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Agrément Certificate
20/5790
Product Sheet 3

WEBEREND MT SYSTEMS

WEBEREND MT SYSTEMS APPLIED TO GLASROC X SHEATHING BOARD

This Agrément Certificate Product Sheet(1) relates to weberend MT Systems applied to Glasroc X Sheathing Board, comprising thin coat external renders with a range of finishes, for use as ventilated and drained exterior wall cladding systems on timber and steel-frame buildings.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Strength and stability — the systems can adequately resist the wind loads and impact damage likely to be met in service (see section 6).
Behaviour in relation to fire — the systems may have an A2-s1, d0 or a B-s1, d0 reaction to fire classification depending on the finish coat chosen and their use may be restricted by the national Building Regulations (see section 8).
Weather resistance — the systems tend to shed water and will considerably reduce the amount of water penetrating through the substrate (see section 9).
Durability — under normal service conditions, the systems will perform satisfactorily for a period in excess of 30 years (see section 12).

The BBA has awarded this Certificate to the company named above for the systems described herein. These systems have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 24 November 2022

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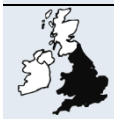
Regulations

In the opinion of the BBA, weberend MT Systems applied to Glasroc X Sheathing Board, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**A1(1)**	**Loading**
Comment:		The systems are acceptable. See section 6 of this Certificate.
Requirement:	**B3(4)**	**Internal fire spread - Structure**
Comment:		The systems can contribute to satisfying this Requirement. See section 8.1 of this Certificate.
Requirement:	**B4(1)**	**External fire spread**
Comment:		The systems may be restricted by this Requirement. See sections 8.2 to 8.4 of this Certificate.
Requirement:	**C2(b)(c)**	**Resistance to moisture**
Comment:		Walls rendered with the systems can satisfy this Requirement. See section 9.1 of this Certificate.
Requirement:	**7(1)**	**Materials and workmanship**
Comment:		The systems are acceptable. See sections 12.1 and 12.2 and the *Installation* part of this Certificate.
Requirement:	**7(2)**	**Materials and workmanship**
Comment:		The systems are restricted by this Regulation. See sections 8.1 to 8.5 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Fitness and durability of materials and workmanship**
Comment:		Use of the systems satisfy the requirements of this Regulation. See sections 11, 12.1 and 12.2 and the *Installation* part of this Certificate.
Regulation:	**8(3)**	**Fitness and durability of materials and workmanship**
Comment:		The systems are restricted by this Regulation. See sections 8.1 to 8.4 and 8.6 of this Certificate
Regulation:	**9**	**Building standards applicable to construction**
Standard:	1.1(a)(b)	Structure
Comment:		The systems are acceptable, with reference to clause 1.1.1$^{(1)(2)}$ of this Standard. See section 6 of this Certificate.
Standard:	2.4	Cavities
Comment:		The systems can contribute to satisfying this Standard, with reference to clause 2.4.2$^{(1)(2)}$. See section 8.1 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Comment:		The systems are restricted by these Standards, with reference to clauses 2.6.4$^{(1)(2)}$, 2.6.5$^{(1)}$, 2.6.6$^{(2)}$ and 2.7.1$^{(1)(2)}$. See sections 8.1 to 8.4 and 8.6 of this Certificate.

Standard: Comment:	3.10	Precipitation Walls rendered with the systems can satisfy the requirements of this Standard, with reference to clauses 3.10.1(1)(2), 3.10.2(1)(2), 3.10.3(1)(2) and 3.10.5(1)(2). See section 9.1 of this Certificate.
Standard: Comment:	7.1(a)	Statement of sustainability The systems can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation: Comment:	**12**	**Building standards applicable to conversions** Comments in relation to the systems under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1(1)(2) and Schedule 6(1)(2).

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation: Comment:	**23(1)(i) (b)(i)**	**Fitness of materials and workmanship** The systems are acceptable. See sections 12.1 and 12.2 and the *Installation* part of this Certificate.
Regulation: Comment:	**23(2)**	**Fitness of materials and workmanship** The systems may be restricted by this Regulation. See sections 8.1 to 8.5 of this Certificate.
Regulation: Comment:	**28(b)**	**Resistance to moisture and weather** Walls rendered with the systems can satisfy this Regulation. See section 9.1 of this Certificate.
Regulation: Comment:	**30**	**Stability** The systems are acceptable as set out in section 6 of this Certificate.
Regulation: Comment:	**35(4)**	**Internal fire spread – Structure** The system can contribute to satisfying this Regulation. See section 8.1 of this Certificate.
Regulation: Comment:	**36(a)**	**External fire spread** The systems are restricted by this Regulation. See sections 8.1 to 8.5 of this Certificate.

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See sections: 1 *Description* (1.2), 3 *Delivery and site handling* (3.1 and 3.2) and 11 *Maintenance* of this Certificate.

Additional Information

NHBC Standards 2022

In the opinion of the BBA, weberend MT Systems applied to Glasroc X Sheathing Board, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Part 6 S*uperstructure (excluding roof*s), Chapters 6.9 *Curtain walling and cladding,* 6.11 *Render,* Clause 6.11.8 *Weather Resistance,* and 9.1 *A consistent approach to finishes.*

Technical Specification

1 Description

1.1 weberend MT Systems applied to Glasroc X Sheathing Board are thin coat renders for use as ventilated and drained exterior wall panel systems on timber- and steel-frame buildings. The systems comprise:

- weberend LAC — a polymer-modified cementitious basecoat/adhesive mortar, supplied as a powder to which 5 litres of clean water is added. Applied in two passes at a coverage of 6.5 $kg \cdot m^{-2}$ and an overall thickness of 6 mm
- weberend LAC Rapid — a polymer-modified cementitious basecoat/adhesive mortar, supplied as a powder to which 5 litres of clean water is added. Applied in two passes at a coverage of 6.5 $kg \cdot m^{-2}$ and an overall thickness of 6 mm
- weberwall brick external adhesive — a factory-batched, polymer-modified basecoat mortar, supplied as a powder, to which only clean water is added
- weber mesh – a 1 m wide, woven glass fibre reinforcing mesh with a polymer coating, with a nominal weight of 160 $g \cdot m^{-2}$
- weber PR310 — a styrene acrylic, resin-based emulsion containing fine fillers, pigment and a coalescing agent, used as a primer and pre-coat to control suction
- weberplast TF — an acrylic-bonded, textured render supplied as a paste containing aggregate of 1.5 mm grain size. It is available in a range of colours, details of which can be obtained from the Certificate holder
- webersil TF — a silicone-bonded, textured render supplied as a paste containing aggregate of 1.5 mm maximum grain size. It is available in a range of colours, details of which can be obtained from the Certificate holder
- weberwall brick — flexible mineral brick slips, typically supplied in standard size of dimensions 65 by 215 by 5 mm with a nominal weight of 6 $kg \cdot m^{-2}$ and formed of a sheet comprising several brick-slips prepressed on glass fibre mesh-reinforcement. Available as straight brick-slips and corner brick-slips and in a range of colours
- weberwall brick pointing mortar — a polymer-modified, dry powder, cement-based mortar for use with weberwall brick
- Glasroc X Sheathing Board(1) — comprising glass-fibre-reinforced gypsum fibreboard encased by hydrophobic-treated glass mat liners, incorporating a protective coating
- Glasroc X Screws — self-drilling, phosphate-coated carbon steel screws 25 mm in length and 3.8 mm diameter (with 8 mm head diameter) to one specification, used at maximum 300 mm centres
- EJOT SH3-STS chipboard screws/stainless steel — self-drilling, stainless steel grade screws 25 mm in length and 6 mm diameter (with 14 mm head).

(1) The board is supplied by Saint-Gobain Construction Products UK Ltd and is the subject of BBA Certificate 17/5453.

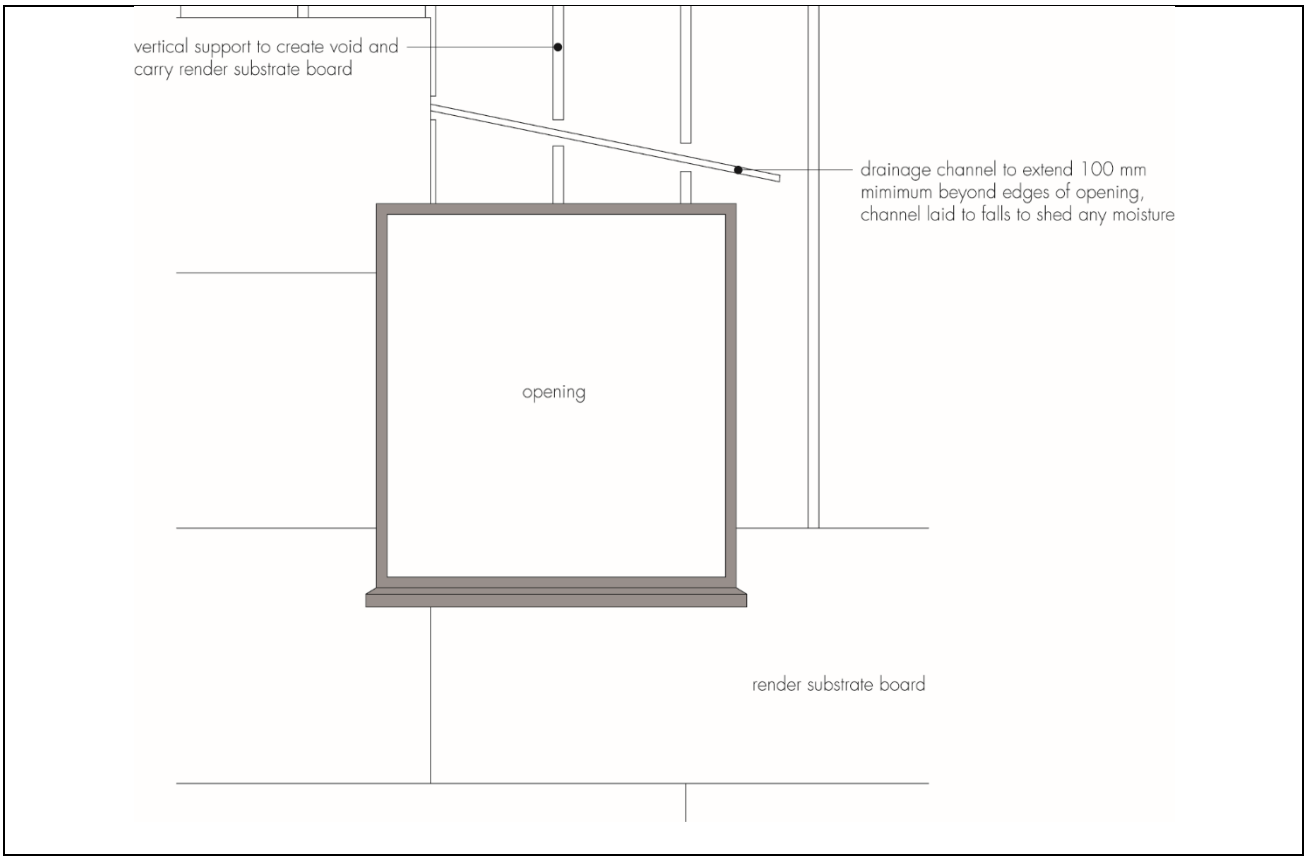
1.2 Glasroc X Sheathing Board has the characteristics of:

Length (mm)	2400
Width (mm)	1200
Thickness (mm)	12.5
Approximate mass per unit area ($kg \cdot m^{-2}$)	10.9
Apparent density ($kg \cdot m^{-3}$)	872
Water absorption rate (%)	<5
Flexural strength breaking load (N)	
longitudinal	733
transverse	699.

1.3 The Certificate holder recommends the following ancillary items for use with the systems, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- steel-frame — light gauge metal studs at 600 mm centres, fixed vertically to the main structure
- sealer — butyl tape or EPDM for use around exposed edges of the boards at openings, such as windows and doors.

Figure 1 Drainage channel at opening



2 Manufacture

2.1 The render components are manufactured in a batch-blending process. The systems components are manufactured by the Certificate holder or bought in from suppliers, to an agreed specification. The board is manufactured from a gypsum and glass fibre reinforcement mixed with water into a slurry and poured onto a reinforced mat base, with a second reinforced mat laid on top to form the board. Once hardened, the boards are cut and dried, prior to trimming and storage.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of Saint-Gobain Construction Products UK Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by BSI (Certificate 641234).

3 Delivery and site handling

3.1 The render components are delivered on pallets in moisture-resistant bags/containers and plastic pails. The boards are delivered to site shrink-wrapped in polythene packs.

3.2 All other components are delivered to site in the quantities and packages as listed in Table 1. Each package carries the manufacturer's and product's identification, batch number, and the BBA logo incorporating the number of this Certificate.

Table 1 Component supply details

Component	Quantity and package
weberend LAC	20 kg bags
weberend LAC Rapid	20 kg bags
weberwall brick external adhesive	20 kg bags
weber PR310	10 litre containers
weberplast TF	15 kg plastic pails
webersil TF	15 kg plastic pails
weberwall brick slips	boxed by manufacturer
weberwall brick pointing mortar	25 kg bags

3.3 weber mesh is 1 m wide and supplied in rolls of 50 m length.

3.4 Powder mortars should be stored in dry conditions, off the ground and protected from frost at all times.

3.5 The primer and textured synthetic coatings should be stored in a safe area, under cover and protected from excessive heat and frost at all times.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on weberend MT Systems applied to Glasroc X Sheathing Board.

Design Considerations

4 Use

4.1 weberend MT Systems applied to Glasroc X Sheathing Board are satisfactory for use as ventilated and drained exterior wall cladding systems on timber- and steel-frame buildings.

4.2 New buildings subject to national Building Regulations should be constructed in accordance with the relevant recommendations of:

- BS EN 13914-1 : 2016
- BS 8000-0 : 2014
- BS EN 1995-1-2 : 2004 and its UK National Annex
- BS EN 338 : 2016
- BS EN 14081-1 : 2016
- BS EN 1993-1-1 : 2005 and its UK National Annex.

4.3 Timber stud walls and timber support work must be structurally sound, designed and constructed in accordance with BS EN 1995-1-1 : 2004 and its UK National Annex, and preservative treated in accordance with BS EN 351-1 : 2007 and BS 8417 : 2011.

4.4 Galvanized steel framework, light steel framed backing wall and steel sub-frame support systems must be structurally sound, and designed and constructed in accordance with BS EN 1993-1-3 : 2006 and its UK National Annex.

4.5 It is essential that all new walls are designed and constructed to prevent moisture penetration and the formation of condensation. A breather membrane should be provided to the backing wall.

4.6 The design should include:

- a ventilated and drained cavity in accordance with BS 5250 : 2021, to ensure that the timber-frame structure is protected from moisture from wind-driven rain in the event of unexpected failure of the cladding envelope, and insect guards at all ventilation openings
- effective detailing around all openings to ensure weathertightness of the structure
- an effective breather membrane on the internal face of the cavity, to ensure that the frame structure is protected.

4.7 Ventilation and drainage must be provided behind the cladding panels. The clear cavity behind the back of the panel and substrate wall or thermal insulation must be at least 25 mm wide and ensure that a minimum ventilation area of 5000 mm^2 per metre run is provided at the building base point and at the roof edge. All ventilation openings around the periphery of a cladding system incorporating the panels should be suitably protected with a mesh or a perforated sheet or similar, to prevent the ingress of birds, vermin and insects.

4.8 The scope of this Certificate covers the systems use on areas of the wall above the damp-proof course level.

5 Practicability of installation

The systems should only be installed by approved contractors who have successfully undergone training and registration by the Certificate holder (see section 13).

6 Strength and stability

6.1 The systems have adequate strength and can be incorporated in an external cladding system suitably designed to resist the wind loads normally experienced in the UK.

6.2 A suitably competent and experienced individual must check the design and installation of the systems.

6.3 The designer must ensure that:

- the sub-frame and the support rails are designed to limit mid-span deflections to L/200, and cantilever deflections to L/150. Board mid-span deflections should be limited to L/500. Where L is the clear span
- the systems attachment to the substrate has adequate fixing pull-out capacity for the calculated loads. An appropriate number of site-specific pull-out tests must be conducted on the substrate to determine the minimum pull-out resistance to failure of the fixings. The characteristic pull-out resistance should be determined in accordance with the guidance given in EOTA TR 055 : 2018, using 50% of the mean value of the five smallest measured values at the ultimate load
- the fixings attaching the board to the subframe have adequate pull-out strength from the subframe used
- the maximum centres between the studs supporting the wall are 600 mm
- the spacing of the fixings attaching the board to the sub-frame is to the manufacturer's instructions. This is typically into the batten, at 600 mm centre-to-centre horizontally and 250 mm centre-to-centre vertically
- the battens are treated timber, minimum 40 mm wide with a thickness to suit the required cavity width. The cavity may be formed by timber battens or steel Z sections.

6.4 The supporting wall must be able to take the full wind actions as well as any racking loads. The systems cannot be assumed to contribute in this respect.

6.5 Design wind actions must be calculated in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. Consideration should be given to the higher-pressure coefficients applicable to corners of buildings, as recommended in this Standard. In accordance with BS EN 1990 : 2002, it is recommended that a partial load factor of 1.5 is used to determine the design wind load to be resisted by the systems.

6.6 The design pull-through resistance per fixing used for securing the boards to the steel studs, depends on the proximity to the edge and is given in Table 2 of this Certificate.

6.7 Glasroc X Sheathing Boards were tested for dynamic wind load resistance in accordance with EAD 040083-00-0404 : 2019, and as given in Table 3 of this Certificate.

Table 2 Design pull-through resistance (kN)

Position	Pull-through resistance[1] (kN)
	Glasroc X Sheathing Boards with 25 mm Glasroc X Screws[2]
Centre	0.157
Edge	0.081
Corner	0.058

(1) Factor of 3.0 was applied to the characteristic value determined by tests to EAD 090062-00-0404.
(2) Values apply for 3.8 mm diameter self-drilling screws with countersunk head, 8 mm diameter, drilled flush with the external face of the board.

Table 3 Design wind load resistance ($kN \cdot m^{-2}$) — 600 studs spacing

System build-up	Fixings	Design wind load resistance ($kN.m^{-2}$)[1]
Steel frame, Glasroc X sheathing board, Super-saphir self-drilling screw/bi-metal, British Gypsum 25 mm Glasroc X screws, Saint-Gobain Weber weberend LAC rapid basecoat, Saint-Gobain Weber fibre glass mesh	8 mm head with 200 and 300 mm centres (for use into steel-frame only)	1.0
Steel frame, Glasroc X sheathing board, Super-saphir self-drilling screw/bi-metal, EJOT SH3-STS chipboard screw / stainless steel, Saint-Gobain Weber weberend LAC rapid basecoat, Saint-Gobain Weber fibre glass mesh	14 mm head with 200 mm centres (for use into steel and timber)	1.5

(1) Obtained by applying a partial factor of 2 to the test failure value.

Impact resistance

6.8 The systems have adequate resistance to impact and cracking in all normal circumstances. Where the systems may be exposed to severe impact (eg on some industrial sites), or are to be applied over existing background cracks, precautions may be required to reduce the risk of damage.

6.9 It is essential that the surface of the boards to be covered is clean and has a sound mechanical key to ensure a satisfactory bond between the backing board and the render.

7 Water vapour resistance

The equivalent air layer thicknesses (sd) (for the render systems) are shown in Table 4.

Table 4 Equivalent air layer thicknesses

	(sd) (m)
LAC basecoat, weberplast TF	0.93
LAC basecoat, webersil TF	0.57
LAC Rapid basecoat, weberplast TF	0.19
LAC Rapid basecoat, webersil TF	0.18
weberwall brick external adhesive (3 mm) + weberwall brick + weberwall brick pointing mortar	0.42

8 Behaviour in relation to fire

8.1 Glasroc X Sheathing Board has a reaction to fire classification(1) of A1 in accordance with BS EN 13501-1 : 2007.

(1) Designers should refer to Centrum stavebniho Fire Technical Laboratory (authorised body No. 212, notified body 1390) test report no. PK -16 - 032, available from the Certificate holder.

8.2 webersil TF and weberplast TF systems, with a topcoat thickness of 1.5 mm, topcoat weight per unit area of 2.7 $kg \cdot m^{-2}$, primer thickness of 0.1 mm, primer weight per unit area of 270 $kg \cdot m^{-2}$, basecoat thickness of 3 mm, basecoat weight per unit area of 3.25 $kg \cdot m^{-2}$, reinforcing mesh of thickness 0.52 mm, reinforcing mesh weight per unit area 160 $kg \cdot m^{-2}$, basecoat thickness of 3 mm, basecoat weight per unit area of 3.25 $kg \cdot m^{-2}$, applied over Glasroc X Sheathing Board have the following fire classifications(1) in accordance with BS EN 13501-1 : 2018:

- webersil TF A2-s1, d0
- weberplast TF B-s1, d0.

(1) Test reports WF 427971 and WF 428755, issued by Warringtonfire. Copies of the reports are available from the Certificate holder upon request. The worst-case substrate was tested for fire performance.

8.3 The weberwall brick system with a brick slip thickness of 5 mm, brick slip weight per unit area of 5.55 $kg \cdot m^{-2}$, pointing mortar thickness of 5 mm, pointing mortar weight per unit area 0.83 $kg \cdot m^{-2}$, basecoat thickness of 3 mm, basecoat weight per unit area of 3.25 $kg \cdot m^{-2}$, reinforcing mesh of thickness 0.52 mm, reinforcing mesh weight per unit area 160 $kg \cdot m^{-2}$, basecoat thickness of 3 mm, basecoat weight per unit area of 3.25 $kg \cdot m^{-2}$, applied over Glasroc X Sheathing Board have a fire classification(1) of A2-s1, d0 in accordance with BS EN 13501-1 : 2018.

(1) Test report WF 428352, issued by Warringtonfire. Copies of the report are available from the Certificate holder upon request. The worst-case substrate was tested for fire performance.

8.4 The classification and permissible areas of use of other specifications and constructions should be established by reference with the documents supporting the national Building Regulations.

8.5 In England, Wales and Northern Ireland, the render systems should not be used on buildings that have a storey at least 18 m above ground level and which contain: one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals, dormitories in boarding schools and, additionally in Northern Ireland, nursing homes and places of lawful detention.

8.6 In Scotland, the render systems should not be used on any building with a storey more than 11 m above the ground, or on any entertainment or assembly building with a total storey area more than 500 m^2, or on any hospital or residential care building with a total storey area more than 200 m^2.

8.7 Designers should refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity barriers and combustibility limitations for other materials and components used in the overall wall construction (for example, thermal insulation).

8.8 For resistance to fire, the performance of a wall incorporating the systems can only be determined by tests from a suitably accredited laboratory and is outside the scope of this Certificate.

9 Weather resistance

9.1 The systems are suitable for use in exposure zones up to and including the 'severe' wind-driven rain index category in accordance with PD 6697 : 2019.

9.2 The construction in which the systems are incorporated must be designed and constructed in relation to local exposure conditions to minimise the incidence of rain penetration.

9.3 The renders will tend to shed water and will considerably reduce the amount of water absorbed during rain.

9.4 A cavity is required which is drained and vented (for timber-frame), drained for steel-frame and should be kept clear to allow drainage, and be provided with weep holes or other suitable means of drainage where necessary.

10 Proximity of flues

Detailed guidance can be found in the documents supporting the national Building Regulations for the provisions that are applicable when the systems are installed in close proximity to certain flue pipes and/or heat-producing appliances.

11 Maintenance

11.1 Regular maintenance checks should be carried out on architectural details and on external plumbing and fittings, to ensure that they are functioning correctly and to prevent water damage to the render.

11.2 Damaged render must be repaired as soon as is practicable (see section 14).

12 Durability

12.1 The durability and service life of the systems will depend upon the building location, the immediate environment and the intended use of the building.

12.2 Under normal service conditions, provided regular maintenance is carried out, as described in section 11 and in accordance with the Certificate holder's instructions, the systems will have a service life in excess of 30 years.

12.3 The systems may become discoloured with time, the rate depending on the local environment. The appearance can normally be restored by cleaning with water and mild detergent. In industrial atmospheres, light colours should be avoided.

Installation

13 Recommended contractors

Application of the systems, within the context of this Certificate, must be carried out by contractors recommended or recognised by the Certificate holder. Such a contractor is a company:

- which operates in the specialist field of activity and has been audited
- which has achieved required installation standards consistently to comply with the Certificate holder's application procedure
- subject to at least one inspection per annum by the Certificate holder to ensure suitable site practices are being employed. This may include unannounced site inspections.

14 General

14.1 Application of weberend MT Systems applied to Glasroc X Sheathing Board should be carried out strictly in accordance with the Certificate holder's instructions and specifications, the relevant recommendations of BS EN 13914-1 : 2016 and this Certificate.

14.2 Advice concerning site survey and preliminary work is available to the designer or rendering contractor from the Certificate holder.

14.3 A pre-application survey of the property must be carried out to determine the suitability of the substrate to receive the systems, and whether repairs to the building structure are necessary before application. A specification is prepared by the designer or rendering contractor for each elevation indicating:

- preliminary treatment of the background
- position of beads
- detailing around windows, doors and at eaves
- areas where flexible sealants must be used.

14.4 The sub-frame to which the cladding is fixed must be structurally sound and constructed in accordance with the requirements of the relevant national Building Regulations and Standards (see sections 4.6 and 4.7).

14.5 The systems are capable of transmitting their self-weight and wind load to the structure. The adequacy of fixing of the sub-frame to the structural frame for specific installations is outside the scope of this Certificate and must be verified by a suitably competent and experienced individual. Particular care is required around window and door openings to ensure that the structure is capable of sustaining the additional weight of Glasroc X Sheathing Board.

14.6 Horizontal movement joints must be provided at every floor to accommodate vertical shrinkage of up to 6 mm in the timber-frame and to follow movement joints in the substructure. For steel-frame structures, reference should be made to the Structural Engineer's details for deflection at floor level and movement joints in the substructure.

14.7 Vertical movement joints should be provided at the required intervals. The actual spacing and position of the joints will be determined by the shape of the area to be rendered and should coincide with movement joints in the structure and allow for the same degree of movement.

14.8 The breather membrane must be installed and properly overlapped in accordance with the instructions of the membrane manufacturer and the building designer.

14.9 All window and door openings must be sealed strictly in accordance with the Certificate holder's installation instructions to ensure that they are weathertight before application of the systems.

14.10 The renders should not be applied in rain or mist, at temperatures above 30°C or below 5°C, or if exposure to frost is likely to occur during curing.

14.11 In sunny weather, work should commence on the shady side of the building, following the sun round to prevent the rendering drying out too rapidly.

14.12 To minimise colour shade variations and to avoid dry line jointing, continuous surfaces should be completed without a break. If breaks cannot be avoided, they should be made where services or architectural features, such as reveals or lines of doors and windows, help mask cold joints. Where long, uninterrupted runs are planned, product from the same batch should be used. Different batch numbers should be checked for colour consistency.

15 Procedure

15.1 Glasroc X Sheathing Board should be securely fixed to the framework at maximum 600 mm spacings using the specified fixings (see section 1.1) at maximum 600 mm centre-to-centre horizontally and maximum 250 mm centre-to-centre vertically to provide a rigid in-plane surface without deflection or edge protrusions.

15.2 The board is supported on a minimum of three members, the centres of which should be a maximum spacing of 600 mm.

15.3 Screws should be fixed at a minimum of 15 mm from board edges. The spacing for the screws should be no more than 250 mm and they should not be over-tightened. Fixings centres are determined by Tables 2 and 3 which could be up to 300 mm centres.

15.4 The boards may be cut using a plasterboard saw or by scoring through the surface glass mat with a board knife. The core is snapped over a straight edge and the boards turned over and cut through the back face glass mat.

15.5 It is essential that the board is rested directly on the framework during installation.

15.6 The board is fixed horizontally over supports with gaps between 3 and 5 mm. Successive rows of boards should be installed with vertical joints offset by a minimum of one stud cavity.

15.7 The board is cut to fit up to the head and down to the sill of windows, ensuring that no continuous vertical joint is formed to avoid leakage and cracks.

15.8 Render beads and expansion beads are fixed in accordance with the Certificate holder's instructions.

15.9 Where board edges are exposed to accommodate openings (such as corners, windows and doors), appropriate cold-applied sealing methods, such as butyl tape, should be used to seal, should be used to seal the exposed edges. The Certificate holder can advise of suitable materials.

15.9 weberend LAC or weberend LAC Rapid or weberwall brick external adhesive is mixed using clean water (5 litres of water per 20 kg bag of render) to achieve a thick creamy consistency, and a 3 mm thick layer is applied onto the board.

15.10 weber mesh is laid in the first pass of weberend LAC or weberend LAC Rapid and left to dry for approximately 30 minutes before application of a second pass of 2 to 3 mm minimum, to achieve a minimum total thickness of 6 mm. Using a sponge, the surface is rubbed to achieve a float finish and the render allowed to dry for 3 to 7 days.

15.11 A coat of weber PR310 (coverage rate 0.25 litres per m^2) is applied by roller and the surface left to dry for 24 hours prior to application of the finishing coats when using weberend LAC. Weber PR310 primer is not required with weberend LAC rapid.

Render finishes

15.12 A finishing coat of either weberplast TF at a coverage rate 2.8 $kg \cdot m^{-2}$ or webersil TF at a coverage rate 2.7 $kg \cdot m^{-2}$ is applied to a thickness of 1.5 mm using a steel float and hawk. A thin plastic float is used to smooth the surface, ensuring evenness of cover.

weberwall brick slips with weberwall brick pointing mortar

15.13 For the weberwall brick system, a further 3 mm thick layer of weberwall brick external adhesive is applied over the wet first layer of basecoat (to give an overall minimum thickness of 6 mm) using a 10 mm square notched trowel to comb through the adhesive to prepare the wet adhesive for application of weberwall brick.

15.14 weberwall brick is immediately pressed into the wet adhesive, ensuring the mesh is fully immersed in adhesive. weberwall brick pointing mortar is then applied in joints once the adhesive has set in accordance with the Certificate holder's instructions. Excess mortar is removed with a dry brush.

15.15 Care should be taken in the detailing of the system around features such as openings, projections and at eaves to ensure adequate protection against water ingress and to limit the risk of water penetrating the system.

15.16 At the top of walls, the system must be protected by a coping, adequate overhang or adequately sealed, purpose-made flashing.

15.17 A typical wall build-up is shown in Figures 2 to 12.

Figure 2 Mesh reinforcement at opening

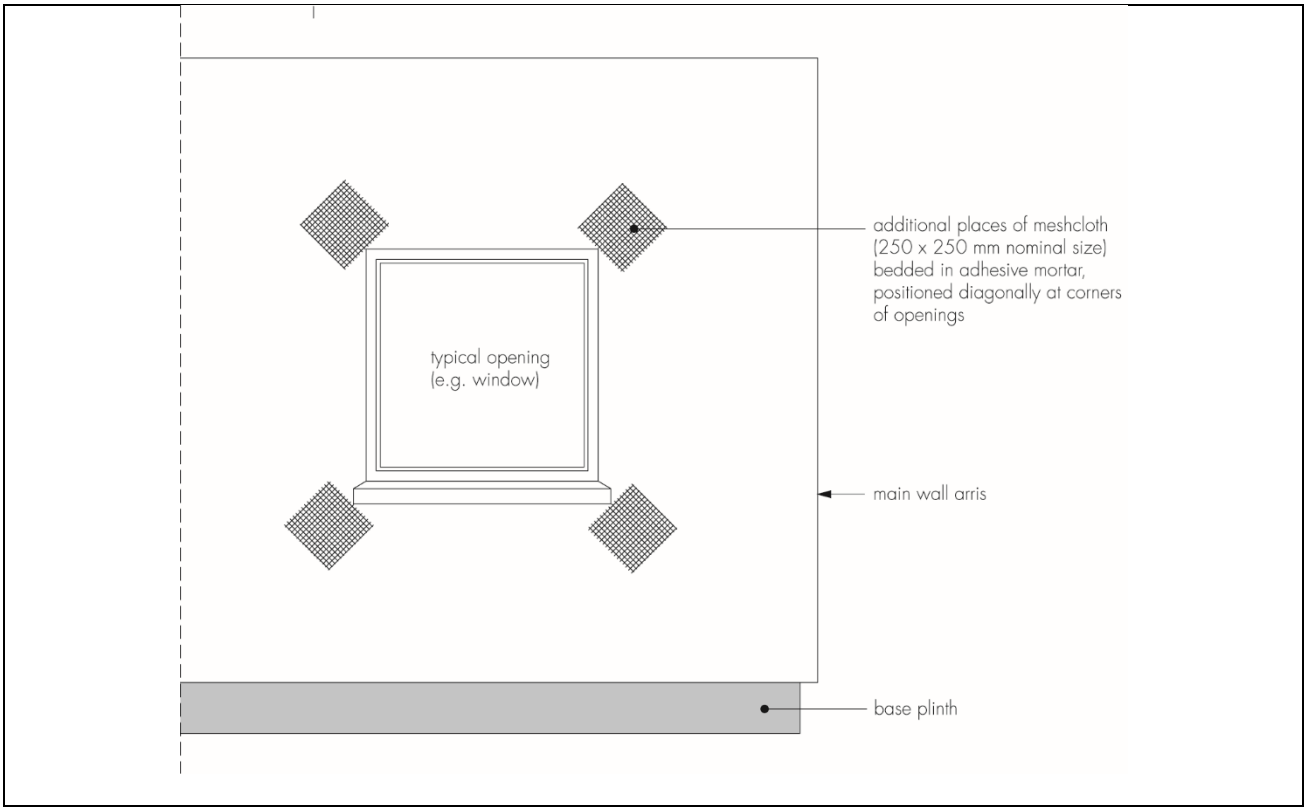


Figure 3 Detail section – main wall

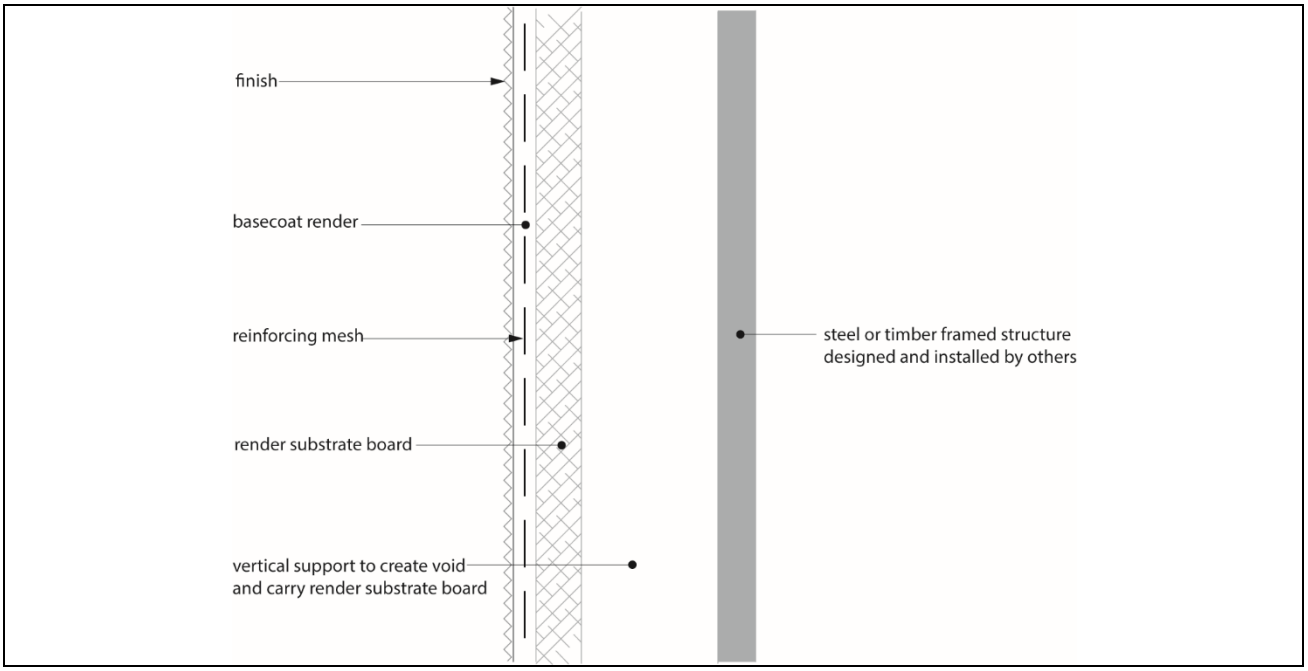


Figure 4 Detail section – base (Z flashing – if required)

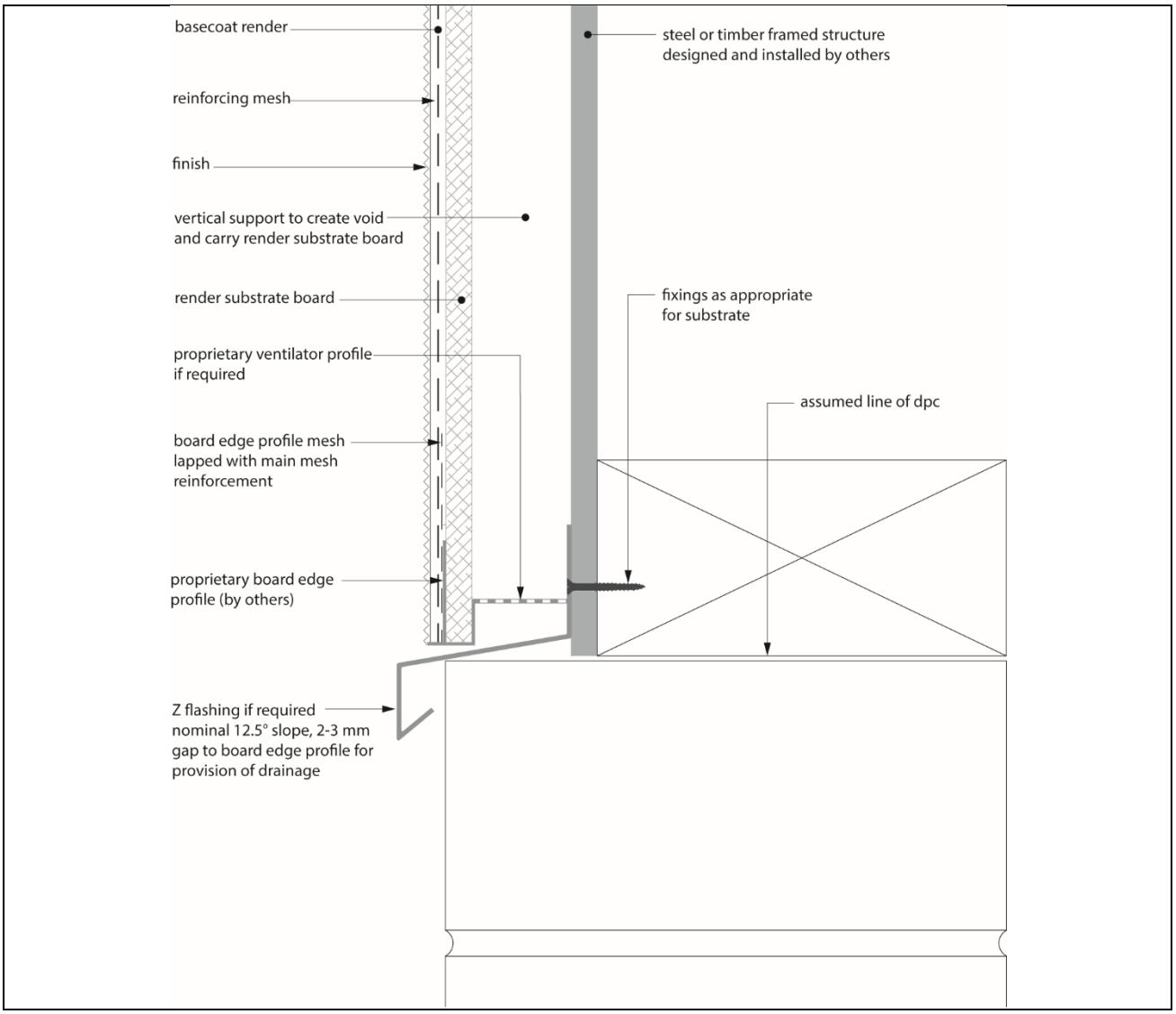


Figure 5 Detail plan – external corner

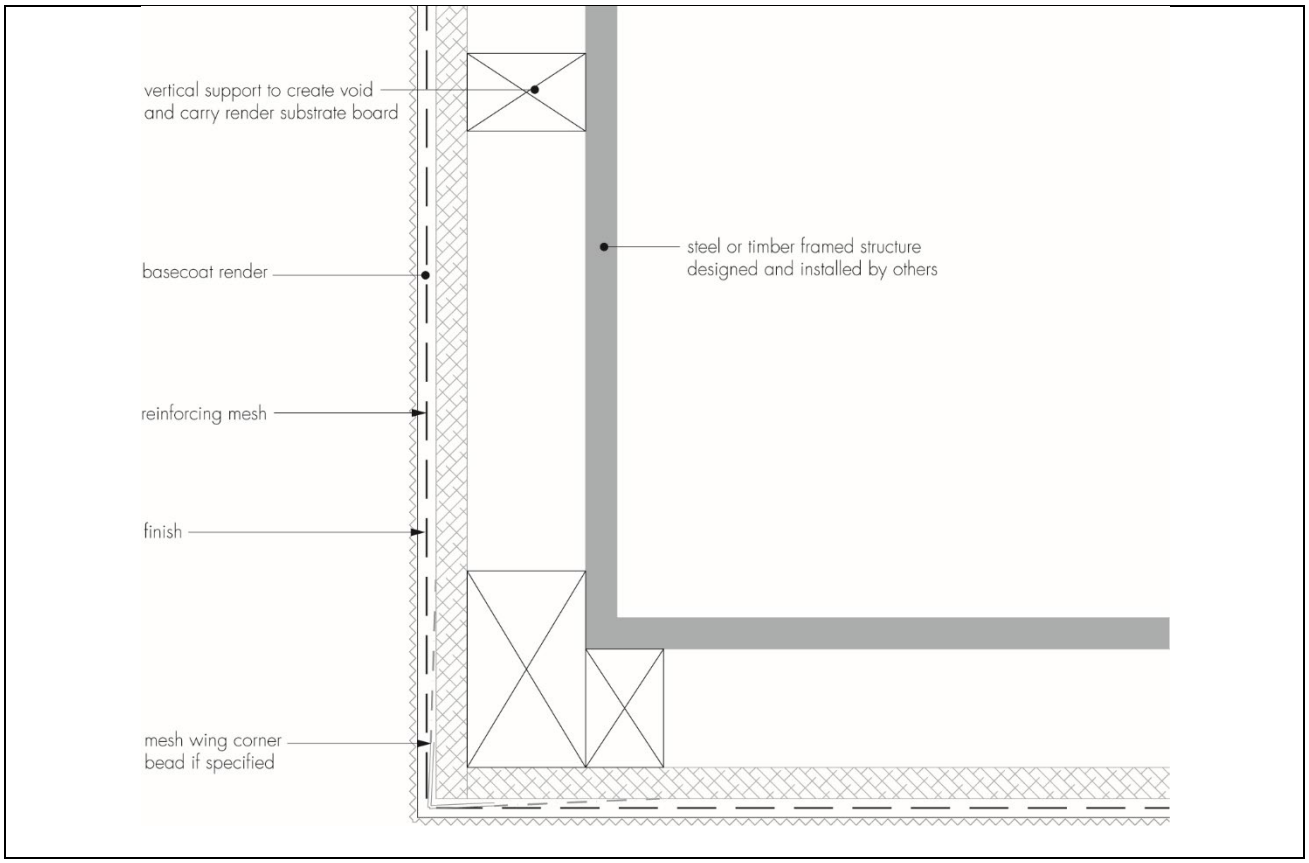


Figure 6 Detail plan – internal corner

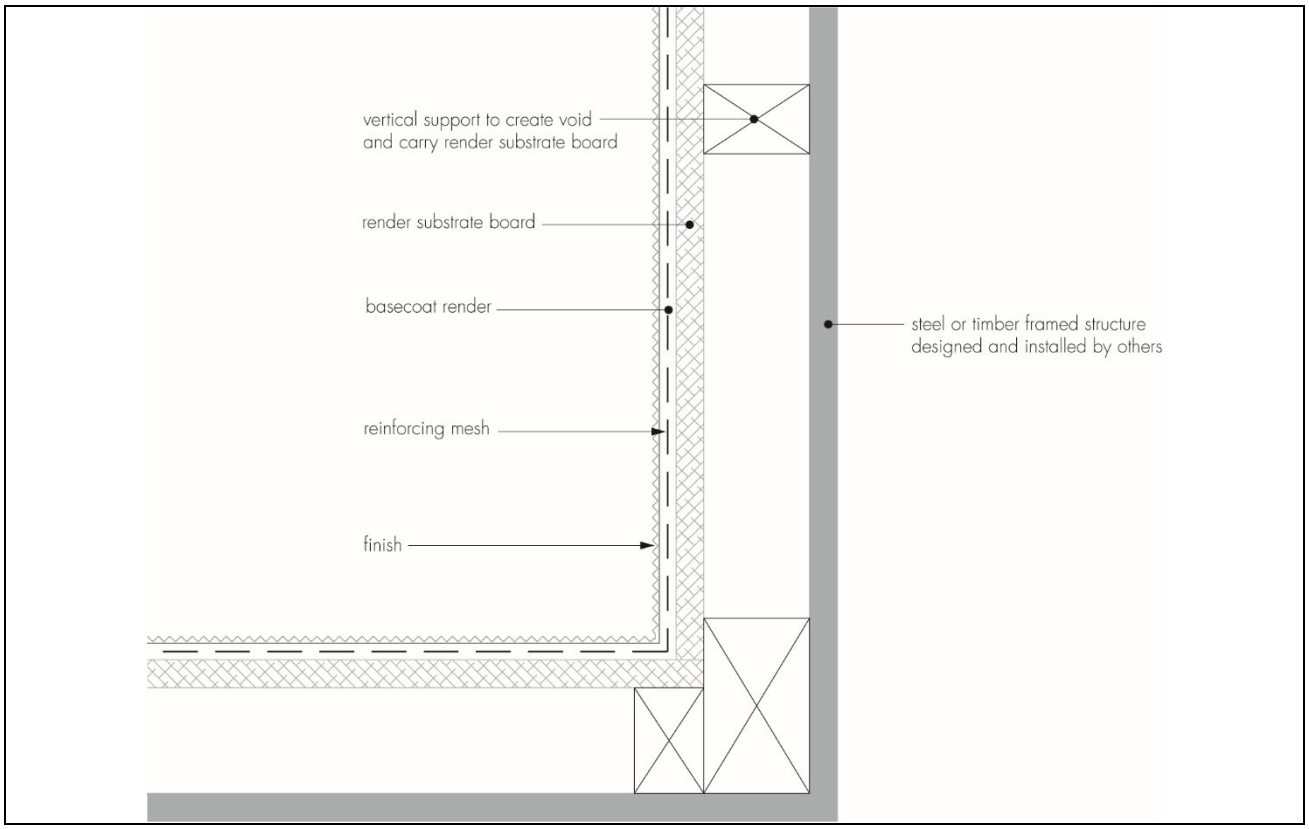


Figure 7 Detail section – UPVC sill

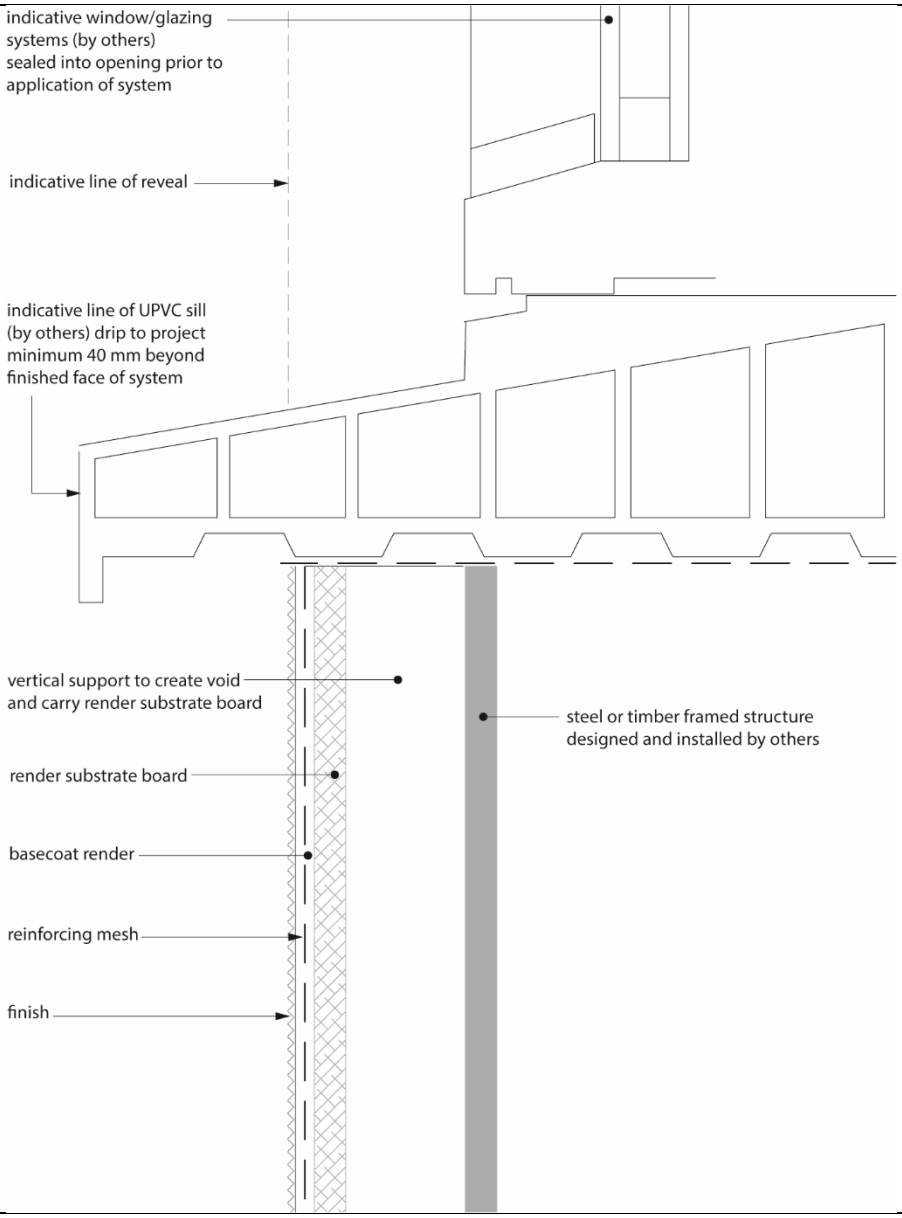


Figure 8 Detail plan – reveal (bead + mastic)

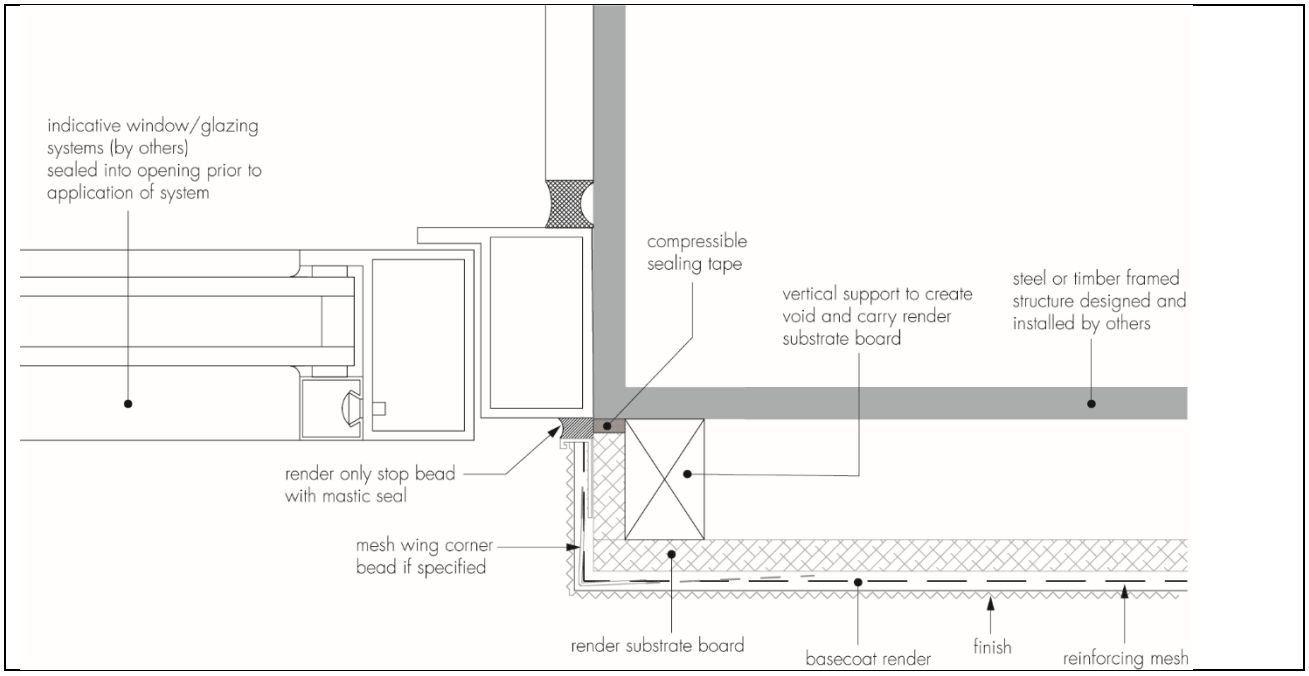


Figure 9 Detail section – head (bead + mastic)

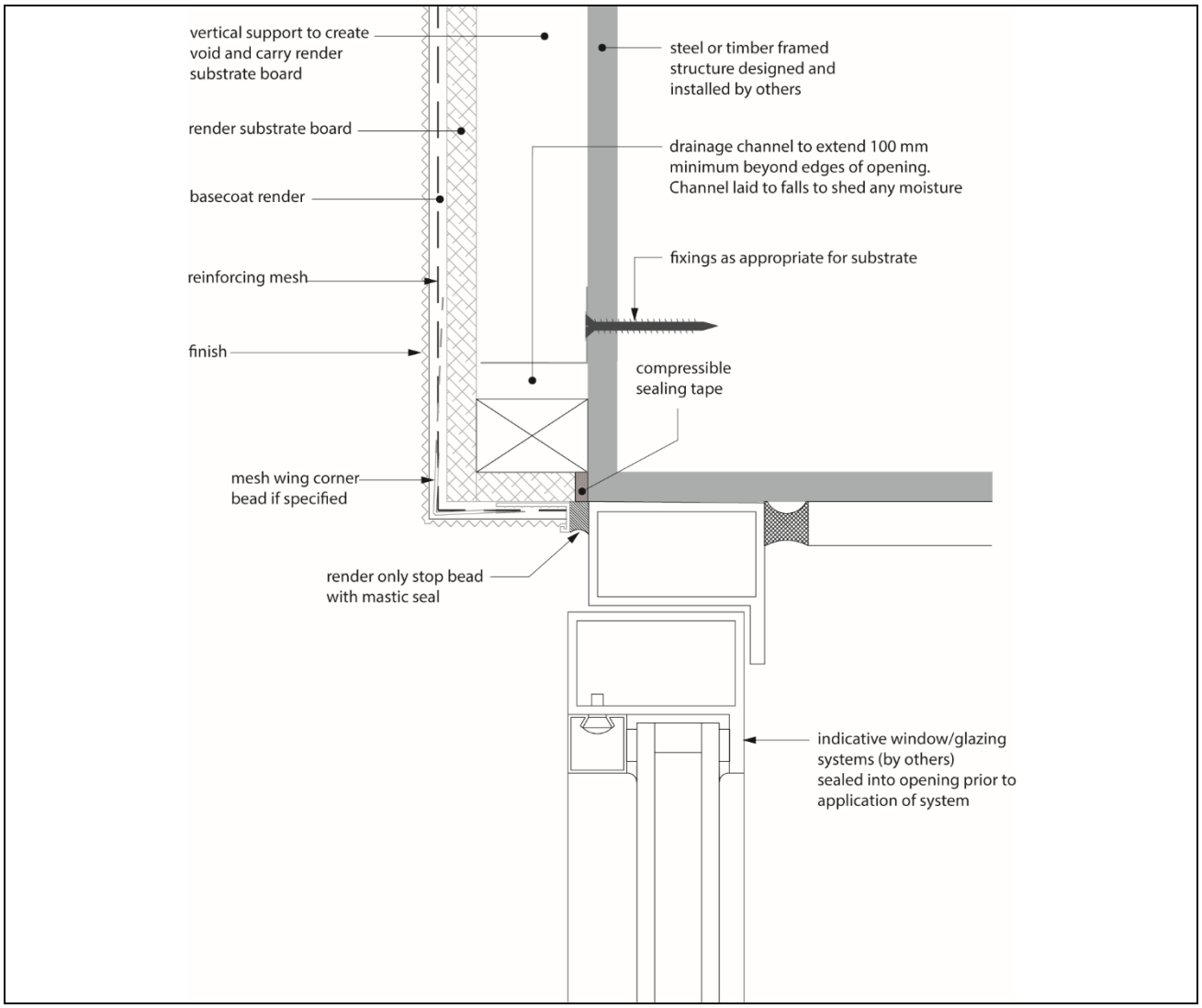


Figure 10 Detail section – compression joint

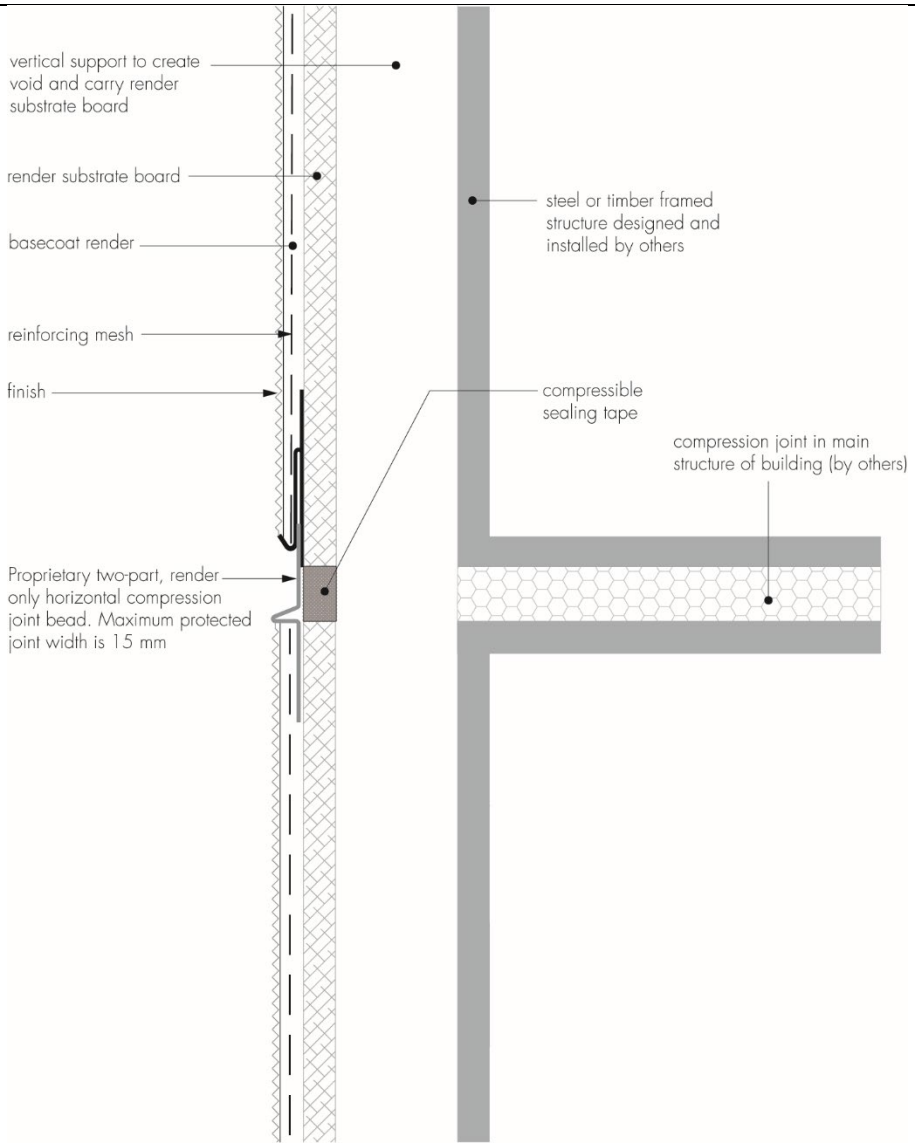


Figure 11 Detail plan – vertical movement joint (bead)

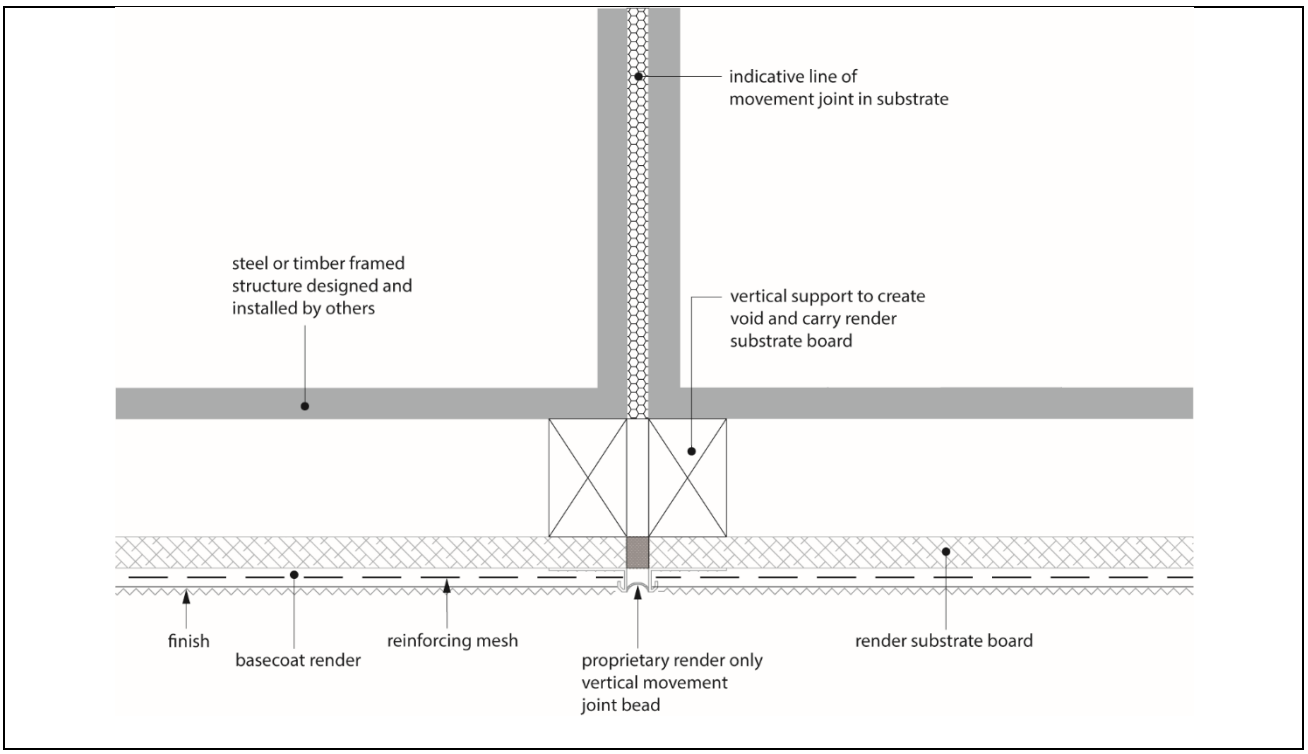
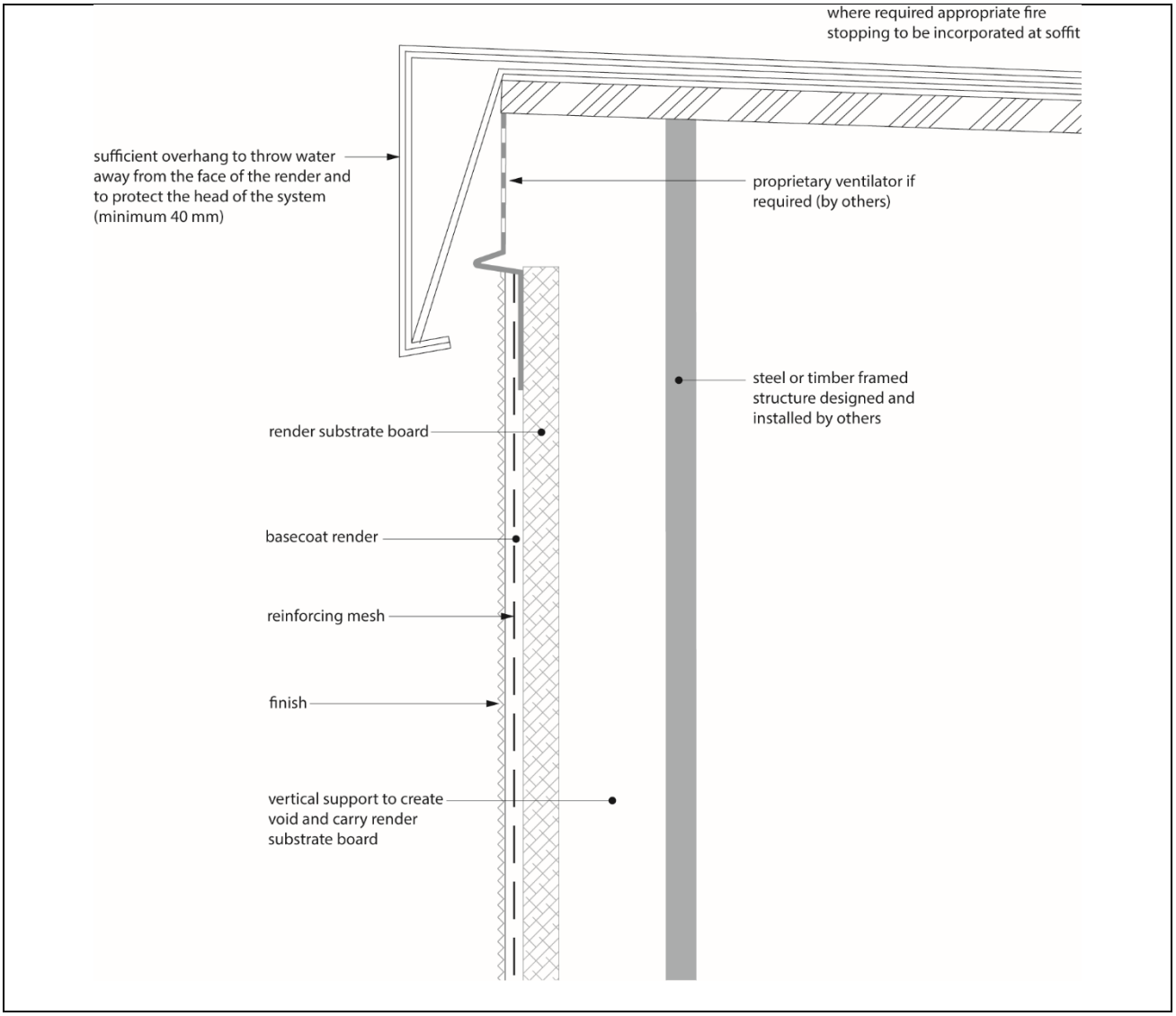


Figure 12 Detail plan – coping trim



Technical Investigations

16 Tests

16.1 Tests were carried out on weberend MT Systems applied to Glasroc X Sheathing Board and the results assessed to determine:

- effect of thermal cycling
- effect of freeze/thaw
- effect of accelerated ageing on impact resistance
- effect of accelerated ageing on bond strength
- water absorption
- water vapour permeability
- dynamic wind load resistance.

16.2 An assessment was made of data relating to reaction to fire.

17 Investigations

17.1 Installations were witnessed to assess the practicability of the render application to Glasroc X Sheathing Board.

17.2 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

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18 Conditions

18.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

18.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

18.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

18.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

18.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

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- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
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- any claims by the manufacturer relating to CE marking.

18.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.