NSAI Agrément

IRISH AGRÉMENT BOARD
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Baumit 60 External Insulation Systems

Système d'isolation pour murs extérieurs
Wärmedämmung für Außen-wand

NSAI Agrément (Irish Agrément Board) is designated by Government to issue European Technical Approvals.

NSAI Agrément Certificates establish proof that the certified products are **'proper materials'** suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2010**.

PRODUCT DESCRIPTION:
This Certificate relates to the Baumit 60 External Insulation Systems. Each system is comprised of:

- Surface preparation of masonry or concrete substrate;
- Full system beads and render only beads;
- Insulation board;
- Cementitious base coat incorporating a glass fibre mesh;
- Synthetic or cementitious decorative finish coat;
- Mechanical fixings;
- Adhesive fixings;
- Weather tight joints;
- Movement joints;
- Provision for limiting cold bridging at external wall/floor junctions in compliance with Acceptable Construction Details published by the DoEHLG.
- Provision for fire stopping at external compartment walls and floors.

w&p Baustoffe GmbH is responsible for the design, manufacture and supply of all components to approved specifications. w&p Baustoffe GmbH has appointed Grafton Merchanting ROI as their distribution partner in Ireland. The system is designed by Grafton Merchanting ROI on a project specific basis in accordance with an approved design process.

The installation of the system is carried out by installers who have been trained by Grafton Merchanting ROI, and are approved by Grafton Merchanting ROI and NSAI Agrément to install the system. Applicators must adhere to strict installation guidelines as specified by Grafton Merchanting ROI.

w&p Baustoffe GmbH offers a five year materials guarantee, subject to certain terms and conditions.

This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2010.

USE
This Certificate covers the system for use as external insulation on new concrete and masonry

residential buildings, up to a maximum of 15 storeys (45 metres) in height in purpose groups 1(a), 1(b), 1(c), 2(a), 2(b), 3, 4(a) and 4 as defined in TGD to Part B of the Buildings Regulations 1997 to 2010.

Detail Sheet 1 covers the system for use as external insulation for refurbishment/retrofit of existing masonry or concrete buildings, up to a maximum of 6 storeys (18 metres) in height in purpose groups 1(a), 1(b), 1(c), 2(a), 2(b), 3, 4(a) and 4 as defined in TGD to Part B of the Building Regulations 1997 to 2010.

The system has not been assessed for use with timber frame or steel frame construction.

In an Irish context, Category I 'Impact Resistance' (see Table 2 of each Detail Sheet) includes a wall at ground level readily accessible to the public and vulnerable to hard body impacts but not subjected to abnormally rough use. Category II excludes any wall at ground level adjacent to a public footpath, but includes one with its own private, walled-in garden. Category III does not include any wall at ground level.

MANUFACTURE, DESIGN & MARKETING:

The system is designed and manufactured by:

w&p Baustoffe GmbH,
Ferdinand-Jergitsch-Str. 15,
A-9020 Klagenfurt,
Austria.
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Project specific design, technical support, sales and applicator approval are performed by:

Grafton Merchanting ROI,
Ashfield,
Naas Road,
Clondalkin,
Dublin 22.
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1.1 ASSESSMENT

In the opinion of NSAI Agrément, the Baumit 60 External Insulation Systems, when installed by Grafton Merchanting ROI recommended contractors, in accordance with this Certificate and Grafton Merchanting ROI specific design, can meet the requirements of the Building Regulations 1997 to 2010, as indicated in Section 1.2 of this Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2010

REQUIREMENTS:

Part D – Materials and Workmanship

D3 – Proper Materials

The Baumit 60 External Insulation Systems, as certified in this Certificate, are comprised of 'proper materials' fit for their intended use (see Part 3 and 4 of this Certificate).

D1 – Materials & Workmanship

The Baumit 60 External Insulation Systems, as certified in this Certificate, meet the requirements for workmanship.

Part A - Structure

A1 – Loading

The Baumit 60 External Insulation Systems, once appropriately designed and installed in accordance with this Certificate, have adequate strength and stability to meet the requirements of this Regulation (see Part 3 of this Certificate).

A2 – Ground Movement

The Baumit 60 External Insulation Systems can be incorporated into structures that will meet this requirement (see Parts 3 and 4 of this Certificate).

Part B – Fire Safety

B4 – External Fire Spread

The Baumit 60 External Insulation Systems can be incorporated into structures that will meet this requirement (see Part 4 of this Certificate).

Part C – Site Preparation and Resistance to Moisture

C4 – Resistance to Weather and Ground Moisture

External walls have adequate weather resistance in all exposures to prevent the passage of moisture from the external atmosphere into the building as specified in Parts 3 and 4 of this Certificate.

Part F – Ventilation

F2 – Condensation in Roofs

The systems as certified can be incorporated into structures that will meet the requirements of this Regulation (see Parts 3 and 4 of this Certificate).

Part J – Heat Producing Appliances

J3 – Protection of Building

When the Baumit 60 External Insulation Systems are used in accordance with this Certificate, wall lining, insulation and separation distances meet this requirement (see Part 4 of this Certificate).

Part L – Conservation of Fuel and Energy

L1 – Conservation of Fuel and Energy

The walls of the Baumit 60 External Insulation Systems can be readily designed to incorporate the required thickness of insulation to meet the Elemental Heat Loss method calculations for walls as recommended in Part L of the Building Regulations 1997 to 2010 (see Part 4 of this Certificate).

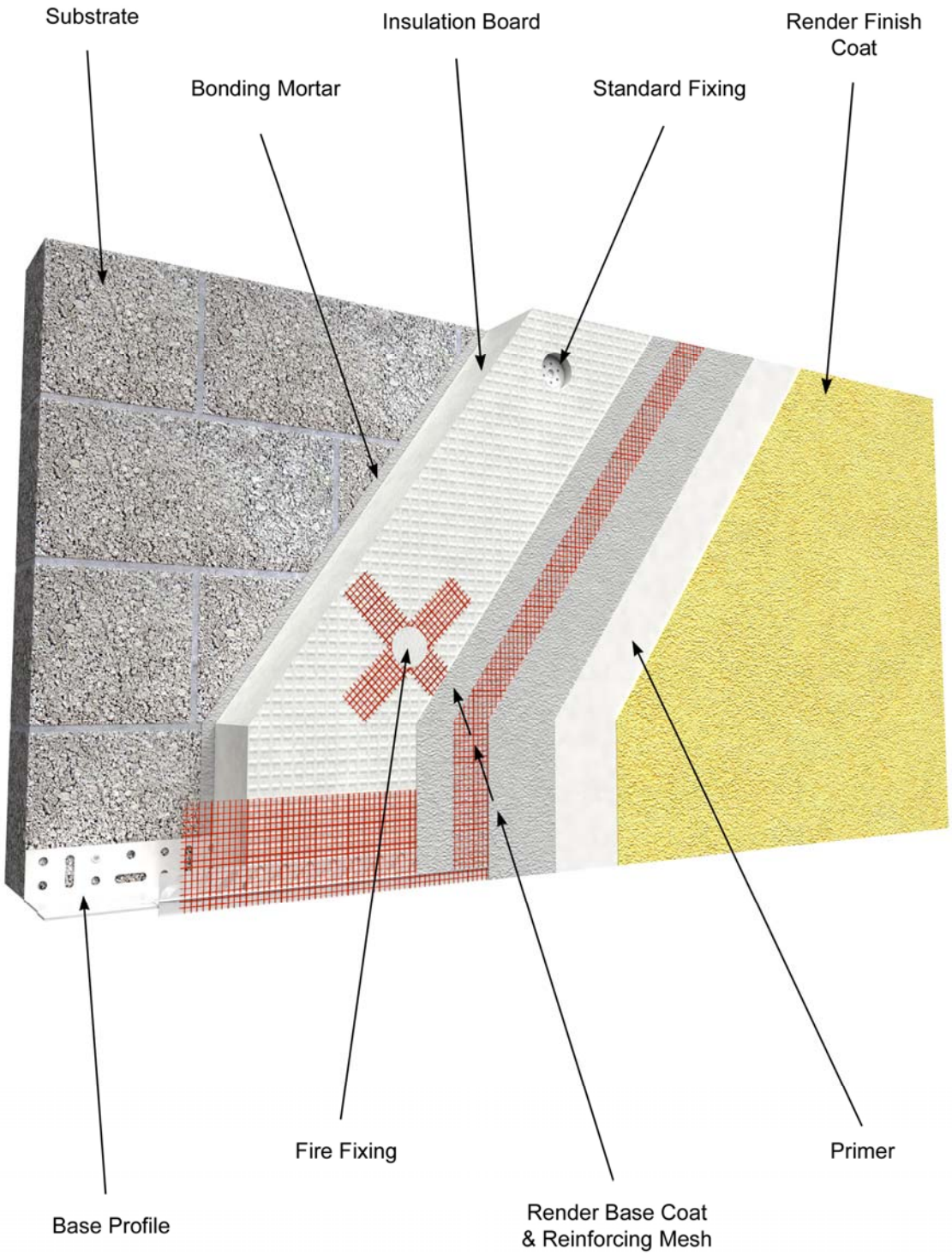


Figure 1: Baumit External Wall Insulation System – Isometric View

2.1 PRODUCT DESCRIPTION

The Baumit External Wall Insulation System is summarised in Table 1. The minimum overall thickness of base coat and decorative finish coat is 5 mm to 8 mm, depending on finish coat specification.

For component specifications see Table 2. A typical system arrangement is shown in Figure 1. Ancillary items are listed in Table 3.

2.2 MANUFACTURE, SUPPLY AND INSTALLATION

w&p Baustoffe GmbH is responsible for the design and manufacture of all components to approved specifications. w&p Baustoffe GmbH has appointed Grafton Merchanting ROI as distribution partner in Ireland, with responsibility for:

- Project specific design in accordance with approved design process;
- Training, monitoring and review of licensed applicators in accordance with approved training and assessment procedures;
- Product supply and documentation control;
- Technical support and installation supervision;
- Sales and marketing.

The installation of the Baumit 60 External Insulation Systems is carried out by Grafton Merchanting ROI trained and approved installers in accordance with Grafton Merchanting ROI project specific specifications and method statements. Installers must also be approved and registered by NSAI Agrément under the NSAI Agrément External Thermal Insulating Composite Systems (ETICS) Approval Scheme (See Section 2.4.1 of this Certificate).

2.2.1 Quality Control

The Certificate holder operates a quality management system, and a quality plan is in place for system manufacture, system design and system installation.

2.3 DELIVERY, STORAGE AND HANDLING

The insulation is delivered to site in packs. Each pack is marked with the manufacturer's details, product identification marks and batch numbers. See Table 2 of this Certificate for the product code that must be included on the insulation identification label.

Each container for other components, e.g. renders, adhesives etc., bears the manufacturer's and the product's identification marks and batch number.

Insulation should be stored on a firm, clean, dry and level base, which is off the ground. The insulation should be protected from prolonged exposure to sunlight by storing opened packs under cover in dry conditions or by re-covering with opaque polythene sheeting.

Care must be taken when handling the insulation boards, to avoid damage and contact with solvents or bitumen products. The boards must not be exposed to ignition sources.

Reinforcing mesh, primers, renders, paints, texture synthetic finish coatings and sealants should be stored in accordance with the manufacturer's instructions, in dry conditions, at the required storage temperatures. They should be used within the stated pot life.

2.4 INSTALLATION

2.4.1 Approved Installers

Installation shall be carried out by Grafton Merchanting ROI trained applicators who:

1) Are required to meet the requirements of an initial site installation check by NSAI Agrément prior to approval and are subject to the NSAI Agrément ETICS Approval Scheme.
2) Are approved by Grafton Merchanting ROI and NSAI Agrément to install the product.
3) Have undertaken to comply with the Grafton Merchanting ROI installation procedure, requirements of this Certificate, and the Grafton Merchanting ROI Code of Practice for approved contractors.
4) Are employing Supervisors and Operatives who have been issued with appropriate identity cards by Grafton Merchanting ROI. Each team must consist of at least one ETICS Operative and ETICS Supervisor (can be the same person).
5) Are subject to supervision by Grafton Merchanting ROI, including unannounced site inspections by both the Certificate holder and NSAI Agrément, in accordance with the NSAI Agrément ETICS Approval Scheme.
6) Are subject to periodic surveillance by the system manufacturer (w&p Baustoffe GmbH) – site visits and office records.

2.4.2 General

Grafton Merchanting ROI prepare a site package for each project, including wind loading and U-value calculations, requirements for materials handling and storage, method statements for installation, building details, fixing requirements, provision for impact resistance, maintenance requirements etc. This document forms part of the contract documentation for circulation to the

home owner and the installer. Installers will be expected to adhere to the specification. Deviations must be approved by a Grafton Merchanting ROI technical representative. Grafton Merchanting ROI technical representatives will visit each site on a regular basis to ensure that work is carried out in accordance with the project specific site package, including the Certificate holder's installation manual. Grafton Merchanting ROI guarantee and home owners manual will be issued on successful completion and sign-off of completed projects.

Mineral fibre board and lamella must be protected from moisture prior to and during installation. It may be necessary to remove and replace any unsuitable/wet material.

External works that leave the external appearance of the building inconsistent with neighbouring buildings may require planning permission. The status of this requirement should be checked with the local planning authority as required.

2.4.3 Site Survey and Preliminary Work

A comprehensive pre-installation site survey of the property shall be carried out by a suitably qualified Grafton Merchanting ROI technical representative or Grafton Merchanting ROI and NSAI Agrément approved contractor and all key information is recorded on the site survey form. The Grafton Merchanting ROI pre-installation survey is also used to price the project and identify all the relevant factors/technical information which needs to be considered in the design of the external cladding system and important information to be included in the site specific pack. This pack would typically include wind load calculations and a fixing specification summary sheet, thermal bridging evaluation, condensation risk analysis, elemental wall U-value calculation, and a full set of project specific building details. The survey will also establish the suitability of the substrate, and the Grafton Merchanting ROI technical representative will determine if pullout resistance testing is required and what substrate preparation is required.

The substrate must be free of water repellents, dust, dirt, efflorescence and other harmful contaminants or materials that may interfere with the adhesive bond. Remove projecting mortar or concrete parts mechanically as required.

Where discrepancies exist preventing installation of the system in accordance with this Certificate and the Certificate holder's instructions, these discrepancies must be discussed with the Certificate holder and a solution implemented with the approval of the Certificate holder.

2.4.4 Procedure

- Prepare substrate in accordance with the project specific site package. This will include brushing down of walls, washing with clean water and treatment with a fungicidal wash as required.
- Weather conditions must be monitored to ensure correct application and curing conditions. Renders (adhesives, base coats, primers, finish coats) must not be applied if the temperature is below 5°C or above 25°C at the time of applications. In addition, cementitious-based renders must not be applied if the temperature will be below 0°C at any time during 72 hours after application; cement-free, synthetic-resin and silicone-resin plasters must not be applied if the temperature will be below 5°C at any time during 72 hours after application; silicate plasters must not be applied if the temperature will be below 8°C at any time during 72 hours after application.
- Until fully cured, the coatings must be protected from rapid drying, precipitation, direct sunlight and strong wind.
- Refer to the site package for guidance on modifications of down pipes, soil and vent pipes, pipe extensions etc.
- Where possible all pipe work should be relocated as required to accommodate the insulation. Where pipe work cannot be relocated and is to be housed in the depth of the system, access for maintenance must be maintained through the use of removable covers or alternative design to be approved by the Certificate holder.
- Base profile and all full system beads are fixed as specified. Insulation and render only beads are fixed as specified in the site package.
- The base profile is mechanically fixed to the substrate level with the DPC line. This provides a horizontal line for the installation of insulation panels as well as providing reinforcement to the lower edge of the system.
- Plinth and perimeter boards are then fixed to the wall below the base profile to provide the necessary resistance to impact and capillary action. To minimise the effects of cold bridging, the plinth board should extend below ground level where possible. Where this is not possible the first run of plinth boards is positioned at ground level.
- The insulation boards are bonded to the wall by applying the specified adhesive (see Table 1 of each Detail Sheet) to the boards. The insulation board should be immediately placed on the substrate and pressed into place.
- Subsequent rows of insulation boards are installed on top of the base profile and positioned so that the vertical board joints are staggered and overlapped at the building corners.
- To avoid thermal bridging, ensure a tight adhesive free joint connection between adjacent insulation boards. A foam filler

approved by the Certificate holder may be used for filling gaps up to 5mm.

- At façade openings, e.g. windows and doors, insulation boards must be continued around the corner. Insulation boards must overlap at these locations and can be cut to size to facilitate this. Any projecting EPS boards should be levelled out using a sanding board with local trimming as required on mineral wool boards.
- Window and door reveals should, where practicable, be insulated to minimise the effects of cold bridging in accordance with the recommendations of the Acceptable Construction Details Document published by the DoEHLG, Detail 2.21, to achieve an R-value of 0.6m^{2}K/W. Where clearance is limited, strips of approved insulation should be installed to suit available margins and details recorded as detailed in Section 4.5 of this Certificate.
- To minimise the effects of cold bridging in all other junctions over and above windows and doors, designers should consider the recommendations of the Acceptable Construction Details Document (published by the DoEHLG), Section 2 – External Wall Insulation. Where clearance is limited, strips of approved insulation (with better thermal resistance values) should be installed to suit available margins and details recorded as outlined in Section 4.5 of this Certificate.
- Details of mechanical fixings (including their arrangement in the insulation boards) are specified in the project specific design based on pullout test results, substrate type and wind loading data. A minimum number of 2 mechanical fixings per board for EPS, 8 per m^2 for MW and 5 per m^2 for Phenolic shall be installed unless otherwise specified in the project specific design. Above two stories an additional stainless steel fire fixing is provided at a rate of 1 per m^2.
- Refer to the Certificate holder's instructions and the project specific site package regarding the installation method and location of the thermally broken fixings through the reinforcing mesh where fire stops have been installed. Additional layers of mesh are also applied at these locations. Stainless steel fire fixings to be provided at a rate of one per square metre above two stories. The fixing design should take account of the extra duty required under fire conditions.
- Purpose-made powder coated aluminium window sills with stop-ends are installed in accordance with the Certificate holder's instructions. They are designed to prevent water ingress and incorporate drips to shed water clear of the system.
- Lamella fire stops are installed in accordance with the Certificate holder's instructions as defined in Section 4.2 of this Certificate, at locations defined in the project specific site package.
- For EPS insulation, any high spots or irregularities should be removed by lightly planning with a rasp to ensure the application of an even thickness of base coat. After sufficient stabilisation of the installed insulation (normally 2 days, during which time the insulation should be protected from exposure to extreme weather conditions to prevent degradation), the insulated wall is ready for the application of the base and finish coats.
- EPS boards exposed to UV light for extended periods prior to the application of the render coatings are subject to breakdown and should be rasped down as required in preparation for rendering.
- Movement joints shall be provided in accordance with the project specific site package.
- At all locations where there is a risk of insulant exposure, e.g. window reveals, eaves or stepped gables, the system must be protected, e.g. by an adequate overhang or by purpose-made sub-sills, seals or flashings.
- A pre-compressed self-adhesive waterproof sealing band and PVC adhesive trim are used to form double seal at windows.
- Building corners, door and window heads and jambs are formed using angle beads bonded to the insulation in accordance with the Certificate holder's instructions.
- To minimise the thermal bridge effect during the installation of railings, exterior lighting, shutter guide rails, canopies, aerials, satellite dishes etc, the Certificate holder offers a range of anchoring options. These anchors must be installed in accordance with the Certificate holder's instruction, as defined in the project specific site package, during the installation of the insulation boards.
- Prior to application of base coat and finish coat, all necessary protective measures such as masking of existing window frames and glass should be in place.
- In sunny weather, work should commence on the shaded side of the building and be continued avoiding the sun to prevent the rendering drying out too rapidly.
- Base coat is mixed and must not be applied until after the adhesive has hardened, i.e. not less than 24 hours afterwards.
- Apply the base coat to the insulation boards to the width of the mesh. The reinforcing mesh must be pressed into the base coat with a 100mm overlap. The mesh should always be embedded in such a way that in the case of thin-layered reinforcement the mesh is in the middle of the base coat layer, and in the case of thick-layered reinforcement it is in the upper third of the base coat layer. The mesh can be laid either vertically or horizontally.

- An additional diagonal reinforcement must be applied around the façade openings. This involves embedding diagonal strips in the reinforcing mesh.
- The primer and/or finish coat must not be applied until after the base coat has dried out fully (5 days approximately).
- Primers shall be applied in accordance with the Certificate holder's instructions and allowed to dry fully prior to the application of the finishing coat. Baumit UniPrimer improves and equalizes the hydrophic quality and suction of the base coat. It also improves adhesion and colour uniformity of the top coat.
- Finishing coats are applied in accordance with the Certificate holder's instructions.
- All rendering should follow best practice guidelines, e.g. BS 8000-10:1995 *Workmanship on building sites – Code of practice for plastering and rendering* and IS EN 13914-1:2005 *Design, preparation and application of external rendering and internal plastering – External rendering*.
- On completion of the installation, external fittings, rainwater goods etc. are fixed through the system into the substrate in accordance with the Certificate holder's instructions.
- When obstructions abut external walls such as a boundary wall, best practice would be to cut back the boundary wall to allow for the continuation of the external insulation system, or in the case of unheated lean-to buildings the external insulation system should continue around the lean-to.
- All necessary post-application inspections should be performed and the homeowner's manual completed and handed over to the homeowner accordingly.

<table>
<tr><th colspan="6">Table 1: Product Range, Components and Fixing Requirements</th></tr>
<tr><th>Type</th><th>Insulation</th><th>Fixing Methods</th><th colspan="2">Base Coat and Reinforcement</th><th>Decorative Finish</th></tr>
<tr><td>Baumit Open</td><td>Expanded polystyrene board</td><td rowspan="4">Adhesively bonded minimum 40% coverage, and supplementary mechanical fixings.</td><td>Standard:
1 coat of OpenContact to a thickness of 5-6mm with a layer of reinforcement mesh.</td><td>High Impact Areas*:
2 coats of OpenContact each to a thickness of 3-4mm, each with a layer of reinforcement mesh.</td><td>Primer:
UniPrimer

Top coats:
openTop
NanoporTop</td></tr>
<tr><td>Baumit EPS</td><td>Expanded polystyrene board</td><td rowspan="2">Standard:
1 coat of StarContact Forte to a thickness of 5-6mm with a layer of reinforcement mesh.</td><td rowspan="3">High Impact Areas*:
2 coats of StarContact Forte each to a thickness of 3-4mm, each with a layer of reinforcement mesh.</td><td>Primer:
UniPrimer

Top coats:
NanoporTop
SilikatTop
SilikonTop
StellaporTop
GranoporTop
EdelPutz Spezial
StyleTop</td></tr>
<tr><td>Baumit XPS</td><td>Extruded polystyrene board</td><td>Primer:
UniPrimer

Top coats:
NanoporTop
SilikatTop
SilikonTop
StellaporTop
Edelputz Spezial
StyleTop</td></tr>
<tr><td>Baumit Mineral</td><td>Mineral wool board</td><td rowspan="2">Standard:
1 coat of StarContact Forte to a thickness of 6-8mm with a layer of reinforcement mesh.</td><td>Primer:
UniPrimer

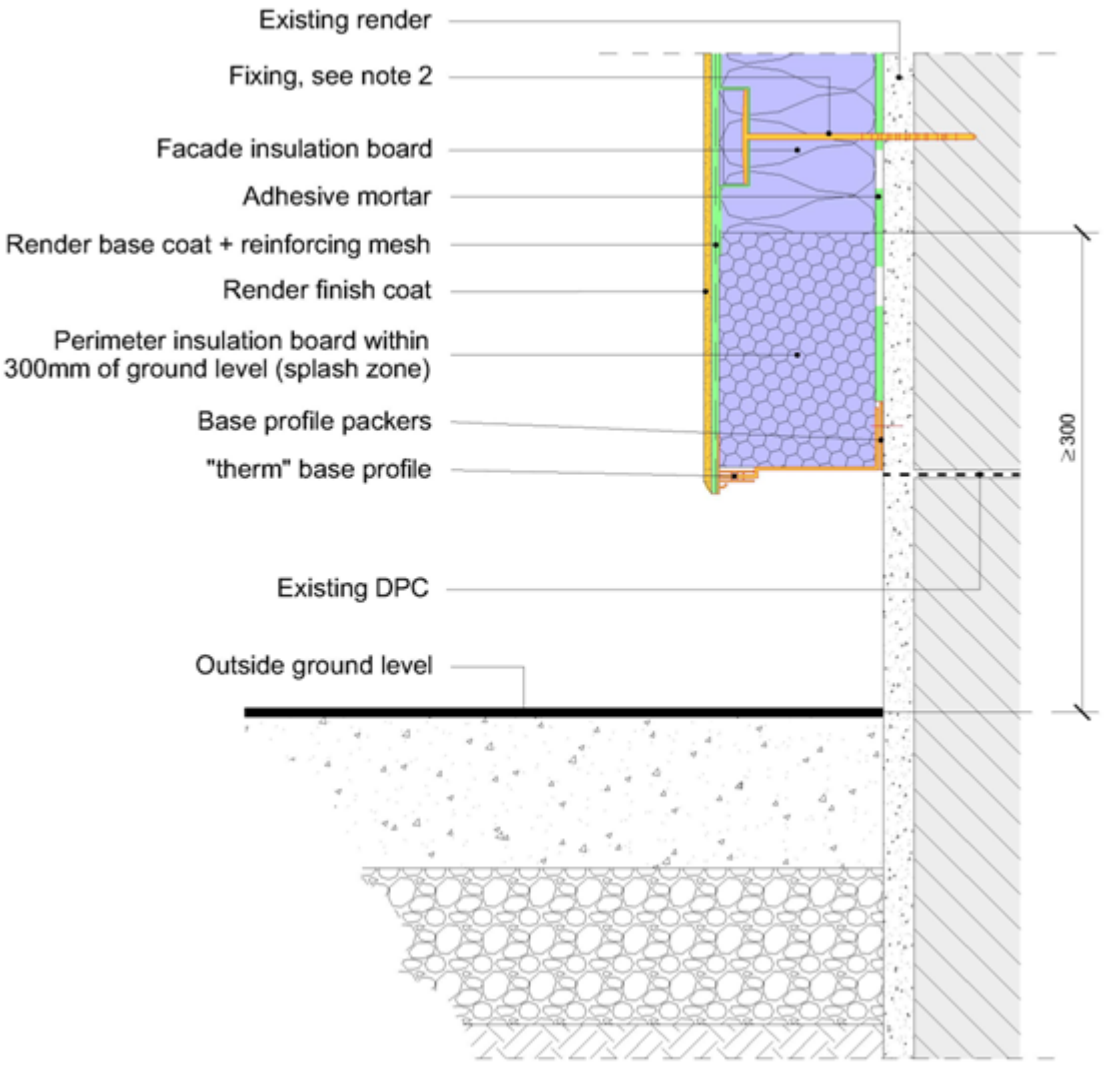
Top coats:
NanoporTop
SilikatTop
SilikonTop
GranporTop
StellaporTop
Edelputz Spezial
StyleTop</td></tr>
<tr><td>Baumit XS 022</td><td>Phenolic board</td></tr>
</table>

Notes:
1. Mechanical fixings to be provided in accordance with the project specific design requirements based on test results.
2. Where EPS or XPS boards require additional mechanical fixing, a minimum of 4 fixings per metre squared shall be provided.
3. Mineral wool boards require a minimum of 8 fixings per metre squared.
4. Phenolic boards require a minimum of 5 fixings per metre squared.
5. Where required, 1 additional stainless steel fire fixing per metre squared shall be provided.
6. Fixing of fire barriers:
   All mineral wool lamella fire barriers are:
   a) Adhesively fixed using the appropriate system bonding mortar (OpenContact, StarContact or StarContact Forte), and
   b) Mechanically fixed as follows:
      Horizontal fire barriers: Stainless steel mechanical fixings countersunk and capped as shown in Figure 7.2 and secured into structural substrate at maximum 1m centres.
      Vertical fire barriers: Stainless steel mechanical fixings countersunk and capped as shown in Figure 7.2 and secured into structural substrate at maximum 0.5m centres.
7. Fire fixings are not required two storey single occupancy dwellings.
8. Fxings must be provided around all window and door openings to ensure adequate and robust edge restraint over the design life. See Figure 4.1.
9. Services/Fitting: Secure supports to be provided for soil and rainwater pipe brackets, aerials, lighting, cameras, signage etc. in accordance with the project specific design as appropriate.

***** High Impact Areas: Two coats with appropriate curing time between coats.

Table 2: Component Specifications and Supply Details			
Component	**Description**	**Dimensions / Quantity**	**Container**
Insulation			
EPS Façade Board	Grade: SD/FRA, CFC/HCFC-free to IS EN 13163:2001. EPS-EN 13163-T2-L2-W2-S2-P4-DS(N)2-TR100 Density 15kg/m^3	Size: 1000mm x 500mm Thickness: 20mm to 350mm	Polythene shrink wrapped package
EPS Plinth Board	Grade: SD/FRA, CFC/HCFC-free to IS EN 13163:2001. EPS-EN 13163-T2-L2-W2-S2-P4-DS(N)2-TR100 Density 33kg/m^3	Size: 1000mm x 500mm Thickness: 20mm to 350mm	
XPS Façade/Plinth Board	Grade: XPS-EN 13164-T1-DS(TH)-CS(10/Y)300-DLT(2)5-WD(V)-FT1-TR200 XPS-EN 13164-T3-CS(10/Y)300-DS(TH)-WL(T)1,5-TR400 Density >30kg/m^3	Size: 1250mm x 600mm Thickness: 20mm to 180mm	
Mineral Wool Façade Board	Grade: CFc/HCFC-free to IS EN 13162:2001 MW-EN 13162-T5-CS(10/Y)10-TR5 Density 140kg/m^3 Contains phenolic resin binder and mineral oil water repellent	Size: 1200mm x 400mm Thickness: 80mm to 200mm	
Phenolic Façade Board	K5 EWB Grade: CFC/HCFC-free to IS EN 13166:2001 Density 40kg/m^3 Minimum compressive strength 150kN/m^2	Size: 1200 x 600mm Thickness: 30 to 200mm	
Reinforcing Mesh			
Standard Mesh	Standard grade non-slip alkaline resistant glass fibre mesh Tear strength ≥ 1.5kN/50mm Weight 160g/m^2	Mesh dimension: 4mm x 4mm Roll size: 1m x 50m	Polythene shrink wrapped package
Panzer Mesh	Heavy duty non-slip alkaline resistant glass fibre mesh Tear strength ≥ 3.4kN/50mm Weight 300g/m^2	Mesh dimension: 6mm x 6mm Roll size: 1m x 25m	
Bonding Mortar			
openContact StarContact StarContact Forte	Factory prepared dry powder mortar to EN 998-1 as adhesive bonding agent and reinforcing base coat.	25kg	Bag
Primer			
UniPrimer	Ready to use acrylic based liquid primer as absorption compensator and bonding agent to improve the adhesion of subsequent synthetic paste finish coats.	10 litres	Bucket
Mineral Renders			
Edelputz Spezial	Factory prepared dry powder mortar to EN 998-1 for a top coat decorative finish as a plain, scratched or freestyle textured finish depending on aggregate size. Maximum grain size 1mm/2mm/3mm/4mm5mm.	25 kg	Bag
Dry Dash Receiver	Factory prepared dry powder mortar to EN 998-1 for use as a backing coat to receive various decorative dry aggregates.		
Synthetic Paste Renders			
NanoporTop	Ready-to-use non-soiling mineral decorative top coat render. Suitable for manual or machine application.	25kg	Bucket
SilikatTop	Ready-to-use silicate decorative top coat render. Suitable for manual or machine application.		
SilikonTop	Ready-to-use silicone resin decorative top coat render. Suitable for manual or machine application.		
StellaporTop	Ready-to-use silicone/organic resin decorative top coat render. Suitable for manual or machine application.		
GranoporTop	Ready-to-use organic resin decorative top coat render. Suitable for manual or machine application.		
MosaikTop	Ready-to-use decorative particles render bound in a clear acrylate resin. Suitable for manual or machine application.		
StyleTop	Ready-to-use organic resin decorative top coat render. Suitable for manual or machine application.		

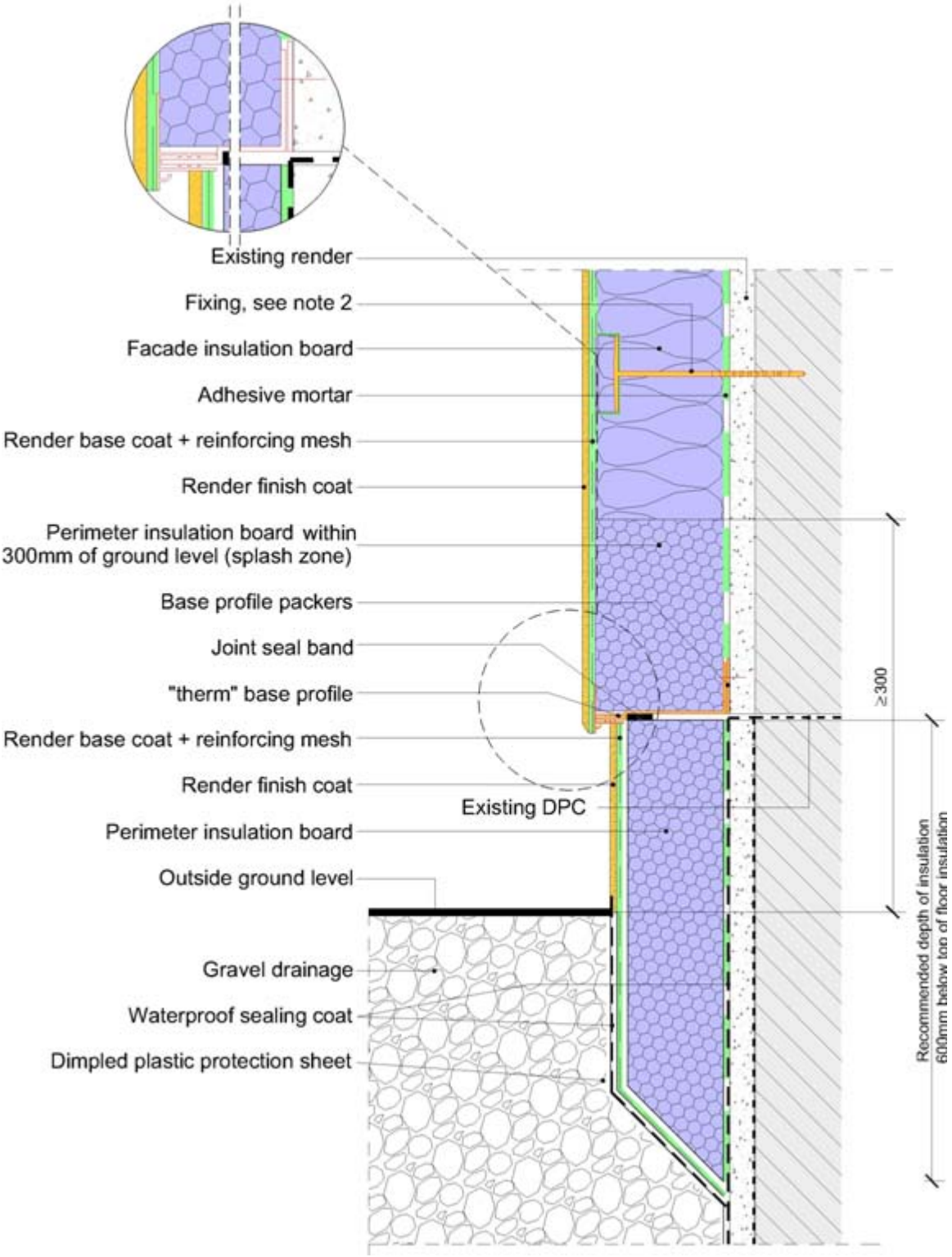
Table 3: Ancillary Items			
Component	**Description**	**Quantity**	**Container**
Baumit Profiles	Range of standard PVC, aluminium, stainless steel and galvanised steel profiles for sue at wall base, stop ends and movement joints. Stainless steel Grade 304 to IS EN 10088-1:2005 DX51D +275N-A-U	2.5 to 3.0m lengths	N/A
Baumit Profile Fixings	A range of fixings is available to suit insulation thickness and substrate type, including stainless steel screws, polypropylene plug type with steel expansion pins or plastic expansion sleeves, and integral plastic finned nails with disc heads. Fixings are specified on a project specific basis, based on pullout strength tests and loading calculations. Where non-stainless steel fixings are used, they must be completely protected in an integral plastic plug and end cap.	Varies	Boxed by manufacturer
Fixing Into and Through the System	A range of fixing anchors are available to suit insulation thickness and substrate type. These have not been individually assessed by NSAI Agrément.		
Joint Seal	Compressible waterproofing sealing tape to DIN 18542. Baumit approved sealant to be one part Low Modulus Modified Polymer Sealants, Class F 25LM to IS EN ISO 11600:2004, have 20-25 year life expectancy, be compatible with Baumit systems and to be installed in accordance with the requirements of BS 6093:2006.	Rolls: 2 to 6mm 3 to 9mm 5 to 12mm	



Note 1: Location and level of existing DPC and footpath to be established during site survey. Project specific design to ensure that DPC is not compromised.

Note 2: For fixing requirements see Table 1.

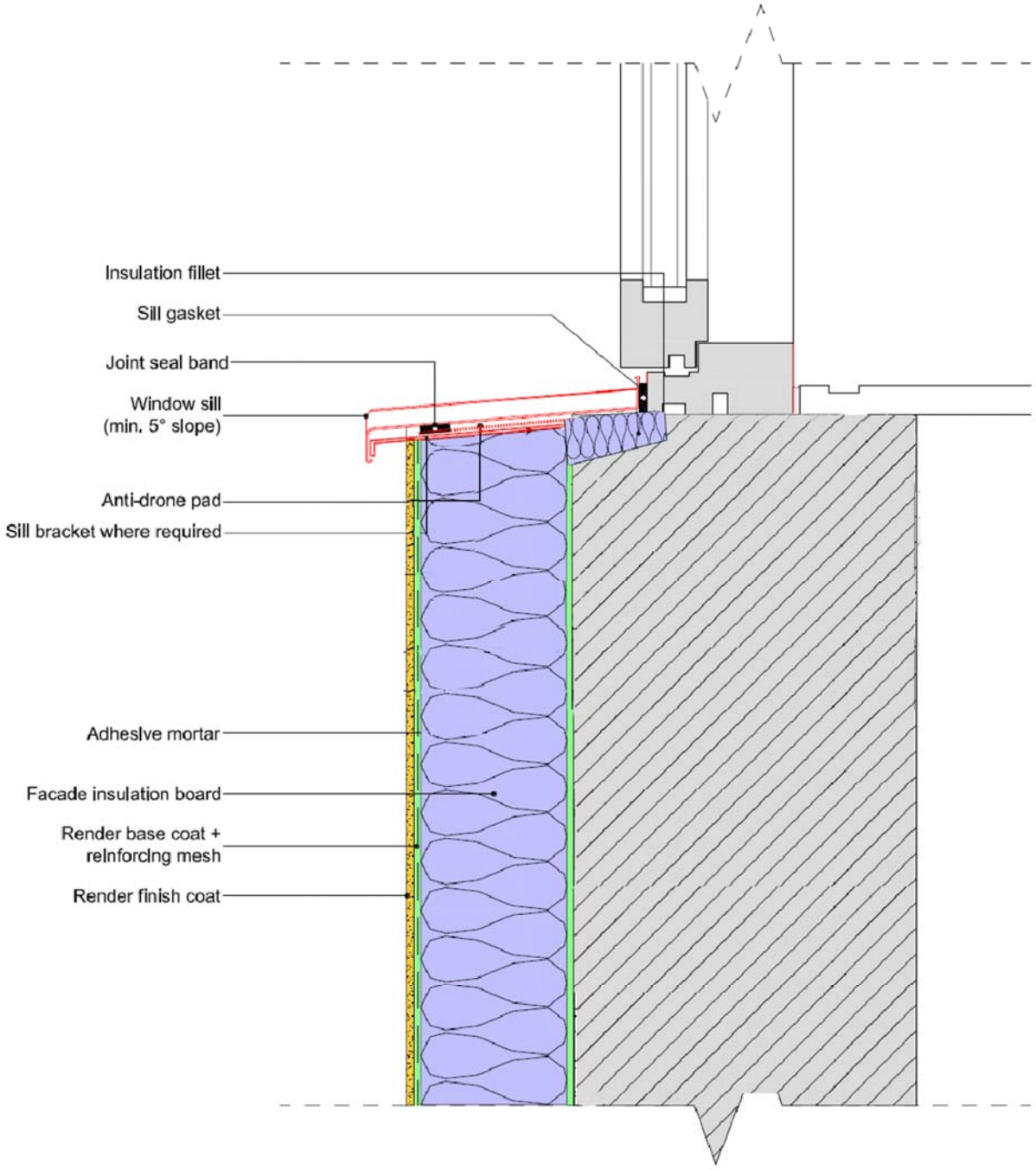
Figure 2.1: Typical Detail – Base Bead



Note 1: Location and level of existing DPC and footpath to be established during site survey. Project specific design to ensure that DPC is not compromised.

Note 2: For fixing requirements see Table 1.

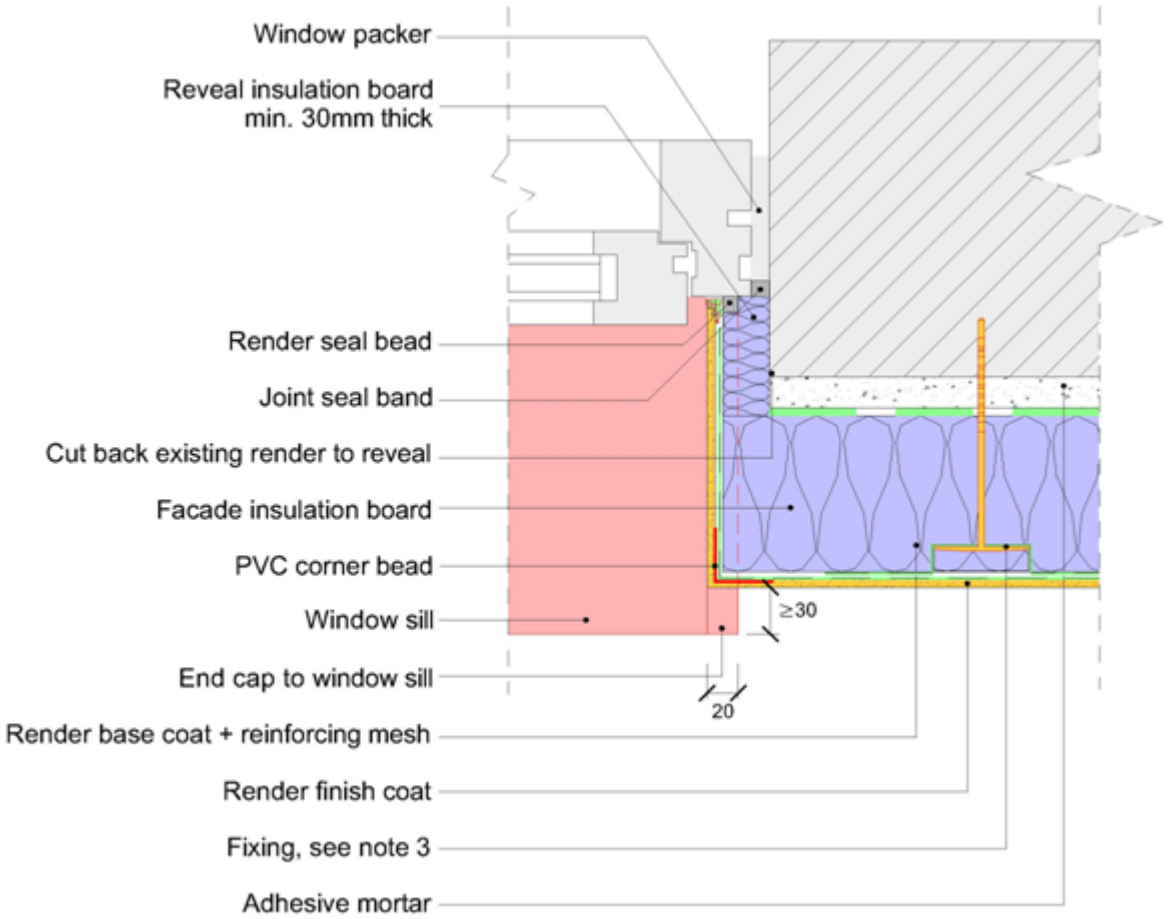
Figure 2.2: Typical Detail – Insulated Plinth



Note 1: Positive fixings to be provided around all window and door openings to ensure adequate and robust edge restraint.

Note 2: Flexible sealant to be provided as necessary at all intersections between dissimilar materials.

Figure 3: Typical Detail –Window Sill

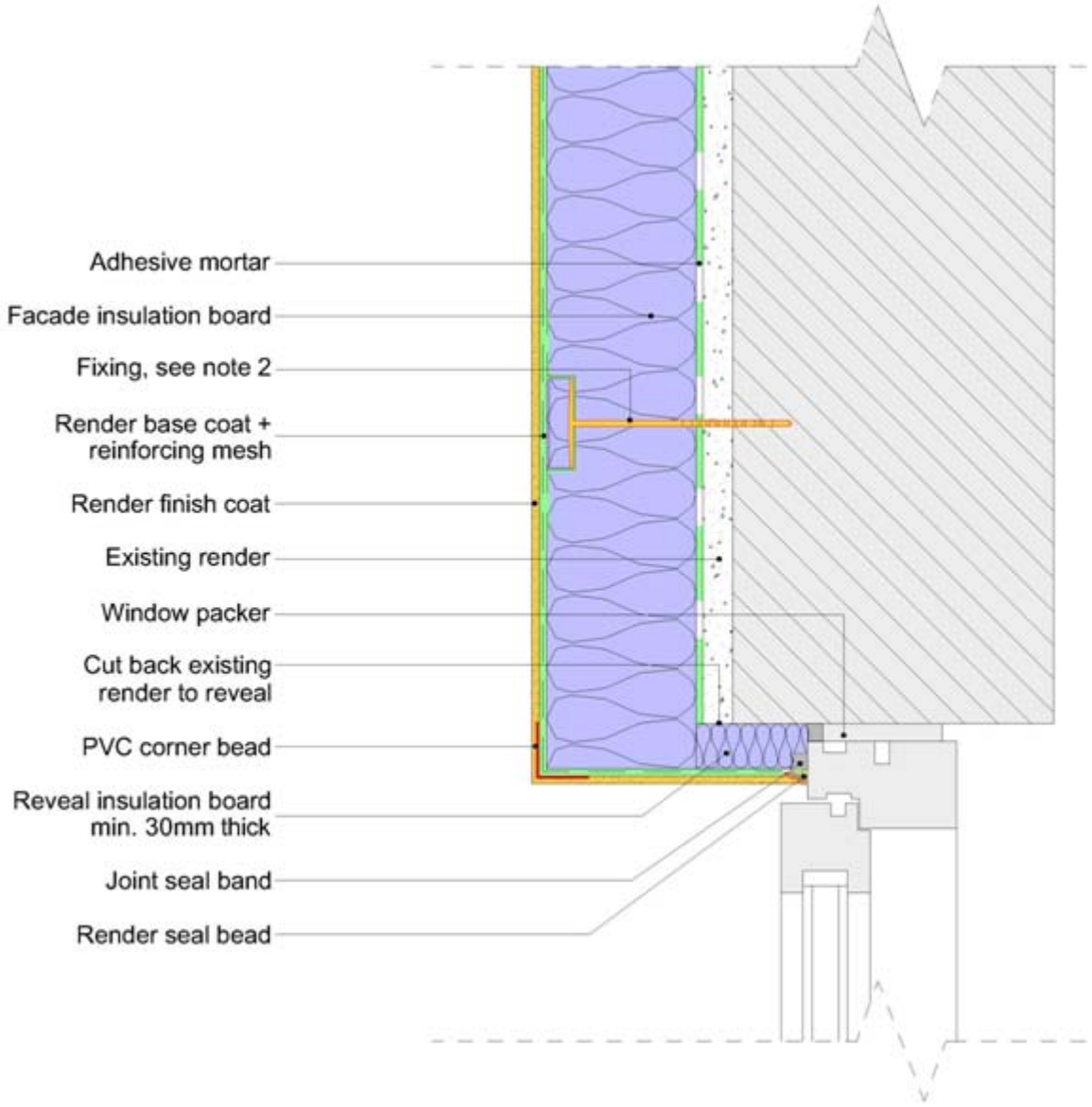


Note 1: Positive fixings to be provided around all window and door openings to ensure adequate and robust edge restraint.

Note 2: Flexible sealant to be provided as necessary at all intersections between dissimilar materials.

Note 3: For fixing requirements see Table 1.

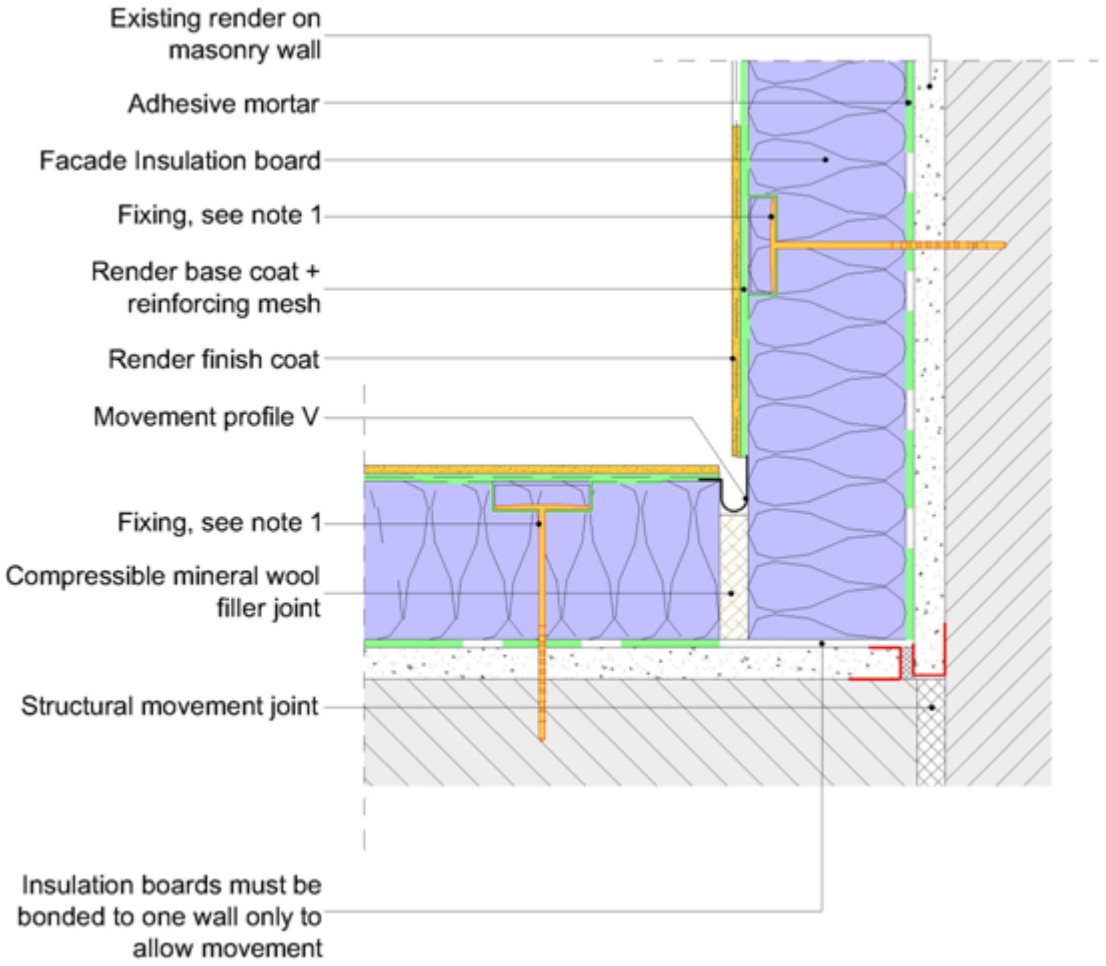
Figure 4.1: Typical Detail – Recessed Window Reveal



Note 1: Positive fixings to be provided around all window and door openings to ensure adequate and robust edge restraint.

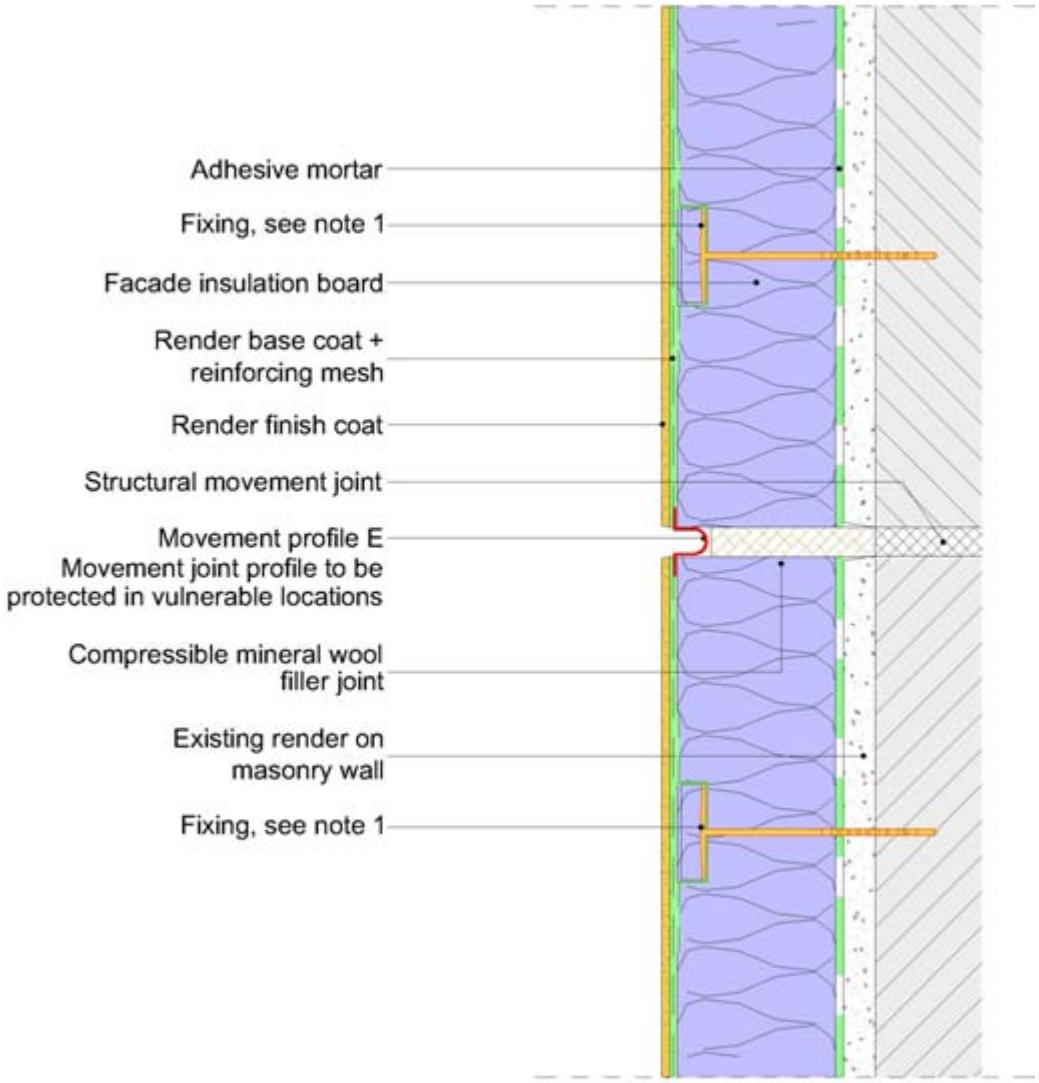
Note 2: For fixing requirements see Table 1.

Figure 4.2: Typical Detail – Window Head



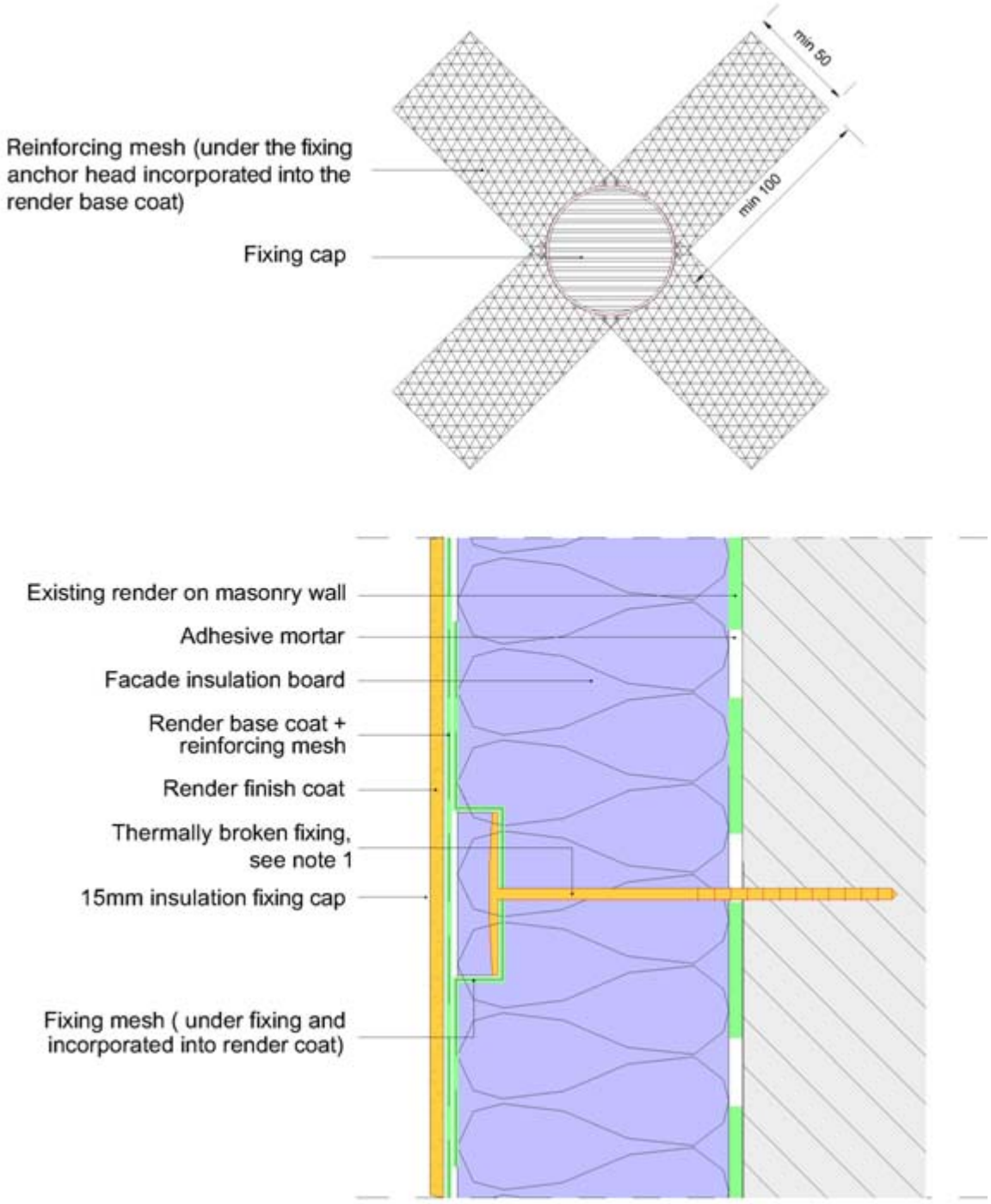
Note 1: For fixing requirements see Table 1.

Figure 5.1: Typical Detail – Movement Joint – Internal Corner



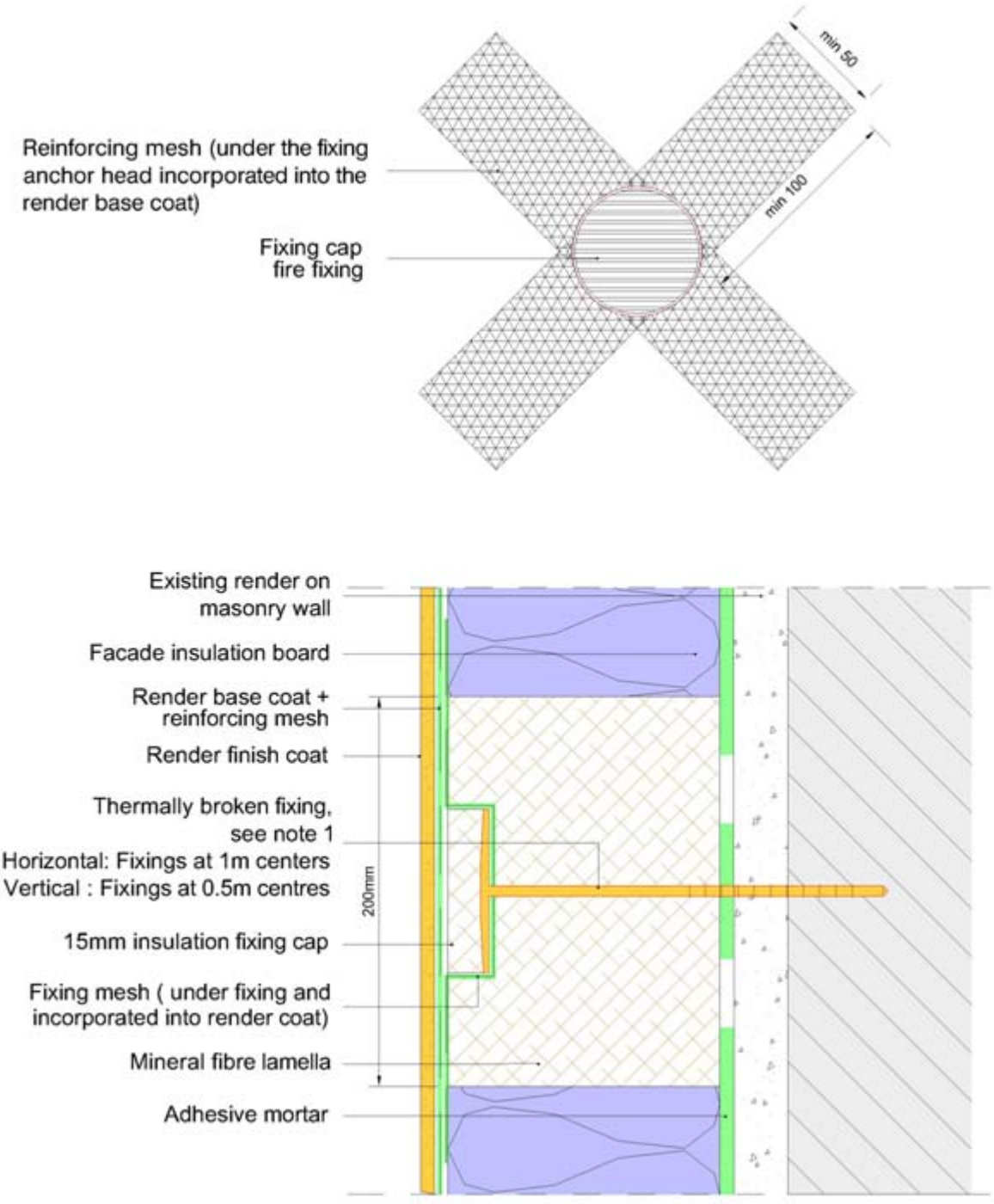
Note 1: For fixing requirements see Table 1.

Figure 5.2: Typical Detail – Movement Joint



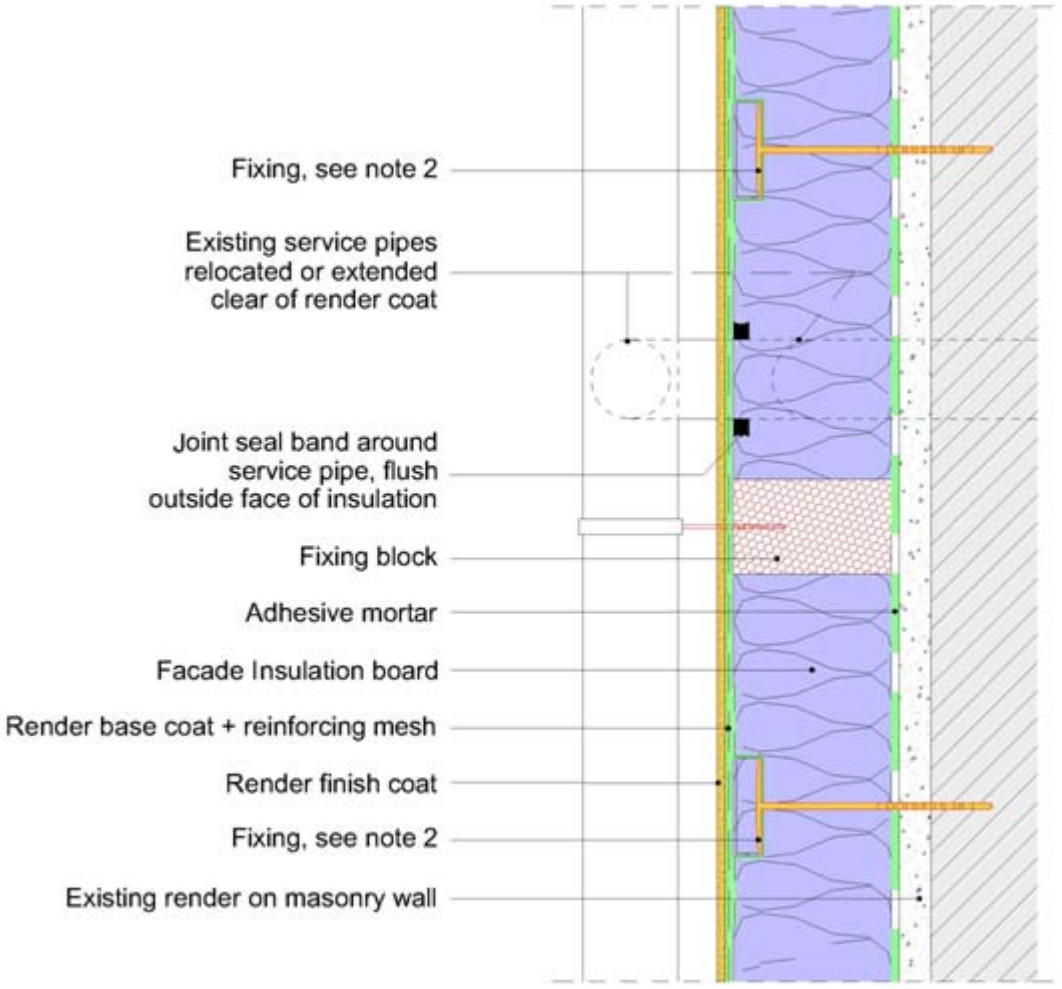
Note 1: Mechanical and fire fixings in accordance with project specific design – See Table 1 for minimum requirements.

Figure 6.1: Typical Detail – Fire Fixing



Note 1: For fixing requirements see Table 1.

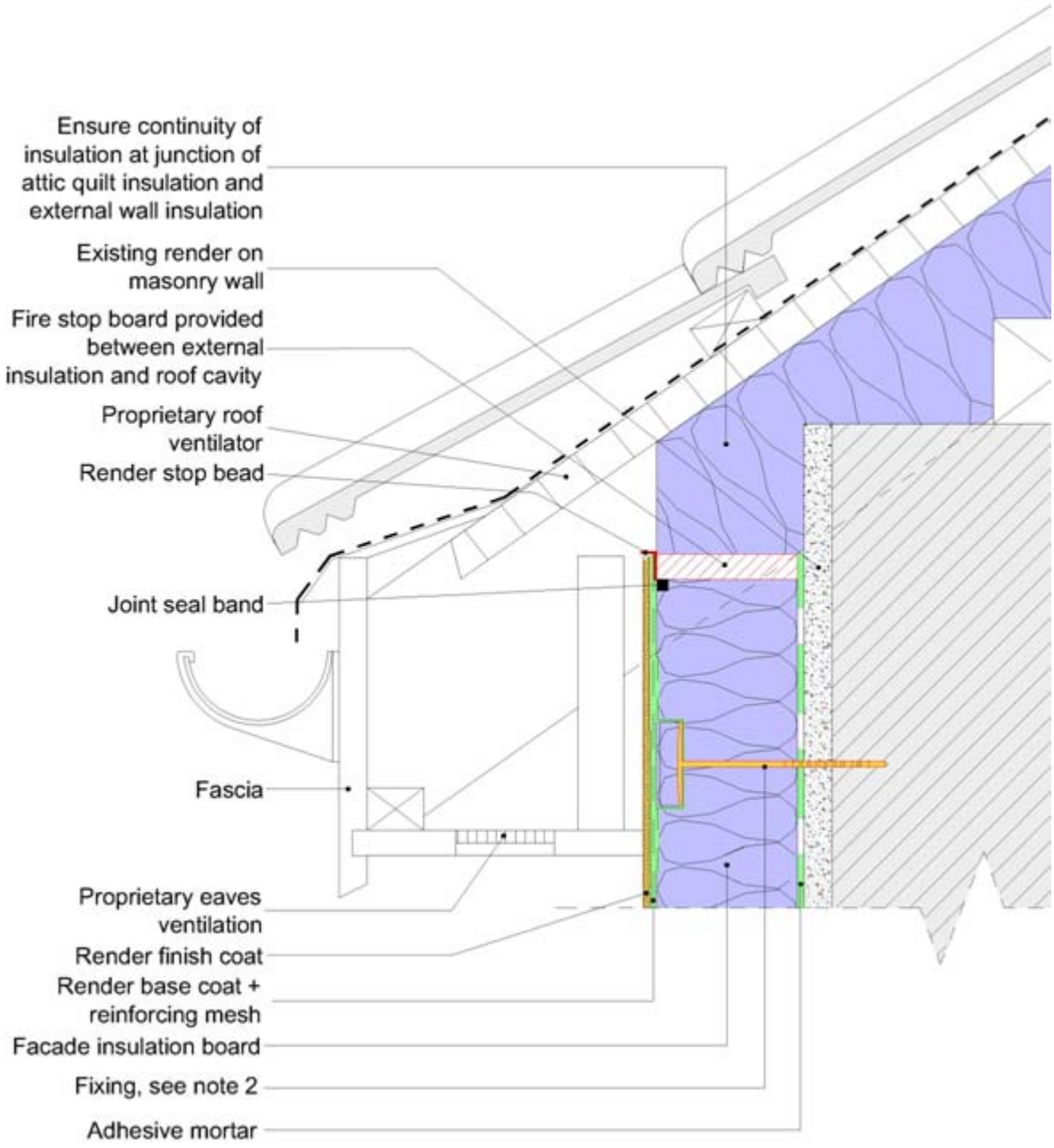
Figure 6.2: Typical Detail – Section Through Fire Barrier / Fixing



Note 1: Fixing to be appropriate for use. Where necessary fixing should be secured to substrate. See Baumit typical details.

Note 2: For fixing requirements see Table 1.

Figure 7: Typical Detail – Service Connection



Note 1: Provision for fire stopping, ventilation and insulation at eaves to be fully in accordance with the Building Regulations. See DoEHLG Acceptable Construction Details.

Note 2: For fixing requirements see Table 1.

Figure 8: Typical Detail – Eaves

3. GENERAL

The system is designed by Grafton Merchanting ROI on a project specific basis. Where the external insulation system is being applied to improve the thermal performance of an existing building, Grafton Merchanting ROI will assess the building and advise on how to maximise the benefits of the external insulation system for that building. The design will include for:

a) The completion and recording of a site survey. For existing buildings, U-value calculations, condensation risk analysis, pull-out resistance etc. should be based on the existing structure.
b) Evaluation and preparation of substrate.
c) Minimising risk of condensation in accordance with the recommendations of BS 5250:2002 *Code of practice for control of condensation in buildings*. This includes the use of approved detailing as shown in Figures 2 to 9 incorporating the requirements of the Acceptable Construction Details published by the DoEHLG.
d) Thermal insulation provision to Part L of the Building Regulations 1997 to 2010.
e) Resistance to impact and abrasion.
f) Resistance to thermal stresses.
g) Resistance to wind loading.
h) Design of fixings to withstand design wind loadings, using a safety factor of 3 (three) for mechanical fixings and a safety factor of 9 (nine) for adhesive. In addition, fixings around window and door openings shall be at a maximum of 400mm centres in each board or section of board so as to provide positive and robust restraint over the life of the system.
i) Design for fire resistance, fire spread and fire stopping, as defined in Section 4.2 and 4.3 of this Certificate.
j) Design of a water management system to prevent ingress of water at movement joints, windows, doors, openings for services etc. Particular attention is required to ensure that window and sill design are coordinated to achieve a fully integrated design.
k) Movement joints.
l) A site specific maintenance programme for inclusion in the home owner's documentation.
m) Durability requirements.

Detailing and construction must be to a high standard to prevent the ingress of water and to achieve the design thermal performance.

Window details should be designed such that, where possible, they can be removed and replaced from within the building. Consideration should be given to maximising improvement of thermal insulation at window reveals, door openings etc.

Adequate provision should be made at design and installation stage for the release of trapped moisture e.g. above window heads.

When designed and installed in accordance with this Certificate, the system will satisfy the requirements of Part L of the Building Regulations 1997 to 2010. The design shall include for the elimination/minimising of cold bridging at window and door reveals, eaves and at ground floor level in compliance with Acceptable Construction Details published by the DoEHLG.

The system is intended to improve the weather resistance of the external walls. Seals to windows and doors shall be provided in accordance with the project specific site plan.

Care should be taken to ensure that any ventilation or drainage openings are not obstructed.

In areas where electric cables can come into contact with EPS, in accordance with good practice all PVC sheathed cables should be run through ducting or be re-routed.

The durability of the render systems is influenced by colour and the following criteria shall be used in colour selection:

a) Mineral renders – Only colours with a Lightness Reflectance Value of more than 40% are suitable for use in the system.
b) Synthetic past renders – Only colours with a Lightness Reflectance Value of more than 20% are suitable for use in the system.

4.1 STRENGTH AND STABILITY

4.1.1 Wind Loading

The Baumit 60 External Insulation Systems can be designed to withstand the wind pressures (including suction) and thermal stresses in accordance with the Building Regulations 1997 to 2010. The design for wind loading on buildings greater than two stories should be checked by a chartered engineer in accordance with Eurocode 1 I.S. EN 1991-1-4:2005 *Actions on structures – General actions – Wind actions*. A general factor of safety of 1.5 is applied to design wind loads.

4.1.2 Impact Resistance

a) The Baumit 60 External Insulation Systems have been classified as defined in Table 4 to be suitable for use as defined in ETAG 004 Cl. 6.1.3.3 Table 8 as follows:
   Category I: A zone readily accessible at ground level to the public and vulnerable to hard impacts but not subject to abnormally rough use.
   Category II: A zone liable to impacts from thrown or kicked objects, but in public locations where the height of the system will limit the size of the impact; or at lower levels where access to the building is primarily to those with some incentive to exercise care.
   Category III: A zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects.
   Note: The above classifications do not include acts of vandalism.

b) The design should include for preventing damage from impact by motor vehicles or other machinery. Preventive measures such as provision of protective barriers or kerbs should be considered.

4.2 BEHAVIOUR IN RELATION TO FIRE

The reaction to fire classification according to IS EN 13501-1:2007 *Fire classification of construction products and building elements – Classification using data from reaction to fire tests* for the Baumit 60 External Insulation Systems are defined in Table 5.

- Systems that achieved a Class B Reaction to Fire Classification (see Table 5) are suitable for use up to a maximum of six storeys (18 metres) in height on purpose groups 1(a), 1(b), 1(c), 2(a), 2(b), 3, 4(a) and 4(b) as defined in TGD to Part B of the Building Regulations 1997 to 2010.
- Systems that achieved a Class C Reaction to Fire Classification (see Table 5) are suitable for use on Residential Dwellings (Purpose Groups 1(a) and 1(b)) not more than 18m high, and for Flats and Maisonettes (Purpose Group 1(c)) not more than 10m high as defined in TGD to Part B of the Building Regulations 1997 to 2010.

The mineral wool board is classified as non-combustible as per Table A8(d) of TGD to Part B of the Building Regulations 1997 to 2010.

With regard to fire stopping and limitations on use of combustible materials, walls must comply with Sections B3.2, B3.3, B3.4 and B4 of TGD to Part B of the Building Regulations 1997 to 2010.

Stainless steel fire fixings to be provided at the rate of one per square metre when specified. The fixing design should take account of the extra duty required under fire conditions.

Vertical and horizontal lamella fire barriers shall be provided at each compartment floor and wall, with fixings provided at 400mm vertical centres and 400mm horizontal centres respectively, including the second floor level of a three-storey single occupancy house. Firebreaks should be adhesively bonded to the substrate (i.e. ribbons or dabs of adhesive is not acceptable) and mechanically fixed with stainless steel fire fixings at 400mm centres. The fire barrier shall be of non-combustible material (i.e. Rockwool, slab of minimum density 120kg/m^3), be at least 200mm high, continuous and unbroken for the full perimeter of the building and for the full thickness of the insulation. Glass wool is not suitable for use as a firestop.

4.3 PROXIMITY OF HEAT PRODUCING APPLIANCES

Combustible material must be separated from a brick or blockwork chimney by at least 200mm from a flue and 40mm from the outer surface of the brick or blockwork chimney, in accordance with Clause 2.15 of TGD to Part J of the Building Regulations 1997 to 2010. Metal fixings in contact with combustible materials should be at least 50mm from a flue.

4.4 THERMAL INSULATION

Assessments were carried out to verify that the requirements of Part L of the Building Regulations 1997 to 2010 can be achieved using the Baumit 60 External Insulation Systems. The manufacturer's declared thermal conductivity values ($\lambda_{90/90}$) are 0.038W/mK for the standard white EPS board, 0.031W/mK for the graphite enhanced EPS board, 0.036W/mK for the mineral wool board (density 140kg/m^3) and 0.020W/mK

for the phenolic board. These have not been assessed by NSAI Agrément. Table 6 shows typical insulation thicknesses to achieve the required 0.27W/m^{2}K U-value.

Calculation of U-values will be required on individual projects to confirm a minimum U-value of 0.27W/m^{2}K has been achieved, based on the wall construction and the insulation used. The thermal conductivity (λ) value of the insulation to be used in all U-value calculations must be the $\lambda_{90/90}$ value.

4.5 LIMITING THERMAL BRIDGING

The linear thermal transmittance 'ψ' (Psi) describes the heat loss associated with junctions and around openings. Window and door reveal design used on the Baumit 60 External Insulation Systems have been assessed and when detailed in accordance with this Certificate can meet the requirements of Table D1 of TGD to Part L of the Building Regulations 1997 to 2010. When **all** bridged junctions within a building comply with the requirements of Table D1 of TGD to Part L, the improved 'y' factor of 0.08 can be entered into the DEAP building energy rating (BER) calculation.

Alternatively if **all** junctions can be shown to be equivalent or better than the Acceptable Construction Details published by the DoEHLG, then the improved 'y' factor of 0.08 can be used, i.e. R value = 0.6m^{2}K/W for window/door reveals.

Where either of the above options are shown to be valid, or when the required values cannot be achieved, all relevant details should be recorded on the 'Certificate of Compliance' for that project for use in future BER calculations.

'ψ' values for other junctions outside the scope of this Certificate should be assessed in accordance with BRE IP1/06 *Assessing the effects of thermal bridging at junctions and around openings* and BRE BR 497 *Conventions for calculating linear thermal transmittance and temperature factors* in accordance with Appendix D of TGD to Part L of the Building Regulations 1997 to 2010.

4.6 CONDENSATION RISK

Areas where there is a significant risk of condensation due to high levels of humidity should be identified during the initial site survey.

4.6.1 Internal Surface Condensation

When improving the thermal performance of the external envelope of a building through external wall insulation, designers need to consider the impact of these improvements on other untouched elements of the building. As discussed in Section 4.5 of this Certificate, thermally bridged sections of the envelope such as window jambs, sills and eaves will experience a lower level of increased thermal performance. The degree of improvement to these junctions can be limited due to physical restrictions on site i.e. footpaths, soffit boards or hinges for windows.

When bridged junctions meet the requirements of Appendix D Table D1 of TGD to Part L of the Building Regulations 1997 to 2010, the coldest internal surface temperature will satisfy the requirements of Section D2, namely that the temperature factor shall be equal to or greater than 0.75. As a result, best practice will have to be adopted in order to limit the risk of internal surface condensation which can result in dampness and mould growth.

When site limiting factors give rise to substandard levels of insulation at bridged junctions, guidance should be sought from the Certificate holder as to acceptable minimum requirements.

4.6.2 Interstitial Condensation

An interstitial condensation risk analysis will be carried out by Grafton Merchanting ROI in accordance with BS 5250:2002 and the design modified as appropriate to reduce the risk of surface condensation to acceptable levels.

4.7 MAINTENANCE

Adequate provision should be made in the initial design phase for access and maintenance over the life of the system.

The system shall be inspected and maintained in accordance with the Certificate holder's instructions, as detailed in the Repair and Maintenance Method Statement, which is incorporated into the Building Owner's Manual.

Necessary repairs should be carried out immediately and must be in accordance with the Certificate holder's instructions. Repairs to plumbing etc. should also be carried out as required to prevent deterioration or damage, and to protect the integrity of the system.

Synthetic finishes may be subject to aesthetic deterioration due to exposure to UV light. They should be re-painted every 18 to 20 years to maintain appearance. Care should be taken to ensure that the synthetic finish used is compatible with the original system and that the water vapour transmission or fire characteristics are not adversely affected.

Sealants shall be subject to regular inspection (at least annually). They should be replaced as required and fully replaced every 18 to 20 years to maintain performance.

Table 4: Impact Resistance			
Insulation	**Reinforced Base Coat**	**Decorative Finish**	**Impact Category** ETAG 004 Table 8
EPS	Standard	Synthetic render	II
EPS	High Impact		I
EPS	Standard	Mineral render	II
EPS	High Impact		
Mineral Wool	Standard	Synthetic render	II
Mineral Wool	High Impact		I
Mineral Wool	Standard	Mineral render	II
Mineral Wool	High Impact		I
Phenolic	Standard	Synthetic render	II
Phenolic	High Impact		
Phenolic	Standard	Mineral Render	
Phenolic	High Impact		

Table 5: Reaction to Fire			
Configuration	**Maximum declared organic content of the rendering system**	**Minimum declared flame retardant content of the rendering system**	**Class according to EN 13501-1**
- Adhesive - EPS 50 to 200mm - Base coat: Baumit Bonding Mortar - Finishing coat: SilikonTop and GranoporTop	6.8%	0%	B-s2, d0
- Adhesive - Mineral fibre 50 to 200mm - Base coat: Baumit Bonding Mortar - Finishing coat: SilikonTop and GranoporTop	6.8%	0%	A2-s1, d0
- Phenolic 60 to 200mm	8.5%	0%	B-s1, d0
All other configurations	6.8%	0%	C-s2, d0

Table 6: Typical U-values			
ETICS insulation	**Declared thermal conductivity ($\lambda_{90/90}$) of insulation (W/mK)**	**Thickness of insulation (mm)**	**U-value (W/m^2K)**
No ETICS	-	-	2.33
EPS board (white)	0.038	160	0.21
		140	0.24
		120	0.27
EPS board (grey)	0.032	160	0.18
		140	0.20
		120	0.23
		100	0.27
Mineral wool board	0.036	140	0.24
		120	0.26
Phenolic board	0.020	120	0.16
		100	0.19
		70	0.26

These values are based on a typical house of 215mm hollow block construction (Building Regulations 2009 Part L) with the following construction (internal to external):

- Plaster, gypsum (BS 5250): 4mm
- Render (BS 5250): 20mm
- Hollow block, 1800kg/m^3: 215mm (10mm mortar joint)
- Render: 20mm
- Adhesive mortar: 10mm
- Insulation material: As specified
- Render finish on to the base coat with reinforcement mesh: As specified.

4.8 WEATHERTIGHTNESS

When designed and detailed in accordance with this Certificate, the system will prevent moisture from the ground coming in contact with the insulation.

The external render has adequate resistance to water penetration when applied in accordance with the Certificate holder's instructions.

Joint designs, sealant specifications and recommendations for detailing at windows and doors were assessed and are considered adequate to ensure that water penetration will not occur, assuming that regular maintenance is carried out in accordance with the Certificate holder's instructions.

Recommendations for detailing at windows and doors have been assessed and are considered adequate to ensure that water penetration will not occur, assuming that regular maintenance is carried out in accordance with the Certificate holder's instruction.

4.9 DURABILITY

4.9.1 Design Life

An assessment of the life of the system was carried out. This included an assessment of:

- Design and installation controls;
- Proposed building heights;
- Render thickness and specification;
- Material specifications, including insulant, mesh, beading and fixing specifications;
- Joint design;
- Construction details;
- Maintenance requirements.

The assessment indicates that the system should remain effective for at least 60 years, providing that it is designed, installed and maintained in accordance with this Certificate. Any damage to the surface finish shall be repaired immediately and regular maintenance shall be undertaken as outlined in Section 4.7 of this Certificate.

4.9.2 Aesthetic Performance

As with traditional renders, the aesthetic performance of the systems, e.g. due to discolouration, soiling, staining, algal growth or lime bloom, is depended on a range of factors such as:

- Type, colour and texture of surface finish;
- Water retaining properties of the finish;
- Architectural form and detailing;
- Building orientation/elevation;
- Local climate/atmospheric pollution.

Adequate consideration should be given at the design stage to all of the above to ensure that the level of maintenance necessary to preserve the aesthetics of the building is acceptable.

4.10 PRACTICABILITY

The practicability of construction and the adequacy of site supervision arrangements were assessed and considered adequate. The project specific designs and method statements for application, inspection and repair were reviewed and found to be satisfactory.

4.11 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING

- Structural strength and stability
- Behaviour in fire
- Impact resistance
- Pull-out resistance of fixings
- Thermal resistance
- Hygrothermal behaviour
- Condensation risk
- Site erection controls
- Durability of components
- Dimensional stability of insulants

4.12 OTHER INVESTIGATIONS

(i) Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on mechanical strength/stability and durability were assessed.

(ii) The manufacturing process was examined including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

(iii) Special building details (e.g. ground level, window and door openings, window sill and movement joints) were assessed and approved for use in conjunctions with this Certificate.

(iv) Site visits were conducted to assess the practicability of installation and the history of performance in use of the product.

5.1 National Standards Authority of Ireland ("NSAI") following consultation with NSAI Agrément has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from date of issue so long as:

(a) the specification of the product is unchanged.

(b) the Building Regulations 1997 to 2010 and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.

(c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.

(d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.

(e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.

(f) the registration and/or surveillance fees due to IAB are paid.

5.2 The NSAI Agrément mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the NSAI Agrément mark and certification number and must remove them from the products already marked.

5.3 In granting Certification, the NSAI makes no representation as to;

(a) the absence or presence of patent rights subsisting in the product/process; or

(b) the legal right of the Certificate holder to market, install or maintain the product/process; or

(c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.

5.4 This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

5.5 Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act 2005, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.

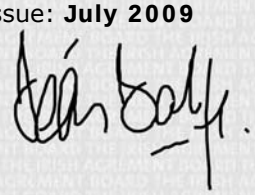
5.6 The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.

5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certification.

NSAI Agrément

This Certificate No. **09/0336** is accordingly granted by the NSAI to **w&p Baustoffe GmbH** on behalf of NSAI Agrément.

Date of Issue: **July 2009**

Signed 

Seán Balfe
Director of NSAI Agrément

Readers may check that the status of this Certificate has not changed by contacting NSAI Agrément , NSAI, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. www.nsai.ie

Revisions: September 2009; December 2011

- Amendment made to value for EPS thermal conductivity.
- Addition of details for system for new construction.

Baumit 30 External Wall Insulation Systems

PRODUCT DESCRIPTION
This Detail Sheet relates to the Baumit 30 External Wall Insulation Systems, as defined in NSAI Agrément Certificate 09/0336. This Detail Sheet must be read in conjunction with NSAI Agrément Certificate 09/0336, which gives the system's position regarding the Building Regulations and the Conditions of Certification.

USE:
The systems are for the external insulation of:
(a) Existing concrete or masonry dwellings;
(b) New concrete or masonry commercial or industrial buildings, which are designed in accordance with the Building Regulations 1997 to 2010.

The systems are suitable for use up to a maximum of six storeys (18m) in height in purpose groups 1(a), 1(b), 1(c), 2(a), 2(b), 3, 4(a) and 4(b) as defined in Part B of the Building Regulations 1997 to 2010.

The systems have not been assessed for use with timber frame or steel frame construction, or where a design life in excess of 30 years is required.

The Baumit 30 External Wall Insulation Systems are a single seal system.

Part One / Certification 1

1.1 ASSESSMENT
In the opinion of NSAI Agrément, Baumit 30 External Wall Insulation Systems, if used in accordance with this Detail Sheet, meets the requirements of the Building Regulations 1997 - 2010 as indicated in Section 1.2 of Certificate 09/0336.

1.2 BUILDING REGULATIONS 1997 to 2010
This matter is dealt with in NSAI Agrément Certificate 09/0336.

Part Two / Technical Specification and Control Data 2

2.1 PRODUCT DESCRIPTION

The Baumit 30 External Wall Insulation Systems are summarised in Table 1.

The systems can be applied on a variety of existing external surfaces such as brick or rendered masonry walls. It can also be fixed on surfaces of horizontal or tilted structural elements provided that they are not directly exposed to precipitation. These may include ceilings over passageways, internal walls and roofs (on the ceiling side) of garages or cellars adjacent to heated rooms.

The substrate on which the Baumit 30 External Wall Insulation Systems will be used should have reaction to fire class A1 or A2-s1 d0 in accordance with I.S. EN 13501-1.

Component specifications and ancillary items are listed in NSAI Agrément Certificate 09/0336 Table 2 and 3.

2.2 MANUFACTURE, SUPPLY AND INSTALLATION

This matter is dealt with in Section 2.2 of NSAI Agrément Certificate 09/0336.

2.3 DELIVERY, STORAGE AND MARKING

This matter is dealt with in Section 2.3 of NSAI Agrément Certificate 09/0336.

2.4 INSTALLATION

This matter is dealt with in Section 2.4 of NSAI Agrément Certificate 09/0336.

Part Three / Design Data 3

This matter is dealt with in NSAI Agrément Certificate 09/0336.

NSAI Agrément

<table>
<tr><th colspan="5">Table 1: Product Range, Components and Fixing Requirements</th></tr>
<tr><th>Type</th><th>Insulation</th><th>Fixing Methods</th><th colspan="2">Base Coat and Reinforcement</th><th>Decorative Finish</th></tr>
<tr><td>Baumit Open</td><td>Expanded polystyrene board</td><td rowspan="5">Adhesively bonded minimum 40% coverage, and supplementary mechanical fixings.</td><td>Standard:
1 coat of OpenContact to a thickness of 3-4mm with a layer of reinforcement mesh.</td><td>High Impact Areas*:
2 coats of OpenContact each to a thickness of 3-4mm, each with a layer of reinforcement mesh.</td><td>Primer:
UniPrimer

Top coats:
openTop
NanoporTop</td></tr>
<tr><td>Baumit EPS</td><td>Expanded polystyrene board</td><td rowspan="2">Standard:
1 coat of StarContact to a thickness of 3-4mm with a layer of reinforcement mesh.</td><td rowspan="3">High Impact Areas*:
2 coats of StarContact each to a thickness of 3-4mm, each with a layer of reinforcement mesh.</td><td>Primer:
UniPrimer

Top coats:
NanoporTop
SilikatTop
SilikonTop
StellaporTop
GranoporTop
EdelPutz Spezial
StyleTop</td></tr>
<tr><td>Baumit XPS</td><td>Extruded polystyrene board</td></tr>
<tr><td>Baumit Mineral</td><td>Mineral wool board</td><td>Standard:
1 coat of StarContact Forte to a thickness of 4-5mm with a layer of reinforcement mesh.</td><td>Primer:
UniPrimer

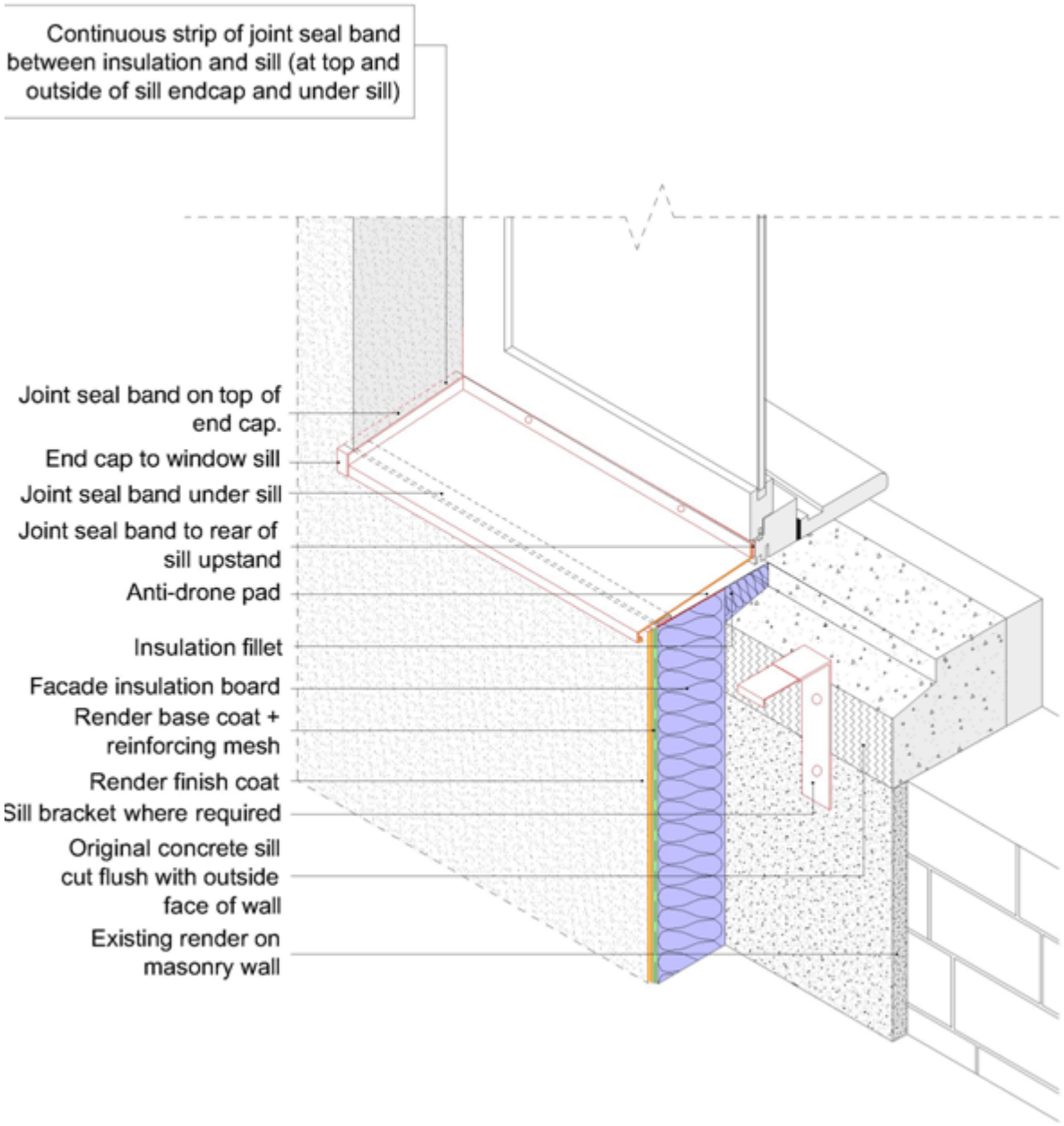
Top coats:
NanoporTop
SilikatTop
SilikonTop
StellaporTop
Edelputz Spezial
StyleTop</td></tr>
<tr><td>Baumit XS 022</td><td>Phenolic board</td><td></td><td>Primer:
UniPrimer

Top coats:
NanoporTop
SilikatTop
SilikonTop
GranporTop
StellaporTop
Edelputz Spezial
StyleTop</td></tr>
<tr><td colspan="6">Notes:
1. Mechanical fixings to be provided in accordance with the project specific design requirements based on test results.
2. Where EPS or XPS boards require additional mechanical fixing, a minimum of 4 fixings per metre squared shall be provided.
3. Mineral wool boards require a minimum of 8 fixings per metre squared.
4. Phenolic boards require a minimum of 5 fixings per metre squared.
5. Where required, 1 additional stainless steel fire fixing per metre squared shall be provided.
6. Fixing of fire barriers:
All mineral wool lamella fire barriers are:
a) Adhesively fixed using the appropriate system bonding mortar (OpenContact, StarContact or StarContact Forte), and
b) Mechanically fixed as follows:
Horizontal fire barriers: Stainless steel mechanical fixings countersunk and capped as shown in Figure 7.2 and secured into structural substrate at maximum 1m centres.
Vertical fire barriers: Stainless steel mechanical fixings countersunk and capped as shown in Figure 7.2 and secured into structural substrate at maximum 0.5m centres.
7. Fire fixings are not required two storey single occupancy dwellings.
8. Fxings must be provided around all window and door openings to ensure adequate and robust edge restraint over the design life. See Figure 4.1.
9. Services/Fitting: Secure supports to be provided for soil and rainwater pipe brackets, aerials, lighting, cameras, signage etc. in accordance with the project specific design as appropriate.
* High Impact Areas: Two coats with appropriate curing time between coats.</td></tr>
</table>

Note 1: Window sill fixing and sealing to be in accordance with manufacturer's instructions.

Note 2: Window unit and sill to be compatible i.e. provide a fully sealed, flush finished joint at interface. Other sill/frame designs must achieve equivalent standard of sealing, fixing and movement accommodation at sill/frame interface and sill/reveal interface. Sill upstand should not compromise window drainage.

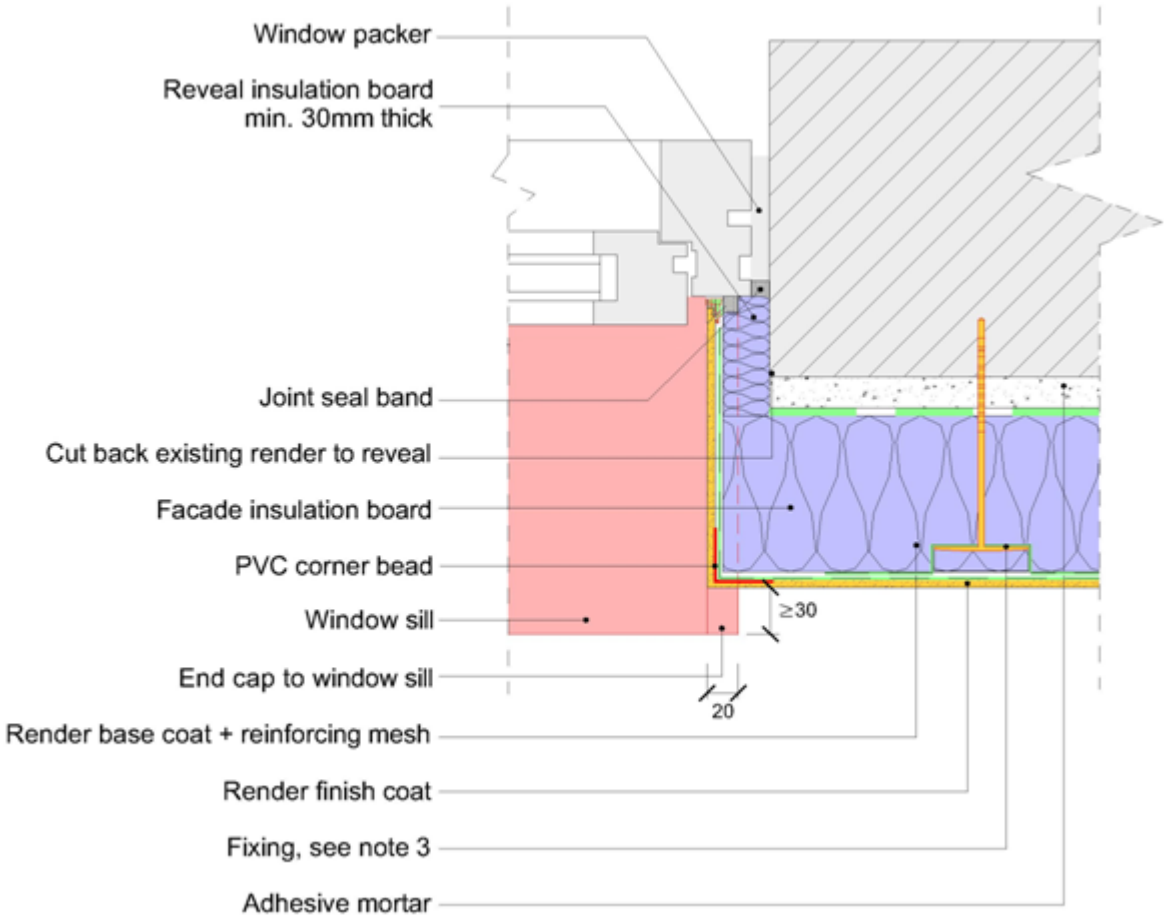
Figure 1-1: Typical Detail – Window Sill Refurbishment - Section



Note 1: Window sill fixing and sealing to be in accordance with manufacturer's instructions.

Note 2: Window unit and sill to be compatible i.e. provide a fully sealed, flush finished joint at interface. Other sill/frame designs must achieve equivalent standard of sealing, fixing and movement accommodation at sill/frame interface and sill/reveal interface. Sill upstand should not compromise window drainage.

Figure 1-2: Typical Detail – Window Sill Refurbishment – Isometric View

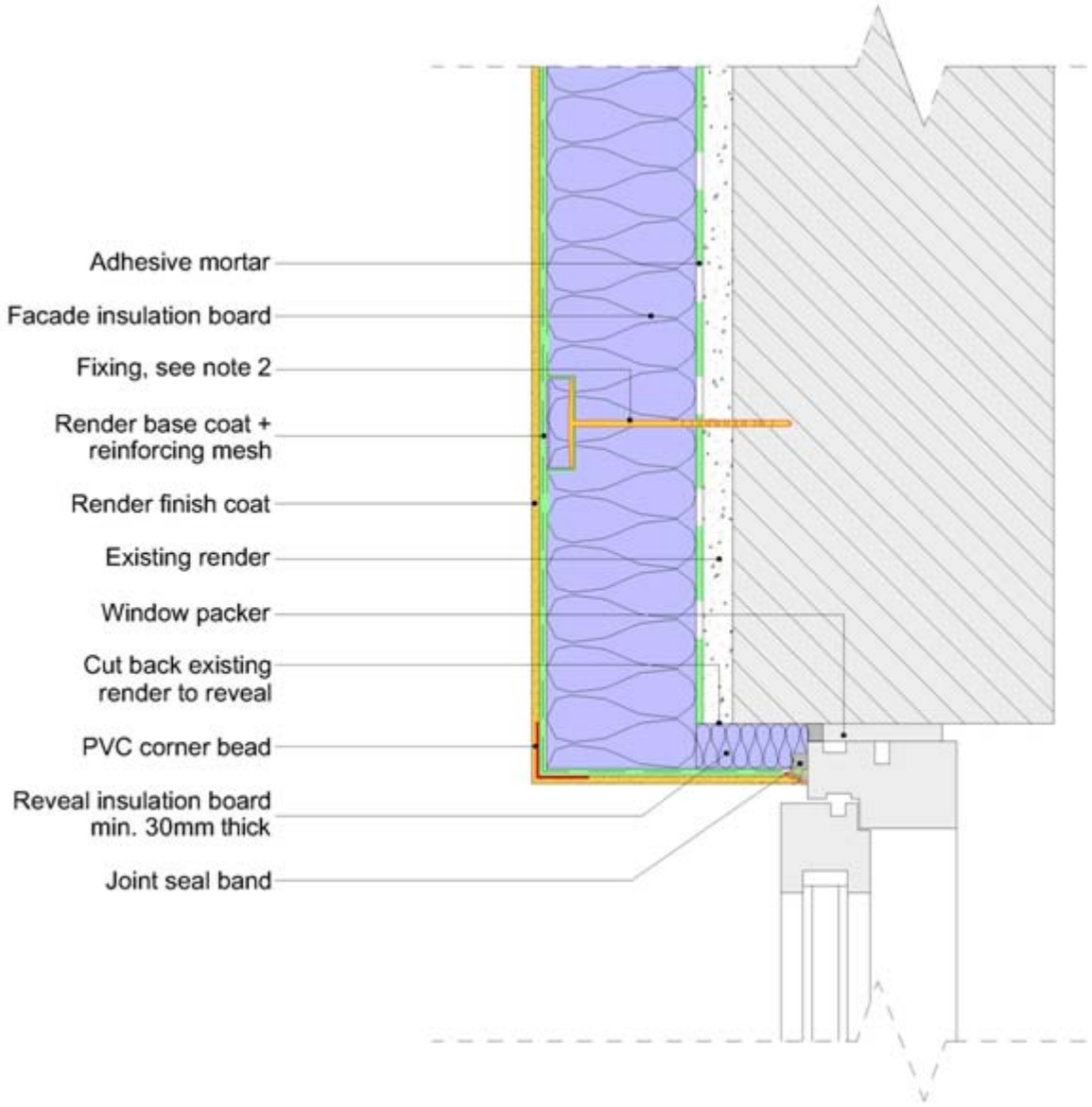


Note 1: Positive fixings to be provided around all window and door openings to ensure adequate and robust edge restraint.

Note 2: Flexible sealant to be provided as necessary at all intersections between dissimilar materials.

Note 3: For fixing requirements see Table 1.

Figure 2.1: Typical Detail – Recessed Window Reveal Refurbishment



Note 1: Positive fixings to be provided around all window and door openings to ensure adequate and robust edge restraint.

Note 2: For fixing requirements see Table 1.

Figure 2.2: Typical Detail – Window Head Refurbishment

4.1 STRENGTH AND STABILITY
This matter is dealt with in Section 4.1 of NSAI Agrément Certificate 09/0336.

4.2 BEHAVIOUR IN RELATION TO FIRE
This matter is dealt with in Section 4.2 of NSAI Agrément Certificate 09/0336.

4.3 PROXIMITY OF HEAT PRODUCING APPLIANCES
This matter is dealt with in Section 4.3 of NSAI Agrément Certificate 09/0336.

4.4 THERMAL INSULATION
This matter is dealt with in Section 4.4 of NSAI Agrément Certificate 09/0336.

4.5 LIMITING THERMAL BRIDGING
This matter is dealt with in Section 4.5 of NSAI Agrément Certificate 09/0336.

4.6 CONDENSATION RISK
This matter is dealt with in Section 4.6 of NSAI Agrément Certificate 09/0336.

4.7 MAINTENANCE
This matter is dealt with in Section 4.7 of NSAI Agrément Certificate 09/0336.

4.8 WEATHERTIGHTNESS
This matter is dealt with in Section 4.8 of NSAI Agrement Certificate 09/0336.

4.9 DURABILITY

4.9.1 Design Life
An assessment of the life of the system was carried out. This included an assessment of:

- Design and installation controls;
- Proposed building heights;
- Render thickness and specification;
- Material specifications, including insulant, mesh, beading and fixing specifications;
- Joint design;
- Construction details;
- Maintenance requirements.

The assessment indicates that the system should remain effective for at least 30 years, providing that it is designed, installed and maintained in accordance with this Certificate. Any damage to the surface finish shall be repaired immediately and regular maintenance shall be undertaken as outlined in Section 4.7 of this Certificate.

4.9.2 Aesthetic Performance
As with traditional renders, the aesthetic performance of the systems, e.g. due to discolouration, soiling, staining, algal growth or lime bloom, is depended on a range of factors such as:

- Type, colour and texture of surface finish;
- Water retaining properties of the finish;
- Architectural form and detailing;
- Building orientation/elevation;
- Local climate/atmospheric pollution.

Adequate consideration should be given at the design stage to all of the above to ensure that the level of maintenance necessary to preserve the aesthetics of the building is acceptable.

4.10 PRACTICABILITY
This matter is dealt with in Section 4.10 of NSAI Agrément Certificate 09/0336.

4.11 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING
This matter is dealt with in Section 4.11 of NSAI Agrément Certificate 09/0336.

4.12 OTHER INVESTIGATIONS
This matter is dealt with in Section 4.12 of NSAI Agrément Certificate 09/0336.