Kingspan Insulation Ltd
Pembridge
Leominster
Herefordshire HR6 9LA

Tel: 01544 388 601
e-mail: info@kingspaninsulation.co.uk
website: www.kingspaninsulation.co.uk

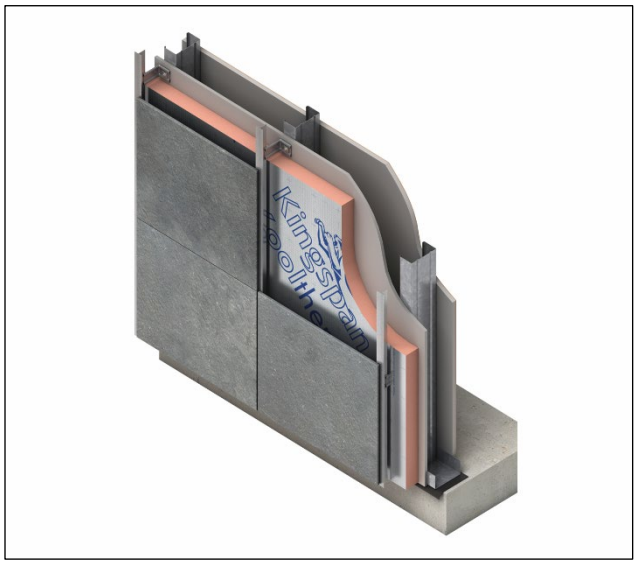
Agrément Certificate
14/5134
Product Sheet 10

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 board with perforated foil composite 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.

(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

Thermal performance — the product has a thermal conductivity of 0.022 or 0.021 $Wm^{-1}{\cdot}K^{-1}$ depending on the thickness (see section 6).

Condensation — the product can contribute to reducing the risk of surface and interstitial condensation (see section 7).

Behaviour in relation to fire — the product is classified as C-s2, d0 in accordance with EN 13501-1 : 2018 and its use is restricted by the national Building Regulations (see section 8).

Durability — under normal service conditions, the product will have a life equivalent to that of the wall structure in which it is incorporated (see section 13).

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

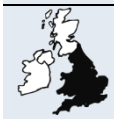
Date of First issue: 28 July 2022

Originally certificated on 24 November 2020

Hardy Giesler
Chief Executive Officer

Regulations

In the opinion of the BBA, 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 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:	**B3(4)**	**Internal fire spread (structure)**
Comment:		The product can contribute to satisfying this Requirement. See section 8.1 of this Certificate.
Requirement:	**B4(1)**	**External fire spread**
Comment:		The product is restricted by this Requirement. See sections 8.1 to 8.3 to 8.5 of this Certificate.
Requirement:	**C2(c)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See sections 7.1, 7.2 and 7.4 of this Certificate.
Requirement:	**L1(a)(i)**	**Conservation of fuel and power**
Comment:		The product can contribute to satisfying this Requirement. See sections 6.1 and 6.2 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The product is acceptable. See section 13 and the *Installation* part of this Certificate.
Regulation:	**7(2)**	**Materials and workmanship**
Comment:		The product is restricted by this Regulation. See sections 8.1 and 8.6 of this Certificate.
Regulation:	**26**	**CO_2 emission rates for new buildings**
Regulation:	**26A**	**Fabric energy efficiency rates for new dwellings (applicable to England only)**
Regulation:	**26A**	**Primary energy consumption 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)**
Comment:		The product can contribute to satisfying these Regulations but compensatory fabric and/or service measures may be required. See sections 6.1 and 6.2 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Durability, workmanship and fitness of materials**
Comment:		The product is acceptable. See section 13 and the *Installation* part of this Certificate.
Regulation:	**8(3)**	**Durability, workmanship and fitness of materials**
Comment:		The product is restricted by this Regulation. See sections 8.1, 8.2, 8.8 and 8.10 of this Certificate.
Regulation:	**9**	**Building standards applicable to 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 sections 8.1, 8.2 and 8.8 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 sections 8.1 to 8.4 and 8.8 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The product is restricted by this Standard, with reference to clauses 2.B.1(1) and 2.E.1(2). See section 8.9 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 sections 7.1, 7.2 and 7.5 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 6.1.1(1), 6.1.2(2) 6.1.3(1), 6.1.4(1), 6.1.6(1)(2) and 6.1.8(2). See sections 6.1 and 6.2 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), 6.2.11(1)(2), 6.2.12(2) and 6.2.13(1)(2). See sections 6.1 and 6.2 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) [Aspects 1(1)(2) and 2(1)], 7.1.6(1)(2) [Aspects 1(1)(2) and 2(1)] and 7.1.7(1)(2) [Aspect 1(1)(2)]. See section 6.1 of this Certificate.
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(1)**	**Fitness of materials and workmanship**
Comment:		The product is acceptable. See section 13 and the *Installation* part of this Certificate.
Regulation:	**23(2)**	**Fitness of materials and workmanship**
Comment:		The product is restricted by this Regulation. See sections 8.1 and 8.7 of this Certificate.
Regulation:	**29**	**Condensation**
Comment:		The product can contribute to satisfying this Regulation. See sections 7.1 and 7.2 of this Certificate.
Regulation:	**35(4)**	**Internal fire spread – Structure**
Comment:		The product can contribute to satisfying this Regulation. See sections 8.1 and 8.2 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The product is restricted by this Regulation. See sections 8.1, 8.3, 8.4 and 8.7 of this Certificate.

Regulation:	**39(a)(i)**	**Conservation measures**
Comment:		The product can contribute to satisfying this Regulation. See sections 6.1 and 6.2 of this Certificate.
Regulation:	**40(2)**	**Target carbon dioxide emission rate**
Comment:		The product can contribute to satisfying this Regulation. See sections 6.1 and 6.2 of this Certificate.

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.3) of this Certificate.

Additional Information

CE marking

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

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.K15.008 (et seq).

Please see OPSS 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.

Technical Specification

1 Description

1.1 Kooltherm K15 Rainscreen Insulation Board comprises a rigid phenolic (PF) insulation core with a perforated composite foil on both sides. The board has the nominal characteristics shown in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Length (mm)(1)	2400
Width (mm)(1)	1200
Thickness (mm)(1)	25 to 150 (in 5 mm increments)
Edge profile	Square

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

1.2 Weather resistance is provided by an external cladding system (outside the scope of this Certificate) which introduces a ventilated cavity to the external face of the product.

1.3 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
- cladding and rainscreen cladding self-adhesive aluminium foil tape
- fixings and aluminium top hat supports and brackets
- sheathing and lining boards
- breather membrane
- fire barriers
- tiles.

2 Manufacture

2.1 Raw materials are injected onto the lower foil-facer on a conveyor belt. The exothermic reaction expands the foam, which then comes into contact with the upper foil-facer. An automated process cures and cuts the product to the required size.

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.

2.3 The management system of Kingspan Insulation Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by CIBSE Certification Ltd (Certificate 0001QMS).

3 Delivery and site handling

3.1 The product is delivered wrapped in plastic. Each pack is labelled with the Certificate holder's name, product name, board dimensions, product code, production lot numbers and the BBA logo incorporating the number of this Certificate.

3.2 Where possible, packs should be stored inside. If stored outside, they should be off the ground on a clean, dry, level surface and covered to protect against moisture and/or mechanical damage.

3.3 When stored, particularly indoors, flammable materials and ignition sources/naked flame should not be permitted in the vicinity.

3.4 Contact with solvents should be avoided, and damaged or wet boards should be discarded.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Kooltherm K15 Rainscreen Insulation Board.

Design Considerations

4 Use

4.1 Kooltherm K15 Rainscreen Insulation Board is effective in reducing the U value (thermal transmittance) of external walls of steel-frame or masonry buildings (where masonry includes clay and calcium silicate bricks, concrete blocks, and natural and reconstituted stone blocks). It is essential that such walls are designed and constructed to incorporate the normal precautions against moisture ingress.

4.2 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 is determined by the system designer and is outside the scope of this Certificate.

4.3 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.

4.4 The wall and sub-frame should be structurally sound and should have been designed and constructed in accordance with the following Standards and, where appropriate, their UK National Annexes:

- BS 8000-3 : 2001
- 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.

4.5 The designer should 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.

4.6 The air gap between the face of the insulation and the back of the rainscreen panels should 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.

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

5 Practicability of installation

The system incorporating the product is designed to be installed by a competent general builder experienced with this type of system.

6 Thermal performance

6.1 Calculations of the thermal transmittance (U value) should be carried out in accordance with BS EN ISO 6946 : 2017, BRE Report BR 443 : 2019 and BRE Digest 465 : 2002, and BS EN ISO 10211 : 2007 (where relevant), using the declared thermal conductivity (λ_D) of the boards shown in Table 2 of this Certificate.

Table 2 Declared thermal conductivity value (λ_D)

Thickness (mm)	Thermal conductivity ($W \cdot m^{-1} \cdot k^{-1}$)
≥ 45	0.021
25 to 44	0.022

6.2 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 3.

Table 3 Example U values

U value ($W \cdot m^2 \cdot K^{-1}$)	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)
0.17	- [6]	- [6]	- [6]
0.18	- [6]	- [6]	- [6]
0.20	- [6]	- [6]	- [6]
0.21	- [6]	135	- [6]
0.22	- [6]	125	- [6]
0.23	145	110	145
0.25	125	90	125
0.26	120	85	120
0.27	110	75	110
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 ($\lambda = 0.23\ W \cdot m^{-1} \cdot K^{-1}$), 90 mm light steel frame system (0.2% fraction), VCL and 15 mm plasterboard ($\lambda = 0.25\ W \cdot m^{-1}\ K^{-1}$).
(2) A fixing correction factor (ΔU_f) of 0.1 $W \cdot m^{-1}\ K^{-1}$ 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 ($\lambda = 0.038\ W \cdot m^{-1}\ K^{-1}$) with a 0.2% steel ($\lambda = 50\ W \cdot m^{-1} \cdot K^{-1}$) 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 ($\lambda = 1.13\ W \cdot m^{-1}\ K^{-1}$), 15 mm adhesive cavity (20% adhesive bridge, $\lambda = 0.43\ W \cdot m^{-1}\ K^{-1}$) and 15 mm plasterboard ($\lambda = 0.25\ W \cdot m^{-1}\ K^{-1}$).
(6) Additional Insulation required.

Junctions

6.3 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.

7 Condensation

Interstitial condensation

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

7.2 The water vapour transmission factors are shown in Table 4.

Table 4 Water vapour transmission factors

Material	Water vapour resistance ($MN \cdot s \cdot g^{-1}$)	Water vapour resistivity ($MN \cdot s \cdot g^{-1} \cdot m^{-1}$)
Foam core	-	420
Foil facing – perforated	9	-

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

Surface condensation

7.4 Walls will adequately limit the risk of surface condensation adequately when the thermal transmittance (U value) does not exceed 0.7 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in section 6.3 of this Certificate.

7.5 Walls will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ 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 6.3 of this Certificate.

8 Behaviour in relation to fire

8.1 The product has a reaction to fire classification of C-s2, d0(1) in accordance with EN 13501-1 : 2018, when placed over any substrate of A1 or A2-s1, d0 with a density $\geq$ 652.5 $kg \cdot m^{-3}$, except gypsum plasterboard. This classification may not be achieved on other substrates which should therefore be confirmed in accordance with the requirements of the documents supporting the national Building Regulations and any consequent restrictions imposed by those documents, on a case-by-case basis.

(1) Report reference Effectis EUI-22-000057-A-Revision 1, copies available from the Certificate holder.

8.2 Cavity barriers should be placed in accordance with the documents supporting the national Building Regulations and should not impede drainage and ventilation pathways.

8.3 Constructions tested to BS 8414-1 : 2015 and BS 8414-2 : 2015, summarised in Table 5 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 should 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 5 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 Breather membrane	100 mm and 80 mm(2)	50 mm	Masonry - Red stock brick 219 x 102 x 63 mm

(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.

8.4 The constructions in Table 5 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.

8.5 In England and Wales, the product may be used in buildings with no storey 18 m or more above the ground, and at any proximity to a boundary. The specific constructions referred to in section 8.3 may be unrestricted in terms of building height, except on building types referred to in section 8.6.

8.6 In England and Wales, the product should not be used on buildings that have a storey more than 18 m above ground level and which contain: one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools.

8.7 In Northern Ireland, the product may be used in buildings with no storey 18 m or more above the ground, and at any proximity to a boundary.

8.8 In Scotland, the product may be used in buildings with no storey 11 m or more above the ground and more than 1 m from a boundary.

8.9 In Scotland, the constructions referred to in section 8.3 may be used on domestic buildings where the external wall of a dwelling is less than 1 m from a boundary and no storey is at a height of 11 m or more above the ground. These constructions may also be used in hospitals, care homes, entertainment buildings and assembly buildings having a storey at a height of less than 11m above the ground and in other non-domestic buildings having a height of 11 m or more above the ground, except on building types referred to in section 8.10.

8.10 In Scotland the product should not be used on buildings that have a storey 11 m or more above ground level and contain; a dwelling, a building used as a place of assembly, or as a place of entertainment or recreation, a hospital, a residential care building or sheltered housing complex or a shared multi-occupancy residential building.

8.11 Designers should 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.

9 Strength and stability

9.1 Although the product will not be directly exposed to wind, each installation should 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.

9.2 The wall and sub-frame to which the product is fixed, or between which it is installed, should be structurally sound and constructed in accordance with sections 4.2 to 4.5 of this Certificate. However, when designing the wall for strength, stability and racking, no contribution from the insulation should be assumed.

9.3 Wind loads should 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 should be used.

9.4 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.

9.5 The cladding must be fixed to the frame or masonry substrate and must be designed by a suitably competent and experienced individual in accordance with the relevant Standards and requirements.

10 Resistance to moisture

10.1 External walls should be in good condition and must resist the ingress of rain (see section 4.4 of this Certificate).

10.2 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.

10.3 The product should be kept dry before the cladding is applied.

10.4 To resist the passage of moisture from the ground, adequate damp-proof courses (dpc) 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.

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

11 Proximity of flues and appliances

Detailed guidance can be found in the documents supporting the national Building Regulations for the provisions that are applicable when the product is installed in close proximity to certain flue pipes and/or heat-producing appliances.

12 Maintenance

As the product is confined between the wall and the cladding and has suitable durability (see section 13), provided the integrity of the cladding is maintained throughout the life of the system, maintenance is not required.

13 Durability

The product is durable, rot proof, water resistant and sufficiently stable to remain effective as insulation under normal service conditions for the life of the building.

Installation

14 General

14.1 Installation of the Kooltherm K15 Rainscreen Insulation Board should be in accordance with this Certificate, the Certificate holder's instructions and current good building practice.

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

14.3 Cavity barriers should be provided as required by the documents supporting the national Building Regulations.

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

14.5 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.

14.6 Rainscreen cladding self-adhesive aluminium foil tape should be applied to the external joints of the insulation board to provide a weathertight finish.

15 Procedure

Fitting boards

15.1 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. The fixings are located along the edges or at corners between 50 and 150 mm from the board edge.

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

15.3 A minimum of 3.13 fixings per m^2 are required to secure the board to the wall structure.

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

Cladding

15.5 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 and is outside the scope of this Certificate.

Technical Investigations

16 Tests

Results of tests were assessed, to determine:

- thermal conductivity
- reaction to fire
- water vapour permeability
- density.

17 Investigations

17.1 Existing data on durability and properties in relation to fire were evaluated.

17.2 A calculation was undertaken to confirm the declared thermal conductivity (λ_D).

17.3 A series of U-value calculations was carried out.

17.4 A series of condensation risk calculations was carried out.

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

Bibliography

BRE Digest 465 : 2002 *U-values for light steel frame construction*

BRE Report BR 135 : 2013 *Fire Performance of External Insulation for Walls of Multistorey Buildings*

BRE Report BR 262 : 2002 *Thermal insulation: avoiding risks*

BRE Report BR 443 : 2019 *Conventions for U-value calculations*

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

BS 8000-3 : 2001 *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 9414 : 2019 *Fire performance of external cladding systems — The application of results from BS 8414-1 and BS 8414-2 tests*

BS EN 845-1 : 2013 *Specification for ancillary components for masonry — Wall ties, tension straps, hangers and brackets*

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 6946 : 2017 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

BS EN ISO 10211 : 2017 *Thermal bridges in building construction — Heat flows and surface temperatures. Detailed calculations*

18 Conditions

18.1 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.

18.2 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.

18.3 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.

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

18.5 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.

18.6 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.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk