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Agrément Certificate

14/5134

Product Sheet 10 Issue 2

KINGSPAN KOOLTHERM RANGE FOR FLOORS, WALLS AND PITCHED ROOFS

KOOLTHERM K15 RAINSCREEN INSULATION BOARD

This Agrément Certificate Product Sheet⁽¹⁾ relates to Kooltherm K15 Rainscreen Insulation Board, a rigid phenolic (PF) board with perforated composite foil-facings on both sides, for use as thermal insulation on new and existing steel-frame or masonry walls, in domestic and non-domestic buildings. The product is used, with height restrictions, in conjunction with ventilated cladding systems.

(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

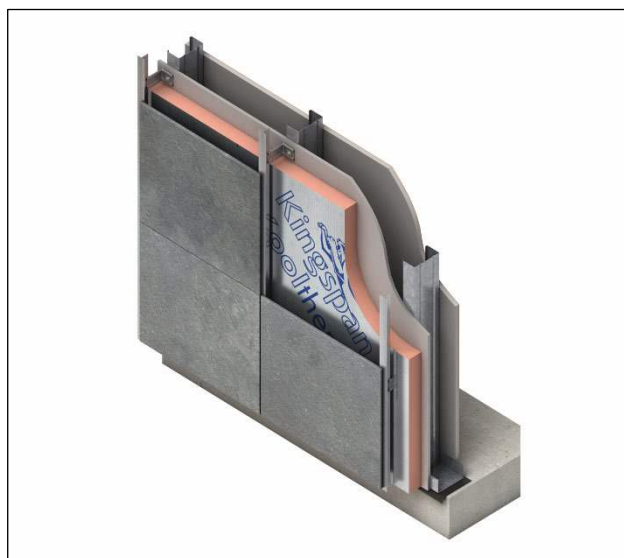
Ongoing contractual Scheme elements†:

- 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 Second issue: 1 July 2024
Originally certified on 24 November 2020



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 Kooltherm K15 Rainscreen Insulation Board, 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: 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 is restricted by this Requirement. See section 2 of this Certificate.
Requirement: C2(a)	Resistance to moisture
Comment:	The product can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement: C2(b)	Resistance to moisture
Comment:	The product can contribute to satisfying this Requirement. See section 9 of this Certificate.
Requirement: C2(c)	Resistance to moisture
Comment:	The product can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement: L1(a)(i)	Conservation of fuel and power
Comment:	The product can contribute to satisfying this Requirement; however, compensating fabric/service measures may be required. See section 6 of this Certificate
Regulation: 7(1)	Materials and workmanship
Comment:	The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation: 7(2)	Materials and workmanship
Comment:	The product is restricted by this Regulation. See section 2 of this Certificate.
Regulation: 25B	Nearly zero-energy requirements for new buildings
Regulation: 26	CO₂ emission rates for new buildings
Regulation: 26A	Fabric energy efficiency rates for new dwellings (applicable to England only)
Regulation: 26A	Primary energy rates for new buildings (applicable to Wales only)
Regulation: 26B	Fabric performance values for new dwellings (applicable to Wales only)
Regulation: 26C	Target primary energy rates for new buildings (applicable to England only)
Regulation: 26C	Energy efficiency rating (applicable to Wales only)
Comment:	The product can contribute to satisfying these Regulations; however, compensating fabric/service measures may be required. See section 6 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1)	Fitness and durability of materials and workmanship
Comment:	The product is acceptable. See sections 8 and 9 of this Certificate.

Regulation:	8(3)	Fitness and durability of materials and workmanship
Comment:		The product is restricted by this Regulation. See section 2 of this Certificate.
Regulation:	9	Building standards – construction
Standard:	2.4	Cavities
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 2.4.2 ⁽¹⁾⁽²⁾ , 2.4.4 ⁽¹⁾ and 2.4.6 ⁽²⁾ . See section 2 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The product is restricted by this Standard, with reference to clauses 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See section 2 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The product is restricted by this Standard, with reference to clause 2.7.1 ⁽¹⁾⁽²⁾ . See section 2 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.4.1 ⁽¹⁾⁽²⁾ and 3.4.5 ⁽¹⁾⁽²⁾ . See section 3 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 3.10.3 ⁽¹⁾⁽²⁾ . See section 9 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1 ⁽¹⁾⁽²⁾ , 3.15.4 ⁽¹⁾⁽²⁾ and 3.15.5 ⁽¹⁾⁽²⁾ . See section 3 of this Certificate.
Standard:	6.1(b)(c)	Energy demand
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 6.1.1 ⁽¹⁾ and 6.1.2 ⁽²⁾ ; however, compensating fabric/service measures may be required. See section 6 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 6.2.1 ⁽¹⁾⁽²⁾ , 6.2.3 ⁽¹⁾ , 6.2.4 ⁽¹⁾⁽²⁾ , 6.2.5 ⁽²⁾ , 6.2.6 ⁽¹⁾⁽²⁾ , 6.2.7 ⁽¹⁾ , 6.2.8 ⁽²⁾ , 6.2.9 ⁽¹⁾⁽²⁾ , 6.2.10 ⁽¹⁾ and 6.2.11 ⁽¹⁾⁽²⁾ ; however, compensating fabric/service measures may be required. See section 6 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. In addition, the product can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4 ⁽¹⁾⁽²⁾ , 7.1.6 ⁽¹⁾⁽²⁾ , 7.1.7 ⁽¹⁾⁽²⁾ , 7.1.9 ⁽²⁾ and 7.1.10 ⁽²⁾ . See section 6 of this Certificate.
Regulation:	12	Building standards – conversion
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(1)(a)(i)(iii)	Fitness of materials and workmanship
Comment:	(b)(i)(ii)	The product is acceptable. See sections 8 and 9 of this Certificate.

Regulation:	23(2)	Fitness of materials and workmanship
Comment:		The product is restricted by this Regulation. See section 2 of this Certificate.
Regulation:	28(a)	Resistance to moisture and weather
Comment:		The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The product can contribute to satisfying this Regulation. See section 9 of this Certificate.
Regulation:	29	Condensation
Comment:		The product can contribute to satisfying this Regulation. See section 3 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 is restricted by this Regulation. See section 2 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Comment:		The product can contribute to satisfying this Regulation; however, compensating fabric/service measures may be required. See section 6 of this Certificate.
Regulation:	40(2)	Target carbon dioxide emission rate
Regulation:	43(1)(2)	Renovation of thermal elements
Regulation:	43B	Nearly zero-energy requirements for new buildings
Comment:		The product can contribute to satisfying these Regulations; however, compensating fabric/service measures may be required. See section 6 of this Certificate.

Additional Information

Product history

This Product Sheet (PS 10) only refers to material manufactured after 9 March 2022, and sold under Declaration of Performance 1002.CPR.2013.K15.009 (et seq).

Please see OPSS (Office for Product Safety and Standards) document Regulatory Statement: Kingspan Insulation Products, published 11 May 2022, for information on the reaction to fire behaviour of material manufactured and sold under Declaration of Performance 1002.CPR.2013.K15.007 between 1 August 2021 and 9 March 2022.

Fulfilment of Requirements

The BBA has judged Kooltherm K15 Rainscreen Insulation Board to be satisfactory for use as described in this Certificate. The product has been assessed as a rigid phenolic board with perforated composite foil-facings, for use as thermal insulation on new and existing steel-frame or masonry walls, in domestic and non-domestic buildings. The product is used, with height restrictions, in conjunction with ventilated cladding systems, which are outside the scope of this Certificate.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. Kooltherm K15 Rainscreen Insulation Board consists of a closed-cell rigid phenolic (PF) foam, with perforated composite foil-facings on both sides.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Length (mm) ⁽¹⁾	2400
Width (mm) ⁽¹⁾	1200
Thickness (mm) ⁽¹⁾	25 to 150
Edge profile	Square

(1) Other board sizes and thicknesses within the above range may be available on request.

Ancillary Items

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:

- steel-frame
- masonry
- cladding
- self-adhesive aluminium foil tape
- fixings and aluminium top hat supports and brackets
- sheathing and lining boards
- breather membrane
- air and vapour control layer (AVCL)
- tapes
- fire barriers
- tiles.

Applications

The product is intended for use with height restrictions:

- as thermal insulation on new and existing steel-frame or masonry walls (where masonry includes clay and calcium silicate bricks, concrete blocks, and natural and reconstituted stone blocks), in domestic and non-domestic buildings
- in conjunction with ventilated cladding systems.

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

Not applicable.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 Reaction to fire

2.1.1 The product was tested for reaction to fire and the classification is given in Table 2.

Table 2 Reaction to fire classification

Material	Assessment method	Requirement	Result ⁽¹⁾
K15 Rainscreen Insulation Board	BS EN 13501-1 : 2018	Value achieved	C-s2, d0

(1) Test report EUI-22-000057-A-Revision-1 (Issue 2, 10/05/2022), issued by EFECTIS UK/Ireland Limited – available from the Certificate holder.

2.1.2 Constructions tested to BS 8414-1 : 2015 and BS 8414-2 : 2015 (summarised in Table 3 of this Certificate) met the requirements of BRE Report BR 135 : 2013 with regard to the temperature rise recorded by both internal and external thermocouples. The nature of the mechanical performance must be considered as part of the overall risk assessment when specifying the system, on a case-by-case basis. Copies of the Classification Reports in accordance with BR 135 : 2013 Annex A⁽¹⁾ and Annex B⁽²⁾ are available from the Certificate holder.

(1) Report reference BRE P114679-1001, Issue 1.

(2) Report reference BRE P112065-1001, Issue 1.

Table 3 BS 8414 - 1 : 2015 and BS 8414 - 2 : 2015, construction summaries⁽¹⁾

Test report and date	Wall construction					
	Lining	Substrate	Sheathing	K15 insulation thickness	Residual cavity thickness	Cladding
BS 8414-1 : 2015 Masonry substrate BRE Global – P114679-1000	—	Masonry block wall	—	60 mm	40 mm	Eternit Equitone Natura panels 8 mm thick
BS 8414-2 : 2015 Structural steel frame BRE Global - P112065-1000	Gyproc plasterboard 2 x 12.5 mm	Galvanized steel 'C' stud 100 x 50 x 1.2 mm	Cement particle board 1 x 12 mm	100 mm and 80 mm ⁽²⁾	50 mm	Masonry - Red stock brick 219 x 102 x 63 mm
Breather membrane						

(1) All materials described, with the exception of Kooltherm K15, are outside the scope of this Certificate.

(2) 80 mm of Kooltherm K15 board was used in a small area of the test wall. See report for details.

2.1.3 The constructions in Table 3 are summaries only. Full details are given in the individual reports mentioned in the Table. Users must satisfy themselves, and relevant verifiers, that a construction intended for a particular site exactly matches the description in the specific test report.

2.1.4 In England and Wales, the product is unrestricted in terms of proximity to a relevant boundary, but other than for the constructions given in Table 3, must not be used in buildings with a storey 18 m or more above the ground and, in England only, in residential buildings with a storey 11 m or more in height.

2.1.5 In Northern Ireland, the product is unrestricted in terms of proximity to a relevant boundary but must not be used in buildings with a storey 18 m or more above the ground.

2.1.6 In Scotland, with the exceptions given in section 2.1.7, the product must not be used in buildings that have a storey 11 m or more above the ground or within 1 m of a relevant boundary.

2.1.7 In Scotland, the constructions referred to in Table 3 may be used on non-relevant buildings with a storey 11 m or more above the ground, and in hospitals, care homes, entertainment buildings and assembly buildings with a storey at a height of less than 11 m above the ground.

2.1.8 Designers must refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity closers and barriers, fire stopping of service penetrations and combustibility limitations for other materials and components used in the overall wall construction, including the selected rainscreen cladding system.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Effectiveness against rising damp

3.1.1 The product was tested for short term water absorption by partial immersion and the results are given in Table 4.

Table 4 Short term water absorption by partial immersion

Product assessed	Assessment method	Requirement	Result
Kooltherm K15	BS EN 1609 : 2013	Value achieved	$\leq 1.25 \text{ kg}\cdot\text{m}^{-2}$

3.2 Water vapour permeability

3.2.1 The product was tested for water vapour permeability and the results are given in Table 5.

Table 5 Water vapour resistance / resistivity

Material	Assessment method	Requirement	Result
Foam core	BS EN 12086 : 2013	Declared value	Resistivity: $420\text{MN}\cdot\text{s}\cdot\text{g}^{-1}\cdot\text{m}^{-1}$
Foil facing - perforated			Resistance: $9 \text{ MN s}\cdot\text{g}^{-1}$

3.2.2 An air and vapour control layer (AVCL) must be used in steel constructions, should the condensation risk analysis show this is necessary.

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Data were assessed for the following characteristics.

6.1 Thermal conductivity

6.1.1 The product was tested for thermal conductivity and results are given in Table 6.

Table 6 Thermal conductivity

Product assessed	Insulation thickness (mm)	Assessment method	Requirement	Thermal conductivity ($\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$)
Kooltherm K15	≥ 45	BS EN 13166 : 2012	Declared value (λ_D)	0.021
	25 to 44			0.022

6.2 Thermal performance

6.2.1 The U value of a completed wall construction will depend on the insulation thickness, number and type of fixings, the rainscreen support system, and the insulating value of the substrate and its internal finish. Calculated U values for example constructions are given in Table 7.

Table 7 Example U values

U value (W·m ⁻² ·K ⁻¹)	Insulation thickness requirement (mm)		
	Steel-frame rainscreen system ⁽¹⁾⁽²⁾	Masonry rainscreen system ⁽²⁾⁽⁵⁾	
	Insulation thickness installed against the sheathing board – no insulation in a 90 mm steel-frame system (mm) ⁽³⁾	Insulation thickness installed against the sheathing board – fully filled with insulation in a 90 mm steel-frame system (mm) ⁽⁴⁾	Insulation thickness installed against the masonry wall (mm)
0.13	— ⁽⁶⁾	— ⁽⁶⁾	— ⁽⁶⁾
0.15	— ⁽⁶⁾	— ⁽⁶⁾	— ⁽⁶⁾
0.17	— ⁽⁶⁾	— ⁽⁶⁾	— ⁽⁶⁾
0.18	— ⁽⁶⁾	— ⁽⁶⁾	— ⁽⁶⁾
0.21	— ⁽⁶⁾	135	— ⁽⁶⁾
0.26	120	85	120
0.28	105	70	105
0.30	95	60	95
0.35	75	45	75

(1) Construction, external to internal: 10 mm rainscreen cladding, open fully ventilated 50 mm clear cavity, Kooltherm K15 Rainscreen Insulation Board, 12 mm cement particle board ($\lambda = 0.23 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$), 90 mm light steel frame system (0.2% fraction) ($\lambda = 50 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$), VCL and 15 mm plasterboard ($\lambda = 0.25 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$).

(2) A fixing correction factor (ΔU_f) of $0.1 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ has been applied, to allow for the thermal bridging of the fixings and rainscreen brackets.

(3) Kooltherm K15 Rainscreen Insulation Board installed against the cement particle board with no insulation in the steel-frame.

(4) Kooltherm K15 Rainscreen Insulation Board installed against the cement particle board with 90 mm of secondary insulation in the steel-frame ($\lambda = 0.038 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$) with a 0.2% steel ($\lambda = 50 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$) frame fraction.

(5) Construction, external to internal: 10 mm rainscreen cladding, open fully ventilated 50 mm clear cavity, Kooltherm K15 Rainscreen Insulation Board, 140 mm dense concrete blocks ($\lambda = 1.13 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$), 15 mm adhesive cavity (20% adhesive bridge, $\lambda = 0.43 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$) and 15 mm plasterboard ($\lambda = 0.25 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$).

(6) Additional insulation required. See section 6.2.3 of this Certificate.

6.2.2 On the basis of data assessed, the product can contribute towards a construction satisfying the national Building Regulations in respect of energy economy and heat retention.

6.2.3 For improved energy or carbon savings, designers must consider appropriate fabric and/or services measures.

7 Sustainable use of natural resources

Not applicable.

8 Durability

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

8.2 The product was tested for dimensional stability and the results are given in Table 8.

Table 8 Dimensional stability

Product assessed	Assessment method	Requirement	Result
Kooltherm K15	Dimensional stability to BS EN 1604 : 2013 (-20°C for 48 hours)	Length and width $\leq 1.5\%$ change Thickness $\leq 1.5\%$ reduction	Pass
Kooltherm K15	Dimensional stability to BS EN 1604 : 2013 (70°C/90% RH for 48 hours)	Length and width $\leq 1.5\%$ change Thickness $\leq 1.5\%$ reduction	Pass

8.3 Service life

Under normal service conditions, the product will have a life equivalent to the structure in which it is incorporated, 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 wall and sub-frame must be structurally sound and must have been designed and constructed by a suitably competent and experienced individual in accordance with the following Standards and, where appropriate, their UK National Annexes:

- BS 8000-3 : 2020
- BS EN 845-1 : 2013
- BS EN 1993-1-2 : 2005 and its UK National Annex
- BS EN 1993-1-3 : 2006 and its UK National Annex
- BS EN 1996-1-1 : 2005 and its UK National Annex
- BS EN 1996-1-2 : 2005 and its UK National Annex
- BS EN 1996-2 : 2006 and its UK National Annex
- BS EN 1996-3 : 2006 and its UK National Annex.

9.1.3 Certain rainscreen systems, such as those with open joints, may require the addition of a breather membrane incorporated into the system. The requirement for a membrane must be determined by the system designer and is outside the scope of this Certificate.

9.1.4 Care must be taken in the overall design and construction of elements incorporating the product to ensure appropriate:

- sheathing or bracing for frame elements. The product must not be relied on to provide any structural contribution, eg racking strength
- fire resistance, for elements and junctions
- cavity barriers and fire dampers
- continuity of insulation to minimise thermal bridging
- resistance to the ingress of precipitation and moisture from the ground.

9.1.5 Wind loads must be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. The higher-pressure coefficients applicable to corners of buildings must be used.

9.1.6 Although the product will not be directly exposed to wind, each installation must be designed to withstand, without damage or permanent deformation, the pressures imposed by wind forces. The product will experience substrate movement which must be considered in the structural design of the construction.

9.1.7 The adequacy of fixing to the structural frame or substrate for specific installations is outside the scope of this Certificate and must be verified by a suitably experienced and competent individual. Particular care is required around window and door openings to ensure that the structure is capable of sustaining additional weight owing to reveal/frame details.

9.1.8 External walls must be in a good condition and must resist the ingress of rain.

9.1.9 The designer must select a construction appropriate to the local wind-driven rain index to BS EN 1996-2 : 2006 and its UK National Annex, paying due regard to the design detailing, workmanship and materials to be used. It is essential that such walls are designed and constructed to incorporate the normal precautions against moisture ingress.

9.1.10 The air gap between the face of the insulation and the back of the rainscreen panels must be of sufficient width to allow any water passing the joints to run down the back of the rainscreen panels and be discharged externally without wetting the insulation or the backing wall.

9.1.11 Care must be taken to ensure that the types of façades and wall finishes, and the design and detailing around openings, are appropriate for the anticipated exposure conditions and, if necessary, resist the movement of the frame.

9.1.12 The product must be kept dry before the cladding is applied.

9.1.13 The construction must be made weathertight as soon as practically possible to ensure maximum protection of the product.

9.1.14 Calculation of the thermal transmittance (U value) of a wall must be carried out in accordance with BS EN ISO 6946 : 2017 and BRE Report BR 443 : 2019.

9.1.15 Care must be taken in the overall design and construction of junctions with other elements and openings to minimise thermal bridges and air infiltration. Detailed guidance can be found in the documents supporting the national Building Regulations.

9.1.16 To resist the passage of moisture from the ground, adequate damp-proof courses (DPCs) and membranes must be provided in accordance with conventional good practice. The boards must not be used in situations where they bridge the DPC in walls.

9.1.17 Cavity barriers must be provided as required by the documents supporting the national Building Regulations.

9.1.18 Weather resistance is provided by an external cladding system (outside the scope of this Certificate).

9.1.19 The detailed provisions given in the documents supporting the national Building Regulations for when the product is installed in close proximity to certain flue pipes and/or heat-producing appliances must be followed.

Interstitial condensation

9.1.20 Walls will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2021.

9.1.21 The product can contribute to maintaining continuity of thermal insulation at junctions with other elements and minimise thermal bridges and air infiltration. Detailed guidance can be found in the documents supporting the national Building Regulations. Advice can also be sought from the Certificate holder.

Surface condensation

9.1.22 In England and Wales, walls will adequately limit the risk of surface condensation adequately when the thermal transmittance (U value) does not exceed $0.7 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in section 9.1.15 of this Certificate.

9.1.23 For buildings in Scotland, wall constructions will be acceptable when the thermal transmittance (U value) does not exceed $1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 9.1.15 of this Certificate.

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 given in Annex A.

9.2.3 The product can be cut using a fine-toothed saw or sharp knife, but care must be taken to prevent damage, particularly to edges.

9.2.4 It is important to ensure a tight fit between boards. Trimming must be accurate, to achieve close butting joints and continuity of insulation.

9.2.5 The boards are fixed against the external face of the sheathing board or against the external face of masonry substrates, in conjunction with masonry cladding or weathertight rainscreen cladding, maintaining a cavity to ensure drainage.

9.2.6 Rainscreen cladding self-adhesive aluminium foil tape must be applied to the external joints of the insulation board to provide a weathertight finish. The Certificate holder can advise on suitable materials for this purpose, but such advice and materials are outside the scope of this Certificate.

9.3 Workmanship

Practicability of installation was assessed by the BBA on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the product must be carried out by a competent general builder experienced with this type of system.

9.4 Maintenance and repair

As the product is confined between the wall and the cladding and has suitable durability, provided the integrity of the cladding is maintained throughout the life of the system, maintenance is not required.

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 the 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 is delivered to site shrink-wrapped in polythene packs containing a label with the product description and characteristics, the manufacturer's name and the BBA logo incorporating the number of this Certificate.

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

11.2.1 Ideally, boards should be stored inside a building. If, however, outside storage cannot be avoided, then the boards must be stacked clear of the ground and covered with an opaque polythene sheet or weatherproof tarpaulin.

11.2.2 The product must be protected from rain, snow and prolonged exposure to sunlight. Boards that have been allowed to get wet or that are damaged must not be used.

11.2.3 Nothing must be stored on top of the boards and care must be exercised to avoid crushing the edges or corners. If damaged, the product must be discarded.

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.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13166 : 2012.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by CIBSE Certification Ltd (Certificate 0001QMS-7) and BS EN ISO 14001 : 2015 by CIBSE Certification Ltd (Certificate 0001EMS-7).

Additional information on installation

Procedure

Fitting boards

A.1 Boards should be installed in a stretcher bond pattern with a minimum 200 mm stagger, using the number of fixings per board as determined by the designer for each specific project.

A.2 Fixings should be evenly distributed over the whole area of the board.

A.3 A minimum of 3.13 fixings per m² are required to secure the board to the wall structure.

A.4 The product should be cut and tightly fitted around wall brackets and penetrations where these occur.

Cladding

A.5 Each proprietary rainscreen cladding system utilises its own mechanisms for attaching cladding panels to the wall structure. Guidance for the site work should be sought from the system manufacturers but such advice is outside the scope of this Certificate.

Bibliography

- BRE Report BR 135 : 2013 *Fire Performance of External Insulation for Walls of Multistorey Buildings*
- BRE Report BR 262 : 2002 *Thermal insulation: avoiding risks*
- BS 5250 : 2021 *Management of moisture in buildings — Code of practice*
- BS 8000-3 : 2020 *Workmanship on building sites — Code of practice for masonry*
- BS 8414-1 : 2015 + A1 : 2017 *Fire performance of external cladding systems — Test methods for non-loadbearing external cladding systems applied to the face of a building*
- BS 8414-2 : 2015 + A1 : 2017 *Fire performance of external cladding systems — Test method for non-loadbearing external cladding systems fixed to and supported by a structural steel frame*
- BS EN 845-1 : 2013 *Specification for ancillary components for masonry — Wall ties, tension straps, hangers and brackets*
- BS EN 1609 : 2013 *Thermal insulating products for building applications — Determination of short term water absorption by partial immersion*
- BS EN 1991-1-4 : 2005 *Eurocode 1 : Actions on structures — General actions — Wind actions*
NA to BS EN 1991-1-4 : 2005 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Wind actions*
- BS EN 1993-1-2 : 2005 *Eurocode 3 — Design of steel structures — General rules — Structural fire design*
NA to BS EN 1993-1-2 : 2005 *UK National Annex to Eurocode 3 — Design of steel structures — General rules — Structural fire design*
- 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 1996-1-1 : 2005 *Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
NA to BS EN 1996-1-1 : 2005 + A1 : 2012 *UK National Annex to Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
- BS EN 1996-1-2 : 2005 *Eurocode 6 : Design of masonry structures — General rules — Structural fire design*
NA to BS EN 1996-1-2 : 2005 *UK National Annex to Eurocode 6: Design of masonry structures — General rules — Structural fire design*
- BS EN 1996-2 : 2006 *Eurocode 6 : Design of masonry structures — Design considerations, selection of materials and execution of masonry*
NA to BS EN 1996-2 : 2006 *UK National Annex to Eurocode 6: Design of masonry structures — Design considerations, selection of materials and execution of masonry*
- BS EN 1996-3 : 2006 *Eurocode 6 : Design of masonry structures : Simplified calculation methods for unreinforced masonry structures*
NA to BS EN 1996-3 : 2006 *UK National Annex to Eurocode 6: Design of masonry structures — Simplified calculation methods for unreinforced masonry structures*
- BS EN 13166 : 2012 *Thermal insulation products for buildings — Factory made products phenolic foam (PF) products — Specification*
- BS EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using data from reaction to fire tests*
- BS EN ISO 9001 : 2015 *Quality management systems — Requirements*
- BS EN ISO 14001 : 2015 *Environmental management systems — Requirements*

Conditions

1 This Certificate:

- relates only to the product 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.

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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 or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA marking and CE marking.

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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.