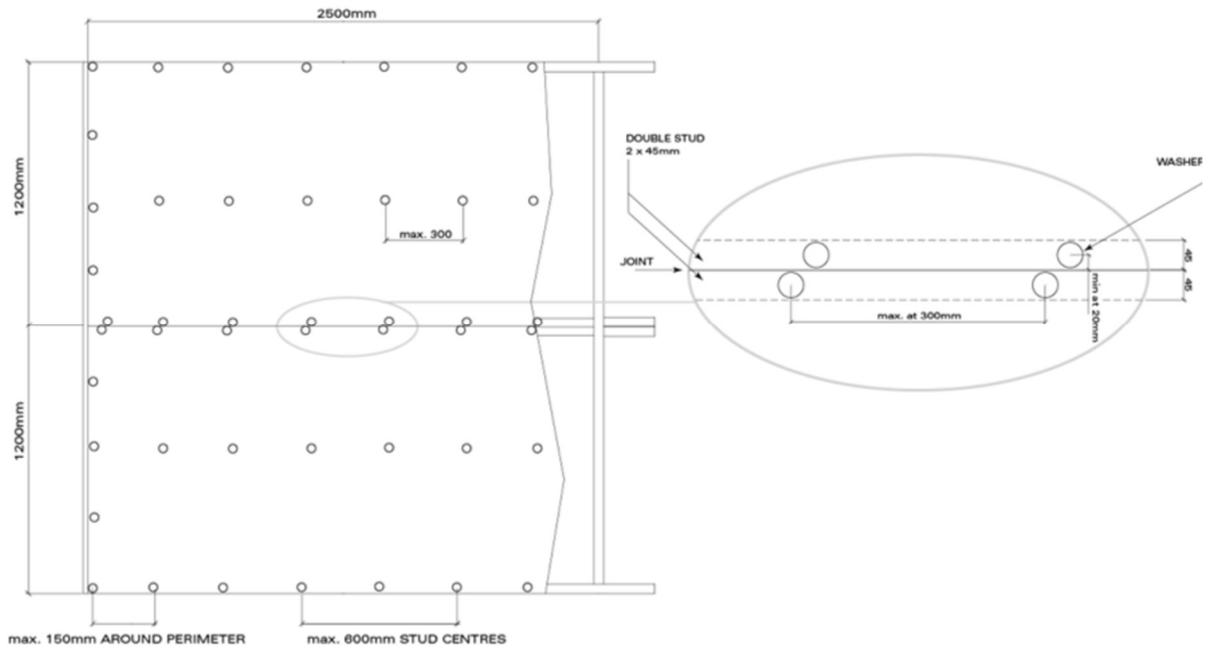




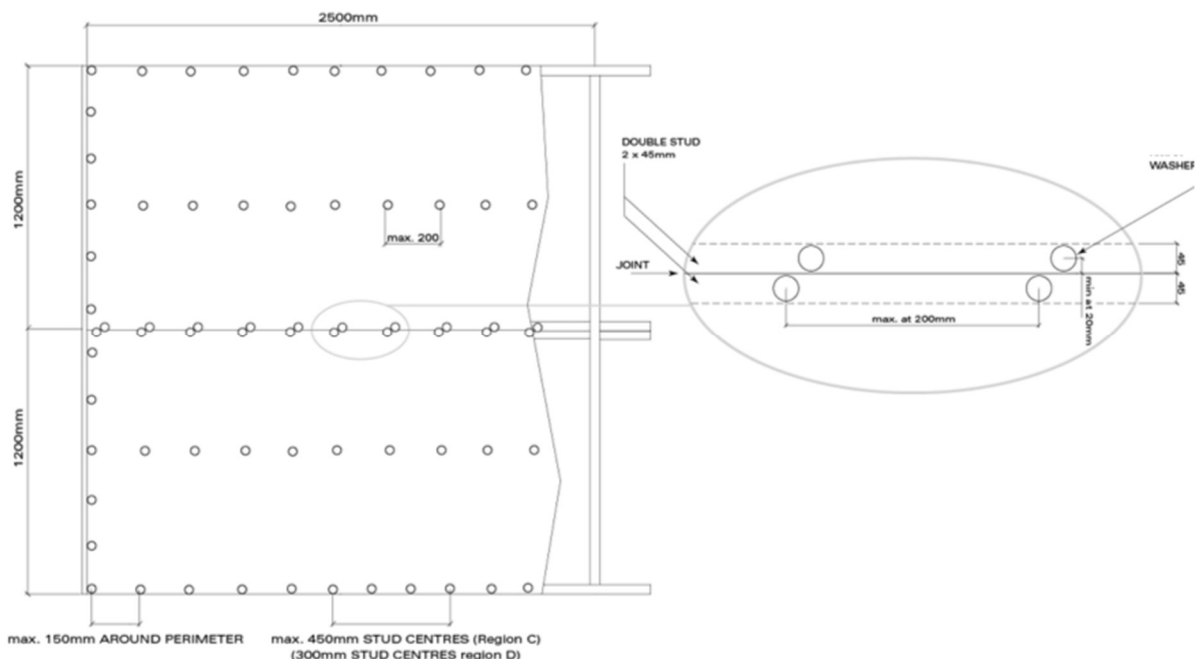
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# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM – Direct Fix

## INSTALLATION AND FIXING DETAILS OF AUSBLOX OrangeBoard<sup>®</sup> in Non Cyclonic Regions (A&B)-Horizontal orientation board installation



## INSTALLATION AND FIXING DETAILS OF AUSBLOX Orange Board<sup>®</sup> in Cyclonic Regions (C&D) - Horizontal orientation board installation

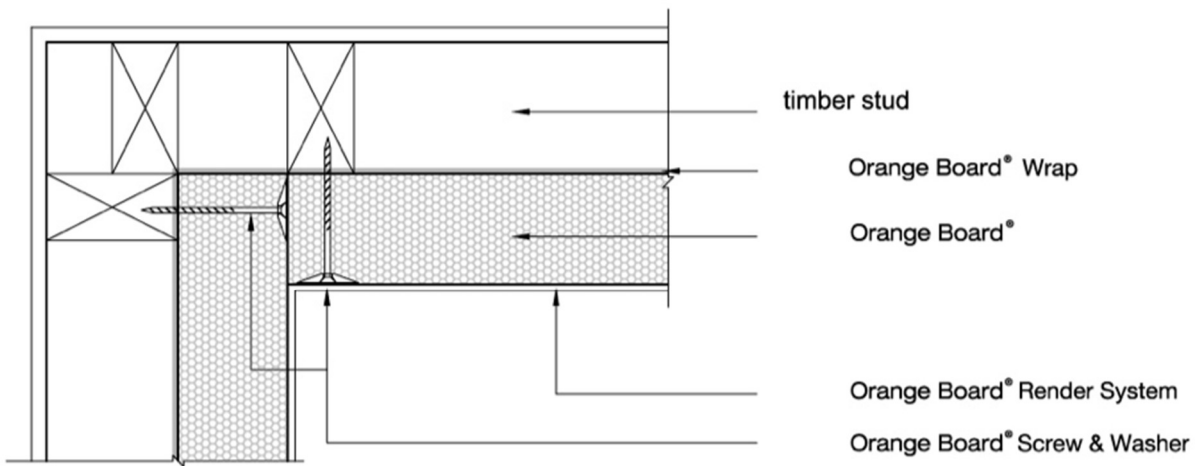


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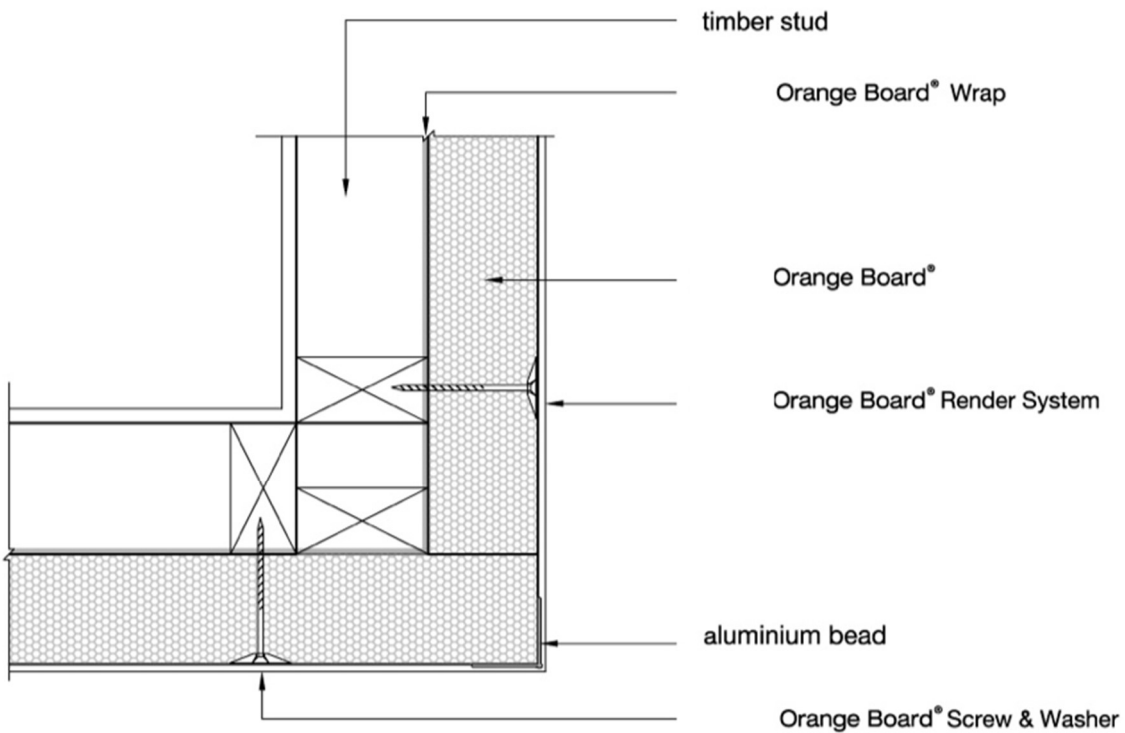
# Orange Board® INSULATED CLADDING SYSTEM – Direct Fix

## INSTALLATION AND FIXING DETAILS

### Corner Details



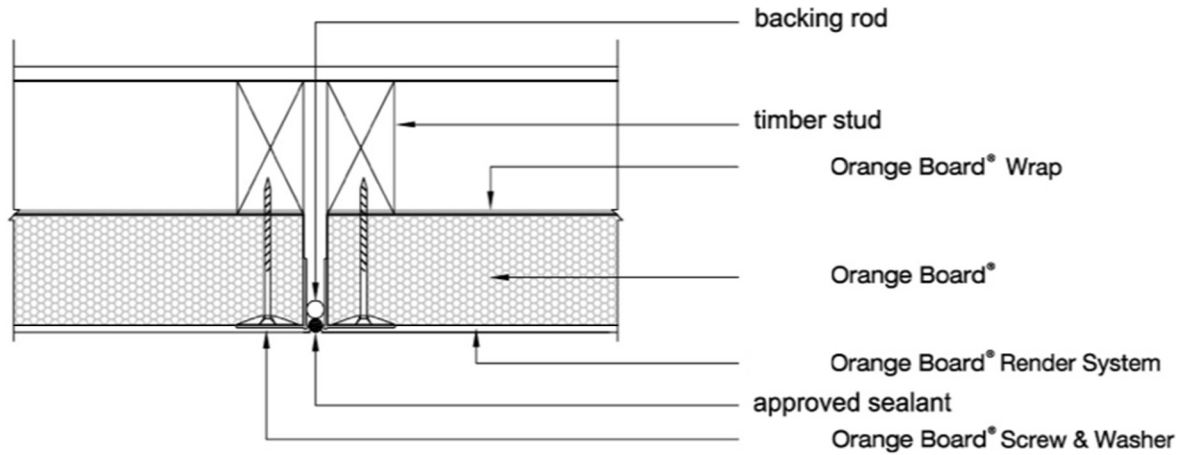
### INTERNAL CORNER DETAILS



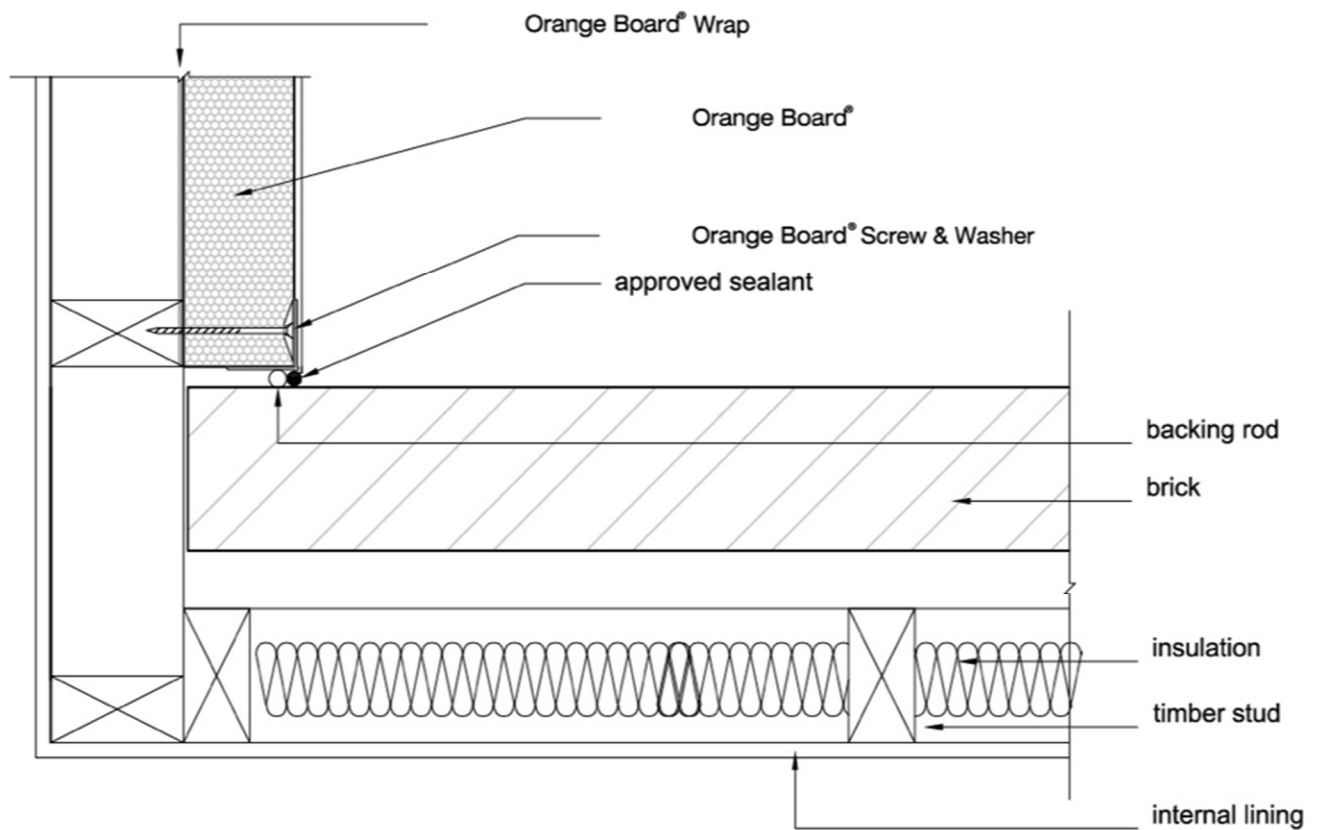
### EXTERNAL CORNER DETAILS

# Orange Board® INSULATED CLADDING SYSTEM – Direct Fix

## INSTALLATION AND FIXING DETAILS



## EXPANSION (CONTROL) JOINTS DETAILS



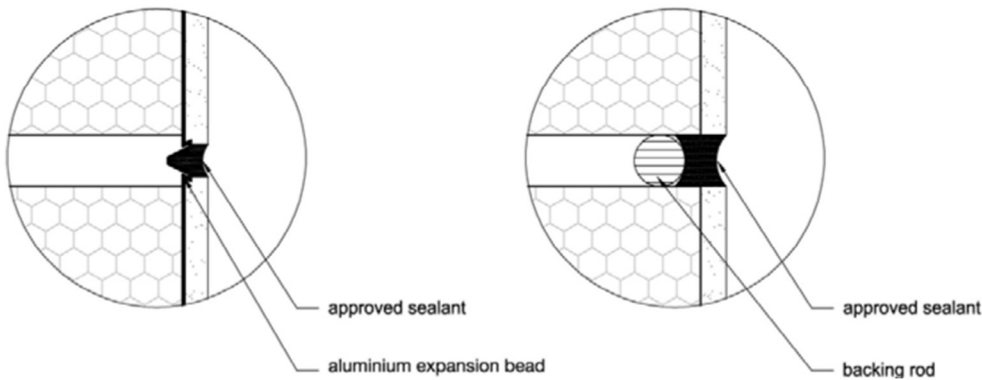
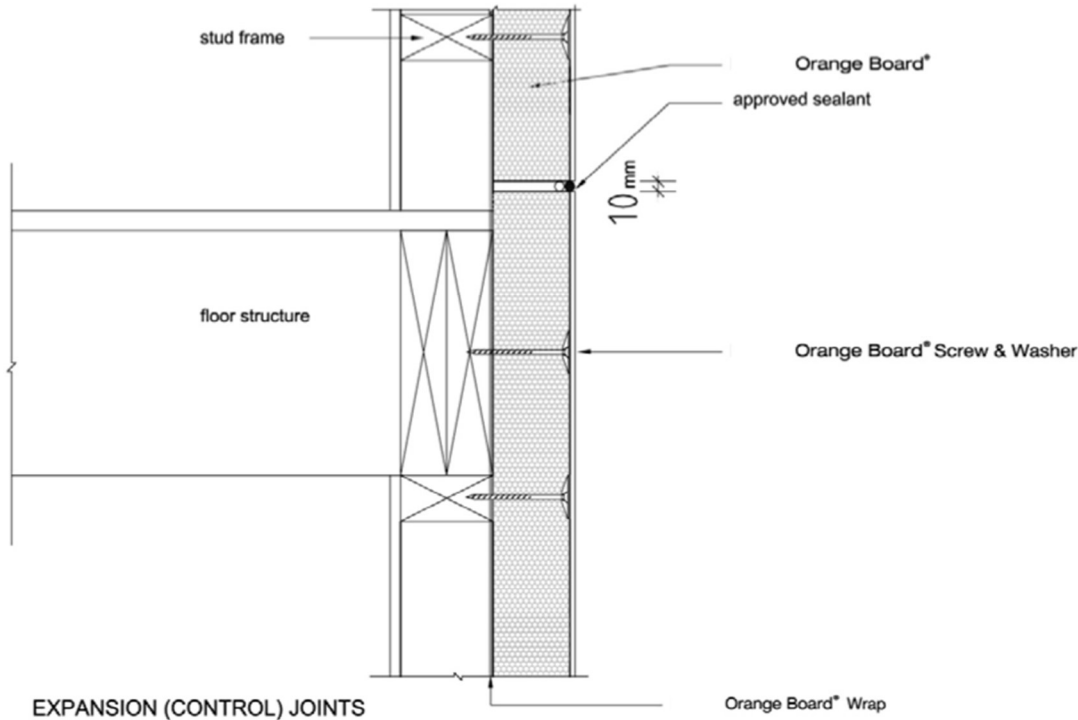
## Orange Board® PANEL TO BRICK DETAILS

### Expansion (Control) Joints

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# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM – Direct Fix

## Expansion (Control) Joints



## HORIZONTAL CONTROL JOINT

### Expansion (Control) Joints

Prior to installation determine expansion joint placement by consulting with a Design Engineer to calculate the deformation/stress due to soil/structure movement, deflection due to load bearing on roofing structures and to specify location of expansion/control joints.

Placement Guide: The following is a guide only and does not negate the user's responsibility to consult a Design Engineer.

In line with good building practice, spacing of vertical expansion joints should not exceed 5 metres where the wall length is greater than 8 metres.

Joints should be placed to align with large door and window openings and internal corners.

Double studs are necessary at all vertical expansion joints.

Horizontal expansion joint spacing should not exceed 3 metres.

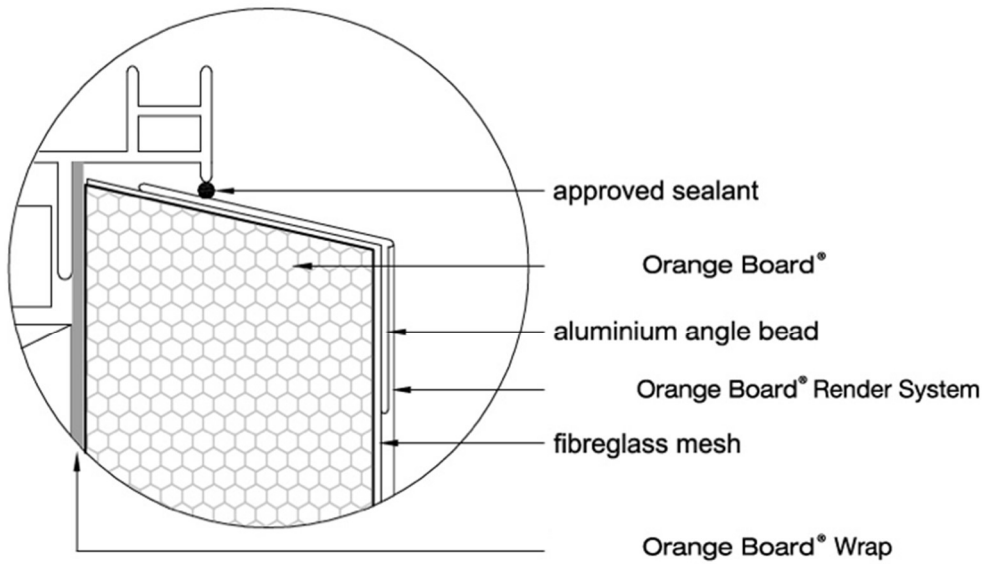
Expansion joints must occur where AUSBLOX Orange Board<sup>®</sup> meets other substrates/cladding materials.

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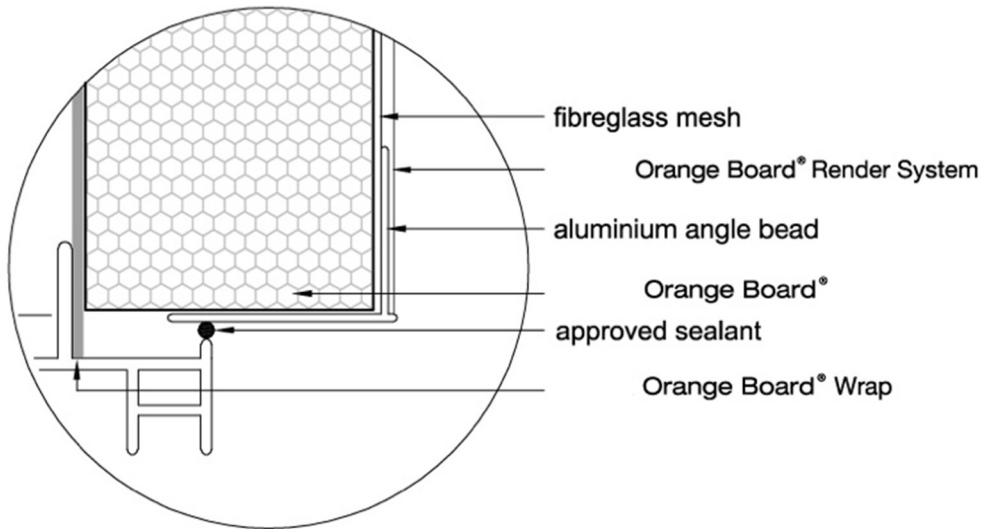
# Orange Board® INSULATED CLADDING SYSTEM – Direct Fix

## INSTALLATION AND FIXING DETAILS

### Expansion (Control) Joints



### WINDOW SILL DETAIL



### HEAD/JAMB DETAIL

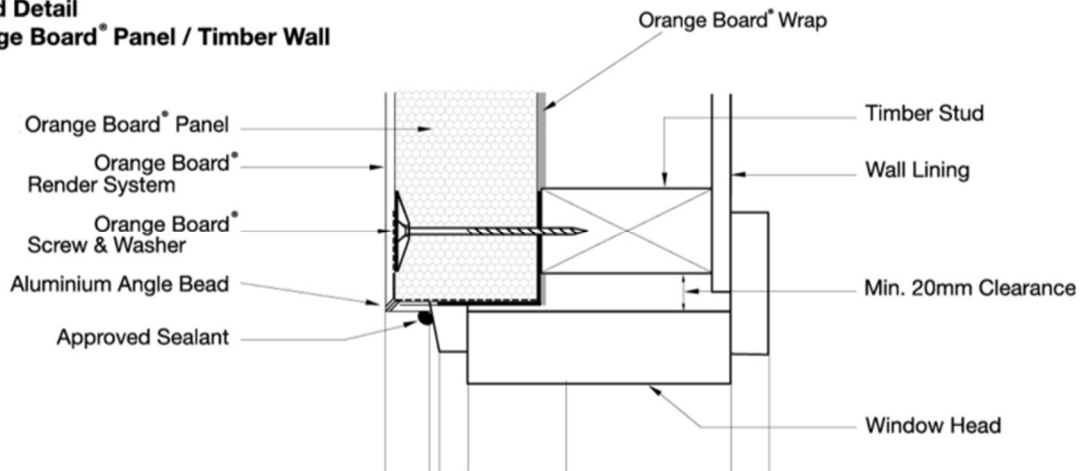
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# Orange Board® INSULATED CLADDING SYSTEM – Direct Fix

## INSTALLATION AND FIXING DETAILS

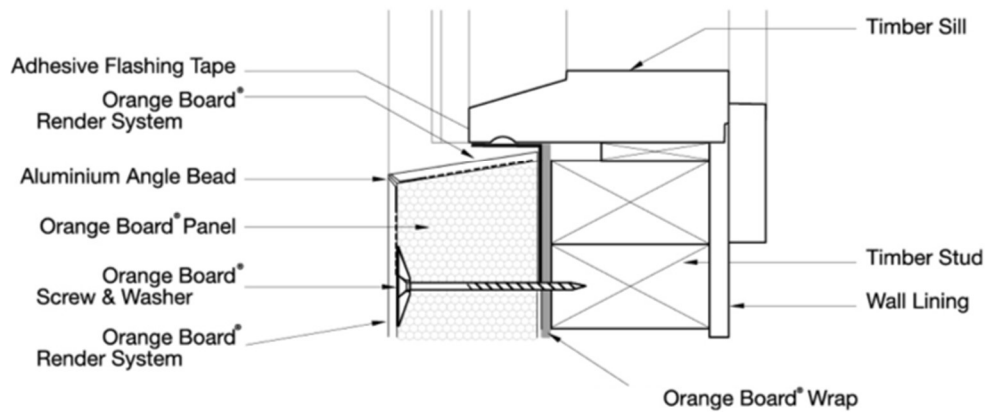
### Typical Head Detail

#### Orange Board® Panel / Timber Wall



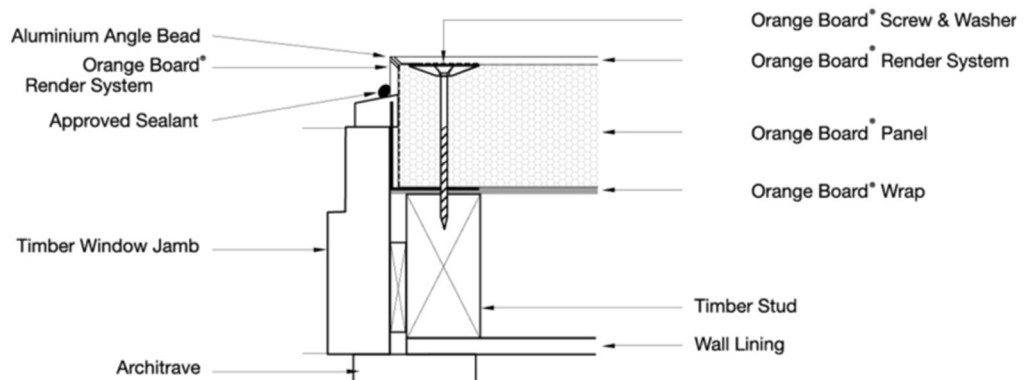
### Typical Sill Detail

#### Orange Board® Panel / Timber Window



### Typical Side Jamb Detail

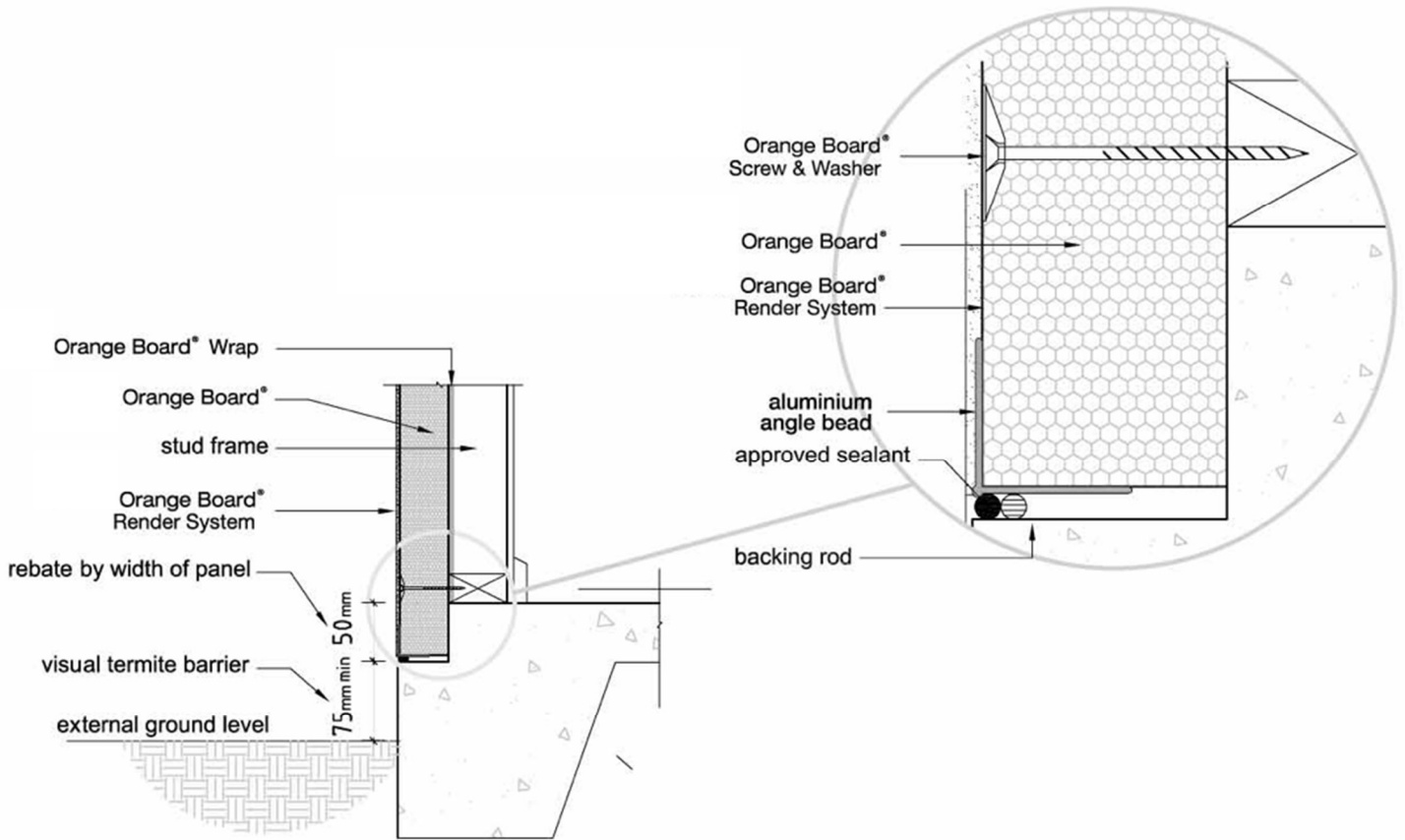
#### Orange Board® Panel / Timber Window



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# Orange Board® INSULATED CLADDING SYSTEM – Direct Fix

## INSTALLATION AND FIXING DETAILS

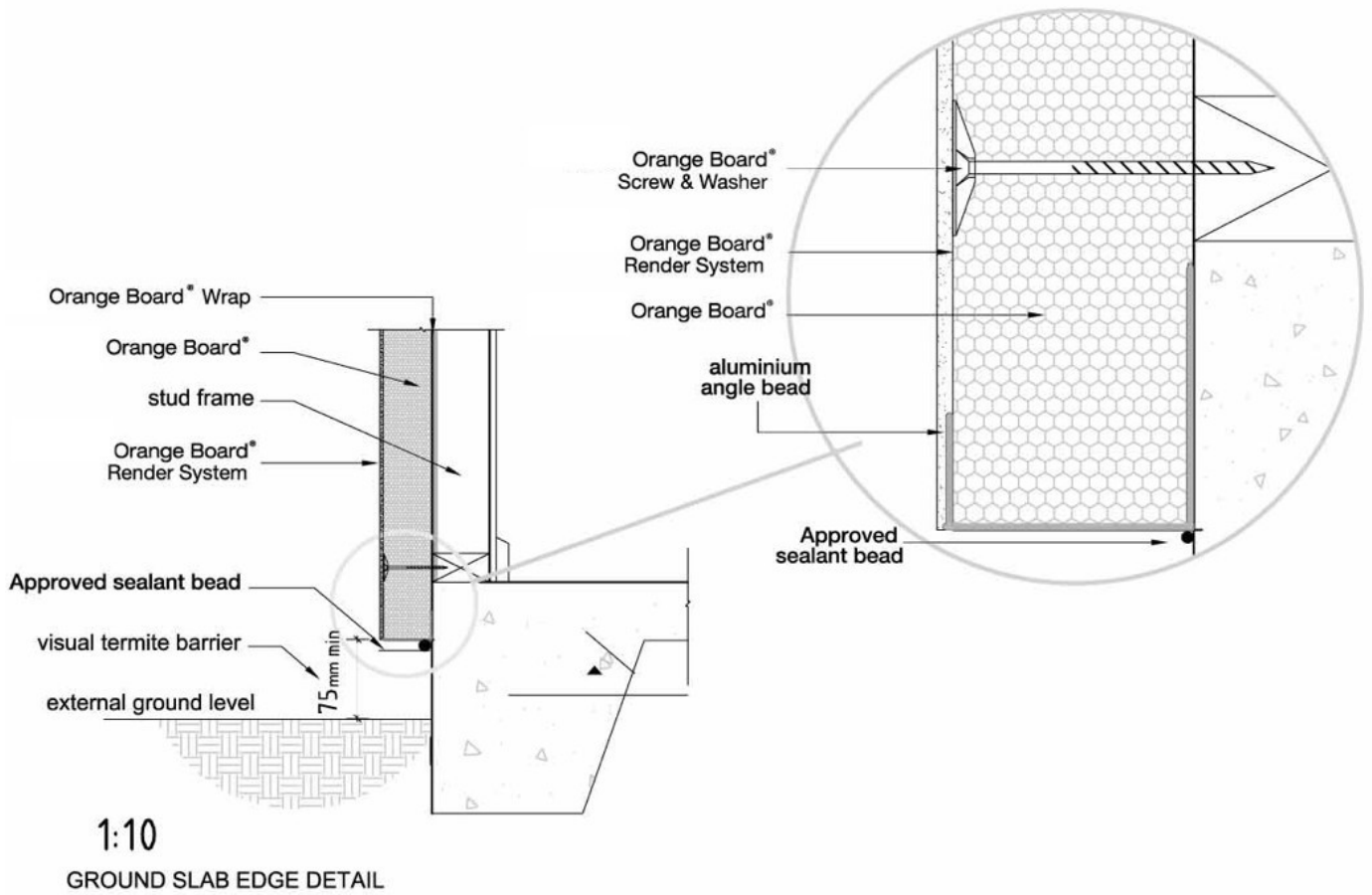


GROUND SLAB REBATE DETAIL



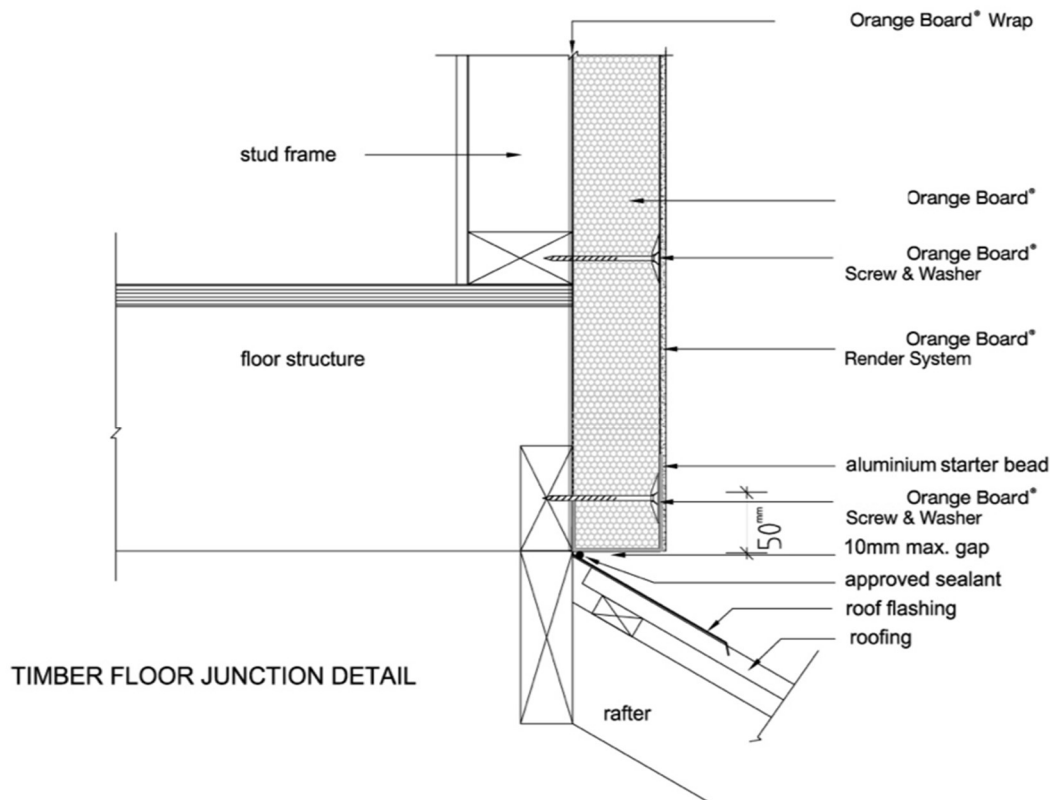
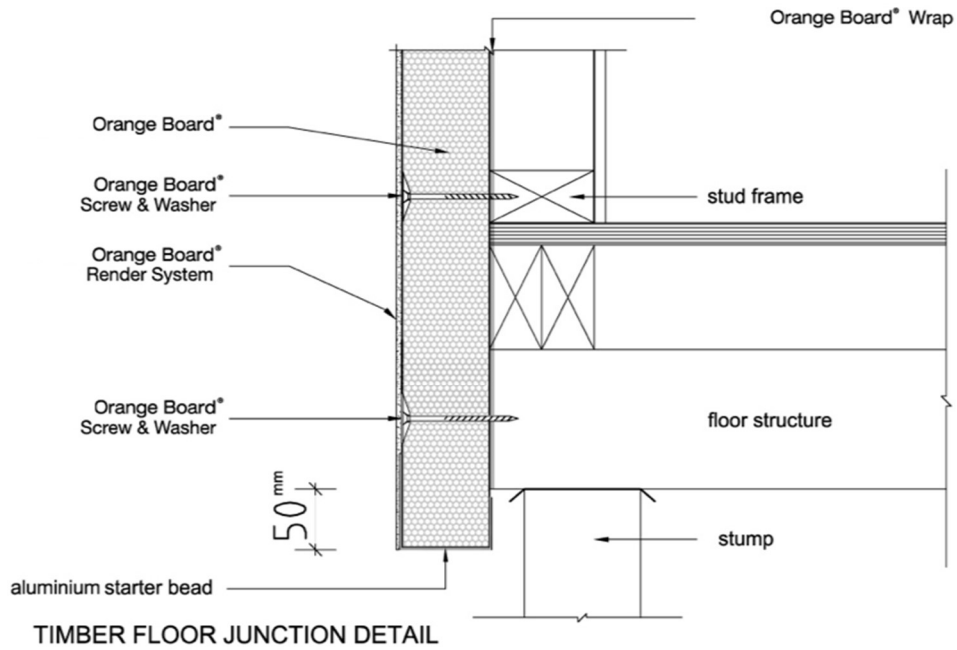
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# Orange Board® INSULATED CLADDING SYSTEM – Direct Fix

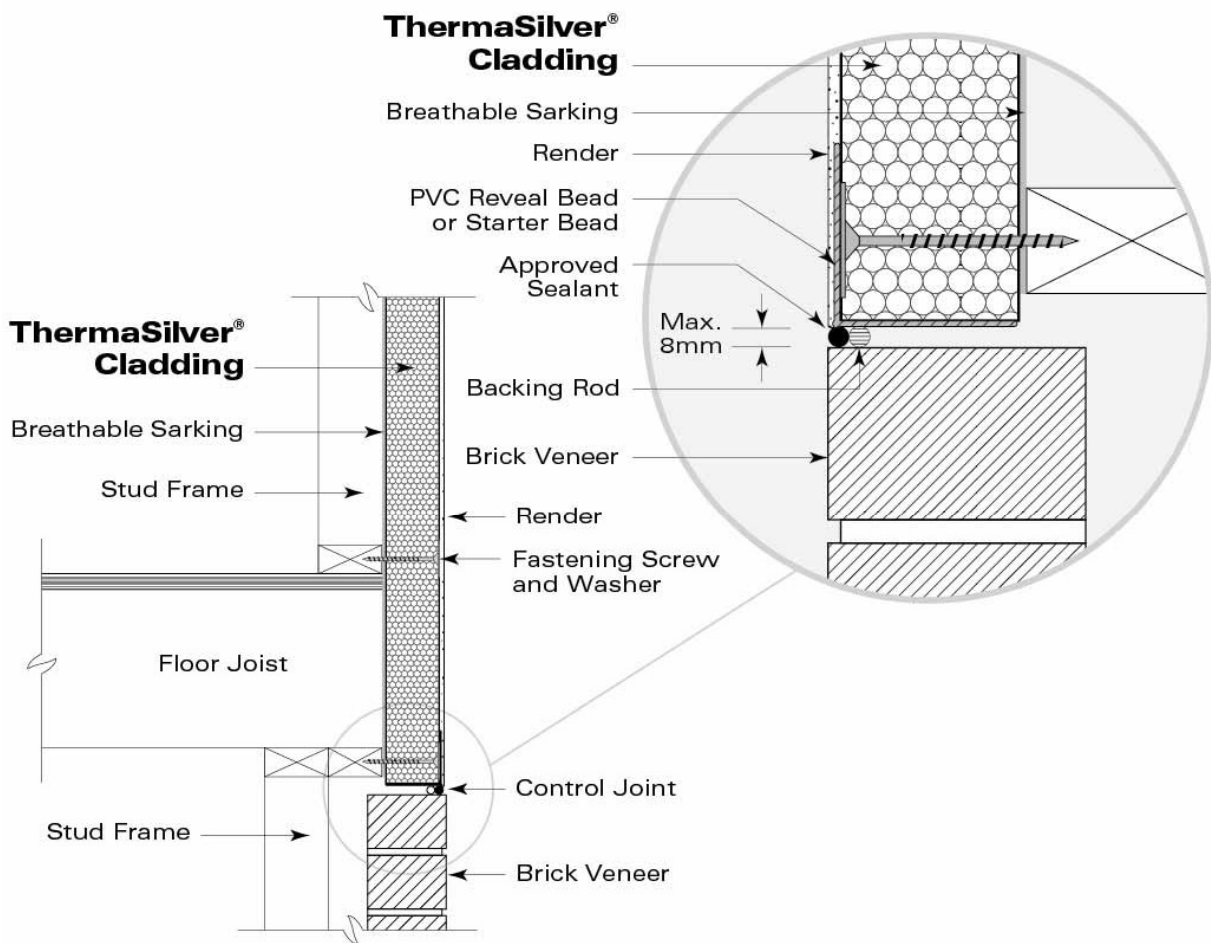


# Orange Board® INSULATED CLADDING SYSTEM – Direct Fix

## INSTALLATION AND FIXING DETAILS



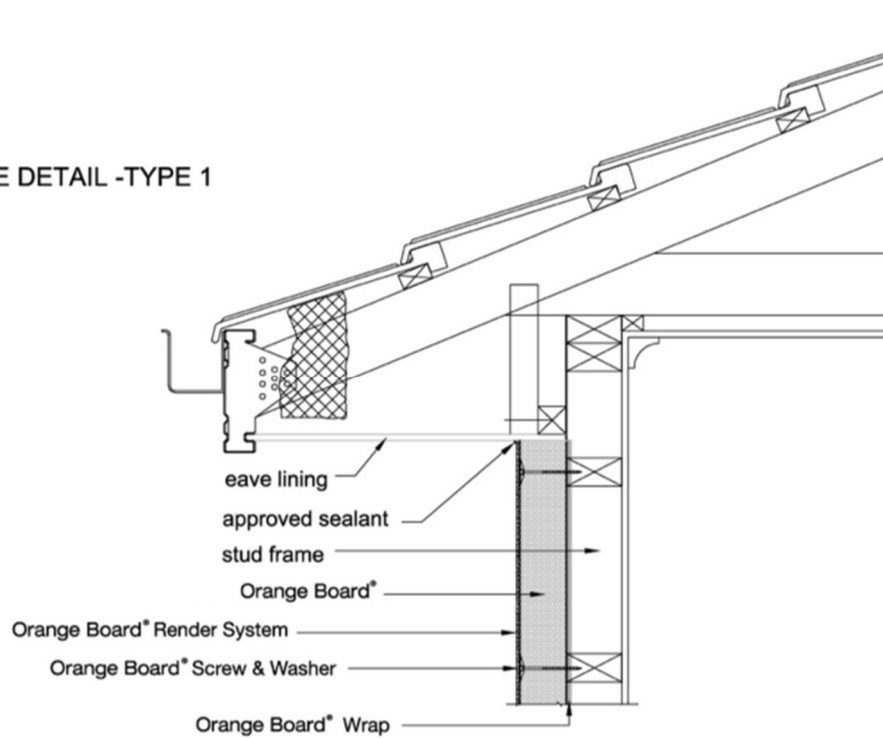
# Orange Board® INSULATED CLADDING SYSTEM – Direct Fix



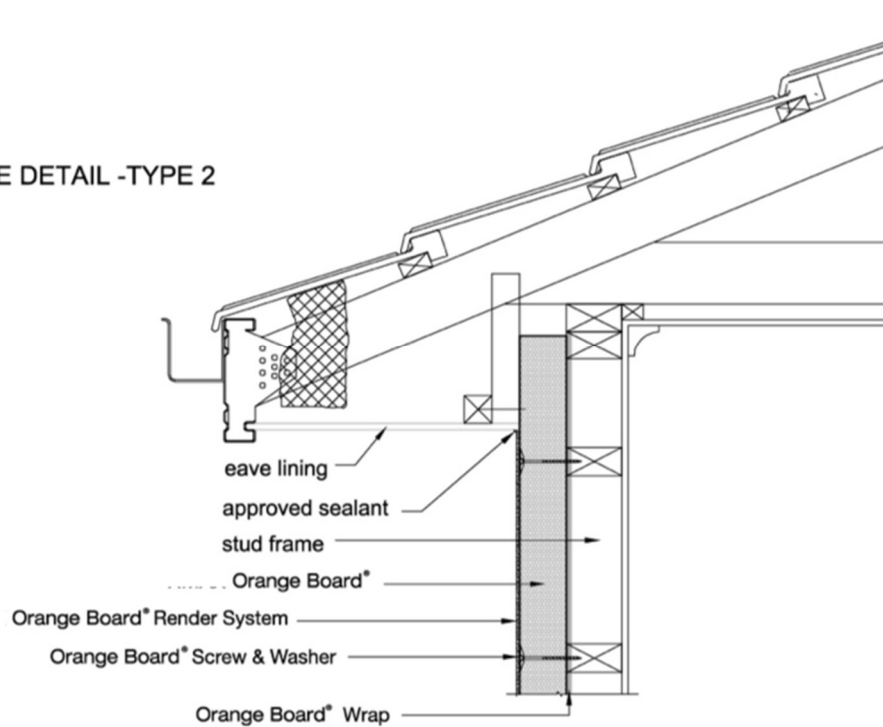
BRICK VENEER JUNCTION DETAIL

## INSTALLATION AND FIXING DETAILS

EAVE DETAIL -TYPE 1

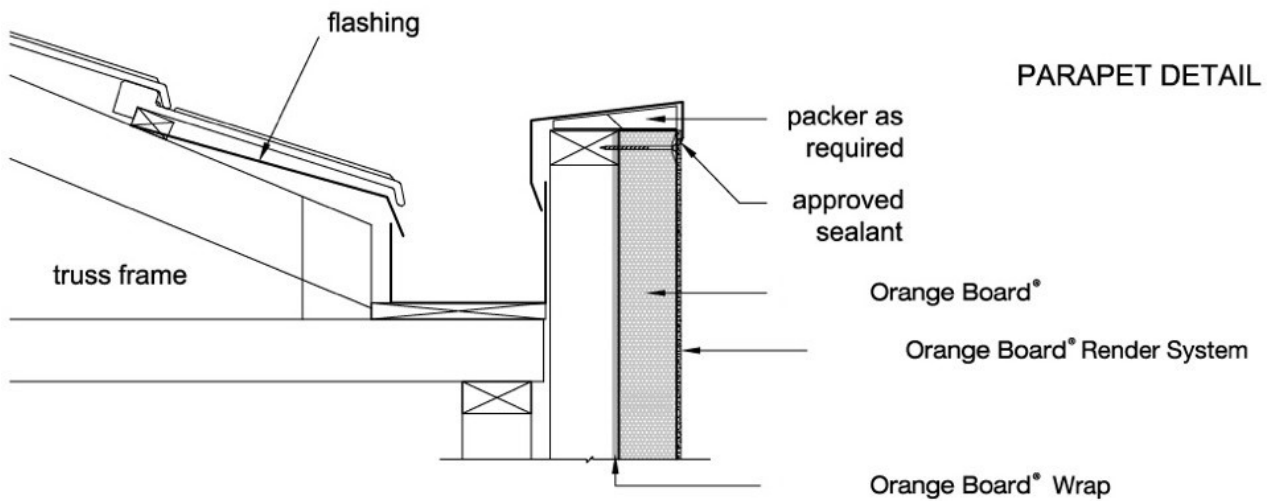
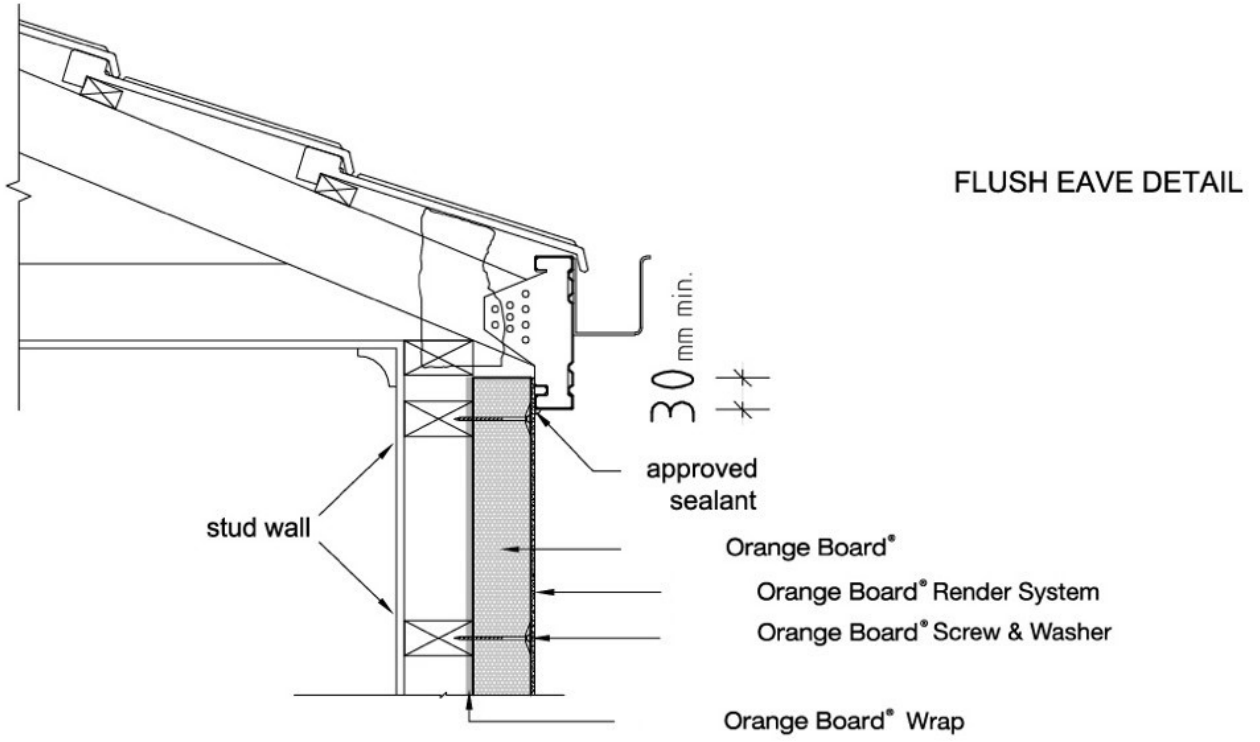


EAVE DETAIL -TYPE 2



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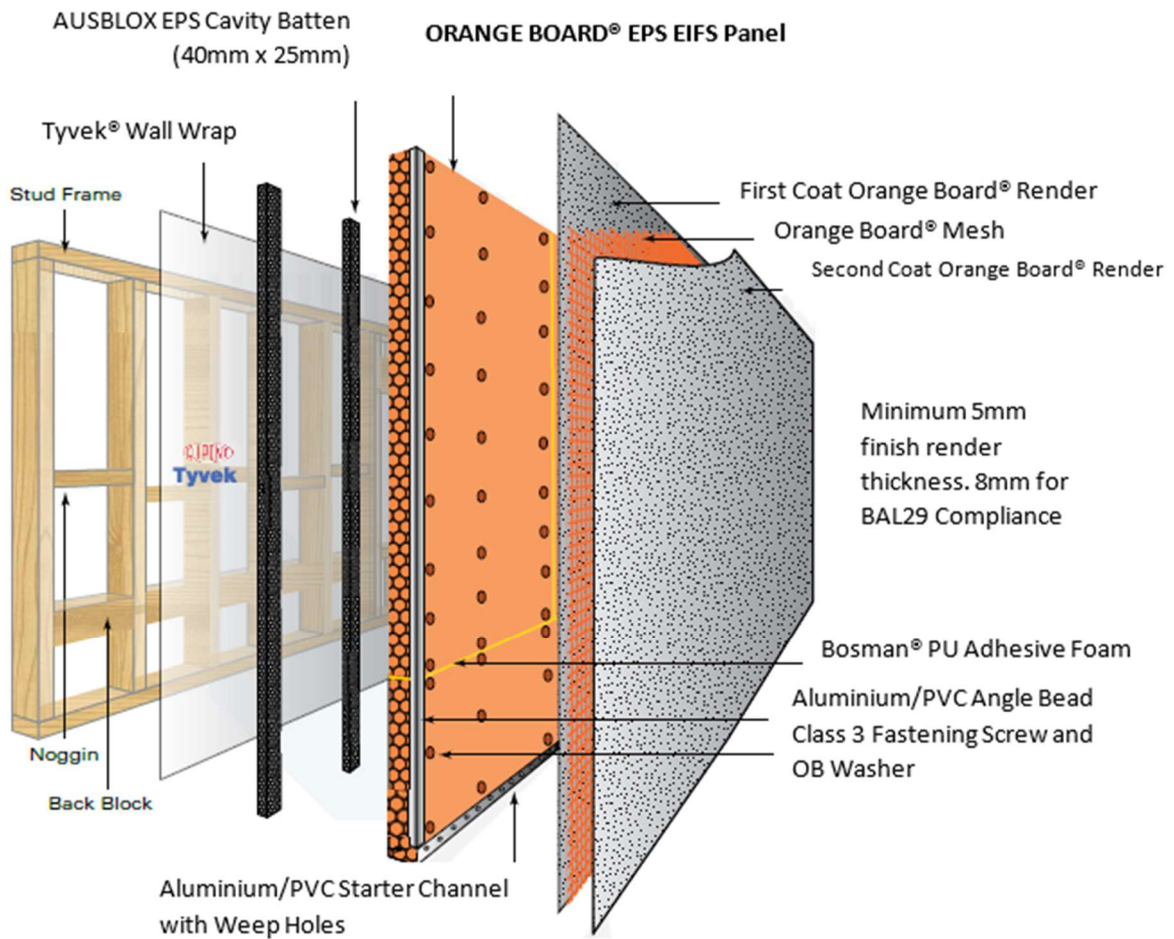
# Orange Board® INSULATED CLADDING SYSTEM – Direct Fix



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# Orange Board® INSULATED CLADDING SYSTEM - Cavity

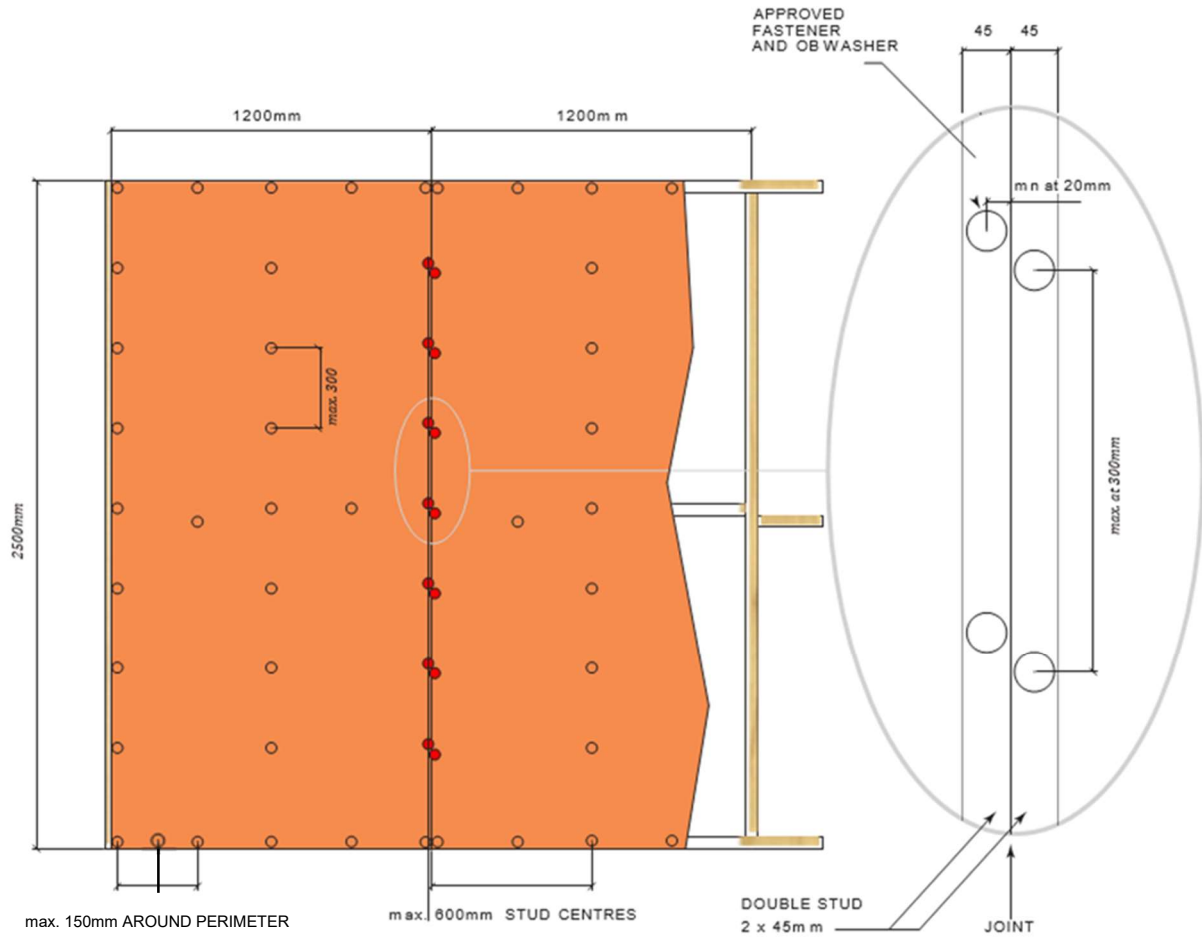
## ORANGE Board® CLADDING CROSS SECTION



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# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXINGS DETAILS in Non-Cyclonic Regions (A&B) - Vertical orientation board installation

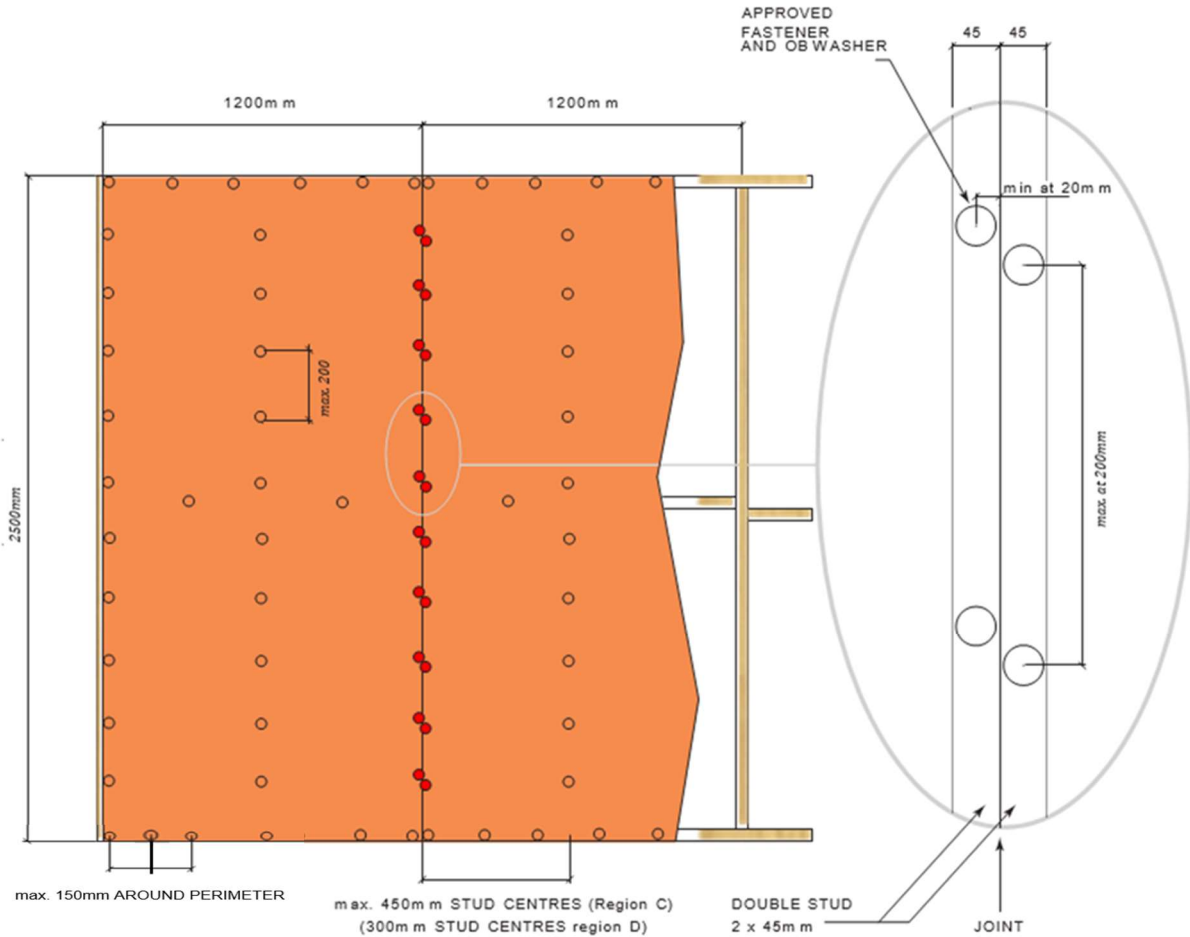




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# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM - Cavity

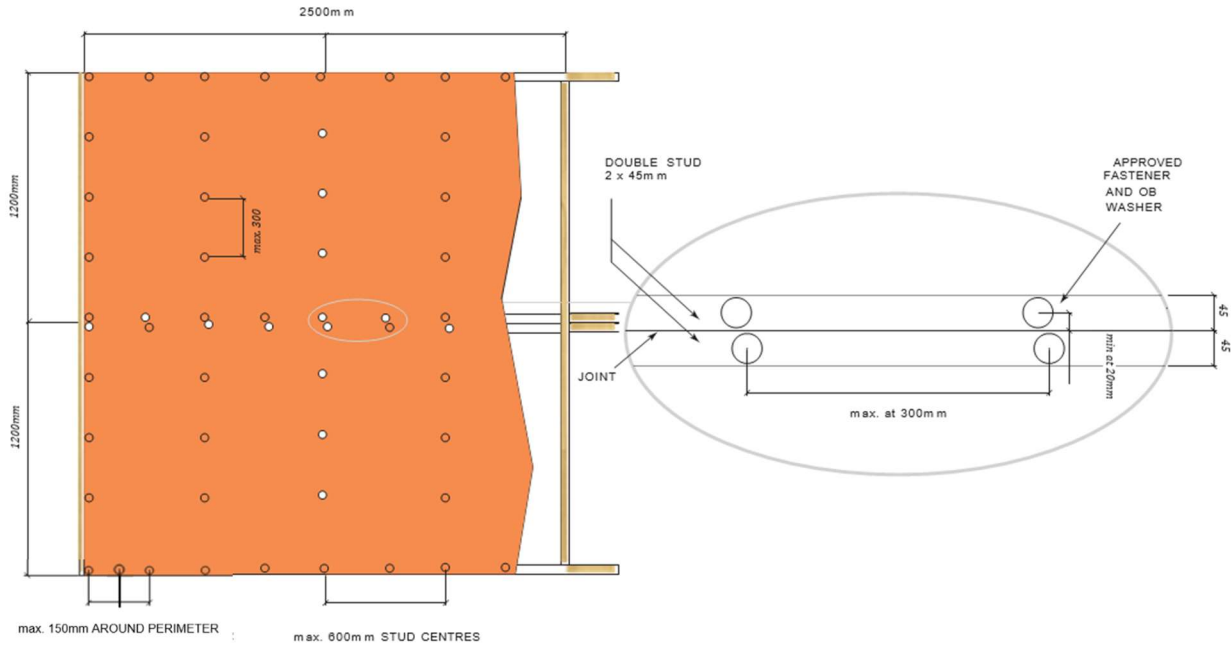
## INSTALLATION AND FIXINGS DETAILS in Non-Cyclonic Regions (A&B) - Vertical orientation board installation



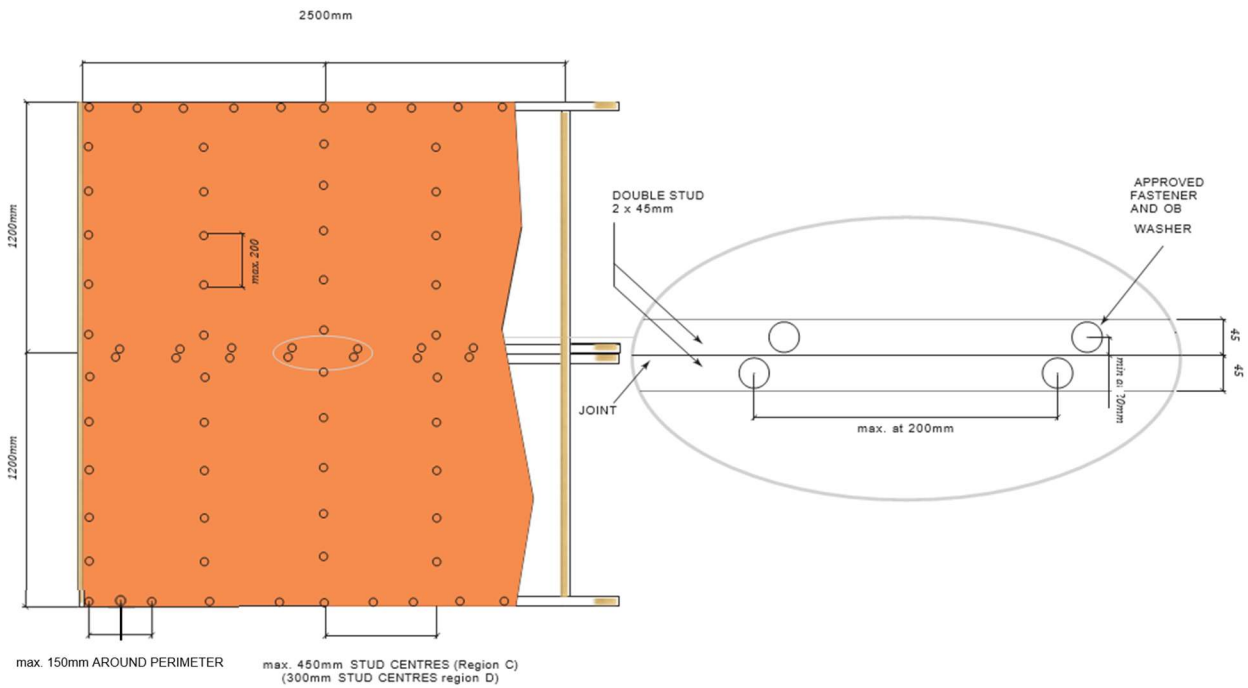
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# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXINGS DETAILS in Cyclonic Regions (A&B) - Horizontal orientation board installation



## INSTALLATION AND FIXINGS DETAILS in Cyclonic Regions (C&D) - Horizontal orientation board installation

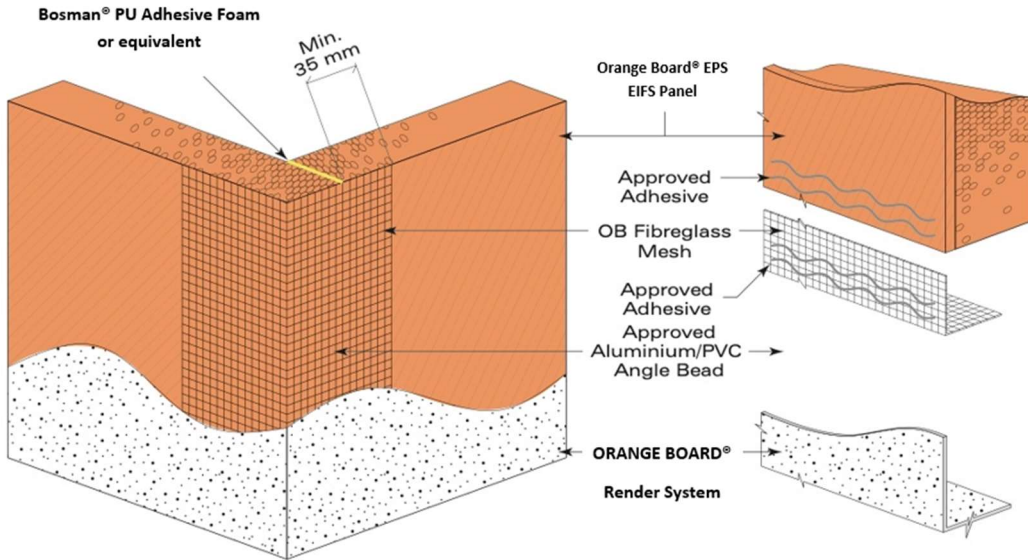


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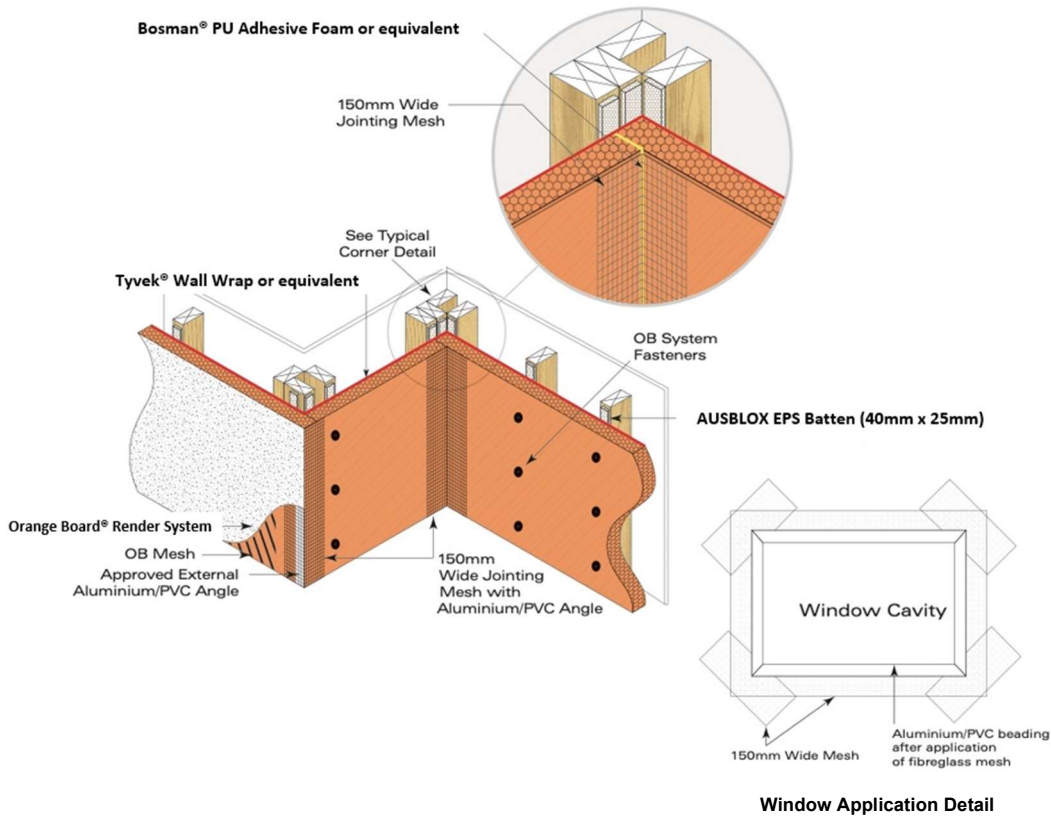
# Orange Board® INSULATED CLADDING SYSTEM – Cavity

## INSTALLATION AND FIXING DETAILS

### Corner Details



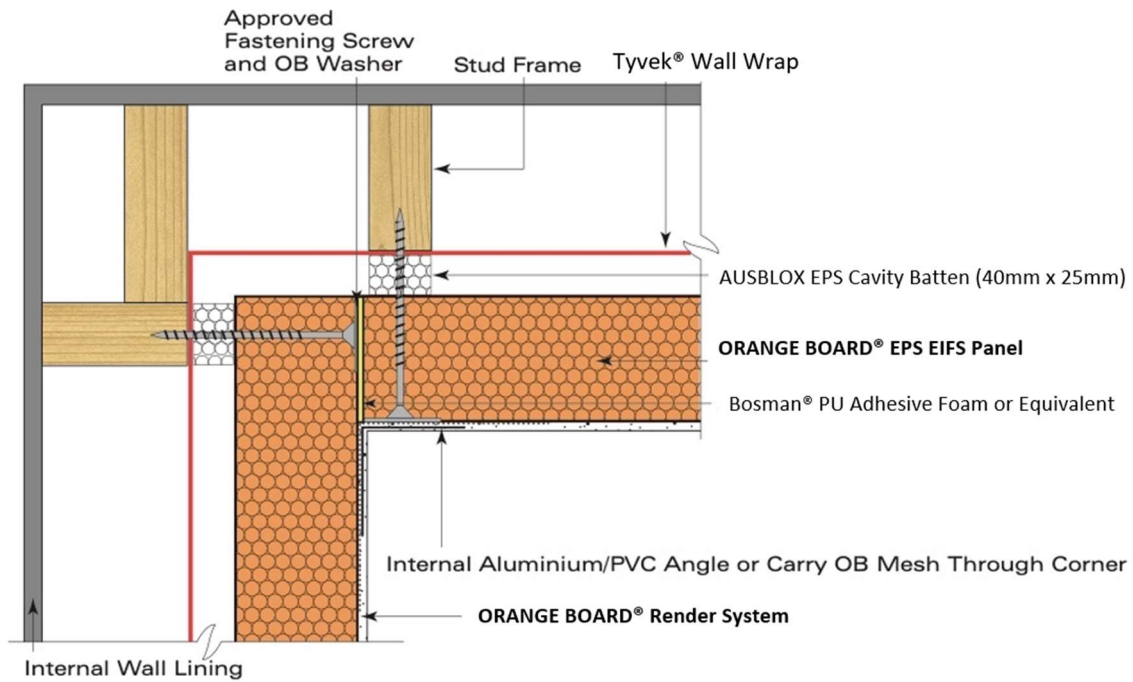
### Internal And External Corner Details



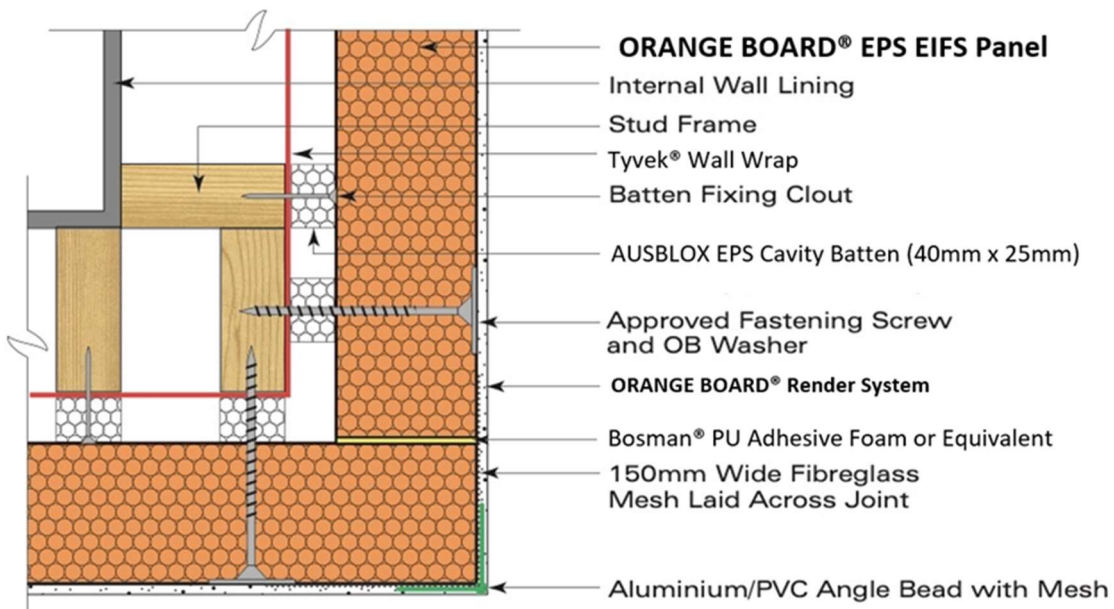
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# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## Corner Details



Internal Corner Detail

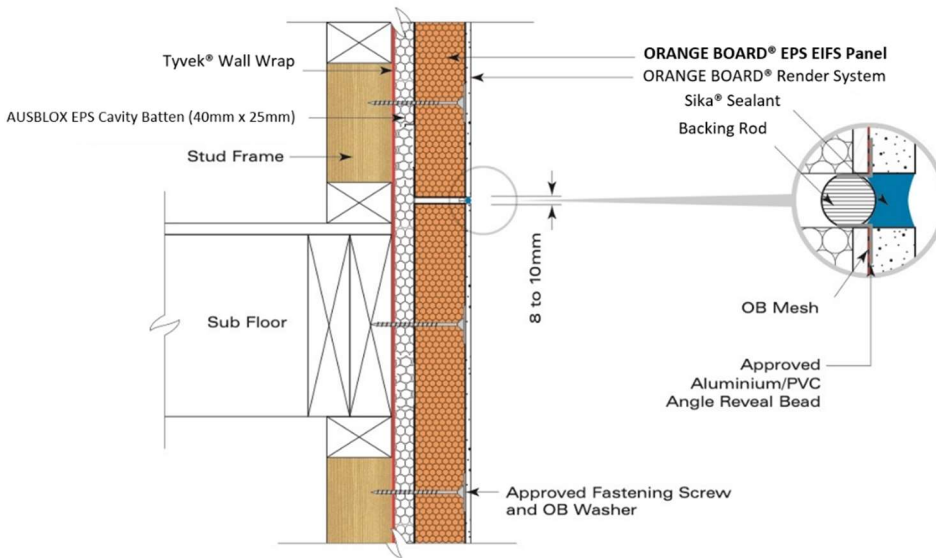


External Corner Detail

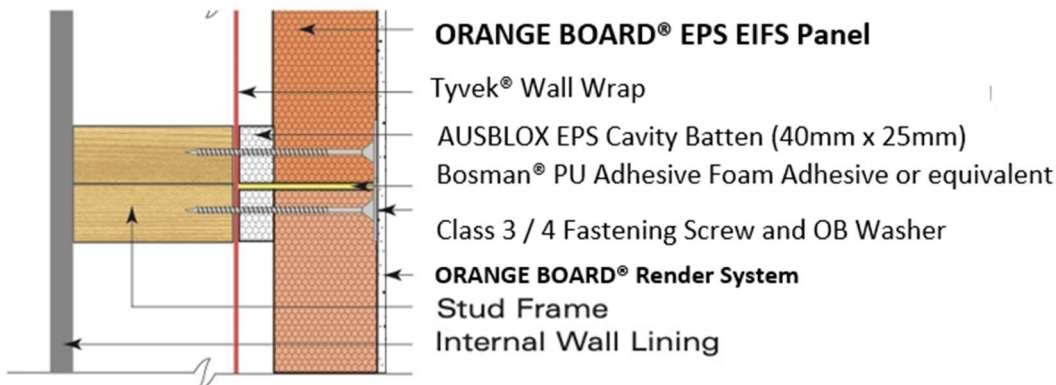
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# Orange Board® INSULATED CLADDING SYSTEM - Cavity

INSTALLATION AND FIXING DETAILS



Expansion (Control) Joint Detail



Panel Joint Detail

## Expansion (Control) Joints

Prior to installation determine expansion joint placement by consulting with a Design Engineer to calculate the deformation/stress due to the soil/structure movement, deflection due to the load bearing on roofing structures and to specify location of expansion/control joints.

Placement guide: The following is a guide only and does not negate the user's responsibility to consult a Design Engineer.

In line with good building practice, spacing of vertical expansion joints should not exceed 5 meters where the wall length is greater than 8 meters.

Joints should be placed to align with large door and window openings and internal corners.

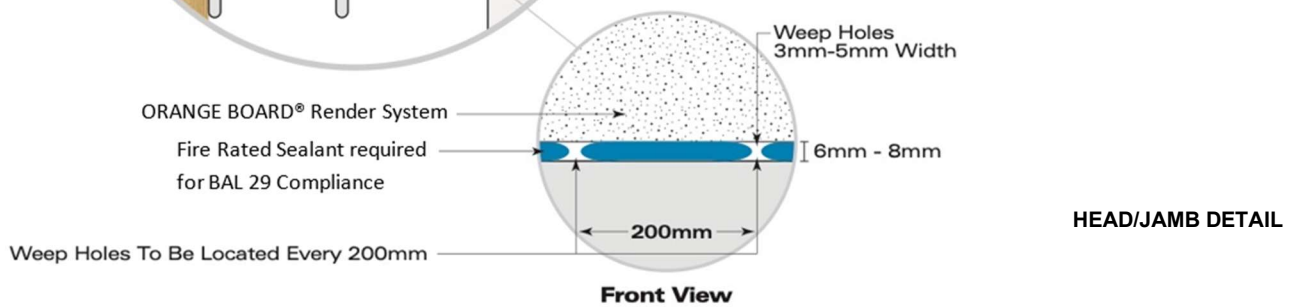
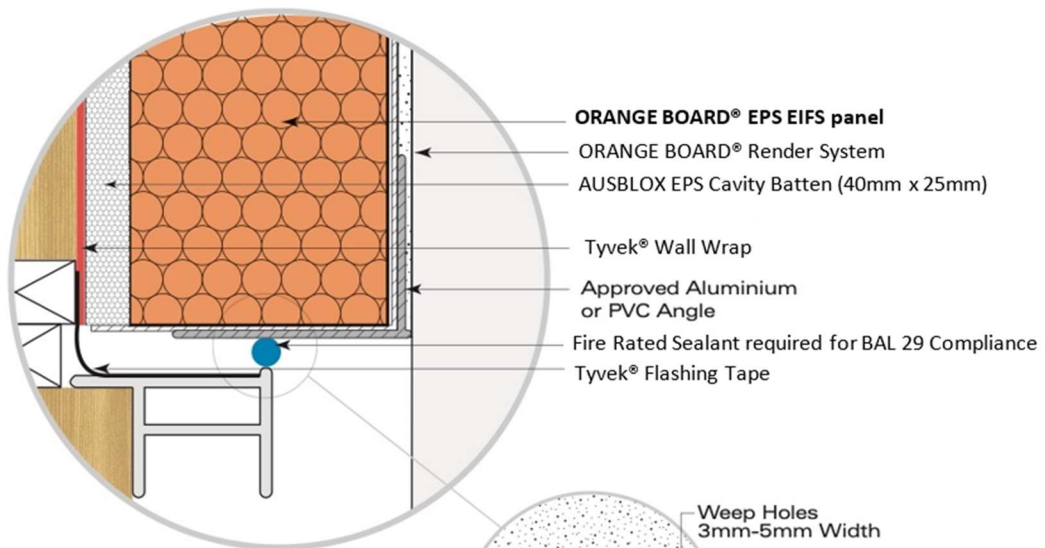
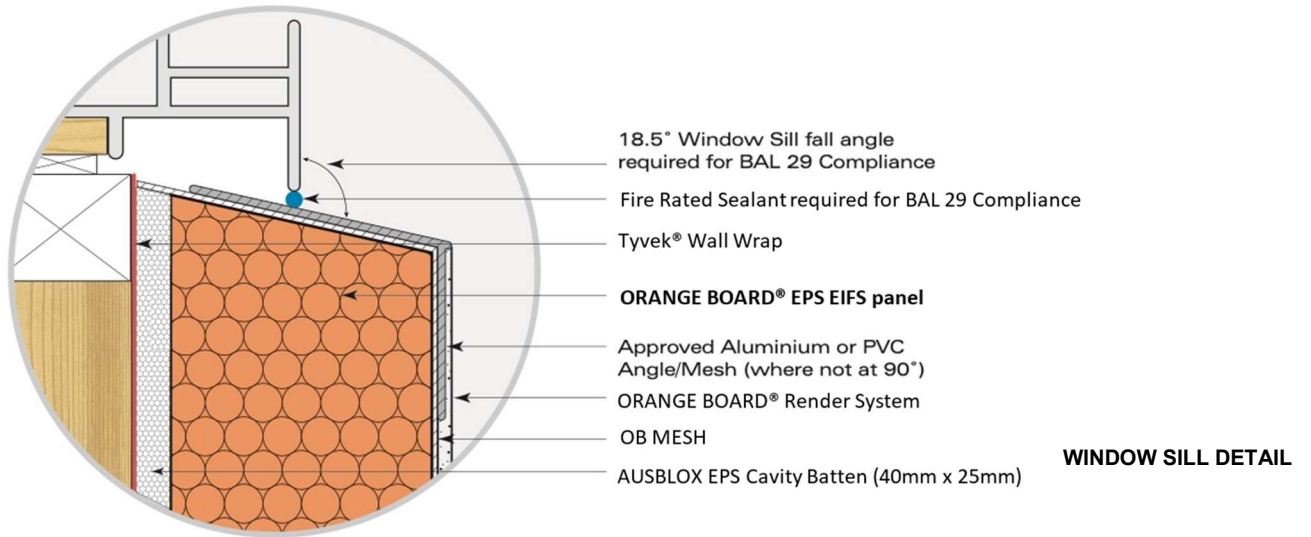
Double studs are necessary at all vertical expansion joints.

Expansion joints must occur where AUSBLOX Orange Board® meets other substrates or cladding materials.



# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXING DETAILS

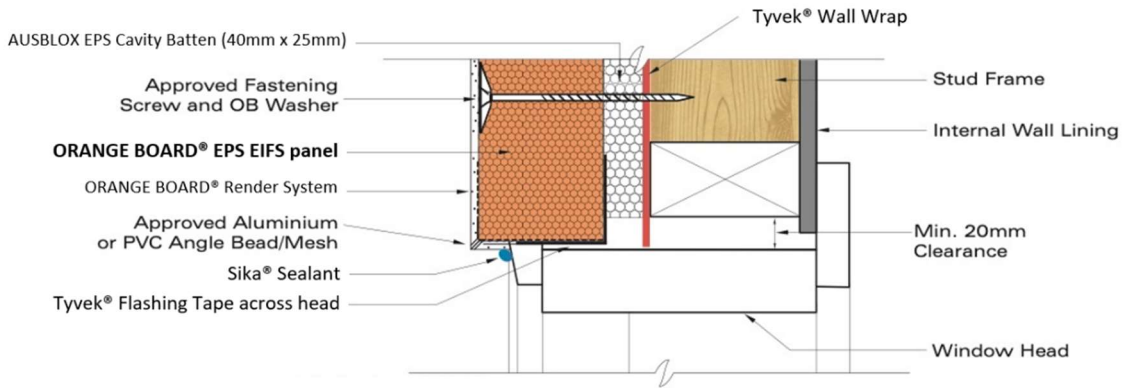


# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXING DETAILS

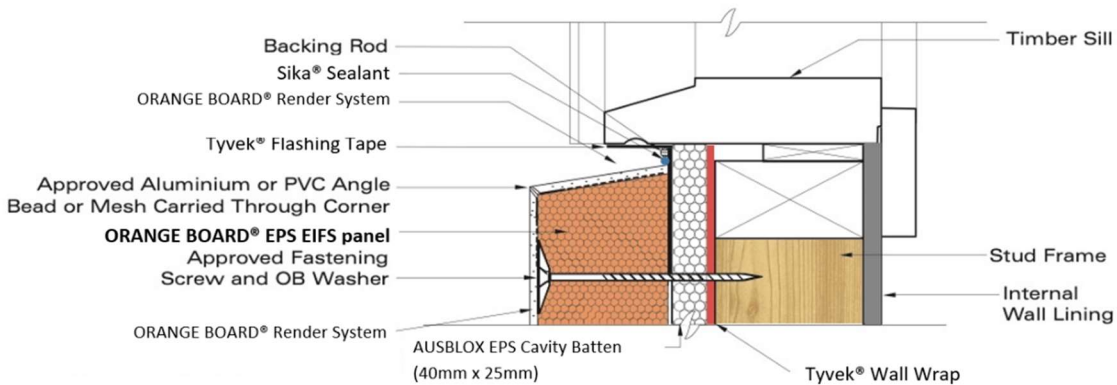
### Orange Board® Panel / Timber Wall

Typical Head Detail



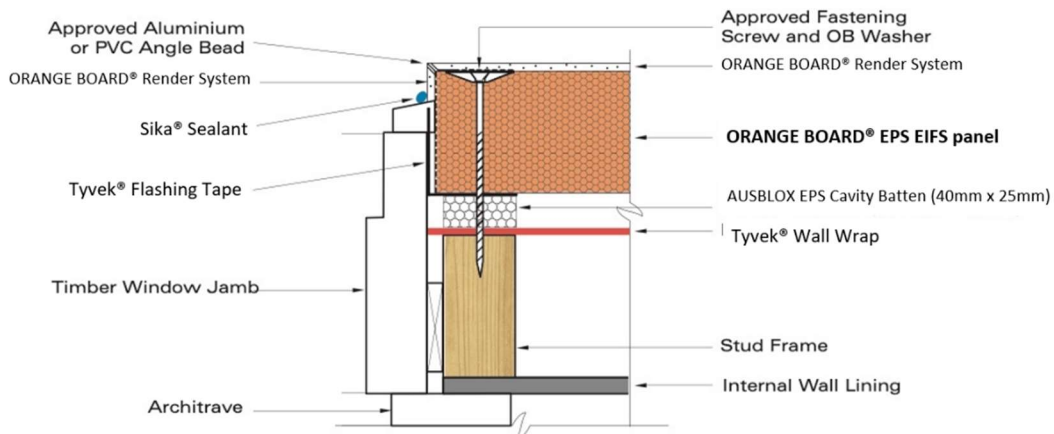
### Orange Board® Panel / Timber Wall

Typical Sill Detail



### Orange Board® Panel / Timber Wall

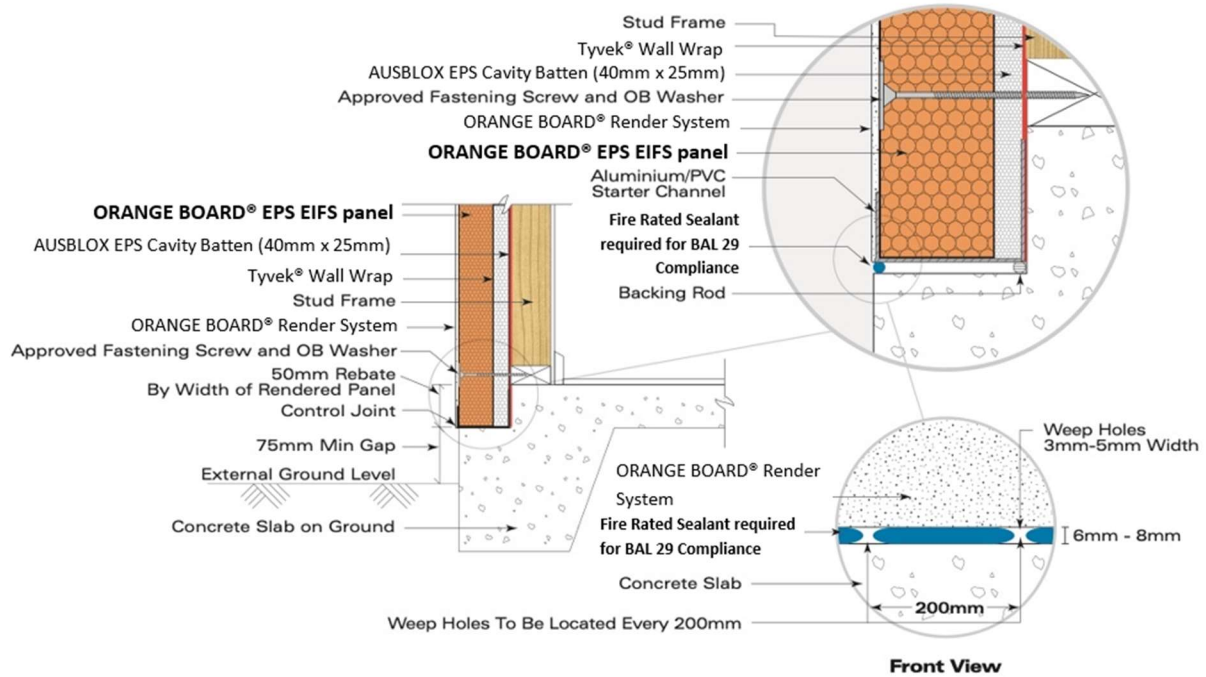
Typical Side Jamb Detail



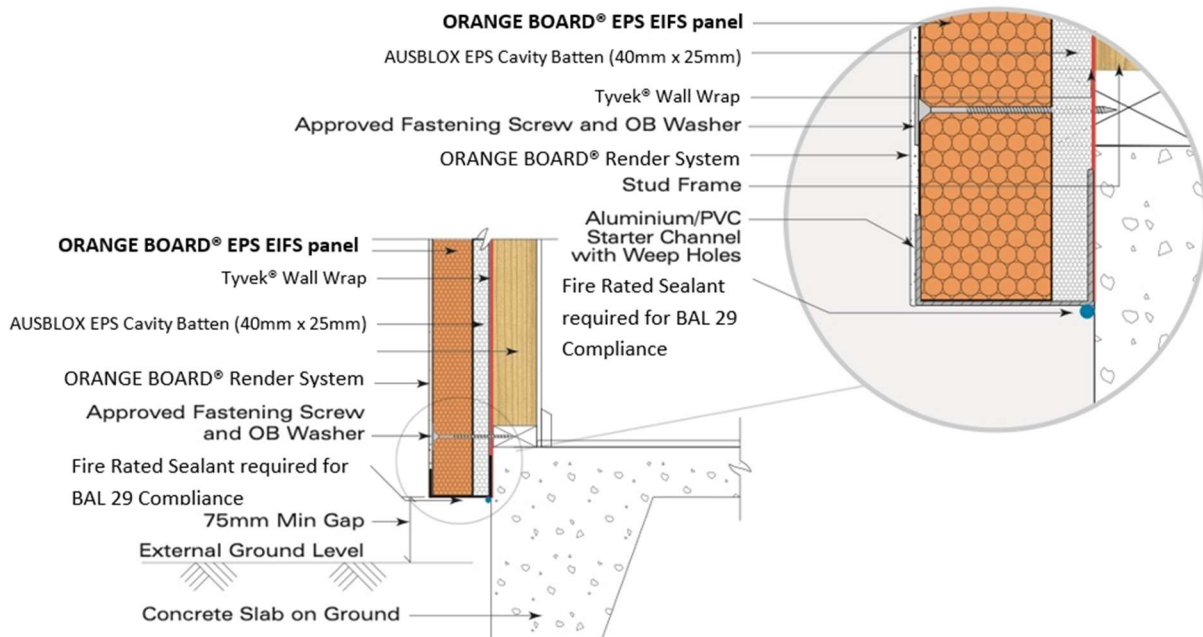


# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXING DETAILS



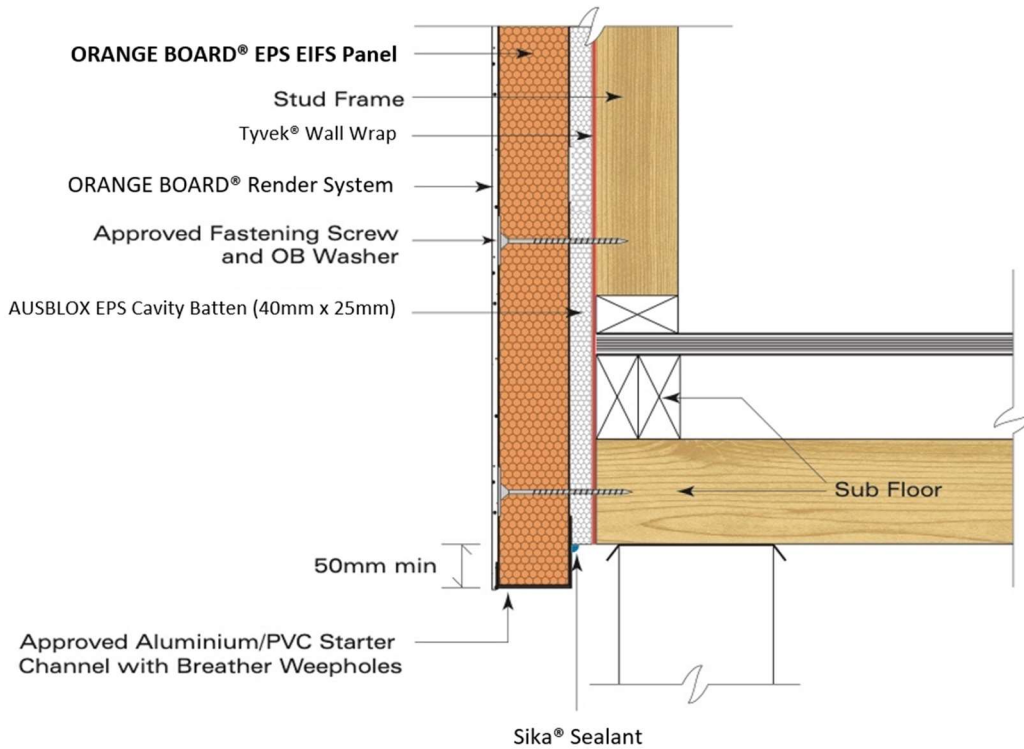
## GROUND SLAB REBATE DETAIL



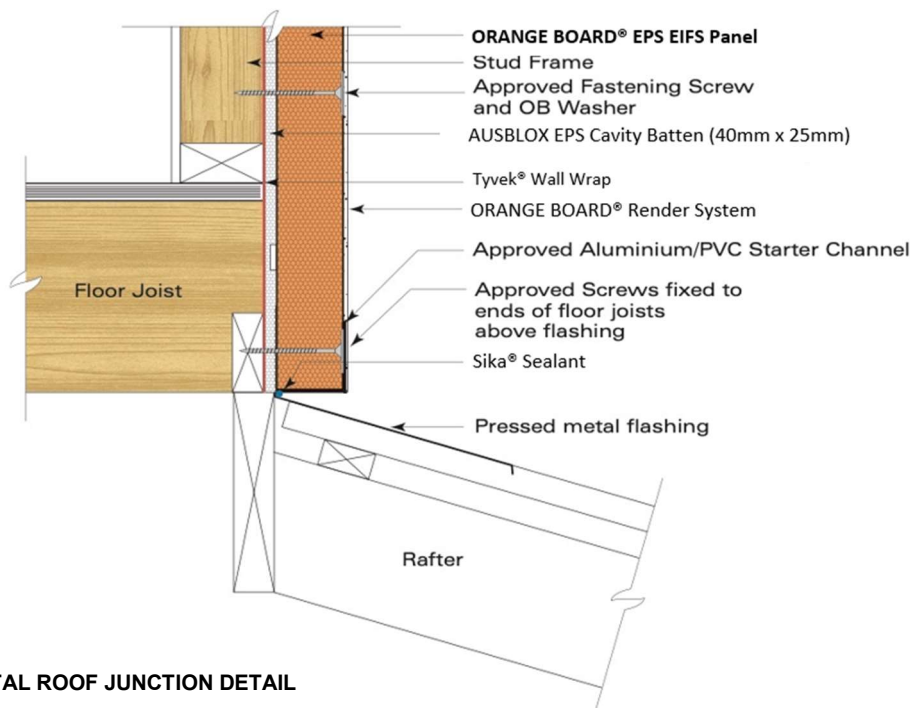
**NOTE:** The AUSBLOX Orange Board® Ground Slab Edge Detail construction is not suitable or compliant in BAL 29 regions.

# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXING DETAILS



## TIMBER FLOOR JUNCTION DETAIL



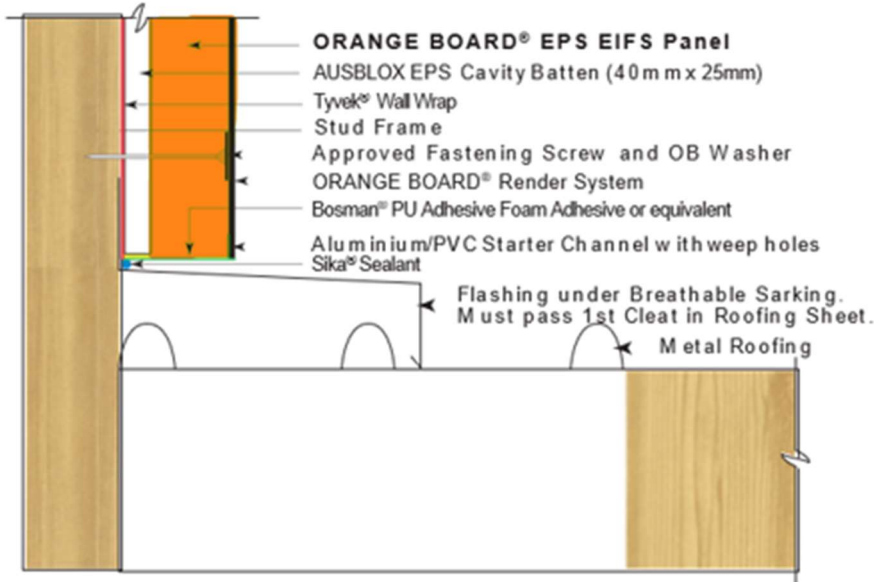
## METAL ROOF JUNCTION DETAIL

**NOTE:** The AUSBLOX Orange Board® Timber Floor Detail construction is not suitable or compliant in BAL 29 regions.

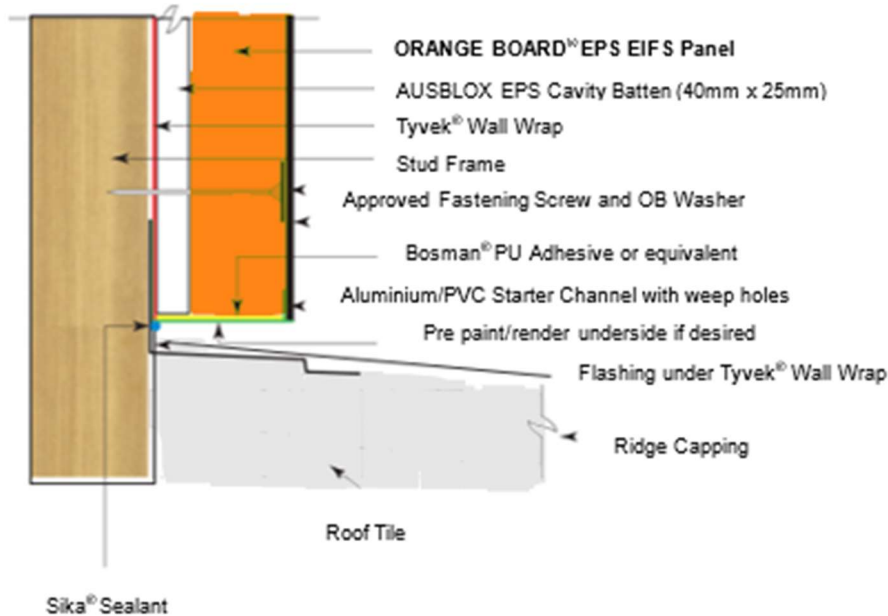
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# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXING DETAILS



Over Flat Roof Detail – Cavity Inside Roof Starter Channel-

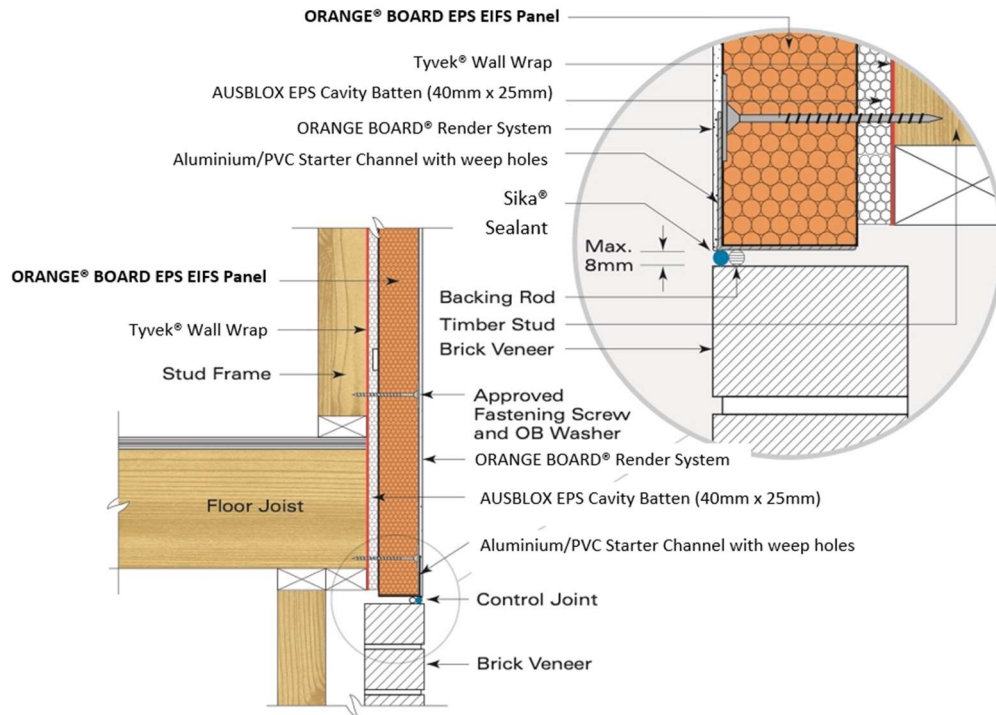


Over Roof Detail – Ridge Capping

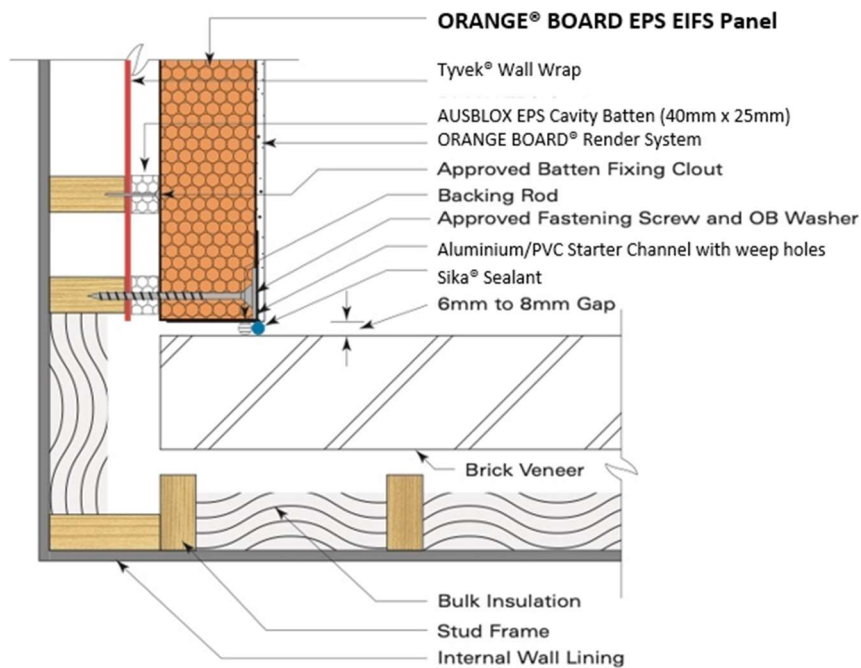
AUSBLOX

# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXING DETAILS



Brick Veneer Junction Detail

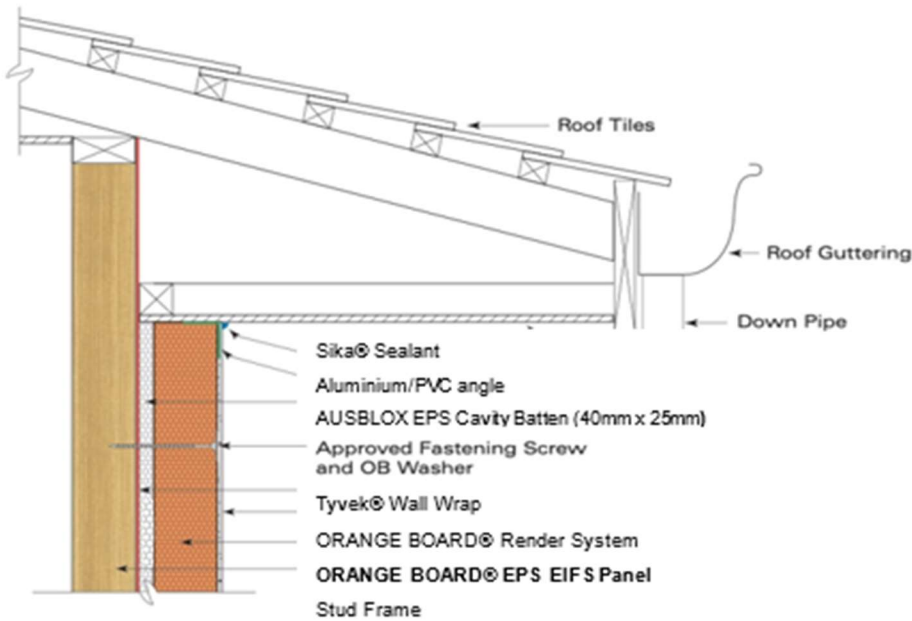


Cladding to Brick Detail – Internal Corner

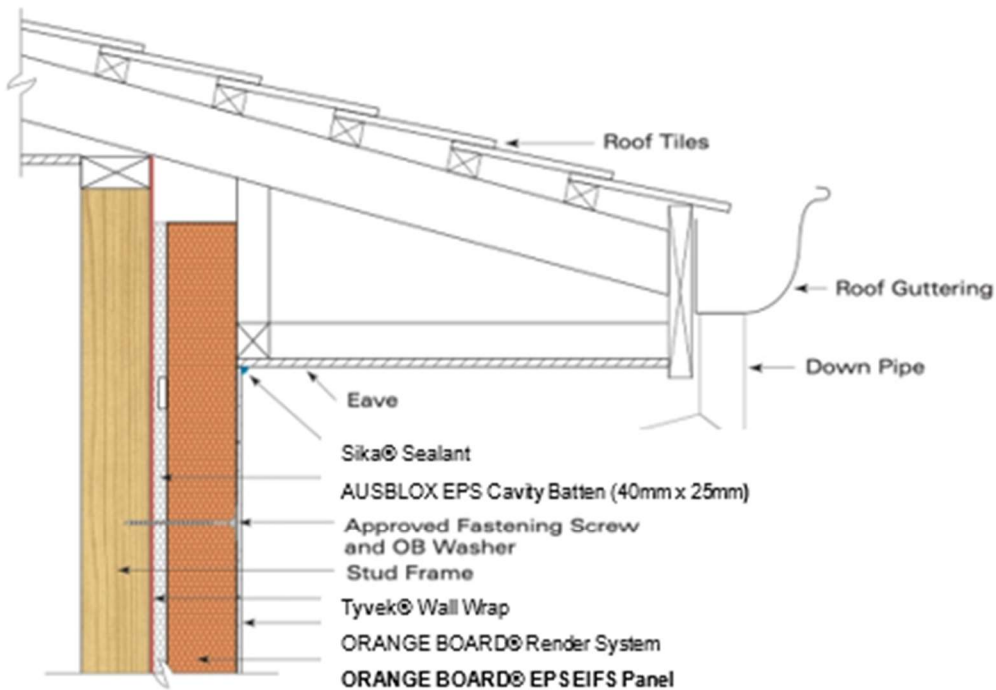
AUSBLOX

# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXING DETAILS



Eave Detail – Type 1



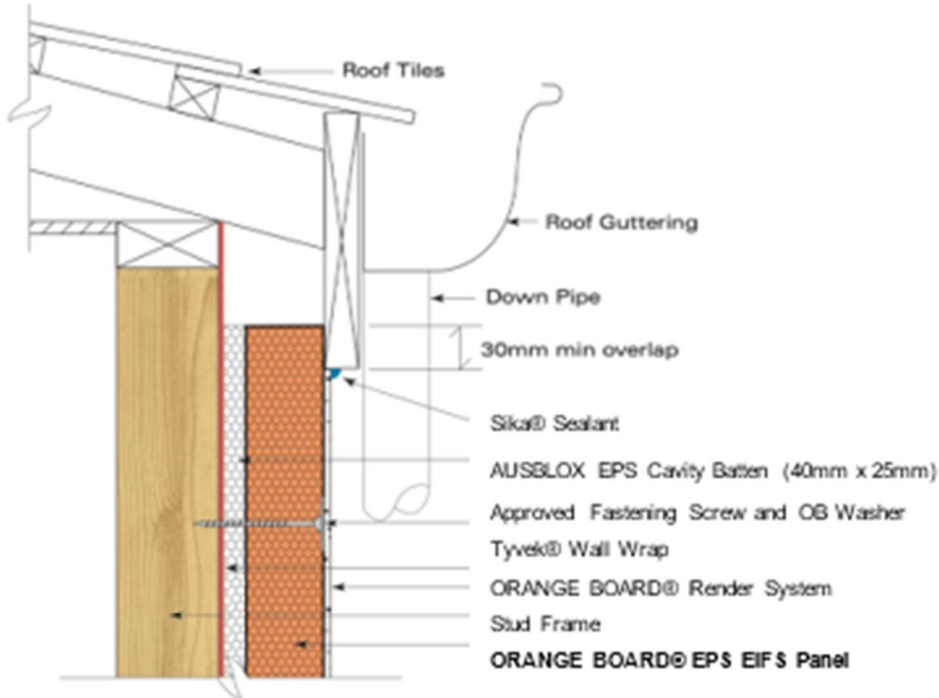
Eave Details – Type 2



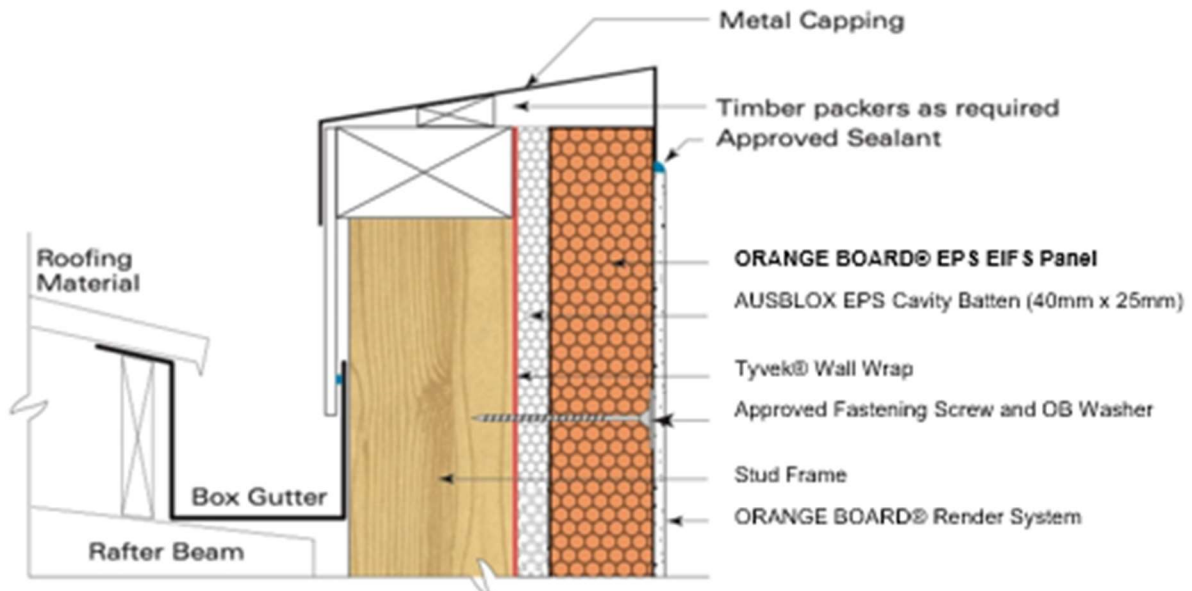
AUSBLOX

# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXING DETAILS



Eave Flush Detail

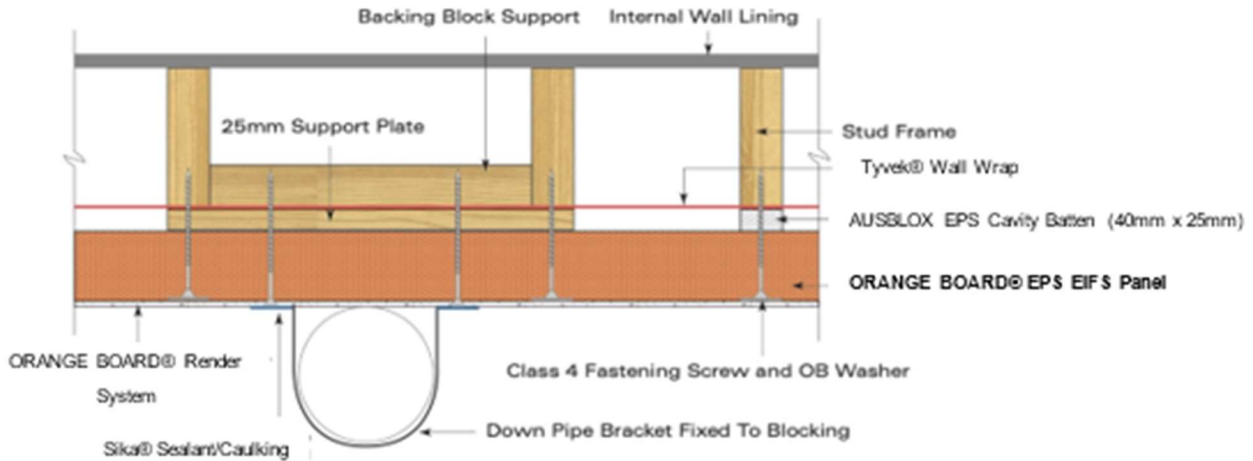


Parapet Detail

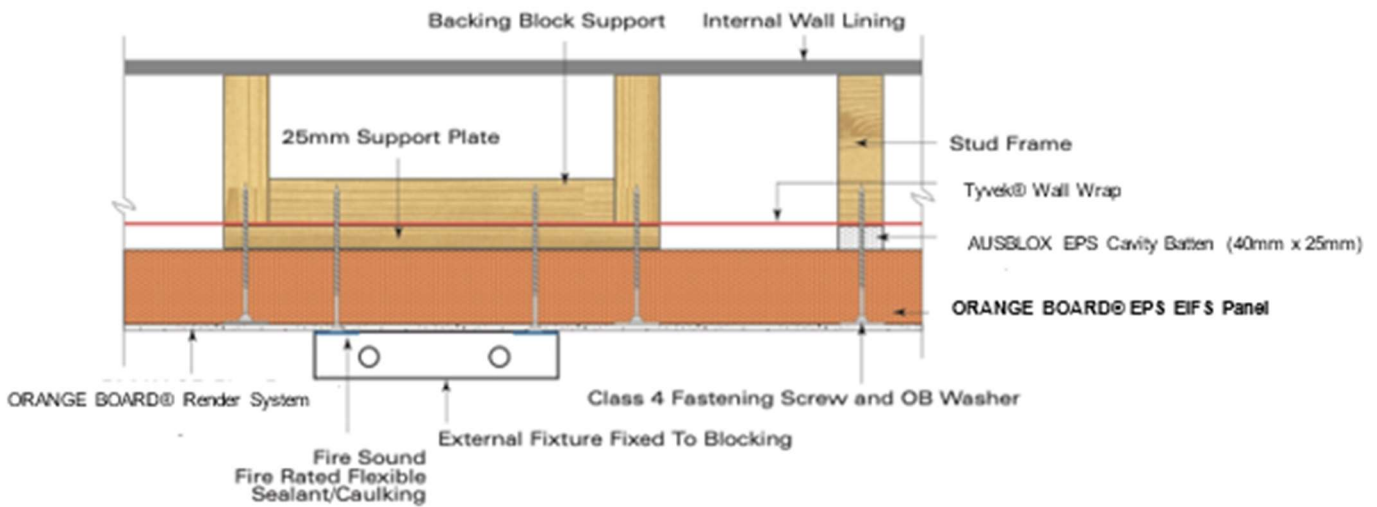
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# Orange Board® INSULATED CLADDING SYSTEM - Cavity

## INSTALLATION AND FIXING DETAILS



Down Pipe Fixture Detail



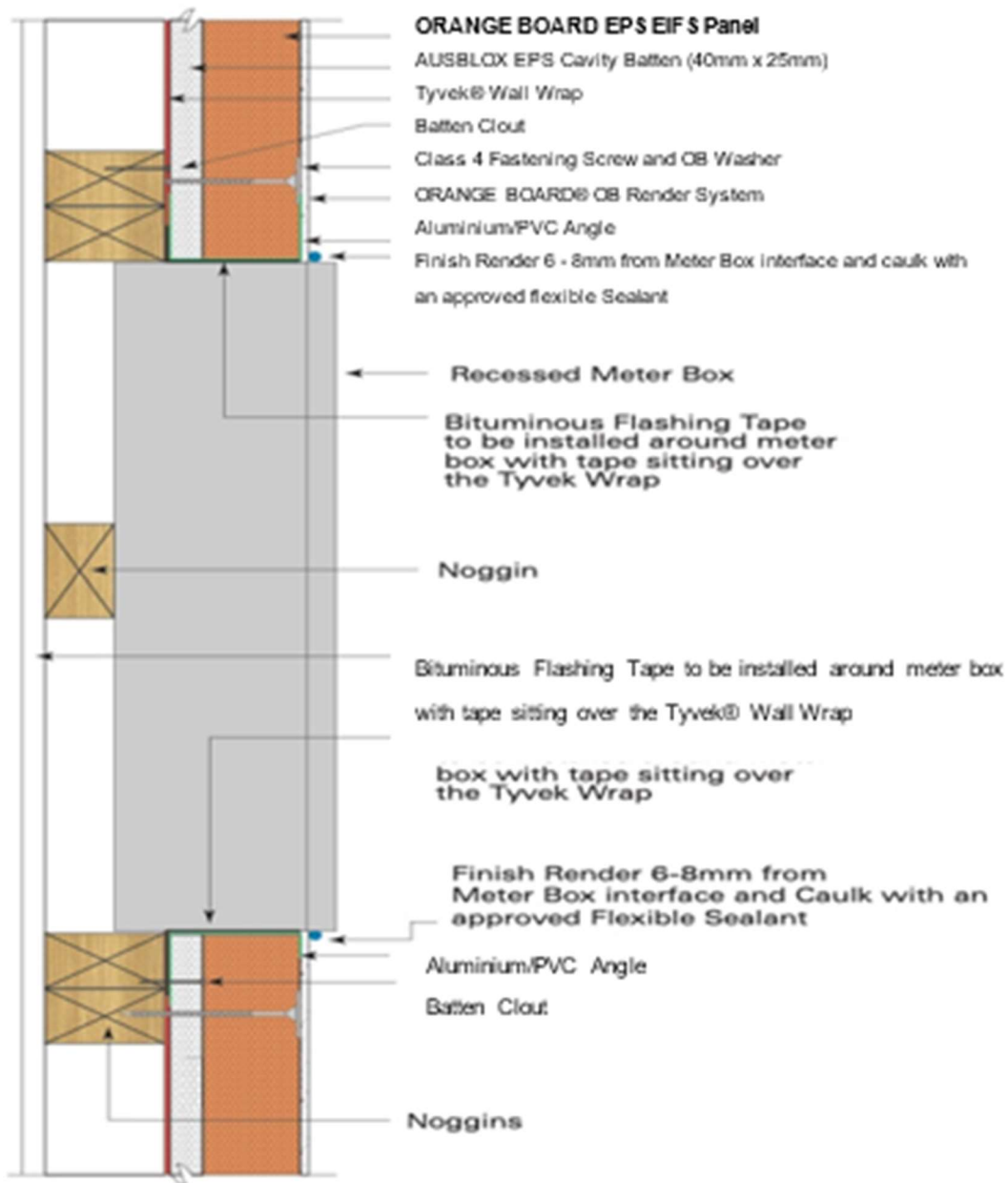
External Penetration Fixture Detail



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# Orange Board® INSULATED CLADDING SYSTEM - Cavity

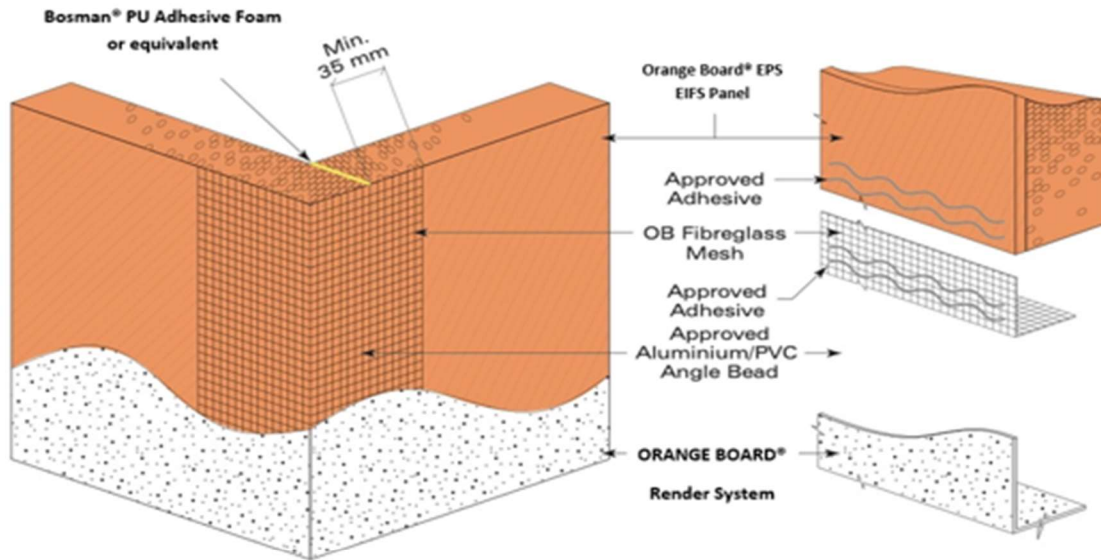
## INSTALLATION AND FIXING DETAILS



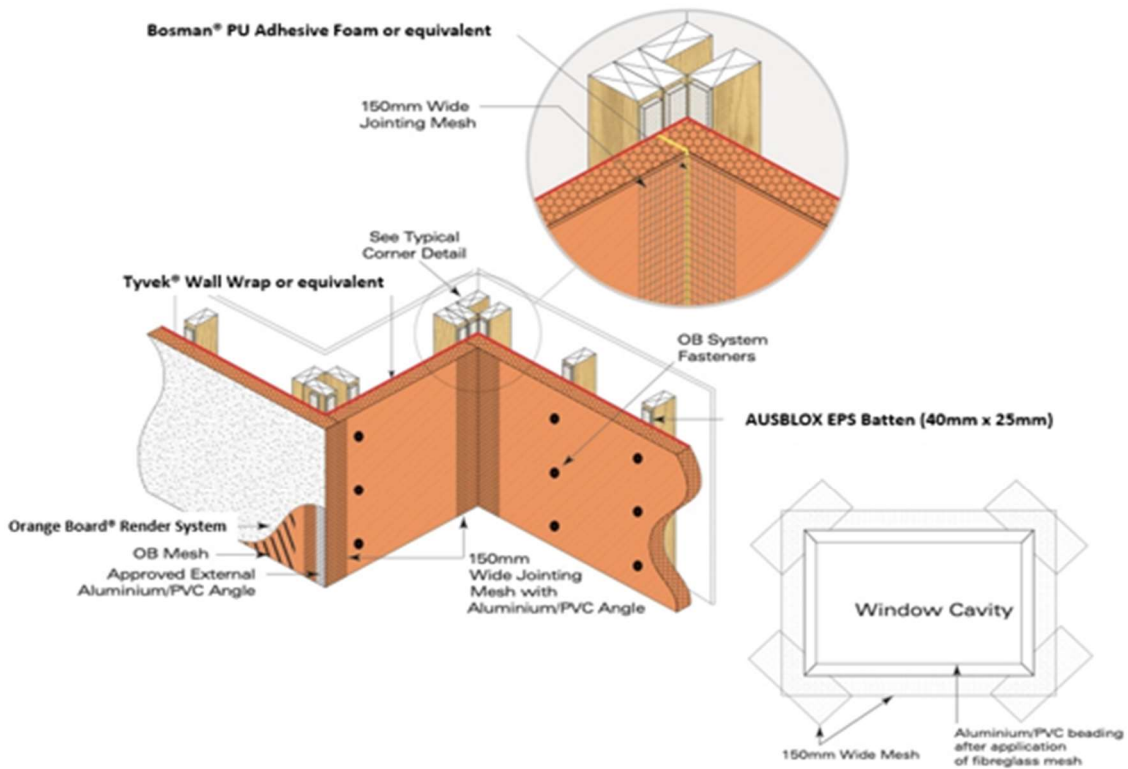
Meter Box Penetration Detail

## PRE-RENDER PREPARATION

### Corner Details



### Internal And External Corner Details



## RENDER PREPARATION

### INSTALLATION GUIDELINES

#### PRODUCT DESCRIPTION

Forming part of the AUSBLOX Orange Board® coating system, AUSBLOX Orange Board® Dry Mix Render is a quality cement based, polymer modified render containing washed and graded medium silica sand, acrylic powder and proprietary additives. Dry Mix products are manufactured to stringent quality standards, from quality raw materials, all of which are blended to accurate specifications to ensure product performance and reliability is “built into every bag every time!” AUSBLOX Orange Board® render provides the ideal base for the subsequent application of a variety of top coats.

**Equivalent acrylic render systems may be used in accordance with manufacturer recommendations.**



#### SUBSTRATE PREPARATION

- Areas not to be coated should be masked off and protected
- All surfaces to be rendered must be clean, sound and free from contaminants including; oil, mould release, dust, dirt, silicone, mud, grease, salt, efflorescence, animal droppings and any loose or flaking material.

#### APPLICATION

- Tools/Machinery Required: Hawk & steel trowel, Polystyrene float, plastic floats, straight edge, sponge, power mixer, masking tapes, drop sheeting. If spraying render use proper render spray application equipment.
- Check panels are installed as per panel manufacturer's instruction.
- Do not render over control joints.
- Add one (1) 20kg bag of AUSBLOX Orange Board® Dry Mix Render to 3.5 - 4.0 litres of clean water using a power stirrer to mix until the consistency is smooth and lump free. Allow the mix to stand for 5 minutes, remix before use or before adjusting consistency if required.
- Apply a 3-5mm basecoat of AUSBLOX Orange Board® Render onto the panel using a steel trowel with enough pressure to adhere the product. Whilst the basecoat is wet embed a full layer of alkali resistant 160gm/m<sup>2</sup> (5mm x 5mm), woven glass fibre mesh ensuring that the mesh pieces overlap by a minimum of 100mm at mesh joints. Panel joints should be evenly covered with the same embedded mesh (avoid overlap of mesh joints near the main panel joint). Strips of mesh at 45 degree angle or equivalent, 300mm long by 150mm wide, should be embedded across the corner of all window and door openings.
- In the same sequence apply another coat of Render at a thickness of 2-3mm on top of the full mesh, embedding the mesh between these layers of Render. On setting use a straight edge and screed surface or if using a polystyrene float, finish the surface to achieve an even and true surface.

#### Pot Life

- When the Dry Mix Render is mixed with water the maximum pot life is two (2) hours. Do not add more water to extend pot life as this will reduce the strength and durability of the finished render.

#### Clean up

- Clean up with water.

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# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM

## Important Notes

- Do not apply any Render on unprotected surfaces when rain is anticipated within 6 hours of completion of the day's work, (longer in damp, cold &/or humid conditions).
- Avoid application in full sun, on hot surfaces or in hot windy conditions.
- Application should be carried out on a day with temperatures above 10°C and below 30°C.
- Coated area must be protected from damage until the completion of the project; finished work must be protected from rain, frost and severe weather conditions until fully dried.
- Primer/Paint coatings should not be applied to the render coating until it is sufficiently hardened and dried.
- General Guide to hardening/drying - allow 1 day per mm of thickness (will reach maximum strength in 28 days from application).

## Packing Type:

Paper Sack/Bag  
Weight: 20kg net per bag

## Coverage:

Render Type	Sq. M/20kg Bag	Application Thickness mm
AUSBLOX Orange Board <sup>®</sup>	3.5 - 4.5	3-5

## TECHNICAL DATA

- Appearance: Powder, off white/grey with slight odour.
- Application: Hawk & trowel, hopper gun, spray machine.
- Specific Gravity: 2.57 - 2.6
- Bulk Density: 1600 - 1850 kg/m<sup>3</sup>
- Particle Size: <2mm  
Flammability: Not applicable.
- Solubility in Water: Slight, hardens on mixing with water.
- Topcoat: min 72 hrs

## OTHER CONSIDERATIONS

### Shelf-life - Unopened Bags:

Maximum 1 year from date of manufacture when stored in dry condition.

### Transport & Storage:

Keep dry, off floor level and preferably on pallet.



## PRIMER/SEALER PREPARATION

### SUBSTRATE PREPARATION

- Ensure the render surface has aged (dried) for 3 days minimum. General Guide to hardening/drying - allow 1 day per mm thickness (AUSBLOX Orange Board® Render will reach maximum strength in 28 days from initial application).
- Areas not to be coated should be masked and protected.
- All surfaces to be coated must be clean, sound, free from contaminants including; oil, mould release, dust, dirt, silicone, mud, grease, salt, efflorescence, animal droppings and any loose or flaking material.

- AUSBLOX Orange Board® Primer/Sealer must be textured and top coated.

**Equivalent Primer/Sealer products may be used in accordance with manufacturer instructions.**

### Coverage:

Primer/Sealer Type	Sq. M/15L Pail Per Coat	Application Thickness $\mu$ M
AUSBLOX Orange Board®	100 - 120	75-100

### APPLICATION

No. of coats: Single coat application.

#### Application Method:

Roller:

- The Rendered surface must be primed prior to texture coating or painting.
- Mix AUSBLOX Orange Board® Primer/Sealer thoroughly before use.
- Apply one coat of Primer/Sealer evenly to the render surface using a 20mm medium nap roller and let it fully dry before top coating.

Dry Time (25°C & 50%) (approx)	Tack Free	Recoat / Overcoat	Fully Dried
	1/5 Hour	After 1 hours	4 Hours

#### Clean Up:

Clean all equipment with water after use.

### SAFETY, HANDLING AND TECHNICAL SUPPORT

Refer to MSDS for AUSBLOX Orange Board® Primer/Sealer before use.

When working AUSBLOX Orange Board® Primer/Sealer, observe the usual precautions for handling acrylic water based products including:

- Avoid inhalation of the vapour, prolonged skin contact and particularly eye contact.
- Wear protective clothing to minimize skin contact and wear goggles where splatter is likely.
- Where spills occur, soak up liquid spillage with sand/sawdust and dispose of in a sensible manner. Do not permit run-off to sewer, storm water or open bodies of water.
- Full pails are HEAVY. Wear protective footwear and seek assistance if necessary.
- Storage - no specific issues, store away from food and drink.

### IMPORTANT INFORMATION

- AUSBLOX Orange Board® Primer/Sealer must only be applied in air temperatures between 10°C and 30°C on a dry substrate and must be protected from rain and frost for the first 24 hours or finished work must be protected from rain, frost and severe weather conditions until fully dried.
- Avoid application in full sun or hot, windy conditions.
- Apply at recommended spreading rate to ensure optimum performance.



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# Orange Board<sup>®</sup> INSULATED CLADDING SYSTEM

## SAFETY AND HANDLING



*This material is hazardous according to criteria of NOHSC. Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail.*

**Please refer to Material Safety Data Sheet before use;**

When working with Render observe the usual precautions for handling cement based mortars & renders including:

- Avoid inhalation of the dust, wear suitable respiratory protection mask, avoid prolonged skin contact with wet mortar and eye contact (contains sand based crystalline silica).
- Wear protective clothing to minimise skin contact and wear goggles where splatter is likely.

## FIRST AID MEASURES

### Ingestion

If swallowed, wash out mouth with water. Do NOT induce vomiting. Drink at least two (2) glasses of water. Seek medical attention.

### Eye

Wash with copious amount of water for 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into non-affected eye. Seek medical attention.

### Advice to Doctor

Treat symptomatically.

## General Health and Safety Think Safe. Act Safe.

To assist in maintaining a safe and healthy workplace, take note of the following:

Ensure the workplace is safe. This includes attention to plant and equipment.

- Insist that safe work methods are practiced.
- Provide supervision and training where appropriate.
- Ensure everyone on site understands and accepts their responsibilities to promote a workplace that is safe.
- Ensure that all health and safety requirements are adhered to.

Consult your authorised Workplace Health and Safety Officer for specific advice.

## Disclaimer

The information contained in this manual is presented as a guide to users of AUSBLOX Orange Board<sup>®</sup> products, and while to the best of AUSBLOX's knowledge it is correct and reliable, AUSBLOX shall not be liable for defects associated with incorrect use of AUSBLOX Orange Board<sup>®</sup> products, misuse, wilful damage, neglect, accidental damage, or any modifications or alterations to products.









## WARRANTY

Orange Board® by AUSBLOX is the manufacturer and supplier of AUSBLOX Orange Board® Insulated Cladding System products.

### AUSBLOX Warranty

1. AUSBLOX warrants that the AUSBLOX Orange Board® products are free from defects caused by faulty manufacture or faulty materials for a period of 10 years from the date of sale to the purchaser.
  2. This warranty is a material only replacement warranty where there is a defect in manufacture. This warranty only applies where the product is used in conjunction with the AUSBLOX Orange Board® System Technical Manual when applied correctly by a skilled and experienced applicator in accordance with all current application recommendations as per the AUSBLOX Orange Board® System composition recommendation, including but not limited to, substrate type and preparation, application rates and methods, prevailing weather conditions and protection of finished work.
  3. To make a warranty claim the customer must provide:
    - (a) the details of the items purchased (application dates, product batch numbers and quantities must be recorded and supplied as a minimum to commence potential product failure investigation);
    - (b) the date and location of purchase;
    - (c) a description of the fault observed with the product, providing photographs and samples if possible;
    - (d) contact details of the customer;
  4. The above information can be provided by:
    - (i) Mail: AUSBLOX Sales, 25 Garling Rd, Kings Park, NSW 2148
    - (ii) Email: [sales@orangeboard.com.au](mailto:sales@orangeboard.com.au)
  5. Unless otherwise agreed to in writing by AUSBLOX, the Buyer shall bear the expense of claiming the warranty.
  6. AUSBLOX provides no warranty, expressed or implied, against damage due to movement of the substrate or structure.
- Whilst AUSBLOX takes every care to ensure that any impurities in the product are eliminated at the time of manufacture, components of the product are natural materials including sands or mineral earths which may occasionally result in minor visual blemishes. AUSBLOX shall not be liable for any such blemishes.
7. Where the Buyer is a consumer under the Competition and Consumer Act 2010, the benefits given under this warranty are in addition to the statutory rights and remedies available to the consumer under the Australian Consumer Law. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
  8. To the full extent permitted by law, the liability of AUSBLOX for any defect or a breach of the Purchaser's statutory rights is limited solely to any one or more of the following as determined by AUSBLOX in its sole discretion, namely:
    - (i) the supply of replacement products or similar products;
    - (ii) the repair of the products; or
    - (iii) the costs of replacement or repair of the products.
  9. Except as expressly provided in this warranty, to the full extent permitted by law, AUSBLOX will in no circumstances be liable for any loss or damage, whether direct or indirect (including consequential loss, economic or financial loss) to persons or property howsoever arising and whether from any defect in or unsuitability of a product or from negligence on the part of AUSBLOX or any of its servants, contractors, or agents. AUSBLOX will not be responsible for any loss or damage arising from normal wear and tear, weather conditions, any act of God, poor installation of rendering or caused by wildlife or organisms. AUSBLOX is not, and will not be, responsible or liable to any person in any manner whatsoever for incorrect fixing, joining, installing, finishing and/or rendering by anyone.



## REFERENCED DOCUMENTS

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2. AUSBLOX Orange Board® - Wall Cladding Cyclonic Region Performance Test Report 300mm Stud Spacing, 200mm Fastner Spacing Vipac Engineers & Scientists Ltd 3/8/2011.
3. VIPAC AUSBLOX Orange Board® - Wall Cladding Performance testing to AS/NZS 4284. 27/5/2011.
4. Keith Altmann & Associates AUSBLOX-75mm thick Orange Board® Wind load testing region C as per AS 1170.2 5/5/2011.
5. RMIT University AUSBLOX Orange Board® Sound reduction Index test report to AS 1192-2002 for Full Wall System 11/3/2011.
6. "Static Test Loads" on AUSBLOX EPS® wall panels (AUSBLOX Orange Board®) - Keith Altmann & Associates, Civil & Structural Engineers - 7/12/2009.
7. "Water Penetration" - AS 4284-2008.
8. "Thermal Insulation" - AS 1366.3 Rigid Cellular Plastic Sheets for thermal Insulation. Part 3: Rigid Cellular Polystyrene - Moulded(RC/PS-M).
9. "Early Fire Hazard Properties" - AS 1530.3.
10. EXIN wall panels: Racking Capacity of Ecotex wall panels Arup Facade Engineering -24/10/2001.

Tests 7, 8, 9 were completed under the previous name for AUSBLOX Orange Board®.



### **AUSBLOX and the Environment**

EPS (Expanded polystyrene) is highly energy efficient. The energy saved over the lifetime of an EPS insulation panel in reduced heating demand, more than compensates for the raw material used in its production. The effective application of EPS insulation can cut carbon dioxide emissions by up to 50%.

The energy used in its manufacture may be recovered within six months by the energy saved in the buildings when EPS is used to insulate the building depending on the building design and the climatic conditions. AUSBLOX promotes the use of EPS, with its superior thermal insulation properties, to lower energy requirements and reduce the impact of buildings on the environment. AUSBLOX EPS is free from ozone depleting substances in manufacture and composition. EPS is made without CFCs, HCFCs or HFCs. Manufacturing is done with blowing agents that have Zero Ozone Depleting Potential (ODP).

### **Recycling EPS**

EPS products are recyclable and AUSBLOX has established recycling facilities in all of its plants throughout Australia. AUSBLOX plays a major role in facilitating the collection and recycling of EPS in Australia. Energy Efficient Manufacture The manufacture of EPS is a low pollution process. There is no waste in production as all off cuts or rejects are re-used or recycled.

### **AUSBLOX - Innovation Working for You**

AUSBLOX is a company driven by innovation. We have pioneered Rigid Cellular Plastics product technologies, leading the development of innovative product solutions for our customers and international partners.

In the Australian building industry, AUSBLOX was the first to introduce termite resistant expanded polystyrene (EPS) - EPS PerformGuard EPS. The exclusive patented technology incorporates a safe, non-toxic inorganic additive that is a deterrent to termites.

Identified by its grey colour, this material has been incorporated into Thermawall<sup>®</sup>. Other new and innovative products from AUSBLOX are ThermaWallSilver<sup>®</sup> and ThermaProof<sup>®</sup>. For details on these and other products in our range, visit [www.Ausblox.com.au](http://www.Ausblox.com.au).

We are committed to working with our customers to deliver high quality creative solutions to construction problems. Contact us and see how our innovative approach using EPS in building construction can help you.

### **Developed in Australia. Made in Australia.**

AUSBLOX Orange Board<sup>®</sup> has been developed in Australia by AUSBLOX specifically for Australian conditions and to meet the stringent Australian Building codes in all States. It is manufactured in AUSBLOX plants in Australia in controlled production processes to maintain consistent quality.



Expanded polystyrene does not contain any ozone depleting substances and none is used in its manufacture.

AUSBLOX pursues a policy of continuous improvement in the design and performance its products. The right is therefore reserved to vary specifications without notice.

The pictures and illustrations shown in this brochure are for illustrative purposes only to demonstrate creativity and design and construction flexibility. They do not imply that AUSBLOX Orange Board<sup>®</sup> was used in their construction.

# AUSBLOX

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