



■ PRORENDER EIFS

PREMIER RENDER SYSTEMS



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■ ProRend EIFS

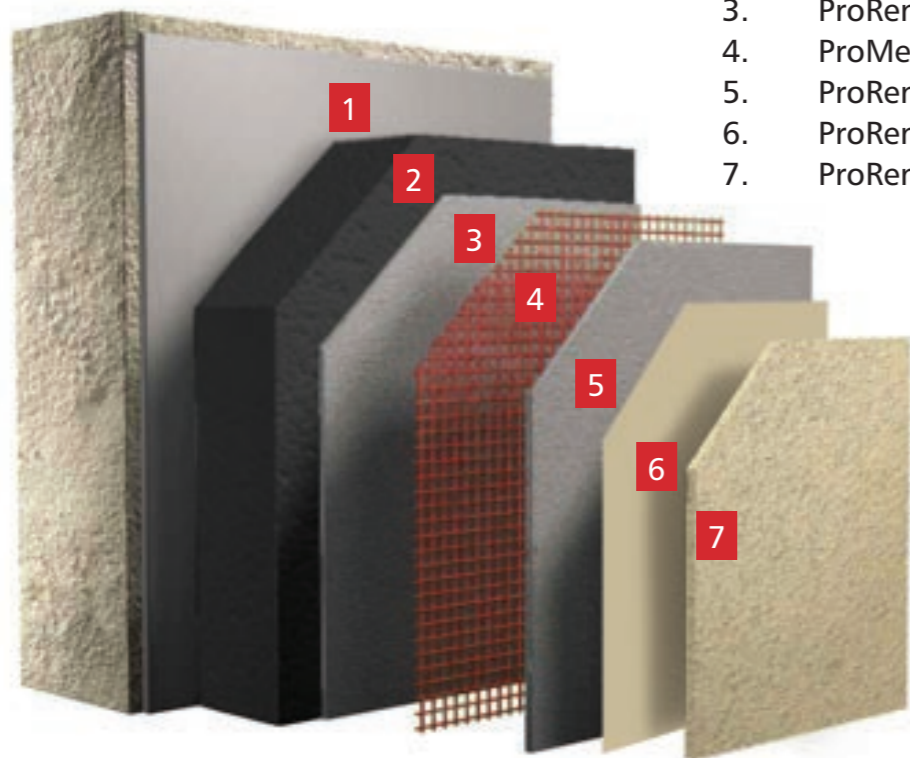
ProRend External Insulation Finishing System, EIFS for short, is a complete render solution for new build and renovation properties both residential and commercial.

This brochure details many of the benefits of the system as well as explaining the types of insulation which are available along with the 2 primary construction methods: adhesive and rail.

This brochure should be read in conjunction with the ProRend brochure which explains in detail the ProRend Lite basecoat and ProRend Colourtex finishes: the final decorative finish of this system.

■ ProRend EIFS - Adhesive

1. ProRend Lite Basecoat
2. ProRend EIFS Platinum EPS
3. ProRend Lite Basecoat
4. ProMesh Grade 3
5. ProRend Lite Basecoat
6. ProRend Colourtex Primer
7. ProRend Colourtex



■ ProRend EIFS Overview

ProRend EIFS primary requirement is to comply with Building Regulations Part L, Conservation of Fuel and Power, simply put - to achieve the current thermal conductivity requirements for walls. It also achieves many other construction objectives such as providing an attractive façade for a property and protecting against the elements.

The insulation may be fixed to the wall by:

- ProRend Lite adhesive with secondary mechanical fixings
- Rails, which mechanically hold the edges of the insulation

See below for a comparison of the 2 systems.

■ Features & Benefits

- Building Regulation compliant:
 - Part B Fire Safety
 - Part L Conservation of Fuel and Power
- Watertight façade
- Breathable render system
- Cavity (Rail system)
- Residential and Commercial properties
- New Build and Renovation
- Low maintenance systems

■ Ideal Substrates

- Concrete
- Masonry
- Timber frame
- Steel frame
- Existing render

■ ProRend EIFS Overview

	Adhesive	Rail
Insulation dimensions	1000 x 500mm	500 x 500mm
Mineral Wool Insulation	✓	✓
Expanded Polystyrene Insulation	✓	✓
Fire barrier	Mineral Wool Lamella – only where primary insulant is EPS	Mineral Wool Rail Slab with Stainless Steel rails and intumescent strip
Cavity	✗	✓
Fixing method	ProRend Lite adhesive with secondary mechanical fixings	PVCu rails fixed at each edge of the insulation panel
Uneven substrates	Requires dubbing out of installed insulation	Ideal
Curved walls	✓ – using Mineral Wool Lamella	✗

Once the insulation is installed, application of the ProRend decorative render system (stages 3 – 7 opposite) is the same for both Adhesive and Rail systems – refer to pages 18 and 19.



Insulation Overview

ProRend EIFS can be installed using either expanded polystyrene (EPS), or mineral wool insulations. Both boast superb **green properties**:

- CFC / HCFC free
- Zero Ozone Depletion Potential (ODP) rated
- Zero Global Warming Potential (GWP) rated

Technical Properties	Mineral Wool		EPS		
	Slab	Lamella	70 White	70 Platinum	200 White
Thermal conductivity λ_{10} , W/mK	0.036	0.040	0.037	0.030	0.033
Water vapour permeability, μ (BS EN ISO 10456 2007 Table 4)	1/1	1/1	60/60	60/60	60/60
Fire classification	A1	A1	E †	E †	E †
Nominal density, kg/m ³	126 - 140	126 - 140	14 - 16	14 - 16	30 - 32

† Contains fire retarding additive

Insulation panel properties

Blunt edge	Thickness, mm	30 - 200	30 - 300	20 -*	20 -*	20 -*
	Face, l x h, mm	1200 x 600	1000 x 200	1000 x 500	1000 x 500	1000 x 500
Rail edge	Thickness, mm	40 - 160	×	40 -*	40 -*	40 -*
	Face, l x h, mm	500 x 500	×	500 x 500	500 x 500	500 x 500
Tongue and groove	Thickness, mm	×	×	40 -*	40 -*	40 -*
	Face, l x h, mm	×	×	1050 x 550	1050 x 550	1050 x 550
Bends around curved walls		×	✓	×	×	×

* Size limit in excess of 1000mm

Note insulation panel thicknesses increase in 10mm increments.

Bespoke EPS shaped panels are available on request e.g. columns and decorative details.

U Values And Dew Points

U values are a measure of the amount of heat conducted through a material per m² at a given temperature. The lower the U value the less heat that will be lost through the walls.

A dew point is the temperature at which air becomes saturated: below this point moisture is deposited as condensation.

Properties constructed using external wall insulation are able to force the dew point to the outside of the wall.

The SAS technical team will provide you with a U-value and dew point calculation once you have provided us with the makeup of the wall.

Expanded Polystyrene, EPS

ProRend EIFS EPS insulation manufactured to BS 13163: 2001 is available in 3 grades:

- EPS 70 White – standard insulation with highest (poorest) thermal conductivity
- **EPS 70 Platinum – premium insulation with the best thermal conductivity of all insulants sold as part of the ProRend EIFS**
- **Achieving a U-value of 0.24 on a traditional cavity wall renovation could save you 20mm in thickness of insulation compared with EPS 70 White or Mineral Wool slab saving on transport costs and sundry items such as fixings and beading profiles**
- EPS 200 White – dense insulation ideally suited to application below DPC

Mineral Wool

ProRend EIFS Mineral Wool insulation is available in 2 grades

- Slab – best thermal conductivity of mineral wool insulants
- Lamella – available in widest range of thicknesses and suitable for curved walls

Mineral Wool can be used as a sole insulant in ProRend EIFS projects or to serve as a fire barrier in EPS type construction. Mineral Wool fire barriers are typically used as follows:

- ProRend EIFS adhesive EPS constructions using Mineral Wool Lamella
- ProRend EIFS rail EPS constructions using Mineral Wool Rail Slab

For further details on fire barriers refer to: page 11 – adhesive system; page 17 – rail system

How much insulation do I require?

This varies on a case by case basis and dependent upon which insulation is chosen. Contact our technical team and we can work with you to specify the right insulation for your project.

■ Adhesive Starter Track

1. DPC membrane
2. ProRend EIFS starter track
3. Fixings at 600mm centres

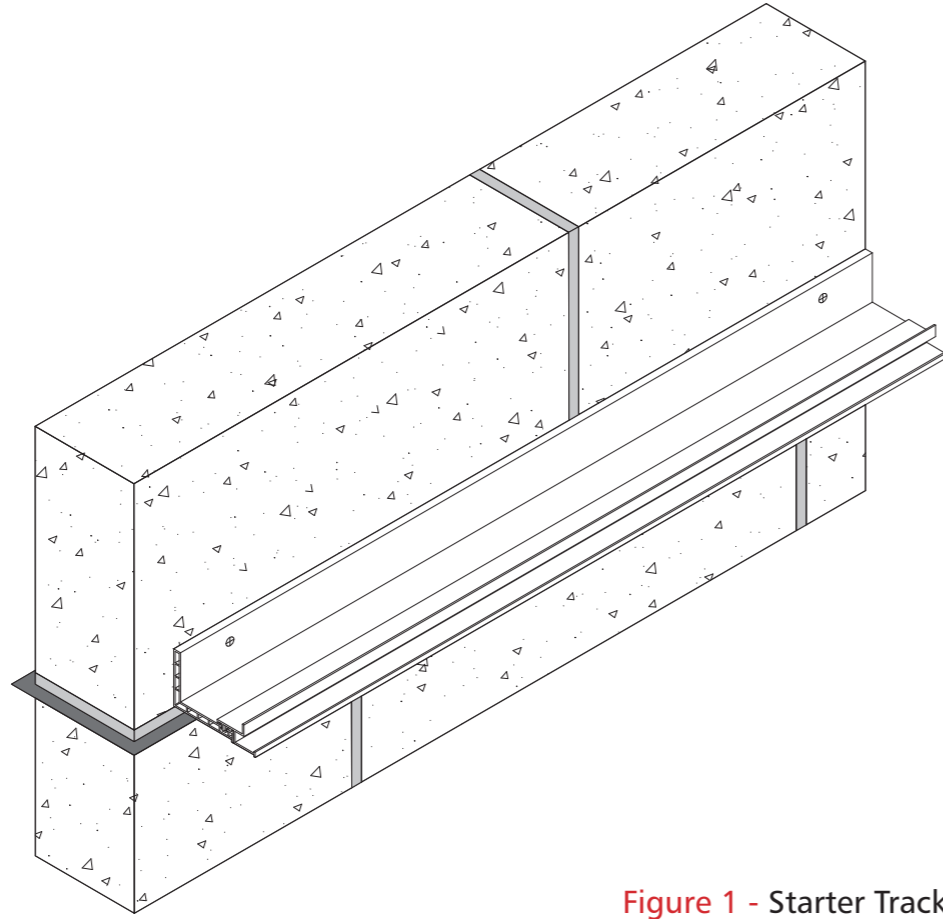
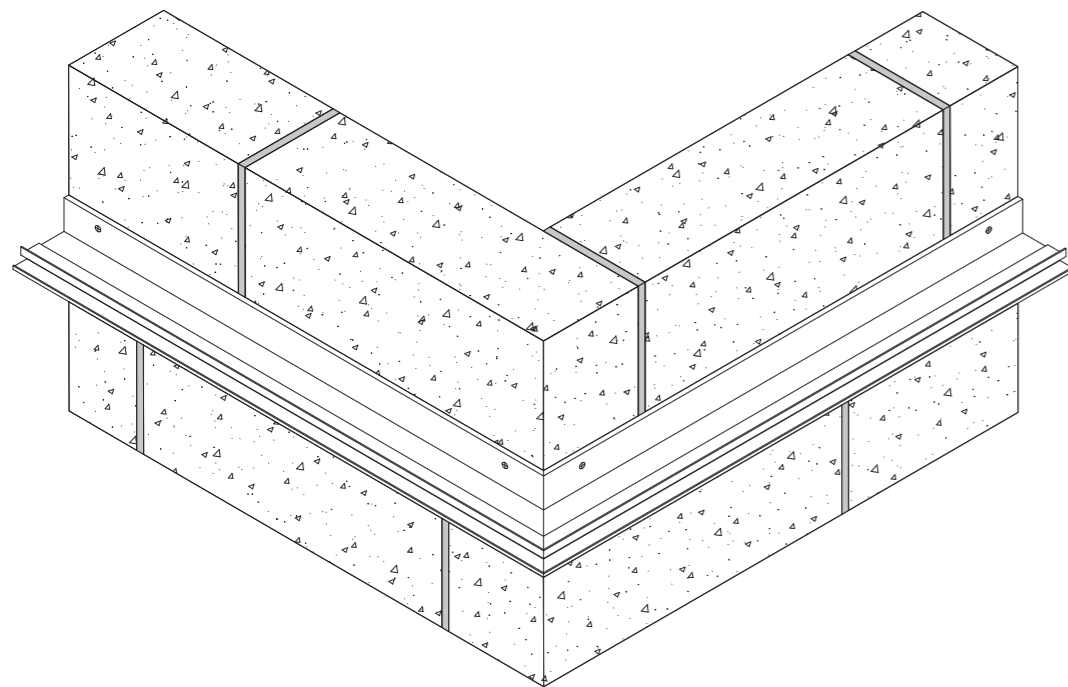


Figure 1 - Starter Track

Figure 2 - Starter Track Mitre Corner



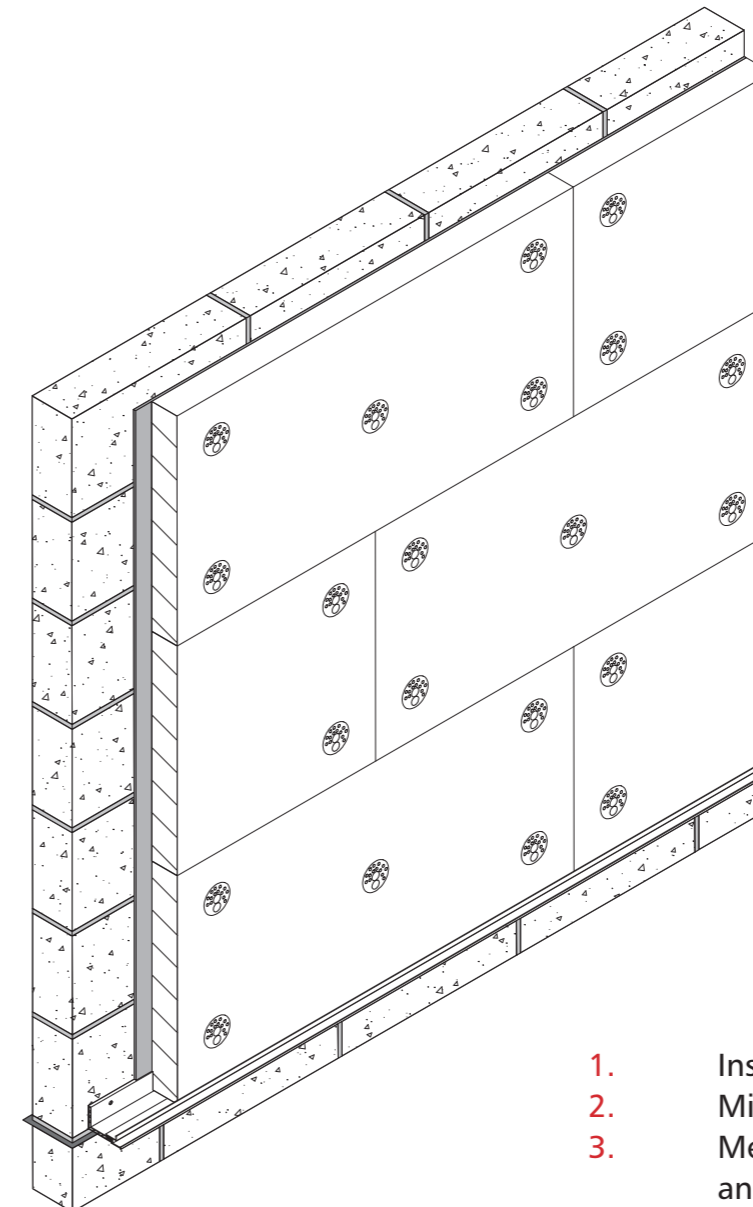
1. Mitre corner
2. Fixing 50mm from inside corner

■ Insulation Application

1. 100% coverage of insulation panel using 10mm groove tiling trowel



Figure 3 - Insulation Application



1. Insulation panels installed block bond
2. Minimum stagger 150mm
3. Mechanical fixings 10/m² in each corner of panel and centre

■ Aperture Planning

1. Minimum 150mm stagger of insulant joints
2. Avoid vertical or horizontal joints at corners of apertures
3. Cut insulation panels to fit around aperture corners
4. Ensure suitable quantity of mechanical fixings used around aperture

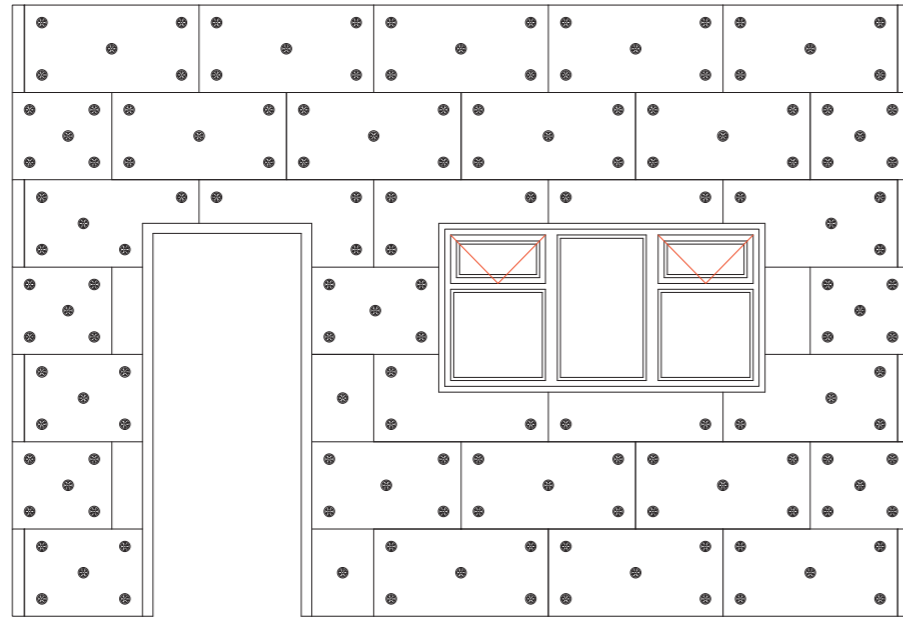


Figure 4 - Insulation Layout Around Apertures

■ Corner Detail

1. Ensure alternating blockbond at corner

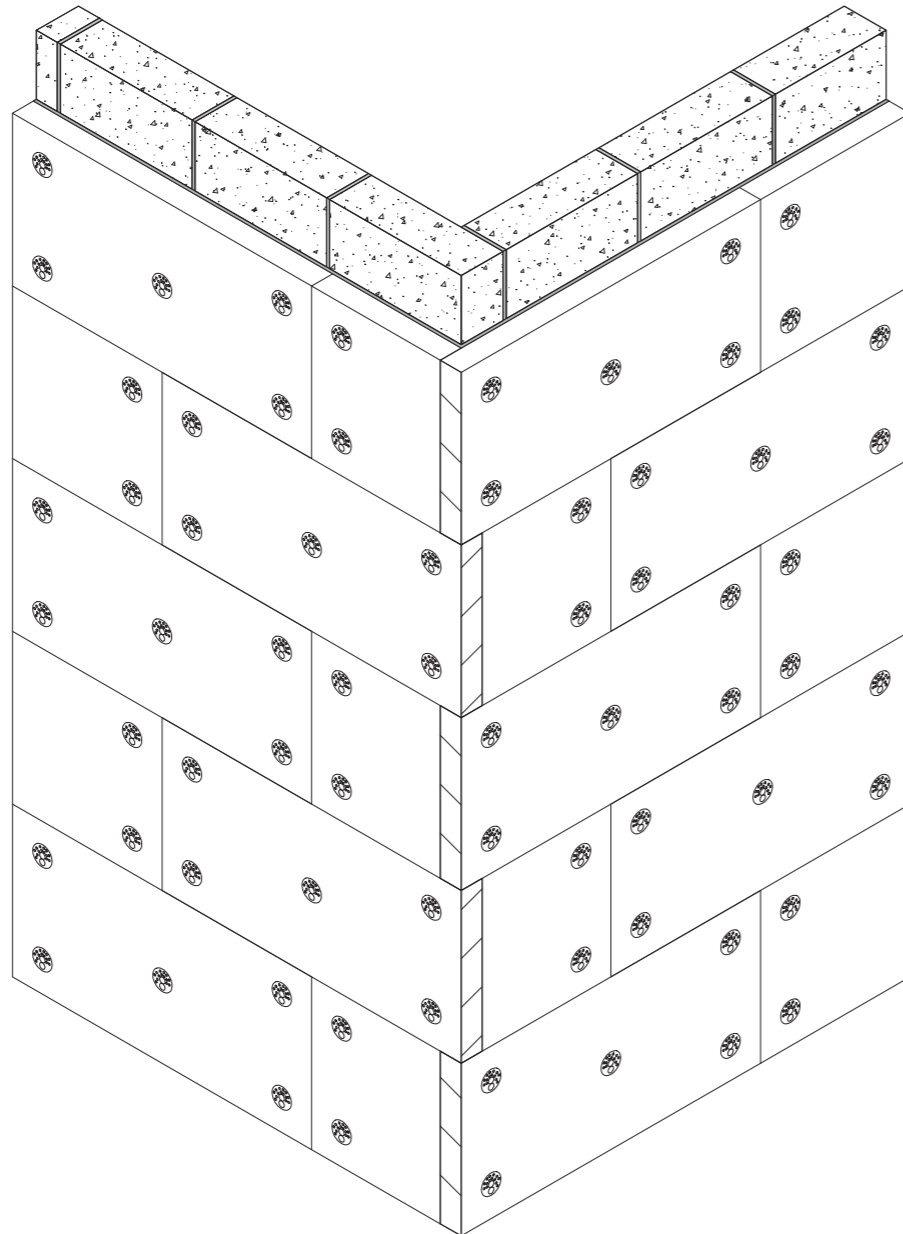


Figure 5 - Insulation Corner Detail

■ Reveal Detail

1. Insulation panels fitted around aperture to avoid horizontal and vertical joints at corners
2. Face insulation panels fitted 20mm proud of blockwork at aperture
3. 20mm insulation fillet fitted between face insulation and window frame to avoid cold bridge
4. Joints in insulation fillet not coincident with joints in face insulation panels
5. Adhesive bitumen sealtape fitted between insulation fillet and window frame to ensure watertight

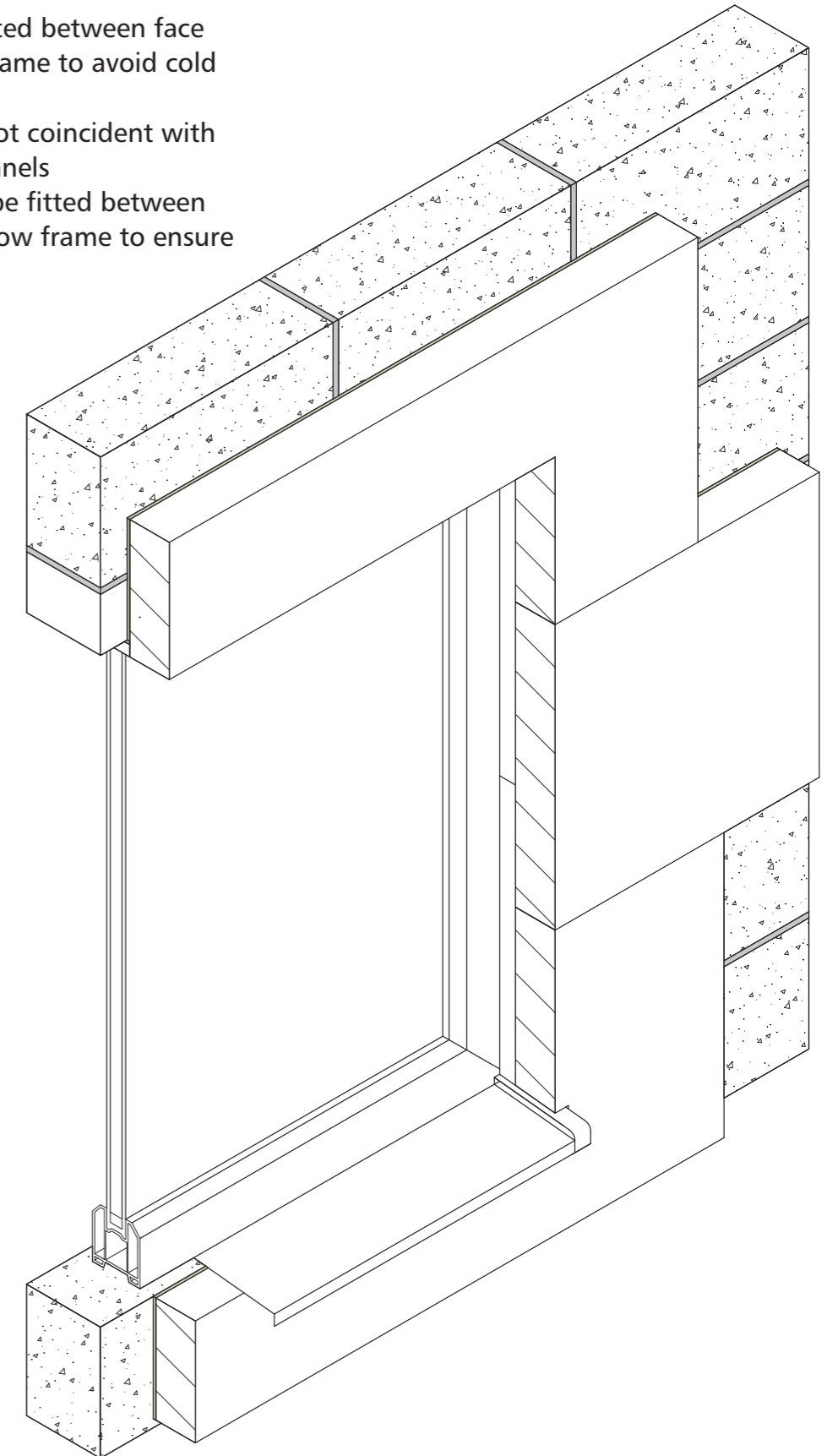


Figure 6 - Adhesive Reveal Detail

Ventilation Services, Flue Pipe And Fixing Pattresses

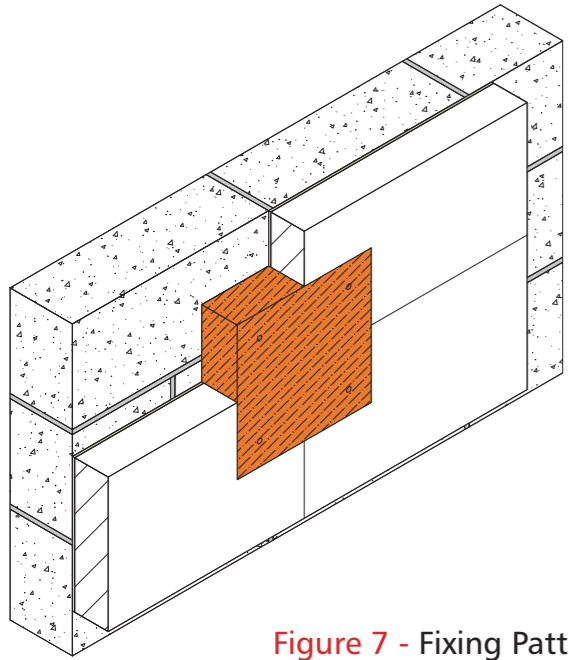


Figure 7 - Fixing Pattress

1. Fixing pattress made of 10mm render carrier board with insulation or solid timber
2. Maximum dimensions: 300mm x 300mm
3. Thickness of pattress to thickness of insulation
4. Mechanically fixed back to substrate
5. Avoid primary insulation joints within 150mm of fixing pattress

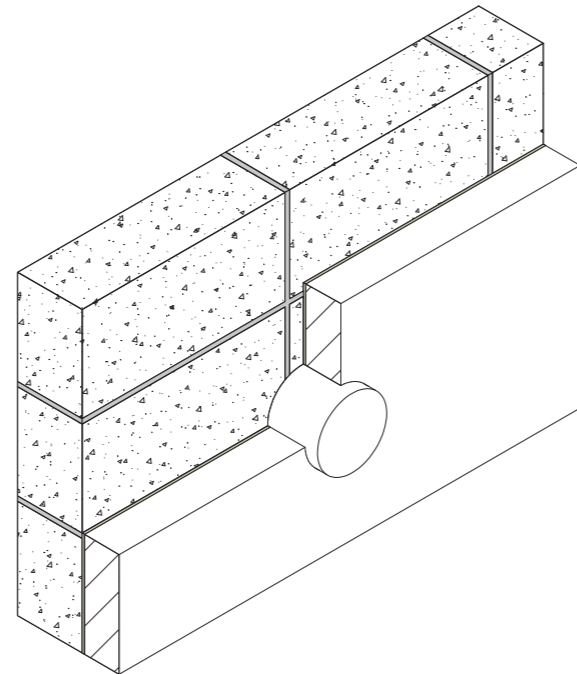


Figure 8 - Ventilation Service

1. Ventilation services fitted through centre of insulation panel without joints
2. Avoid ventilation service at edge of insulation panel

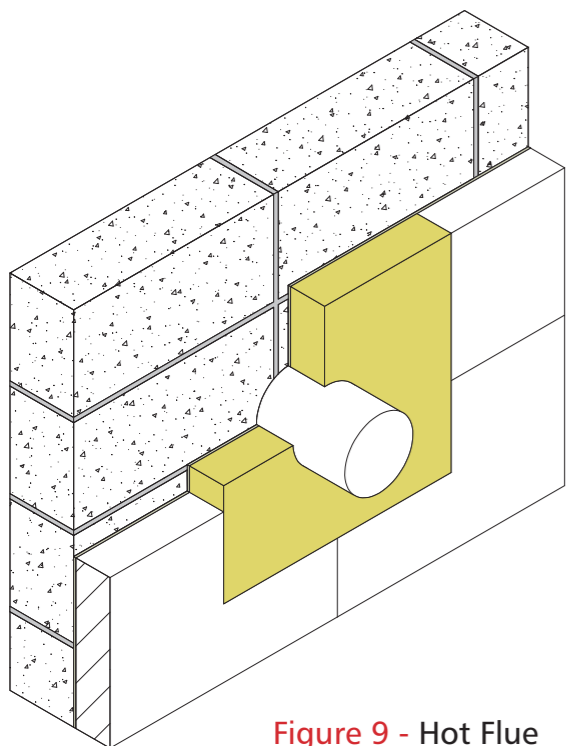


Figure 9 - Hot Flue

1. Hot flue requires mineral fibre insulation (if primary insulant is EPS) around hot flue pipe
2. Hot flue fitted through centre of insulation panel without joint
3. For systems using EPS as primary insulant minimum distance of EPS from hot flue to be determined during system design
4. Avoid hot flue at edge of insulation panel

Fire Barrier In EPS Systems

1. Mineral Wool Lamella insulation fitted at floor level between EPS insulation panels
2. Fire Barrier panels fitted block bond so joints alternate with EPS joins – minimum 150mm stagger
3. Adhesive mortar used to rear of fire barrier panels – see figure 3
4. Mechanical fixings used to secondary fix fire barrier panels to substrate

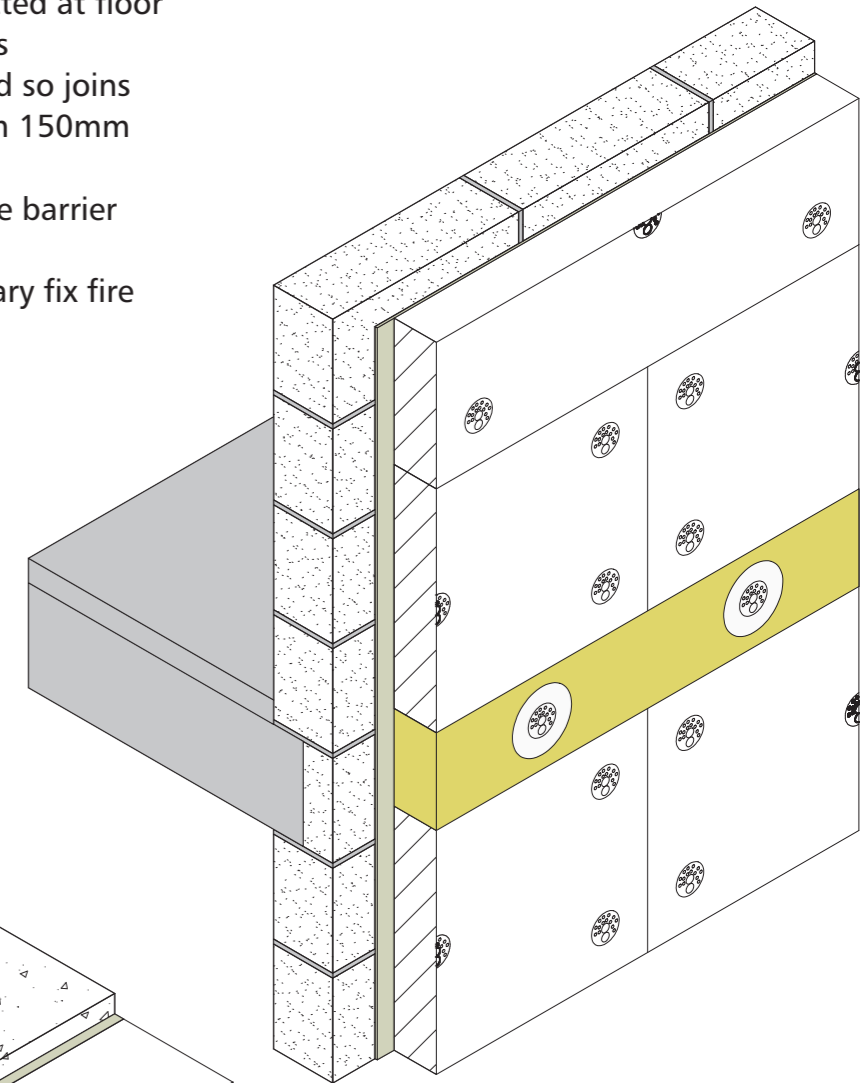


Figure 10 - Adhesive Fire Barrier

1. Stainless steel fire bead to thickness of insulation mechanically fixed to the substrate coincident with party wall of adjacent dwellings
2. Flexible PVCu joint between adjacent fire beads

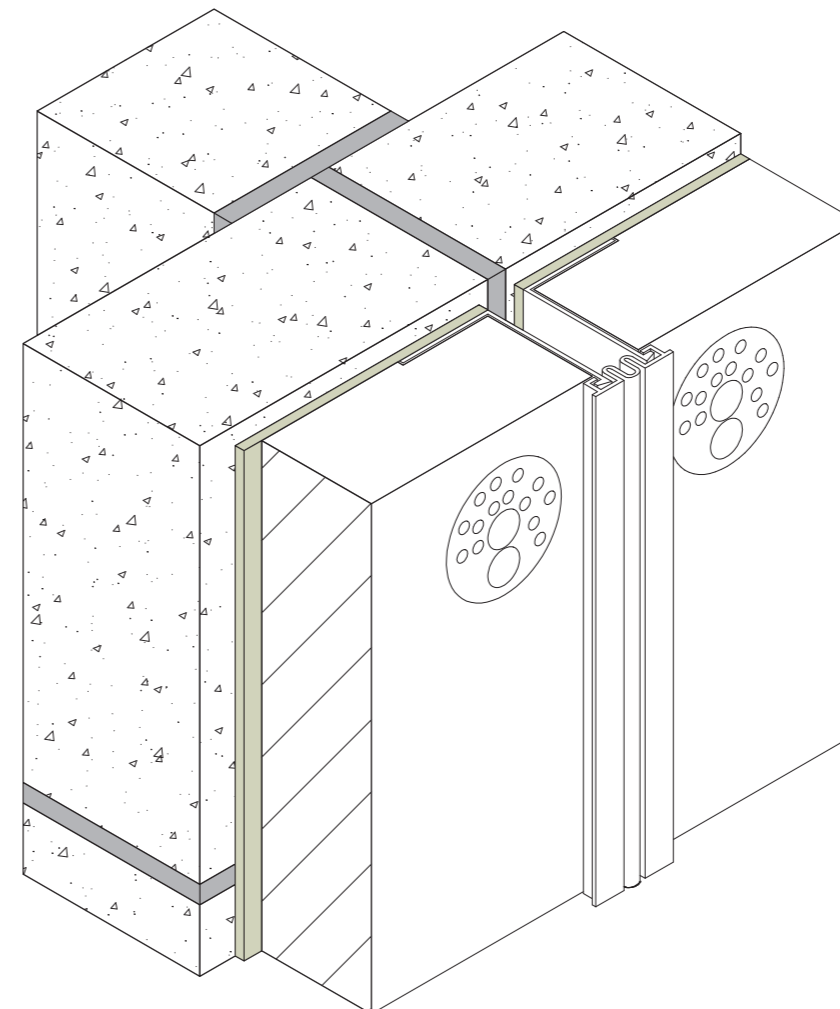


Figure 11 - Fire Barrier Layout Between Adjacent Dwellings

■ Rail Starter Track

1. DPC membrane
2. ProRend EIFS ventilated starter track
3. Fixings at 600mm centres into sheathing board

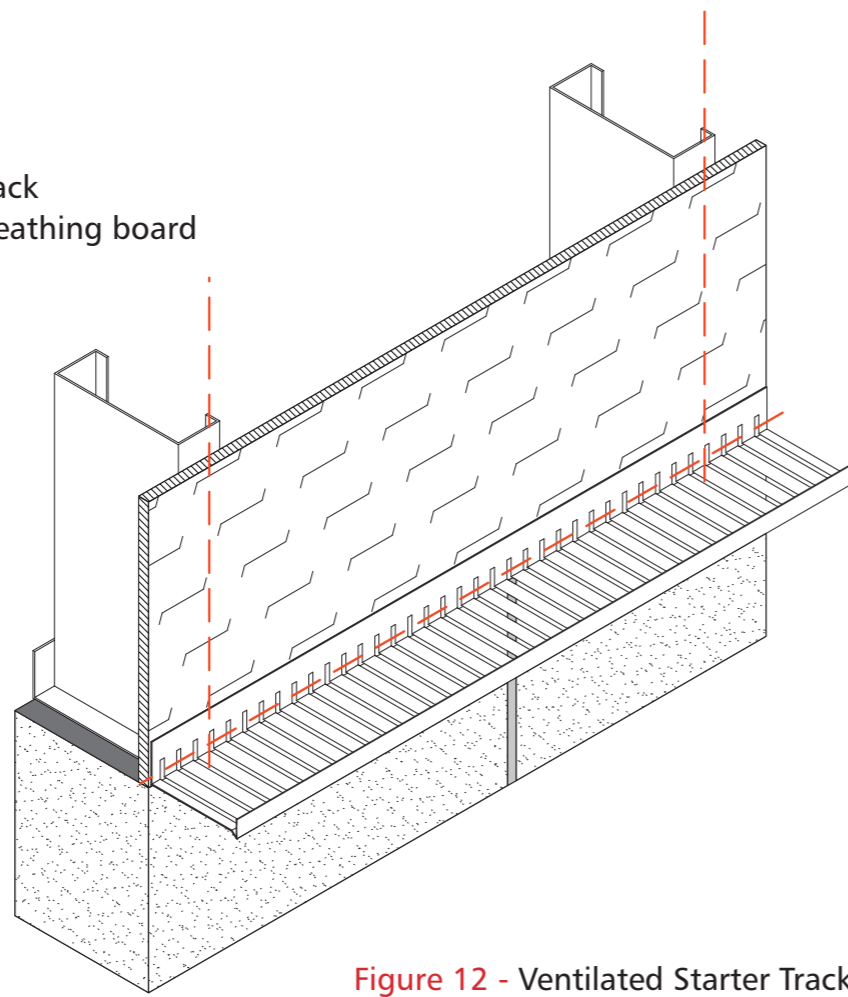
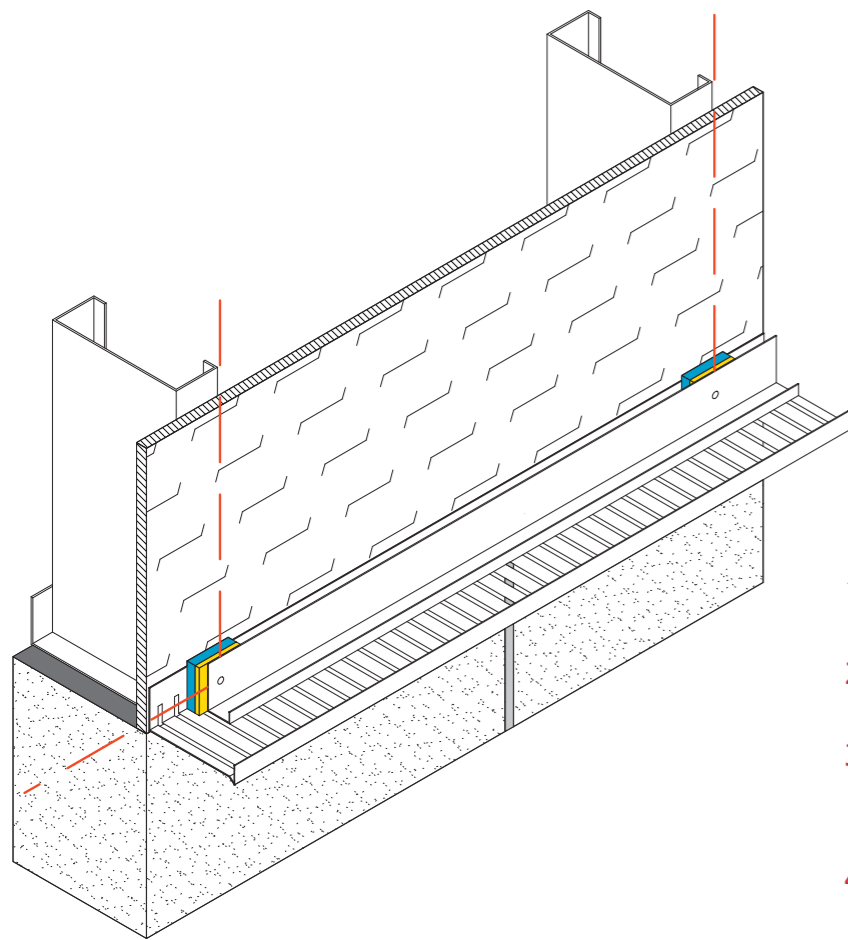


Figure 12 - Ventilated Starter Track



1. PVCu termination profile sits on Ventilated Starter Track
2. Packing shims create typical 15mm cavity
3. PVCu termination profile fixed through sheathing board into steel uprights
4. Use of laser beam to confirm straight application of rails

Figure 13 - Termination Profile and Packing Shims

■ Insulation Application

1. Insulation panels fitted with rebated groove embedded on PVCu termination profile
2. PVCu intermediate track fitted into rebated groove of insulation panel
3. Vertical PVCu T spline between every insulation panel clips into PVCu termination profile below
4. PVCu intermediate track packed off substrate in line with laser cavity
5. Mechanical fixing into every vertical upright

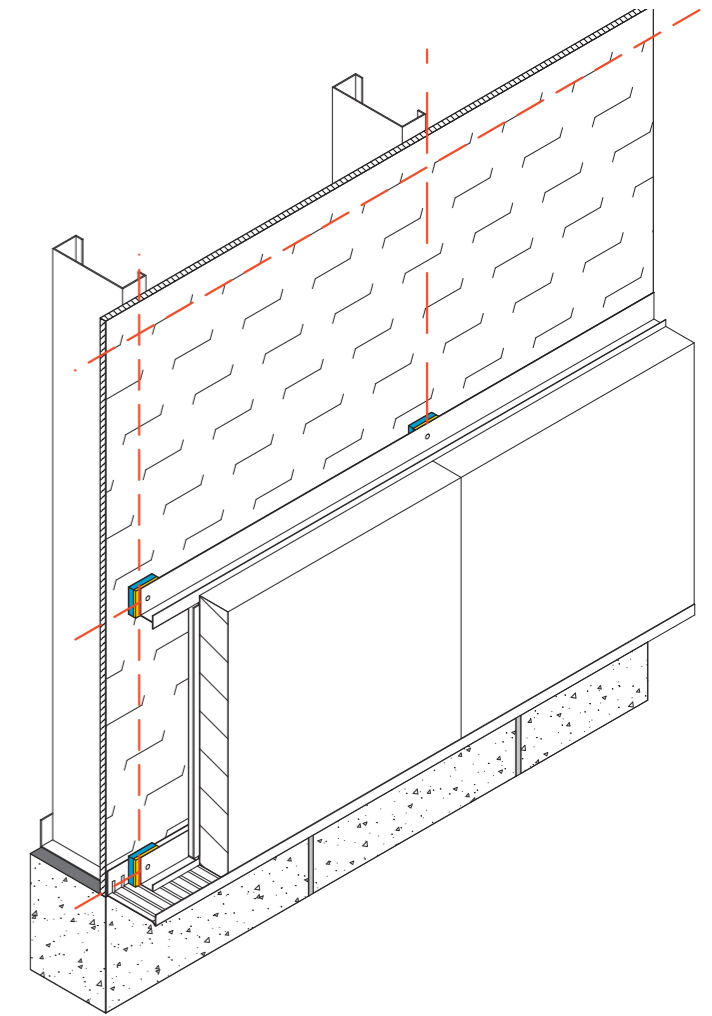


Figure 14 - Insulation Application

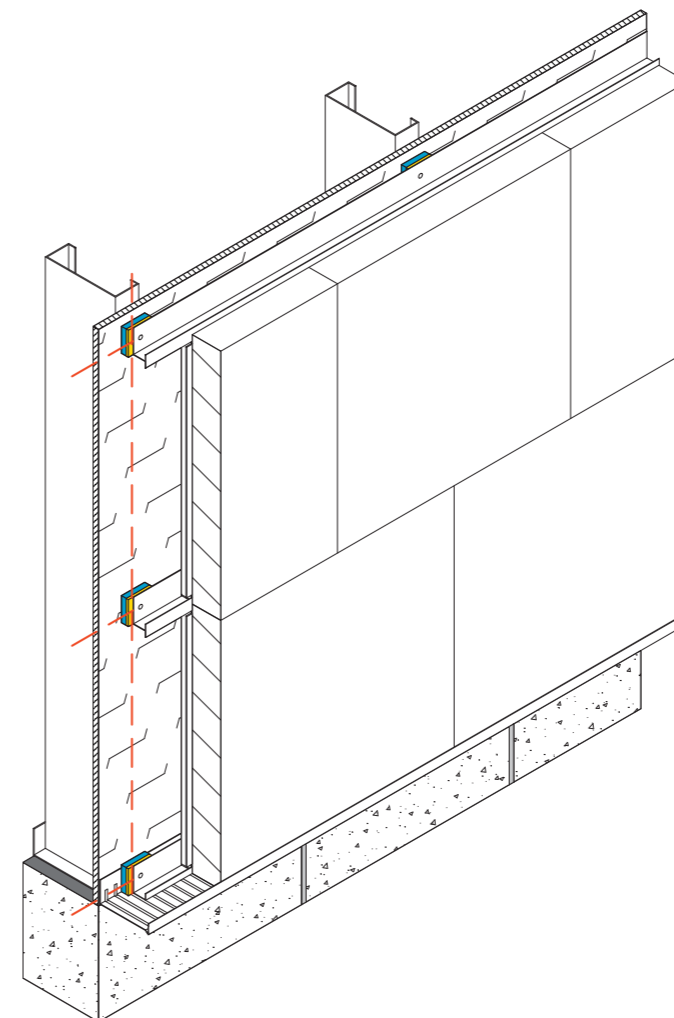


Figure 15 - Insulation Application Continued

1. Repeat figure 14 with additional intermediate tracks
2. Insulation panels installed block bond with minimum 150mm stagger

■ Aperture Planning

1. Minimum distance of aperture from insulation panel joint 150mm
2. Avoid vertical or horizontal joints at corners of apertures
3. Cut insulation panels to fit around aperture corners

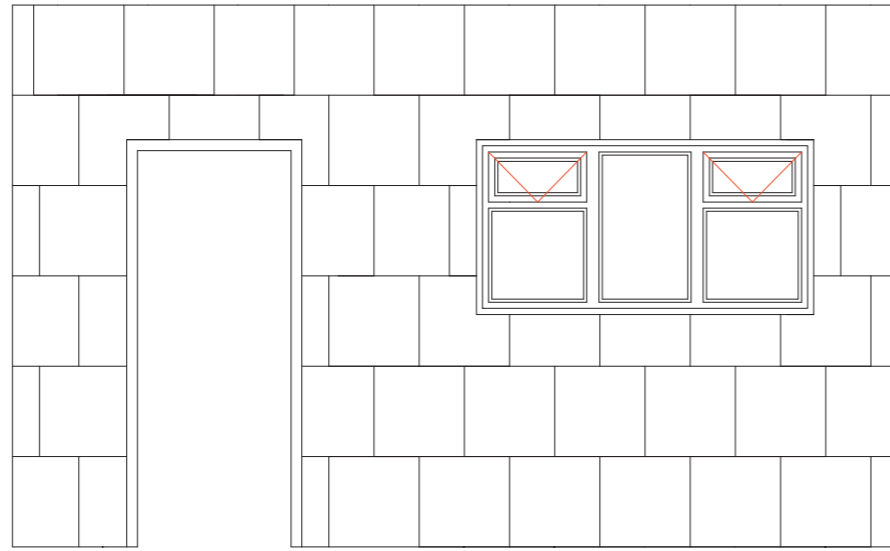


Figure 16 - Insulation Layout Around Apertures

■ Corner Detail

1. Ensure alternating block bond at corner

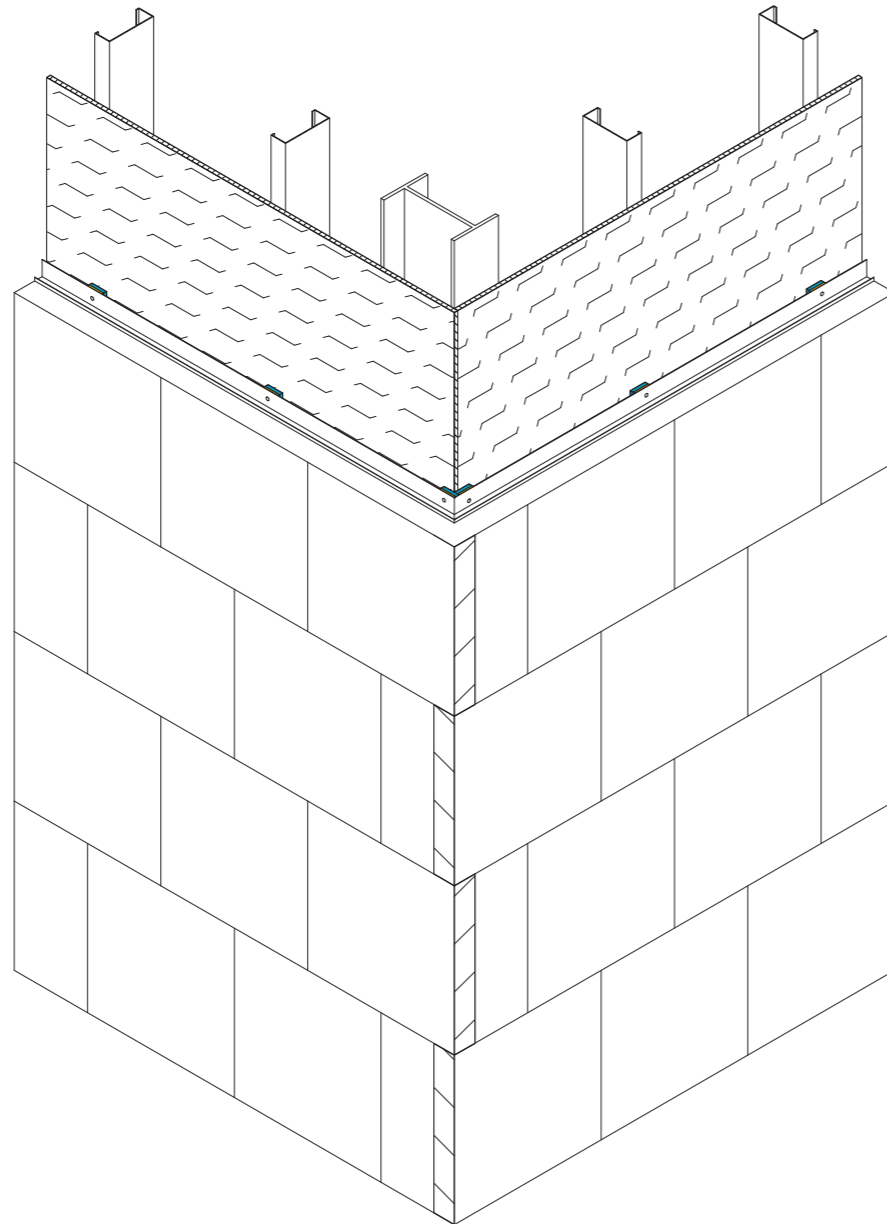


Figure 17 - Insulation Corner Detail

■ Reveal Detail

1. Insulation panels fitted around aperture to avoid horizontal and vertical joints at corners
2. Face insulation panels fitted 20mm back from window frame
3. 20mm insulation fillet fitted to end of insulation panels closing rail cavity
4. Joints in insulation fillet not coincident with joints in face insulation panels
5. Adhesive bitumen sealtape fitted between insulation fillet and window frame to ensure watertight

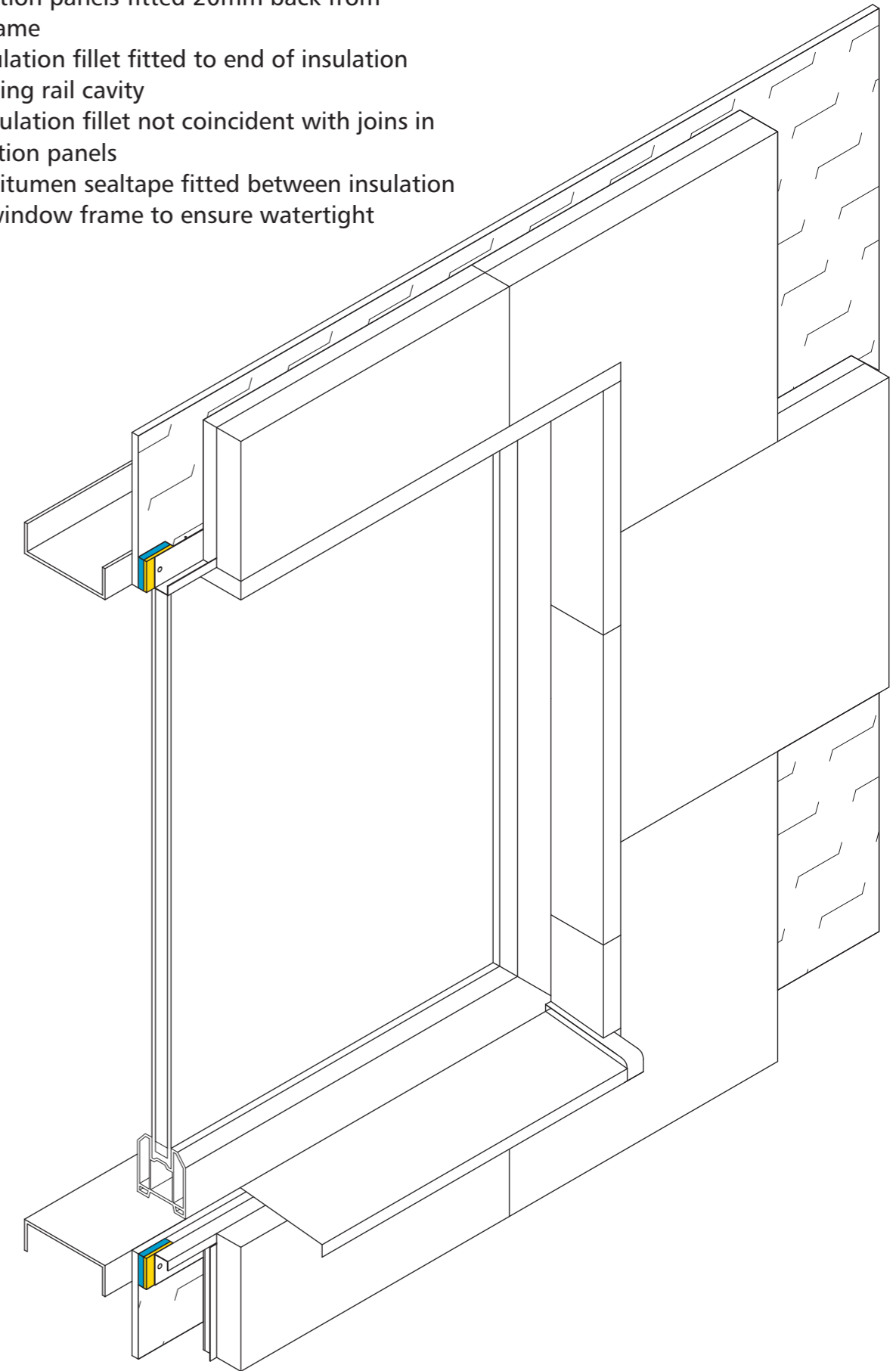
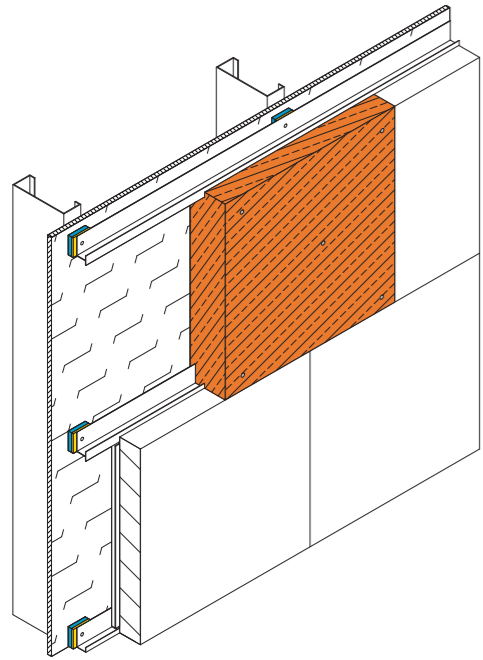


Figure 18 - Rail Reveal Detail

Ventilation Services, Flue Pipe And Fixing Pattresses



1. Fixing pattice made of solid timber with groove rebate for PVCu intermediate tracks
2. Dimensions: 500mm x 500mm
3. Thickness of pattice to thickness of insulation + cavity
4. Fit cavity flashing tape above pattice to ensure moisture drips continue down cavity

Figure 19 - Fixing Pattice

1. Ventilation services fitted through edge of insulation panel with vertical joint at centre
2. Ventilation service must avoid intermediate rail tracks
3. PVCu T splines to be cut to appropriate length by installer

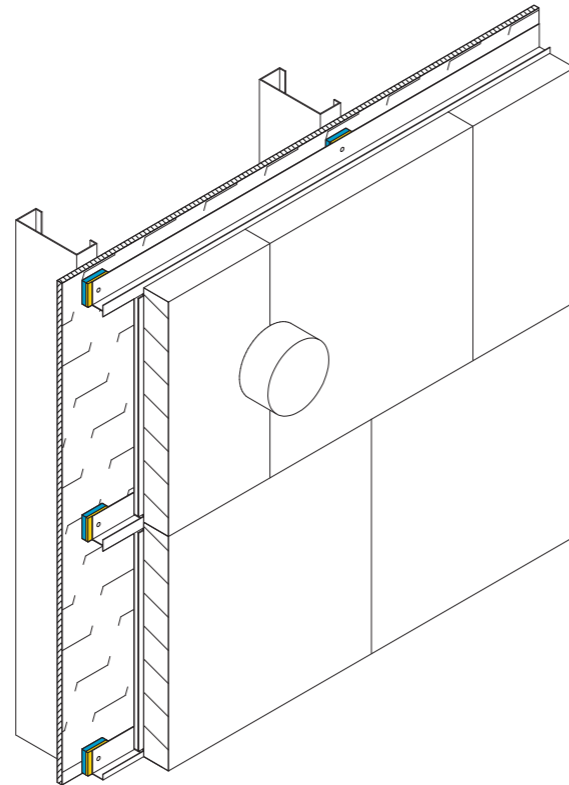


Figure 20 - Ventilation Service

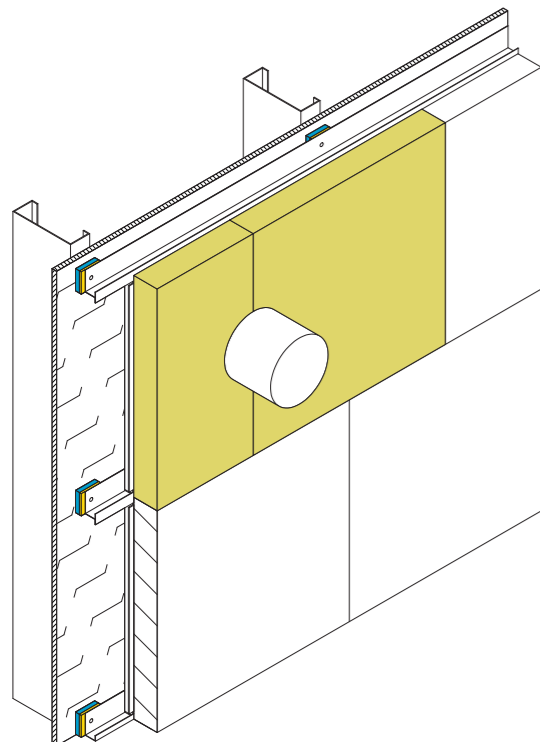


Figure 21 - Hot Flue

1. Hot flue requires mineral fibre insulation (if primary insulant is EPS) around hot flue pipe
2. Hot flue fitted through edge of insulation panel with vertical joint at centre
3. For systems using EPS as primary insulant minimum distance of EPS from hot flue to be determined during system design
4. Hot flue must avoid intermediate rail tracks
5. PVCu T splines to be cut to appropriate length by installer

Fire Barrier In EPS Systems

1. Mechanically fix stainless steel fire track to substrate above final row of EPS insulation
2. Stainless steel fire track contains ventilation and drainage holes in cavity section
3. Mechanically fix intumescent strip to substrate above stainless steel fire track

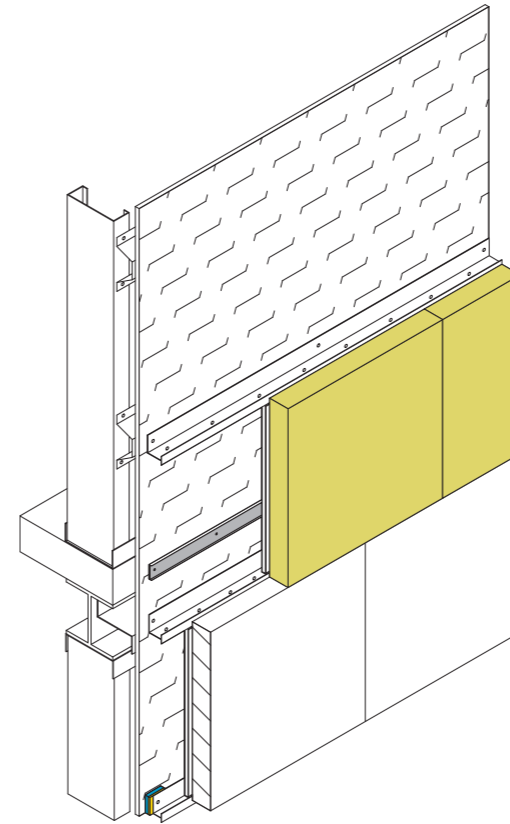


Figure 23 - EPS Rail Fire Barrier 2

1. Continue installation of EPS rail system above fire barrier using PVCu intermediate tracks

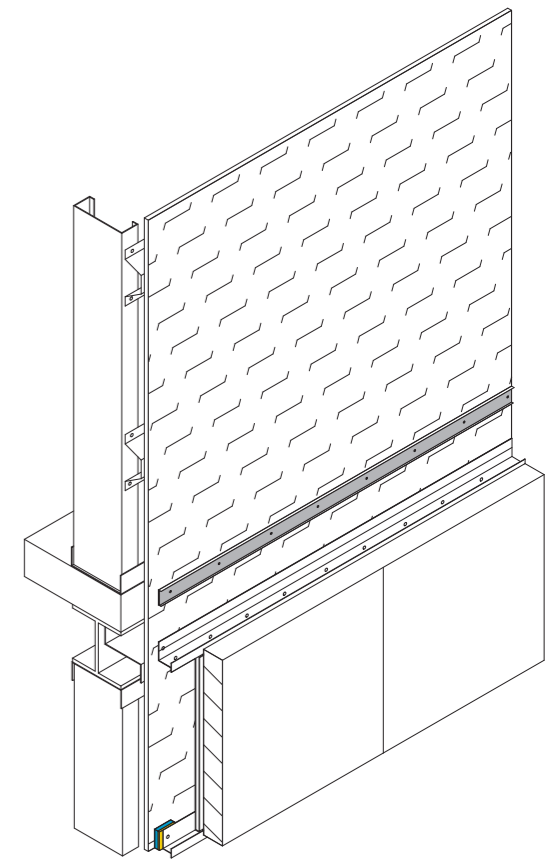


Figure 22 - EPS Rail Fire Barrier 1

1. Install course of Mineral Wool Rail Slab
2. Further mechanically fix with stainless steel fire track above insulation
3. Use vertical PVCu T spline to fix insulation between stainless steel fire tracks

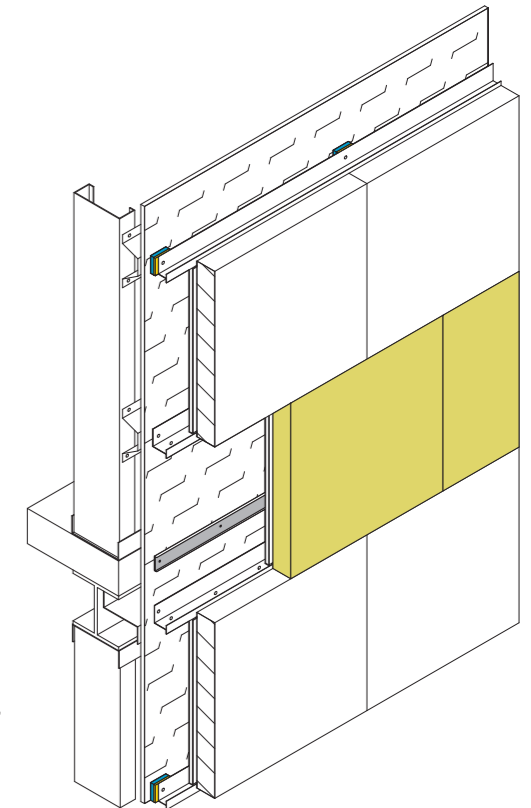


Figure 24 - EPS Rail Fire Barrier 3

■ Mesh-coat Layout

1. Minimum 100mm overlap between layers of mesh
2. 300x300mm reinforcement squares at corners of apertures at 45o
3. Applied in 4-7mm ProRender Lite basecoat

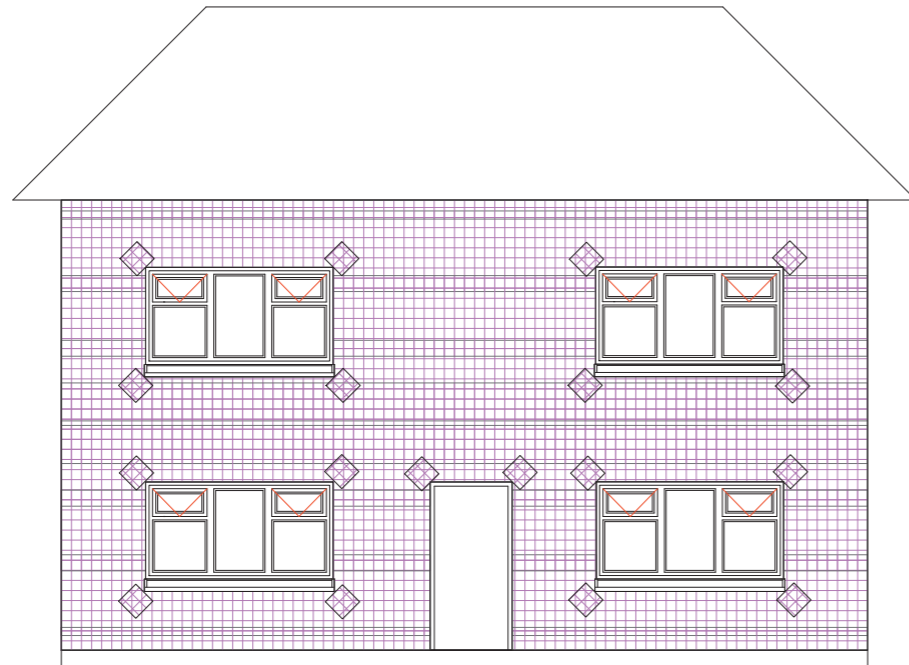


Figure 25 - Mesh Overlap Layout

■ Render Application

Following application of the insulation components of ProRender EIFS the decorative render system is applied:

1. ProBead Noseless Meshed Angle beads to corners
2. ProBead Window Protection Beads to window and door returns
3. 4-7mm ProRender Lite mesh-coat with embedded ProMesh Grade 3 – see figure 25 above
4. ProRender Colourtex Primer
5. ProRender Colourtex Finish

Refer to ProRender Brochure for application, technical details and CE markings of ProRender render products

■ Tools

A wide range of tools and fixings are available which are specified as part of the ProRender EIFS system. Further details will be stated as part of the written documentation for the project.



ProRender Finishing Spatula

ProRender EIFS Rasp

ProRender Colourtex PVC Float

■ Sample U-value Calculation[†]

Adhesive system renovation over typical rendered brickwork cavity wall using 70mm EPS Platinum

Construction	Thickness, m	Lambda, W/mK	R, m ² K/W
External Resistivity			0.04
ProRender Colourtex	0.0015	0.700	0.00
ProRender Lite	0.0050	0.270	0.02
ProRender EIFS EPS 70 Platinum	0.0700	0.030	2.33
ProRender Lite	0.0050	0.270	0.02
BS EN 12524 Render, Lime, Sand	0.0200	0.800	0.03
Brick Outer Leaf	0.1020	0.770	0.13
Cavity	0.0400	0.222	0.18
Brick Inner Leaf	0.1020	0.560	0.18
BS EN 12524 Gypsum Plastering	0.0150	0.570	0.03
Internal Resistivity			0.13
	<u>0.3605</u>		$R_T = \underline{\underline{3.09}}$ m ² K/W
			$U = \underline{\underline{0.32}}$ W/m ² K

Rail system new build over lightweight steel constructed walls using 130mm Mineral Wool Slab

Construction	Thickness, m	Lambda, W/mK	R, m ² K/W
External Resistivity			0.04
ProRender Colourtex	0.0015	0.700	0.00
ProRender Lite	0.0050	0.270	0.02
ProRender EIFS Mineral Wool Slab	0.1300	0.036	3.61
BS EN ISO 6946 Cavity	0.0150	0.088	0.17
BS EN 12524 Sheathing Board	0.0090	0.130	0.07
Metal Frame	0.1000	0.556	0.18
Plasterboard	0.0125	0.210	0.06
Plasterboard	0.0125	0.210	0.06
BS EN 12524 Gypsum Plastering	0.0030	0.570	0.01
Internal Resistivity			0.13
	<u>0.2885</u>		$R_T = \underline{\underline{4.35}}$ m ² K/W
			$U = \underline{\underline{0.23}}$ W/m ² K

[†] U value calculations according to BS EN ISO 6946



■ SAS

At SAS we have in excess of 35 years of practical experience in the rendering and plastering industry from personal application of materials to technical troubleshooting on site. We are always striving to improve our service and provide quality information as quickly as possible.

We are constantly developing and innovating new products for the market place to provide the best solutions for rendering and plastering. Our product portfolio contains premium quality products offering longevity to the proprietor as well as technically sound and fast applications to the contractor.

■ Nationwide Delivery

Ex stock package goods next working day
Ex stock palletised goods 1-3 working days

■ Office hours:

08:00 – 17:00 (16:30 Fridays)

Details and drawings contained within this brochure are for illustration only and do not form part of any project specific guidelines or technical specification and should not be used in that way.

Information contained in this brochure was correct at the date of print. SAS (Europe) Ltd reserve the right to make alterations to the content of this brochure and to the products and services we make available as part of our continuing commitment to improvement.

■ ProRend EIFS Service

Free of charge specification service providing:

- Details of required materials including sundry items
- Technical, safety and maintenance datasheets
- CAD details specific to your project
- Finish samples available in colours chosen by you
- In person visit to discuss the details at an office or on site
- Full technical support from our offices
- Comprehensive U value and condensation risk analysis calculations

Applicators:

- Providing comprehensive hands-on training courses for applicators
- Recommendations of sub-contractors to complete the works

Practical completion certificate when works have finished

- 10 year product guarantee – see ProRend brochure page 5 for further details



■ PROREND EIFS

PREMIER RENDER SYSTEMS

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SYSTEMS AND SOLUTIONS FOR THE PLASTERING INDUSTRY

