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Agrément Certificate

23/7055

Product Sheet 2 Issue 1

FERMACELL BOARDS

FERMACELL POWERPANEL H₂O CEMENT-BASED BOARD FOR EXTERNAL USE

This Agrément Certificate Product Sheet⁽¹⁾ relates to the Fermacell Powerpanel H₂O Cement-Based Board for External Use, a fibre-glass reinforced cement board for use as part of the outer layer of an exterior wall façade in conjunction with a specified finishing render system on masonry, and timber-frame or steel-frame domestic and non-domestic buildings.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review

The BBA has awarded this Certificate to the company named above for the product described herein. This product 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 issue: 14 December 2023



KEY FACTORS ASSESSED

- Section 1. Mechanical resistance and stability
- Section 2. Safety in case of fire
- Section 3. Hygiene, health and the environment
- Section 4. Safety and accessibility in use
- Section 5. Protection against noise
- Section 6. Energy economy and heat retention
- Section 7. Sustainable use of natural resources
- Section 8. Durability

Hardy Giesler
Chief Executive Officer

This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.

The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).

Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

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

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SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that Fermacell Powerpanel H₂O Cement-Based Board for External Use, 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 Building Regulations 2010 (England and Wales) (as amended)

Requirement:	A1	Loading
Comment:		The product has sufficient strength and stiffness to sustain and transmit design loads to the primary structure without excessive deflection. See section 1 of this Certificate.
Requirement:	B3(4)	Internal fire spread (structure)
Comment:		The product can contribute to satisfying this Requirement. See section 2 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The product can contribute to satisfying this Requirement. See section 2 of this Certificate.
Requirement:	C2(b)(c)	Resistance to moisture
Comment:		The product can be incorporated into a wall structure, suitably designed to prevent the ingress of water and excessive interstitial and surface condensation. See section 3 of this Certificate.
Requirement:	7(1)	Materials and workmanship
Comment:		The product is acceptable. See sections 8 and 9 and part of this Certificate
Regulation:	7(2)	Materials and workmanship
Comment:		The product is unrestricted by this Regulation. See section 2 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The use of the product satisfies the requirements of this Regulation. See section 8 and 9 of this Certificate.
Regulation:	9	Building standards – construction
Standard:	2.1	Compartmentation
Standard:	2.2	Separation
Standard:	2.3	Structural protection
Comment:		The product can contribute to satisfying these Standards, with reference to clauses 2.1.1 ⁽²⁾ , 2.1.12 ⁽²⁾ , 2.2.1 ⁽¹⁾⁽²⁾ , 2.2.4 ⁽²⁾ , 2.2.5 ⁽²⁾ , 2.2.6 ⁽¹⁾ , 2.2.7 ⁽¹⁾ , 2.2.8 ⁽¹⁾ and 2.3.2 ⁽¹⁾⁽²⁾ . See section 2 of this Certificate.
Standard:	2.4	Cavities
Comment:		The product can contribute to satisfying this Standard, with reference to clause 2.4.2 ⁽¹⁾⁽²⁾ . See section 2 of this Certificate.

Standard:	2.6	Spread to neighbouring buildings
Comment:		The product will contribute to an external wall satisfying the requirements of this Standard, with reference to clauses 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.2 ⁽¹⁾⁽²⁾ . See section 3 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.2 ⁽¹⁾ , 3.15.4 ⁽¹⁾ and 3.15.5 ⁽¹⁾ . See section 3 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The product 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 – conversions
Comment:		All comments given for this product 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 product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	29	Condensation
Comment:		The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	30	Stability
Comment:		The product can contribute to satisfying this Regulation. See sections 6.1 and 6.6 of this Certificate.
Regulation:	35(4)	Internal fire spread – structure
Comment:		The product can contribute to satisfying this Regulation. See section 2 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The product can contribute to satisfying this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2023

In the opinion of the BBA, Fermacell Powerpanel H₂O Cement-Based Board for External Use, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards 2023*, Chapters 6.2 *External timber framed walls*, and 6.10 *Light steel framed walls and floors*.

Fulfilment of Requirements

The BBA has judged Fermacell Powerpanel H₂O Cement-Based Board for External Use to be satisfactory for use as described in this Certificate. The product has been assessed as non-load bearing/non-structural sheathing boards in weatherproof façade constructions behind a drained and ventilated rain-screen cladding, over masonry or vertical timber and light gauge steel-frame external walls, in new and existing buildings above the damp-proof course (DPC) level.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. Fermacell Powerpanel H₂O Cement-Based Board for External Use consists of:

- a cement-bonded core, reinforced on each face by an alkali-resistant, 0.2 to 0.5 mm thick glass-fibre mesh (of 5 mm by 5 mm aperture size) embedded in the face layers. The product is light grey in colour with square edges and is marked on the front face with the product name and identification.

The product has the nominal characteristics given in Table 1.

Characteristic (unit)	Value
Length (mm)	1000, 2000, 2600 and 3000
Width (mm)	1200
Thickness (mm)	12.5
Approximate weight (kg·m ⁻²)	13
Density (kg·m ⁻³)	950 to 1050

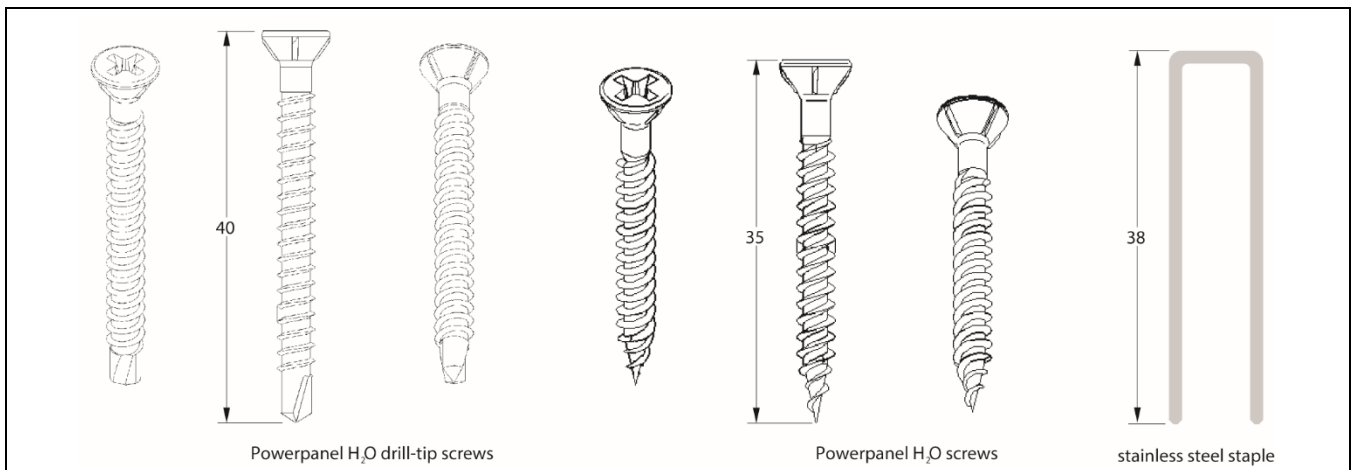
Ancillary Items

The following ancillary items are essential to use with the product and have been assessed with the product:

The fixing of the product depends on the substrate and must be in accordance with the Certificate holder's relevant specification. Fixings (see Figure 1) used with the product are:

- Powerpanel H₂O drill-tip screws — manufactured from stainless steel coated with 10µm of polymer zinc, 3.9 mm diameter by 40 mm length. A self-tapping screw for fixing the products to a supporting metal sub-frame (more than 0.7 mm gauge)
- Powerpanel H₂O screws — manufactured from stainless steel coated with 10µm of polymer zinc, 3.9 mm diameter by 35 mm length for fixing the product to a supporting timber sub-frame or light metal sub-frame (up to 0.7 mm gauge)
- Stainless steel staples — minimum 38 mm long, 1.5 mm gauge and 10 mm head width for fixing the product to a supporting timber sub-frame.

Figure 1 Fixings



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

- Fermacell HD Light Mortar⁽¹⁾ — dry, ready-mixed, plastic-reinforced cement-based compound for applying a full surface covering to the product up to a total thickness of 8 mm
- Fermacell HD Reinforcement mesh — 4 by 4 mm mesh of alkali-resistant 0.2 to 0.5 mm thick glass-fibre for full surface covering application within the mortar
- Fermacell HD Light Reinforcement tape — 120 mm wide tape to be placed over the joints and window returns
- Fermacell HD Adhesive — polyurethane-based adhesive, roller applied, for covering the reinforcement tape and exposed fixing heads
- beads, sealant, joint reinforcement
- timber battens/metal rails creating a cavity
- masonry and timber or steel-framed wall substrates
- breather membrane
- insulation.

(1) The use of the boards with other render systems is outside the scope of this Certificate.

The product can be installed as part of the outer layer of an insulated single-leaf construction onto supports incorporating a cavity. The product is suitable for masonry, and steel- or timber-framed walls of domestic and non-domestic buildings. The system is designed to transmit self-weight and wind load into the structural frame.

The board is satisfactory for use as part of an exterior wall cladding render system with a minimum 25 mm width drained and ventilated cavity.

Product assessment – key factors

The product was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Data were assessed for the following characteristics.

1.1 Strength and stability

1.1.1 A suitably experienced and competent individual must check the design and method of installation of the cladding system using the product.

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

1.1.3 The adequacy of the structural substrate wall must be verified by a suitably experienced and competent individual. The structural frame or substrate must be able to resist the full racking loads; no contribution from boards can be assumed.

1.1.4 When tested with appropriate fixings at the specified spacings given in section 9.2, the panels have an ultimate resistance of 1200 Pa.

Table 2 Wind resistance

Product assessed	Assessment method	Requirement	Result
Fermacell Powerpanel H ₂ O Cement-Based Board – partition system built with the product fixed at either side of a frame made of 0.6 mm thick C-section lightweight steel studs at 600 mm centres with Powerpanel H ₂ O drill-tip screws at 250 mm centres.	EN 12179 : 2001	Value achieved	Mean value 1800 Pa Design value 1200 Pa

1.1.5 The mechanical characteristics of the boards obtained by testing are shown in Table 3.

Table 3 Mechanical properties

Product assessed	Assessment method	Property	Result
Fermacell Powerpanel H ₂ O Cement-Based Board	EN 12467 : 2012	Bending strength $f_{m,90}$ N·mm ⁻²	6.0
		Modulus of elasticity $E_{m,mean}$ N·mm ⁻²	4200
		Modulus of rupture N·mm ⁻²	8.32
	EN 319 : 1993	Cross tension strength $f_{t,90}$ N·mm ⁻²	0.20

1.1.6 The characteristic pull-out values of the H₂O screws and the stainless steel staples on the board, were determined by tests according to EN 1383 : 1999, and are given in Table 4.

Table 4 Pull-out values-substrate $f_{1,k}$

Product	Assessment method	Requirement	Result
Fermacell Powerpanel screws ⁽¹⁾ into:		Value achieved	
Softwood of strength class C24	EN 1382 : 1999		10.4 N
Metallic profiles t = 0.6 mm	EN 14566 : 2008		607 N
Metallic profiles t = 1.5 mm			1661 N

(1) Powerpanel H₂O screws or Powerpanel H₂O drill-tip screws as described in the Product Description.

1.1.7 The characteristic pull-through resistance values of the H₂O screws and the stainless steel staples on the board, were determined by tests according to EN 1383 : 1999, and are given in Table 5.

Table 5 Pull-through values $f_{2,k}$

Product	Assessment method	Requirement	Result
Fermacell Powerpanel screws	EN 1382 : 1999	Value achieved	500 N
Stainless steel staples			350 N

1.3 Resistance to impact

1.3.1 When tested for hard and soft body impact, the results were as in Table 6. The relevant impact categories from ETAG 004 : 2000 are reproduced in Table 7 of this Certificate.

Table 6 Resistance to impact

Product assessed	Assessment method	Requirement	Value achieved
12.5 mm board with mortar and reinforcement mesh, supported on battens at 600mm centres.	ETAG 004 : 2000	Hard body impact	Category I -III

Table 7 ETAG 004 impact 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.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 Reaction to fire

2.1.1 The boards achieve the reaction to fire classification given in Table 8.

Table 8 Reaction to fire classification

Product assessed	Assessment method	Requirement	Result
Fermacell Powerpanel, H ₂ O Cement-Based Board	BS EN 13501-1 : 2002	Value achieved	A1 ⁽¹⁾

(1) The report No. 3459/9515-2 – Do/Ht (IBMB) is available from the Certificate holder on request.

2.1.2 On the basis of data assessed, the product is not subject to any restriction on building height or proximity to relevant boundaries by the documents supporting the national Building Regulations.

2.1.3 Designers must refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for fire resistance, cavity barriers, service penetrations and combustibility limitations for other materials and components used in the overall wall construction (for example, thermal insulation and cladding).

2.2 Resistance to fire

2.2.1 Constructions incorporating the boards have achieved the resistance to fire classifications given in Table 9

Table 9 Resistance to fire classification

Product assessed	Assessment method	Requirement	Result
Fermacell Powerpanel, H ₂ O Cement-Based Board Butt-jointed and fastened at 200 mm centres, on 50 x 10 mm wooden battens	BS EN 13501-2 : 2007	Value achieved	K10 ⁽¹⁾

(1) Test report No. KB 3.2/12-042-1 is available from the Certificate holder on request.

2.2.2 When specified for use as the internal dry lining to loadbearing timber-framed or steel-framed external and separating walls, each construction must be individually assessed for fire resistance, by fire testing in accordance with BS EN 1365-1 : 2012 or BS 476-21 : 1987.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Properties in relation to water

3.1.1 Weathertightness

When tested for weathertightness, water impermeability and water absorption, in accordance with MOAT 22, BS EN 12467 : 2012 and EN 520 : 2004 respectively, the values shown in Table 10 of this Certificate were achieved.

Table 10 Weathertightness

Product assessed	Assessment method	Characteristic	Result
Fermacell Powerpanel, H ₂ O Cement-Based Board	BS EN 12467 : 2003	Water permeability	No water penetration
	EN 520 : 2004	Water absorption at the surface	650 g·m ⁻²
	EN 520 : 2004	Total water absorption of the product	8.5%
	EN 322 : 1993 at 20°C and 65%	Moisture content	≤5%
Fermacell Powerpanel, H ₂ O Cement-Based Board with Fermacell HD Light Mortar	MOAT 22	Weathertightness	Pass

3.2 Condensation

3.2.1 The boards were tested for water vapour transmission, and the result of the test is given in Table 11.

Table 11 Water vapour transmission

Product	Assessment method	Requirement	Result
Fermacell Powerpanel H ₂ O Cement-Based Board	EN ISO 12572 : 2001	Value achieved	Water vapour resistance factor (μ) 56

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable

6 Energy economy and heat retention

6.1 Thermal conductivity

The thermal conductivity of the board was established in accordance with BS EN 12524 : 2000, as shown in Table 12.

Table 12 Thermal conductivity

Product assessed	Assessment method	Requirement	Value
Fermacell Powerpanel H ₂ O Cement-Based Board	EN 12664 : 2000	Value achieved	0.173 W·m ⁻¹ ·K ⁻¹

7 Sustainable use of natural resources

Data were assessed for the following characteristics.

7.1 Recycled content

Table 13 Recycled content

Product	Assessment method	Requirement	Recycled content
Fermacell Powerpanel H ₂ O Cement-Based Board	BREEAM	Value achieved	24%

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the product were assessed.

8.2 Specific test data were assessed as shown in Table 14.

Table 14 Durability testing

Product assessed	Assessment method	Requirement	Result
Fermacell Powerpanel H ₂ O Cement-Based Board	EN 12467 : 2012 Freeze-thaw Heat-rain Warm-water Soak-dry	Value achieved	Category A
Fermacell Powerpanel, H ₂ O Cement-Based Board with Fermacell HD Light Mortar	MOAT 22 Hygrothermal	No deterioration	Pass

8.3 Service life

Under normal service conditions, the product will have a service life in excess of 30 years, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed by the BBA, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 The adequacy of the timber- or steel-frame wall to which the product is fixed is outside the scope of this Certificate and must be verified by a suitably competent and experienced individual. It must have sufficient strength to resist independently the loads imparted directly by the product and wind actions normally experienced in the UK, as well as any in plane force effects. It must be designed and constructed in accordance with the requirements of the national Building Regulations and Standards given below. The contribution of the product to the stability of the timber- or steel-frame wall is assumed to be negligible:

- timber-frame walls must be designed and constructed in accordance with PD 6693-1 : 2019, BS EN 1995-1-1 : 2004 and BS EN 1995-1-2 : 2004 and their UK National Annexes, with workmanship in accordance with BS 8000-5 : 1990, and preservative-treated in accordance with BS EN 351-1 : 2013 and BS 8417 : 2011
- steel-frame walls must be structurally sound, and designed and constructed in accordance with BS EN 1993-1-1 : 2005, BS EN 1993-1-2 : 2006 and BS EN 1993-1-3 : 2006, and their UK National Annexes.

9.1.3 The timber/steel supports should be designed to limit mid-span deflections to L/250 and cantilever deflections to L/180.

9.1.4 The designer should ensure that:

- the structural adequacy of the board is checked by a suitably experienced and competent individual.
- the system is capable of transmitting its self-weight and wind load to the structure. Particular care is required around window and door openings to ensure that the structure is capable of sustaining the additional weight of the system.

9.1.5 The design of the exterior wall façade should include:

- a ventilated 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 (vcl) on the inside, to ensure the frame structure is protected.
- horizontal movement joints in accordance with BS EN 13914-1 : 2005 at every floor to accommodate vertical shrinkage of up to 6 mm in the timber frame and to follow movement joints in the substructure. For steel-frame structures, reference to the Structural Engineer's details for deflection at floor level and movement joints in the substructure should be made.
- vertical movement joints in accordance with BS EN 13914-1 : 2005 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.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance is provided in Annex A.

9.2.3 The maximum spacing between the supports must be 600 mm.

9.3 Workmanship

The level of supervision during installation of the system and the associated structure must be sufficient to ensure the quality of workmanship.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the product in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA and found to be appropriate and adequate.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate:

9.4.3 Periodic inspections of the external façade should be carried out to assess the need for cleaning, maintenance painting, maintenance of localised repairs and replacement, such as joints seals and fixings, to ensure that ingress of water does not occur. All necessary repairs should be effected immediately.

9.4.4 The product is not exposed and is suitably durable (see section 8); therefore, maintenance will not be required. However, it must be ensured that damage occurring before enclosure is repaired beforehand.

10 Manufacture

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review 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.

11 Delivery and site handling

11.1 The Certificate holder stated that the product delivered to site in stacks of up to 30 on wooden pallets braced by three straps. The board edges are protected by cardboard. The stacks are wrapped in polythene and each carries a label bearing the product name, date of manufacture, size and quality control stamp.

11.2 Delivery and site handling must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 Pallets can only be moved by forklift truck and must not be stacked more than four high.

11.2.2 When removed from the pallets, boards must be stored flat, off the ground, on a dry, level surface in a well-ventilated area protected from rain and snow. Sufficient supports should be provided to prevent bowing.

11.2.3 To protect the surface, individual boards must be lifted (not slid) from the stack by two people and carried in the vertical position.

Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the 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.

CLP Regulations

Not applicable. The product is non-toxic and can be disposed of as rubble or domestic waste.

UKCA marking

The Certificate holder has taken the responsibility of UKCA marking the product in accordance with harmonised Standard BS EN 12467 : 2004, and all fields which are defined by the service classes 1,2 or 3 according to EN 1995-1-1 : 2004.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with ETA 07-0087.

Management Systems Certification for production

The management system of James Hardie Europe GmbH has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by TÜV NORD CERT GmbH (Certificate no. 08 100 959271).

Additional information on installation

A.1 Installation must be in accordance with the Certificate holder's instructions and this Certificate.

A.2 FFP1 dust masks and eye protection are recommended when cutting with machinery.

A.3 The boards must be always mechanically fixed with the appropriate fixing types specified in Figure 1 and installed with:

- screws at a maximum distance of 250 mm centres (vertically along the supports) and 200 mm centres (horizontally along top and bottom supports)
- staples at a maximum distance of 150 mm centres (vertically and horizontally along the supports).

A.4 Screws and staples must be fixed at a minimum of 15 mm from board edges.

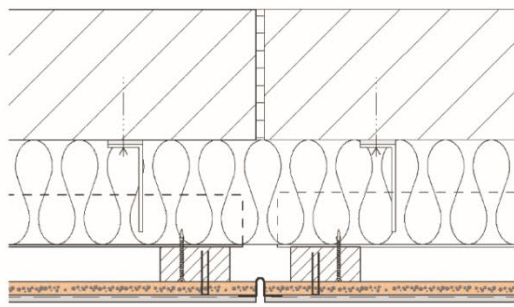
A.5 The installation should be kept above the DPC level and a minimum of 150 mm above the ground level.

A.6 The detailing at doors and windows must accommodate any increased depth. In addition, every attempt should be made to avoid thermal bridging at the reveals of openings and at separating wall junctions.

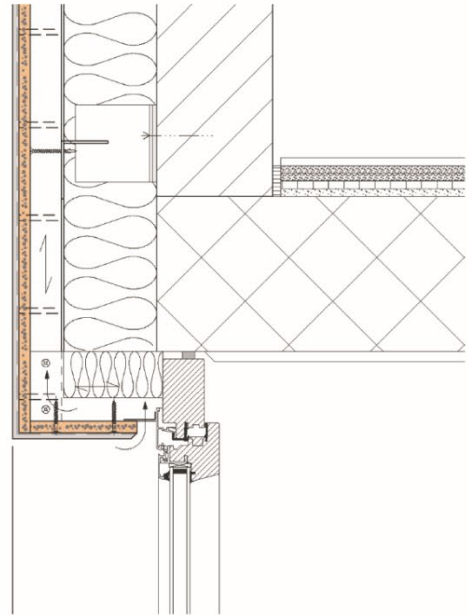
A.7 The substrate wall to which the boards are fixed must satisfy the requirements of the relevant national Building Regulations and Standards with respect to airtightness and watertightness.

A.8 Typical installation of the product is shown in Figure 2.

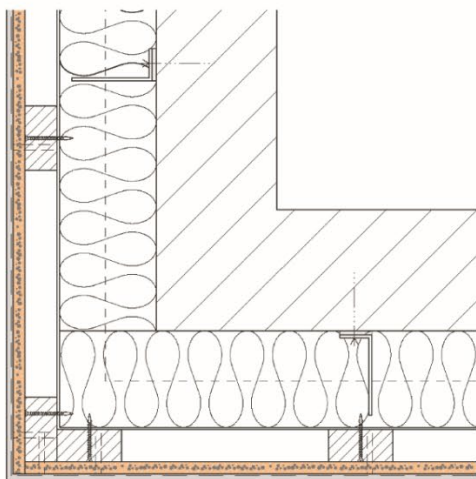
Figure 2 Typical installation details



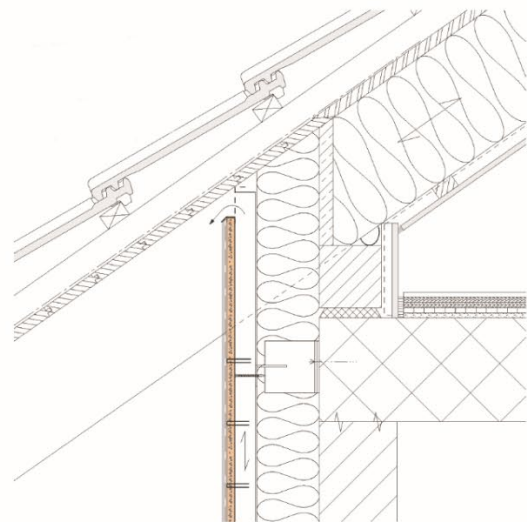
movement joint



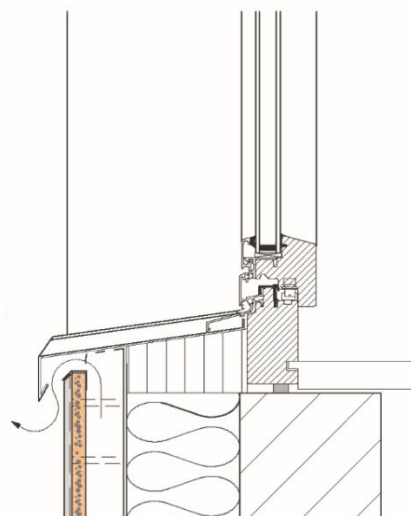
opening detail



corner detail



eaves detail



sill detail

A.9 The level of supervision during installation of the product and the associated structure must be sufficient to ensure the quality of workmanship.

A.10 When a breather membrane is required, it must be installed and properly overlapped in accordance with the instructions of the membrane manufacturer and the building designer.

A.11 All window and door openings must be sealed strictly in accordance with the Certificate holder's installation instructions to ensure air and water impermeability.

A.12 The product can be cut using power tools⁽¹⁾. For the best results, tungsten tipped blades should be used. To minimise the amount of dust, vacuum extraction should be applied. Without power tools, cutting can be carried out using a stout sharp knife or hand saw by scoring along a straight edge through the glass-fibre mesh, breaking the board over a supported edge and cutting through the underside mesh. Adequate PPE should be worn.

(1) Rail-guided circular saws are used for straight edges, and jigsaws and core drills for details.

A.13 The Certificate holder's advice should be sought regarding the preparation and application of the render system, including application details relating to starter tracks, around apertures, control joints including fire breaks and expansion joints and ventilation.

Bibliography

- BS 476-21 : 1987 *Fire tests on building materials and structures — Methods for determination of the fire resistance of loadbearing elements of construction*
- BS 8000-5:1990 *Workmanship on building sites. Code of practice for carpentry, joinery and general fixings*
- BS 8417 : 2007 *Code of practice and advises on the choice of timber species and the use and application of wood preservatives depending on the end use*
- BS EN 351-1 : 2013 *Durability of wood and wood-based products — Preservative-treated solid wood — Classification of preservative penetration and retention*
- BS EN 1365-1 : 2012 *Fire resistance tests for loadbearing elements — Walls*
- BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 : Actions on structures — General actions — Wind actions*
- BS EN 1993-1-1 : 2005 *Eurocode 3 : Design of steel structures — General rules and rules for buildings*
- BS EN 1993-1-2 : 2005 *Design of steel structures. General rules. Structural fire design*
- BS EN 1993-1-3 : 2006 *Design of steel structures. General rules. Supplementary rules for cold-formed members and sheeting*
- BS EN 1995-1-1 : 2004 + A2 : 2014 *Eurocode 5 : Design of timber structures — General — Common rules and rules for buildings*
- BS EN 1995-1-2 : 2004 *Eurocode 5 : Design of timber structures — General — Structural fire design*
- BS EN 12467 : 2003 *Fibre-cement flat sheets — Product specification and test methods*
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- BS EN 13501-1 : 2002 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*
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- BS EN 13914-1 : 2005 *Design, preparation and application of external rendering and internal plastering — External rendering*
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- EN 319 : 1993 *Particleboards and fibreboards — Determination of tensile strength perpendicular to the plane of the board*
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ETAG 004 : 2000 *Guideline for European Technical Approval of External Thermal Insulation Composite Systems with Rendering*

MOAT 22 UEAtc directives for the assessment of external insulation systems for walls (expanded polystyrene insulation faced with a thin rendering)

PD 6693-1:2019 *Recommendations for the design of timber structures to Eurocode 5: Design of timber structures. General - common rules and rules for building*

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