

# *RendeX*®

EXTERNAL CLADDING SYSTEM

**PWS**  
Prestige Wall Systems

## TECHNICAL MANUAL

NCC 2019 BCA Compliant



**CODEMARK**  
Australia

Certificate CM40090

VERSION 3.2019





<b>PREFACE</b>	<b>4</b>
<b>1. PRODUCT ACCREDITATION</b>	<b>5</b>
<b>2. ABOUT THE RENDEX® PANEL</b>	<b>6</b>
<b>3. STRUCTURAL PERFORMANCE</b>	<b>7</b>
<b>4. FIRE AND THERMAL PERFORMANCE</b>	<b>8</b>
<b>5. SPECIFICATION</b>	<b>9</b>
DESIGN PROCESS	9
MANUFACTURE AND SUPPLY	10
CONSTRUCTION	10
<b>6. INSTALLATION OF RENDEX® EXTERNAL CLADDING SYSTEM</b>	<b>11</b>
COMMENCEMENT	11
QUALIFICATIONS AND EXPERIENCE OF INSTALLERS	11
METHODOLOGY	11
FIXING REQUIREMENTS-FACTORY COATED PANELS	13
FIXING LOCATIONS FOR DIRECT FIX	13
FIXING REQUIREMENTS-APPLICATOR COATED PANELS	14
FIXING LOCATIONS FOR DIRECT FIX	14
INSPECTION AND TESTING REQUIREMENTS	15
<b>7. MATERIALS</b>	<b>16</b>
DAMP-PROOF COURSE	16
RENDEX® STARTER PANEL / STARTER TRIM	16
RENDEX® WALL WRAP	16
RENDEX® PANEL (EPS) PROPERTIES	17
EXPANDING FOAM FOR JOINTS	17
SCREW FIXINGS	18
WASHERS	18
MESHED EXTERNAL BEADING	18
FIBREGLASS MESH	19
RENDERING	20
<b>8. INSTALLATION DETAILS   DIRECT FIX</b>	<b>21</b>
FIXING LOCATIONS	22
STEP BY STEP	23
GENERAL ARRANGEMENT   DIRECT FIX	24
EAVE DETAIL   OPTION A   DIRECT FIX	25
EAVE DETAIL   OPTION B   DIRECT FIX	25
LOWER ROOF JUNCTION DETAIL   DIRECT FIX	26
OVERHANG DRIP DETAIL   DIRECT FIX	26
WINDOW DETAIL   DIRECT FIX	26
CONCRETE REBATE DETAIL   DIRECT FIX	27
RENDEX® AND BRICK VENEER DETAIL   DIRECT FIX	27

DISSIMILAR SUBSTRATES   <b>DIRECT FIX</b>	28
VERTICAL MOVEMENT JOINT DETAIL   <b>DIRECT FIX</b>	28
INTERNAL AND EXTERNAL CORNER DETAILS   <b>DIRECT FIX</b>	29
GROUND SLAB DETAIL   <b>DIRECT FIX</b>	30
DOWNPIPE FIXING DETAIL   <b>DIRECT FIX</b>	30
PENETRATION DETAIL   <b>DIRECT FIX</b>	30
RENDEX® STARTER PANEL ROOF ARRANGEMENT   <b>DIRECT FIX</b>	31
RENDEX® STARTER PANEL ROOF DETAIL   <b>DIRECT FIX</b>	31
PARAPET FLASHINGS   <b>DIRECT FIX</b>	32
MESHING OF RENDEX PANELS AT WINDOW OPENINGS   <b>DIRECT FIX</b>	33
PARAPET AND BOX GUTTER DETAIL   <b>DIRECT FIX</b>	33
<b>12. CERTIFICATION OF ALTERNATIVE SOLUTION</b>	<b>34</b>
<b>13. WARRANTY</b>	<b>35</b>

## **RendeX® EXTERNAL CLADDING SYSTEM**

The RendeX® External Cladding System, manufactured and supplied by Prestige Wall Systems Pty Ltd (PWS) is a multi-layered, BCA Compliant exterior wall cladding system. The benefits are superior energy efficiency, weather resistance, design flexibility, lightweight construction, quick and easy installation, strong and durable structure, yet with the appearance of a rendered brick wall. The RendeX® External Cladding System is an insulating, decorative and protective finish system for exterior walls that can be used in many different types of construction. The RendeX® External Cladding System is a cost effective solution for Domestic, plus some limited Commercial and Industrial applications.

The key element of the RendeX® External Cladding System is the RendeX® Panel manufactured from M-Grade Expanded Polystyrene (EPS) Boards. The RendeX® Panel can be one or other of the following:

- RendeX® Factory-Coated Panels, which are EPS boards factory coated on one or both sides with alkaline resistant fibreglass mesh and polymer modified cementitious basecoat ready for application of render, texture and finish coatings.
- RendeX® Applicator Coated Panels, which are EPS boards applicator coated on one side after installation by a competent tradesperson, with alkaline resistant fibreglass mesh and polymer modified cementitious basecoats, ready for application of render, texture and finish coatings.

The RendeX® Panels must be mechanically secured to a structurally adequate, external wall frame (by others).

Few, if any competitive products offer such a wide range of desirable benefits. Chief among these are superior energy efficiency and virtually unlimited design flexibility. Furthermore, the RendeX® External Cladding System has been awarded CodeMark Accreditation.

## **TECHNICAL MANUAL TO BE USED BY ARCHITECTS/DESIGNERS, ENGINEERS AND BUILDERS**

This Manual is intended for use by qualified and experienced Architects/Designers, Engineers and Builders. The authors, publishers and distributors of this Manual and the associated drawings do not accept any responsibility for incorrect, inappropriate or incomplete use of this information.

This Manual, including the design recommendations and associated drawings, are available in electronic format, with the express intention that Architects/Designers will edit them to suit the particular requirements of specific construction projects.

## **BASIS OF SPECIFICATION AND DRAWINGS**

This Manual has been prepared in the context of the National Construction Code (NCC). Architects/Designers, Engineers and Builders must make themselves aware of any recent changes to these documents, to any Standards referred to therein or to local variations or requirements. The authors, publishers and distributors of the referenced specifications and associated drawings do not accept any responsibility for failure to do so.

In the preparation of this Manual, the following conventions have been adopted. Architects/Designers can choose to either:

- Ensure that all building design and construction complies with the NCC and any relevant referenced documents referred to therein, including Deemed-to-Satisfy provisions, or
- Where the construction is not covered by the Deemed-to-Satisfy provisions of the NCC, the design and construction is presented as an Alternative Solution and must comply with a balanced combination of Australian Standards, current practice, engineering principles and Supplier's information (refer Section 12 Certification of Alternative Solution).





### CODEMARK ACCREDITATION



**NOTE:** Refer website for latest versions of certificates.


## 2. ABOUT THE RendeX® PANEL

### USE AND APPLICATIONS

The RendeX® Factory Coated Panel and RendeX® Applicator Coated Panel are lightweight and therefore easy to install to either timber or steel framing. They have great thermal insulation properties and therefore the RendeX® Panel has many uses in residential, commercial and industrial buildings, such as external walls, bulkheads, columns and extensions. The RendeX® Panels once rendered, textured and finish coated provide the appearance of a rendered brick wall with depth of reveal at windows that enhances the architectural appeal.

### SIZES

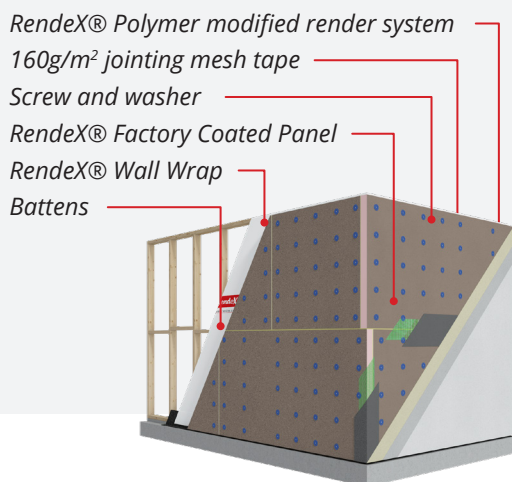
RendeX® Panels are available as 1200mm x 2400mm sheets in the following thicknesses:

	FACTORY COATED ON ONE SIDE	50mm	75mm	100mm
	FACTORY COATED ON TWO SIDES	40mm	75mm	100mm
	APPLICATOR COATED ON ONE SIDE	50mm	75mm	100mm

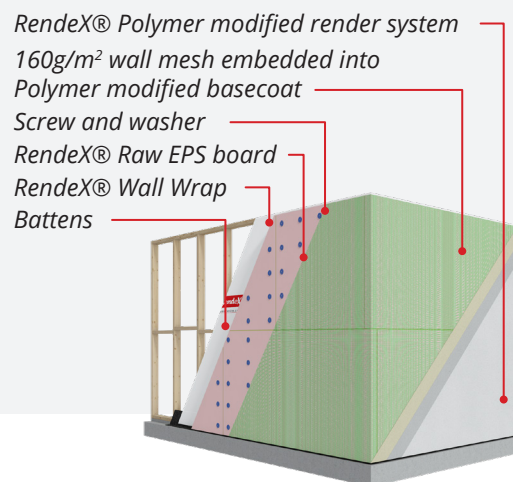
75mm and 100mm RendeX® Factory Coated Panels are also available in 3000mm lengths.

75mm and 100mm RendeX® Applicator Coated Panels are also available in lengths up to 5000mm.

#### DIRECT FIX | HORIZONTAL RendeX® FACTORY COATED PANELS DIRECT FIXED TO TIMBER OR STEEL STUDS



#### DIRECT FIX | HORIZONTAL RendeX® APPLICATOR COATED PANELS DIRECT FIXED TO TIMBER OR STEEL STUDS



#### NOTES:

1. Polymer modified render system includes renders, textures and finishes, as per manufacturer's specs.

## 3. STRUCTURAL PERFORMANCE

### NATIONAL CONSTRUCTION CODE AND AUSTRALIAN STANDARDS

RendeX® External Cladding System applications must be designed to withstand the loads set out in the NCC and Australian Standards, as applicable. As a minimum the following Australian Standards should be considered:

AS/NZS1170.0	Structural design actions	Part 0: General principles
AS/NZS1170.1	Structural design actions	Part 1: Permanent, imposed and other actions
AS/NZS1170.2	Structural design actions	Part 2: Wind actions
AS/NZS1170.3	Structural design actions	Part 3: Snow and ice actions
AS1170.4	Structural design actions	Part 4: Earthquake actions in Australia
AS4055	Wind loads for housing	

### WIND LOADS

#### Alternative Solution Requirements

The wind loading capacity as specified in Section 12 'Certification of Alternative Solution' has been determined in accordance with:

- AS/NZS1170.2 – Structural Design Actions Part 2: Wind Actions
- AS4055 – Wind Loads for Housing.

The design wind loads for a particular building may only be determined by site classification and height of the building in accordance with one of these Australian Standards.

As the RendeX® External Cladding System is not load bearing, and movement joints are specified at regular intervals, there is no specific wall height limitation for the application of the system for buildings with wind loads determined in accordance with AS/NZS1170.2.

#### Deemed-to-Satisfy Requirements

Where the wind loads of a Class 1 or 10 building are determined in accordance with AS4055, the building shall comply with the limitations of that standard including;

- distance from ground level to the underside of eaves shall not exceed 6.0m;
- distance from ground level to the highest point of the roof, not including chimneys, shall not exceed 8.5m;
- width including roofed verandahs, excluding eaves, shall not exceed 16.0m, and the length shall not exceed five times the width; and
- roof pitch shall not exceed 35 degrees.

The RendeX® External Cladding System when applied to the walls of a building designed for wind loads in accordance with AS4055, are capable of sustaining the design ultimate limit state wind loadings for Wind Classifications N1, N2, N3, N4 and C1.

#### Racking Loads

The RendeX® External Cladding System is not intended to resist racking loads. These must be resisted by appropriate bracing of the wall structure to provide both strength and a high degree of stiffness against these loads.

## 4. FIRE AND THERMAL PERFORMANCE

### FIRE PERFORMANCE

The RendeX® Panel is made of flame-retardant modified expanded polystyrene (EPS). The RendeX® Panels are not fire rated, however the EPS will self-extinguish when the flame source is removed. Note also that the RendeX® External Cladding System has NOT been tested for fire rated construction, therefore the FRL performance is not stated and cannot be assumed.

However, the RendeX® Panel can be combined with other fire-rated components, to form part of a wall system that offers both fire-rating and thermal rating performance. Refer PWS' Sales Department for specific details.

Separation distances from flues to the adjacent faces of the RendeX® panels should be observed for the protection of the EPS material. Care must also be taken to protect heat sensitive lining/framing and finishing materials where they are used. Where penetrations are made in the RendeX® Panels for flues and the like, reference must be made to the Building Code of Australia (BCA) Part 3.7.3.

### THERMAL RESISTANCE OF RendeX® EXTERNAL CLADDING SYSTEM

The RendeX® External Cladding System is applied to stud framing (either timber or metal frame) with RendeX® Wall Wrap, RendeX® Panels, render, texture and seal coatings. The RendeX® External Cladding System has excellent thermal resistance as set out in TABLE 1.

A 100mm thick RendeX® External Cladding System can provide a thermal resistance up to R4.5, when additional R1.5 wall insulation is installed.

Table 1 | *Thermal Resistance of RendeX® External Cladding System*

THERMAL RESISTANCE OF RendeX® EXTERNAL CLADDING SYSTEM (CALCULATED)		
Thickness of EPS (mm)	Thermal Resistance of EPS – R (m <sup>2</sup> K/W)	Total Thermal Resistance of walls made from RendeX® External Cladding System fixed to a Timber Stud Wall, with 10mm Plasterboard – R <sub>total</sub> (m <sup>2</sup> K/W)
40	1.00	1.40
50	1.20	1.60
75	1.80	2.20
100	2.40	2.80

The thermal resistance values of the EPS board are the minimum values required for compliance with AS1366.3 for Class M EPS. The Total Thermal Resistance of a completed wall is calculated using:

- 0.04m<sup>2</sup>K/W for the external air film
- 0.01m<sup>2</sup>K/W for 5-8mm external render
- 1.20, 1.80 or 2.40m<sup>2</sup>K/W for 50mm, 75mm or 100mm EPS board respectively
- 0.00m<sup>2</sup>K/W for the RendeX® Wall Wrap
- 0.17m<sup>2</sup>K/W for a non-ventilated cavity not less than 70mm between the RendeX® Wall Wrap and plasterboard, bridged only by stud frames
- 0.06m<sup>2</sup>K/W for 10mm plasterboard
- 0.12m<sup>2</sup>K/W for the internal air film

The thermal resistance of these systems may be increased by adding bulk insulation between the studs and/or reflective foil between the studs and the plasterboard, or other proprietary insulation system.

The building design and construction process involves three principle steps:

- Design, including product selection;
- Manufacture and supply of all components; and
- Construction, including the attendant supervision, inspections and certification.

### DESIGN PROCESS

The design process must encompass the selection of the appropriate product for the particular design application. The Architect/Designer and Engineer for any building project share responsibility (and authority) to determine and communicate the design (within the constraints of the NCC) to the Builders. They are required to consider all relevant matters affecting the building and its components, and determine their designs drawing on professional training, experience, peer practices, ethics, client requirements, published standards, research and the like. This information must be communicated to the Builders and Installers via drawings and specifications.

All materials and construction must comply with the most recent version of:

- the relevant parts of the Building Regulations;
- the Standards referred to therein;
- other Standards nominated in this manual; and
- other relevant Regulations.

### Relevant Standards

AS1684.2	Residential Timber Framed Construction <i>Non-cyclonic areas</i>
AS1684.3	Residential Timber Framed Construction <i>Cyclonic areas</i>
NASH Standard	Residential and low-rise steel framing

All buildings are required to be built such that:

- The RendeX® External Cladding System is properly supported to resist horizontal wind and earthquake loads, together with vertical gravity loads;
- The building is weatherproof and durable; and
- The required thermal resistance can be achieved.



## Structural Support

The specification, supply and construction of the building frames and/or structure is outside the scope of this Manual and the supply of the RendeX® External Cladding System. The Architect/Designer, Engineer and Builder must ensure the correct specification, supply and construction of appropriate frames to AS1684 (timber frames designed in accordance with AS1720.1 that provide the same degree of support e.g. support spacing, will be equally applicable), AS4600 or other appropriate standard, such that the supporting structure has sufficient combined capacity to transmit the horizontal in-plane and out-of-plane loads from the wall to the supports.

## Weather-Proofing

Buildings must be correctly detailed to account for weatherproofing requirements, foundation movement, shrinkage and the efficient removal of rain water:

- Gutters and rainwater downpipes must be free draining, and connected to a functioning stormwater system.
- Flashing must be secured and joints sealed with flexible sealant e.g. silicone or similar, which must be renewed over time as they deteriorate.
- Damp-proof courses shall exclude rising ground water and the accompanying salts from contaminating the structure. The RendeX® External Cladding System does not require a proprietary damp-proof course provided the bottom of the RendeX® Starter Panel or Starter Trim is fixed at least 100mm above the finished ground level.
- The specification, supply and construction of appropriate windows and doors are outside the scope of the RendeX® External Cladding System and this Manual. The Architect/Designer, Engineer and Builder must ensure the correct specification, supply and construction of appropriate windows and doors, such that drainage holes and integral flashings drain rain water to the outside of the building and prevent the ingress of water behind the RendeX® External Cladding System.

## MANUFACTURE AND SUPPLY

The RendeX® Factory Coated Panels are manufactured according to controlled work instructions and under the guidance of an approved Product Quality Plan. All raw material suppliers are expected to maintain a Quality Control process which enables full traceability.

All raw materials are checked on receipt, records are kept of production runs and the finished RendeX® Factory Coated Panels are checked prior to dispatch.

## CONSTRUCTION

Correct installation of the components of the RendeX® External Cladding System is critical for achieving a structurally sound and weatherproof finished product. Section 8 of this Manual detail typical installation requirements, to assist Designers, Architects and Builders at all stages of the project.

## 6. INSTALLATION OF RendeX® EXTERNAL CLADDING SYSTEM

### COMMENCEMENT

Work must commence as soon as practical after, but not before:

- The structural framework has reached a stage to permit the work to proceed.
- The Builder has issued:
  - a written order advising of completion of support framing
  - the relevant contract drawings, specifications and schedule of work
  - written approval of any details provided by the Contractor

### QUALIFICATIONS AND EXPERIENCE OF INSTALLERS

The RendeX® External Cladding System should only be installed by qualified and experienced carpenters or other tradesmen under the supervision of a licenced Builder, who are conversant with the installation techniques set out in this Manual.

### METHODOLOGY

Refer to Section 8 of this Manual for specific installation details.

Before fixing the RendeX® Panels ensure that the wall framing (or superstructure) is both aligned and plumb. Check that the stud spacing does not exceed 600mm in any direction. Ensure that all RendeX® Panel edges are supported, so that fixings can be applied between 30mm to 150mm from the edge. Additional vertical studs may also be required to support horizontal RendeX® Panels on both sides of a vertical join.

When fixing RendeX® Panels within 1200mm of an external corner, provide additional studs where required for the additional fastener requirements (see detailing in Section 8, where additional studs are indicated with a 'red star').

- **1. DPC or Flashing** – DPC and flashings must be fixed (by others) as per the manufacturer's recommendation and approved drawings/specifications.
- **2. RendeX® Wall Wrap** – Fix the permeable (breathable) wall wrap over the studs, before fixing the RendeX® Panels.
- **3. RendeX® Starter Panel or Starter Trim** – Install RendeX® Starter Panel or Starter Trim. or alternatively basecoat, fiberglass mesh, render, texture and finish coat bottom of panel where EPS is exposed.
- **4. Cutting** – Measure the required lengths and cut the RendeX® Panel using a straight-edge and diamond-masonry blade in a circular saw, to a tolerance of  $\pm 1$  mm.
- **5. Openings** – At window and door openings provide a 3mm gap between the RendeX® Panel and the window/door frames. Provide a minimum of 1 in 6 fall at window sills. Install mesh reinforced corner trim around all reveals and install butterfly meshing on corners. Install RendeX® Weatherseal Tape for rain/moisture and wind protection around windows and doors frames. Apply approved flexible sealant between the frames and finished RendeX® Panels.
- **6. Penetrations** – At meter box and stormwater penetrations provide a 3mm gap between the RendeX® Panel and the meter box or stormwater pipe. Install RendeX® Weatherseal Tape for rain/moisture and wind protection around the penetrations. Apply approved flexible sealant between the meter box or stormwater pipe and finished RendeX® Panels.

- **7. Fixing** – The RendeX® Panels should be butted together, with a maximum gap of 5mm. A clearance of not less than 100mm must be maintained between the bottom edge of any RendeX® Panel and the finished ground level. Erect each RendeX® Panel, ensuring it is square to the frame. Apply expanding foam between each RendeX® Panel (except at movement joints) and fix to the studs using washers and screws (see specification for details). Screws must be driven only until the washer begins to sink into the surface of the RendeX® Panel, without damaging the fibreglass mesh of the RendeX® Factory Coated Panels or the raw EPS of the RendeX® Applicator Coated Panel.
- **8a. RendeX® Factory Coated Panel Joints (other than Movement Joints)** – After trimming back any excess expanding foam, install a 200mm wide strip of fibreglass mesh tape (160g/m<sup>2</sup>) to all RendeX® Panel joints. Ensure that the mesh overlaps the RendeX® Panel by 100mm and apply using polymer modified patching compound.
- **8b. RendeX® Applicator Coated Panel Joints (other than Movement Joints)** – After trimming back any excess expanding foam, apply polymer modified basecoat render to the raw EPS board surface, then install/embed fibreglass wall mesh (160g/m<sup>2</sup>) to the complete surface. Ensure that the mesh overlaps by 100mm when joined and apply polymer modified basecoat compound i.e. RendeX® Basecoat Render.
- **9. Horizontal Movement Joints** – Provide horizontal movement joints at vertical centres corresponding to a storey height or not exceeding 3.6m. The movement joint consists of a 10mm gap filled with a closed-cell polyethylene joint filler strip (75mm\*10mm) and an approved flexible sealant (refer to manufacturer for recommended installation details). The joint filler strip is placed between the RendeX® Panel at the time of installation. Horizontal joints to dissimilar materials, other than those detailed in this Manual should be referred to the respective manufacturer for guidance.
- **10. Vertical Movement Joints** – Install vertical movement joints at horizontal centres not exceeding 4.8m. The movement joint consists of a 10mm gap, closed-cell 13mm diam. backing rod and an approved flexible sealant (refer to manufacturer for installation details). The backing rod is pressed into position after the adjoining RendeX® Panels have been rendered. Vertical joints to dissimilar materials, other than those referenced in this Manual, should be referred to the respective manufacturer for guidance.
- **11. External Corners** – Install mesh reinforced corner trim (meshed external beading) with an additional strip of 200mm wide fibreglass mesh to the side where raw polystyrene is visible. Apply with polymer modified patching compound.
- **12. Internal Corners** – Install an additional strip of 200mm wide strip of fibreglass mesh into the corner. Apply with polymer modified patching compound. Alternatively, internal corners may be detailed as a vertical movement joint.
- **13. Finish Rendering of RendeX® Panels** – Apply RendeX® polymer modified render in accordance with manufacturer's specifications. The RendeX® Panels must be rendered within two weeks of installation and must not be rendered when wet e.g. from dew, rain or frost.
- **14. Finishing RendeX® Panels** – Apply suitable texture and seal coats, according to the manufacturer's specification.

## FIXING REQUIREMENTS - FOR RENDEX® FACTORY COATED PANELS

The minimum number of standard fixings for RendeX® Factory Coated Panels is summarized in TABLE 2.

Fixings must not be placed less than 30mm or more than 150mm from the edge or end of a RendeX® Panel.

Table 2 | Minimum Number of Standard Fixings for RendeX® Factory Coated Panels

MINIMUM NUMBER OF STANDARD FIXINGS FOR RENDEX® FACTORY COATED PANELS			
Wind Class (to AS4055)	RendeX® Panel Thickness (mm)	Minimum number of standard fixings per m <sup>2</sup>	
		Further than 1200mm from corners	Within 1200mm of the corners
N1	40, 50, 75, 100	5	5
N2	40, 50, 75, 100	5	5
N3	40, 75, 100	5	5
N4	40, 75, 100	5	7
C1	75, 100	5	7
Pressures are determined in accordance with AS4055:2012.			
Each Standard Fixing consists of a 50mm diameter flexible PP washer, fixed to the supports through the RendeX® Panel by one screw.			

Specific fixing requirements for the alternate systems are defined below:

### FIXING LOCATIONS FOR DIRECT FIX

(Horizontal RendeX® Factory Coated Panels fixed Direct to Studs)

Further than 1200mm from external corners:

WIND CLASSES N1 - C1:			
RendeX® Panel Width	Nominal Stud Spacing	Fixings/Panel/Stud	Fixings/m <sup>2</sup>
1200mm (full Panel)	600mm	3	4
	450mm	3	6
600mm (half Panel)	600mm	2	6
	450mm	2	7
300mm (Starter Panel)	600mm	2	11
	450mm	2	15

Within 1200mm of external corners:

WIND CLASSES N1 - N3:			
RendeX® Panel Width	Nominal Stud Spacing	Fixings/Panel/Stud	Fixings/m <sup>2</sup>
1200mm (full Panel)	600mm	3	4
	450mm	3	6
600mm (half Panel)	600mm	2	6
	450mm	2	7
300mm (Starter Panel)	600mm	2	11
	450mm	2	15

WIND CLASSES N4 - C1:			
RendeX® Panel Width	Nominal Stud Spacing	Fixings/Panel/Stud	Fixings/m <sup>2</sup>
1200mm (full Panel)	600mm	5	7
	450mm	4	7
600mm (half Panel)	600mm	3	8
	450mm	2	7
300mm (Starter Panel)	600mm	2	11
	450mm	2	15

## FIXING REQUIREMENTS - FOR RENDEX® APPLICATOR COATED PANELS

The minimum number of standard fixings for RendeX® Applicator Coated Panels is summarized in TABLE 3.

Fixings must not be placed less than 30mm or more than 150mm from the edge or end of a RendeX® Panel.

Table 3 | Minimum Number of Standard Fixings for RendeX® Applicator Coated Panels

MINIMUM NUMBER OF STANDARD FIXINGS FOR RENDEX® APPLICATOR COATED PANELS			
Wind Class (to AS4055)	RendeX® Panel Thickness (mm)	Minimum number of standard fixings per m <sup>2</sup>	
		Further than 1200mm from corners	Within 1200mm of the corners
N1	50, 75, 100	5	5
N2	50, 75, 100	5	5
N3	50, 75, 100	5	6
N4	75, 100	5	8
C1	75, 100	5	8

Pressures are determined in accordance with AS4055:2012.

Each Standard Fixing consists of a 50mm diameter flexible PP washer, fixed to the supports through the RendeX® Panel by one screw.

Specific fixing requirements for the alternate systems are defined below:

## FIXING LOCATIONS FOR DIRECT FIX

(Horizontal RendeX® Applicator Coated Panels fixed Direct to Studs)

Further than 1200mm from external corners:

WIND CLASSES N1 - C1:			
RendeX® Panel Width	Nominal Stud Spacing	Fixings/Panel/Stud	Fixings/m <sup>2</sup>
1200mm (full Panel)	600mm	4	5
	450mm	3	6
600mm (half Panel)	600mm	2	6
	450mm	2	7



Within 1200mm of external corners:

WIND CLASSES N1 - N2:			
RendeX® Panel Width	Nominal Stud Spacing	Fixings/Panel/Stud	Fixings/m <sup>2</sup>
1200mm (full Panel)	600mm	4	5
	450mm	3	6
600mm (half Panel)	600mm	2	6
	450mm	2	7

WIND CLASSES N3:			
RendeX® Panel Width	Nominal Stud Spacing	Fixings/Panel/Stud	Fixings/m <sup>2</sup>
1200mm (full Panel)	600mm	5	7
	450mm	4	7
600mm (half Panel)	600mm	3	8
	450mm	2	7

WIND CLASSES N4 - C1:			
RendeX® Panel Width	Nominal Stud Spacing	Fixings/Panel/Stud	Fixings/m <sup>2</sup>
1200mm (full Panel)	450mm	4	8
	300mm	3	8
600mm (half Panel)	450mm	3	11
	300mm	2	11

## INSPECTION AND TESTING REQUIREMENTS

Inspections and tests must be performed as defined in TABLE 4.

Table 4 | *Inspection and Testing Requirements*

INSPECTION AND TESTING REQUIREMENTS			
Item or Product	Inspection Required	Acceptance Criteria	Hold / Witness
Drawings & Specifications	Inspect controlled documents	Controlled copy of latest issue on site	Hold
Frame			
Position	Spot check	±5mm	Hold
Squareness	Spot check	±5mm	Hold
Plumbness	Spot check	±2mm in 1.2m	Hold
Samples	Visual	As per specification	Hold
Finished cladding etc	Visual + open and close all doors and windows	As per drawing and specification. Must function correctly.	Witness

### DAMP-PROOF COURSE

Damp-proof course shall be installed around the perimeter of the ground floor walls frames, where a concrete rebate is provided (as per detail). By others.

### RendeX® STARTER PANEL / STARTER TRIM

RendeX® Starter Panels function as a cavity closer but must permit drainage to the exterior of the wall. Starter Trims function in the same way.

RendeX® Starter Panels and Starter Trims must be installed such that there is a minimum drip edge to the wall cladding of:

- 15mm above window and door head flashings; and
- 10mm at the base of walls.

Where Starter Trims are installed to provide intermittent support for fixings or pipe penetrations through a drained cavity, the Starter Trim must be set to a 1 in 12 fall to allow drainage of any moisture from the top.

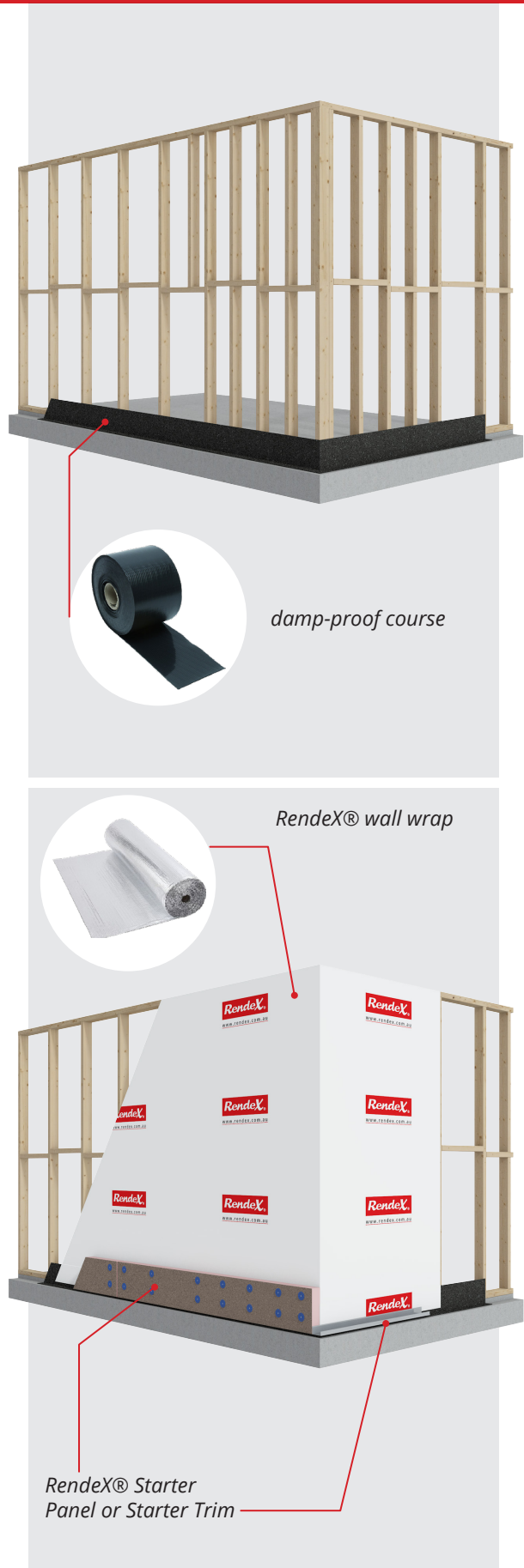
Starter Trims must be manufactured from aluminium, with holes or slots having min and max dimension of 3 and 5mm, providing an opening area of at least 1,000mm<sup>2</sup>/m length.

### RendeX® WALL WRAP

RendeX® Wall Wrap is a breathable (permeable) laminate of aluminium foil and poly-woven fabric with the following properties: Heavy duty, Water Vapour Transmission Rate not less than 140Ng/Ns, Emittance of reflective face not more than 0.05, Flammability Index under 5, Tensile Strength in the machine direction not less than 12.5kN/m, Tensile Strength in the lateral direction not less than 7.5kN/m, Edge Tear Resistance in the machine direction not less than 80N, Edge Tear Resistance in the lateral direction not less than 80N.

#### Complying product:

RendeX® Wall Wrap  
(Product code: MA-SSET)



## RendeX® PANEL

### (EPS) PROPERTIES

EPS board must be M-Grade, flame retardant modified in accordance with AS1366.3, with the following properties:

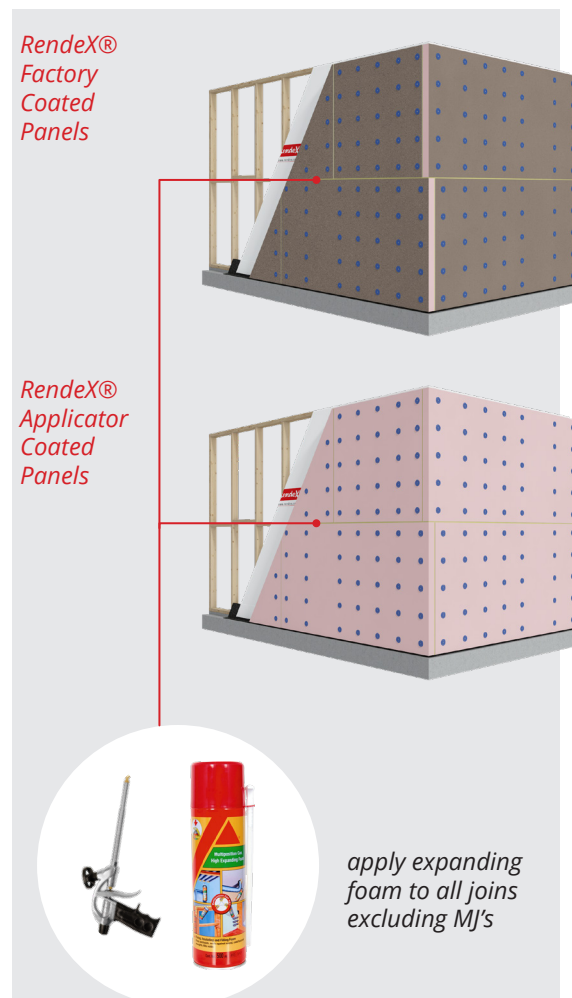
- Thermal resistance at a mean temperature of 23°C of a 50mm sample in accordance with AS/NZS4859.1 – not less than R1.2 (m²K/W)
- Compressive strength in accordance with AS2498.3 Method 3 – not less than 105kPa
- Cross breaking strength in accordance with AS2498.4 Method 4 – not less than 200kPa
- Water Vapour Transmission in accordance with AS2498.5 Method 5 – not more than 520mg/m²
- Dimensional stability in accordance with AS2498.6 Method 6 – not more than 1%
- Flame Propagation Surface Ignition of Vertically Oriented Specimens in accordance with AS2122.1 Method 6
  - Residue for 2sec Ignition Median Percent not less than 30%, Standard Deviation not less than 27%
  - Flame duration 5sec: Median Percent not more than 2sec, Standard Deviation not more than 3sec

### EXPANDING FOAM FOR JOINS

Expanding foam for joins must be a single-component polyurethane foam, which is applied by pistol, hardens via chemical reaction with atmospheric humidity, with long shelf life, resistant to rotting and resistant to aging, resistance to temperature of hardened foam (-30°C to +80°C), non-tacky after approximately 10mins, can be cut after approximately 25mins, load-bearing after approximately 3hrs, completely hardened after approximately 5 to 8hrs (all details based on temperature of +20°C).

#### Complying product:

HB Fuller Low Expansion Foam



## SCREW FIXINGS

Schedule of screw fixings for Direct Fix are detailed in TABLE 5:

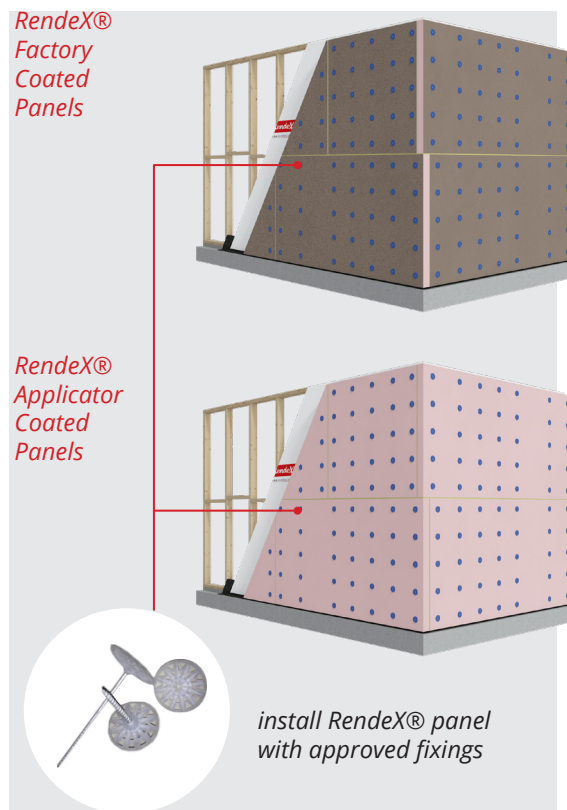
Table 5 | Schedule of Screw Fixings for Direct Fix

SCHEDULE OF SCREW FIXINGS								
Application	Substrate	Thickness secured mm	Outside Diameter	Screw Gauge	Length mm	Corrosion Resistance	Thread	Washer
More than 1km from breaking surf	Steel or timber studs	40mm	4.8mm	10g	75	Class 3	Coarse	50mm diam PP
		50mm	4.8mm	10g	75	Class 3	Coarse	
		75mm	4.8mm	10g	100	Class 3	Coarse	
		100mm	4.8mm	10g	125	Class 3	Coarse	

Screws shall be:

- Coarse threaded (Coarse);
- At least 10 gauge (4.8mm) for Wind Classifications N1, N2, N3, N4 and C1;
- Of length at least 25mm longer than the thickness of the EPS board;
- At least Class 3 further than 1km from breaking surf;
- At least Class 4 further than 100m (and less than 1km) from breaking surf and fully embedded;
- Grade 304 or 316 stainless steel for applications within 100m of breaking surf.

**Complying product:** RendeX® Screws (Product code: MA-Screw 75/100/125) Galvanised Class 3 (Class 4 or 304 or 316 stainless for corrosive environments as specified above)



## WASHERS

Washers must be a minimum of 50mm diameter flexible Polypropylene (PP).

**Complying product:** RendeX® Washers (Product code: MA-48mmPW)

## MESHED EXTERNAL BEADING

Meshed External Beading shall be either Aluminium or uPVC. uPVC beading must be polyvinyl chloride virgin material, mesh reinforced, UV stabilised, marine grade. Both shall be extruded to the specified shapes.

## FIBREGLASS MESH

**RendeX® Factory Coated Panels:**

Meshing is required to all joints (excluding movement joints), and external corners where exposed EPS is visible, i.e. internal and external corners and openings as detailed, it must be 200mm wide, 160g/m<sup>2</sup> alkali resistant fibreglass mesh tape (as pictured and shown green in diagram).

Tape to be applied using polymer modified patching compound.

**Complying product:**

Site-installed - Fibreglass 5mm x 5mm mesh, 160g/m<sup>2</sup> mesh, alkali resistant.

Product code: MESH200A

**RendeX® Applicator Coated Panels:**

Meshing is required to whole surface of raw EPS boards (excluding movement joints), 160g/m<sup>2</sup> alkali resistant fibreglass mesh to be used (as pictured and shown green in diagram). Fibreglass mesh to be embedded in Polymer Modified Basecoat.

**Complying product:**

Site-installed (embedded) - Fibreglass 5mm x 5mm mesh, 160g/m<sup>2</sup> mesh, alkali resistant.

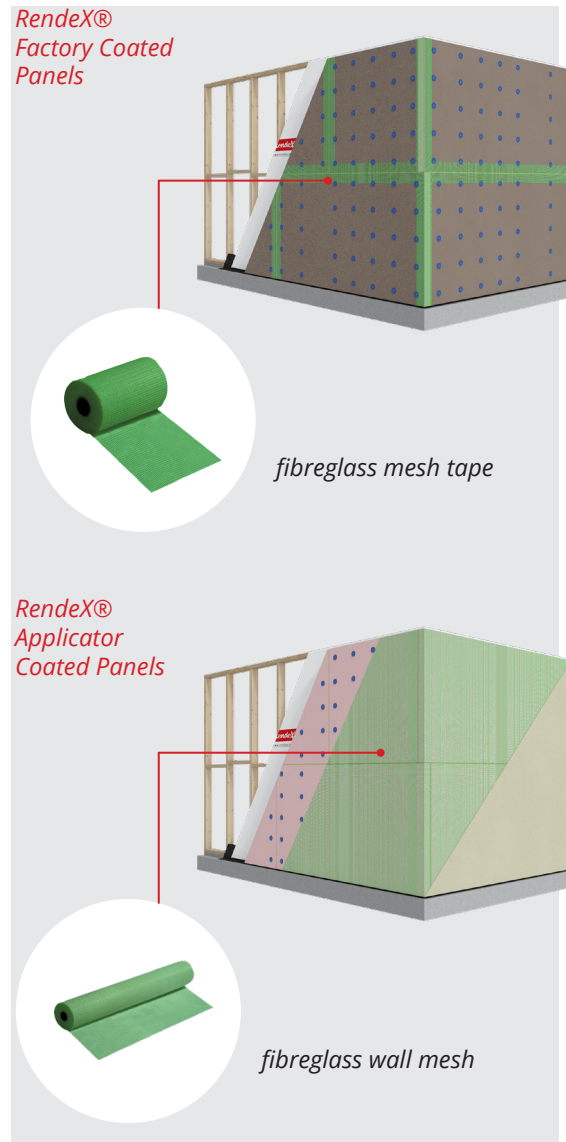
Product code: MESH1200

Polymer modified Basecoat.

Product code: RR-BASECOAT

**Window openings and penetrations:**

Refer to installation details of this Manual. Section 8.

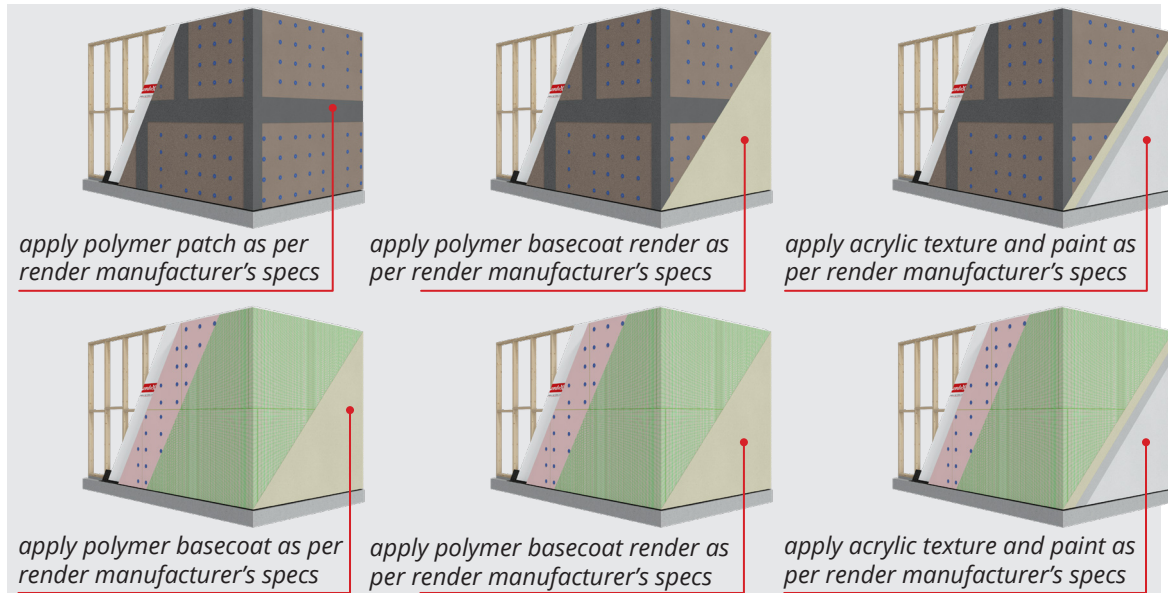
**RENDERING**



Render must be pre-blended polymer modified cement render, suitable for mixing with water immediately before use to provide a smooth, trowel-able paste.

**Fine Joint Patch:** (pre-coated panels): firmly fix and prepare all Joints, Beads and Trim by applying a thin layer of Fine Joint Patch.

**Base Coat:** After patch, apply two coats of base coat render 3 to 5mm thick for each coat. Should be applied to the entire wall area.



Texture finish must be acrylic based texture coating suitable for external application over cement rendered surfaces. Membrane Paint finish must consist of an acrylic external coating system, applied according to the manufacturer's specification.

#### Complying product:

RendeX® Factory Coated Panels: RendeX® Basecoat or proprietary systems compliant with the specification above are deemed suitable.

RendeX® Applicator Coated Panels: RendeX® Basecoat or proprietary systems approved by PWS.

**Texture Coat:** If required, applied directly to the base render.

**Finish Membrane Coating:** Applied on top of the base coat or texture coat to give a durable, weatherproof, crack-resistant finish.

## MOVEMENT JOINT MATERIALS

### FULAFLEX 550 PU LM

Fulaflex 550 PU LM is a one-component moisture-curing low modulus Class A polyurethane sealant with excellent joint movement capabilities. It cures into a flexible, durable and weather resistant sealant and exhibits excellent adhesion to a wide range of substrates. Fulaflex 550 PU LM is low in VOC (<60g/L) and satisfies the requirements for the Green Building Council of Australia (GBCA).



8

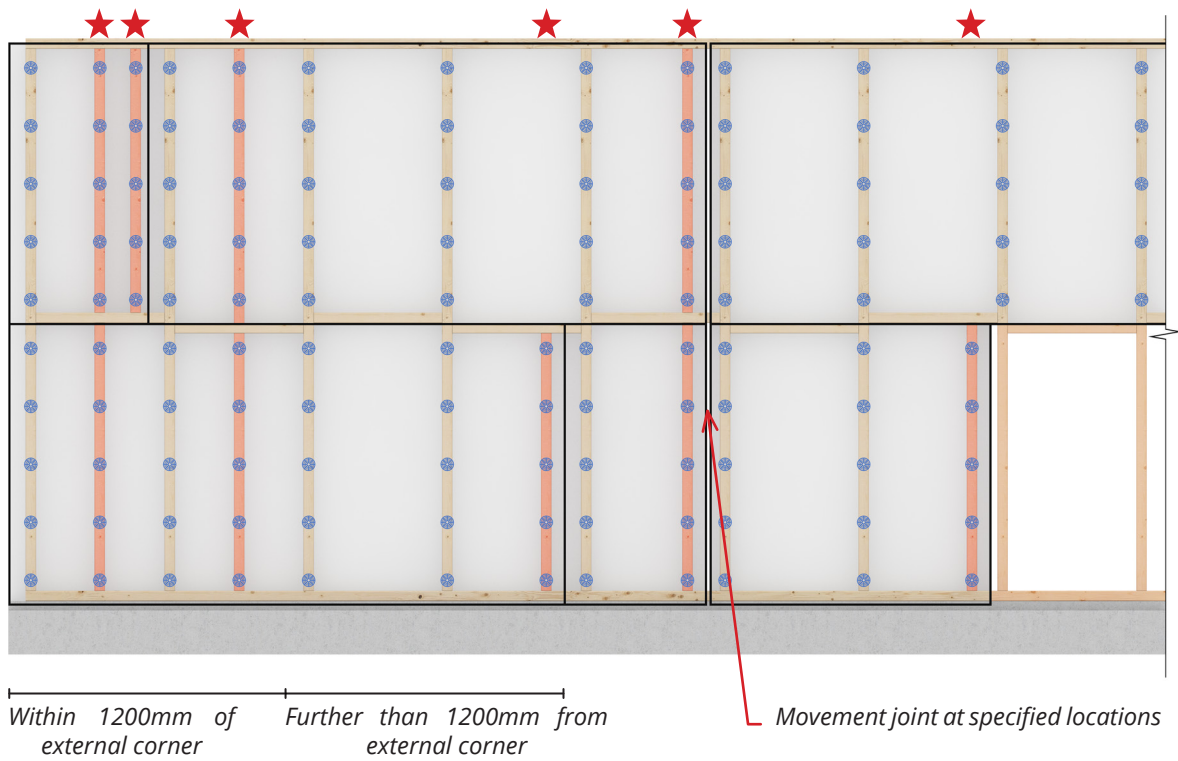
## INSTALLATION DETAILS | **SYSTEM 3**

Horizontal RendeX® Panel fixed to steel or timber studs

## FIXING LOCATIONS

**Fixing and stud locations:** Horizontal RendeX® panels fixed to steel or timber studs.

★ Indicates additional studs to provide required support.



Fixings must not be placed less than 30mm or more than 150mm from the edge or end of a panel.

## STEP BY STEP

### RendeX® Factory Coated Panels

STEP 1 | Install DPC (by others)

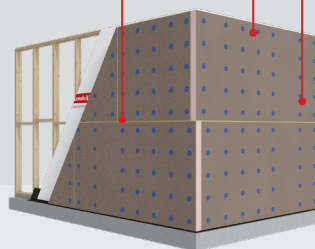
STEP 2 | Install RendeX® Wall Wrap



STEP 3 | Cut panel to size

STEP 4 | Fix panel with screws and washers

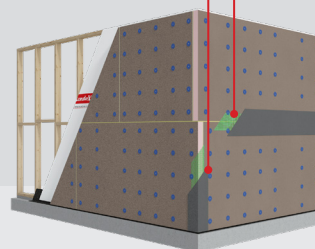
STEP 5 | Fill gaps between the panels with expanding foam



STEP 6 | Install fiberglass mesh tape to joints and corners

Apply extra mesh tape to external corner

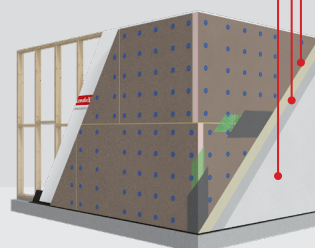
STEP 7 | Patch with patching compound



STEP 8 | Apply RendeX® Basecoat acrylic render to manuf. specs

STEP 9 | RendeX® Texture

STEP 10 | Acrylic paint membrane



### RendeX® Applicator Coated Panels

STEP 1 | Install DPC (by others)

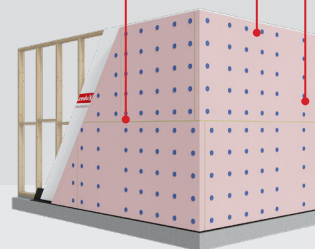
STEP 2 | Install RendeX® Wall Wrap



STEP 3 | Cut raw EPS board to size

STEP 4 | Fix board with screws and washers

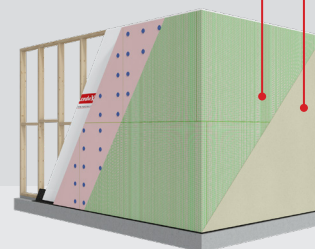
STEP 5 | Fill gaps between the boards with expanding foam



STEP 6 | Render with RendeX® Basecoat acrylic render

STEP 7 | Embed fibreglass mesh to whole surface

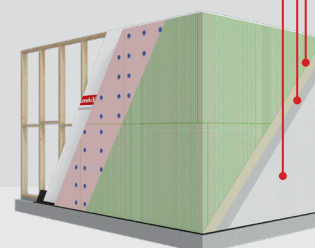
Apply extra mesh to external corner



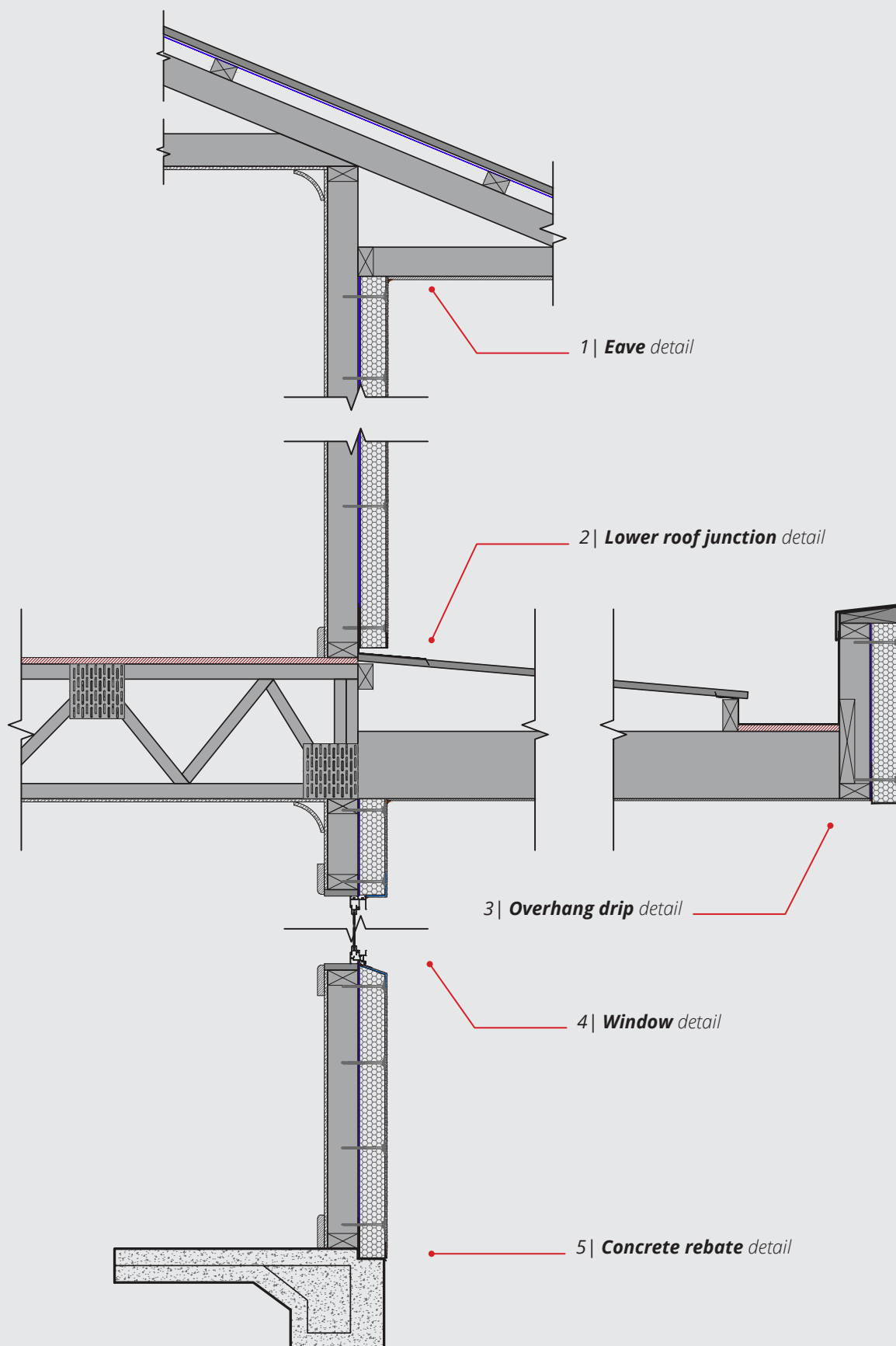
STEP 8 | Apply additional coat of RendeX® Basecoat acrylic render to manuf. specs

STEP 9 | RendeX® Texture

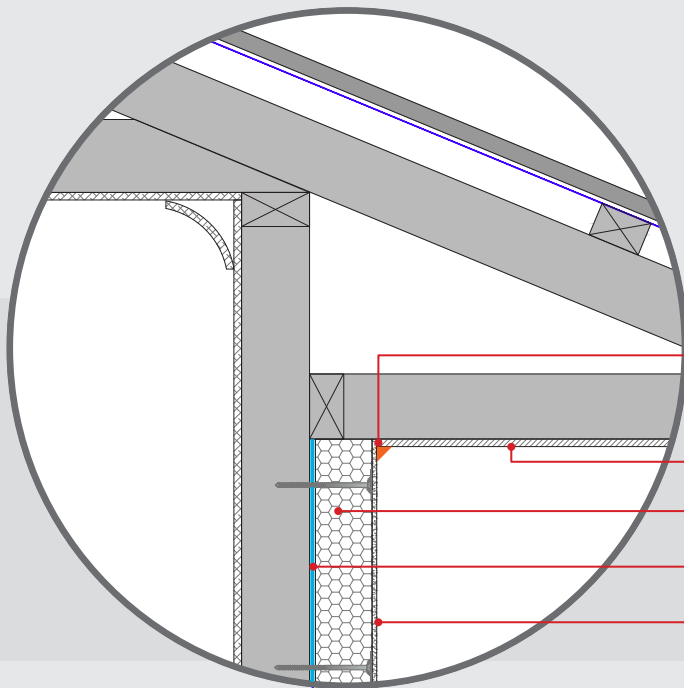
STEP 10 | Acrylic paint membrane



## GENERAL ARRANGEMENT | SYSTEM 3







## EAVE DETAIL | OPTION A SYSTEM 3

Approved sealant

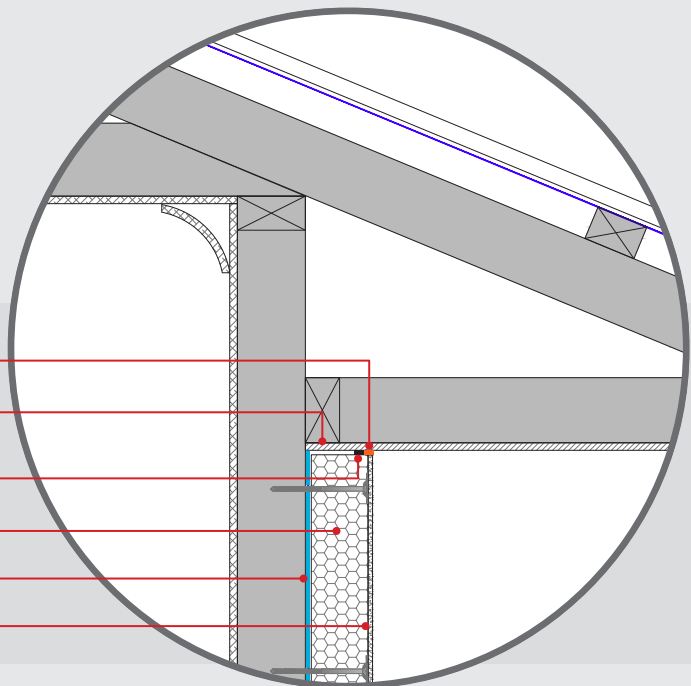
Eave lining (by others)

RendeX® panel

RendeX® Wall Wrap

Acrylic render

**1A**



## EAVE DETAIL | OPTION B SYSTEM 3

Approved sealant

Eave lining (by others)

Backing rod

RendeX® Panel

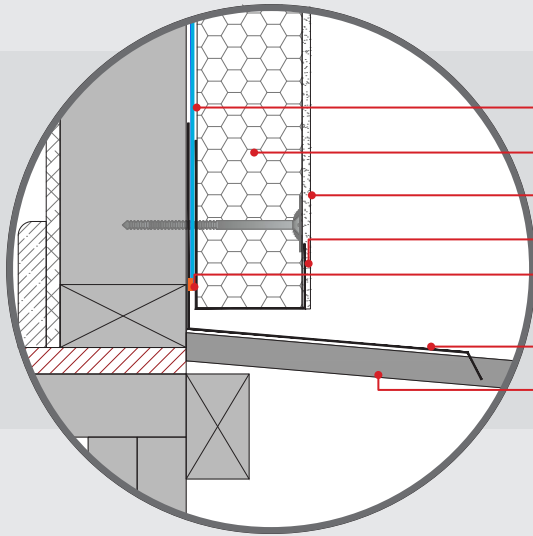
RendeX® Wall Wrap

Acrylic render

**1B**

## LOWER ROOF JUNCTION DETAIL | SYSTEM 3

2



- RendeX® Wall Wrap
- RendeX® panel
- Acrylic render
- Starter trim
- Approved sealant  
(between sarking and flashing)
- Metal flashing
- Metal roof

\* Please check **detail 13 | RendeX® starter panel roof detail (page 49)** for Starter Panel alternative.

## OVERHANG DRIP DETAIL | SYSTEM 3

RendeX® Wall Wrap

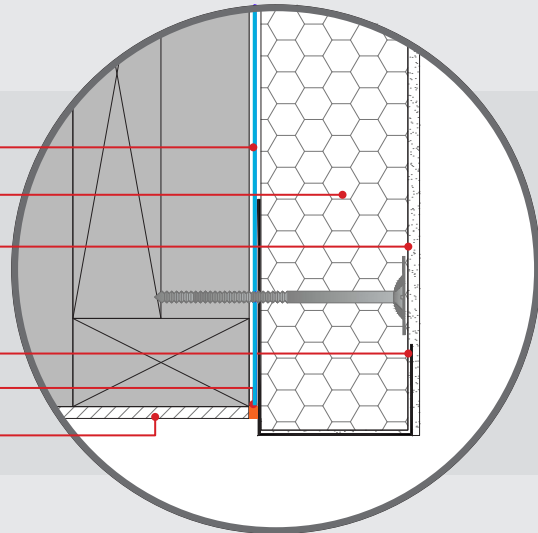
RendeX® panel

Acrylic render

Starter trim

Approved sealant

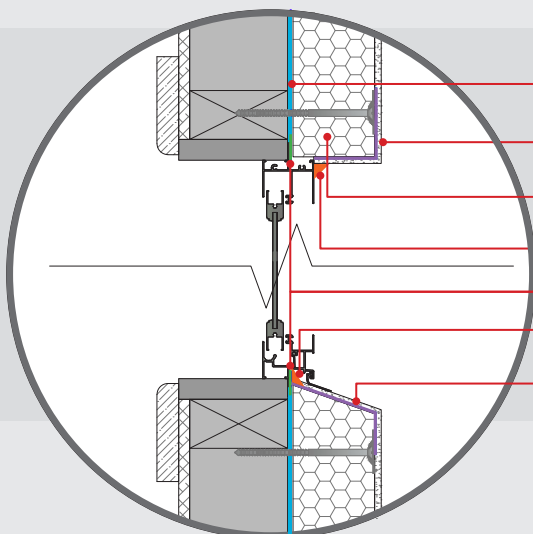
Soffit lining



3

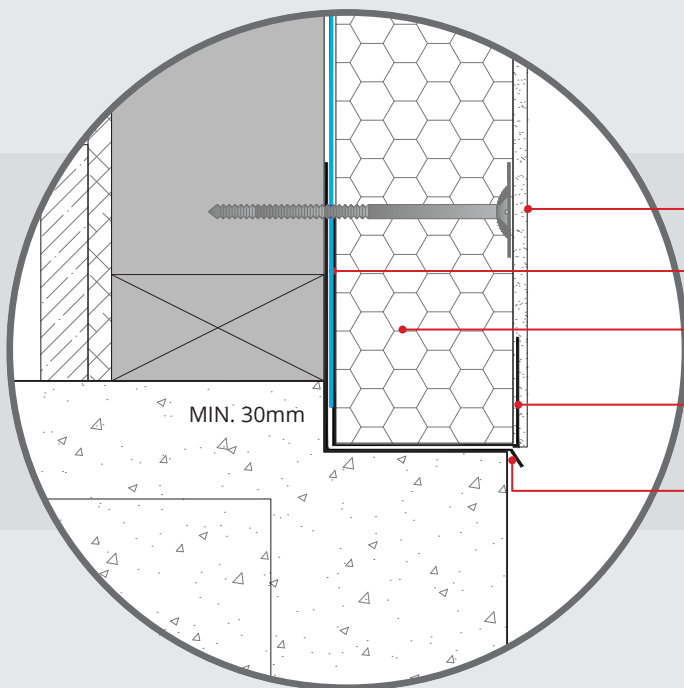
## WINDOW DETAIL | SYSTEM 3

4



- RendeX® Wall Wrap
- Acrylic render
- RendeX® panel
- Approved sealant
- Flashing tape
- Approved sealant
- Meshed corner bead

5



## CONCRETE REBATE DETAIL SYSTEM 3

Acrylic render

RendeX® Wall Wrap

RendeX® panel

Starter trim

DPC

## RendeX® AND BRICK VENEER DETAIL SYSTEM 3

RendeX® Wall Wrap

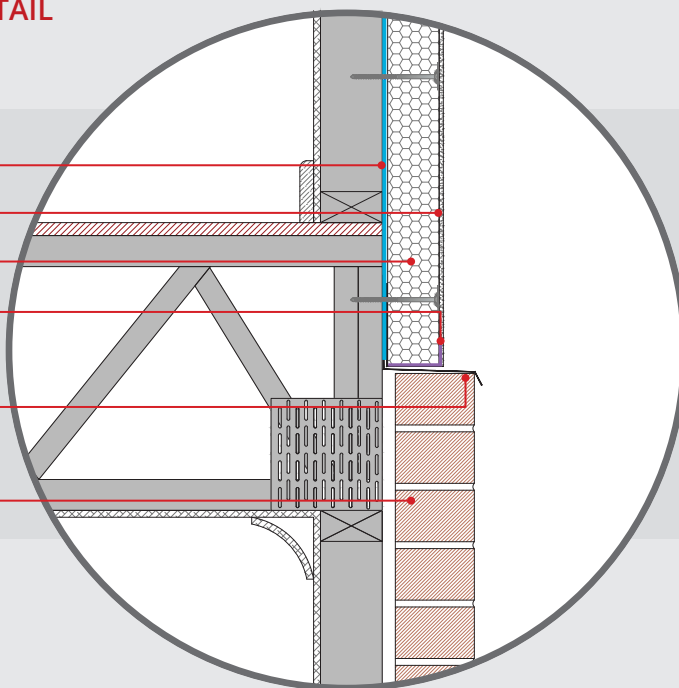
Acrylic render

RendeX® panel

Starter trim

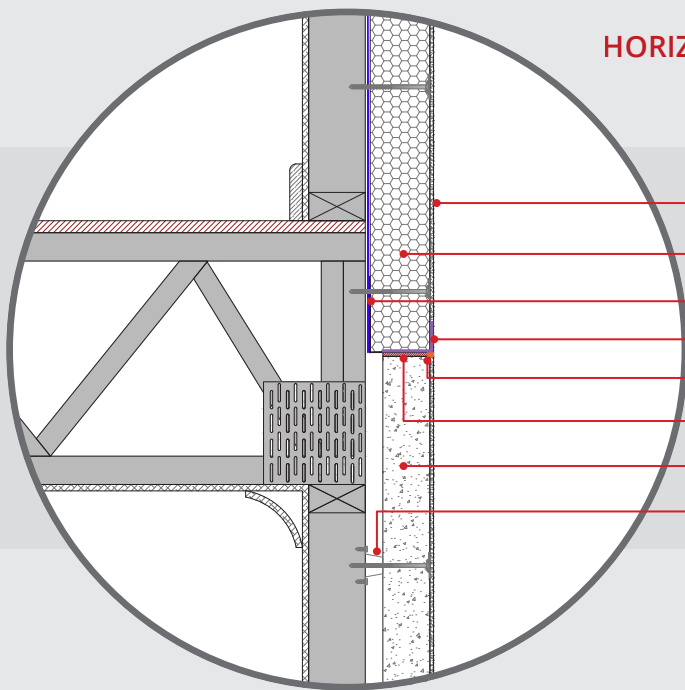
Metal flashing

Brick (by others)



6

# DISSIMILAR SUBSTRATES HORIZONTAL MOVEMENT JOINT DETAIL SYSTEM 3



7

Acrylic render

100mm RendeX® panel

RendeX® Wall Wrap

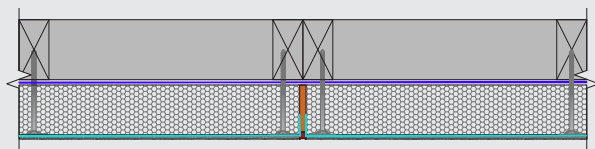
Starter trim

Approved sealant

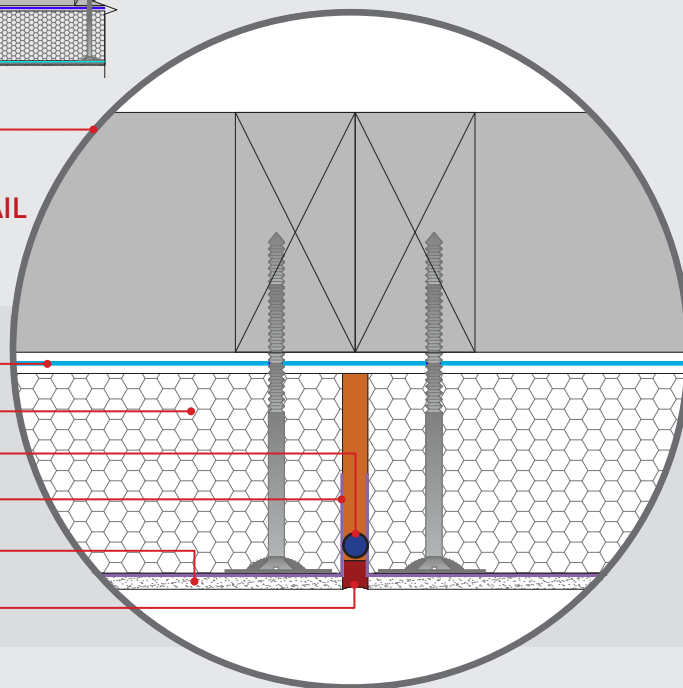
Joint Filler Strip

75mm AAC panel (by others)

Tophat



## VERTICAL MOVEMENT JOINT DETAIL SYSTEM 3



RendeX® Wall Wrap

RendeX® panel

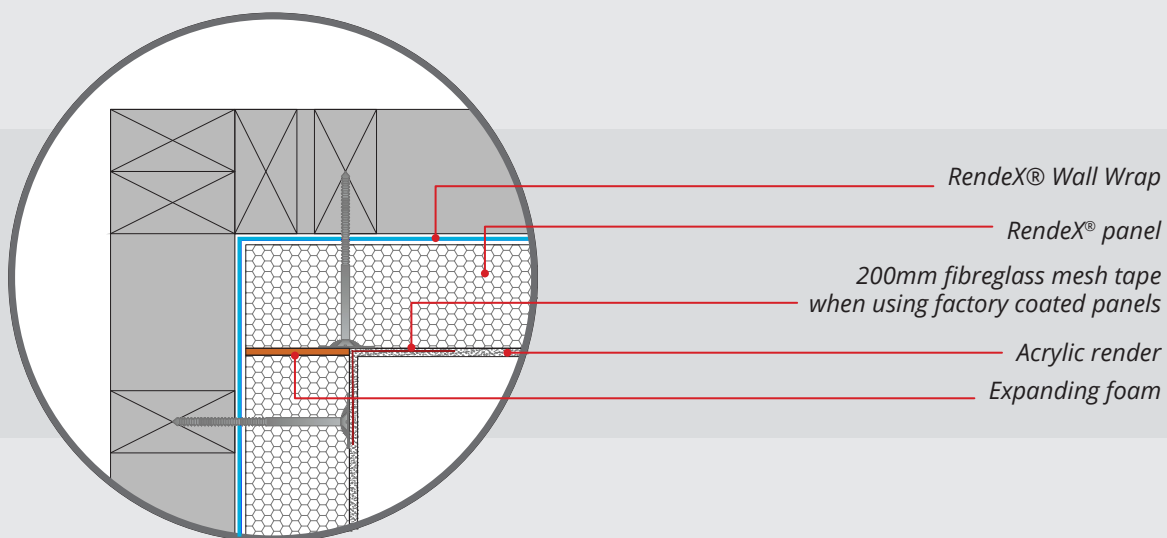
Backer rod

Meshed corner bead

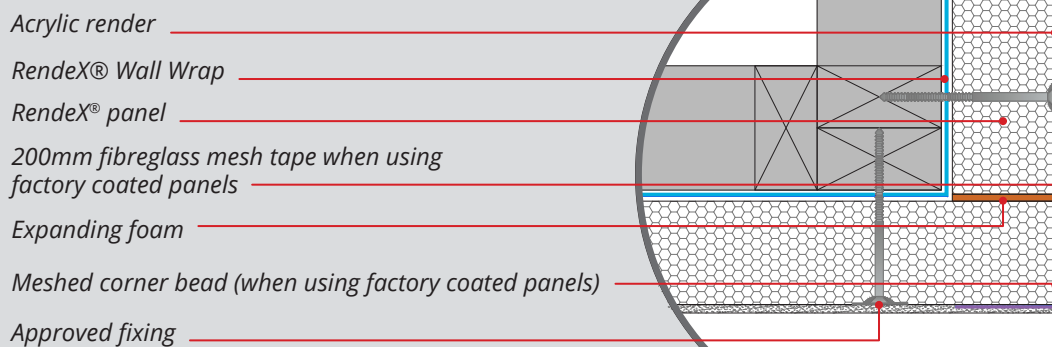
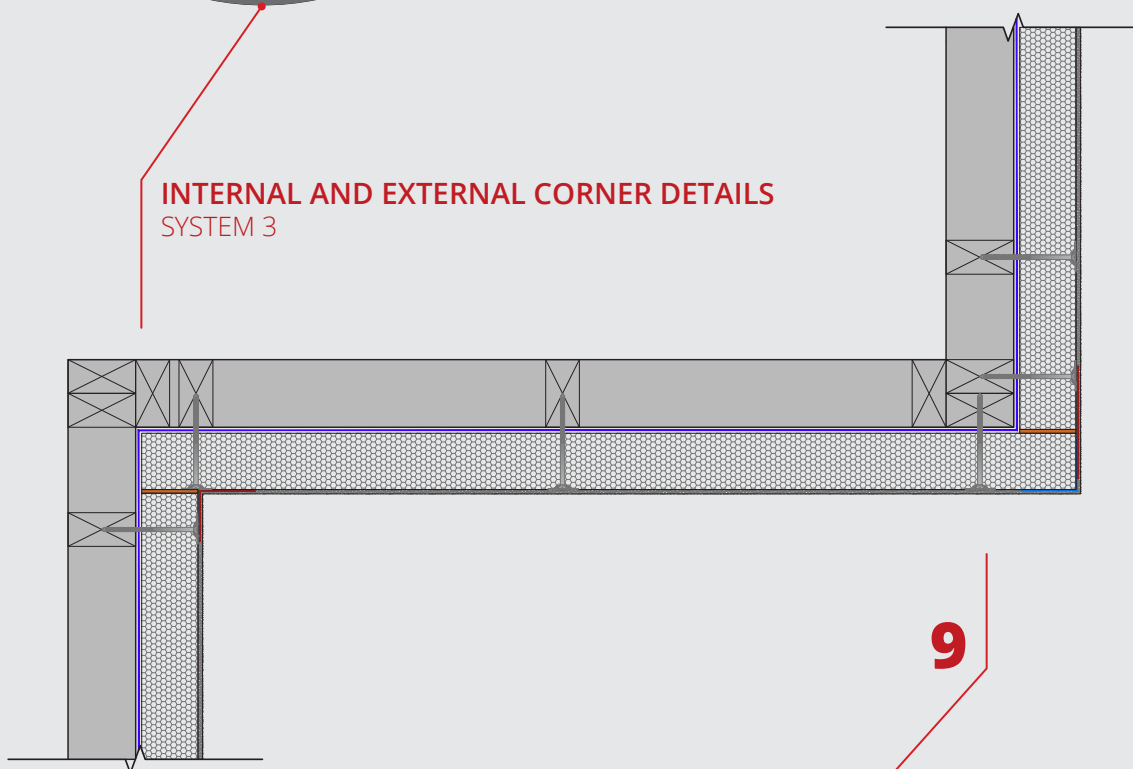
Acrylic render

Approved sealant

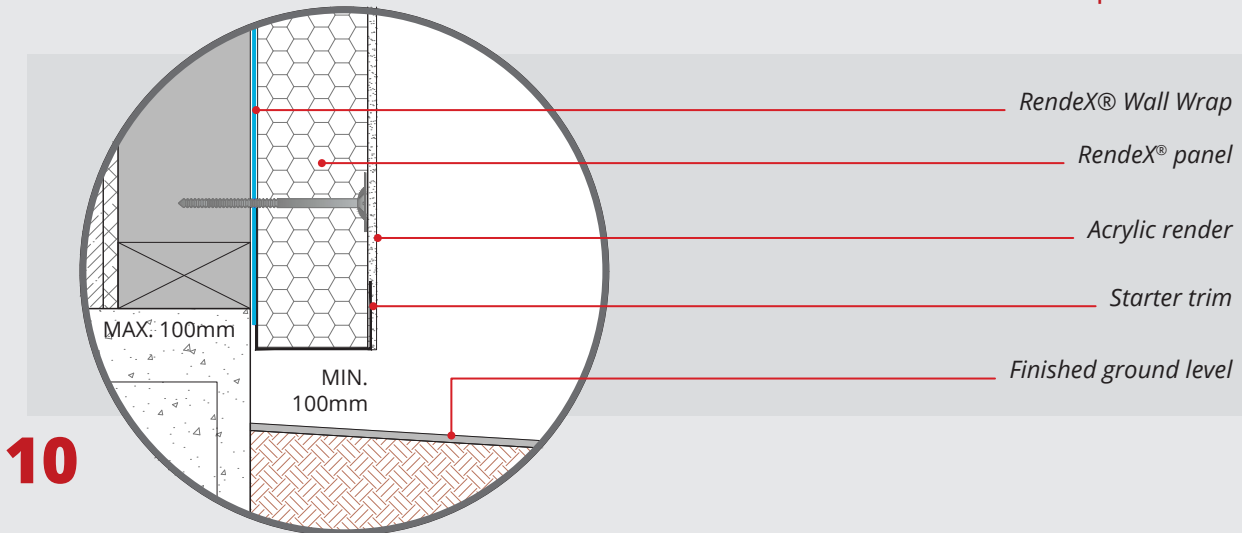
8



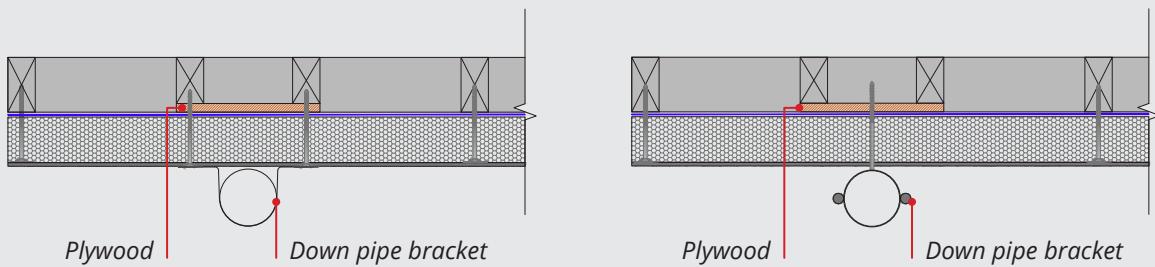
### INTERNAL AND EXTERNAL CORNER DETAILS SYSTEM 3



## GROUND SLAB DETAIL | SYSTEM 3

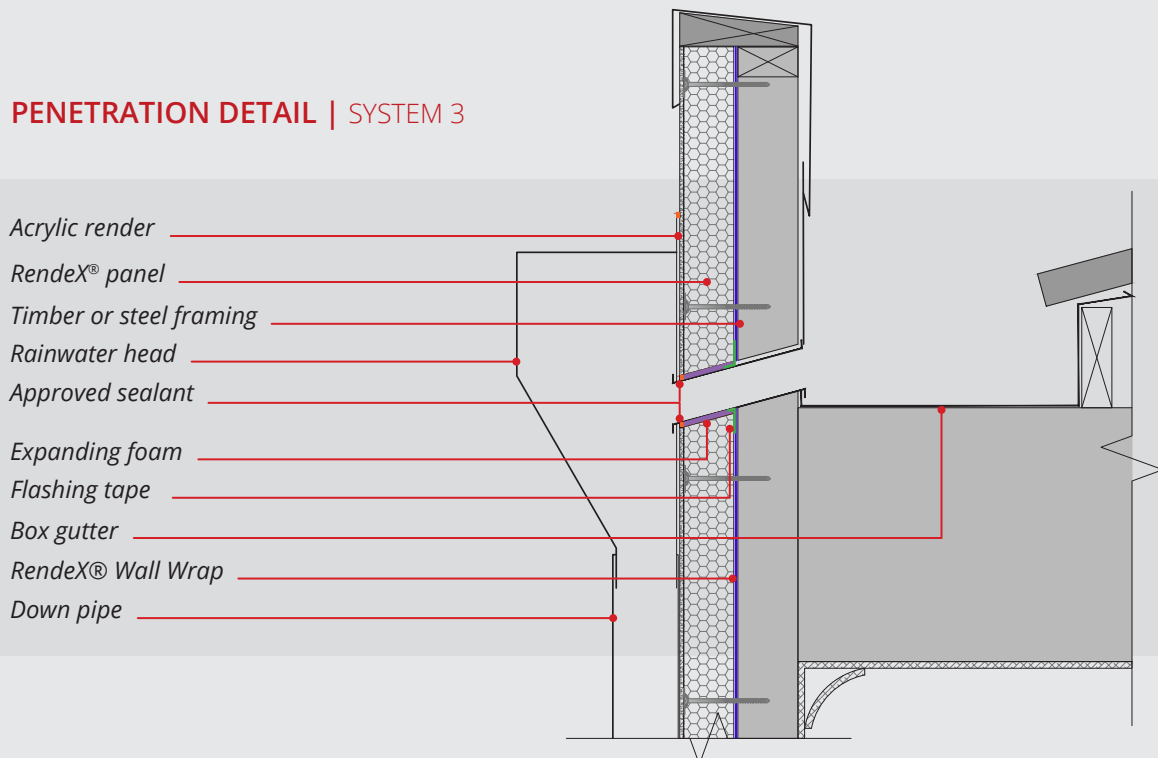


## DOWNPIPE FIXING DETAIL | SYSTEM 3

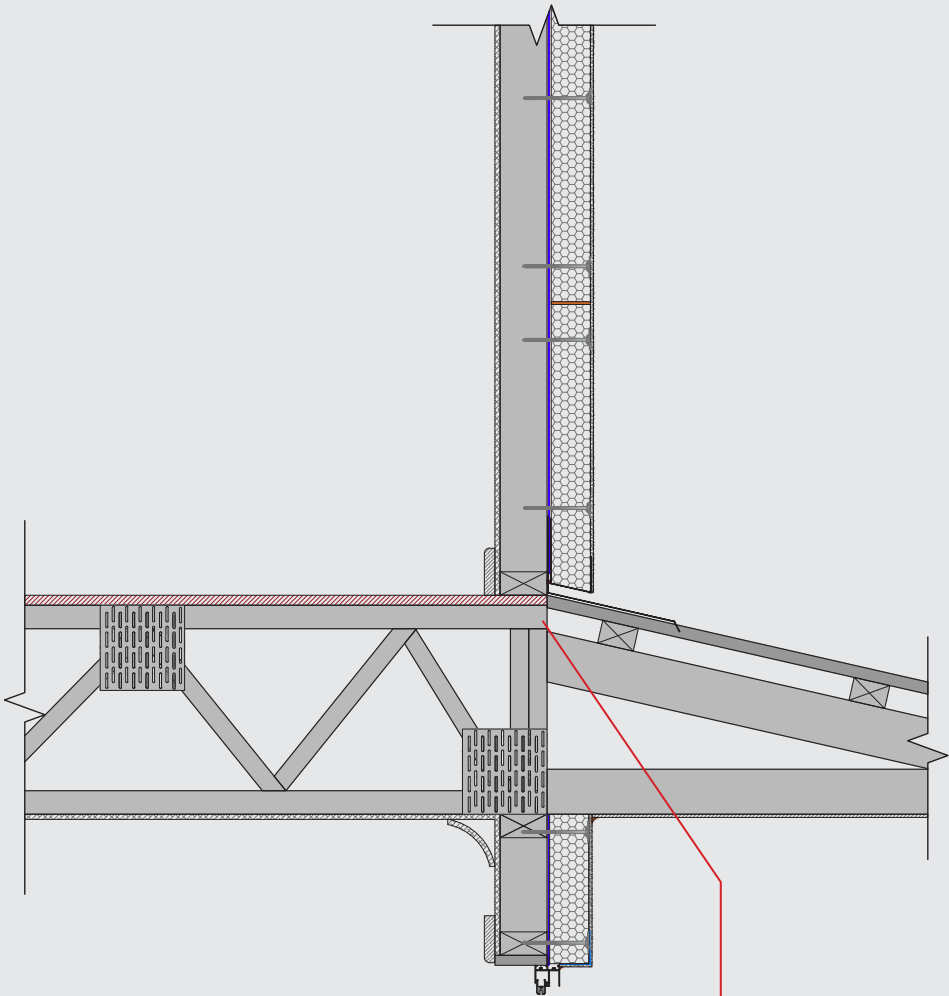


**11**

## PENETRATION DETAIL | SYSTEM 3

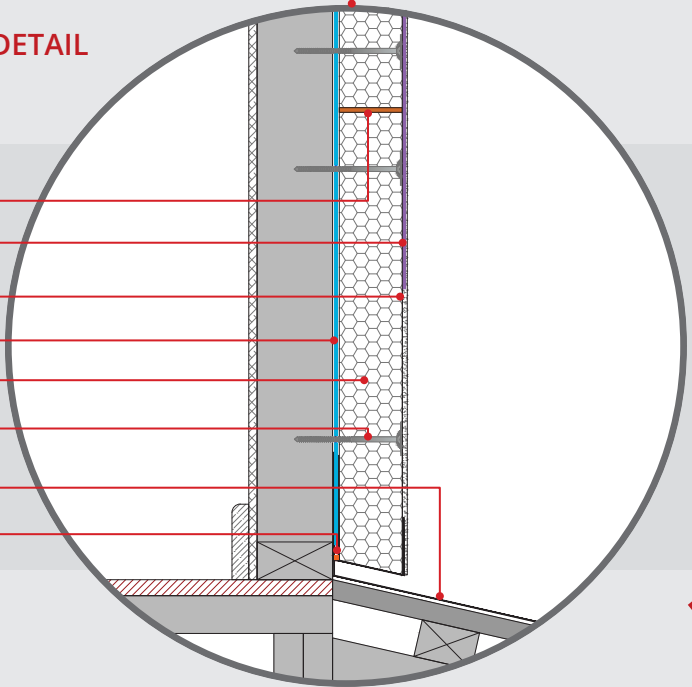


**12**



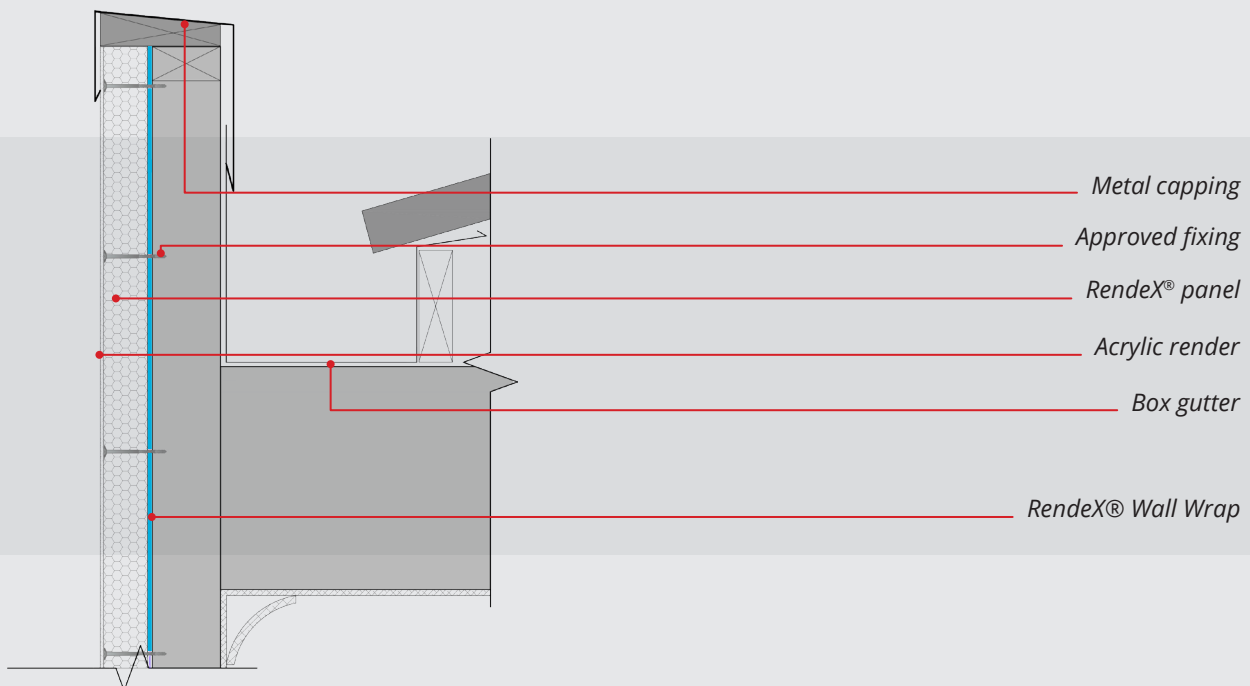
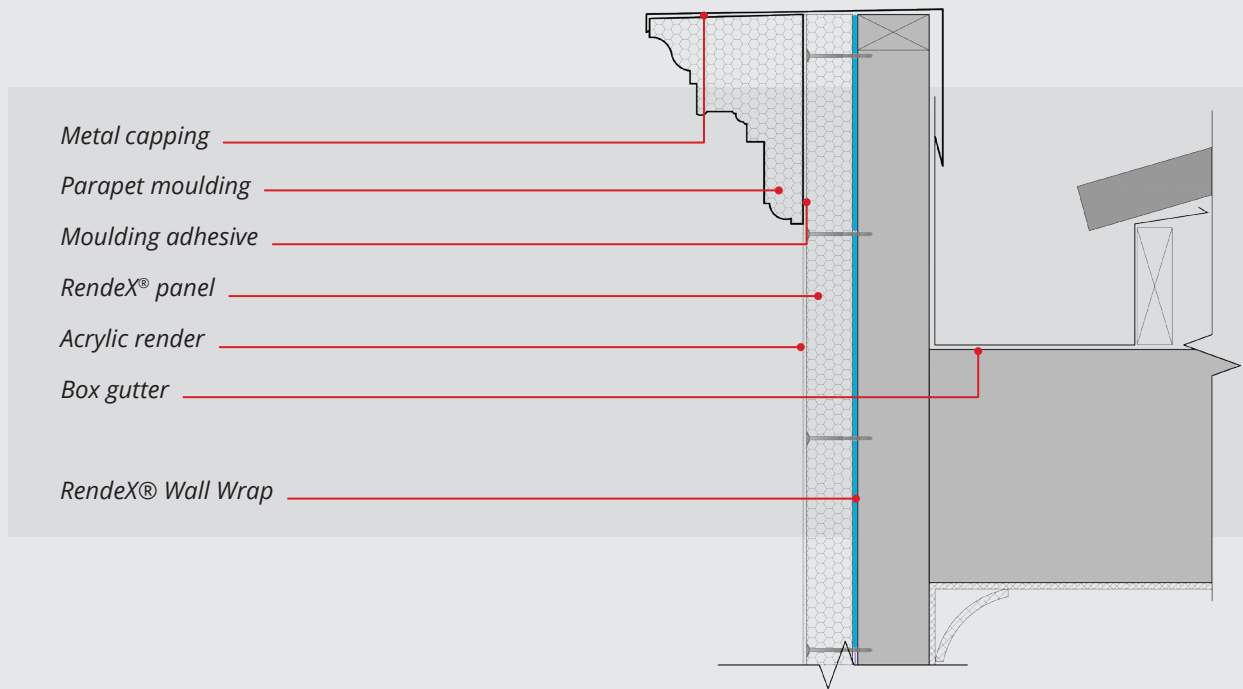
RendeX® STARTER PANEL ROOF DETAIL  
SYSTEM 3

- Expanding foam
- 200mm fibreglass mesh tape
- Acrylic render
- RendeX® Wall Wrap
- Starter panel
- Approved fixing
- Metal flashing
- Approved sealant

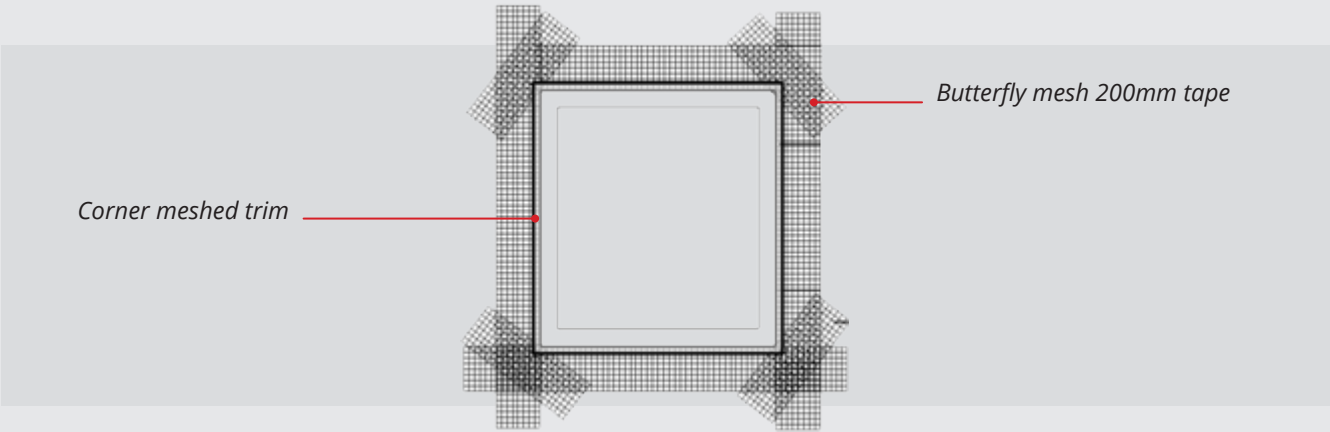




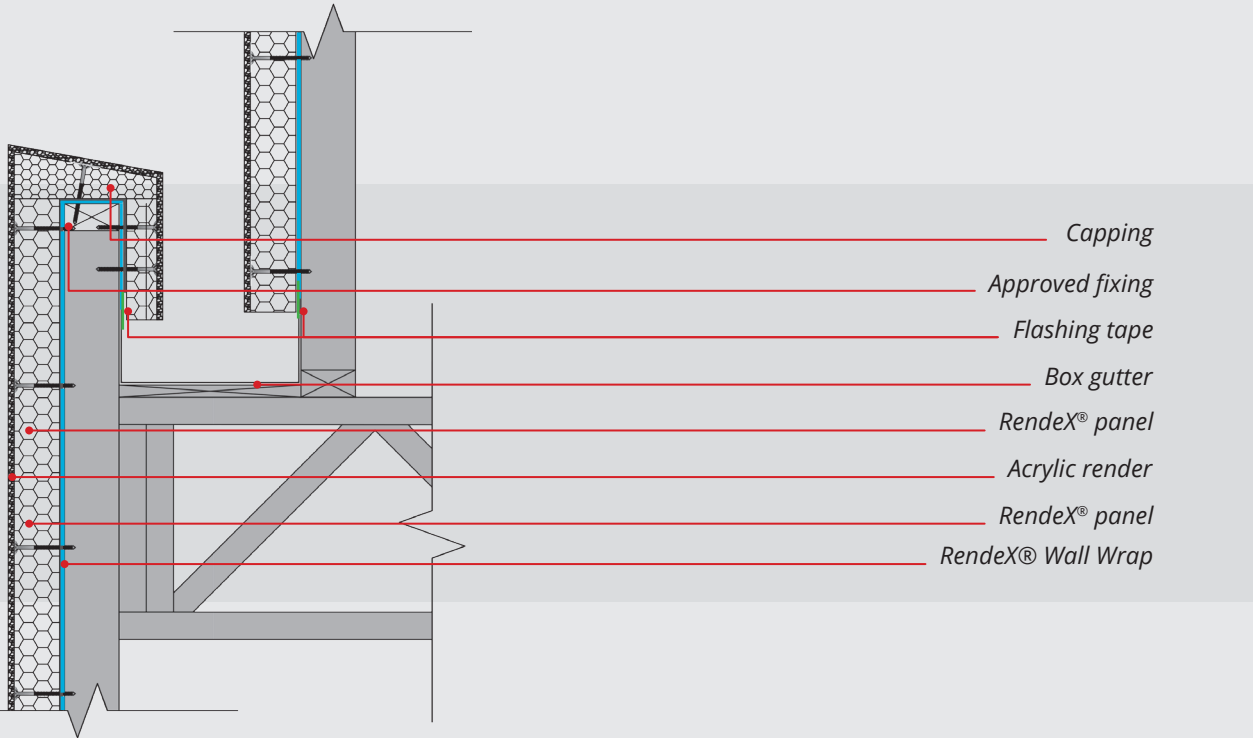
## PARAPET FLASHINGS | SYSTEMS 2 AND 3



MESHING OF RENDEX PANELS AT WINDOW OPENINGS | SYSTEMS 1, 2 AND 3



PARAPET AND BOX GUTTER DETAIL | SYSTEMS 1, 2 AND 3



## 12. CERTIFICATION OF ALTERNATIVE SOLUTION

The RendeX® External Cladding System is suitable as an Alternative Solution complying with the following Parts of the National Construction Code (NCC) – Building Code of Australia (BCA) 2019:

- Volume One BP1.1 (a),(b) (i), (ii) & (iii) and Volume Two P2.1.1 (a), (b) (i), (ii) & (iii) in respect of structural performance of external walls designed and constructed in accordance with this Manual, where the net wind pressure does not exceed 2.01kPa, the net general wind suction does not exceed 1.72kPa and local net wind suction does not exceed 3.01kPa; calculated using AS/NZS1170.2 or AS4055. This includes AS4055 Wind Classifications N1, N2, N3, N4 and C1 (and excludes AS4055 Wind Classifications N5, N6, C2, C3 and C4).
- Volume One FP1.4 and Volume Two P2.2.2 in respect of weatherproofing for walls, if properly flashed in accordance in accordance with this Manual.
- Volume One JP1 and Volume Two P2.6.1 in respect of energy efficiency of walls in applications where complying thermal resistances of the walls have been determined in accordance with this Manual.

### SUBJECT TO THE FOLLOWING CONDITIONS

- Product selection, and incorporation into the building design, must be made by a person who is conversant with the application and technical aspects of the product, and has ready access to the relevant technical information related to the product use.
- Product installation must be carried out by a competent carpenter or other tradesman under the direction of a licensed Builder, both of whom are conversant with the method of product installation, and have access to all relevant technical information on product installation.

## BASIS OF CERTIFICATION

This Certification is based on the following test reports:

Laboratory	Report No and Date
PWS In-house Report	PWS_RPT_0001 Load Testing of Fasteners   test date 11/01/17
Ian Bennie and Associates	2019-051-S1 Weatherproof   test date 08/05/19
Ian Bennie and Associates	2019-051-S2 ULT   test date 08/05/19
Ian Bennie and Associates	2019-051-S3 ULT   test date 08/05/19
Ian Bennie and Associates	2019-051-S4 ULT   test date 08/05/19
Ian Bennie and Associates	2019-051-S5 ULT   test date 08/05/19
Ian Bennie and Associates	2019-051-S6 ULT   test date 08/05/19

Refer PWS 190813 Structural Assessment. RendeX® External Cladding System for fixing recommendations.

## LIMITATIONS

- This certification does not deal with fire resistance or fire hazard properties. The RendeX® External Cladding System is designed to be used as an external cladding in non-fire rated wall applications. As such, it is not subject to the fire hazard properties of NCC, BCA Vol.1, Specification C1.10.
- This certification does not apply to AS4055 Wind Classifications N5, N6, C2, C3 or C4.
- This certification does not deal with material safety and should be considered in conjunction with a suitable Safety Data Sheet, which considers all aspects of safety including threats to respiration and the possibility of electrocution.

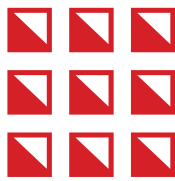
The reports listed above only provide an NCC and BCA compliance appraisal of the RendeX® External Cladding System and do not deal with the quality assurance aspects of the manufacturing, construction and installation processes.

## 13. WARRANTY

Prestige Wall Systems Pty Ltd (PWS) as the manufacturer of the RendeX® Panel provides a seven year warranty as follows:

- PWS provides the warranty from date of purchase for replacement of defective product only.
- PWS will be in no circumstances liable for any loss or damage (including consequential loss), whether direct or in direct to persons or property.
- PWS will not be responsible and/ or liable to any person in any way for incorrect fixing, installing, finishing and rendering by any person.

Warranty is null and void if product is not installed in accordance with guidelines given and set by this Manual.



[www.rendex.com.au](http://www.rendex.com.au)

**ADDRESS**

**VIC** 4/1764 Sydney Rd, Campbellfield 3061  
**NSW** 6/376 Newbridge Rd, Moorebank 2170  
**SA** 24 Humphries Tce, Kilkenny 5009

**CONTACT**

1300 663 118  
**Fax** 1300 676 233  
[sales@prestigewallsystems.com.au](mailto:sales@prestigewallsystems.com.au)