



**IRISH AGRÉMENT BOARD
CERTIFICATE NO. 06/0260**

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weber.therm XM60
External Wall 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 2017**.



PRODUCT DESCRIPTION:

This Certificate relates to weber.therm XM60 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 undercoat incorporating a glass fibre mesh cloth;
- Cementitious topcoat;
- Decorative finish;
- 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 DECLG.

- Provision for fire stopping at external compartment walls and floors.

The systems are designed by Weber 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 Weber, and are approved by Weber and NSAI Agrément to install the system.

Weber offers a fifteen year materials and workmanship guarantee, subject to certain terms and conditions. All component parts shall be supplied by Weber.

This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2017.

Readers are advised to check that this Certificate has not been withdrawn or superseded by a later issue by contacting NSAI Agrément, NSAI, Santry, Dublin 9 or online at <http://www.n sai.ie/modules/certificates/uploads/pdf/1AB060260.pdf>

USE

The systems are for use as external insulation on new concrete or masonry residential buildings, which are designed in accordance with the Building Regulations 1997 to 2017. The system is suitable for use up to a maximum height of 6 storeys (18m) in purpose groups 1(a), 1(c), 2(a), 2(b), 3, 4(a) and 4(b), and for use up to a maximum of five storeys (15m) in height in purpose group 1(b) as defined in TGD to Part B of the Building Regulations 1997 to 2017, provided that the window detailing requirements, specified in Table 4, are complied with.

The systems have not been assessed for use with timber frame or steel frame construction.

MANUFACTURE, DESIGN & MARKETING:

System Design:

Weber,
Saint-Gobain Weber Ltd,
Dickens House,
Enterprise Way,
Flitwick,
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Manufacture, Sales and Project Specific Design:

Weber,
Old Paper Mill,
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Plot 1,
Halesfield 25,
Telford,
Shropshire TF7 4LP.
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1.1 ASSESSMENT

In the opinion of NSAI Agrément, the weber.therm XM60 External Wall Insulation Systems if used in accordance with this Certificate can meet the requirements of the Building Regulations 1997 to 2017, as indicated in Section 1.2 of this Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2017

REQUIREMENTS:

Part D – Materials and Workmanship

D3 – Proper Materials

The weber.therm XM60 External Wall 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 weber.therm XM60 External Wall Insulation Systems, as certified in this Certificate, meet the requirements for workmanship.

Part A - Structure

A1 – Loading

The weber.therm XM60 External Wall 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 weber.therm XM60 External Wall Insulation Systems can be incorporated into structures that will meet this requirement (see Parts 3 and 4 of this Certificate).

Part B – Fire Safety

Part B Vol 2 – Fire Safety

B4 & B9 – External Fire Spread

The weber.therm XM60 External Wall 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 J – Heat Producing Appliances

J3 – Protection of Building

When the weber.therm XM60 External Wall 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 weber.therm XM60 External Wall 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 2017 (see Part 4 of this Certificate).

2.1 PRODUCT DESCRIPTION

The weber.therm XM60 External Wall Insulation Systems are available with three insulation options, i.e. expanded polystyrene (EPS), mineral fibre board (MFS/MFD), and polyisocyanurate (PIR). The minimum overall render thickness (multi-coat or one coat) is 12mm.

Product range and components are detailed in Table 1. Component specifications are detailed in Table 2. Ancillary items are listed in Table 3. A typical system arranged is shown in Figure 1.

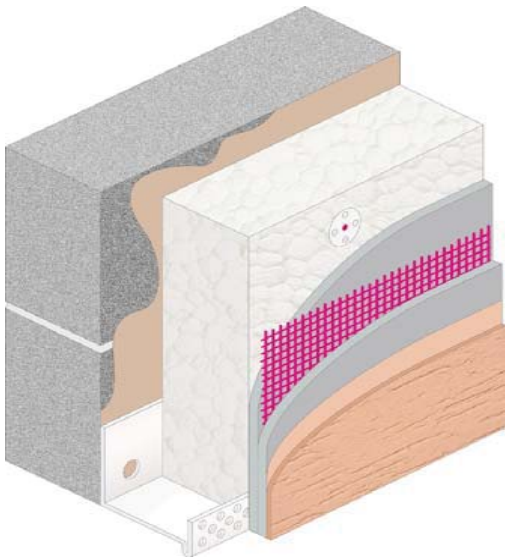


Figure 1: weber.therm XM60 – Isometric view

2.2 MANUFACTURE, SUPPLY AND INSTALLATION

Weber is responsible for the manufacture and supply of all components to Weber approved specifications, in accordance with the Weber approved supplier system.

The installation of the weber.therm XM60 External Wall Insulation Systems are carried out by Weber trained and approved installers in accordance with Weber instructions, including the Applications Guide and project specific Site Package. 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 the quantities and container types listed in Table 2. Each pack is marked with the manufacturer's details, product identification marks and batch numbers. 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.

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

Meshcloth, 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 Weber 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 Weber and NSAI Agrément to install the product.
- 3) Have undertaken to comply with the Weber installation procedure.
- 4) Are employing Supervisors and Operatives who have been issued with appropriate identity cards by Weber. Each team must consist of at least one ETICS Operative and ETICS Supervisor (can be the same person).
- 5) Are subject to supervision by Weber, 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 (Weber) – site visits and office records.

| Type | Insulation | Reinforcement | Fixings ¹ | Render (Min thickness 12mm) | | Finish |
|----------------------------|-------------------------|---------------|--|--------------------------------|-----------------------------------|---|
| | | | | Undercoat | Topcoat | |
| weber.therm XM60 (EPS) | Expanded polystyrene | | weber.rend LAC ² or Mechanical ³ | 5 to 6mm weber.rend LAC | 6 to 8mm weber.rend PTC | Dry-dash or Plain finish with Primer and Synthetic finish |
| | | | | | weber.rend RBB and weber.rend RBF | Brick Effect Render |
| | | | Mechanical ³ | N/A | weber.therm M1 | Dry-dash / Spray roughcast or Scraped texture |
| | | | | | with weber.rend RBF | Brick Effect Render |
| weber.therm XM60 (MFS/MFD) | Mineral fibre | Meshcloth | Mechanical ³ | 5 to 6mm weber.rend LAC | 6 to 8mm weber.rend PTC | Dry-dash or Plain finish with Primer and Synthetic finish |
| | | | | | weber.rend RBB and weber.rend RBF | Brick Effect Render |
| | | | Mechanical ³ | N/A | weber.therm M1 | Dry-dash / Spray roughcast or Scraped texture |
| | | | | | with weber.rend RBF | Brick Effect Render |
| weber.therm XM60 (PIR) | Polyiso-cyanurate board | | weber.rend LAC ² or Mechanical ³ | 5 to 6mm weber.rend LAC | 6 to 8mm weber.rend PTC | Dry-dash or Plain finish with Primer and Synthetic finish |
| | | | | | weber.rend RBB and weber.rend RBF | Brick Effect Render |
| | | | Mechanical ³ | N/A | weber.therm M1 | Dry-dash / Spray roughcast or Scraped texture |
| | | | | | with weber.rend RBF | Brick Effect Render |

Notes:

- Mechanical fixings are provided in accordance with the project specific design requirements based on pullout test results.
- Where EPS and PIR are adhesively bonded, a minimum of two supplementary mechanical fixings per board and one additional stainless steel fire fixing (when specified) per metre squared shall be provided.
- Where EPS, MFS/MFD and PIR insulation are mechanically fixed, a minimum of five mechanical fixings per board or seven per meter squared and one additional stainless steel fire fixing (when specified) per metre squared shall be provided.
- Synthetic finishes include the following options: weber.plast TF, weber.sil TF, weber.plast P or weber.sil P.

Table 1: weber.therm XM Product Range, Components & Fixing Requirements

| Component | Description | Dimensions/Quantity | Container |
|------------------------------|--|---|----------------------------------|
| Insulation | | | |
| EPS | 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: 1200 x 600mm Thickness: 30 to 200mm | Polythene shrink wrapped package |
| MFS/MFD | Grade: CFC/HCFC-free to IS EN 13162:2001 MW-EN 13162-T5-CS(10/Y)10-TR5 Density 130kg/m ³ /160 kg/m ³ Minimum compressive strength 25kN/m ² Contains phenolic resin binder and mineral oil water repellent | Size: 1200 x 600mm Thickness: 30 to 200mm | |
| PIR | Grade: CFC/HCFC-free to IS EN 13165:2001 Density 32kg/m ³ Minimum compressive strength 150kN/m ² | Size: 1200 x 600mm Thickness: 30 to 200mm | |
| Meshcloth | | | |
| Standard duty | Balanced open weave alkaline resistant glass fibre meshcloth Weight 160g/m ² | Mesh dimension: 3.5mm x 3.5mm Roll size: 1m x 50m | Roll |
| Heavy duty | Balanced open weave alkaline resistant glass fibre meshcloth Weight 480g/m ² | Mesh dimension: 6mm x 6mm Roll size: 1m x 25m | |
| Substrate Preparation | | | |
| weber CI150 | Water based masonry wash containing biocides, used as a masonry cleaner and steriliser | 25 litres | Bucket |
| weber.rend stipple | Cementitious polymer-modified bonding agent | 25 kg | Bag |
| Undercoat | | | |
| weber.rend LAC | Factory batched, low-density, polymer-modified dry powder mortar | 20 kg | Bag |
| Topcoat | | | |
| weber.rend PTC | Factory batched, polymer-modified dry powder mortar of cement, sand, pigment and polymers | 25 kg | Bag |
| weber.therm M1 | Factory batched, through coloured dry powder mortar of sand, cement, and polymers for one-coat scrape texture finish | | |
| weber.rend RBB | Factory batched, polymer-modified dry powder mortar of cement, sand, pigment and polymers | | |
| weber.rend RBF | Factory batched, polymer-modified dry powder mortar of cement, sand, pigment and polymers | | |
| Primer | | | |
| weber PR310 | General purpose, pigmented, liquid paint primer | 10 litres | Bucket |
| Dry Dash | | | |
| Weber dry dash aggregate | Natural coloured, size 4mm to 6mm or 6mm to 9mm aggregate, available in a range of colours | 25 kg | Bag |
| Synthetic Finishes | | | |
| weber.plast TF | Acrylic based, textured, pigmented composite supplied as a paste, containing aggregate (1.5mm max grain size) for an even texture finish | 15 kg | Bucket |
| weber.sil TF | Silicone based, through coloured decorative, textured, weather resistant vapour permeable surface supplied as a paste, containing aggregate (1.5mm max grain size) | | |
| weber.plast P | Acrylic based, silicone enhanced breathable protective coating for smooth float finish on masonry and rendered surfaces | 10 litres | |
| weber.sil P | Silicone based, resin emulsion paint | | |

Table 2: Component Specifications and Supply Details

| Component | Description | Dimensions /Quality | Container |
|------------------------------|--|---------------------|-----------------------|
| Weber profiles | Range of standard profiles for use at wall base, stop ends and expansion joints, including Grade 304 stainless steel to IS EN 10088-1:2005, DX51D+275N-A-U galvanised steel to IS EN 10327:2004 with polyester powder coated finish to BS 6497:1984, or aluminium | 2.5 – 3m lengths | N/A |
| Weber profile fixings | A range of fixings are 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 mushroom 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 plus and end cap. | Varies | Boxed by manufacturer |
| Weather Seal | Weber approved mastic sealant (silicone, poly-sulphide or polyurethane) Weber approved compressible weather seal to BS 6093:2006 Table 1. | Varies | Varies |

Table 3: Ancillary Items

2.4.2 General

Weber prepare a bespoke site package for each project, including 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 Weber technical representative. Weber technical representatives will visit the 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.

All windows have to be installed and made weather tight within the opening before application of the system.

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

2.4.3 Site Survey and Preliminary Work

A pre-installation survey of the property shall be carried out and recorded to confirm suitability of substrate for application of the system including modifications required, pullout resistance of proposed mechanical fixings etc.

Internal wet work e.g. screeding or plastering, should be completed and allowed to dry prior to system application.

2.4.4 Procedure

- Application of the render coats should be carried out within the permitted temperature range and should be protected from rapid drying. In sunny weather, work should commence on the shady side of the building and be continued following the sun to prevent the rendering drying out too rapidly.

- 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 30°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. The coatings must also be protected from rapid drying.
- All rendering should follow best practice guidelines, e.g. BS 8000-0:2014 *Workmanship on construction sites – Introduction and general principles* and IS EN 13914-1:2016 *Design, preparation and application of external rendering and internal plastering – External rendering*.
- Base beads and all full system beads are fixed as specified. Insulation and render only beads are fixed as specified in the site package.

Multi-Coat Option

- Undercoat is mixed and applied, meshcloth is laid in and a further application of undercoat is applied to achieve the appropriate thickness (5 to 6mm). Topcoat is mixed and applied (6 to 8mm) to achieve the desired overall minimum thickness of 12mm.
- If an additional synthetic finish is required, the primer is applied to the topcoat prior to the application of the selected textured coating.

One-Coat Option

- weber.therm M1 render is mixed and applied, meshcloth is laid in and a further application of weber.therm M1 is applied to achieve the desired overall minimum thickness of 12mm.
- If an additional brick effect finish is required, apply a further 2 to 3mm of render face.

- Mechanical fixings are provided in accordance with the project specific design requirements based on pullout test results. See Table 2.
- Movement and day joints shall be provided in accordance with the Site Package (see Figures 7 and 8). The recommended panel size is 45-50m² with an aspect ratio of no greater than 4:1.
- 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-cills, seals or flashing. For examples see Figures 3, 4, 5 and 11.
- To minimise the effects of cold bridging, the EPH (high density EPS) insulation below DPC level should, where practicable, extend below ground level as shown in Figure 2. Where this is not possible the first run of insulation boards is positioned on the base profile. All HD EPS below DPC level should be fully encapsulated by the basecoat.
- 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 DECLG, Detail 2.21, to achieve an R-value of 0.6m²K/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.
- Purpose-made powder coated aluminium window sills 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 (see Figure 3).
- 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 light planning with a rasp to ensure the application of an even thickness of basecoat. For all other insulation types, the substrate must be flat and level before installing the boards, as the boards must not be rasped.
- Refer to the Certificate holder's instructions and the project specific site package regarding the installation method and location of the SS fixings through the reinforcing mesh where fire stops have been installed. Additional mesh patches 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.
- 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 through the system into the structure, in accordance with the Certificate holder's recommendations.

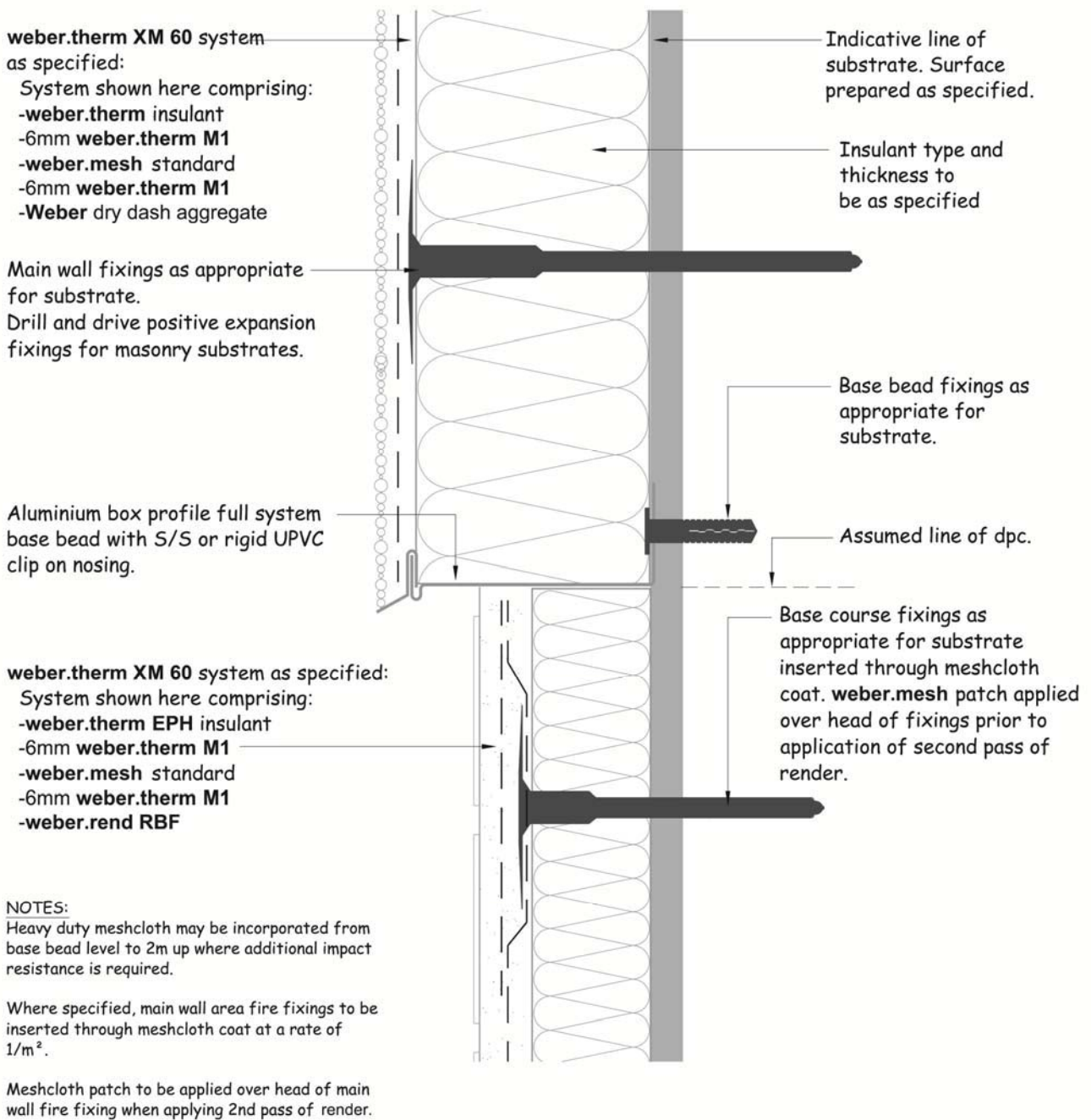


Figure 2: Detail Section – Base Bead/Below DPC

Window unit and sill to be compatible, i.e. provide a fully sealed flush finished joint at interface. Sill upstand should not compromise window drainage.

Sill to bear on and to be mechanically fixed to adequate structural support (insulation should not bear weight of sill)



Figure 3: Profiled Sill/Reveal

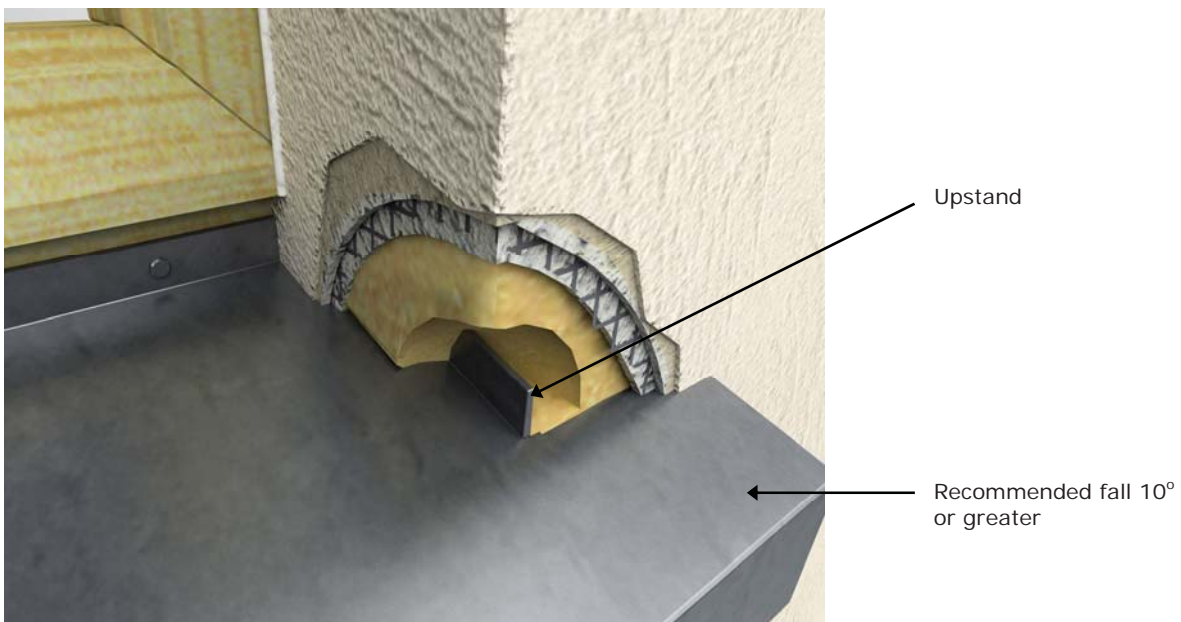


Figure 3a: Profiled Sill – Stop End

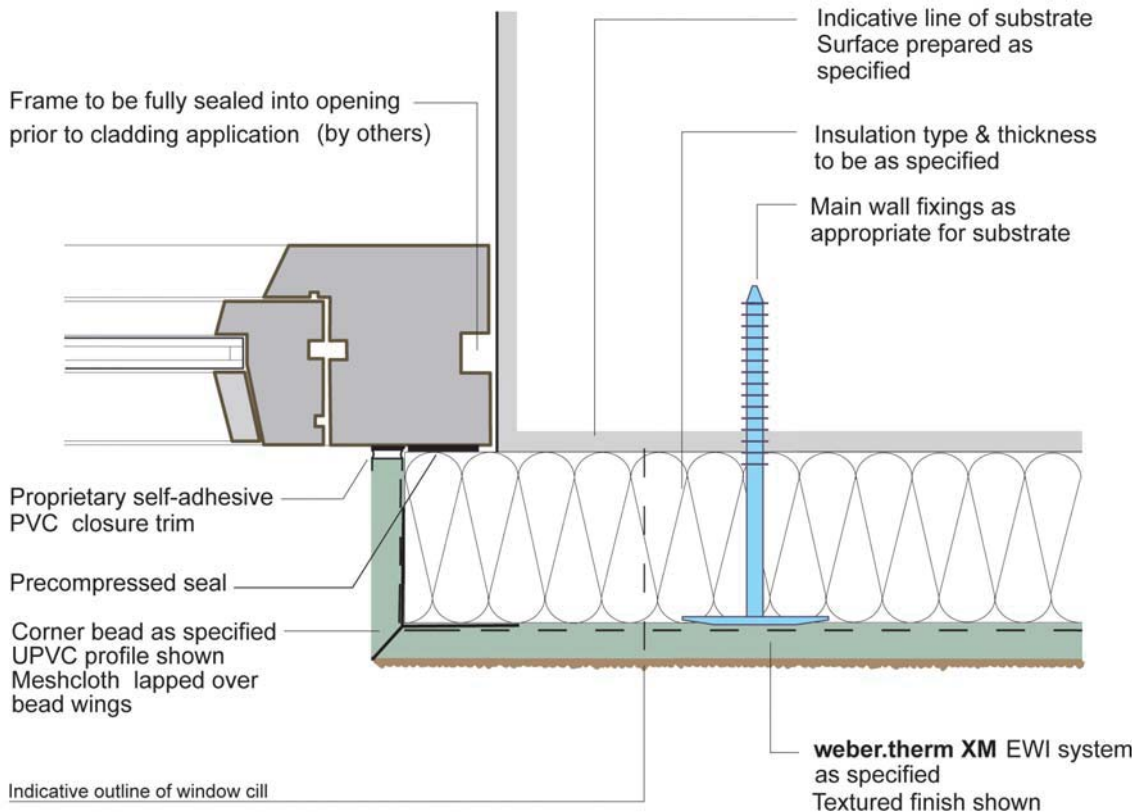


Figure 4: Detail Plan – Window Reveal (Frame Seal)

Window & Sub-Frame to be fully sealed into opening prior to cladding application (all by others)

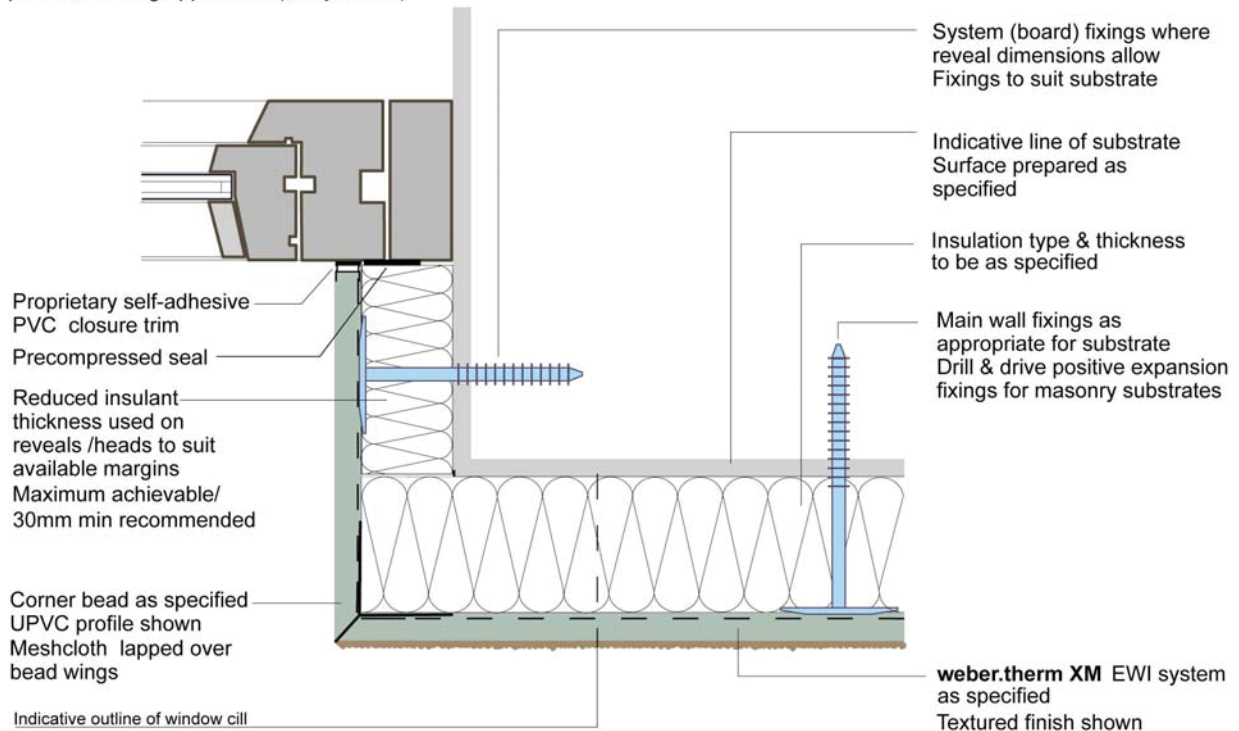


Figure 5: Detail Plan – Thin Board Reveal (Frame Seal)

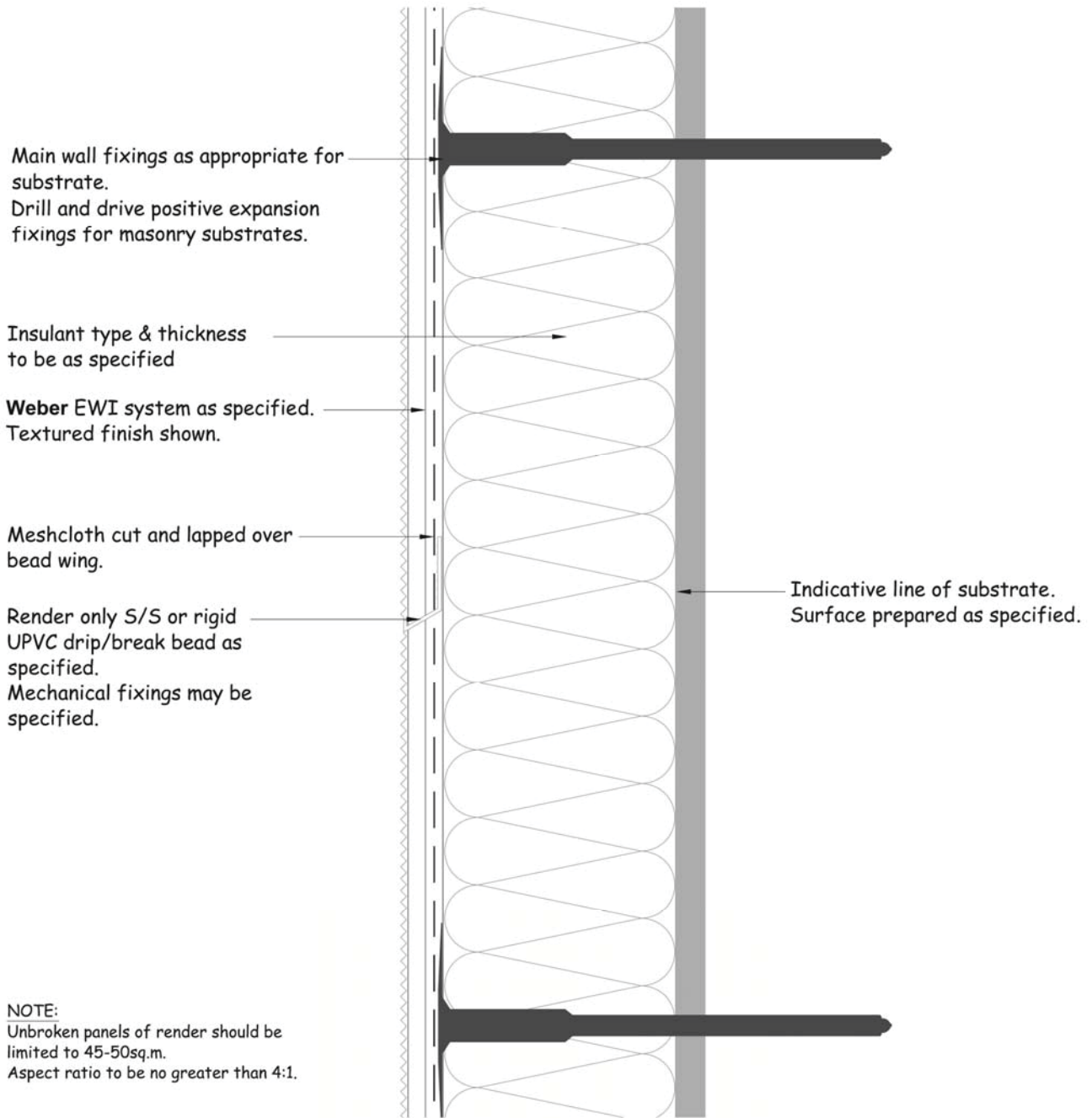


Figure 6: Detail Section – Horizontal Drip Bead

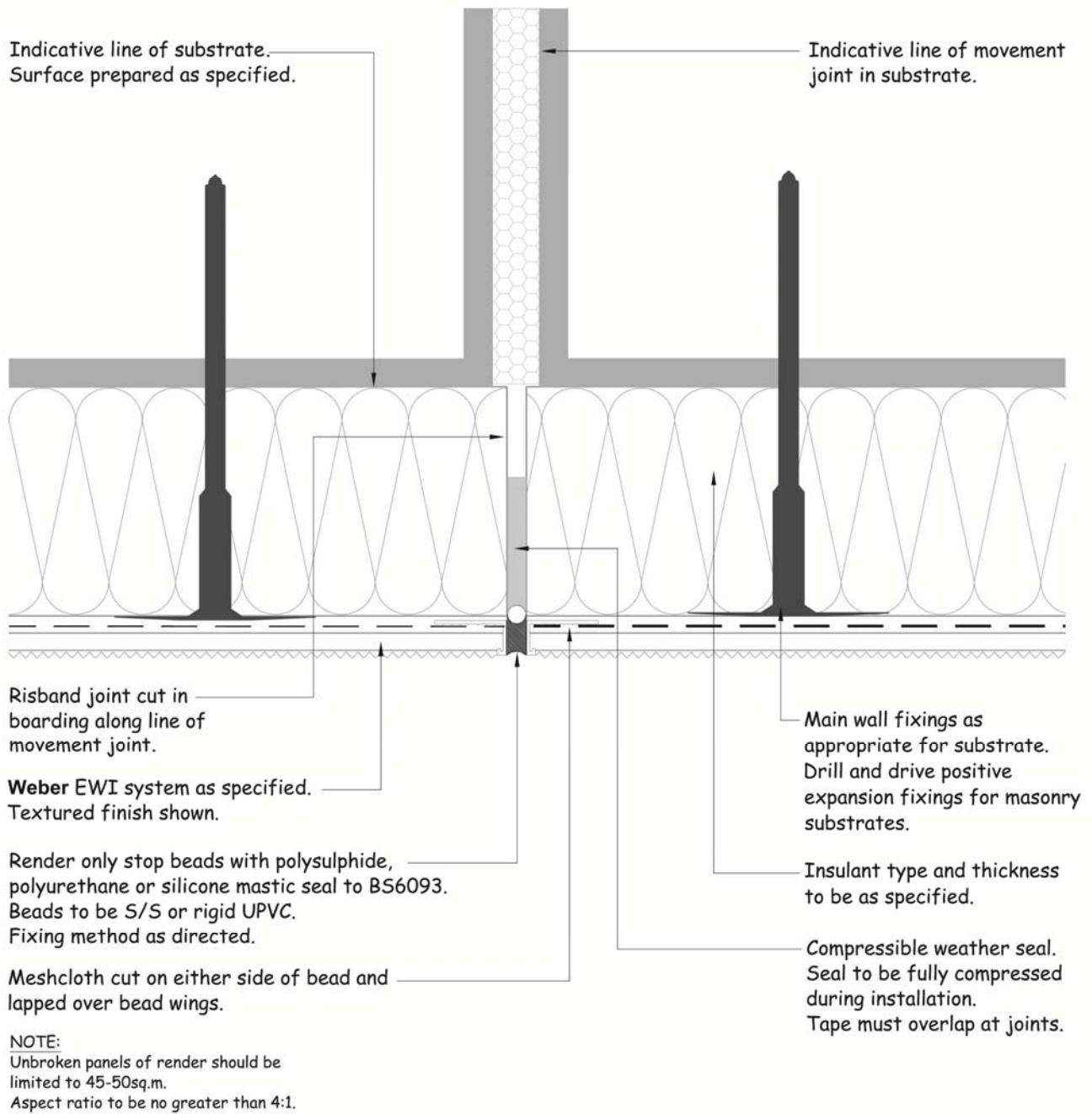
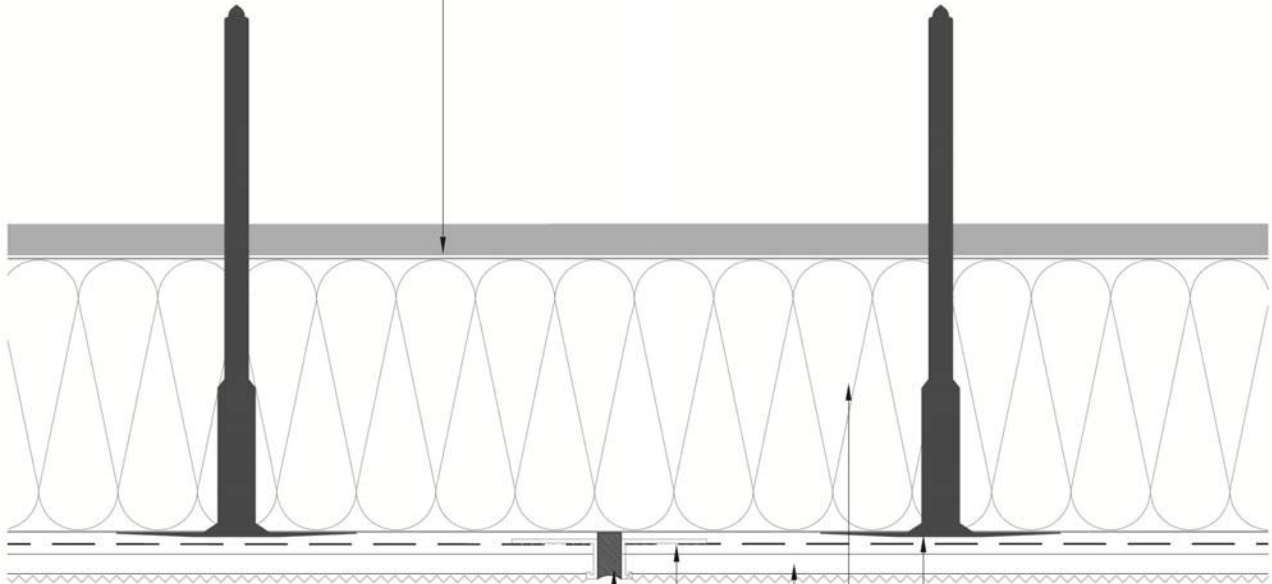


Figure 7: Detail Plan – Vertical Movement Joint (Full System)

Indicative line of substrate.
Surface prepared as specified.



Render only stop beads with polysulphide,
polyurethane or silicone mastic seal to BS6093.
Beads to be S/S or rigid UPVC.
Fixing method as directed..

Meshcloth cut on either side of bead and
lapped over bead wings.

Main wall fixings as
appropriate for substrate.
Drill and drive positive
expansion fixings for masonry
substrates.

Insulant type and thickness to
be as specified.

**Weber EWI system as
specified.**
Textured finish shown.

NOTE:

Unbroken panels of render should be
limited to 45-50sq.m.
Aspect ratio to be no greater than 4:1.

Figure 8: Detail Plan – Vertical Movement Joint (Render Only)

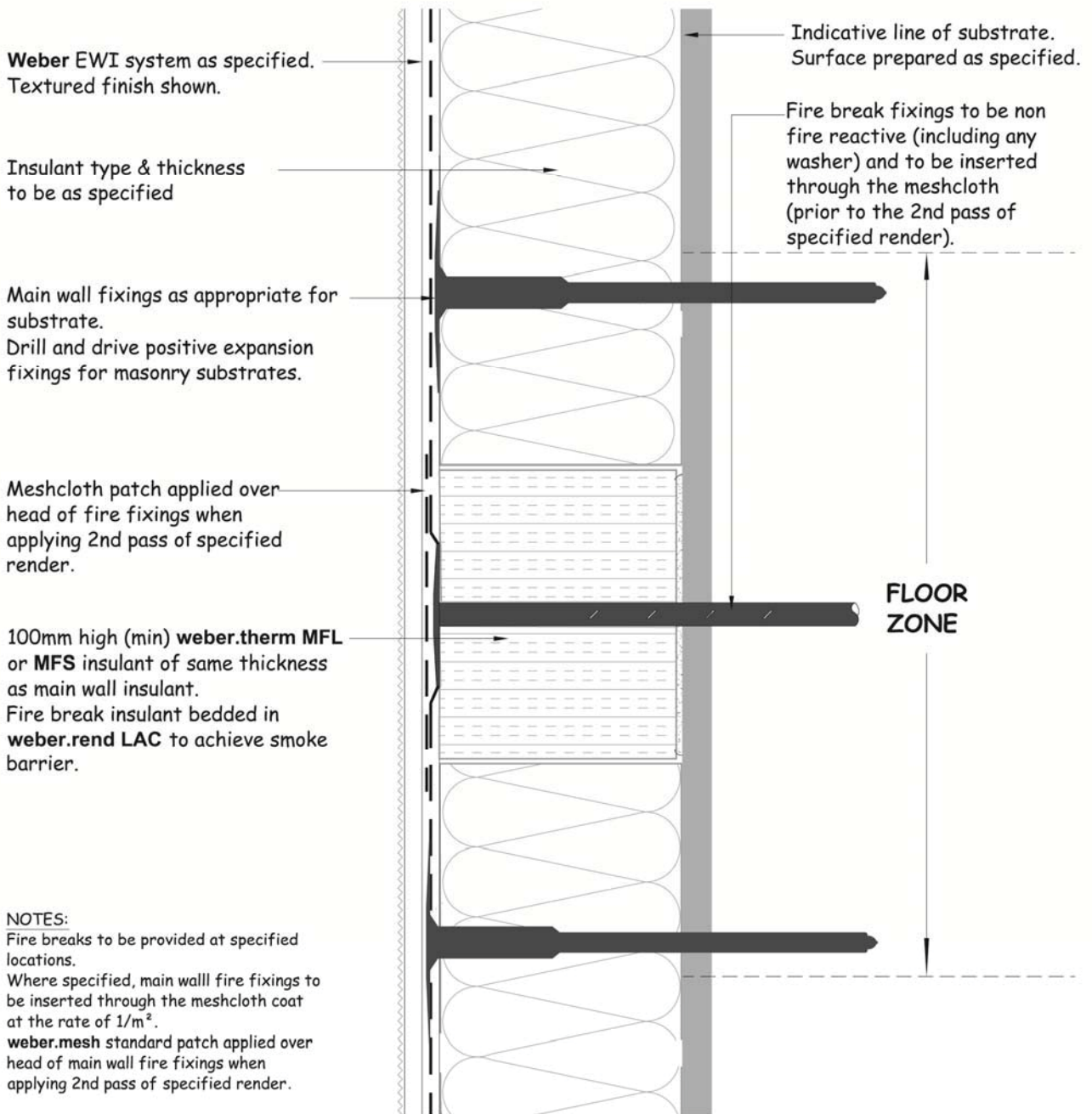


Figure 9: Detail Section – Horizontal Fire Stop

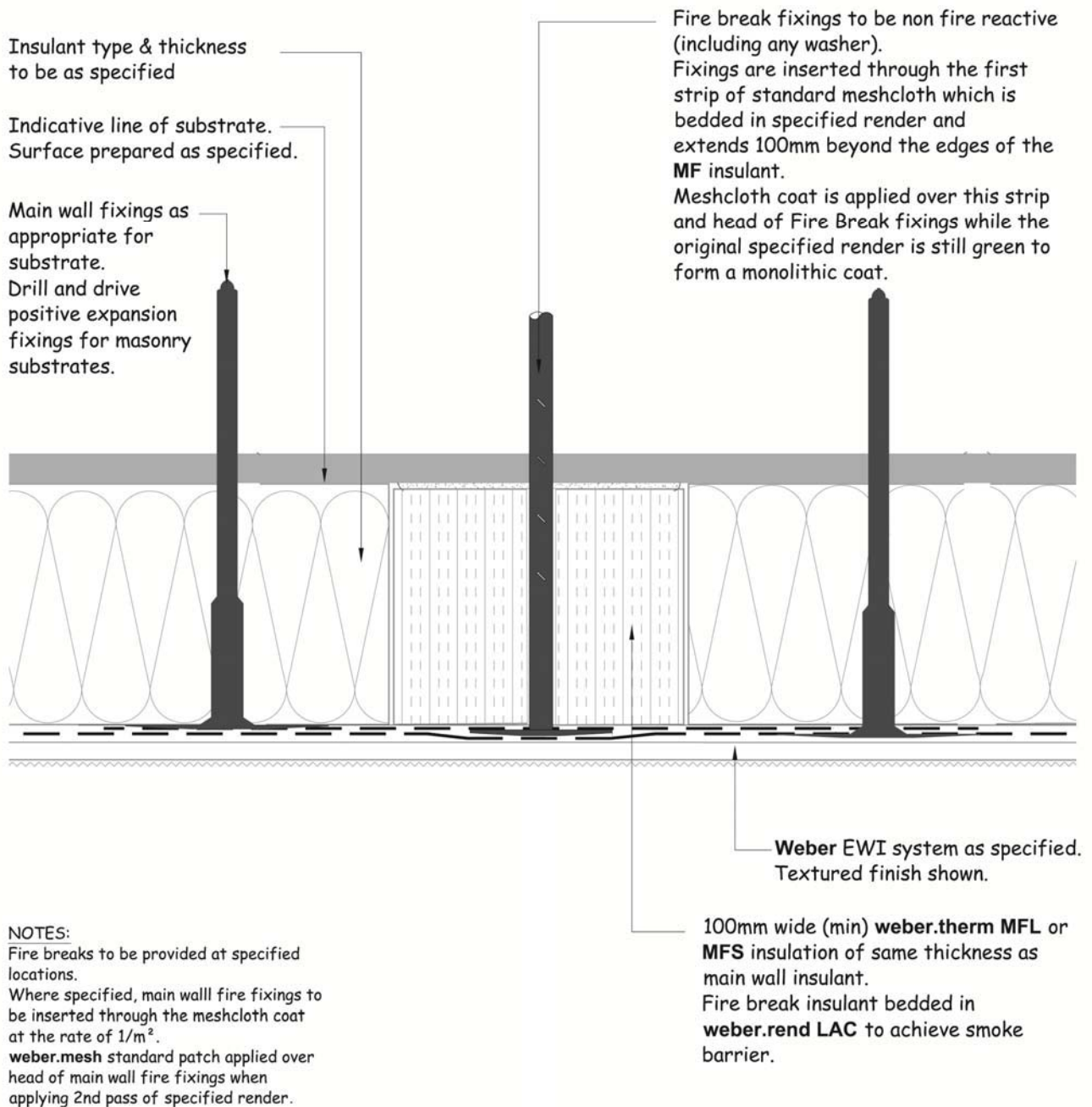


Figure 10: Detail Plan – Vertical Fire Stop

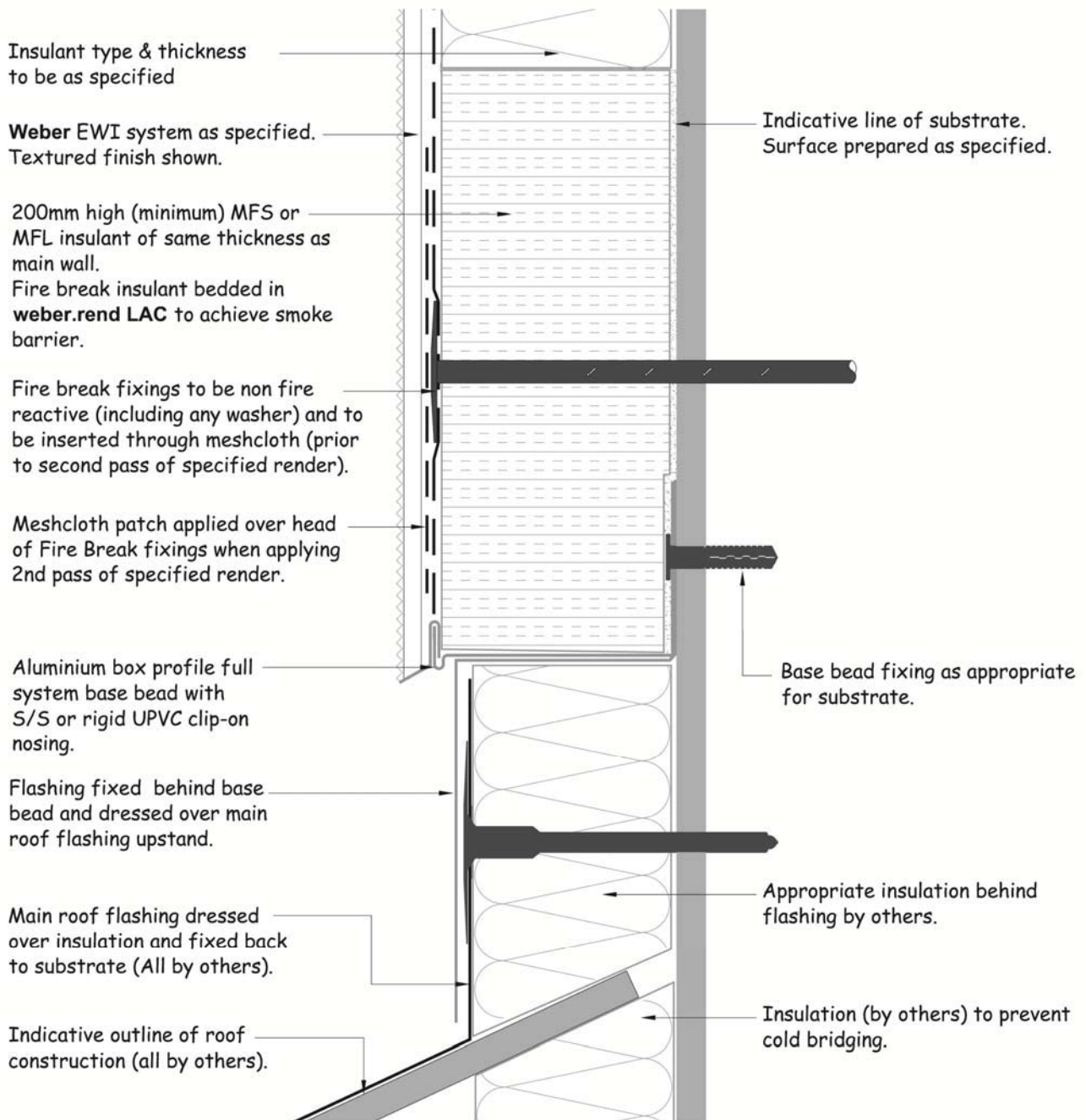


Figure 11: Detail Section – Stepped Gable

3. GENERAL

The systems are designed by Weber on a standard or project specific basis. The design will include for:

- a) The completion and recording of a site survey.
- b) Evaluation and preparation of substrate.
- c) Minimising risk of condensation in accordance with the recommendations of BS 5250:2011+A1:2016 *Code of practice for control of condensation in buildings*. This includes the use of approved Weber detailing as shown in this Certificate incorporating the requirements of SR 54:2014 *Code of practice for the energy efficient retrofit of dwellings* and, where possible, meeting all of the Acceptable Construction Details published by the DHPLG.
- d) Thermal insulation provision to Part L of the Building Regulations 1997 to 2017.
- e) Resistance to impact and abrasion.
- f) Resistance to thermal stresses.
- g) Resistance to wind loading.
- h) The overall factor of safety for wind loading that should be used is 1.5. 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 Building Owner’s Manual.
- 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 2017. 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 DHPLG.

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 the colour of the render used. The Certificate holder recommends the following Light Reflectance Values:

- Mineral renders: 20% or greater.
- Acrylic textured finishes: 20% or greater.
- Silicone textured finishes: 20% or greater.

| Building Type | Max Height | Window Sealing Requirements* |
|--|------------|---|
| Up to and including 15 storeys | 45 m | PVC adhesive trim and either a concealed sealant or compressible foam seal AND Stop send or equivalent e.g. profiled trough type sub-sill (A mastic sealant will not suffice) |
| * For examples, see Figures 3, 4 and 5 | | |

Table 4: Height of Building – Window Weatherproofing Requirements

4.1 STRENGTH AND STABILITY

4.1.1 Wind Loading

The weber.therm XM60 External Wall Insulation Systems can be designed to withstand the wind pressures (including suction) and thermal stresses in accordance with the Building Regulations 1997 to 2017.

4.1.2 Impact Resistance

- a) The weber.therm XM60 External Wall Insulation Systems have been classified as having adequate resistance to impact and abrasion where walls are exposed and have some protection, e.g. walls of private dwellings and walls of communal dwellings above ground floor level.
- b) Where the system may be exposed to severe mechanical or malicious impact, e.g. walls of public buildings at ground floor level, incorporate heavy duty mesh on all wall areas up to 2m above adjacent ground level.
- c) Where 15Nm impact resistance is required, reduce insulation thickness and incorporate a 10mm medium density calcium silicate board as a render carrier.
- d) 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 external surfaces of the weber.therm XM60 Multi-coat External Insulation System is classified as Class O as per Clause A12 of TGD to Part B of the Building Regulations 1997 to 2017. 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 weber.therm XM60 One-coat External Insulation System is defined at B-s1, d0. weber.therm XM60 Multi-coat & One-coat (MFS/MFD) are classed as non-combustible as per Table A8 d) of TGD to Part B of the Building Regulations 1997 to 2017.

Systems that achieve a Class B Reaction to Fire Classification are suitable for use up to a maximum of six storeys (18m) in height on purpose groups 1(a), 1(c), 1(d), 2(a), 2(b), 3, 4(a) and 4(b), and for use up to a maximum of five storeys (15m) in height on purpose group 1(b), as defined in TGD to Part B of the Building Regulations 1997 to 2017.

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 2017.

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 fire barriers shall be provided at each compartment floor and wall, with fixings provided at 300mm vertical centres and 400mm horizontal centres respectively, including the second floor level of a three-storey single occupancy house (see Diagram 12 of TGD to Part B Volume 2 of the Building Regulations 1997 to 2017). Firebreaks should be adhesively bonded to the substrate and mechanically fixed with stainless steel fire fixings at 300mm centres. The fire barrier shall be of non-combustible material (i.e. stone mineral wool (lamella) slab of minimum density 120kg/m³) 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

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 2017. 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 2017 can be achieved using the weber.therm XM60 External Wall Insulation Systems. The manufacturer's declared thermal conductivity values ($\lambda_{90/90}$) taken from their CE marking Declarations of Performance are given in Table 5. These have not been assessed by NSAI Agrément.

Calculation of U-values will be required on individual projects to confirm a U-value of 0.27W/m²K 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.

When the system is to be applied to a masonry cavity wall, consideration should be given to the treatment of the ventilated cavity. In order to ensure the thermal effectiveness of the external

insulation system, it is critical to eliminate airflow within the cavity void. It is essential to seal the cavity to achieve an unventilated air layer. This eliminates heat losses due to airflow within the cavity circumventing the external insulation system. Best practice is to fill the cavity void with an NSAI Agrément approved Cavity Wall Insulation (CWI) system. Ventilation to the building must be maintained in accordance with the requirements of Part F of the Building Regulations 1997 to 2017.

| Product | Insulation Type | Manufacturer's Declared Conductivity Value* |
|----------------------------|----------------------------|---|
| weber.therm XM60 (EPS) | Expanded polystyrene board | 0.032 W/mK |
| weber.therm XM60 (MFS/MFD) | Mineral fibre | 0.036 W/mK |
| weber.therm XM60 (PIR) | Polyisocyanurate board | 0.025 – 0.027 W/mK |

* The declared values have not been assessed by NSAI

Table 5: Thermal Insulation – Conductivity Values

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 weber.therm XM60 External Wall Insulation Systems have been assessed and when detailed in accordance with this Certificate (see Figures 4 and 5) can meet the requirements of Table D1 of TGD to Part L of the Building Regulations 1997 to 2017. 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 DECLG, then the improved 'y' factor of 0.08 can be used, i.e. R value = 0.6m²K/W for window/door reveals as shown in Figures 4 and 5.

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 2017.

4.6 CONDENSATION RISK

Areas where there is a significant risk of interstitial condensation due to high levels of humidity should be identified by the client/architect. A condensation risk analysis will be carried out by Weber in accordance with BS 5250:2011+A1:2016 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 may require to 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.

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 (see Figure 2).

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 (see Figures 6 to 8).

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 (see Figures 3, 4 and 5).

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;
- Accelerated ageing test data.

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. Beadings and nosings shall be as shown in building details (see Figure 1 to 11). The use of exposed plastic beads/nosings for weathering purposes is not permitted.

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 2017 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 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.

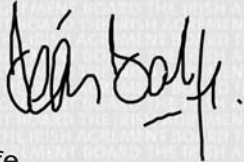
5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is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

NSAI Agrément

This Certificate No. **06/0260** is accordingly granted by the NSAI to **Weber** on behalf of NSAI Agrément.

Date of Issue: **November 2006**

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 March 2009

November 2007: Removal of phenolic insulation.

March 2009: Addition of PIR insulation, one-coat options and brick render effect.

11th January 2018: References to Building Regulations and standards updated.