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Agrément Certificate

22/5993

Product Sheet 1

WIENERBERGER SVK VENTILATED FAÇADE CLADDING

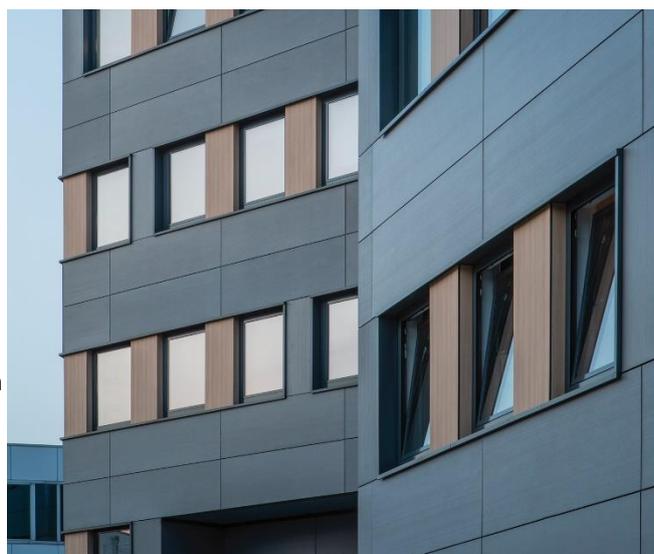
ORNIMAT, DECOBOARD, PURO PLUS AND COLORMAT FAÇADE CLADDING PANELS

This Agrément Certificate Product Sheet ⁽¹⁾ relates to Ornimat, Decoboard, Puro Plus, and Colormat Façade Cladding Panels, flat fibre-reinforced cement panels, used in back ventilated and drained rain-screen cladding systems, to provide a decorative and protective façade over timber-frame, steel-frame or masonry external walls of new and existing 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 panels, when incorporated in a suitably designed cladding system, can safely resist the wind actions normally encountered in the UK (see section 6).

Behaviour in relation to fire — constructions incorporating the panels may have a reaction to fire classification of A2-s1, d0 in accordance with BS EN 13501-1 : 2018 (see section 7).

Weathertightness — the panels, when installed, are not weathertight and, where necessary, must be used in conjunction with a suitable breather membrane (see section 8).

Durability — under normal UK service conditions, the panels will have a service life of at least 30 years (see section 10).

The BBA has awarded this Certificate to the company named above for the products described herein. These products 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: 19 January 2022

Hardy Giesler
Chief Executive Officer

The BBA is a UKAS accredited certification body – Number 113.

*The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.*

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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Regulations

In the opinion of the BBA, Ornimat, Decoboard, Puro Plus and Colormat Façade Cladding Panels, 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 panels are acceptable for use as set out in sections 6.5, 6.6 and 6.8 of this Certificate.
Requirement:	B3(4)	Internal fire spread (structure)
Comment:		The panels can contribute to satisfying this Requirement. See section 7.3 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The panels may be restricted by this Requirement. See sections 7.1, 7.2, 7.4 and 7.5 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The panels do not provide a watertight or airtight facing but will resist the passage of rainwater to the supporting structure. See section 8.1 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The panels are acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The panels are restricted by the Regulation in some cases. See sections 7.1, 7.2 and 7.5 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The panels can contribute to a construction satisfying this Regulation. See sections 9.1 and 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(b)	Structure
Comment:		The panels are acceptable, with reference to clauses 1.1.1 ⁽¹⁾⁽²⁾ , 1.1.2 ⁽¹⁾⁽²⁾ and 1.1.3 ⁽¹⁾⁽²⁾ of this Standard as set out in sections 6.5, 6.6 and 6.8 of this Certificate.
Standard:	2.4	Cavities
Comment:		The panels can contribute to meeting this Standard, with reference to clause 2.4.2 ⁽¹⁾⁽²⁾ . See section 7.3 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The panels may be restricted 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, 7.2, 7.4 and 7.7 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The panels may be restricted by this Standard, with reference to clause 2.7.1 ⁽¹⁾⁽²⁾ . See sections 7.1, 7.2, 7.4 and 7.7 of this Certificate.

Standard:	3.10	Precipitation
Comment:		The panels do not form a watertight or airtight facing but will resist the passage of rainwater to the supporting structure, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ , 3.10.5 ⁽¹⁾⁽²⁾ and 3.10.6 ⁽¹⁾⁽²⁾ . See section 8.1 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The panels 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:	12	Building standards applicable to conversions
Comment:		All comments given for the panels 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)	Fitness of materials and workmanship
Comment:	(iii)b(i)	The panels are acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The panels do not form a watertight or airtight facing but will resist the passage of rainwater to the supporting structure. See section 8.1 of this Certificate.
Regulation:	30	Stability
Comment:		The panels are acceptable to satisfying this Regulation as set out in sections 6.5, 6.6 and 6.8 of this Certificate.
Regulation:	35(4)	Internal fire spread (structure)
Comment:		The panels can contribute to satisfying this Regulation. See section 7.3 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The panels may be restricted by this Regulation. See sections 7.1, 7.2, 7.4 and 7.6 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* (3.8 to 3.9) and 13 *Repair*

Additional Information

NHBC Standards 2022

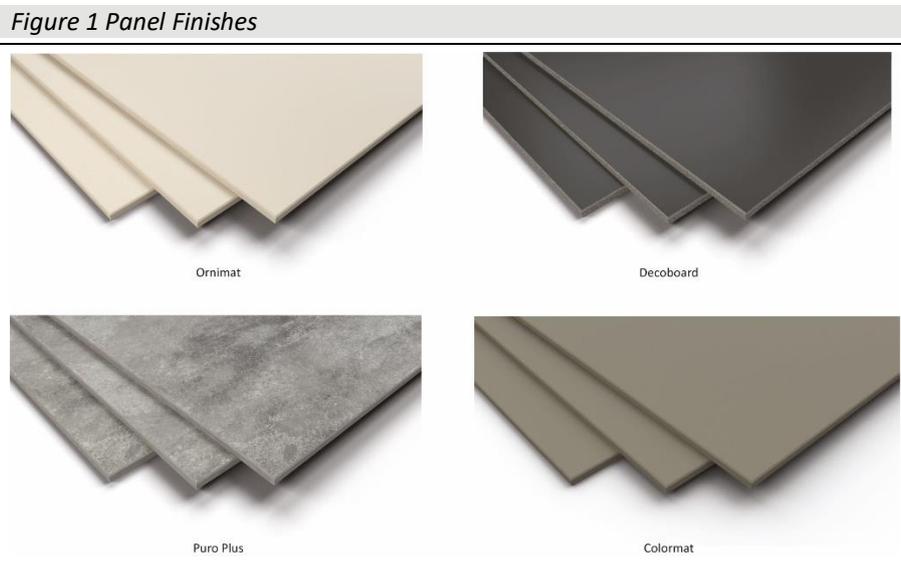
In the opinion of the BBA, Ornimat, Decoboard, Puro Plus and Colormat Façade Cladding Panels, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards, Part 6 Superstructure (excluding roofs), Chapter 6.9 Curtain walling and cladding.*

CE marking

The Certificate holder has taken the responsibility of CE marking the panels, in accordance with harmonised European Standard BS EN 12467 : 2012.

1 Description

1.1 Ornimat, Decoboard, Puro Plus and Colormat Façade Cladding Panels are fibre-reinforced cement panels, satisfying the requirements of Category A, Class 5, to BS EN 12467 : 2012. Figure 1 illustrates the different panel finishes available.



1.2 The panels have the nominal characteristics given in Table 1.

Table 1 Panel nominal characteristics

Characteristic (unit)	Panel types ⁽¹⁾			
	Ornimat	Decoboard	Puro Plus	Colormat ⁽²⁾
Thickness (mm)	(8, 10 and 12 ⁽³⁾) ± 10 %			(8,10 and 12 ⁽³⁾) ± 0.2
Width (mm)	1220 ± 1.5	1220 ± 1.5	1220 ± 1.5	1220 ± 1.0
Length (mm)	3070 ± 1.5	3070 ± 1.5	3070 ± 1.5	3050 ± 2.0
Avg. Density - Oven Dry(kg·m ⁻³)	1850 ± 150			1600 ± 50
Nominal weight (kg·m ⁻²) ⁽⁴⁾	8 mm: 15.2 ± 1.2 kg/m ² ; 10 mm: 19.0 ± 1.5 kg/m ² ; 12 mm: 22.9 ± 1.9 kg/m ²			8 mm: 14.3 ± 0.5 kg/m ² ; 10 mm: 17.9 ± 0.6 kg/m ² ; 12 mm: 21.5 ± 0.7 kg/m ²
Finishing -Front	Two-component polyurethane paint	Acrylic painting	Coloured through-and-through and sanding	Hydrofuge – through board finish
Finishing- Back	Two-component polyurethane paint	Acrylic painting	Coloured through-and-through	Hydrofuge – through board finish
Mechanical resistance	Class 5 ⁽⁵⁾			
Weather resistance	Category A ⁽⁶⁾			
Colour range	RAL and NCS colours	RAL and NCS colours	Natural grey	H401 Jasmine, H402 Slate, H403 Storm, H405 Natural, H406 Camel, H407 Daybreak, H408 Chestnut, H409 Sunset, H410 Earth, H411 Raspberry, H412 Champagne, H413 Caribbean, H420 Pearl

(1) Squared panels satisfy the requirements of dimensional Tolerance Level I in accordance with BS EN 12467: 2012.

(2) Colormat Bando has not been covered under this assessment.

(3) 12 mm thick panels are produced on demand.

(4) Nominal weight including 3% moisture content for Ornimat, Decoboard, Puro Plus and 12% moisture content for Colormat.

(5) Class 5 — minimum Modulus of Rupture (MOR) in the wet condition is ≥ 24 MPa.

(6) Category A — sheets intended for applications where they may be subjected to heat, high moisture and severe frost.

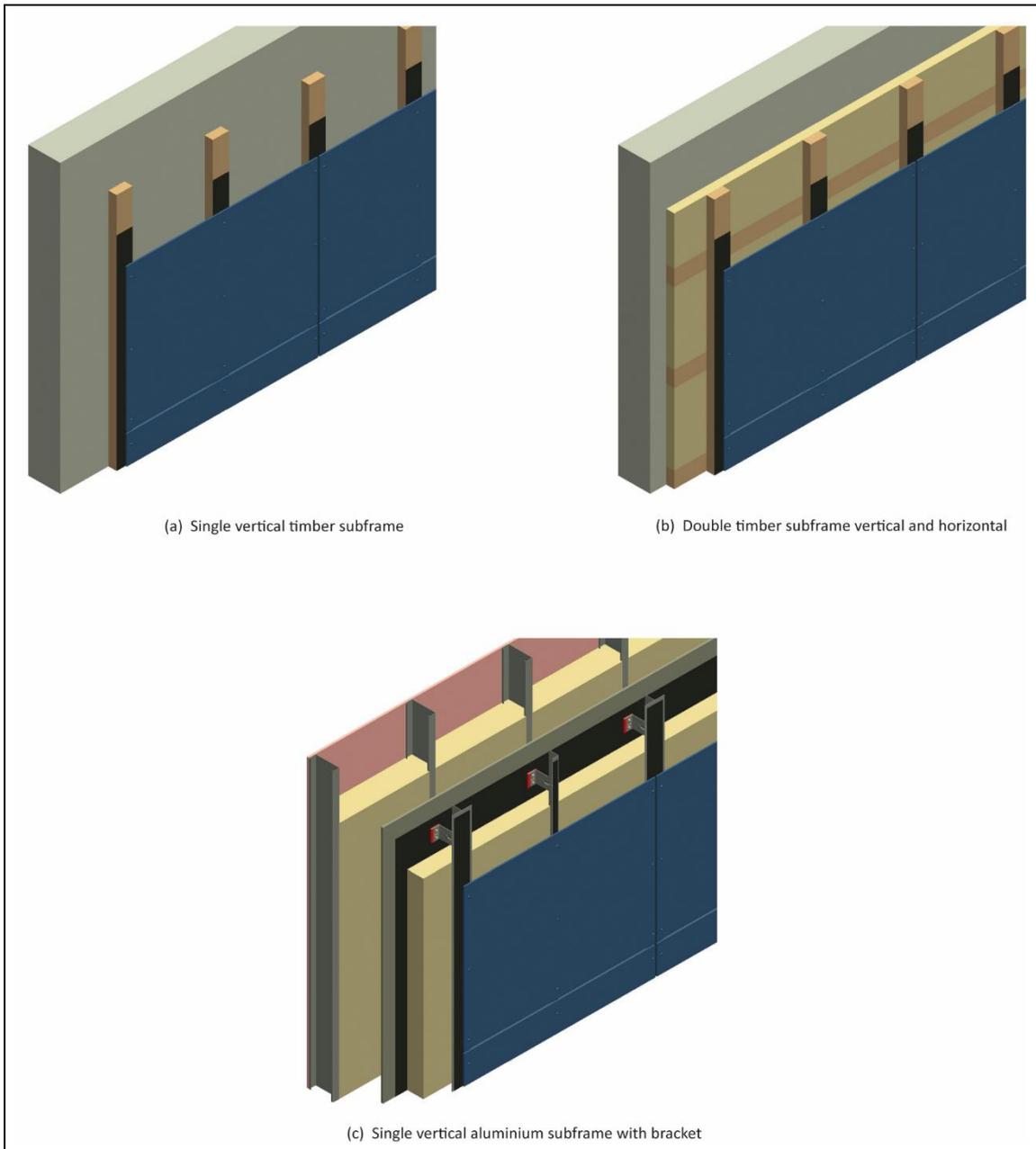
1.3 The panels are fixed to timber or aluminium sub-frames using mechanical fixings with the following minimum specifications:

- (a) Screws for timber sub-frames: self-drilling stainless-steel screw with painted mushroom head Ø 12 mm, Torx 20. Minimum dimensions Ø 4,8 mm x 38 mm. Grade A2 or A4. Screws are fixed at a maximum spacing of 600 mm along the timber batten.
- (b) Rivets for aluminium subframes: stainless steel rivets with lacquered head Ø 16 mm; Ø 4,8 mm X 16 mm (L). Grade A2 or A4. Rivets fixed at a maximum spacing of 600 mm along the aluminium rail.

1.4 Specifications⁽¹⁾ of the subframe on which panels are installed, but which are outside of the scope of this Certificate, are:

- Timber subframe – single vertical or double timber subframe (consists of horizontally aligned battens, on which vertical battens are mounted), made of natural durability or treated wood with strength class C24 in accordance with EN 338 : 2016 , dry (moisture < 18%). The single battens (see Figure 2a) are fixed directly to the substrate wall with no insulation layer between them. In the double batten arrangement (see Figure 2b), vertical battens are fixed to secondary horizontal battens (at 600 max centres), which are attached to the substrate wall and allow for an insulation layer (outside the scope of this assessment) to be installed. The distance between the vertical battens must be adapted to the distance between the fixing points of the facade panels, which is a maximum of 600 mm. In both arrangements, the thickness of the vertical batten must be such that it creates a minimum clear cavity of 50 mm behind the cladding between the back of the cladding and the substrate wall (or insulation if installed within the cavity).
 - Aluminium subframe (consists of profiles and brackets) – vertical aluminium T or L profiles with a minimum thickness of 2 mm, made from aluminium alloy EN-AW 6060 in accordance with EN 573-3 : 2019 and thermal treatment T5 in accordance with EN 515 : 2017 (see Figure 2c). The distance between the vertical T or L must be adapted to the distance between the fixing points of the facade panels, which is a maximum of 600 mm. The vertical profiles are mechanically fixed to aluminium wall brackets at horizontal spacings defined by design calculations according to the characteristics of the building and location. Leg length of the wall brackets must be such that they create a minimum clear cavity of 50 mm between the back of the cladding and the substrate wall (or insulation if installed within the cavity).
- (1) The sections and intermediate distances between the supports are determined with regard to the maximum deflection, acceptable tensions, wind zone, terrain category and exposure of the facade surface (location, facade height, form parameters). The adequacy of the subframe is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual for each project in function of the specific situation.

Figure 2 Typical timber and aluminium subframe cladding support



1.5 Ancillary components used with the panels, but outside the scope of this Certificate, include:

- Timber and aluminium sub-frames (specification is within the scope of assessment)
- Fixings connecting the sub-frame to the substrate wall
- Substrate wall
- Insulation within the cavity (specified on a project basis)
- Breather membrane
- Protective cavity mesh or perforated sheet.
- EPDM joint strip
- Cavity barriers
- Joint profiles-horizontal, roof, corner and U-profile
- Adhesive tape
- Sill and roof flashing.

2 Manufacture

2.1 The Ornimat, Decoboard, Puro Plus and Colormat panels are manufactured from a homogeneous mixture of Portland cement, selected reinforcement fibres, additives and water. This mixture is transmitted in thin layers under constant pressure to a format roller by means of a sieve cylinder machine (Hatschek) until the required panel thickness is obtained.

2.2 The Ornimat, Decoboard and Puro Plus panels are double pressed and air cured. The Colormat panels are autoclaved and hydrophobated after pressing process.

2.3 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.

3 Delivery and site handling

3.1 The Ornimat, Decoboard, Puro Plus and Colormat panels are supplied on pallets, wrapped in protective foil. The panels must be transported under waterproof sheeting and must be protected from the weather until they are installed.

3.2 Each pallet bears a label showing the Certificate holder's name, product type, size, quantity, identification code, customer order number and colour.

3.3 The panels must be stored indoors and prevented from becoming wet or dirty due to condensation, water absorption, high humidity, dust or any other kind of pollution. If it is impossible to store Ornimat, Decoboard and Colormat panels inside, they should be protected from precipitation and bright sunlight with waterproof sheeting. It is important to maintain good ventilation around the panels to avoid condensation. Puro Plus panels should not be stored outdoors under any circumstances, not even under waterproof sheeting and not in humid conditions.

3.4 The panels should be stored horizontally on flat, level and dry ground. Panels should be stored clear of the ground using racks, pallets or supporting laths with a maximum spacing of 400 mm and supported sufficiently so that they cannot deform.

3.5 Ornimat pallets should never be stacked on top of each other to avoid damage to the top coating. The other versions of the product may be stacked, but with no more than three pallets stacked on top of each other.

3.6 The storage period on site should be limited to the time that is needed to execute the work. The packaging must be kept closed until the moment the panels will be installed.

3.7 In order not to damage the decorative finishing layer when transporting or handling, the panels must be lifted by two people, without dragging or moving the panels over the panel below. Panels must always be carried in a vertical position, staining avoided (glue, silicone, polyurethane foam and any type of adhesive tape) and woollen gloves worn when lifting to avoid sweat and grease stains on the panels.

3.8 Whilst transporting and handling panels, the legislation related to mobile work equipment for hauling and lifting loads must be always respected and all Health and Safety measures must be observed when working on site.

3.9 Dust from fibre-cement panels is characterised as mineral dust. Where excessive concentrations of dust are generated, the dust levels must be controlled by the use of dust extraction equipment. The Certificate holder should be consulted for material safety data sheets and advice. When working in enclosed areas, precautions should be taken to ensure dust levels are controlled in accordance with the current issue of EH40/2005 and the measures defined in Health and Safety Executive Guidance Note EH44 should be followed.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Ornimat, Decoboard, Puro Plus and Colormat Cladding Panels.

Design Considerations

4 Use

4.1 Ornimat, Decoboard, Puro Plus and Colormat Façade Cladding Panels are satisfactory for use in back ventilated and drained rain-screen cladding systems, to provide a decorative and protective façade over timber-frame or steel-frame or masonry external walls of new and existing buildings above the damp-proof course (dpc) level.

4.2 It is important for designers, planners, contractors and/or installers to ensure that the installation of the system 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 Building Regulations and Standards.

4.3 The substrate wall and the sub-frame to which the panels are to be fixed must be structurally sound, and designed and constructed in accordance with the requirements of the relevant national Building Regulations and Standards. The contribution of the panels to the stability of the substrate wall and subframe is assumed to be negligible.

- brickwork or blockwork walls are designed and constructed in accordance with the relevant sections of BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006, BS EN 1996-3 : 2006 and their UK National Annexes, and PD 6697 : 2019, or one of the technical specifications given in the relevant documents supporting the national Building Regulations
- timber frame walls must be designed and constructed in accordance with the relevant sections of BS EN 1995-1-1 : 2004 and its UK National Annex, PD 6693-1 : 2019, and preservative-treated where necessary, in accordance with BS 8417 : 2011. Guidance on recommended wood preservation is also given in *NHBC Standards 2021, Part 3 General, Chapter 3.3 Timber preservation (natural solid timber)*
- steel frame walls must be designed and constructed in accordance with the relevant sections of BS EN 1993-1-1 : 2005 and BS EN 1993-1-3 : 2006, and its UK National Annex.

4.4 The substrate wall, without the cladding panels, must be able to take the full wind actions normally experienced in the UK, and the general actions, and be capable of sustaining the weight of the cladding panels. The contribution of the panels to the stability of the substrate wall and subframe is assumed to be negligible. The adequacy of the substrate wall is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual.

4.5 The subframe should be able to transmit the loads (own weight of the panels and wind loads) to the substrate wall. The subframe profiles and intermediate distances between the supports are determined with regard to the maximum deflection, acceptable tensions, wind zone, terrain category and exposure of the facade surface (location, facade height, form parameters). The adequacy of the subframe is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual for each project in function of the specific situation.

4.6 Ventilation and drainage must be provided behind the cladding panels. As the panels are open-jointed, the clear cavity between the back of the panel and the wall (or insulation if installed on the wall) must be at least 50 mm wide and ensure that a minimum ventilation area of 5000 mm² per linear metre is provided at the building base point and at the roof edge. Horizontal and vertical joint gaps between the panels must be minimum 10 mm wide. 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. Refer to the manufacturer's guidance for the installation procedure of ancillary items. Also see section 7.2 of this Certificate.

4.7 As the panels are open-jointed, any insulation installed behind the cladding must be suitably fixed to the supporting wall to resist forces generated by wind actions and insulation self-weight. Insulation must be resistant to or be protected from weather circumstances during the complete life cycle of the façade cladding panels and, where its performance could be diminished by moisture, a breather membrane should be provided over its outer face. The performance of these ancillary components is outside of the scope of this Certificate.

4.8 Expansion joints in the subframe should coincide with a panel joint, in order not to have the movement of the sub-frame creating extra tension on the facade cladding panels.

4.9 Installation of the panels on a timber subframe uses sliding points and installation on an aluminium subframe uses both fixed and sliding points (also see Table 3, Table 5 and Figure 3 of this Certificate).

4.10 It is essential that the system is installed and maintained in accordance with the conditions set out in this Certificate. The fixing of rainwater goods, satellite dishes, clothes lines, hanging baskets and similar items is outside the scope of this Certificate. In all cases the Certificate holder's advice should be sought.

5 Practicability of installation

The panels are designed to be installed by competent contractors experienced with these types of products.

6 Strength and stability

Wind loading

6.1 Design wind actions should be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. Due consideration should be given to higher pressure coefficients applicable to corners of the building as recommended in this Standard. In accordance with BS EN 1990 : 2002 and its UK National Annex, it is recommended that a partial load factor applied to wind of 1.5 is used to determine the design wind load to be resisted by the cladding system.

6.2 The supporting wall must have sufficient strength to resist independently the loads imparted directly by the cladding system and wind actions normally experienced in the UK, as well as any in plane force effects. The supporting sub-frame must have sufficient stiffness, such that its deformation does not affect the performance of the panels. The panels do not enhance the structural performance of the wall.

6.3 The designer should ensure that:

- the design of the sub-frame and its fixings is in accordance with the relevant codes and Standards, and is such as to limit mid-span deflections to span /200 and cantilever deflections to span /150
- the panels are fixed to the support sub-frame using the specified fixings (see section 1.3)
- the specified panel fixings have adequate tensile and pull-out strength to resist the applied actions
- fixing of the support subframe to the substrate wall has adequate tensile pull-out strength and corrosion resistance (not covered by this Certificate). An appropriate number of site-specific pull-out tests must be conducted on the substrate wall 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 BS EN 1990 : 2002.

6.4 The fixings defined in section 1.3 should be used to attach the panels to the support frame. The design should ensure adequate capacity against wind suction.



6.5 When tested for pull-through resistance in accordance with ETAG 034 : 2012, in conjunction with the screw fixing defined in section 1.3 (a) for fixed holes (non-clearance holes) and sliding holes (clearance holes) the panels achieved the characteristic pull-through resistance given in Table 2.

Table 2 Characteristic pull-through resistance

Fixing type ⁽¹⁾	Panel Type	Characteristic pull-through resistance (N) ⁽²⁾		
		Panel corner	Panel edge	Panel centre
A2 screws, head diameter 12 mm, shaft diameter 4,8 mm, length 38 mm with sliding holes (Ø 6.5mm)	Ornimat, Decoboard, Puro Plus	137.7	617.2	1361.9
A2 screws, head diameter 12 mm, shaft diameter 4,8 mm, length 38 mm with fixed holes (Ø 5 mm)	Colormat	591	993	1277

(1) The characteristic pull-through resistance values for rivets and screws are comparable at centre positions, therefore values listed in Table 3 may be adopted to rivets defined in section 1.3 of this Certificate.

(2) The pull-through values are lowest pull-through values at ring diameter 350 for Ornimat, Decoboard, Puro Plus panels and 270 for Colormat panel.

(3) In accordance with BS EN 1990 : 2002 for design value calculations, a partial material factor of 1.3 must be applied to the characteristics values .



6.6 When tested for wind load resistance, a built-up system including 8 mm thick Colormat panels fixed to vertical battens of section L 100 mm x D 70 mm spaced 600 mm apart with the Ø 4.8 mm x 38 mm x Ø 12 mm head screws fixing defined in section 1.3 (a) with sliding holes, spaced 600 mm vertically and 600 mm horizontally, with horizontal edge distance 25 mm and vertical edge distance 70 mm achieved a design wind load resistance as given in Table 3, below.

Table 3 Design wind load resistance (kN.m⁻²) – 600 studs spacing

Fixing layout ⁽¹⁾⁽²⁾ V X H	Panel dimension Height (mm) x Width (mm)	Design wind load resistance (kN.m ⁻²) ⁽³⁾
3X3	1340x 1250	2.4375
2X3	1295 x 650	2.4130
2X2	740x 650	2.4335

(1) V = vertical

(2) H = horizontal

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

6.7 For system arrangements other those stated in section 6.6, pull through values given in Table 2 can be used to calculate wind load resistance.

Impact resistance



6.8 When tested for hard and soft body impact, at support centres not exceeding 600 mm, the panels achieved adequate resistance for use in Categories III, to IV as defined in Table G.2 of EAD 090062-00-0404 : 2018 (reproduced in Table 4 below).

Table 4 Definition of Use Categories

Use Category	Description
I	A zone readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use
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
III	A zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects
IV	A zone out of reach from ground level

Note: Use Categories I and II are shown for reference purposes only.

7 Behaviour in relation to fire



7.1 Constructions incorporating the panels achieved the reaction to fire classifications given in Table 5.

Table 5 Reaction to fire classifications

Classification	Panel name	Construction	Classification method/report reference ⁽¹⁾
A2-s1, d0	Decoboard ^{(2) (3)}	Panel joint width \leq 10 mm. Steel, aluminium, or timber support.	BS EN 13501-1 : 2018 WF 432543 dated 18 August 2021
	Colormat ^{(2) (3)}	Air cavity \geq 40 mm without thermal insulation or with insulation of class A2-s1, d0 or better according to EN 13501-1	BS EN 13501-1 : 2018 WF 432541 dated 26 August 2021
	Ornimat ^{(2) (3)}	A1 mineral wool \geq 50 mm and density 30-70 kg·m ⁻³ , or,	BS EN 13501-1 : 2018 WF 432545 dated 23 rd September 2021
	Puro Plus	any A1 of A2-s1, d0 substrate \geq 9 mm thick and \geq 652.5 kg·m ⁻³ .	BS EN 12467 : 2012

(1) Copies available from the Certificate holder.

(2) Any colour.

(3) Surface texture – smooth or embossed.

7.2 The classification in Table 5 may not be achieved by other constructions incorporating the panels and the performance of such constructions should be determined in accordance with the requirements of the documents supporting the national Building Regulations.

7.3 The reverse side of the panels (facing into the cavity) have the reaction to fire classification in Table 5. Cavity barriers should be provided in accordance with the requirements of the documents supporting the national Building Regulations and should not impede drainage and ventilation pathways.

7.4 The constructions in Table 5 are not subject to any restriction on building height or proximity to boundaries, other than those in sections 7.5 to 7.7 of this Certificate.



7.5 In England and Wales, the panels should not be used with a timber batten support system 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 or dormitories in boarding schools.



7.6 In Northern Ireland the panels should not be used with a timber batten support system on buildings that have a storey 18 m or more above ground level.



7.7 In Scotland, panels should not be used with a timber batten support system on buildings 1 metre or less from a boundary or on any buildings 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 m², or on any hospital or residential care building with a total storey area more than 200 m².

7.8 Designers should refer to the relevant national Building Regulation guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity barriers, service penetrations and combustibility limitations for other materials and components used in the overall wall construction, for example, timber battens or thermal insulation, but are outside the scope of this Certificate.

7.9 Fire resistance of a particular construction incorporating the product is outside of the scope of this Certificate and should be confirmed by a suitably qualified and experienced individual or by a test from a suitably accredited laboratory.

8 Weathertightness



8.1 The panels are suitable for use in back-ventilated and drained cladding systems. They do not provide a watertight or airtight facing but will contribute to resisting the passage of rainwater to the supporting structure.

8.2 The substrate wall onto which the system is installed must satisfy the requirements of the relevant national Building Regulations and Standards.

8.3 The joints between panels are open, (i.e., gaps between panels are 10 mm) but any water entering the cavity behind the panels by wind-driven rain or condensation will be minimal and removed by drainage and ventilation.

8.4 The air space between the back of the panels and the external wall (or insulation if installed within the cavity) must be at least 50 mm wide, which must be drained and ventilated and allow for conventional building tolerances. Guidance on recommended cavity widths and opening joint width between panels is given in *NHBC Standards 2022*, Chapters 6.2 and 6.9. The ventilation pathway behind the cladding must not be allowed to become blocked and openings should be suitably protected, or baffled, to prevent the ingress of birds, vermin and rain. Also see section 7.2 of this Certificate.

8.5 The designer should ensure the cladding system is designed with appropriate compartmentation of the cavity, and in accordance with the requirements of the *NHBC Standards 2022*, Chapter 6.9.

8.6 The panels are not weathertight and when used on timber stud or on metal frame substrate walls they must be backed by a breather membrane acting as a vapour-permeable water barrier, incorporated behind the cladding under the supporting battens. See also section 4.7 of this Certificate.

8.7 Provision must always be made to allow water that has penetrated behind the cladding to drain away.

9 Maintenance



9.1 To maintain the appearance of the panels regular maintenance will be required in accordance with the Certificate holder's instructions. The cleaning frequency depends on the environment and the panel type. Regular maintenance inspections of the panel surface, ventilation gaps, joints and fixings are recommended to ensure they are clear and in good state. Maintenance should also ensure that protective cavity mesh, gutters and downpipes are clear and in a good state, and that ancillary features such as flashings and seals are in place and secure. The inspection should also detect the need for repair of damage that will prolong the life of the cladding.

9.2 Ornimat and Decoboard panels can be cleaned with clean water and a neutral, non-abrasive all-purpose cleaner with a good lather. Soaps containing linseed oil, or household detergents for washing dishes must not be used. Cleaning products should be testing on a small area first. A sponge or soft, clean cloth should be used for this purpose and hard scrubbing should be avoided. Abrasive pads such as wools or sandpapers must not be used for cleaning as they will cause scratches on the panels. After cleaning, the panels should be rinsed thoroughly with clean water, without pressure (eg a garden hose, where the water is sprayed at a wide angle on the panel) avoiding spraying water directly into the joints. High pressure washing is not recommended. For more difficult soiling, the Certificate holder's advice should be sought.

9.3 Puro Plus and Colormat panels can be cleaned by rinsing with clean water, without pressure (eg a garden hose, where the water is sprayed at a wide angle on the panel) avoiding spraying water directly into the joints. The use of cleaners and detergent should be avoided. High pressure washing is not recommended. For more difficult soiling, the Certificate holder's advice should be sought.

10 Durability



10.1 Under normal service conditions, provided that the panels are used in accordance with this Certificate and the Certificate holder's instructions, and regular maintenance is carried out as described in section 9, the panels will perform effectively as a cladding with a service life of at least 30 years.

10.2 In general, the decorative life of the panels will be lower than 30 years and will depend on the specific colour chosen, building location, façade aspect and immediate environment. Colour change will normally be uniform on any one elevation.

Installation

11 General

11.1 The panels must be installed in accordance with the Certificate holder's installation instructions, the requirements of this Certificate and the specifications laid down by a suitably qualified and experienced individual. The Certificate holder can provide advice on installation if required.

11.2 The panels can only be cut with equipment and sawing blades adequate for sawing hard fibre cement sheets.

11.3 The panels should always be installed on vertical studs to provide uninterrupted ventilation. Accurate positioning and installation of the supporting frame is essential. If possible, the panels should be installed after the structural work has been finished. When screw fixing or rivet fixing it is recommended to install panels from the top of the façade working downwards, to minimise the risk of damage or soiling of panels. Each panel is fixed with at least 4 fasteners of the same type.

11.4 The panels are non-load bearing and cannot support any loads, so no objects should be fixed directly on them during and after installation of the system.

11.5 The panels must not be installed butting against each other, a minimum joint width of 10 mm must be provided to allow for hygro-thermal movement of the panels and the execution tolerances. The fixing system should not obstruct the hygro-thermal movement, otherwise the panels will be subject to high tensions.

12 Procedure

12.1 The panels are installed on subframe profiles using either screws, or rivets (see section 1.3), depending on whether the subframe is a timber or aluminium.

12.2 When timber subframes are used, all panel fixings holes are sliding points (6.5 mm predrilled holes). This is larger than the fixing diameter in order to allow for movement.

12.3 Where aluminium sub-frames are used, the panels are installed with fixed points and sliding points. The number of fixed and sliding holes depends on the size of the panel. The panels are installed with one fixed point at the centre of the panel and all other predrilled holes are sliding points.

12.4 For fixed points, fixing holes in the panels must be pre-drilled with a diameter of 5 mm. For sliding points, fixings holes in the panels must be predrilled with a diameter of 6.5 mm. This is wider than the screw diameter in order to allow the panels to move (see Table 5 of this Certificate). The fixings should be centred in the holes so that they do not prevent movement of the panel.

12.5 For all fixings the minimum and maximum distance to the panel edge as specified in Table 5 must be observed.

12.6 A rivet tool with the correct nose piece should be used to protect the panel and prevent over tightening of the rivet.

12.7 An EPDM⁽¹⁾, with ribs, should be used on timber battens at all vertical joints and intermediate supports for easy evacuation of water at the vertical joints and to prevent moisture from getting trapped between the battens and the panels (see Figure 3). The EPDM should be the same width as the batten.

(1) Outside of the scope of this Certificate.

12.8 Fixing spacings and pre-drill hole size specifications for the panel types and sub-frames are given in Table 6 and Figure 3. Reference should be made to Figure 3 when reading the installation details given in this section.

Table 6 Panels fixing locations and predrilled diameter

Type of subframe		Panel Type	H min-max (horizontal edge distance)	V min-max (Vertical edge distance)	L max (panel length)	Fixed Point – Predrilled Hole Diameter	Sliding Point - Predrilled Hole Diameter
Timber subframe		Ornimat, Decoboard , Puro Plus	20-100 mm	20-100 mm	3070 mm	N/A	Ø 6 .5 mm
		Colormat	25-100 mm	70-100 mm	3050 mm	N/A	Ø 6 .5 mm
Metal subframe (aluminium)	Rivets	Ornimat, Decoboard , Puro Plus	30-100 mm	70-100 mm	3070 mm	Ø 5 mm	Ø 6 .5 mm
		Colormat	30-100 mm	70-100 mm	3050 mm	Ø 5 mm	Ø 6 .5 mm

Figure 3 Typical installation details - rivet fixing and aluminium subframe

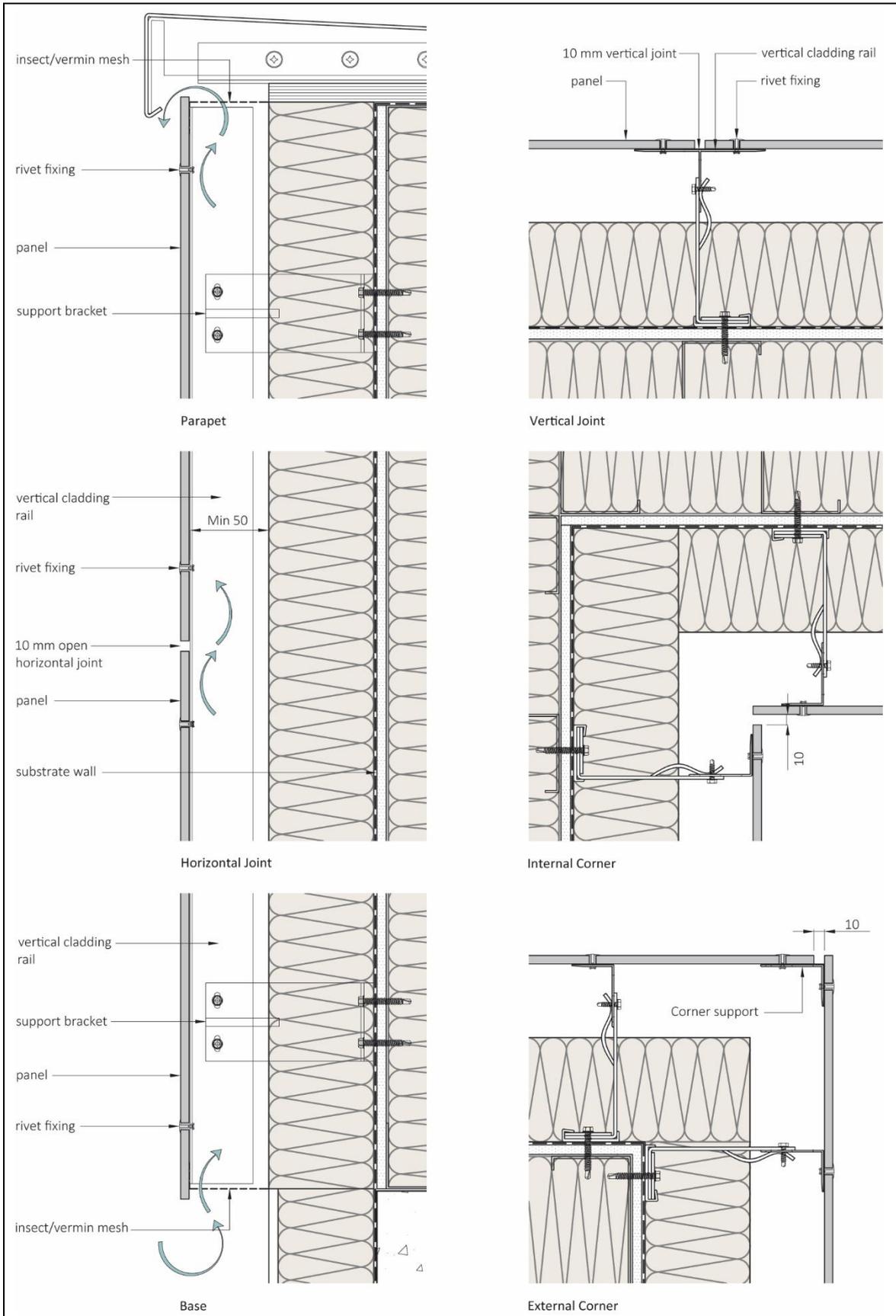


Figure 3 Typical installation details (continued) - rivet fixing and aluminium subframe

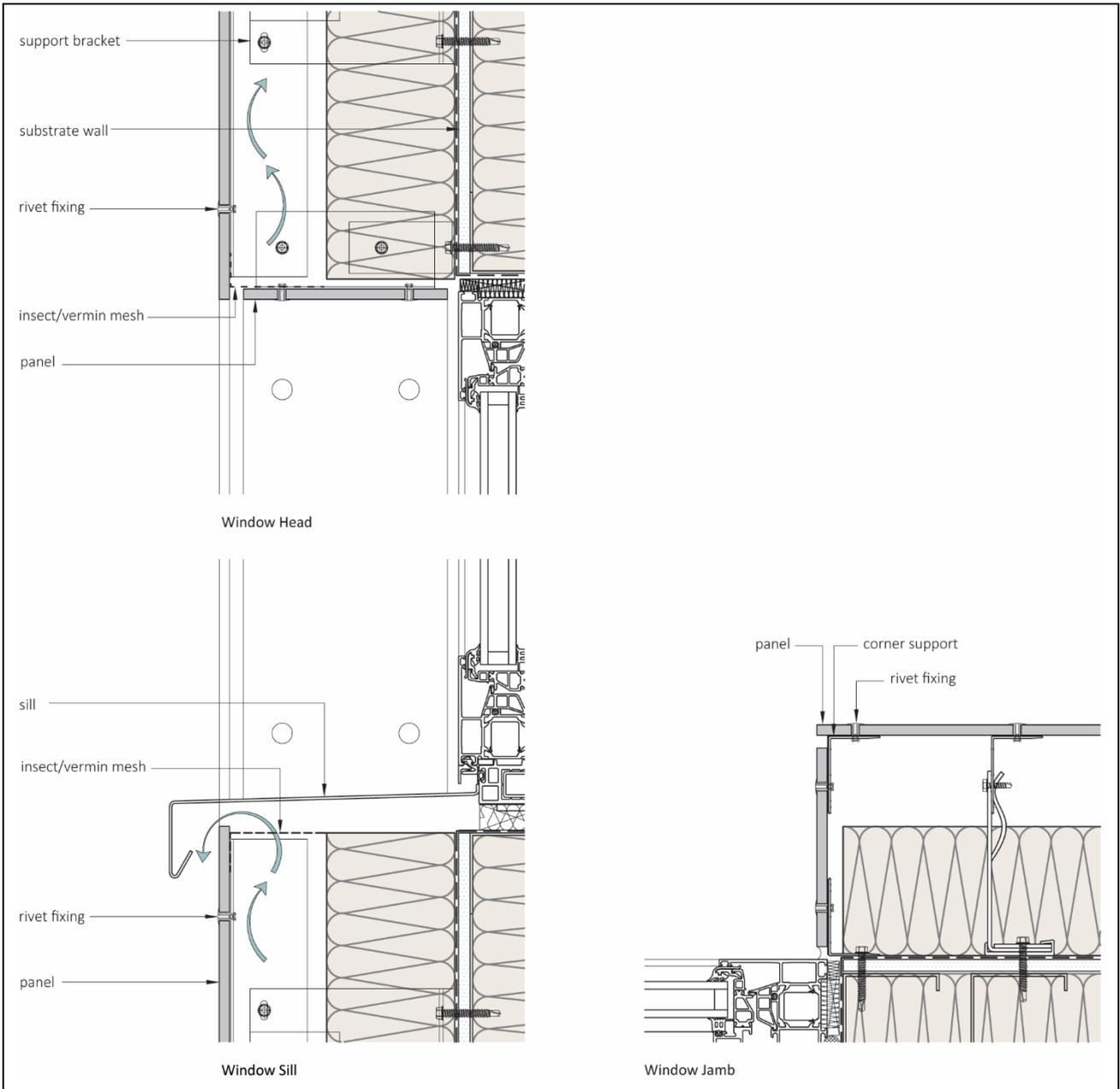


Figure 3 Typical installation details (continued) - screw fixing and timber subframe

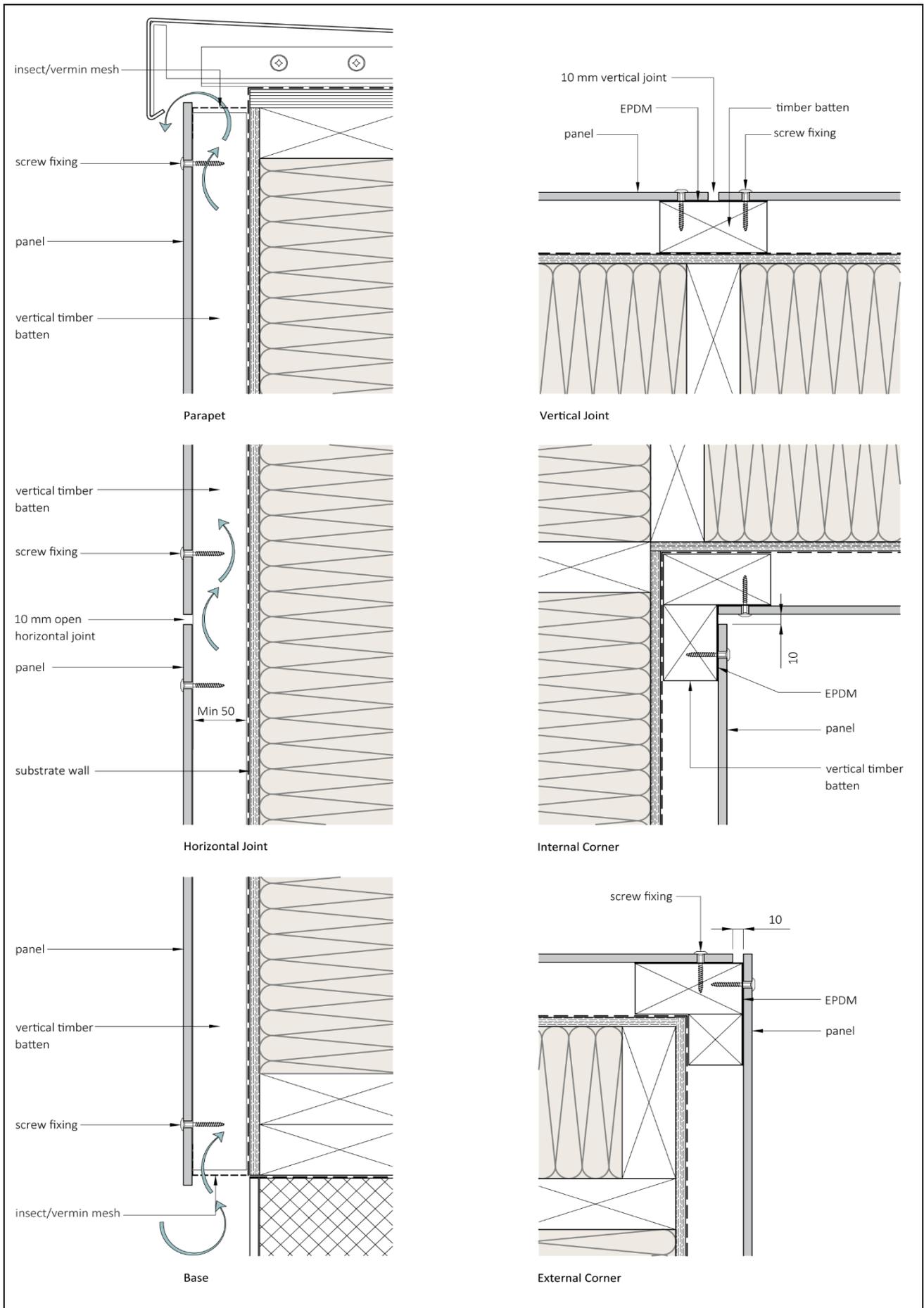
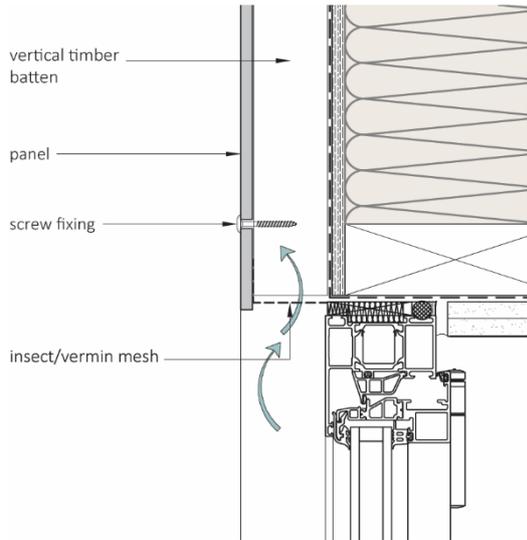
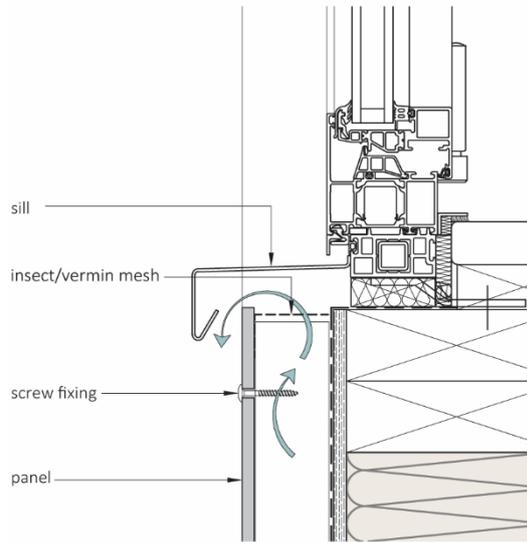


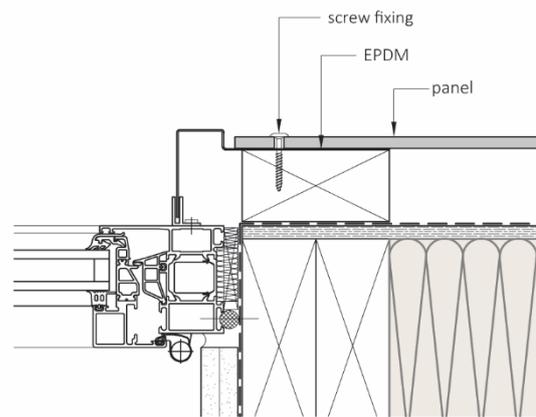
Figure 3 Typical installation details (continued) - screw fixing and timber subframe



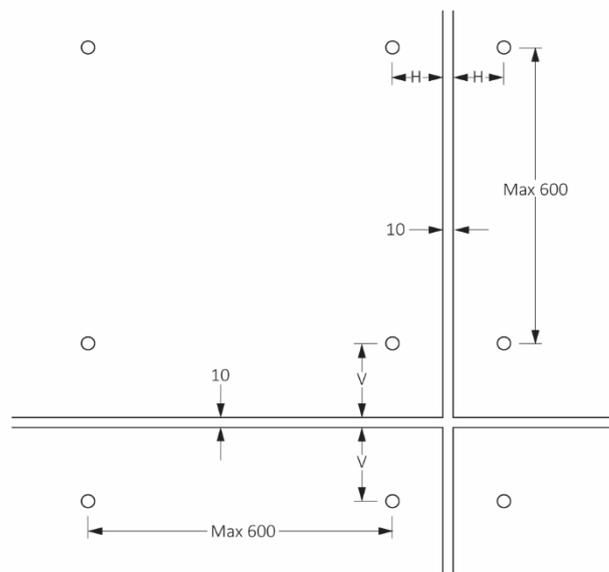
Window Head



Window Sill



Window Jamb



Edge distance H and V as per Table 5

13 Repair

Damaged panels should be replaced as soon as practicable. Work carried out should follow the Certificate holder's instructions and all necessary Health and Safety regulations should be observed.

Technical Investigations

14 Tests

Tests were carried out on Ornimat, Decoboard, Puro Plus and Colormat Facade Cladding Panels, by the BBA and the results assessed to determine:

- colour measurement
- gloss measurement
- crosscut adhesion
- resistance to marking and staining
- resistance to algal growth.

15 Investigations

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

15.2 An assessment was made of test reports relating to the reaction to fire classification of the panels

15.3 An assessment was made of data to BS EN 12467 : 2012 in relation to:

- apparent density
- resistance to freeze/thaw
- resistance to water soak
- resistance to soak/dry cycling
- resistance to heat/rain cycling
- bending strength
- dimensions, straightness of edge and out of squareness
- water impermeability
- resistance to soft and hard body impact
- pull through resistance
- wind load resistance.

15.4 An assessment was made of the practicability of installation.

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16 Conditions

16.1 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.

16.2 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.

16.3 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.

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

16.5 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.

16.6 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.