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Agrément Certificate

21/5983

Product Sheet 1

WEATHERKEM SHEATHING BOARD

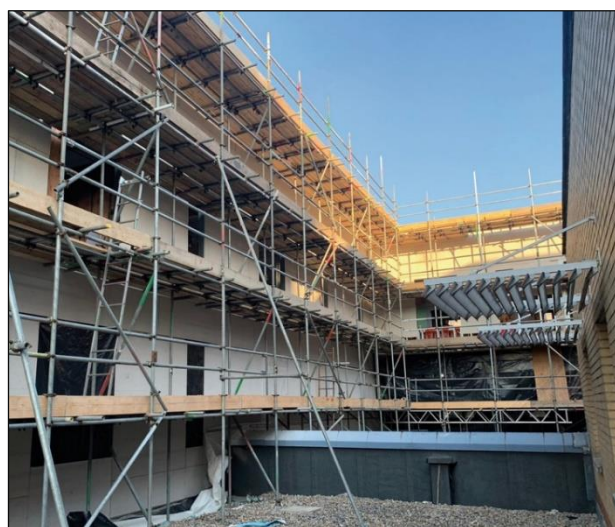
ECOPRO WeatherKem

This Agrément Certificate Product Sheet⁽¹⁾ relates to ECOPRO WeatherKem, a calcium silicate fibre cement board for use as a non-structural sheathing board behind facade/rainscreen cladding applied to lightweight steel frame, and a liner board for internal walls in domestic and non-domestic 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 product has sufficient strength to resist the loads likely to be encountered in service (see section 6).

Behaviour in relation to fire— the product has a reaction to fire classification of A1 in accordance with BS EN 13501-1 : 2007 (see section 7).

Resistance to moisture— the product has adequate moisture resistance (see section 9).

Durability — the board will have a life equal to that of the building in which it is installed (see section 11).

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 First issue: 21 December 2021

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, ECOPRO WeatherKem, 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 product has sufficient strength and stiffness to sustain and transmit the design loads to the primary structure without excessive deflection. See section 6 of this Certificate.
Requirement:	B2(1)	Internal fire spread (linings)
Requirement:	B3(4)	External fire spread
Comment:		The product can contribute to satisfying these requirements. See section 7.1 of this Certificate.
Requirement:	7(1)	Materials and workmanship
Comment:		The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The product is unrestricted by this Regulation. See sections 7.1 to 7.4 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The use of the product satisfies the requirements of this Regulation. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(b)	Structure
Comment:		The product is acceptable, with reference to Clause 1.1.1 ⁽¹⁾⁽²⁾ of this Standard. See section 6 of this Certificate.
Standard:	2,1	Compartmentation
Comment:		The product is unrestricted by this Standard with reference to Clause 2.1.12 ⁽²⁾ . See sections 7.1, 7.3 and 7.4 of this Certificate.
Standard:	2.2	Separation
Comment:		The product is unrestricted by this Standard with reference to Clauses 2.2.4 ⁽²⁾ , 2.2.5 ⁽²⁾ , 2.2.6 ⁽¹⁾⁽²⁾ , 2.2.7 ⁽¹⁾ and 2.2.8 ⁽¹⁾ . See section 7.1 to 7.4 of this Certificate.
Standard:	2.4	Cavities
Comment:		The product can contribute to satisfying this Standard with respect to Clause 2.4.2 ⁽¹⁾⁽²⁾ . See section 7.1 of this Certificate.
Standard:	2.5	Internal Linings
Comment:		The product can contribute to satisfying this Standard, with reference to Clause 2.5.1 ⁽¹⁾ . See sections 7.1 and 7.4 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The product is unrestricted by this Standard, with reference to Clauses 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See sections 7.1 to 7.4 of this Certificate.

Standard: 7.1(a) **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 satisfying a bronze level of sustainability as defined in this Standard.

Regulation: 12 **Building standards applicable to conversions**
Comment: Comments in relation to the 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 section 11 and the *Installation* part of this Certificate.

Regulation: 30 **Stability**
Comment: The product is acceptable. See section 6 of this Certificate.

Regulation: 34(a)(b) **Internal fire spread – Linings**
Regulation: 35(4) **Internal fire spread - Structure**
Comment: The product can contribute to satisfying these Regulations. See sections 7.1 to 7.4 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* (3.2) and 12 *General* (12.6) of this Certificate.

Additional Information

NHBC Standards 2021

In the opinion of the BBA, ECOPRO WeatherKem, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, 6.3 *Internal walls*, 6.9 *Curtain walling and cladding*, 6.10 *Light steel framing* and 9.2 *Wall and ceiling finishes*.

CE marking

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

Technical Specification

1 Description

1.1 ECOPRO WeatherKem is a fibre cement board, which satisfies the requirements of Category A, Class 2 boards to BS EN 12467 : 2012.

1.2 The board has the nominal characteristics:.

Length (± 3 mm)	2400
Width (± 2 mm)	1200
Thickness (± 0.5 mm)	12
Density ($\text{kg}\cdot\text{m}^{-3}$)	1300.

1.3 Ancillary items or components specified for use with the board, but outside the scope of this Certificate, include:

- fixings — TBF 4.8 mm by 45 mm long (with 11 mm diameter head) stainless steel screws with minimum yield strength of $450 \text{ N}\cdot\text{mm}^{-2}$ for attaching ECOPRO WeatherKem sheathing board to the steel frame
- insulation — used within the frame or cavity
- steel framing — at 600 mm supports
- joint seal — self-adhesive tape and sealant for sealing board joints (KemStop FR Flexi Sealant)
- joint tape (Ampacoll Flexx Tape)
- sound rated sealant
- breather membrane.

2 Manufacture

2.1 The ECOPRO WeatherKem board is manufactured from wet sheet, prior to a process of autoclave and surface finishing.

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

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

3 Delivery and site handling

3.1 The boards are supplied on timber pallets. Each pallet contains a label with the manufacturer's name, product name, board dimensions, batch number and quantity of boards.

3.2 The boards must be stored in a dry and ventilated environment on a flat and level surface to avoid the possibility of contamination. To avoid flexing of the boards, it is advised that the boards are supported when being handled. The Certificate holder's instructions on site handling and storage must be followed.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on ECOPRO WeatherKem.

Design Considerations

4 Use

4.1 ECOPRO WeatherKem is satisfactory for use as an external non-structural sheathing board or as an internal lining board applied to lightweight steel frame walls with stud centres at maximum 600 mm.

4.2 The boards satisfy Category A⁽¹⁾, Class 2 requirements in accordance with BS EN 12467 : 2012.

(1) Boards which are intended for applications where they may be subjected to heat, high moisture and severe frost.

4.3 The frame to which the board is fixed must be structurally sound, and designed and constructed in accordance with the requirements of the relevant national Building Regulations and Standards, namely:

- steel-frame — in accordance with BS EN 1993-1-1: 2005 and BS EN 1993-1-3 : 2006, and their UK National Annexes.

4.4 Any external finishes/cladding applied must be such that the cavity between the back of the cladding and the sheathing board satisfies the minimum cavity width required by NHBC Standards 2021, Chapter 6.9 and 6.10.

4.5 Wall-mounted fittings (outside the scope of this Certificate) must be fixed through the board into the steel frame, using suitable fixings. The recommendations of the manufacturer must be followed.

5 Practicability of installation

The board is designed to be installed by a competent builder, or contractor, trained and experienced with this type of product.

6 Strength and stability



6.1 When tested in accordance with BS EN 12467 : 2012, a 12 mm thick ECOPRO WeatherKem board achieved a mean Modulus of Rupture (MOR) of 8.2 MPa, therefore satisfying the requirements for a Class 2 board.

6.2 The designer must ensure that the steel frame has adequate strength to resist all lateral, and any other, loads on its own. No contribution may be assumed from the boards in this regard. The adequacy of the structural frame is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual.

6.3 When tested in accordance with Annex I.1.1 of EAD 090062-00-0404, the fixing (as specified in clause 1.3) for the 12 mm board was found to have the characteristic pull-through resistance shown in Table 1.

Table 1 Characteristic Pull-through Resistance

Ring Diameter (mm)	Centre Position [N]	Middle-Edge Position [N]	Corner Position [N]
350	1182	333	3024
270	1487	679	6294
180	1546	779	4864



6.4 Design wind actions must be calculated 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, it is recommended that a partial load factor of 1.5 is applied to determine the design wind load to be resisted by the wall.

6.5 A suitably qualified and experienced individual must check the design and method of installation of the product.

6.6 The cladding support system and other applied loads must be fixed back through the sheathing board to the steel-frame structure.

7 Behaviour in relation to fire



7.1 The reaction to fire classification for the boards is A1 in accordance with BS EN 13501-1 : 2007.

(1) Fire report from the Efectis, reference number EFR-19-000762, issue no 1 dated 9 July 2019.

External wall sheathing

7.2 The product is not subject to any restriction on building height or proximity to boundaries.

Compartment walls

7.3 The product is not subject to any restriction in compartment walls.

Internal linings

7.4 The product is not subject to any restriction as an internal lining.

7.5 Designers should 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.

7.6 Where the boards are incorporated in a wall construction where fire resistance is required by the documents supporting the national Building Regulations, the fire resistance should be confirmed by a suitably qualified and experienced individual or by a test from a suitably accredited laboratory.

8 Thermal insulation

When tested in accordance to BS EN 12664: 2001, ECOPRO WeatherKem boards achieved a thermal conductivity (λ value) of $0.24 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ and as such will not have a significant effect on the thermal transmittance (U value) of a wall construction.

9 Water impermeability

9.1 When tested for water impermeability in accordance with BS EN 12467 : 2012, the board showed no signs of water penetration after the 24-hour test and no dampness or dripping on the undersides of the sample. Therefore, the board satisfied the requirements of a Category A board in accordance with this Standard.

9.2 External walls must have suitable weather protection on the outside and a drained and ventilated cavity must be provided between the back of the wall cladding and the board. The product must be treated as a conventional sheathing board with regard to detailing and damp-proofing at openings, eaves and sole plates, and the fixing of wall ties. Where required by the design, the addition of a breather membrane must be in accordance with BS 5250 : 2021.

10 Maintenance

10.1 As the boards have suitable durability, will normally be confined within the building structure and, in most cases, will be covered with finishes, maintenance is not required.

10.2 Under normal conditions of use, the boards are unlikely to suffer damage but, if damage does occur, the boards must be replaced.

11 Durability



11.1 The durability of the board is satisfactory. Provided the board is used in accordance with this Certificate and the Certificate holder's instructions, and is fixed to satisfactory, stable and durable structures by fully trained operatives, it should have a service life equal to that of the structure in which it is installed.

11.2 Care should be taken when designing, detailing and constructing buildings to ensure that moisture does not accumulate within the board.

Installation

12 General

12.1 ECOPRO WeatherKem must be installed in accordance with this Certificate and the Certificate holder's instructions.

12.2 Steel framing should comply with all national building regulation requirements and be designed to provide support with a maximum allowable deflection of $L/360$ under all intended live (including wind) and dead loads.

12.3 Metal studs should be at a maximum of 600 mm centres. All board edges must be fixed to framing members.

12.4 A moisture resistant barrier and/or vapour barrier should be installed as necessary and in accordance with the guidelines given in *NHBC Standards 2021*, Chapters 6.10.18 and 6.10.19. The requirement for this, along with the type and specific placement or location of such barrier will vary based on building type and performance requirements as specified by the designer of the building.

12.5 The final layout and pattern of fixings on the boards depends on the wind actions and other loads to be resisted.

12.6 It is important to observe appropriate Health and Safety legislation when working on site (that is, using personal protective clothing and 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.

12.7 Reasonable precautions must be taken to ensure the boards are not damaged during installation and in-service.

13 Procedure

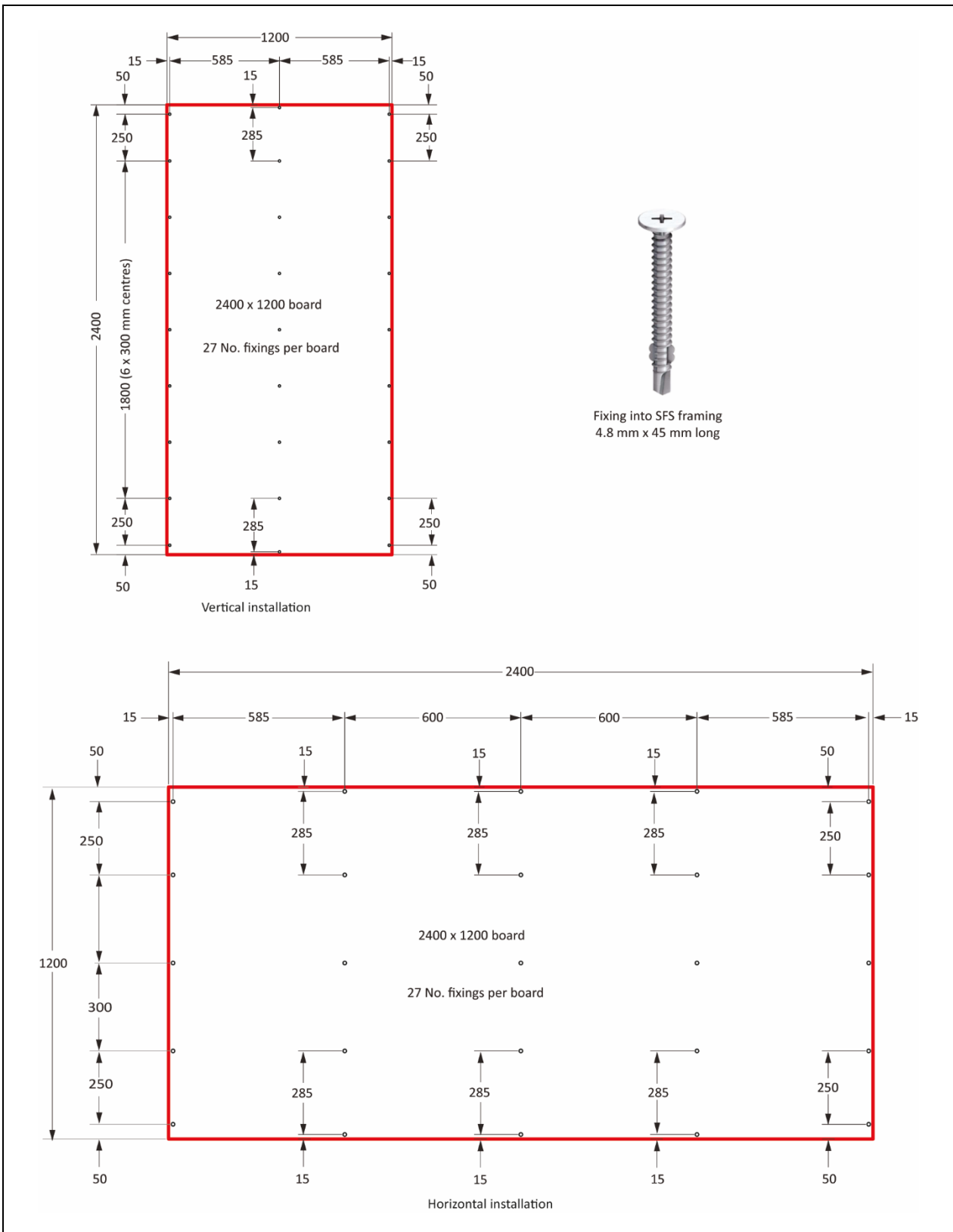
13.1 The boards are fixed to the steel studs using the specified screws (see section 1.3) and at centres/pattern detailed in Figure 1.

13.2 Once the first board is installed, subsequent boards are installed butt-jointed, ensuring that 2 mm gaps are present.

Joint Treatment

13.3 The boards are installed allowing for a nominal 2mm wide joint between the board. The joint is sealed between the boards and around the perimeter edges using a bead of KemStop FR Flexi Sealant fire and sound rated sealant. For air tightness, Ampacoll Flexx Tape is also applied to the joints in accordance with Kemwell Fire International Ltd. Installation Guide.

Figure 1 WeatherKem Board Standard Fixing Detail



Technical Investigations

14 Investigations

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

14.2 An assessment was made of test reports relating to the reaction to fire classification of the product to BS EN 13501-1: 2007.

14.3 An assessment was made on durability requirement for Category A board according to BS EN 12467 : 2012 for:

- density
- dimensional variation
- resistance to freeze/thaw
- resistance to warm water soak
- resistance to soak/dry cycling
- resistance to heat/rain cycling
- water impermeability
- mechanical characteristics- bending strength (MOR).

14.4 Thermal conductivity value of the product as specified in section 8.

14.5 Pull through resistance of fixing as specified in clause 1.3.

14.6 An assessment was made of the practicability of installation.

Bibliography

BS 5250 :2021 *Management of moisture in buildings — Code of practice*

BS EN 1990 : 2002 + A1 : 2005 *Eurocode – Basic of structural design*

NA TO BS EN 1990 : 2002 + A1 : 2005 *UK National Annex for Eurocode. Basis of structural design*

BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 — Actions on structures — General actions — Wind actions*

NA + A1 : 2010 to BS EN 1991-1-4 : 2005 + A1 : 2010 *UK National Annex to Eurocode 1 — Actions on structures — General actions — Wind actions*

BS EN 1993-1-1 : 2005 + A1 : 2014 *Eurocode 3 — Design of steel structures — General rules and rules for buildings*

NA + A1 : 2014 to BS EN 1993-1-1 : 2005 + A1 : 2014 *UK National Annex to Eurocode 3 — Design of steel structures — General rules and rules for buildings*

BS EN 1993-1-3 : 2006 *Eurocode 3 — Design of steel structures — General rules — Supplementary rules for cold-formed members and sheeting*

NA to BS EN 1993-1-3 : 2006 *UK National Annex to Eurocode 3 — Design of steel structures — General rules — Supplementary rules for cold-formed members and sheeting*

BS EN 12467 :2012 + A2 : 2018 *Fibre-cement flat sheets — Product specification and test methods*

BS EN 12667 : 2001 *Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Products of high and medium thermal resistance*

BS EN 13501-1 : 2007 + A1 : 2009 *Fire classification of construction products and building elements — Classification using test data from reaction to fire test*

EAD 090062-00-0404 *Kits for external wall claddings mechanically fixed*

EH40/2005 *Workplace Exposure Limits — containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations (as amended)*

15 Conditions

15.1 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.

15.2 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.

15.3 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.

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

15.5 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.

15.6 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.