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### Agrément Certificate

10/4725

Product Sheet 6

## SINIAT SYSTEMS

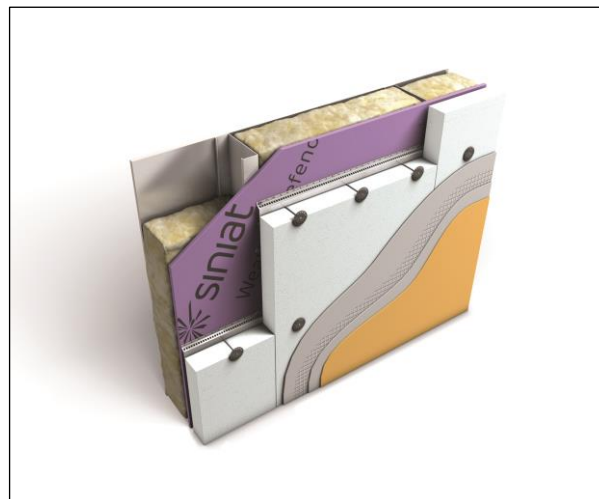
### SINIAT WEATHER DEFENCE INSULATED RENDER CLADDING SYSTEM

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to the Siniat Weather Defence Insulated Render Cladding System, for use as an exterior wall façade system above the damp-proof course (dpc) on new or existing domestic and non-domestic timber-framed or lightweight-steel-framed 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 system can be designed to resist the wind loads normally encountered in the UK (see section 6).

**Behaviour in relation to fire** — Siniat Weather Defence Boards and the Parextherm Render System have a reaction to fire classification of A1 and B respectively; the system is therefore restricted for use in buildings up to 18 metres in height (see section 7).

**Air and water penetration** — the system resists the passage of moisture from the ground and from weather (see section 9).

**Durability** — the system has acceptable durability and can be expected to have a service life in excess of 30 years (see section 13).

The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate

On behalf of the British Board of Agrément

Date of First issue: 23 March 2017

Brian Chamberlain  
Head of Technical Excellence

Claire Curtis-Thomas  
Chief Executive

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](http://www.bbacerts.co.uk)  
Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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## Regulations

In the opinion of the BBA, the Siniat Weather Defence Insulated Render Cladding System, 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)

<b>Requirement:</b>	<b>A1</b>	<b>Loading</b>
Comment:		The system is acceptable for use as set out in sections 4.3 and 6 of this Certificate.
<b>Requirement:</b>	<b>B4(1)</b>	<b>External fire spread</b>
Comment:		The system can contribute to satisfying this Requirement. See sections 7.1 to 7.4 and 7.6 to 7.8 of this Certificate.
<b>Requirement:</b>	<b>C2(a)</b>	<b>Resistance to moisture</b>
Comment:		The system will satisfy this Requirement. See sections 9 and 11 of this Certificate.
<b>Regulation:</b>	<b>7</b>	<b>Materials and workmanship</b>
Comment:		The system is acceptable. See sections 13.1 and 13.2 and the <i>Installation</i> part of this Certificate.



### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)(2)</b>	<b>Durability, workmanship and fitness of materials</b>
Comment:		The system can contribute to a construction satisfying this Regulation. See sections 12, 13.1 and 13.2 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	1.1(a)(b)	Structure
Comment:		The system is acceptable, with reference to clause 1.1.1 <sup>(1)(2)</sup> . See sections 4.3 and 6 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The system can contribute to satisfying this Standard, with reference to clause 2.6.4 <sup>(1)(2)</sup> . See section 7 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The system can contribute to satisfying this Standard, with reference to clause 2.7.1 <sup>(1)(2)</sup> . See section 7 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system will contribute to satisfying this Standard, with reference to clauses 3.10.1 <sup>(1)(2)</sup> to 3.10.3 <sup>(1)(2)</sup> , and 3.10.5 <sup>(1)(2)</sup> to 3.10.6 <sup>(1)(2)</sup> . See section 9 of this Certificate.
Standard:	3.15	Condensation
Comment:		The system can satisfy or contribute to satisfying this Standard, with reference to clauses 3.15.1 <sup>(1)</sup> , 3.15.2 <sup>(1)</sup> , 3.15.4 <sup>(1)</sup> and 3.15.5 <sup>(1)</sup> . See sections 9 and 11 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The system 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.

<b>Regulation:</b>	<b>12</b>	<b>Building standards applicable to conversions</b>
<b>Comment:</b>	All comments given for the system under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .	
	(1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).	



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

<b>Regulation:</b>	<b>23</b>	<b>Fitness of materials and workmanship</b>
<b>Comment:</b>	The system is acceptable. See sections 13.1 and 13.2 and the <i>Installation</i> part of this Certificate.	
<b>Regulation:</b>	<b>28(a)</b>	<b>Resistance to moisture and weather</b>
<b>Comment:</b>	The system will contribute to satisfying this Regulation. See section 9 of this Certificate.	
<b>Regulation:</b>	<b>29</b>	<b>Condensation</b>
<b>Comment:</b>	The system is acceptable. See sections 9 and 11 of this Certificate.	
<b>Regulation:</b>	<b>30</b>	<b>Stability</b>
<b>Comment:</b>	The system is acceptable. See sections 4.3 and 6 of this Certificate.	
<b>Regulation:</b>	<b>36(a)</b>	<b>External fire spread</b>
<b>Comment:</b>	The system satisfies the Class 0 requirements. See sections 7.1 to 7.4 and 7.6 to 7.8 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 section: *3 Delivery and site handling* (3.1, 3.2, 3.3, 3.5 and 3.6) of this Certificate.

## Additional Information

### NHBC Standards 2017

NHBC accepts the use of the Siniat Weather Defence Insulated Render Cladding System, provided it is installed, used and maintained in accordance with this Certificate, 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 Siniat Weather Defence Boards, in accordance with harmonised European Standard BS EN 15283-1 : 2008. An asterisk (\*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

## Technical Specification

### 1 Description

1.1 The Siniat Weather Defence Insulated Render Cladding System consists of Siniat Weather Defence Boards mechanically fixed directly onto the timber-frame or steel-frame structure and connected, with vented timber battens and steel rails respectively, to Parex Wallshield EWI, an E grade fire-retardant polystyrene board, finished externally with the Parextherm Render System.

1.2 Siniat Weather Defence Board is a purple-coloured, square-edge gypsum sheathing board, with the following nominal characteristics:

Width (mm)	1200
Standard length (mm)	2400, 2700, 3000
Thickness (mm)	12.5
Density ( $\text{kg}\cdot\text{m}^{-3}$ )	873
Vapour resistance ( $\text{MN}\cdot\text{s}\cdot\text{g}^{-1}$ )	0.49
Water vapour resistance factor ( $\mu$ )	7.98
Thermal conductivity* ( $\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ )	0.25
Flexural strength (N)	
longitudinal	684
transverse	312.

1.3 The Parex Wallshield EWI (External Wall Insulation) comprises grey or white E grade fire-retardant insulating panels of expanded polystyrene (EPS 70 E), with the following characteristics:

Compressive strength at 10% compression	70 kPa
Nominal density	14–15 $\text{kg}\cdot\text{m}^{-3}$
Standard size	1000 x 500 mm / 1200 x 600 mm
Thickness	80 to 300 mm
Declared thermal conductivity ( $\lambda_D$ )	0.031 $\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ (grey EPS) 0.038 $\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ (standard white EPS).

1.4 The Parextherm Render System comprises:

- Parex 121/Maite — a basecoat, joint filler and adhesive of polymer-modified, coloured mortar in powder form, ready to mix with water
- Parex DPR or Revlane Ignifuge Taloché Fin or Gros Topcoat finish — pre-mixed, ready-to-apply acrylic-based decorative coatings available in an extensive range of colours and in a range of fine, coarse and swirl effects
- Parex 355 AVU — glassfibre synthetic-coated, alkaline-resistant mesh
- Parex Weathertech Weatherseal — acrylic trowel and roll-on elastomeric waterproof liquid membrane, joint sealer and air barrier.

1.5 The drained and ventilated cavity is created by:

- treated timber battens 65 mm wide x 15 mm deep minimum (a minimum dry strength grade C16 in accordance with BS EN 14081-1 : 2016 is required for timber-framed structures)
- omega-shaped horizontal vented support rails made from galvanized steel (X51D+Z125-N-A-C to BS EN 10346 : 2015) (for light steel-framed structures), 15 x 74 x 2500 mm, minimum 0.9mm thick.

1.6 Fixings used with Siniat Weather Defence Board are:

- GTEC Wet Area Self Drilling Screws — carbon steel screws with ceramic coating, for steel more than 0.7 mm thick
- GTEC Wet Area Self Tapping Screws — carbon steel screws with ceramic coating, for steel less than or equal to 0.7 mm thick
- GTEC Wet Area High Thread Screws — carbon steel screws with ceramic coating, for use with timber supports.

1.7 Fixings used to attach Parex Wallshield EWI to the timber battens/steel rails are EWI AISI 1022 steel screws with a head diameter of 60 mm, and length varying with the thickness of insulation used.

1.8 Batten and rail fixings are proprietary fixings (see section 1.7) with a minimum pull-out value 0.7 kN.

1.9 Details of other components used with the system, but which are outside the scope of this Certificate, are:

- Parex insulation profiles — a range of standard profiles at the wall base, end stops, reveal and corner mesh, expansion joints for vertical and horizontal applications, sill extensions and fire-break systems, available in stainless steel to BS EN 10088-2 : 2014 and galvanized steel to BS EN 10346 : 2015, all of which can be powder-coated to

BS EN 13438 : 2013, and PVC-U extruded plastics to BS ISO 3302-1 : 2014. All profiles must be approved by the Certificate holder

- timber-frame/steel-frame for the substrate wall
- insulation used inside the substrate wall.

1.10 Details of suitable products and specifications can be obtained from the Certificate holder.

## **2 Manufacture**

2.1 Siniat Weather Defence Boards are manufactured to BS EN 15283-1 : 2008 from a slurry of calcium sulfate dihydrate, fillers and fibres in an automated lamination process between two liner sheets, then dried and cut.

2.2 Fixings and components for the Parextherm Render System are bought in from suppliers, to an agreed specification.

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
- 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.

2.4 The Parextherm Render System is manufactured and supplied by Parex Ltd, Holly Lane Industrial Estate, Atherstone, Warwickshire CV9 2QZ (tel: 01827 711755, fax: 01827 711330, website: [www.parex.co.uk](http://www.parex.co.uk)).

## **3 Delivery and site handling**

3.1 Siniat Weather Defence Boards are delivered to site on pallets. Each pallet incorporates the Certificate holder's name, product name, thickness, width, length, number of boards per pallet, pallet weight, recommended storage and handling method. Each board is printed with the appropriate classification to BS EN 15283-1 : 2008.

3.2 The palletted boards must be stored flat on a dry, level surface protected from exposure to the elements on site. Stacks should not exceed seven pallets high. The Certificate holder's instructions on site handling and storage must be followed.

3.3 The render bags are supplied on pallets, and the acrylic finishes in sealed buckets. The rolls of mesh are delivered in cardboard boxes stacked vertically on pallets. Each bag/bucket/mesh incorporates the manufacturer's name, product name, weight, batch reference, date of manufacture and application instructions. The Certificate holder's instructions on site handling and storage must be followed.

3.4 The render materials must be stored in a cool dry place and protected from moisture, frost and direct sunlight. Metal components and render beads must be stored flat in dry conditions.

3.5 Parex Wallshield EWI is wrapped in clear polythene and incorporates a label bearing the manufacturer's name, date of manufacture, product name, grade of insulation, thickness, width, length, number of boards per pack, recommended storage, handling method, appropriate classification to BS EN 13163 : 2012 and CE marking.

3.6 Details of packaging and weight for the components of the system are given in Tables 1 and 2.

Table 1 Packaging and weights — render components

Render component	Dimension/quantity	Weight (kg)	Packaging
Parex 121/Maite	–	30	bags (40 per pallet)
Parex DPR, Revlane Ignifuge Taloché Fin or Gros	–	25 and 29.5	buckets (24 or 36 per pallet)
Parex Weathertech Weatherseal	–	25	buckets (24 or 36 per pallet)
355 AVU	50 m x 1.1 m	7	individual rolls (33 per pallet)
Parex Wallshield EWI	1000 mm x 500 mm, 1200 mm x 600 mm x thickness required	various	sealed packaging
EWI fixings	Fixing length according to insulation thickness		boxes (100 or 200 fixings per box)

Table 2 Packaging and weights — boards and fixings

Component	Product size (mm)	Packaging number/weight
12.5 mm Siniat Weather Defence Board	1200 x 2400	52 boards per pallet/1.62 tonnes per pallet
	1200 x 2700	52 boards per pallet/1.91 tonnes per pallet
	1200 x 3000	40 boards per pallet/1.63 tonnes per pallet
GTEC Wet Area High Thread Screws	42 (length)	1000 screws per box/10 boxes per carton
GTEC Wet Area Self Drilling Screws	25 and 38 (length)	1000 screws per box/10 boxes per carton
GTEC Wet Area Self Tapping Screws	32 and 42 (length)	1000 screws per box/10 boxes per carton

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Siniat Weather Defence Insulated Render Cladding System.

### Design Considerations

#### 4 General

4.1 The Siniat Weather Defence Insulated Render Cladding System, when installed in accordance with this Certificate, is satisfactory for use as an external wall cladding system in timber-frame and steel-frame buildings.

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 national Building Regulations and Standards.



4.3 The steel/timber frame substrate wall to which the system is fixed must be structurally sound, and constructed in accordance with the requirements of the relevant national Building Regulations and Standards with respect to watertightness, heat and sound transmission.

4.4 Timber stud walls and timber battens must be structurally sound, designed and constructed in accordance with BS EN 1995-1-1 : 2004, and preservative-treated in accordance with BS EN 351-1 : 2007.

4.5 Galvanized steel framework and the aluminium cavity rails must be structurally sound, and designed and constructed in accordance with BS EN 1993-1-3 : 2006. The steel studs should be of metal thicknesses to suit specific load conditions and manufactured in accordance with BS EN 10140 : 2006.

4.6 Ventilation and drainage must be provided behind the insulated render cladding. The ventilated cavity is created by timber battens or vented render-board support rails to ensure that a minimum ventilation area of 5000 mm<sup>2</sup> per metre

run of cladding is achieved. All ventilation openings around the periphery of the system should be suitably protected with mesh to prevent the ingress of birds, vermin and insects.

4.7 The design must include:

- effective detailing around window openings to ensure that wind-driven rain is excluded from the hidden members in the surround and from the cavity
- an effective vapour control layer on the inside, to ensure that the frame structure is protected
- a maximum of 400 mm spacing between cavity rails or battens
- screws fixed at a minimum of 15 mm from board edges
- a maximum of 300 mm screw spacing for steel- and timber-frame applications.

4.8 The system should be kept above dpc level and a minimum of 150 mm above ground level.

## 5 Practicability of installation

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

## 6 Strength and stability



6.1 A suitably qualified and experienced individual must check the design and installation of the cladding system.

6.2 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 buildings, as recommended in this Standard.

6.3 The contribution of the board, insulation and render finish on the stability of the substrate wall is assumed to be negligible. The substrate, without the Siniat Weather Defence Insulated Render Cladding System, must be able to take the full wind actions and racking loads, and must be capable of sustaining the weight of the system. The adequacy of the substrate is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual.

6.4 For each wall panel, a partial safety factor of 1.3 and the values of modification factor  $k_{mod}$  in Table 3, as defined in BS EN 1995-1-1 : 2004 sections 2.4.1 and 3.1.3 respectively, are to be used to determine the design values of racking loads.

Table 3 Values of modification factors  $k_{mod}$

Load duration class	Service class		
	Class 1	Class 2	Class 3
Short-term actions	0.9	0.7	0.5
Instant actions	1.1	0.9	0.7

6.5 The characteristic pull-through resistance of Siniat Weather Defence Boards, calculated by applying a safety factor of 3.0 to the mean pull-through failure values (determined by tests in accordance with BS EN 1383 : 1999) for the stainless steel screws defined in section 1.6, is given in Table 4.

Table 4 Characteristic pull-through resistance

Position	Pull-through resistance (kN)		
	Wet Area High Thread Screws	Wet Area Self Tapping Screws	Wet Area Self Drilling Screws
Centre	0.31	0.25	0.33

6.6 The design wind load resistance of the system, based on the characteristic pull-through resistance values in Table 4, is as shown in Table 5, provided the designer ensures that:

- the fixing of Siniat Weather Defence Boards to the substrate wall has adequate pull-out resistance for the calculated loads (not covered by this Certificate). Site-specific tests should be conducted on the substrate of the building to determine the minimum pull-out resistance to failure of the fixings
- the design of the timber/steel frame and the horizontal support rails is in accordance with the relevant Codes and Standards and is such as to limit the mid-span deflections to L/250 and cantilever deflections to L/180
- a wind load factor of 1.5 is applied to the values in Table 5.

Table 5 Design wind load resistance

Vertical batten or stud spacing (mm)	Screw spacing (mm)	Fixing type		
		Wet Area High Thread Screws	Wet Area Self Tapping Screws	Wet Area Self Drilling Screws
		Design wind load resistance (kN·m <sup>-2</sup> )		
600	200	2.52	2.05	2.64
600	300	1.80	1.46	1.88
400	200	3.53	2.87	3.70
400	300	2.52	2.05	2.64

6.7 The system should be designed to adequately resist wind pressures likely to be experienced in the UK. For other batten and screw spacings, and design wind pressures, the structural adequacy of Siniat Weather Defence Boards should be checked by a suitably qualified and experienced individual.

6.8 When tested for dynamic wind load in accordance with ETAG 004 : 2013, a built-up system including the following, achieved a design wind load resistance of 2 kPa<sup>(1)</sup>: an 80 mm thick grey EPS insulation fixed to horizontal steel rails spaced 400 mm apart with EWI screws (as per section 1.6 of this Certificate) spaced 400 mm vertically and 200 mm horizontally, and Siniat Weather Defence Boards fixed to steel studs spaced 600 mm apart using Wet Area Self Drilling Screws at 300 mm centres.

(1) Obtained applying a safety factor of 1.5 to the test value.

### Impact resistance



6.9 When tested for impact, the system supported on studs at 600 mm centres with the horizontal rails supporting Parex Wallshield EWI at 400 mm was found to adequately resist 'soft body' impact energy of 100 J and 'hard body' impact energy of 3 J. The system can therefore be considered suitable for use in location categories III and IV, as defined in ETAG 034-1 : 2012, Part 1, Table 4, reproduced in part in Table 6 of this Certificate.

Table 6 Definition of use categories (from ETAG 034 : 2012, Part I)

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



## 7 Behaviour in relation to fire



7.1 When tested to BS EN 13501-1 : 2007, Siniat Weather Defence Boards achieved a reaction to fire classification\* of A1.

7.2 When tested to BS EN 13501-1 : 2007, the Parextherm Render System (as described in section 1.3) achieved a B-s2, d0 reaction to fire classification.

7.3 For houses in Scotland, and for all buildings in England, Wales and Northern Ireland, the system is suitable for use on, or at any distance from, the boundary.

7.4 The system is restricted for use in buildings up to 18 metres in height.



7.5 For flats, maisonettes and non-domestic buildings in Scotland, the system is suitable only for use more than 1 metre from the boundary.



7.6 The system is not classified as 'non-combustible'; therefore calculations for unprotected areas may apply, dependent on the fire resistance characteristics of the wall.

7.7 For resistance to fire, the performance of a wall incorporating the system can only be determined by tests from a suitably accredited laboratory, and is not covered by this Certificate.

7.8 To limit the risk of fire spread between the floors in buildings subject to the national Building Regulations, fire barriers must be incorporated in the cavity behind the system as required under these Regulations, but should not block essential ventilation pathways. Guidance on fire barriers can be found in BRE Report BR 135 : 2013.

## 8 Proximity of flues

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

**England and Wales** — Approved Document J

**Scotland** — Mandatory Standard 3.19, clause 3.19.4<sup>(1)(2)</sup>

**Northern Ireland** — Technical Booklet L.

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

## 9 Air and water penetration



9.1 The system resists the passage of moisture from the ground. Any water collecting in the cavity owing to rain or condensation will be removed by drainage and ventilation<sup>(1)</sup>.

9.2 The air space between the back of Parex Wallshield EWI and Siniat Weather Defence Boards on the face of the supporting wall must be a minimum of 15 mm in accordance with the requirements of *NHBC Standards 2017*.

(1) Guidance on recommended cavity widths is given in *NHBC Standards*, Chapter 6.9.

## 10 Water absorption

10.1 The water absorption of Siniat Weather Defence Boards is 1.71% when tested in accordance with BS EN 15283-1 : 2008, the boards are therefore designated GM-H1 in accordance with this Standard.

10.2 When tested in accordance with ETAG 004 : 2013, the Parextherm Render System achieved a water absorption (capillarity) of less than 0.5 kg·m<sup>-2</sup> after 24 hours.

## 11 Thermal conductivity and interstitial condensation



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 insulation system, to minimise the risk of condensation. The recommendations of BS 5250 : 2011 should be followed.

## 12 Maintenance and repair



12.1 Periodic inspections are recommended to assess the need for cleaning, localised repairs and replacement of elements such as joint seals and fixings, to ensure that ingress of water does not occur. Necessary repairs must be carried out immediately.

12.2 Damaged areas must be repaired using appropriate materials and advice should be sought from the Certificate holder.

## 13 Durability



13.1 The durability and service life of the system will depend on the building location, immediate environment and intended use of the building, and proper maintenance and repairs.

13.2 Provided regular maintenance is carried out, as described in section 12 and in accordance with the Certificate holder's instructions, the system can be expected to have a service life in excess of 30 years when used in climatic conditions normally found in the UK.

13.3 Siniat Weather Defence Boards have been tested and found to be resistant to mould growth.

## 14 Reuse and recyclability

Siniat Weather Defence Boards are made from gypsum, which can be recycled. A recycling service is available from the Certificate holder.

## Installation

### 15 General

15.1 Installation of the system must be carried out strictly in accordance with the provisions of this Certificate and the Certificate holder's instructions.

15.2 Full system details for each application are available from the Certificate holder.

### 16 Procedure

16.1 Horizontal movement joints in accordance with BS EN 13914-1 : 2016 must be provided at every floor, to accommodate vertical shrinkage of up to 6 mm in the timber-frame and to follow movement joints in the subframe. For steel-frame structures, reference should be made to the designer's details for deflection at floor level and movement joints in the substructure.

16.2 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.

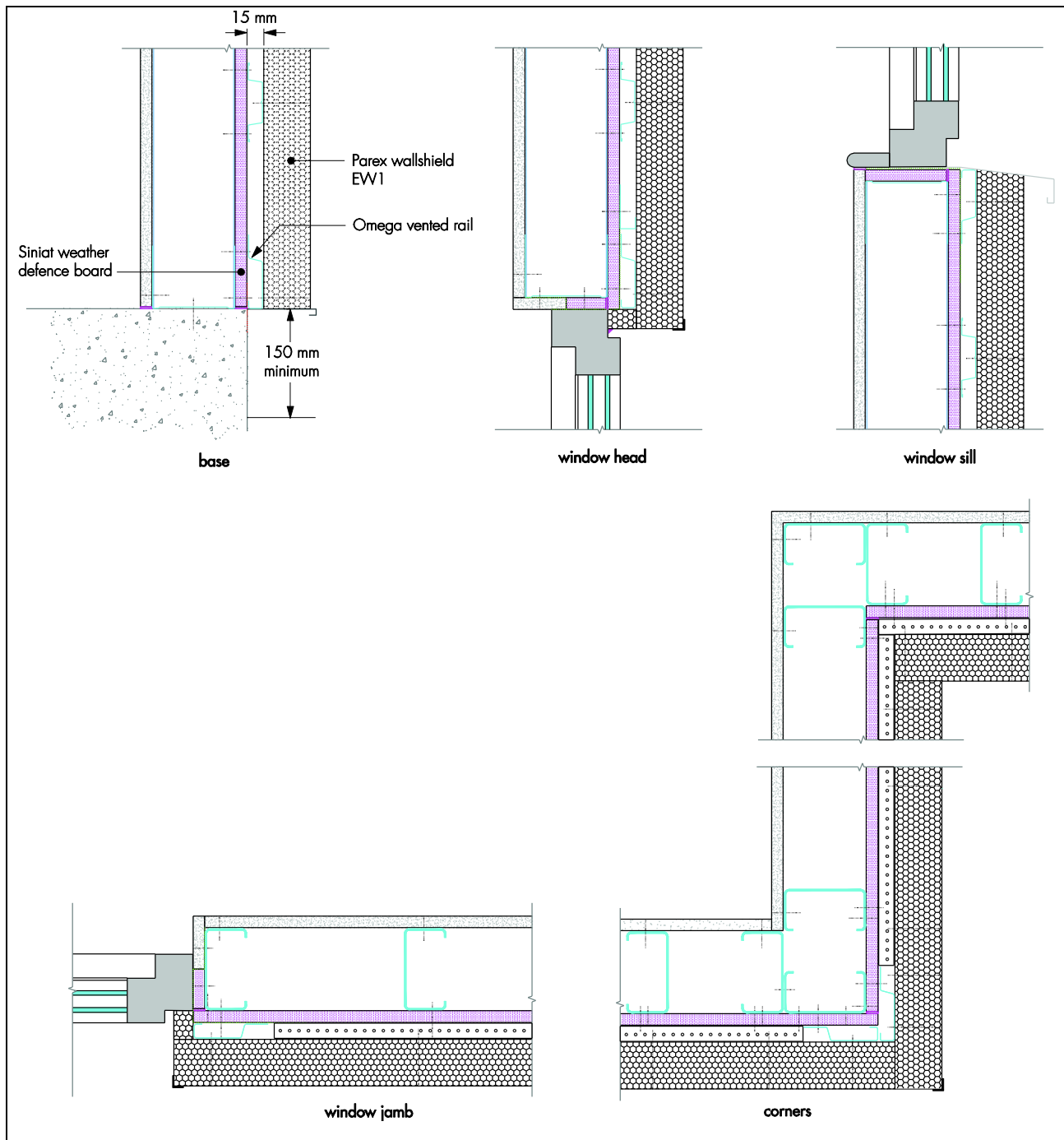
16.3 When used in timber-frame structures, the design of the system must account for differential movement between the timber-frame wall and other building elements. Guidance on the minimum requirements for timber-frame

shrinkage in relation to opening and closing gaps can be found in *NHBC standards*, Chapter 6, section 6.2.8, Table 1 *Gap sizes to accommodate differential movement*.

16.4 All window and door openings must be sealed in accordance with the Certificate holder's installation instructions to ensure that they are weathertight.

16.5 Typical construction details for the system can be found in Figure 1.

Figure 1 Typical construction details



16.6 For a drainage cavity, the steel rail or timber batten is fixed through Siniat Weather Defence Boards directly into the structural frame, and Parex Wallshield EWI is fixed to the rail/battens.

16.7 The screws should not be over-tightened (details are given in the Certificate holder's installation guide).

## Render finish

16.8 The Certificate holder's advice should be sought regarding the preparation and application of the render system. Brief details are:

- Parex 121/Maite is used as joint filler (in conjunction Parex 355 AVU mesh), as a basecoat (minimum of 4 to 5 mm thick), and as an adhesive (applied using a toothed trowel or with dabs)
- Parex DPR/ Revlane Ignifuge Taloché Fin or Gros topcoat finishes. The finished appearance is based upon grain sizes of 1 and 1.25 mm (sand fine/taloché fin finishes), 1.8 and 2.6 mm (sand coarse/taloché gros finishes), 1.25 and 1.5 mm (swirl fine finish) and 3 mm (swirl coarse finish). The installed thickness of the topcoat finishes should follow the manufacturer's recommendations
- corners and reveals are reinforced using a corner mesh bead including two mesh wings (100 mm and 150 mm wide respectively). The corner mesh is embedded into the Maite basecoat and overlaps with the base coat mesh.

## Technical Investigations

### 17 Tests

17.1 Tests were carried out and the results assessed to determine:

- resistance to hard and soft body impacts
- pull-through
- wind loading
- bending strength
- modulus of elasticity in bending
- shear strength
- density
- water absorption
- thermal conductivity
- water vapour permeability
- resistance to heat/rain cycling.

17.2 Existing test reports from independent test laboratories were evaluated in relation to:

- resistance to fire
- reaction to fire
- resistance to organic growth
- dimensional stability.

### 18 Investigations

18.1 The system's resistance to wind loading, mechanical resistance and stability were assessed.

18.2 The system's durability and behaviour in relation to fire were assessed.

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

## Bibliography

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### 19 Conditions

#### 19.1 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 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.

19.2 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.

19.3 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.

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

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

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- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- 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.

19.6 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.