



NSAI
Agrément

CI/SfB (21.9) Rn7 (M2) CI/SfB

CERTIFICATE NO. 09/0336

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Baumit

External Wall Insulation System

Système d'isolation pour murs extérieurs
Wärmedämmung für Außenwand

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 2008**.

NSAI Agrément operates in association with the **National Standards Authority of Ireland (NSAI)** as the National Member of UEAtc.



PRODUCT DESCRIPTION:

This Certificate relates to **Baumit** External Wall Insulation Systems. Each system is comprised of:

- Surface preparation of masonry or concrete substrate;
- Full system beads and render only beads;
- Insulation board;
- Cementitious basecoat incorporating a glass fibre mesh
- Synthetic or cementitious decorative finish coat;
- Decorative finish;
- Mechanical Fixings;
- Adhesive Fixings;
- Weather tight joints;
- Movement Joints;
- Provision for limiting cold bridging at external wall/floor junctions;
- Provision for fire stopping at external compartment walls and floors.

The system is designed and manufactured by Baumit GmbH. Baumit GmbH (**Baumit**) has approved **CPI Ltd** to fulfil certain functions on its behalf ie

- provide project specific design in accordance with an approved design process

- approve, monitor and review Licensed Applicators in accordance with approved procedures
- supply all materials and components.

The installation of the system is by CPI Ltd Licensed Applicators and installation is monitored by CPI Ltd.

Baumit GmbH offers a five year materials guarantee, subject to certain terms and conditions.

USE

The system is for the external insulation of

- a) existing concrete and masonry buildings
- b) new concrete or masonry commercial or industrial buildings, which are designed in accordance with Building Regulations 1997 to 2008;

The systems have not been assessed for use

- a) where a design life in excess of 30 years is required, or
- b) with steel frame or timber frame construction.

The system is suitable for use up to a maximum height of 6 storeys (18 metres) as specified in Table 1, provided that the window detailing requirements, specified in Table 4, are complied with.

Readers are advised to check that this Certificate has not been withdrawn or superseded by a later issue by contacting the NSAI Agrément, NSAI, 1 Swift Square, Northwood, Santry, Dublin 9 or online at <http://www.n sai.ie/modules/certificates/uploads/pdf/090336.pdf>

**DESIGN, MANUFACTURE,
INSTALLATION AND MARKETING**

System Design and Manufacture:

Baumit GmbH
Reckenberg 12, D-87541 Bad Hindelang,
Germany
Tel: +49 (0) 83 24 921-0
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**Project Specific Design, Technical
Support, Applicator Approval, Sales:**

CPI Ltd, Laraghcon, Lucan, Co Dublin
Tel: +353 (0) 1 6302500
Fax: +353 (0) 1 6280318
e-mail: ewi@cpi.ie
website: www.cpi.ie

Installation:

CPI Ltd Licensed Applicators.

1.1 ASSESSMENT

In the opinion of the NSAI Agrément, Baumit External Wall Insulation Systems, when installed by CPI Ltd recommended contractors, in accordance with a CPI Ltd project specific design and in accordance with the requirements of this Certificate, can meet the requirements of the Building Regulations 1997 to 2008, as indicated in Section 1.2 of this NSAI Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2008

REQUIREMENT:

Part A – Structure

A1 - Loading

The system as certified, can be incorporated into structures that will meet the requirements. See Parts 3 and 4 of this certificate.

A2 – Ground Movement

The system as certified, can be incorporated into structures that will meet the requirements. See Parts 3 and 4 of this certificate.

Part B – Fire Safety

B3 – Internal Fire Spread (structure)

The system as certified, can be incorporated into structures that will meet the requirements. See Parts 3 and 4 of this certificate.

B4 – External Fire Spread

The system as certified, can be incorporated into structures that will meet the requirements. See Parts 3 and 4 of this certificate.

**Part C – Site Preparation and
Resistance to Moisture**

**C4 – Resistance to weather and
ground moisture**

The system as certified, can be incorporated into structures that will meet the requirements. See Parts 3 and 4 of this certificate.

Part D – Materials and Workmanship

D3 – Baumit External Wall Insulation Systems, as certified in this Certificate, are manufactured from materials, which are proper materials, fit for their intended use. See Parts 3 and 4 of this Certificate.

D1 – Baumit External Wall Insulation Systems, when used in accordance with this certificate meets the requirements for workmanship.

Part F - Ventilation

F2 – Condensation in roofs

The system as certified, can be incorporated into structures that will meet the requirements. See Parts 3 and 4 of this certificate.

Part J - Heat producing appliances

J3 - Protection of the building

The system as certified, can be incorporated into structures that will meet the requirements. See Parts 3 and 4 of this certificate.

**Part L - Conservation of Fuel and
Energy**

L1 – Conservation of fuel and energy

The system as certified, can be incorporated into structures that will meet the requirements. See Parts 3 and 4 of this certificate.

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

These are listed in Table 3.

2.2 MANUFACTURE, SUPPLY AND INSTALLATION

Baumit is responsible for the manufacture and supply of system components to Baumit approved specifications, in accordance with the Baumit approved supplier system. Baumit has appointed CPI Ltd as distribution partner for Ireland, with responsibility for

- a. project specific design in accordance with an approved design process,
- b. approval, monitoring and review of Licensed Applicators in accordance with approved training and assessment procedures
- c. product supply;
- d. technical support,
- e. sales and marketing.

The installation of the system is by CPI Ltd Licensed Applicators, in accordance with CPI Ltd project specific specification, and method statements. Installation is monitored by CPI Ltd Technical Advisors.

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 MARKING

- 2.3.1 The insulation is delivered to site in the quantities, and container types, listed in Table 2. Each pack is marked with the manufacturer's details, product identification marks and batch numbers.
- 2.3.2 Components are delivered to site as outlined in Tables 2 and 3. Each container bears the manufacturer's and the product's identification marks, batch number and the NSAI Agrément logo incorporating the number of this certificate.
- 2.3.3 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.
- 2.3.4 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.
- 2.3.5 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.

Table 1 Product Range, Components and Fixing Requirements

Type	Storey Height	Insulation	Reinforced base coat	Fixings	Minimum base coat thickness	Decorative Finish
Baunit (EPS)	Up to 6m (2.5 storeys maximum including gable)	Expanded polystyrene board	Standard: One coat 4mm minimum thickness of Baunit Bonding Mortar, applied in two layers (wet in wet) with Baunit Standard Reinforcing mesh applied between layers. High impact areas: Two standard coats as above, with appropriate curing time between coats. Overall thickness 8mm minimum.	Adhesively bonded minimum 40% coverage See Notes 1, 4 and 5	Standard: 4mm High impact areas: 8mm	Primer and synthetic render Or Primer and mineral render
Baunit (EPS)	Up to 18m (6 storeys maximum)	Expanded polystyrene board		Adhesively bonded minimum 40% coverage See Notes 2, 4 and 5		
Baunit (MFB)	Up to 18m (6 storeys maximum)	Mineral fibre board (MFB)		Adhesively bonded minimum 40% coverage See Notes 3, 4 and 5		

Notes:

- 1 In addition to adhesively fixing with Bonding Mortar, EPS insulation board to be mechanically fixed, if required, in accordance with the project specific design requirements based on pullout test results. Standard fixings to be countersunk and capped, minimum rate of 4/m² – see Figure 1. Fire fixings are not required though the board in two storey single occupancy dwellings. For fixings of fire barriers, where required, see Note 4.
- 2 In addition to adhesively fixing with Bonding Mortar, mechanical fixing of EPS insulation board may be required, in accordance with the project specific design requirements, based on pullout test results and Certificate holder's requirements. Standard fixings to be countersunk and capped, minimum rate of 4/m² see Figure 1. Where horizontal distance between vertical fire barriers is greater than 3m, one additional thermally broken fire fixing to be provided, per metre squared – see Figure 7.1. For fixings of fire barriers see Note 4.
- 3 In addition to adhesively fixing with Bonding Mortar, mineral fibre board is mechanically fixed, in accordance with the project specific design requirements, based on pullout test results. Standard fixings to be countersunk and capped, minimum rate of 8/m². Where horizontal distance between vertical fire barriers is greater than 3m, one additional thermally broken fire fixing to be provided, per metre squared – see Figure 7.1. For fixings of fire barriers see Note 4.
- 4 Fixing of fire barriers:
 All mineral fibre lamella fire barriers are
 a) adhesively fixed using Bonding Mortar 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 1 m centres
 Vertical fire barriers: Stainless steel mechanical fixings countersunk and capped as shown in Figure 7.2 and secured into structural substrate at maximum 0.5 m centres
- 5 Positive fixings must be provided around all window and door openings to ensure adequate and robust edge restraint over the design life. See Figure 3
- 6 Services/Fittings: 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.
- 7 Synthetic finishes include the following options: Silikon Putz, GranoporPutz, NanoporPutz.

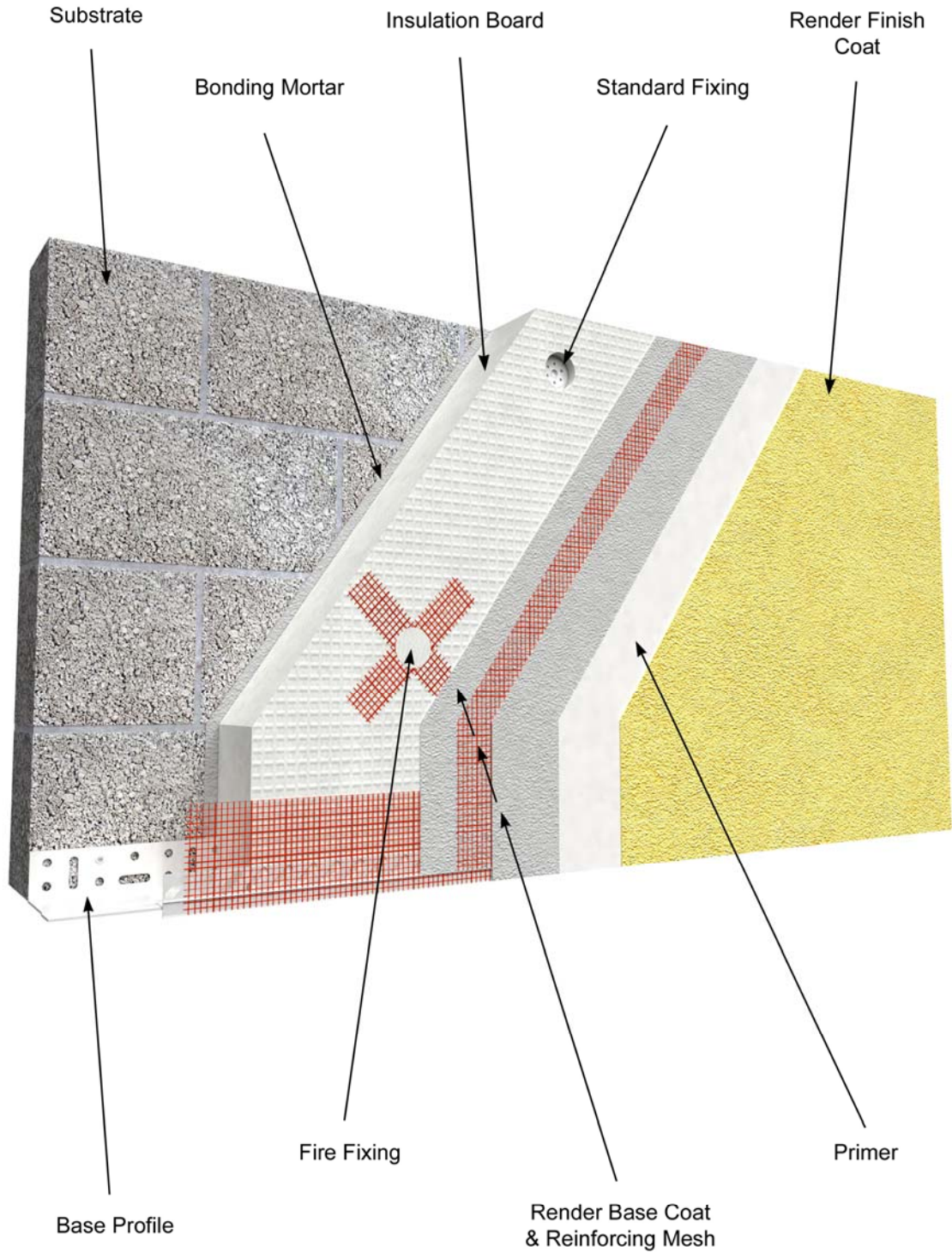


Figure 1.0 Baunit External Wall Insulation System– Isometric view

Table 3 Ancillary Items

Component	Description	Quantity	Container
Baunit profiles	Range of standard PVC, aluminium, stainless steel and galvanised steel profiles for use at wall base, stop ends and movement joints. Stainless steel Grade 304 to IS EN 10088-1:2005 <i>Stainless steels. List of stainless steels</i> DX51D +275N-A-U	2.5 – 3.0 m lengths	N/a
Baunit 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 is available to suit insulation thickness and substrate type. These have not been individually assessed by NSAI Agrément.	Varies	Boxed by manufacturer
Joint Seal	Compressible waterproofing sealing tape to DIN 18542 <i>Sealing of outside wall joints with impregnated sealing tapes made of cellular plastics - Impregnated sealing tapes - Requirements and testing</i> Baunit approved sealant to be one-part Low Modulus Modified Polymer Sealants, Class F 25LM to IS EN ISO 11600: 2004 <i>Building Construction - Jointing Products - Classification and Requirements for Sealant</i> , have 20-25 year life expectancy, be compatible with Baunit systems and to be installed in accordance with the requirements of BS 6093 2006 <i>Design of joints and jointing in building construction. Guide</i> .	Rolls 2-6mm 3-9mm 5-12mm	Boxed by manufacturer

Table 2 Component specifications and supply details

Component	Description	Dimensions/Quantity	Container
Insulation			
EPS Expanded Polystyrene Facade Board	Grade: SD/FRA. CFC/HCFC-free to IS EN 13163:2001 <i>Thermal insulation products for buildings. Factory made products of expanded polystyrene.</i> Density 15kg/m ³	Size: 1000mm x 500mm Thickness 20 mm to 200 mm	Polythene shrink wrapped package
EPS Expanded Polystyrene Plinth Board	Grade: SD/FRA. CFC/HCFC-free to IS EN 13163:2001 <i>Thermal insulation products for buildings. Factory made products of expanded polystyrene.</i> Density 33kg/m ³	Size: 1000mm x 500mm Thickness 20 mm to 200 mm	Polythene shrink wrapped package
MFB Mineral Fibre Board	CFC/HCFC-free to IS EN 13162:2001 <i>Thermal insulation products for buildings. Factory made mineral wool (MW) products. Specification</i> Density 140kg/m ³ Contains phenolic resin binder and mineral oil water repellent.	Size: 1200mm x 400mm Thickness 80 mm to 200 mm	Polythene shrink wrapped package
Mineral Fibre Lamallae	CFC/HCFC-free to IS EN 13162:2001 <i>Thermal insulation products for buildings. Factory made mineral wool (MW) products. Specification</i> Density 95kg/m ³ Contains phenolic resin binder and mineral oil water repellent.	Size: 1200mm x 200mm Thickness 80 mm to 200 mm	Polythene shrink wrapped package
Mesh			
Standard mesh	Standard grade non-slip alkaline resistant glass fibre mesh Tear strength $\geq 1.5\text{kN}/50\text{mm}$; Weight 160 g/m ²	Mesh dimension 4 mm x 4 mm Roll size 1 m x 50 m	Polythene shrink wrapped package
Panzer mesh	Heavy duty non-slip alkaline resistant glass fibre mesh Tear strength $\geq 3.4\text{kN}/50\text{mm}$; Weight 300 g/m ²	Mesh dimension 6.0 mm x 6.0 mm Roll size 1 m x 25 m	
Bonding Mortar			
Baumit Bonding Mortar	Factory prepared dry powder mortar to EN 998-1 as adhesive bonding agent and reinforcing base coat.	25Kg	Bag
Primer			
DG27	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			
SEP 02/03/04	Factory prepared dry powder mortar to EN 998-1 for use with sponged or scratched finish. Maximum grain size 2mm/3mm/4mm	25 kg	Bag
EST 01/02/03/04/05	Factory prepared dry powder mortar to EN 998-1 for use with plain, sponged or trowel texture finish. Maximum grain size 1mm/2mm/3mm/4mm/5mm	25 kg	Bag
KRP 02/03/04	Factory prepared dry powder mortar to EN 998-1 for use with scratched, pitted texture finish. Maximum grain size 2mm/3mm/4mm	25 kg	Bag
MRP 02/03/05	Factory prepared dry powder mortar to EN 998-1 for use with coarse grain textured finish. Maximum grain size 2mm/3mm/5mm	25 kg	Bag
Synthetic Paste Renders			
Silikon Putz	Ready-to use, silicone resin decorative thin coat render. Suitable for manual or machine application.	25 kg	Bucket
Granopor Putz	Ready-to use, decorative particles render bound in a clear silicone finish. Suitable for manual or machine application.	25 kg	Bucket
Nanopor Putz	Ready-to use, non-soiling mineral decorative thin coat render. Suitable for manual or machine application.	25 kg	Bucket

2.4 Installation

2.4.1 General

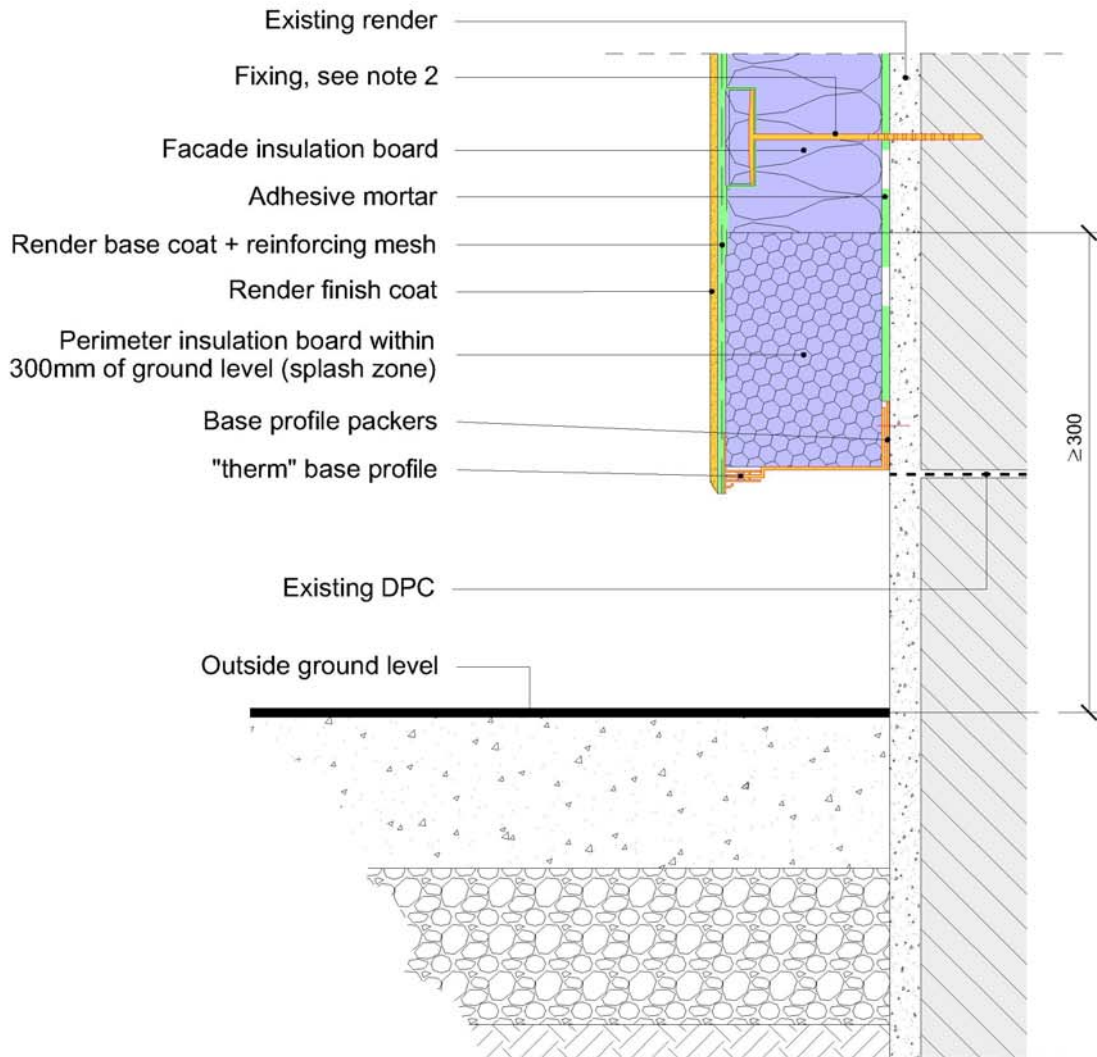
- Installation shall be carried out by CPI Ltd Licensed Applicators and shall be in accordance with the Certificate holder's instructions and the requirements of this Certificate.
- CPI Ltd prepare a bespoke *Site Package* for each project, which takes into consideration whether the building is new or existing, and includes 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 Client and the Main Contractor. Contractors will be expected to adhere to the specification. Deviations must be approved by a CPI Ltd technical representative.
- CPI Ltd Technical Advisors will visit site on a regular basis to ensure work is carried out in accordance with the Certificate holder's requirements and the project specific *Site Package*.
- All windows have to be installed and made weather tight within the opening, before application of the system.
- Mesh specification shall be in accordance with Clause 4.1.2.
- Mineral fibre board and lamella should be protected from moisture prior to and during installation. If the board or lamella gets wet during or post installation, it should not be rendered until dry. It may be necessary to remove and replace any unsuitable/wet material.

2.4.2 Site survey and preliminary work

- A pre-installation survey of the property shall be carried out to confirm suitability of substrate for application, modifications/repairs necessary to existing buildings, pullout resistance of proposed mechanical fixings etc.
- Internal wet work eg screeding or plastering, should be completed and allowed to dry, prior to system application

2.4.3 Procedure

- Prepare substrate in accordance with CPI Ltd project specific *Site Package*. Particular attention should be paid to substrate preparation for retrofit work.
- Refer to project specific *Site Package* for guidance on modifications of existing down pipes, soil and vent pipes, pipe extensions etc.
- Base beads and all full system beads are fixed as specified.
- Insulation and render only beads are fixed as specified in the *Site package*.
- Basecoat is mixed and applied, mesh is laid in and a further application of basecoat is applied to achieve the appropriate thickness (see Table 1). Primer is applied prior to the application of the selected decorative render.
- Where required, mechanical fixings are provided in accordance with the project specific design requirements based on pullout test results. See Table 1.
- Application of the basecoat and finishes should be carried out within the permitted temperature range and should be protected from rapid drying.
- All rendering shall be in accordance with IS EN 13914-1:2005 *Design, preparation and application of external rendering and internal plastering. External rendering* and BS 8000-10:1995 *Workmanship on building sites. Code of practice for plastering and rendering*
- Movement and day joints shall be provided in accordance with the *Site Package*. See Figures 6.1 and 6.2.
- At all locations where there is a risk of insulant exposure, eg window reveals, eaves or stepped gables, the system must be protected eg by an adequate overhang or by purpose made sub-sills, seals or flashing. For examples, see Figures 4.2 and 9.0.
- Care must be taken in the detailing of the system around openings and projections.
- On completion of the installation, external fittings, rainwater goods etc are fixed though the system into the structure, in accordance with the Certificate holder's recommendation.



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.
2. For fixing requirements see Table 1.

Figure 2.1 Typical detail – Base bead

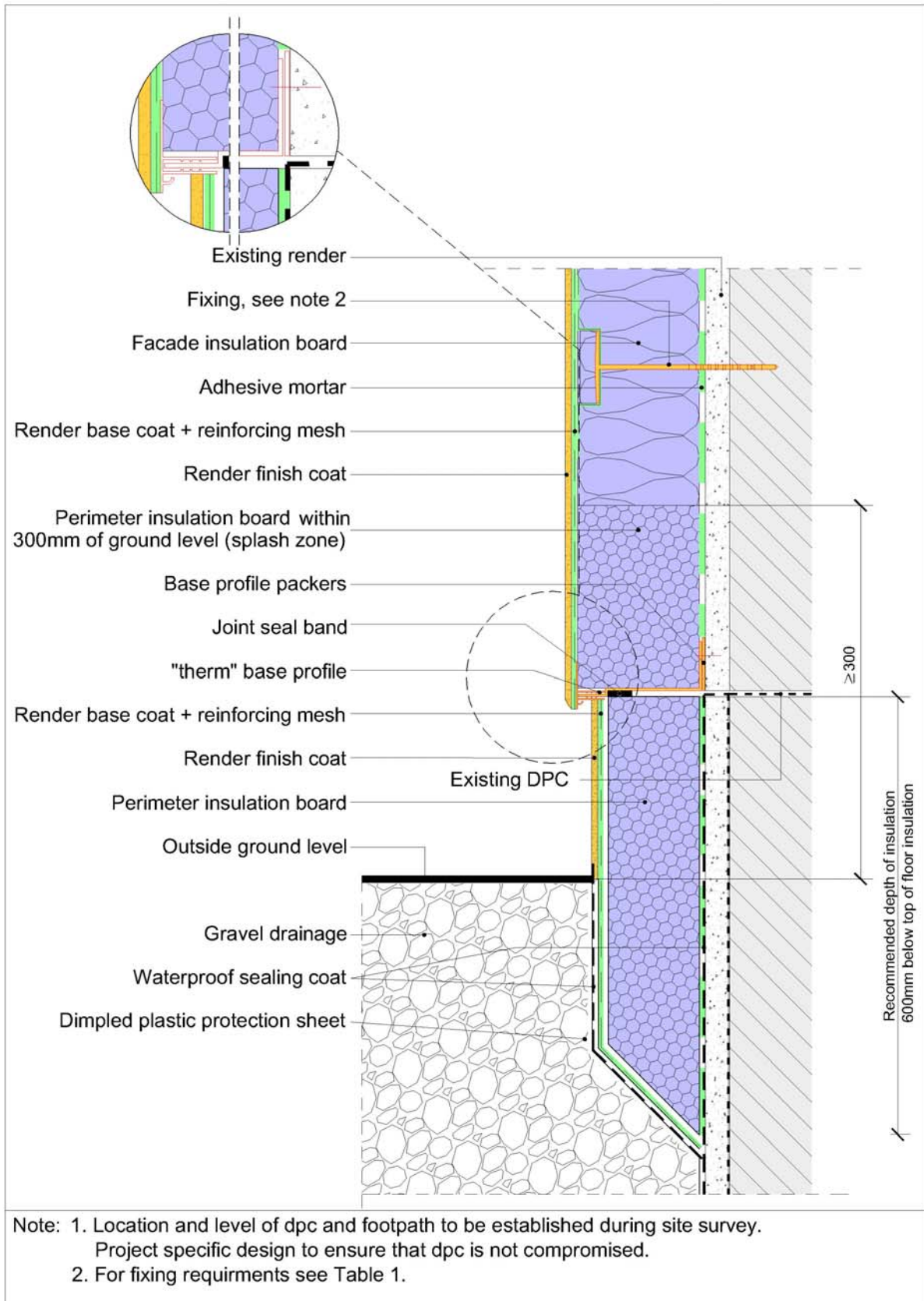


Figure 2.2 Typical detail – Insulated plinth

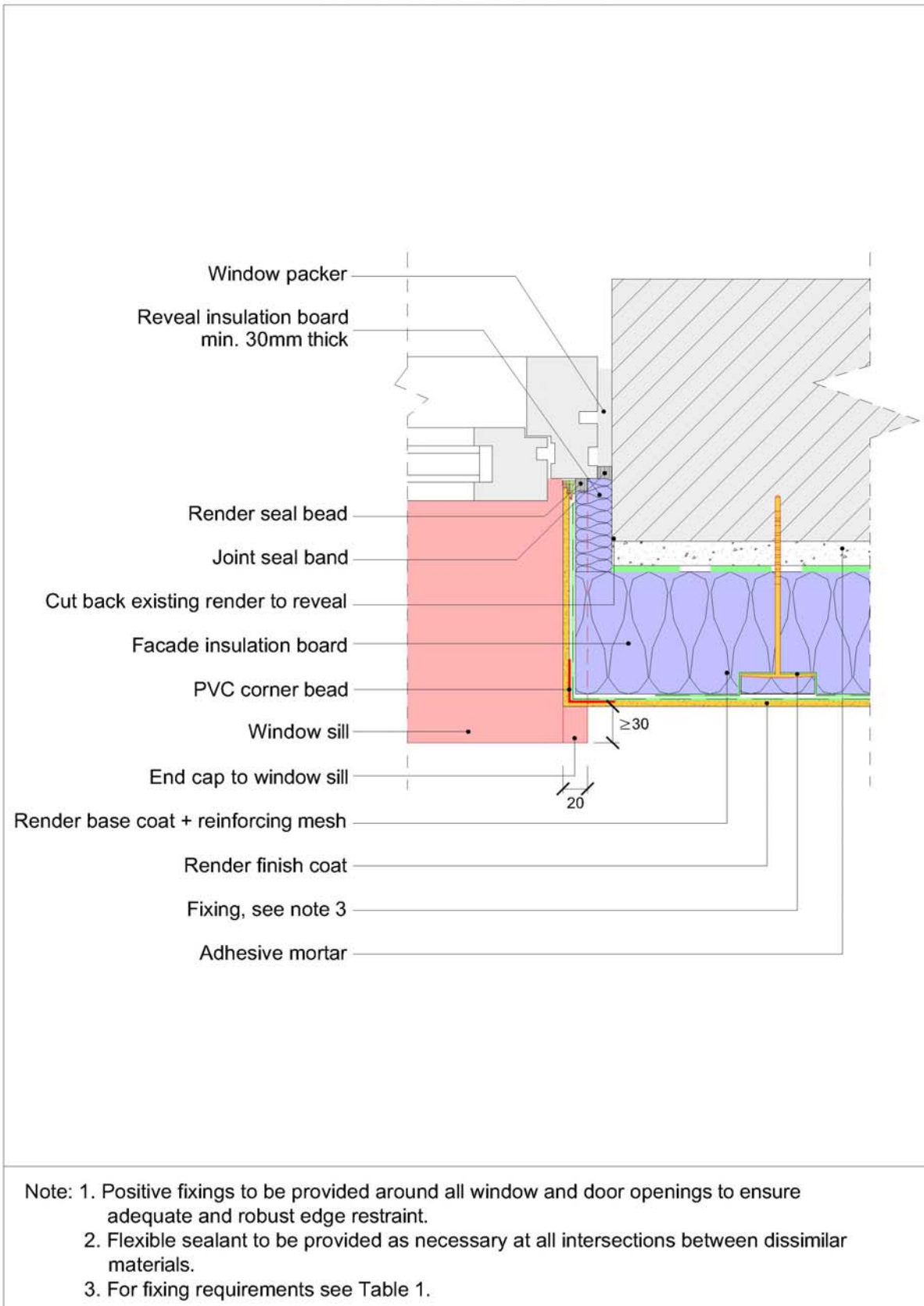


Figure 3 Typical detail – Recessed window reveal

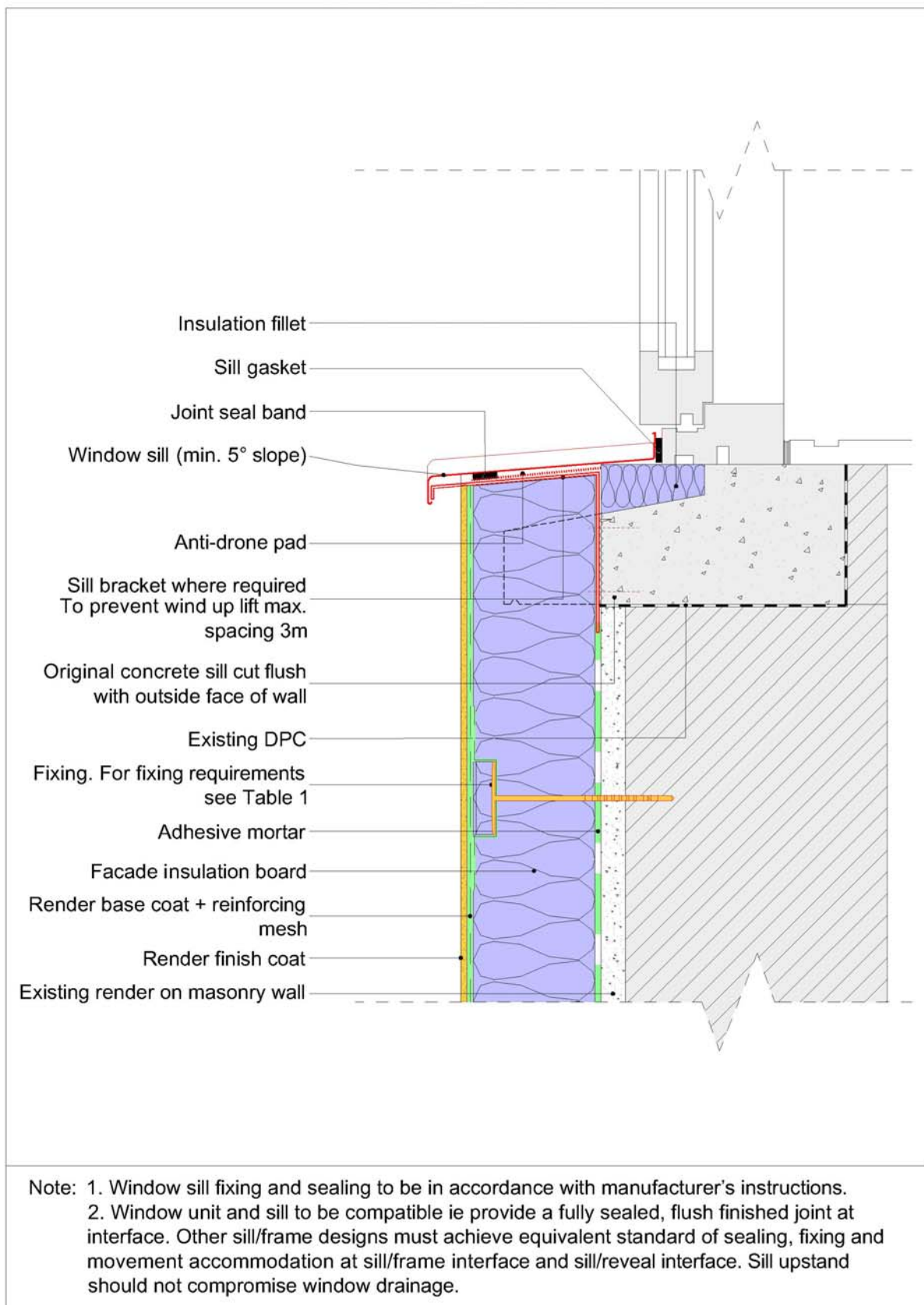


Figure 4.1 Typical detail – Window sill refurbishment – section

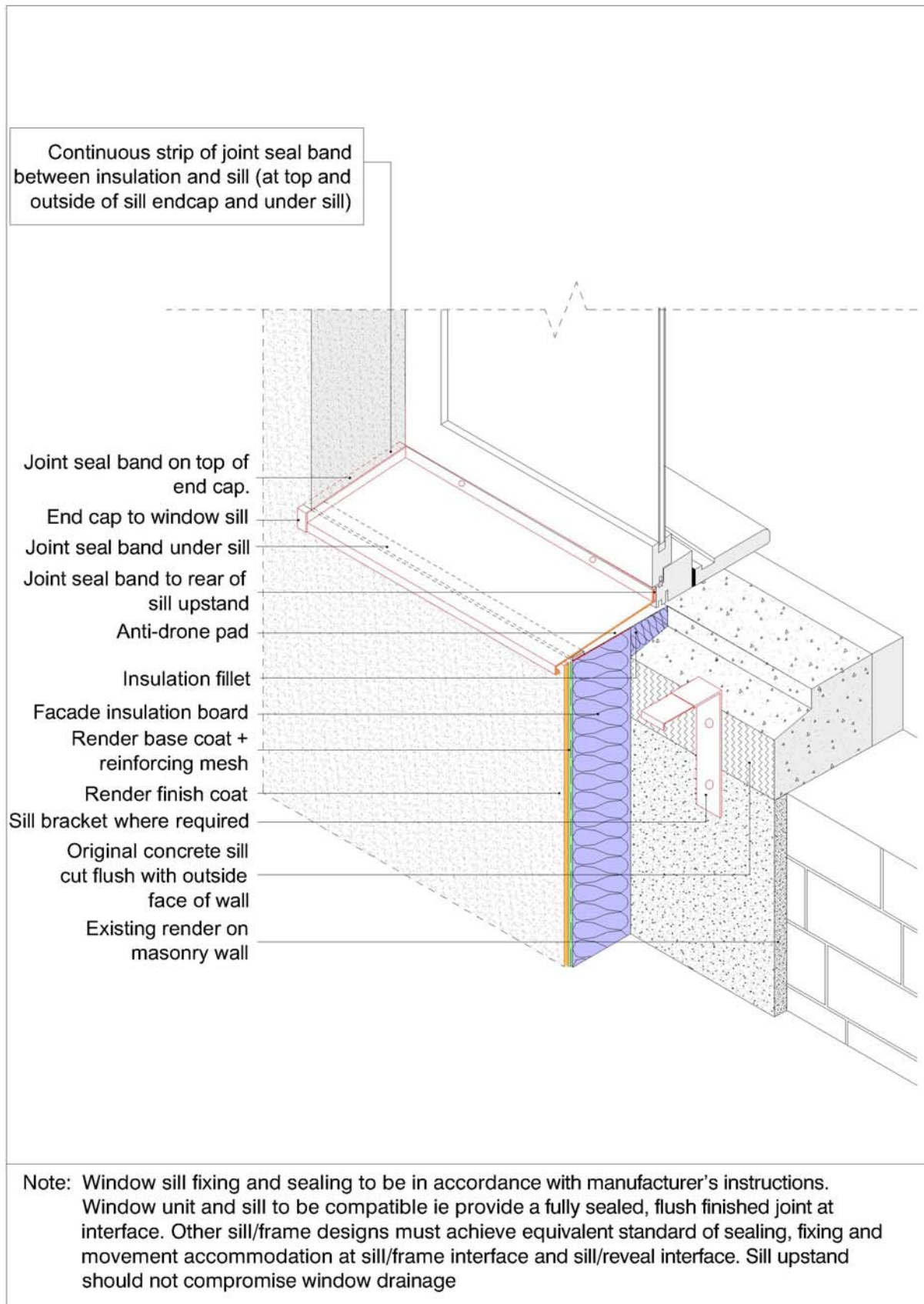


Figure 4.2 Typical detail – Window sill refurbishment – Isometric view

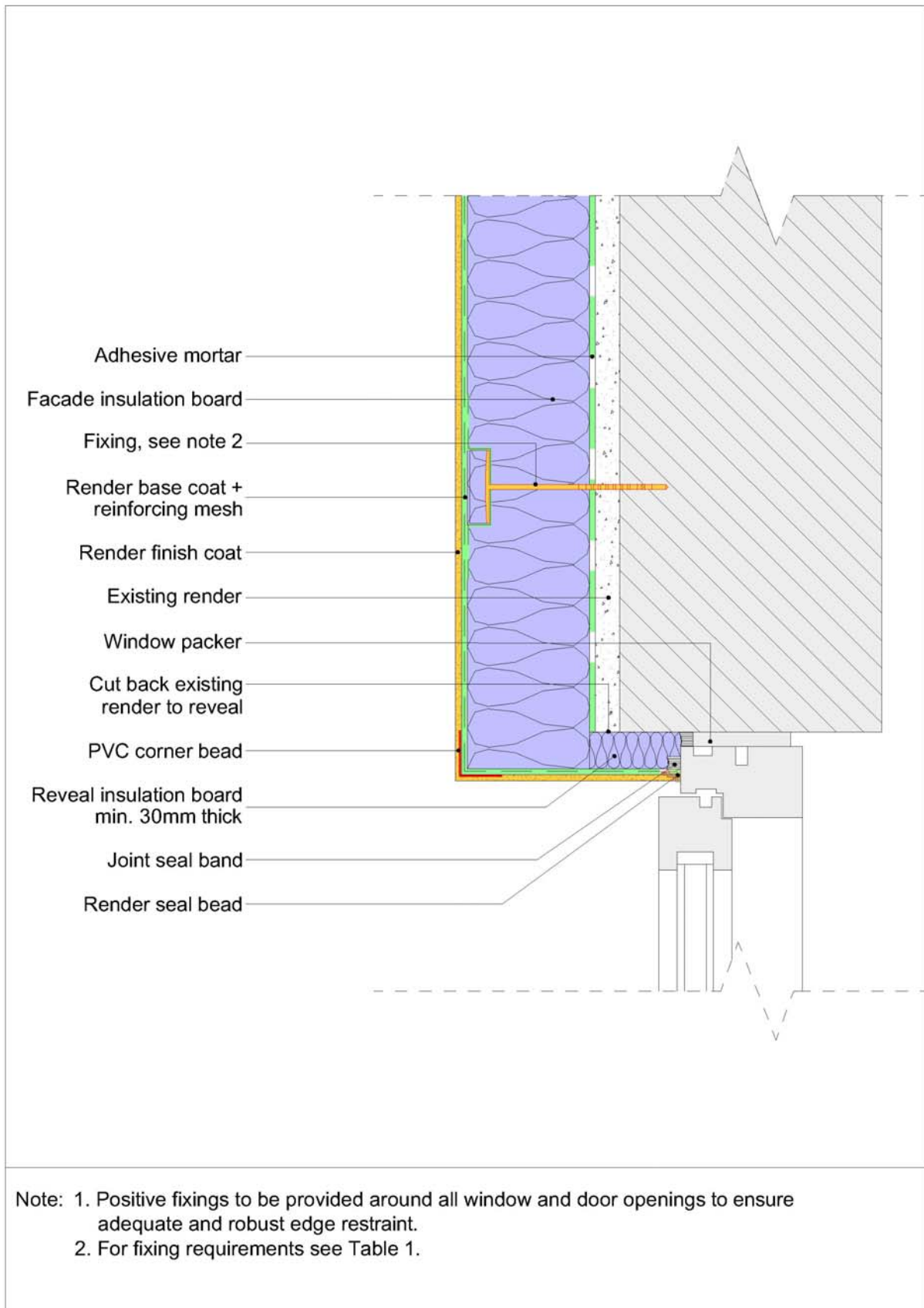


Figure 5 Typical detail – Window head

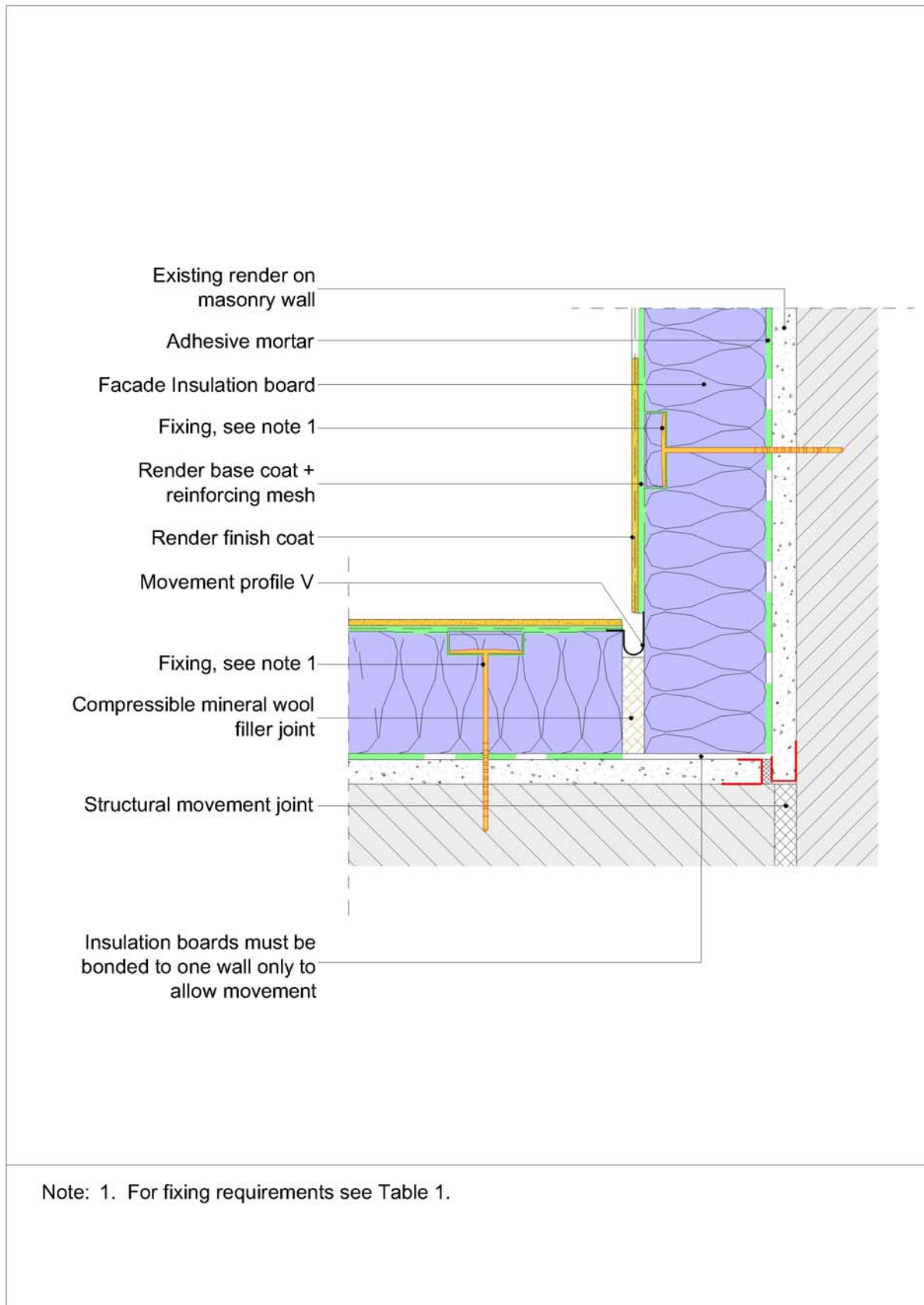
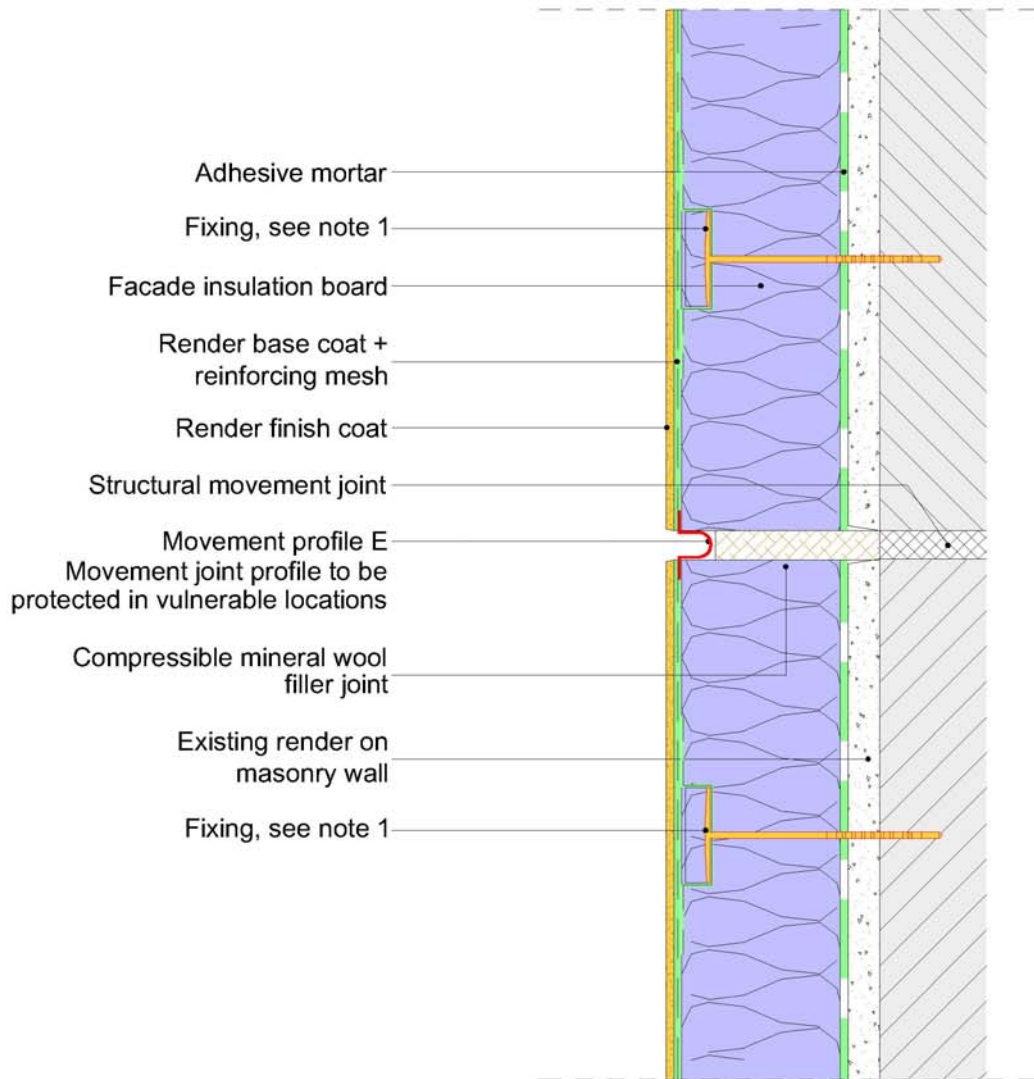


Figure 6.1 Typical detail – Movement joint – Internal corner



Note: 1. For fixing requirements see Table 1.

Figure 6.2 Typical detail – Movement joint

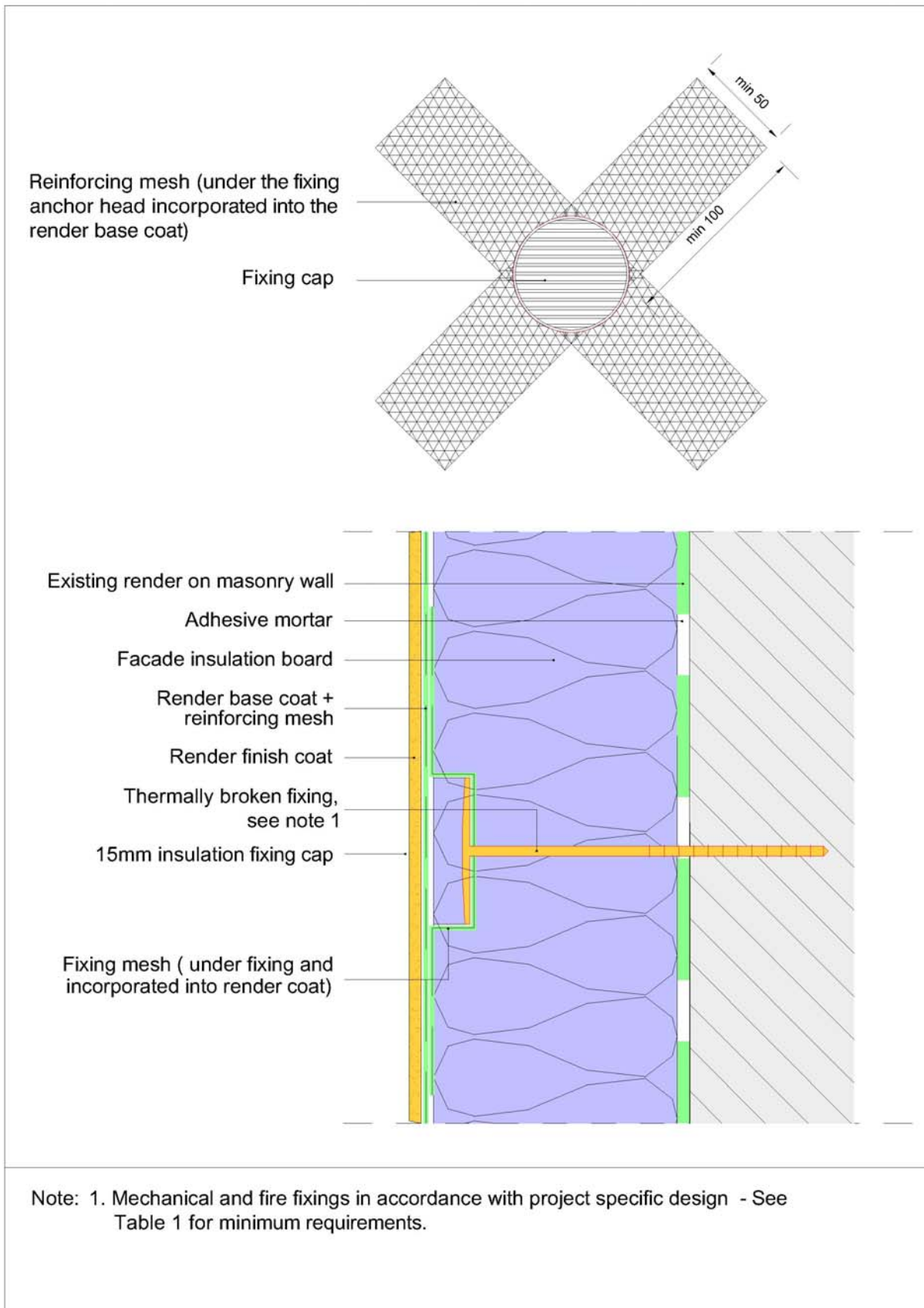


Figure 7.1 Typical detail – Fire fixing

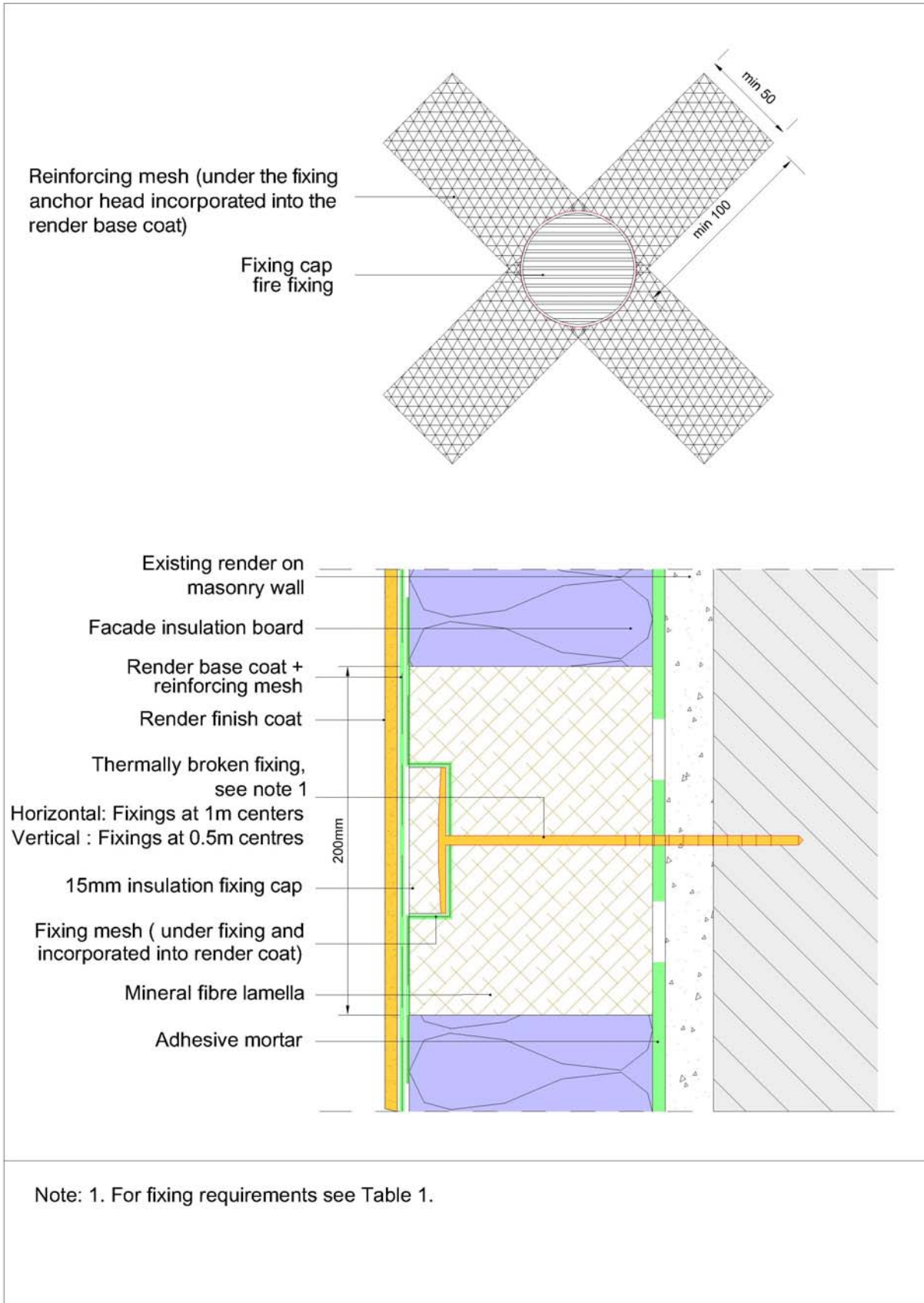
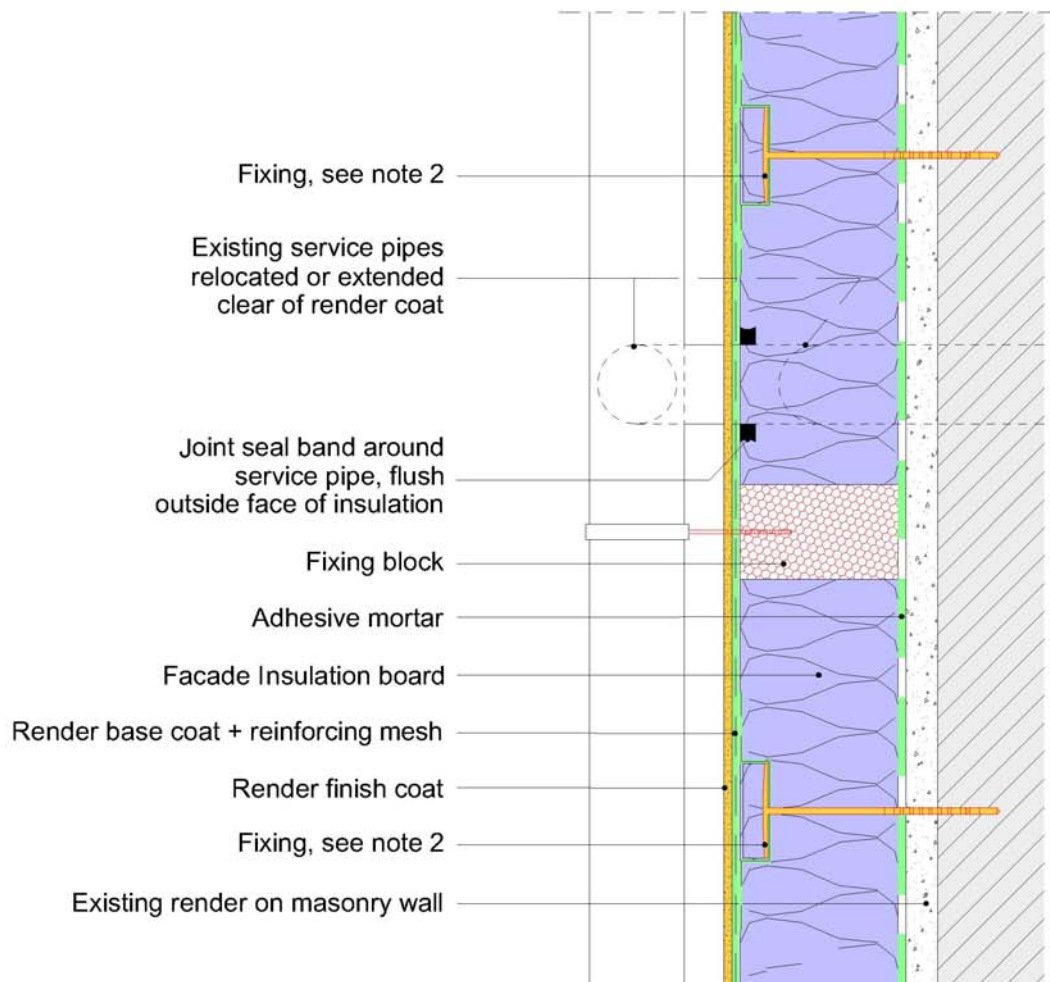


Figure 7.2 Typical detail – Section through fire barrier/fixing



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

Figure 8 Typical detail – Service connection

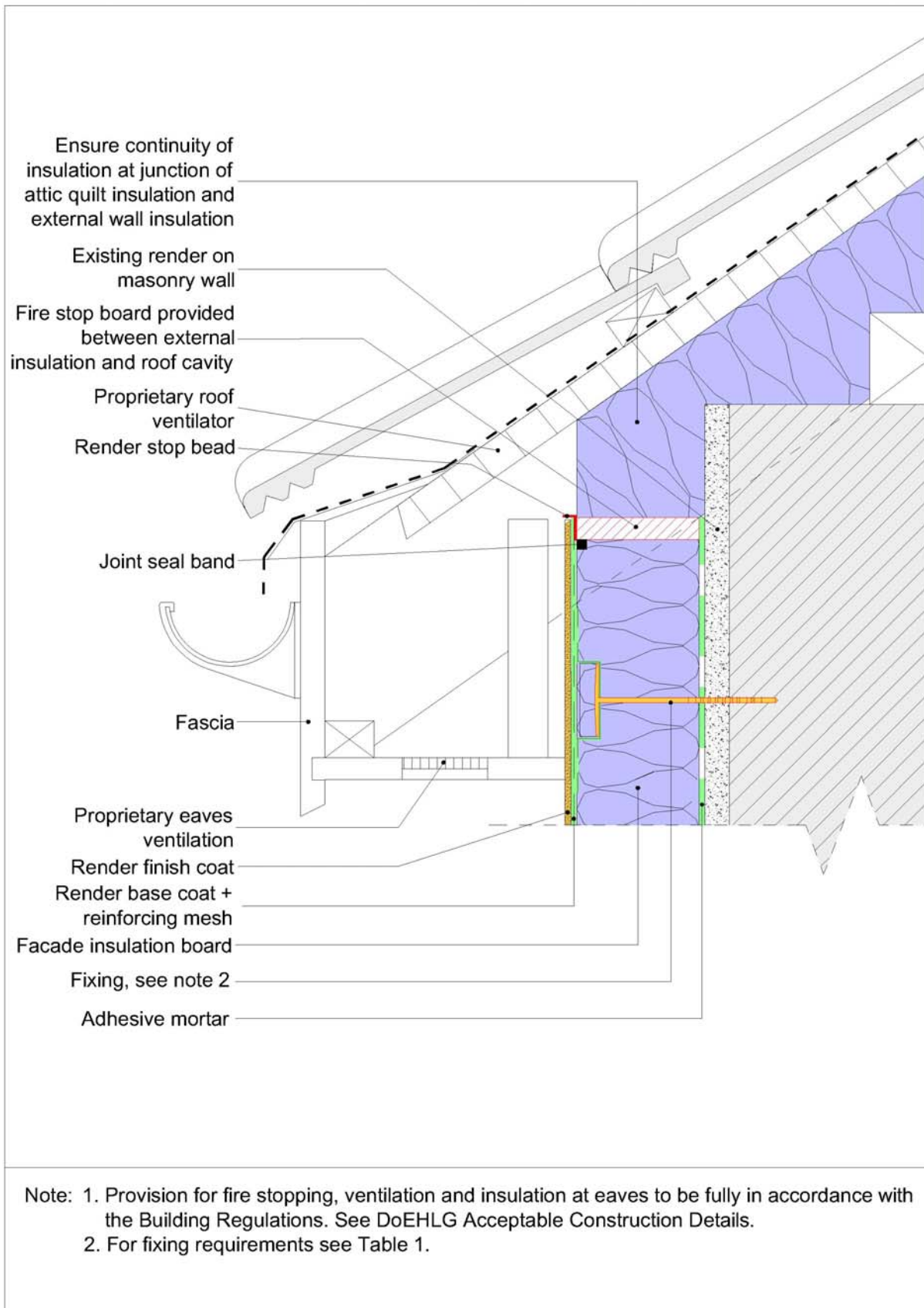


Figure 9 Typical detail – Eaves refurbishment

3.0 Design Data

3.1 The system is designed by Baunit. Baunit has approved and authorised CPI Ltd to provide a project specific design in accordance an approved design process. The installation of the system is by CPI Ltd Licensed Applicators and installation is monitored by CPI Ltd Technical Advisors.

Where the external insulation system is being applied to improve the thermal performance of an existing building, CPI Ltd will assess the building and advise on how to maximise the benefits of the external insulation system for that building. For typical details see Figure 2 to 9.

3.2 The design will include for:

- a) Site survey. A site survey shall be carried out. For existing buildings, U-value calculations, condensation risk analysis, pullout resistance etc should be based on existing construction.
- b) Preparation of substrate.
- c) Minimising risk of condensation in accordance with recommendations of BS 5250:2002 *Code of practice for control of condensation in buildings*;
- d) Thermal insulation provision to Building Regulations Part L;
- 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 three for mechanical fixings and a safety factor of 9 for adhesive; in addition, fixings around window and door openings shall be at a maximum of 400 centres, in each board or section of board, so as to provide positive and robust restraint over life of the system;
- i) Design for fire resistance, fire spread and fire stopping;
- j) Design of a water management system to prevent ingress of water at movement joints, windows, doors, openings for services etc. For sealing requirements see Table 4. Particular attention is required to ensure that window and window sill design are co-ordinated to achieve a fully integrated design eg sill detail shown in Figure 4.1 and 4.2.
- k) Movement joints;
- l) A site specific maintenance programme for inclusion in the *Building Owner's Manual*;
- m) Durability requirements;

- 3.3 Detailing and construction must be to a high standard to prevent ingress of water and to achieve the design thermal performance.
- 3.4 Windows should be designed such that where possible, they can be removed and replaced from within the building. In existing buildings, consideration should be given to maximising improvement of thermal insulation at window reveals, door openings etc.
- 3.5 Consideration should be given, at design stage, for the release of trapped moisture eg above window heads.
- 3.6 When designed and installed in accordance with this certificate, the system will satisfy the requirements of Building Regulations Technical Guidance Document Part L. The design shall include for the elimination of cold bridging at windows and door reveals, eaves and at ground floor level.
- 3.7 The system will improve the weather resistance of a wall.
- 3.8 Seals to windows and doors shall be provided in accordance with Table 4. See Figures 3 and 4.
- 3.9 Care should be taken to ensure that any ventilation openings are not obstructed.
- 3.10 The durability and impact resistance of the render 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 paste renders – Only colours with a Lightness Reflectance Value of more than 20% are suitable for use in the system.

Table 4 Height of building – window weatherproofing requirements

Building Type	Maximum height (m)	Window sealing requirements*
Up to and including 6 storeys	18 metres	Pre-compressed self adhesive expanding waterproof sealing band and PVC adhesive trim to form double seal. Baunit approved Sill profiles with stop-ends
* For examples, see Figure 4.2		

Table 5 Thermal Insulation - Conductivity Values

Insulation type	Density	Manufacturer's Declared Conductivity value* (Wm ⁻¹ K ⁻¹)
EPS – White	15 kg/m ³	0.038
	33 kg/m ³	0.035
EPS – Grey	15 kg/m ³	0.031
Mineral Fibre Board	140 kg/m ³	0.035 0.040
Note: The declared conductivity values have not been assessed by NSAI Agrément		

Table 6 Impact resistance

System	Reinforced base coat	Decorative finish	Impact Category ETAG 004 Table 8
Baumit (EPS)	Standard	Synthetic render	II
Baumit (EPS)	High Impact	Synthetic render	I
Baumit (EPS)	Standard	Mineral Render	II
Baumit (EPS)	High Impact	Mineral Render	II
Baumit (MFB)	Standard	Synthetic render	II
Baumit (MFB)	High Impact	Synthetic render	I
Baumit (MFB)	Standard	Mineral Render	II
Baumit (MFB)	High Impact	Mineral Render	I

4.1 STRENGTH AND STABILITY

- 4.1.1 The system can be designed to withstand the wind pressures (including suction) and thermal stresses in accordance with the Building Regulations 1997 – 2008.
- 4.1.2 a) The systems described in Table 1 have been classified as defined in Table 6 to be suitable for use as defined in ETAG 004 CI 6.1.3.3 Table 8 ie Category 1 exposure zone as 'A zone readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use'.
or
Category II exposure zone ie:
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.
- b) The Category I or II zones do not include an allowance for acts of vandalism. Where the system may be exposed to severe mechanical or malicious impact, e.g. walls of public buildings at ground floor level, alternatives should be considered.

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

4.2 BEHAVIOUR IN FIRE

- 4.2.1 **Internal fire spread (structure)** The masonry or concrete structure, to which the system is applied, shall be designed to provide the necessary fire resistance.
- 4.2.2 **External fire spread:**
- The external surfaces of the system are classified as Class O as per Building Regulations Technical Guidance Document Part B 2006 Clause A12.
 - Baumit(MFS) is classed as non-combustible as per Building Regulations Technical Guidance Document Part B 2006 Table A8 d).
 - With regard to fire stopping of cavities and limitations on use of combustible materials, walls must comply with Building Regulations Technical Guidance Document Part B 2006 Section B3.2, B3.3, B3.4 and Section B4.
 - 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.

- e) Vertical and horizontal fire barriers shall be provided at each compartment floor and wall, including the second floor level of a three-storey single occupancy house. See Figures 7.2. Firebreaks should be adhesively bonded to the substrate and mechanically fixed with stainless steel fire fixings at 300 centres. Maximum separation between vertical fire breaks to be 3m.
- f) The fire barrier should be of non-combustible material i.e. mineral fibre, be at least 200 mm high, continuous and unbroken for the full perimeter of the building and for the full thickness of the insulation.

4.3 PROXIMITY OF HEAT PRODUCING APPLIANCES

The building construction must comply with Building Regulations Technical Guidance Document Part J 1997 Clause 2.9 and 2.15, particularly with regard to proximity of combustible materials to flues.

4.4 THERMAL INSULATION AND U VALUES

Assessments were carried out to verify that the requirements of Building Regulations Part L can be achieved using CPI Ltd. The manufacturer's declared thermal conductivity values are given in Table 5. These have not been assessed by NSAI Agrément.

4.5 CONDENSATION RISK

The Client/Architect should identify areas where there is a significant risk of interstitial condensation due to high levels of humidity. Condensation risk analysis will be carried out by CPI Ltd in accordance with BS 5250: 2002, and the design modified as appropriate, to reduce the risk of surface condensation to acceptable levels.

4.6 MAINTENANCE

- 4.6.1 Adequate provision should be made, in the initial design phase, for access for inspection and maintenance, over the life of the building.
- 4.6.2 The system shall be inspected and maintained in accordance with the Certificate holder's instructions, as detailed in the *Repair and Maintenance Method Statement*, for incorporation into the *Building Owner's Manual*.
- 4.6.3 Repairs should be carried out in accordance with the Certificate holder's instructions as detailed in the *Repair and Maintenance Method Statement*. Repairs to plumbing etc should also be carried out as required to prevent deterioration or damage, and to protect the integrity of the system.
- 4.6.4 Synthetic finishes may be subject to aesthetic deterioration due to exposure to

ultraviolet light. They should be re-painted every 18 to 20 years to maintain appearance. Care should be taken to ensure that the paint used is compatible with the original system and that the water vapour transmission or fire characteristics are not adversely affected.

- 4.6.5 Joints/intersections shall be subject to regular inspection (at least annually). Sealants should be repaired as required and fully replaced every 18 to 20 years to maintain performance.

4.7 WEATHERTIGHTNESS

- 4.7.1 When designed and detailed in accordance with this Certificate, the system will prevent moisture from the ground coming in contact with the insulation (see Figure 2.1 and 2.2).
- 4.7.2 The cementitious render has adequate resistance to water penetration, when applied in accordance with the Certificate holder's instructions. Joint designs and sealant specifications 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. See Figures 6.1 and 6.2.
- 4.7.3 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 instructions. See Figures 3, 4.1 and 4.2.

4.8 DURABILITY

- 4.8.1 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 fixings specifications;
 - joint design;
 - construction details;
 - maintenance requirements;
 - accelerated aging test data.
- 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 Cl 4.6. Beadings and nosings shall be as shown in building details – see Figures 2 to 9.
- 4.8.2 Aesthetic Performance
As with traditional renders, the aesthetic performance of the system eg due to

discolouration, soiling, staining, algal growth or lime bloom, is dependent 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/exposure conditions/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.

4.9 PRACTICABILITY

The practicability of construction and the adequacy of site supervision arrangements were assessed and considered adequate. The *Site Package* and *Method statements for application, inspection and repair* were reviewed.

4.10 TESTS AND ASSESSMENTS

Tests and assessments were carried out to determine the following:

- Structural strength and stability
- Behaviour in fire
- Resistance to impact
- Pull out resistance of fixings
- Thermal resistance
- Condensation risk
- Site erection controls
- Durability of components
- Dimensional stability of insulants

4.11 OTHER INVESTIGATIONS

- The manufacturing process was examined including methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- Special building details (ground level, window and door openings and movement joints) were assessed and approved for use in conjunction with this Certificate. See Figures 2 to 9.
- Site visits were conducted to assess the practicability of installation.
- Site visits were conducted to assess performance in use.

No failure of products in use, have been reported to NSAI Agrément.

5.1 National Standards Authority of Ireland ("NSAI") following consultation with the NSAI Agrément ("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 2008 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 NSAI Agrément 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.

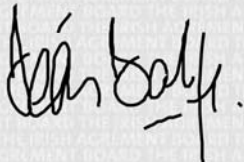
- 5.6** The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.
- 5.7** Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory 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.

TheNSAI Agrément Board

This Certificate No. 09/0336 is accordingly granted by the NSAI to **Baumit 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.n sai.ie

Revisions: September 2009

- Amendment made to value for EPS thermal conductivity