Wetherby Building Systems Ltd
1 Kid Glove Road
Golborne Enterprise Park
Golborne
Greater Manchester WA3 3GS

Tel: 01942 717100 Fax: 01942 717101
e-mail: info@wbs-ltd.co.uk
website: www.wbs-ltd.co.uk

Agrément Certificate
19/5711
Product Sheet 1

WETHERBY BUILDING SYSTEMS

WETHERBY EPSITEC RENDER CARRIER BOARD SYSTEMS

This Agrément Certificate Product Sheet(1) relates to Wetherby Epsitec Render Carrier Board Systems, comprising cement particle board mechanically fixed to sheathed substrates using top hat rail profiles or timber battens, with a reinforced basecoat and render or brick-slip finish, for use as a ventilated exterior wall panel system 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 — when designed in accordance with the guidance in this Certificate, 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 have an A2-s1,d0 reaction to fire classification to BS EN 13501-1 : 2018 (see section 7).

Weathertightness — the systems resist the passage of moisture from the weather (see section 9).

Durability — the systems can be expected to have a design life 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.

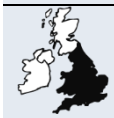
On behalf of the British Board of Agrément

Date of First issue: 9 December 2019

Brian Moore
Director

Regulations

In the opinion of the BBA, Wetherby Epsitec Render Carrier Board Systems, 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**	**Loading**
Comment:		The systems can sustain and transmit wind loads to the substrate wall. See sections 4.7 and 6.3 to 6.6 of this Certificate.
Requirement:	**B3(4)**	**Internal fire spread (structure)**
Comment:		The systems can contribute to satisfying this Requirement. See section 7.2 of this Certificate.
Requirement:	**B4(1)**	**External fire spread**
Comment:		The systems are unrestricted by this Requirement. See sections 7.1, 7.3 and 7.5 of this Certificate.
Requirement:	**C2(b)(c)**	**Resistance to moisture**
Comment:		The systems will satisfy this Requirement. See sections 9 and 10 of this Certificate.
Regulation:	**7**	**Materials and workmanship (applicable to Wales only)**
Regulation:	**7(1)**	**Materials and workmanship (applicable to England only)**
Comment:		The systems are acceptable. See sections 12.1 and 12.2 and the *Installation* part of this Certificate.
Regulation:	**7(2)**	**Materials and workmanship (applicable to England only)**
Comment:		The systems are unrestricted by this Regulation. See section 7.5 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Durability, workmanship and fitness of materials**
Comment:		The systems can contribute to a construction satisfying this Regulation. See sections 11, 12.1 and 12.2 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	1.1(a)(b)	Structure
Comment:		The systems are acceptable, with reference to clauses 2.4.1(1)(2) and 2.4.2(1)(2) of this Standard. See sections 4.7 and 6.3 to 6.6 of this Certificate.
Standard:	2.4	Cavities
Comment:		The systems can contribute to satisfying this Standard, with reference to clauses 2.4.2(1)(2) and 2.4.4(1)(2). See section 7.2 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The systems are unrestricted by this Standard, with reference to clauses 2.6.4(1)(2), 2.6.5(1) and 2.6.6(2). See sections 7.1 and 7.5 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The systems are unrestricted by this Standard, with reference to clause 2.7.1(1)(2). See sections 7.1, 7.3 and 7.5 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The systems will contribute to satisfying this Standard, with reference to clauses 3.10.1(1)(2) to 3.10.3(1)(2), 3.10.5(1)(2) and 3.10.6(1)(2). See section 9 of this Certificate.

Standard:	3.15	Condensation
Comment:		The systems will contribute to satisfying this Standard, with reference to clauses 3.10.1(1)(2) to 3.10.3(1)(2), 3.10.5(1)(2) and 3.10.6(1)(2). See section 10.2 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The systems can contribute to meeting 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:	**12**	**Building standards applicable to conversions**
Comment:		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:	**23(a)(i) (iii)(b)(i)**	**Fitness of materials and workmanship**
Comment:		The systems are acceptable. See sections 12.1 and 12.2 and the *Installation* part of this Certificate.
Regulation:	**28**	**Resistance to moisture and weather**
Comment:		The systems can satisfy this Regulation. See section 9 of this Certificate.
Regulation:	**29**	**Condensation**
Comment:		The systems can satisfy this Regulation. See section 10.2 of this Certificate.
Regulation:	**30**	**Stability**
Comment:		The systems are acceptable for use as set out in sections 4.7 and 6.3 to 6.6 of this Certificate.
Regulation:	**35(4)**	**Internal fire spread – Structure**
Comment:		The systems are unrestricted by this Regulation. See section 7.2 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The systems are unrestricted by this Regulation. See sections 7.1, 7.3 and 7.5 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: 3 *Delivery and site handling* (3.2 and 3.5) and 15 *Procedure* (15.2) of this Certificate.

Additional Information

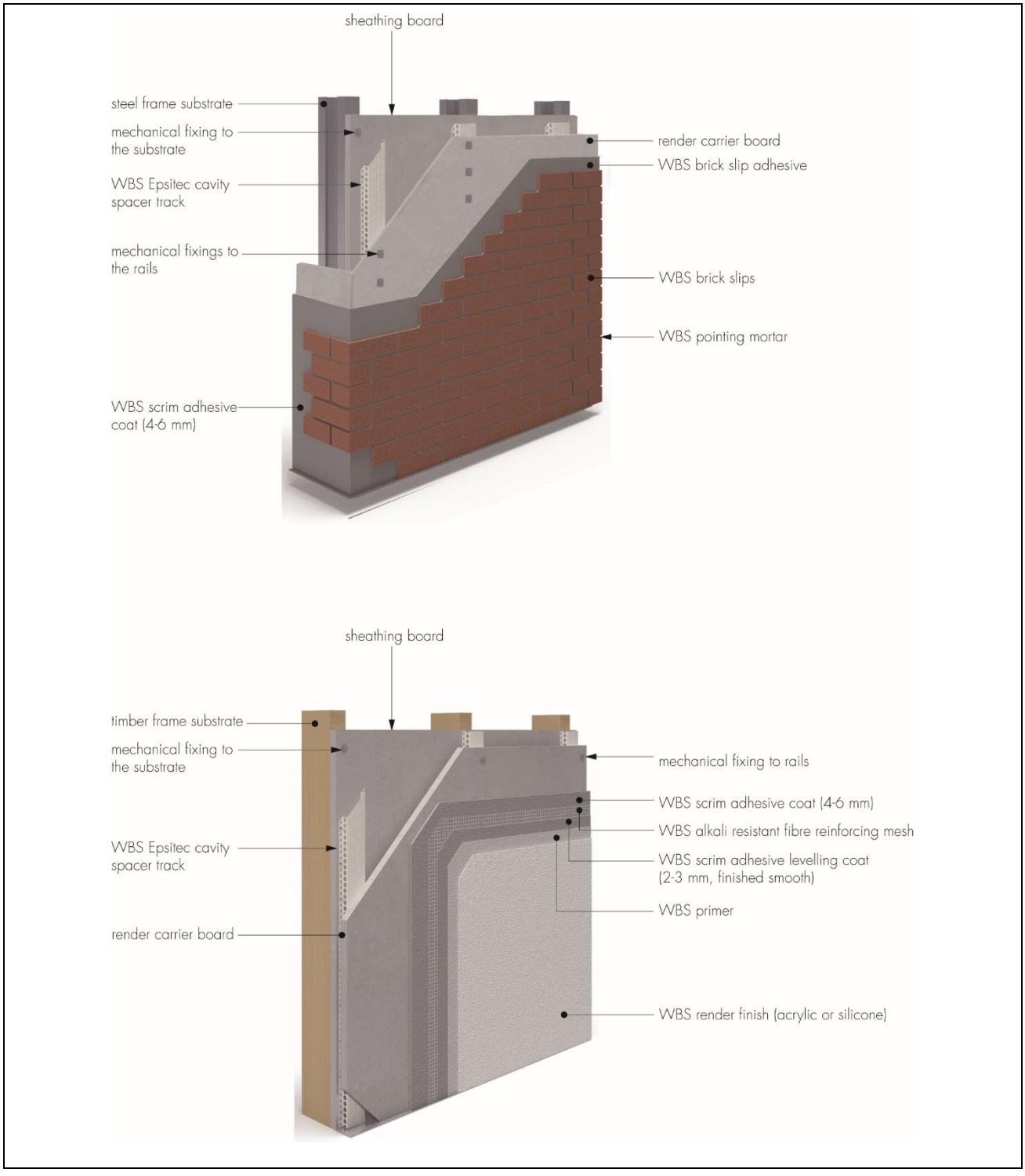
NHBC Standards 2019

In the opinion of the BBA, Wetherby Epsitec Render Carrier Board Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.2 *External timber framed walls*, 6.9 *Curtain walling and cladding*, 6.10 *Light steel framed walls and floors*, and 6.11 *Render.*

1 Description

1.1 Wetherby Epsitec Render Carrier Board Systems are cladding systems consisting of cement particle board mechanically fixed onto vertical timber battens or steel top hat/ventilation support channels at a maximum of 600 mm centres to form a vented cavity, and finished with Acrylic, Silicone, and StoneRend render finishes or brick-slip finish options (see Figure 1) in timber- and steel-frame buildings.

Figure 1 Typical details for installation onto steel- or timber-frame



1.2 The systems comprise the following components:

Support rails

- top hat channel/Epsitec Cavity Spacer Tracks — 48 by 25 mm vertically fitted galvanized steel top hat profile to which the cement particle board is fitted. Wider top hat rails with better strength and stiffness are acceptable for use with the systems
- timber battens — minimum 50 by 25 mm structural grade treated timber battens to BS 5534 : 2014

Render carrier boards

- Wetherby-approved cement particle board — Category B to BS EN 12467 : 2012 with the following nominal characteristics:

– width (mm)	$\leq$1250
– thickness (mm)	12.5
– length (mm)	2400
– approximate mass per unit area (kg·m^{-2})	16
– approximate dry density (kg·m^{-3})	1150 $\pm$ 50
– modulus of rupture (MPa)	9.60
– reaction to fire classification to BS EN 13501-1 : 2018	A1

Mechanical fixings

- EJOT Super-SAPHIR Screws — self-drilling stainless steel JT3-STS-2-6.0 x 28 (length 28 mm, head diameter 14.5 mm, and shank diameter 6.0 mm), for fixing a single layer of boards to thin steel/aluminium substrates
- Knauf AQUAPANEL Rust-proof Screws — stainless steel SN 40 (length 40 mm, head diameter 9 mm, shank diameter 4.0 mm), for fixing a single layer of boards to timber substrates
- Aquapanel Exterior Maxi Screws — SN25-corrosion-resistant coated screws complying with BS EN 14566 : 2008, with length of 25 mm and shank diameter 4.2 mm, for use in steel top hats up to 0.7 mm thick with a single layer of board (covered under BBA Certificate 09/4633)

Basecoat

- Styrobond DP — a factory-batched, lime/cement resin-based mortar. Supplied as a powder to which clean water is added at a ratio of 4:1 by weight. Applied to the board face to an approximate thickness of 6 to 8 mm, with a coverage of 5 to 8 kg·m^{-2}

Brick-slip adhesive

- Wetherby Brick-slip Adhesive — a high adhesive-strength, cementitious-based mortar conforming to BS EN 12004-1 : 2017, including cement conforming to BS EN 197-1 : 2011 and additives. Supplied as a grey powder to which clean water is added and used as a brick-slip finish adhesive

Scrim reinforcement mesh

- glass fibre mesh — alkali and slide resistant, with a mass per unit area of approximately 160 g·m^{-2} and a mesh size of approximately 4 by 4 mm

Primer

- Epsicoat Primer — a pigmented acrylic resin primer for use with EpsiCoat Acrylic, Silicone and StoneRend finishes, at a coverage of approximately 0.25 l·m^{-2} (for the silicone render finish)

Brick-slip pointing mortar

- Wetherby Pointing Mortar — pre-coloured water-repellent, frost-resistant, cementitious pointing mortar, in accordance with BS EN 13888 : 2009 and conforming to BS EN 13139 : 2013. Supplied in powder form and used as a brick-slip finish pointing mortar

Finishes

- Epsicoat Silicone 'R' Finish and Epsicoat Silicone 'K' Finish — factory-batched, silicone finishing coats, supplied as ready-to-use pastes, applied to the basecoat to an approximate total thickness of 1.5 to 2.5 mm. Available in particle sizes of 1.5 to 3 mm (Epsicoat Silicone 'R' Finish), and 1 to 3 mm (Epsicoat Silicone 'K' Finish)
- Epsicoat Acrylic 'R' Finish and Epsicoat Acrylic 'K' Finish — factory-batched, silicone finishing coats, supplied as ready to use pastes, applied to the basecoat to an approximate total thickness of 1.5 to 3 mm. Available in particle sizes of 1.5 to 3 mm (Epsicoat Acrylic 'R' Finish), and 1 to 3 mm (Epsicoat Acrylic 'K' Finish)
- Brick-Slips — handmade, extruded or cut brick-slips, conforming to BS EN 771-1 : 2015. Available in sizes 215 by 65 mm with a thickness of 7 to 15 mm, and available in a range of colours
- Brick-Slip Pistols — clay brick-slip pistol corners conforming to BS EN 14411 : 2016. Available in sizes 100/215 mm by 65 mm with a thickness of 7 to 15 mm, and available in a range of colours
- Epsicoat StoneRend — factory-batched, ready-to-use acrylic finishing coat. Applied to the basecoat to an approximate total thickness of 2 to 3 mm
- Epsicoat Colour Stain — factory-batched, optional colour coat for top coating render finishes.

1.3 Items used with the systems and included in this assessment are:

- profiles — a range of PVC-U, stainless steel and galvanized steel profiles, including base, edge, corner and render stop profiles
- fibre-cement sheathing board manufactured to EN 12467 : 2012
- expansion joint beads
- profile fixings — EJOT LS 5.5 fixings used to fix the profiles back to the substrate.

1.4 Other ancillary items or components which may be used with the systems, but which are outside the scope of this Certificate, are:

- sheathing board (see Table 2)
- sealant
- profile fixings
- cavity fire stopper
- PU foam filler
- joint tape
- joint filler
- breather membranes to BS EN 13859-2 : 2014
- water drainage deflection channels.

2 Manufacture

2.1 The render components are manufactured in a batch-blending process. The render boards are manufactured from a cement mixture, lightweight core material and water, and reinforced on both sides with an alkali-resistant glass fibre fabric.

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 Wetherby Building Systems Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 and BS EN ISO 14001 : 2015 by Bureau Veritas (Certificate UK 9000006).

3 Delivery and site handling

3.1 The cement particle board is shrink-wrapped with polythene on pallets, 30 to 50 sheets per pallet. Each pack contains a label bearing the manufacturer's name and the BBA logo incorporating the number of this Certificate.

3.2 The systems components are delivered to site in the quantities and packages listed in Table 1. Each package carries the manufacturer's and product logo and batch number.

Table 1 Component supply details

Component	Quantity and packaging
Basecoat (Wetherby Scrim Adhesive Basecoat, Styrobond DP)	25 kg bag
EpsiCoat Primer	20 l plastic pail
Brick-slip adhesive Pointing mortar	25 kg bag
Brick-slips Brick-slip pistols	Boxed by manufacturer
Reinforcement mesh (WBS Reinforcing Scrim)	1 x 50 m rolls
Mechanical fixings	Boxed by manufacturer
Epsicoat Acrylic 'R' finish, Epsicoat Acrylic 'K' finish, Epsicoat Silicone 'R' finish, Epsicoat Silicone 'K' finish, EpsiCoat StoneRend	25 kg plastic pail

3.3 The boards must be protected from prolonged exposure to sunlight and moisture and should be stored inside, under cover and protected with opaque polythene sheeting. The boards should be stacked flat and raised above ground level, and should not be in contact with ground moisture.

3.4 The adhesive, basecoat and finish components should be stored in dry conditions, off the ground, and protected from frost at all times. Bags of unopened render will have a shelf-life of 12 months when stored correctly.

3.5 Good site practice should be observed to prevent damage to the boards and ancillary components. Protective clothing should be worn as required, and all Health and Safety rules observed.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Wetherby Epsitec Render Carrier Board Systems.

Design Considerations

4 General

4.1 Wetherby Epsitec Render Carrier Board Systems are satisfactory for use when mechanically fixed to sheathed substrates using top hat channels or timber battens, with a reinforced basecoat and render or brick-slip finish as a drained and back-vented cladding on exterior walls of timber- and steel-frame buildings. The systems are designed to transmit self-weight and wind actions into the structural frame.

4.2 The design should include:

- a minimum 15 mm vented and drained cavity system incorporating an insect guard to all ventilation openings
- effective detailing around window openings, including appropriate flashing, to ensure that wind-driven rain is excluded from hidden members in the surround and from the cavity
- an effective vapour control layer on the inside, to ensure the frame structure is protected.

4.3 The application of the systems must comply with the guidelines given in the *NHBC Standards* 2019, Chapter 9.1.

4.4 Prior to the installation of the systems, wall surfaces should comply with the *Installation* part of this Certificate.

4.5 The systems are for application onto timber- and steel-frame structures.

4.6 It is important for designers, planners, contractors and/or installers to ensure that the installation of the systems is in accordance with the Certificate holder's instructions and the information given in this Certificate. All design aspects should be checked by a suitably qualified and experienced individual in accordance with the requirements of the relevant national Building Regulations and Standards. For advice on specific construction details, eg flue pipe penetrations, the Certificate holder should be consulted.

4.7 The substrate wall supporting the systems should be structurally sound and capable of supporting the additional loads imposed on it by the cladding, and must satisfy the requirements of the relevant national Building Regulations and Standards with regard to watertightness, and heat and sound transmission.

4.8 The structural frame of the building, including the sheathing boards, is the responsibility of the building designer and is outside the scope of this Certificate. However, the timber- or steel-frame structural wall of sheathing and associated fixings must be designed to resist racking due to wind and other forces (see Table 2 for minimum specification) and give an acceptable resistance to pull-out fixings (see section 6).

Table 2 Minimum substrate wall construction specification

Item	Specification
Timber-frame structure(1)	Exterior grade in accordance with BS EN 338 : 2016 and BS EN 14081-1 : 2016, and dry graded and marked in accordance with BS 4978 : 2007. The timber structure should not be less than 37 mm thick with a minimum width of 72 mm, or 0.026 times, the panel height in mm, whichever is greater. The overall timber-frame structure should be constructed in accordance with the relevant recommendations of BS EN 1995-1-1 : 2004, and other parts where appropriate
Sheathing board(1)	Marine plywood manufactured to BS EN 313-1 : 1996 with a minimum thickness of 12 mm with a minimum density equal to or greater than 640 $kg \cdot m^{-3}$ Oriented Strand Board (OSB) manufactured to BS EN 300 : 2006 with a minimum thickness of 11 mm and a minimum density of 600 $kg \cdot m^{-3}$ (see section 7.5) Cement Particle Board manufactured to BS EN 12467 : 2012 or BS EN 634-2 : 2007 with a minimum thickness of 10 mm and a minimum density of 1,000 $kg \cdot m^{-3}$ (see section 7.5)
Steel-frame structure(1)	Continuously hot-dip coated in accordance with BS EN 10346 : 2015. The light-weight steel-frame structure should be not less than 1.2 mm thick with a minimum of 50 mm flanges, in accordance with BS EN 1993-1-3 and its UK National Annex. The overall steel-frame structure should be constructed in accordance with the relevant recommendations of BS EN 1993-1-1 : 2005, and other parts where appropriate

(1) Outside the scope of this Certificate.

4.9 The effect of the installation of the systems on the acoustic performance of a construction is outside the scope of this Certificate.

4.10 The fixing of sanitary pipework, plumbing, rainwater goods, satellite dishes, clothes lines, hanging baskets and similar items to the systems is outside the scope of this Certificate. See section 4.12.

4.11 External pipework and ducts should be removed before installation, and alterations made to underground drainage to accommodate repositioning of the pipework to the finished face of the systems when the systems are installed on a building already in service. The Certificate holder may advise on suitable fixing methods, but these are outside the scope of this Certificate.

4.12 It is essential that the systems are installed and maintained in accordance with the conditions set out in this Certificate.

5 Practicability of installation

The systems should only be installed by installers who have been trained and approved by the Certificate holder.

6 Strength and stability

Wind loading

6.1 When installed on suitable walls, the systems can adequately transfer to the wall the self-weight and negative (suction) and positive (pressure) wind loads normally experienced in the UK.

6.2 A suitably qualified and experienced chartered engineer must check the design and installation of the systems, including the adequacy of the substrate wall to which the cladding is to be fixed, to ensure that an adequate number of suitable fixings are used to attach the systems.

6.3 When installed in accordance with the requirements of this Certificate and the Certificate holder's instructions, the systems will withstand, without damage or permanent deformation, the stresses imposed by self-weight and wind loads likely to be experience in the UK.

6.4 Design wind actions should be calculated in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. Due consideration should be given to the higher-pressure coefficients applicable to corners of the building as recommended in this Standard.

6.5 The substrate wall, without the Wetherby Epsitec Render Carrier Board Systems, must be able to take the full wind actions and racking loads and be capable of sustaining the weight of the systems. The adequacy of the substrate wall is outside the scope of this Certificate and must be verified by a suitably qualified and experienced chartered engineer. It should not be assumed that the systems enhance the structural performance of the existing structure.

6.6 For design purposes, the frame should be designed to limit mid-span deflections to L/200 and cantilever deflections to L/150. Sheathing board mid-span deflections should be limited to L/500.

6.7 The characteristic pull-through resistances of the render carrier board, using the following screws, are detailed in Table 3.

Table 3 Design pull-through values

Screws	Centre	Pull-through value[(1)] (kN)	
		Edge (25 mm min)	Corner (25 mm min)
Maxi Screw SN 25[(2)(3)(4)]	0.30	0.21	0.14
Maxi Screw SN 39[(2)(3)(5)]	0.26	0.19	0.15
Maxi Screw SB 25[(2)(3)(4)]	0.31	0.19	0.16
Maxi Screw SN 40[(2)(3)(5)]	0.42	0.19	0.14

(1) The characteristic pull-through values were obtained in accordance with BS EN 1990 : 2002, Annex D7.2 (Source – ETA 07/0173)
(2) The partial factor of 2 is applied and based on the assumption that all boards are quality controlled and tested to establish tensile strength perpendicular to the faces on a periodic basis.
(3) Other fixings may be used provided they can be demonstrated to have equal or higher pull-out, plate diameter, stiffness and mechanical characteristics. These fixings are outside the scope of this Certificate.
(4) For use with steel top-hat profiles.
(5) For use with timber battens.

6.8 The dynamic wind load test carried out on the brick-slip system on a steel sub-frame indicated that for fixings spaced at 300 mm centres, the equivalent ultimate pressure that can be sustained is 2.6 kPa[(1)].

(1) The design wind resistance value was obtained by applying a partial factor of 1.5.

Impact

6.9 Hard body impact tests were carried out in accordance with EAD 090062-00-0404 : 2018, on render carrier board with Wetherby Epsicoat Acrylic, Wetherby Epsicoat Silicone, Wetherby Epsicoat StoneRend and Wetherby Brick-Slip finishes supported on timber battens at 600 mm centres. The systems are suitable for use in all Use Categories as defined in EAD 090062-00-0404 : 2018, Table G.2, an extract of which is reproduced in Table 4 of this Certificate.

6.10 A soft body impact test was carried out in accordance with EOTA TR 001, February 2003, on render carrier board on timber battens at 600 mm centres with the brick-slip finish. The system is suitable for use in all Use Categories as defined in EAD 090062-00-0404 : 2018, Table G.2, an extract of which is reproduced in Table 4 of this Certificate.

Table 4 Definition of Use Categories (reproduced from ETAG 034, Part I Table 4)

Use Category	Description
Category I	A zone readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use (eg, façade bases in buildings sited in public locations, such as squares, schoolyards or parks. Cleaning gondolas may be used on the façade)
Category II	A zone liable to impacts from thrown or kicked objects, but in public locations where the height of the kit 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 [eg, façade bases in buildings not sited in public locations (such as squares, schoolyards or parks) or upper façade levels in buildings sited in public locations that occasionally can be hit by a thrown object (such as balls or stones, etc). Cleaning gondolas may be used on the façade]
Category III	A zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects [eg, upper façade levels in buildings (not including base) not sited in public locations, that occasionally can be hit by a thrown object (such as balls or stones, etc). Cleaning gondolas should not be used on the façade]
Category IV	A zone out of reach from ground level (eg, high façade levels that cannot be hit by a thrown object. Cleaning gondolas should not be used on the façade)

7 Behaviour in relation to fire

7.1 The external surface of Wetherby Epsitec Render Carrier Board Systems, utilising Epsitec Cavity Spacer Tracks and finished with silicone, acrylic, stone rend, or brick-slip finishes on the Knauf Aquapanel Board, as described in section 1.2, when installed over 12 mm Marine Ply Sheathing Board, have a reaction to fire classification of A2-s1,d0(1) in accordance with EN 13501-1 : 2018.

(1) Designers should refer to EXOVA Warrington Fire Test Reports No. WF419088 and WF419075 available from the Certificate holder for more details.

7.2 The reverse side of the panel (facing into the cavity) has a reaction to fire classification of A1 to BS EN 13501-1 : 2018.

7.3 The fixings attaching the board to the subframe and the Wetherby Epsitec Rails are classified as non-combustible in accordance with the relevant national regulatory guidance. The timber batten sub-frame component is not non-combustible.

7.4 Designers should refer to the relevant national regulatory guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance and combustibility limitations for other materials and components used in the overall wall construction.

7.5 The Wetherby Epsitec Render Carrier Board Systems, when installed over a sheathing board with a reaction to fire classification of A1 or A2-s1,d0 to BS EN 13501-1 : 2018, and finished with silicone, acrylic, stone rend or brick-slip finishes, are not subject to any restriction on building height or proximity to boundaries.

7.6 Where the Wetherby Epsitec Render Carrier Board Systems are incorporated in a wall construction which is subject to fire resistance requirements, an appropriate assessment or test must be carried out by a United Kingdom Accreditation Service (UKAS)-accredited laboratory for the testing concerned.

7.7 Cavity barriers must be incorporated as required under the national Building Regulations, but should not block essential ventilation and drainage pathways. Guidance on fire barriers can be found in BRE Report 135 : 2003.

8 Proximity of flues

When installing the systems in close proximity to certain flue pipes or heat-producing appliances, the following provisions of the national Building Regulations should be satisfied:

England and Wales – Approved Document J
Scotland – Mandatory Standard 3.19, clauses 3.19.1[(1)(2)] to 3.19.4[(1)(2)] and 3.19.8[(1)(2)]

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

Northern Ireland – Technical Booklet L.

9 Weathertightness

9.1 Wetherby Epsitec Render Carrier Board Systems, as described in section 1.3, will resists the passage of moisture from the weather. The systems must be installed with a minimum cavity of 15 mm, which must be drained and vented[(1)].

9.2 Any water collecting in the cavity due to rain or condensation must be able to be drained through openings at the base of each closed section of the cavity. The product should be treated as a conventional sheathing board with regard to detailing and damp-proofing at openings, eaves and sole plates, and the fixing of wall ties.

9.3 The supporting wall must be weathertight. Where required by design, the addition of a breather membrane must be in accordance with BS 5250 : 2011.

9.4 At the top of the walls, the systems should be protected by an adequate coping, overhang or other detail designed for use with these types of systems.

(1) Guidance on recommended cavity widths is given in *NHBC Standards* 2019, Chapters 6.2 and 6.9.

10 Condensation risk

10.1 Designers must ensure that an appropriate condensation risk analysis has been carried out for all parts of the construction, including openings and penetrations at junctions between the systems and windows, to minimise the risk of condensation. The recommendations of BS 5250 : 2011 should be followed.

10.2 As the systems incorporate a 15 mm drained and vented cavity, the risk of interstitial condensation within the systems is reduced.

11 Maintenance

11.1 Regular checks should be made on the installed systems, including:

- an initial inspection after 12 months and subsequently every five years
- visual inspection of the render for signs of damage. Cracks in the render exceeding 0.2 mm must be repaired
- visual inspection of the brick-slips for signs of disbandment. Dislodged brick-slips should be re-fixed using brick-slip adhesive
- examination of the sealant around openings and service entry points
- visual inspection of the architectural details designed to shed water to confirm that they are performing properly
- visual inspection to ensure that water is not leaking from external downpipes or gutters; such leakage could penetrate the rendering
- necessary repairs effected immediately and the sealant joints at window and door frames replaced at regular intervals

- maintenance schedules, which should include the replacement and resealing of joints, for example between the systems and window and door frame.

11.2 Damaged areas must be repaired using the appropriate components and procedures detailed in the Certificate holder's installation instructions, and taking into account the relevant recommendations of BS EN 13914-1 : 2016.

12 Durability

12.1 The durability and service life of Wetherby Epsitec Render Carrier Board Systems will depend on the building location, immediate environment and intended use of the building, and proper maintenance and repairs.

12.2 Provided regular maintenance is carried out, as described in section 11 and in accordance with the Certificate holder's instructions, Wetherby Epsitec Render Carrier Board Systems can be expected to have a design life in excess of 30 years when used in the normal climatic conditions found in the UK.

12.3 The render may become discoloured with time, the rate depending on the initial colour, the degree of exposure and atmospheric pollution, as well as the design and detailing of the wall. In common with traditional renders, discolouration by algae and lichens may occur in wet areas. The appearance may be restored by a suitable power wash or, if required, by over coating. Care should be taken not to adversely affect the water vapour transmission or fire characteristics of the systems. The advice of the Certificate holder should be sought as to the suitability of a particular product.

Installation

13 Approved installers

Application of Wetherby Epsitec Render Carrier Board Systems, within the context of this Certificate, is carried out by approved installers recommended or recognised by the Certificate holder. Such an installer is a company:

- employing operatives who have been trained and approved by the Certificate holder to install the system
- which has undertaken to comply with the Certificate holder's application procedure, containing the requirement for each application team to include at least one member trained by the Certificate holder
- 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

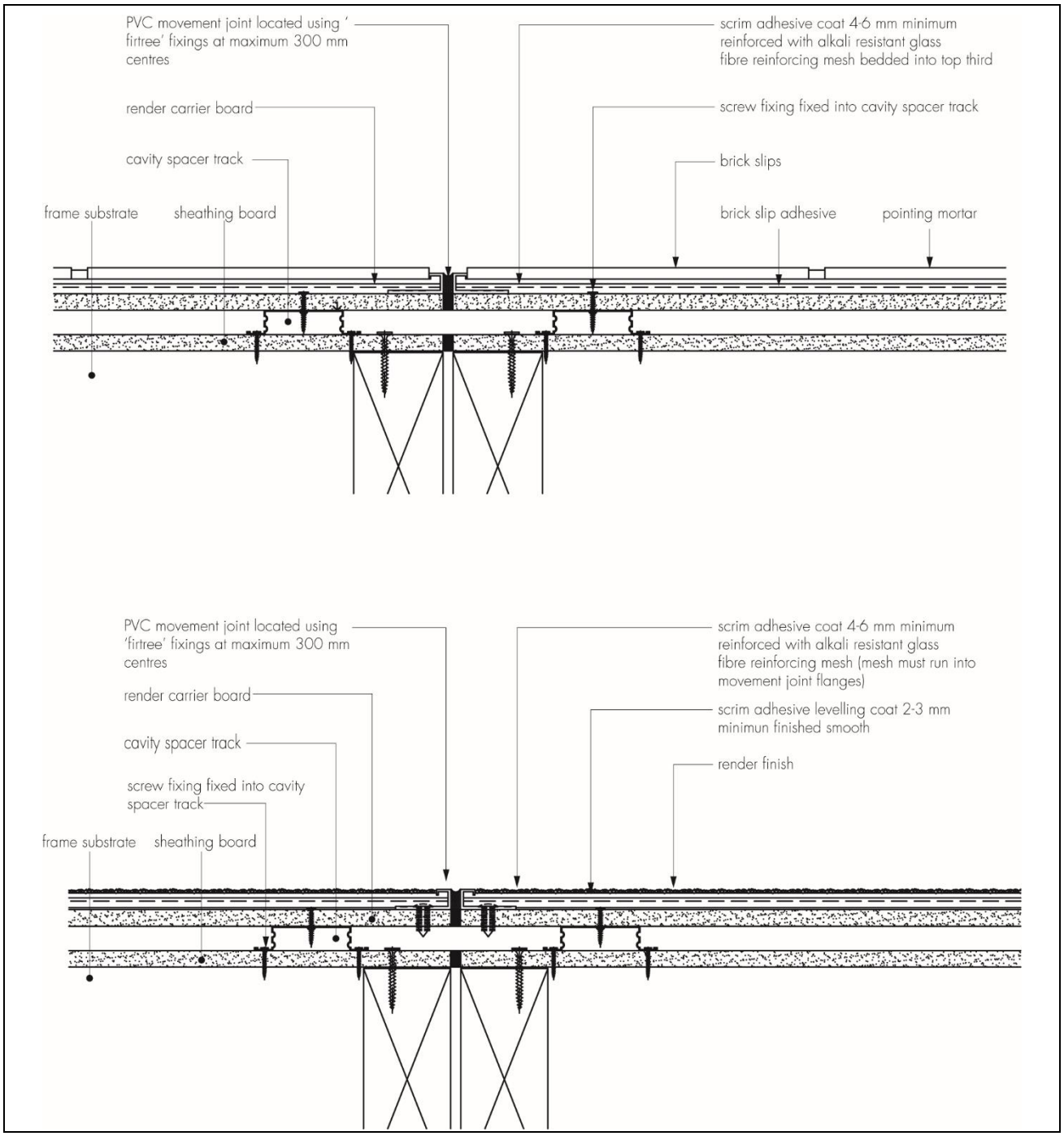
14.1 Installation of the systems should be carried out strictly in accordance with the provisions of this Certificate and the Certificate holder's installation instructions. Typical installation details are shown in Figures 5 to 10.

14.2 Care should be taken during design, detailing and construction to ensure that moisture does not accumulate within the board.

14.3 Horizontal movement joints in accordance with BS EN 13914-1 : 2016 must be provided to accommodate vertical shrinkage in the timber-frame and to follow movement joints in the substructure. For steel-frame structures, reference to the structural engineer's details for deflection at floor level and movement joints in the substructure should be made.

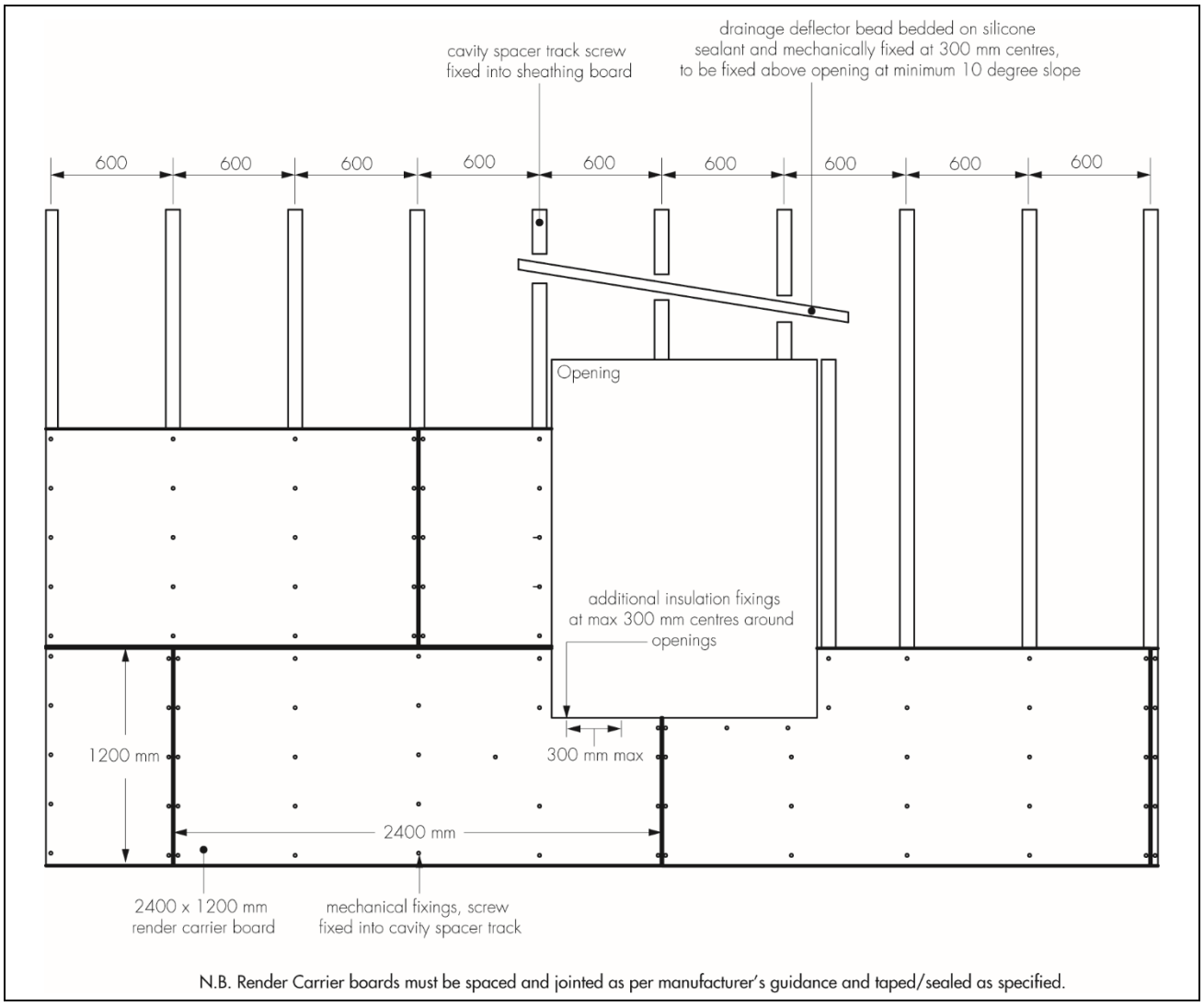
14.4 Vertical movement joints in accordance with BS EN 13914-1 : 2016 should be provided at a maximum of 15 m intervals. The actual spacing and position of the joints will be determined by the shape of the area to be rendered and should coincide with movement joints in the structure and allow for the same degree of movement (see Figure 2).

Figure 2 Horizontal movement joints



14.5 Epsitec Cavity Spacer Tracks or timber battens are fixed directly to the sheathing board and/or structural frame, and the render carrier board is fixed to Epsitec Cavity Spacer Tracks/battens with approved fixings. Epsitec Cavity Spacer Tracks/battens should be at maximum horizontal centres of 600 mm and fixed at maximum vertical centres (on either side of the rail) of 300 mm for fixings (see Figure 3).

Figure 3 Typical rail/batten and fixing arrangement



14.6 Application of the render or brick-slip systems must not be carried out at temperatures below 5°C or above 30°C, nor if exposure to frost is likely. The coating must be protected from rapid drying. Weather conditions should be monitored to ensure correct curing conditions. Render carrier boards must be protected from moisture/frost, and be installed only when dry and in dry conditions.

14.7 Rendering should be in accordance with the relevant recommendations of BS EN 13914-1 : 2016.

14.8 Care should be taken in the detailing of the systems 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 systems.

15 Procedure

Render carrier board

15.1 Wetherby-approved render carrier boards must be spaced and jointed as per the manufacturer's guidance, and taped/sealed as specified.

15.2 The render carrier board can be cut with a fine tooth saw or power saw, ensuring suitable dust control measures are taken (eg protective safety glasses, gloves and respiratory masks) and observing all necessary health and safety regulations. Damaged/wet boards must not be used.

15.3 The render carrier boards should be securely fixed to the sub-frame at the recommended spacing's as per the manufacturer's instructions and the details provided in this Certificate.

15.4 Appropriate fixings (as described in section 1.2) are used to fix the render carrier boards to the top hat/ventilation channels or timber battens at maximum 600 mm centres (see also section 6).

15.5 Surface mounted PVC render and expansion beads are mechanically fixed at the agreed locations using a bed of silicone sealant where required, in accordance with the Certificate holder's instructions.

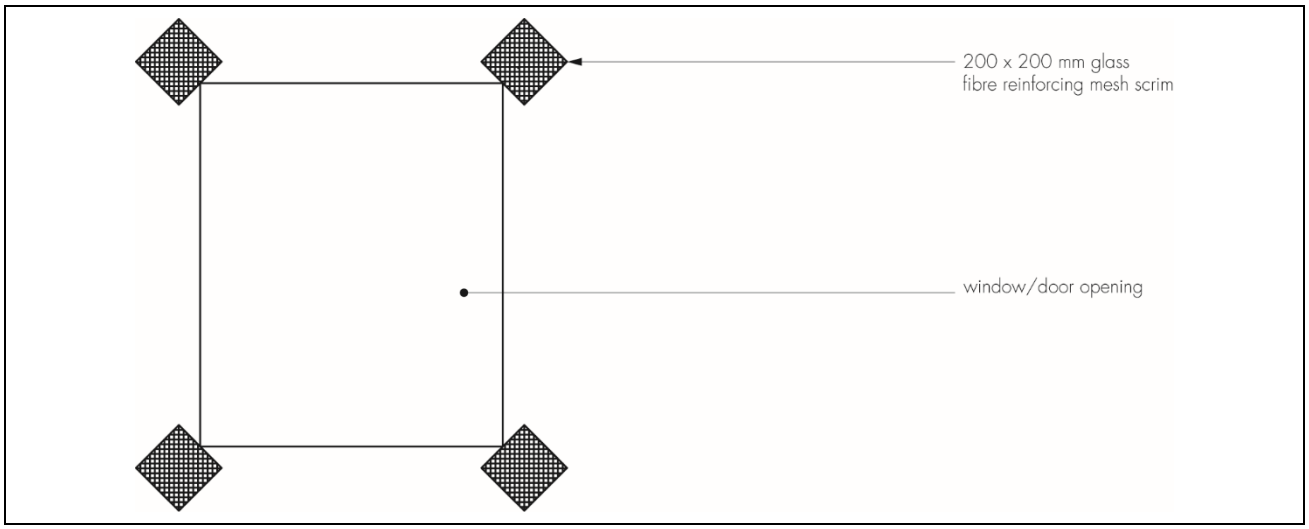
15.6 Movement joints/slip joints (see Figure 2) must be installed at the required locations identified by the building designer (see sections 14.3 and 14.4). The correct spacing must be left between boards to ensure movement is not restricted.

Basecoat

15.7 Styrobond DP is prepared by mixing the contents of each 25 kg bag with approximately 4 to 5 litres of cold, clean water, using a paddle mixer. Mixing should continue at least five minutes after the addition of the last bag of render to allow an even dispersion of resins.

15.8 The mixed basecoat render is trowel applied to the surface of the dry render carrier boards to a thickness of 4 to 6 mm. The scrim reinforcement mesh is bedded into the render with 100 mm laps at joints. Additional reinforcement mesh patches should be fitted at corners of windows and doors and similar openings (see Figure 4).

Figure 4 Additional reinforcement at openings



15.9 A second coat of Styrobond DP is applied to a thickness of between 2 and 3 mm and finished smooth to receive a render finish. All reinforcement scrim mesh must be fully embedded and positioned in the top third of the basecoat.

15.10 Once Styrobond DP is fully dry, the Epsicoat Primer coat is applied, ensuring a full and equal coating before applying a render finish.

15.11 For Brick-slip applications, Wetherby Scrim Adhesive Basecoat is applied by stainless steel trowel to the surface of the dry cement board to a minimum thickness of 4 mm. The scrim reinforcement mesh is embedded immediately into the basecoat with 100 mm minimum overlap at joints; it must be in the upper third of the basecoat render. Additional pieces of reinforcing scrim mesh (200 by 200 mm) are used diagonally at the corners of openings, as shown in Figure 4. Corner details are reinforced using corner beads. Finally, Wetherby Scrim Adhesive Basecoat should be lightly scratched horizontally to provide a key for the brick-slips.

Finishing

Epsicoat Silicone

15.12 Epsicoat Silicone topcoat is supplied pre-mixed in a tub and is trowel applied to a thickness of approximately 1.5 to 3 mm.

15.13 Epsicoat Silicone is lightly mixed and applied in an even thickness to the grain size. Prior to setting, the render is polished with a plastic float to give a uniform even texture and to remove all trowel lines. Elevations should be completed in one application and finished to natural breaks in render, ie, beads or building corners. Texture should be checked to ensure same batches are applied to each elevation. Where necessary, drums can be batch mixed to ensure colour consistency.

Epsicoat Acrylic

15.14 Epsicoat Acrylic topcoat is supplied pre-mixed in a tub and is trowel applied to a thickness of approximately 1.5 to 3 mm.

15.15 Epsicoat Acrylic lightly mixed and applied in an even thickness to the grain size. Prior to setting, the render is polished with a plastic float to give uniform even texture and remove all trowel lines. Elevations should be completed in one application and finished to natural breaks in render, ie, beads or building corners. Texture should be checked to ensure same batches are applied to each elevation. Where necessary, drums can be batch mixed to ensure colour consistency.

EpsiCoat StoneRend

15.16 Epsicoat StoneRend is applied directly over the primed basecoat to an approximate render thickness of 2 to 3 mm. All rendering should be in accordance with the relevant recommendations of BS EN 13914-1 : 2016.

15.17 Continuous surfaces should be completed without a break.

Brick-slip Finish

15.18 Wetherby Brick-slip Adhesive is mixed with clean water in accordance with the manufacturer's instructions.

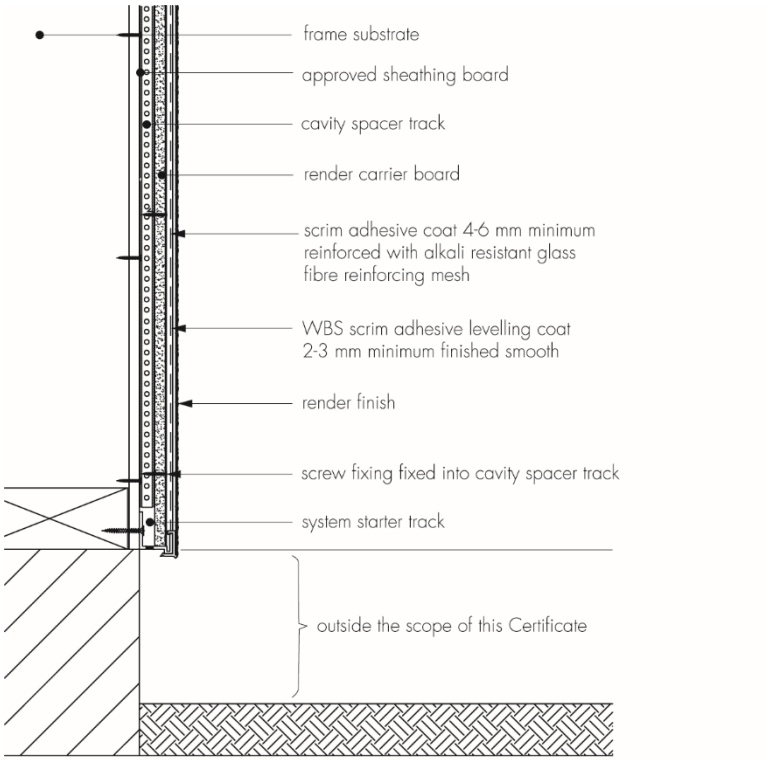
15.19 The brick-slip adhesive is buttered to the back of the pistol corner brick-slips which are then applied to the corners and doors/window reveals. The distance between corners and/or outer edges should be measured to identify the number of bricks required per course and subsequent width of the vertical pointing joint.

15.20 Where required, the brick-slips are cut to size using a bench saw or standard tile cutter and the brick-slip adhesive is applied to the back of the brick-slips and installed at the required location. Consistent joint spaces (approximately 10 mm) are made between the brick-slips, spacers may be required. Vertical joints are to be staggered to give the appearance of continental brickwork or in a stack bond pattern in accordance with the required design.

15.21 Once the brick-slips have set, Wetherby Pointing Mortar is applied using a pointing gun/pointing bag. Shaping of the mortar is achieved by using a pointing trowel. Once the mortar is dry, walls should be brushed to remove all loose mortar.

15.22 After the application of the brick-slips, sealant is positioned and installed at all openings such as, windows and doors, overhanging eaves, or gas and electric meter boxes.

Figure 5 Base detail



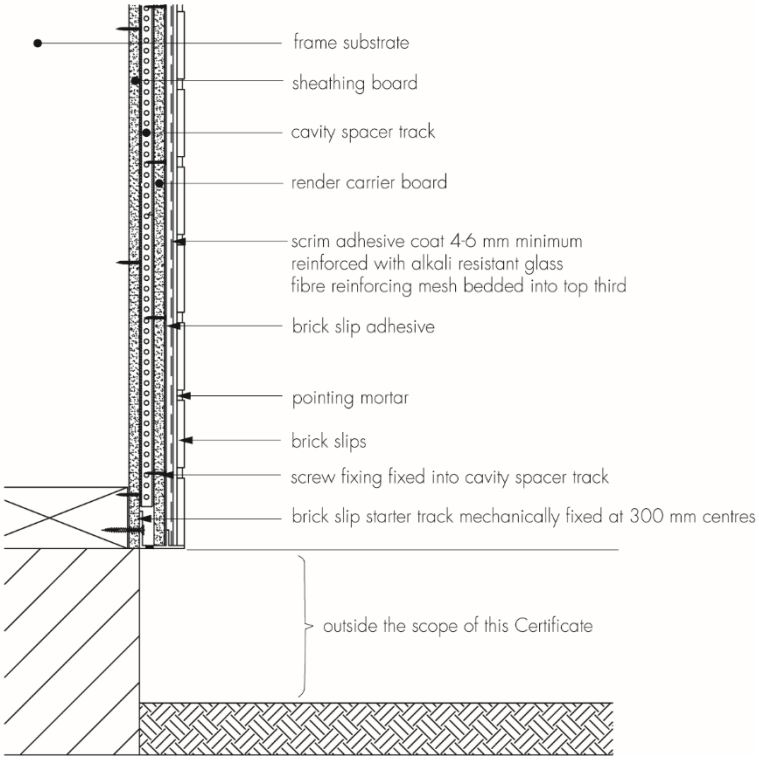


Figure 6 Opening detail

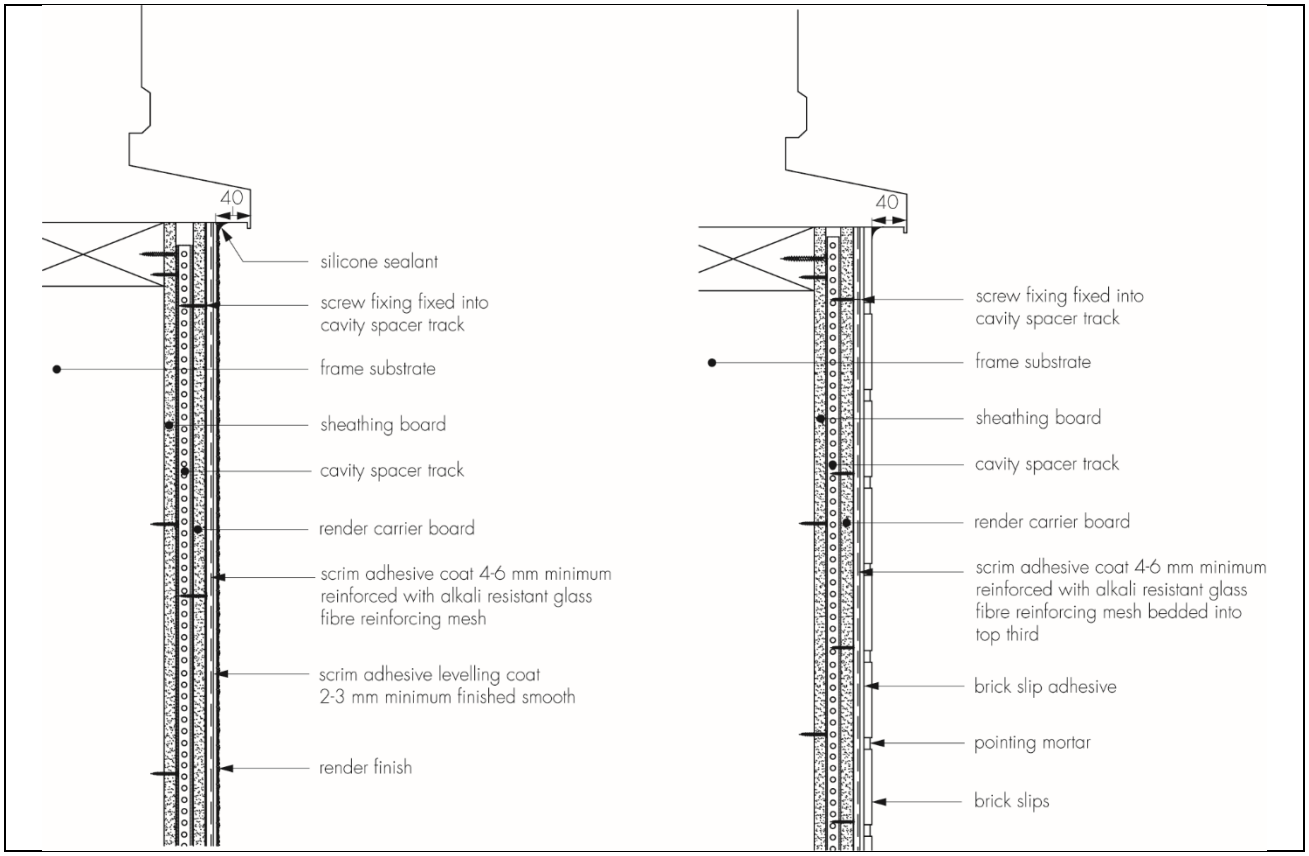


Figure 7 Sill detail

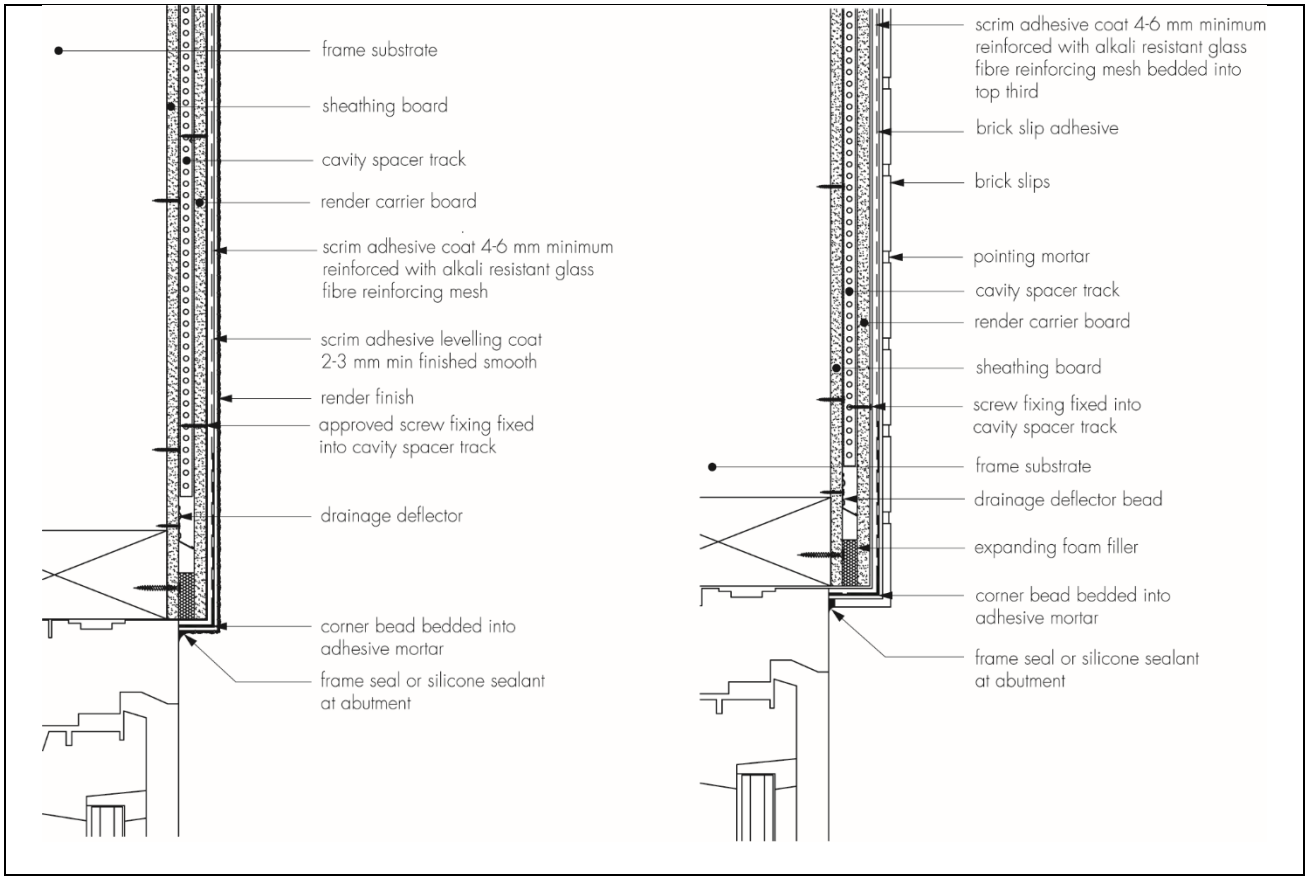


Figure 8 Corner detail

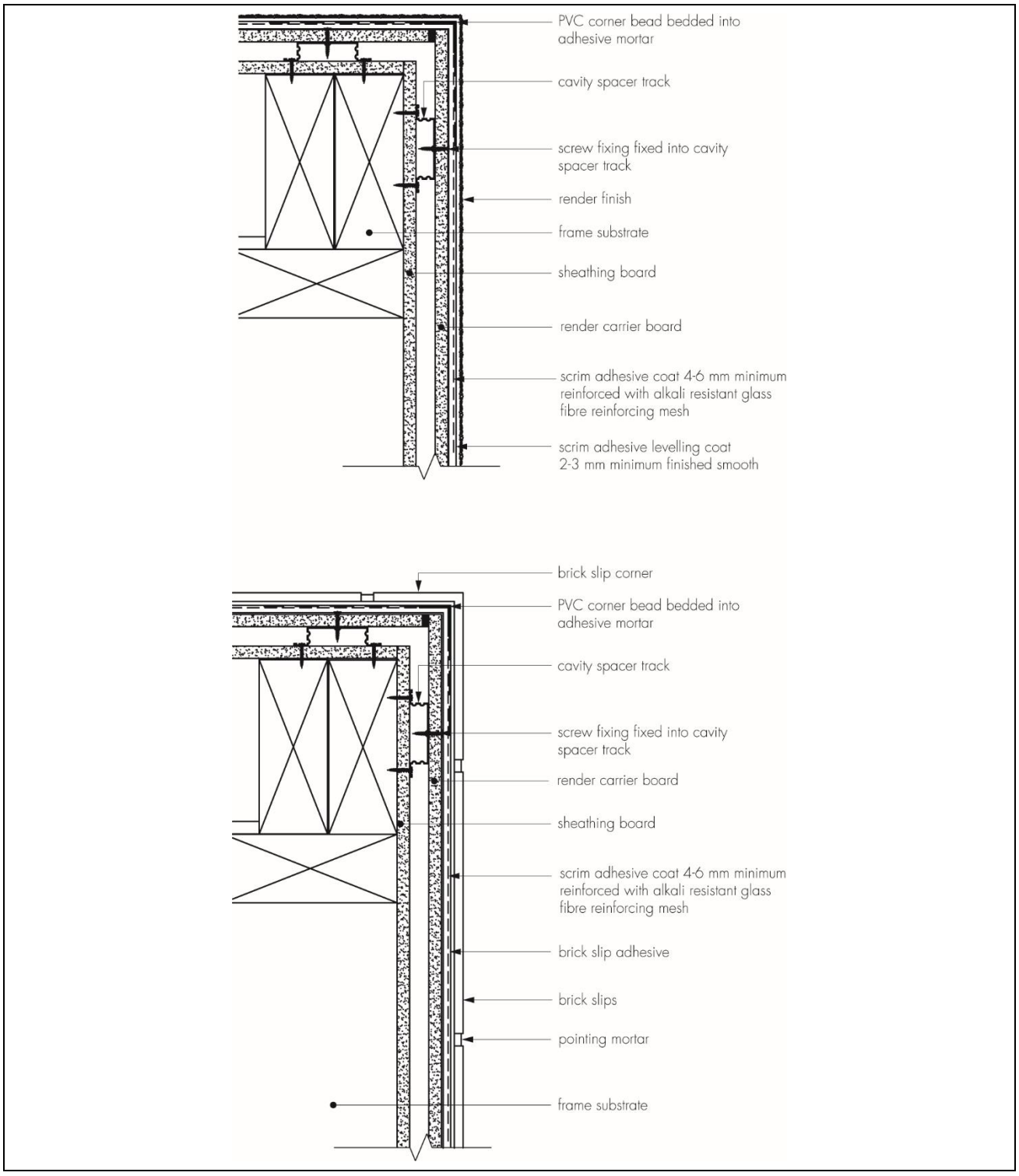
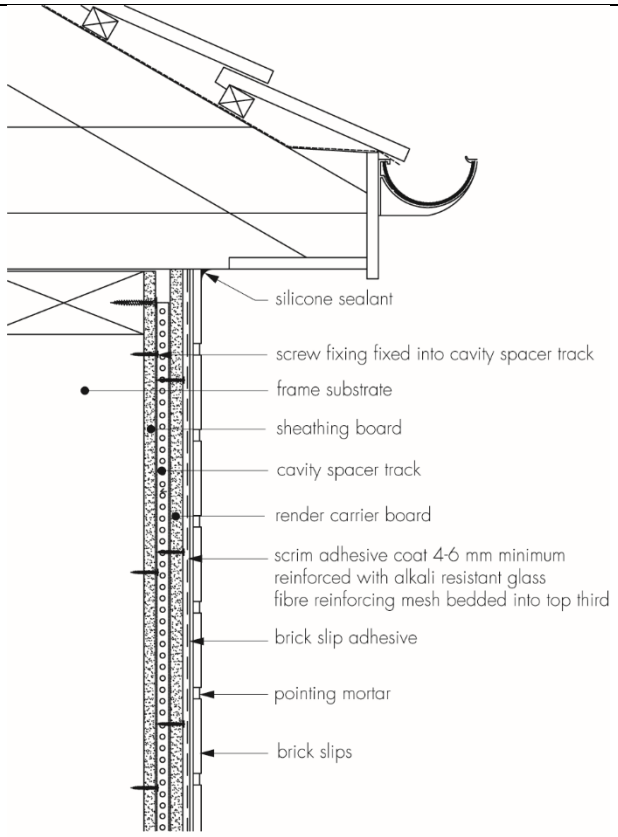


Figure 9 Roof abutment detail



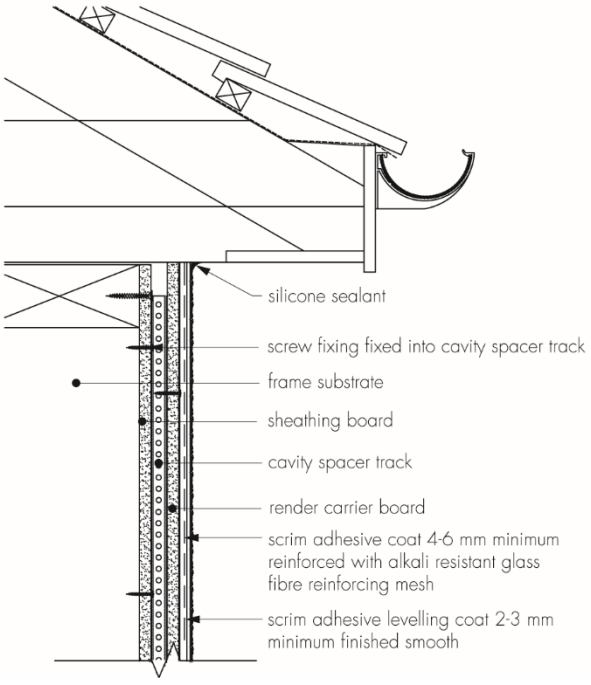
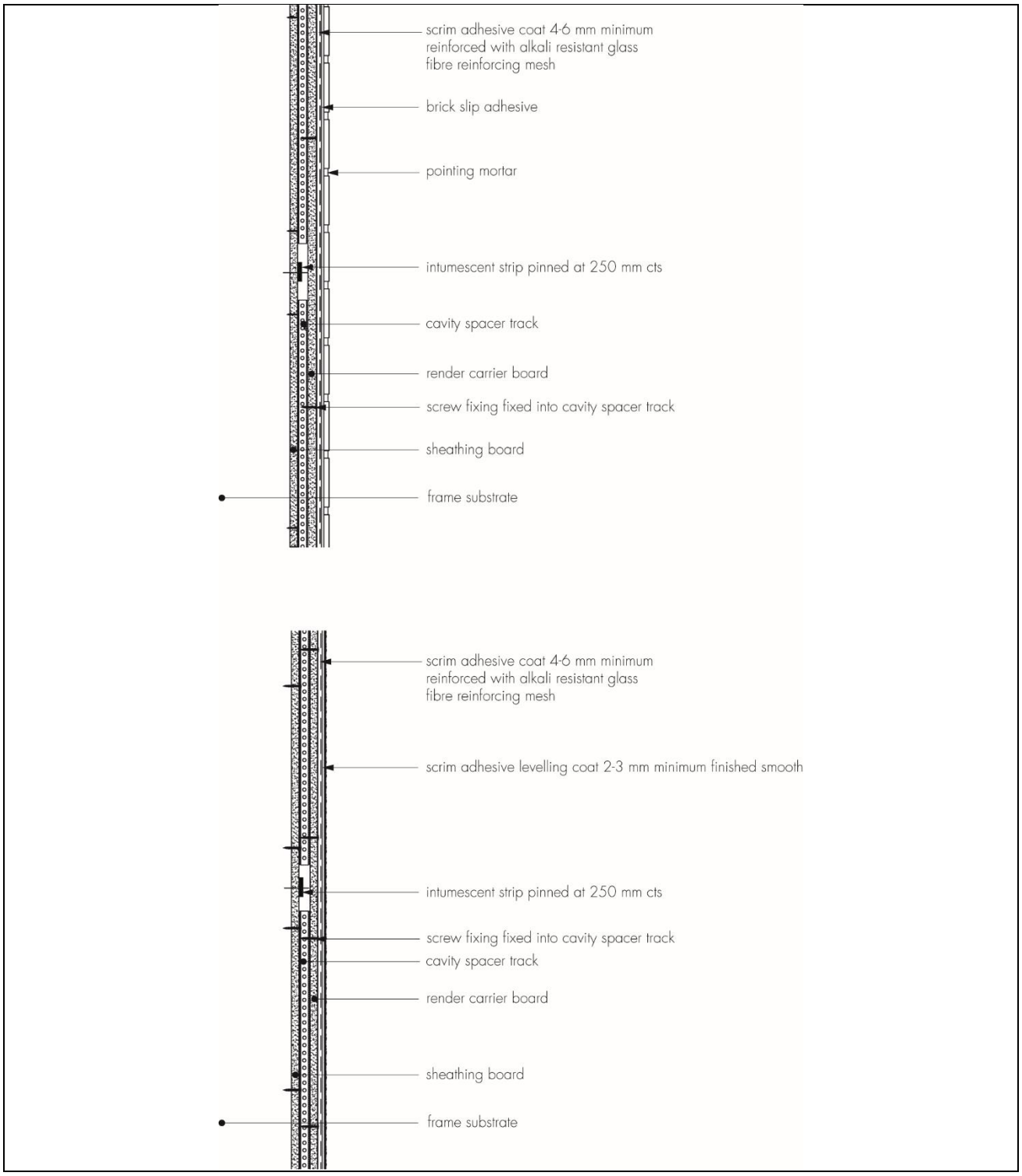


Figure 10 Fire barrier detail



Technical Investigations

16 Tests

Tests were carried out and the results assessed to determine:

- fire performance
- hygrothermal behaviour
- impact resistance
- bond strength
- resistance to wind uplift
- water absorption
- pull-through resistance
- soft and hard body impact.

17 Investigations

17.1 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.

17.2 The practicability of installation and the effectiveness of detailing techniques were examined.

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:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- 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
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- 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.