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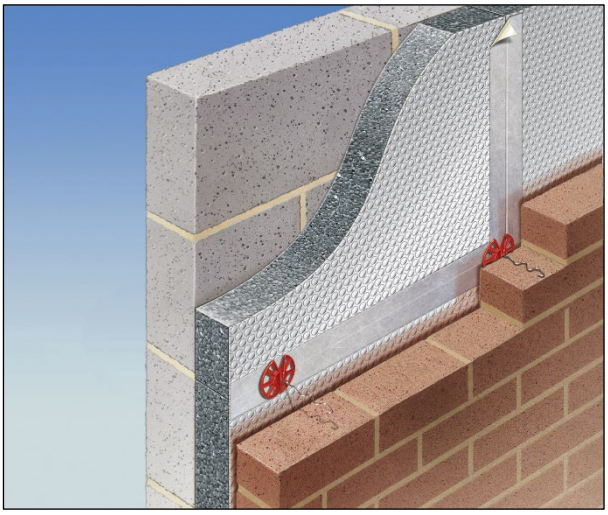
Agrément Certificate
93/2861
Product Sheet 8 Issue 2

ALREFLEX RANGE OF CAVITY WALL INSULATION AND CAVITY RAIN BARRIERS

ALREFLEX FULLFILL CAVITY INSULATION BOARD

This Agrément Certificate Product Sheet(1) relates to Alreflex Fullfill Cavity Insulation Board, comprising a single-layer polyethylene bubble sheet faced on one side with aluminium foil, attached to a rigid expanded polystyrene (EPS) insulation board, for use as full fill insulation (with a minimum 10 mm residual cavity) in new external masonry cavity walls, up to 25 m in height, in domestic and non-domestic buildings. Additional requirements apply for buildings above 12 m in height and further restrictions may apply based on the reaction to fire performance.

(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

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

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: 7 May 2025
Originally certified on 22 August 2017

Hardy Giesler
Chief Executive Officer

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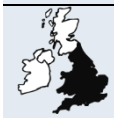
SUMMARY OF ASSESSMENT AND COMPLIANCE

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 Alreflex Fullfill Cavity 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 in some cases. 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 3 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. See section 6 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The product is acceptable. See section 8 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**	**CO_2 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. 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 section 8 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) and 2.4.4(1)(2). See section 2 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The product is restricted by this Standard in some cases with reference to clauses 2.6.5(1) and 2.6.6(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 3 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). 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(2), 6.2.8(1), 6.2.9(2) and 6.2.12(1). 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 at least 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), 7.1.6(1)(2), 7.1.7(1), 7.1.9(2) and 7.1.10(2). See section 6 of this Certificate.
Regulation:	**12**	**Building standards – conversion**
Comment:		Comments made in relation to this product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1(1)(2) and Schedule 6(1)(2).

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

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

Regulation:	**23(1)(a)(i)(iii)**	**Fitness of materials and workmanship**
Comment:	**(b)(i)(ii)**	The product is acceptable. See section 8 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 3 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 in some cases. See section 2 of this Certificate.
Regulation:	**39(a)(i)**	**Conservation measures**
Regulation:	**40(2)**	**Target carbon dioxide emission rate**
Regulation:	**43(b)**	**Nearly zero-energy requirements for new buildings**
Comment:		The product can contribute to satisfying these Regulations. See section 6 of this Certificate.

Additional Information

NHBC Standards 2025

In the opinion of the BBA, Alreflex Fullfill Cavity Insulation Board, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 6.1 *External masonry walls*.

Fulfilment of Requirements

The BBA has judged Alreflex Fullfill Cavity Insulation Board to be satisfactory for use as described in this Certificate. The product has been assessed as full fill insulation (with a minimum 10 mm residual cavity) in new external masonry cavity walls, up to 25 m in height, in domestic and non-domestic buildings. Additional requirements apply for buildings above 12 m in height and further restrictions may apply based on the reaction to fire performance.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. Alreflex Fullfill Cavity Insulation Board comprises a single-layer polyethylene bubble sheet faced on one side with aluminium foil, attached to a rigid EPS insulation board. Once installed, the joints between two boards are sealed by Thermal Economics Alreflex breathable tape.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Length (mm)	1200
Width (mm	450
Thickness of the bubble film (mm)	3
Thickness of the rigid board (mm)	25 – 300 mm, in 5 mm increments
Edge detail	Square edge

Application

The product is intended for use as full fill cavity wall insulation in external cavity walls with masonry inner and outer leaves (where masonry includes clay and calcium silicate bricks, concrete blocks, and natural and reconstituted stone blocks).

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:

- cavity wall ties with insulation-retaining clips/fixings to BS EN 845-1 : 2013
- Thermal Economics Alreflex breathable tape
- Thermal Economics aluminium tape.

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 Certificate holder has not declared a reaction to fire classification to BS EN 13501-1 : 2018 for the product.

2.1.2 On the basis of data assessed, the product will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.1.3 In England, Wales and Northern Ireland, the product must not be used on buildings with a storey 18 m or more above ground level which contain one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house in Wales and Northern Ireland only), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools and, additionally in Northern Ireland, nursing homes and places of lawful detention.

2.1.4 In England, Wales and Northern Ireland, the product is unrestricted in terms of proximity to a relevant boundary and, for constructions comprising two leaves of brick or concrete each at least 75 mm thick and with cavities closed around openings and at the top of the wall (with cavity barriers in Northern Ireland), is also unrestricted in terms of height, except for those constructions described in section 2.1.3.

2.1.5 In England, Wales and Northern Ireland, for constructions other than those described in sections 2.1.3 or 2.1.4, the product must not be used on buildings with a floor more than 18 m above ground level, or, in England only, residential buildings with a storey 11 m or more in height.

2.1.6 In Scotland, the product may be used without restriction on height or proximity to a relevant boundary, provided it is installed in a cavity that is between two leaves of masonry or concrete at least 75 mm thick, and which has a cavity barrier around all openings in the wall and at the top of the wall head. For other constructions, the product should not be used on buildings with a storey at a height of 11 m or more above the ground or within 1 m of a relevant boundary.

2.1.7 Designers should refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for construction fire performance, cavity closers and barriers, metre cupboards, fire stopping of service penetrations and combustibility limitations for other materials and components used in the overall wall construction.

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 long term water absorption by total immersion and the result is given in Table 2.

Table 2 Long term water absorption by total immersion

Product assessed	Assessment method	Requirement	Result
Alreflex Fullfill Cavity Insulation Board	BS EN 12087 : 2013	≤ 3.5 % by volume	Pass

3.1.2 On the basis of the data assessed, the product may be used in situations where it bridges the damp-proof course (DPC) in walls; dampness from the ground will not pass through to the inner leaf provided the wall is detailed in accordance with the requirements and provisions of the national Building Regulations.

3.2 Weathertightness

3.2.1 A rain penetration test was carried out and the results are given in Table 3.

Table 3 Rain penetration test

Product assessed	Assessment method	Requirement	Result
Alreflex Fullfill Cavity Insulation Board	BBA test method	No water transfer to inner leaf	Pass

3.2.2 Constructions incorporating the product, and built in accordance with the Standards and requirements listed in section 9 of this Certificate, will resist the transfer of precipitation to the inner leaf and satisfy the requirements of the national Building Regulations.

3.3 Water vapour permeability

3.3.1 The water vapour resistance and resistivity of the product are given in Table 4.

Table 4 Water vapour resistance/resistivity

Material	Assessment method	Requirement	Result
EPS insulation	BS EN 13163 : 2012	Declared value	100 – 200 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$
Bubble film	BS EN ISO 10456 : 2007		150 $MN \cdot s \cdot g^{-1}$

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

The product was tested for thermal conductivity and resistance, and the results are given in Table 5.

Table 5 Thermal conductivity and emissivity

Product assessed	Assessment method	Requirement	Result
EPS insulation	Thermal conductivity to BS EN 13163 : 2012	Declared value (λ_D)	0.030 $W \cdot m^{-1} \cdot K^{-1}$
Bubble film	Thermal resistance to BS EN 12667 : 2001	Declared value	0.10 $m^2 \cdot K \cdot W^{-1}$

6.2 Thermal Performance

The product was tested for emissivity and the result is given in Table 6.

Table 6 Outer surface emissivity

Product assessed	Assessment method	Requirement	Result
Bubble film	BS EN ISO 22097 : 2023	Declared value	0.05

6.3 Conservation of fuel and power

6.3.1 The U value of a completed wall will depend on the insulation thickness, its structure and its internal finish Example U values are given in Table 7.

Table 7 Example U values(1) – full fill insulation (10 mm residual cavity)

U value ($W \cdot m^{-2} \cdot K^{-1}$)	EPS insulation thickness (mm)	
	13 mm dense plaster 100 mm dense block(2)	Plasterboard on dabs 100 mm AAC block(3)
0.13	200	175
0.15	170	150
0.17	150	125
0.18	140	115
0.21	115	95
0.26	90	65
0.28	80	60
0.30	75	50

(1) The U value calculations are based on the following:
- wall ties: mild steel (λ = 50 $W \cdot m^{-1} \cdot K^{-1}$), 2.5 per m^2, 3.3 mm^2 cross-section
- 102.5 mm brick (λ = 0.77 $W \cdot m^{-1} \cdot K^{-1}$)
- 10 mm low e cavity (R = 0.363 $m^2 \cdot K \cdot W^{-1}$).

(2) 100 mm dense block (λ = 1.13 $W \cdot m^{-1} \cdot K^{-1}$) bridged by mortar (6.7%, λ = 0.88 $W \cdot m^{-1} \cdot K^{-1}$) and 13 mm dense plaster (λ = 0.57 $W \cdot m^{-1} \cdot K^{-1}$).

(3) 100 mm AAC block (λ = 0.12 $W \cdot m^{-1} \cdot K^{-1}$) bridged by mortar (6.7%, λ = 0.88 $W \cdot m^{-1} \cdot K^{-1}$) and 12.5 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$), affixed by plaster dabs (20%, λ = 0.43 $W \cdot m^{-1} \cdot K^{-1}$) bridging a 15 mm air cavity (R = 0.17 $m^2 \cdot K \cdot W^{-1}$).

6.3.2 The product can contribute towards a construction satisfying the national Building Regulations in respect of energy economy and heat retention.

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 Specific test data were assessed as given in Table 8.

Table 8 Durability

Product assessed	Assessment method	Requirement	Result
Alreflex Fullfill Cavity Insulation Board	Dimensional stability to BS EN 1603 : 2013 (23°C and 50% RH for 24 hours)	Value achieved	Length and width ≤ 0.2% change

8.3 Service life

Under normal service conditions the product will have a life equivalent to the building 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 External masonry cavity walls must be designed and constructed in accordance with the relevant recommendations of :

- BS 5250 : 2021
- BS 8000-3 : 2020
- BS EN 845-1 : 2013
- 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 As with other forms of cavity wall insulation, where buildings need to comply with the *NHBC Standards,* specifiers must observe the requirements of that document.

9.1.4 Cavity wall ties with insulation-retaining fixings and, if required, any additional ties to BS EN 845-1 : 2013 must be used for structural stability in accordance with BS EN 1996-1-1 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006, and their UK National Annexes.

9.1.5 Care must be taken in the overall design and construction of walls incorporating the product to ensure the provision of appropriate:

- cavity trays and DPCs
- cavity barriers
- resistance to the ingress of precipitation, moisture and dangerous gases from the ground
- resistance to sound transmission when flanking separating walls and floors.

9.1.6 The following design conditions must be ensured:

- the insulation completely fills the cavity (with a 10 mm residual cavity)
- the insulation thickness remains constant where possible. Should any change in vertical thickness occur, a horizontal damp-proof cavity tray should separate each thickness change
- a minimum thickness of 50 mm is maintained where possible. Where, for structural reasons, the insulation thickness is reduced, eg, by the intrusion of ring beams, a minimum thickness of 25 mm insulation should be maintained and the manufacturer's advice on fixing and weatherproofing sought.

9.1.7 Where the walls of a building are between 12 and 25 m high, the following requirements also apply (see also Section 2 of this Certificate):

- from ground level, the maximum height of continuous cavity walls must not exceed 12 m; above 12 m, the maximum height of continuous cavity walls must not exceed 7 m. In both cases, breaks should be in the form of continuous horizontal cavity trays and weepholes discharging to the outside
- the area to be insulated must not be in an infill panel in a framed structure
- the Certificate holder, in association with the architect, must carry out a detailed programme of assessment of the project, including an examination of the quality of installation as work progresses. Above average site supervision is recommended during installation.

9.1.8 This Certificate covers the product in any exposure zone. However, this does not preclude the need to apply an external render or other suitable finish in severe exposure zones, where such application would be normal practice.

9.1.9 Window and door opening reveals must be constructed incorporating a cavity barrier/closer/DPC, as required.

9.1.10 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.

9.1.11 Calculations 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.

9.1.12 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.

Interstitial condensation

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

9.1.14 If the product is to be used in the external wall of rooms expected to have high humidity, care must be taken to provide adequate permanent ventilation to avoid possible problems from the formation of interstitial condensation.

Surface condensation

9.1.15 In England and Wales, walls will adequately limit the risk of surface condensation 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 9.1.12 of this Certificate.

9.1.16 For buildings in Scotland, wall constructions will be acceptable 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 9.1.12 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 provided in Annex A of this Certificate.

9.2.3 The internal leaf must be constructed ahead of the outer leaf so that any mortar protruding into the cavity space from the back of the internal leaf can be cleaned off before installing the product. Boards must not be pushed into a completed cavity.

9.2.4 The product must be installed with the polyethylene bubble sheet facing the outer masonry leaf.

9.2.5 Vertical joints in the boards must be staggered and all joints tightly butted. Where protrusions occur in the cavity, the boards must be carefully cut to fit.

9.2.6 If installation of the boards is terminated below the highest level of the wall, the top edge of the insulation must be protected by a cavity tray and alternate perpend joints raked out to provide adequate drainage of water from the tray.

9.2.7 In all situations, it is particularly important to ensure during installation that:

- installation is carried out to the highest level on each wall, or the top edge of the insulation is protected by a cavity tray
- cavity trays are used with appropriate stop ends and weepholes at lintel level
- cavity battens and/or boards are used during construction to prevent bridging by mortar droppings
- wall ties are installed correctly and are thoroughly clean
- excess mortar is cleaned from the cavity face of the leading leaf and any debris removed from the cavity
- mortar droppings are cleaned from the exposed edges of installed boards
- insulation boards are properly installed and butt-jointed
- the DPC at ground level does not project into the cavity as it can form a trap for mortar bridging
- raked or recessed mortar joints are avoided in very severe exposure areas.

9.3 Workmanship

Practicability of installation was assessed by the BBA, on the basis of 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, or a contractor, experienced with this type of product.

9.4 Maintenance and repair

As the product is confined within the wall cavity and has suitable durability, 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 each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

11 Delivery and site handling

11.1 The Certificate holder stated that the product is delivered to site wrapped in polythene, with the production code printed on each board. Each pallet carries a label bearing the production date, and board size and thickness.

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

11.2.1 The product must be protected from prolonged exposure to direct sunlight and UV, and should be stored either under cover or protected with light-coloured, opaque polythene sheets. Where possible, packs should be stored inside. If stored outside, the product must be raised above ground level out of contact with ground moisture and must be protected from rain.

11.2.2 The product must not be exposed to naked flame or other ignition sources. Care must be taken to avoid contact with solvents and with materials containing volatile organic compounds. If damaged, the product must be discarded.

†ANNEX A – SUPPLEMENTARY INFORMATION

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.

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 and BS EN ISO 14001 : 2015 by Centre for Assessment (Certificates 23/1568 and 23/1570 respectively).

Additional information on installation

A.1 It is recommended that the inner leaf of the wall be constructed ahead of the outer leaf, as the product is fastened to the cavity face of the inner leaf. It is essential that the spacing of the wall ties/clips allows the long edge of each board to be secured at a minimum of two points. A 10 mm clear cavity must be maintained between the product and the outer leaf.

A.2 All joints, including corners, should be taped over with Thermal Economics Alreflex breathable tape.

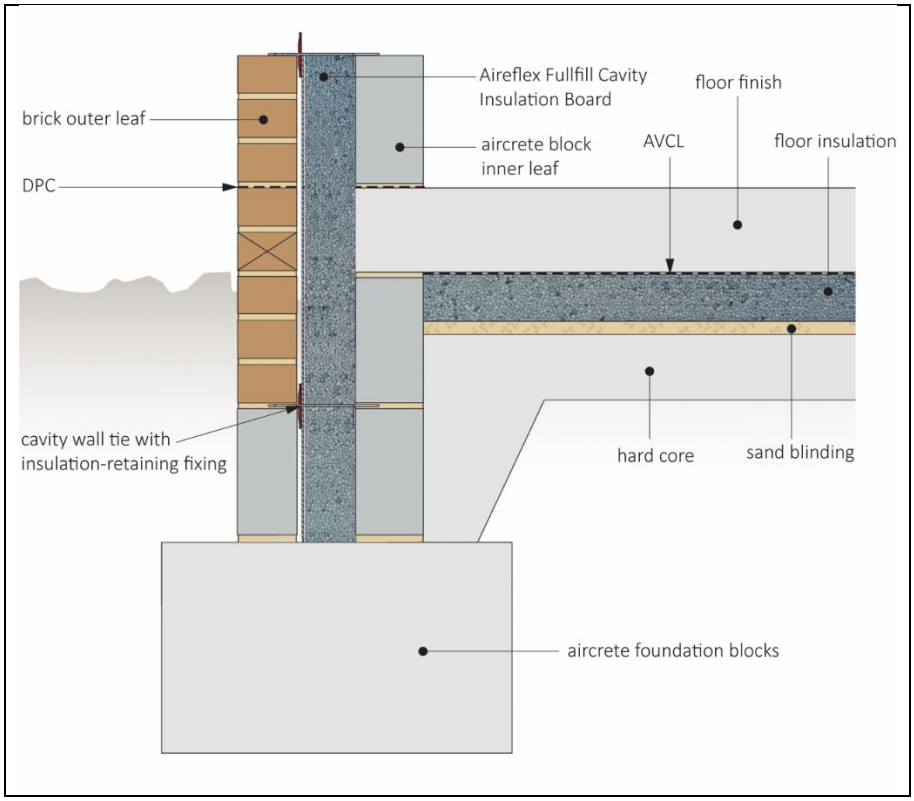
A.3 Any damage to the outer foil face of the boards may be repaired with Thermal Economics aluminium tape.

Procedure

A.4 A section of the inner leaf is built with the first row of wall ties, at approximately 600 mm horizontal spacings, where the insulation is to begin. It is recommended that the wall ties are not placed directly on the DPC. The first run of the product may commence below DPC level(1) to provide some edge insulation for the floor (see Figure 1).

(1) At least 150 mm, or 200 mm for suspended timber floors.

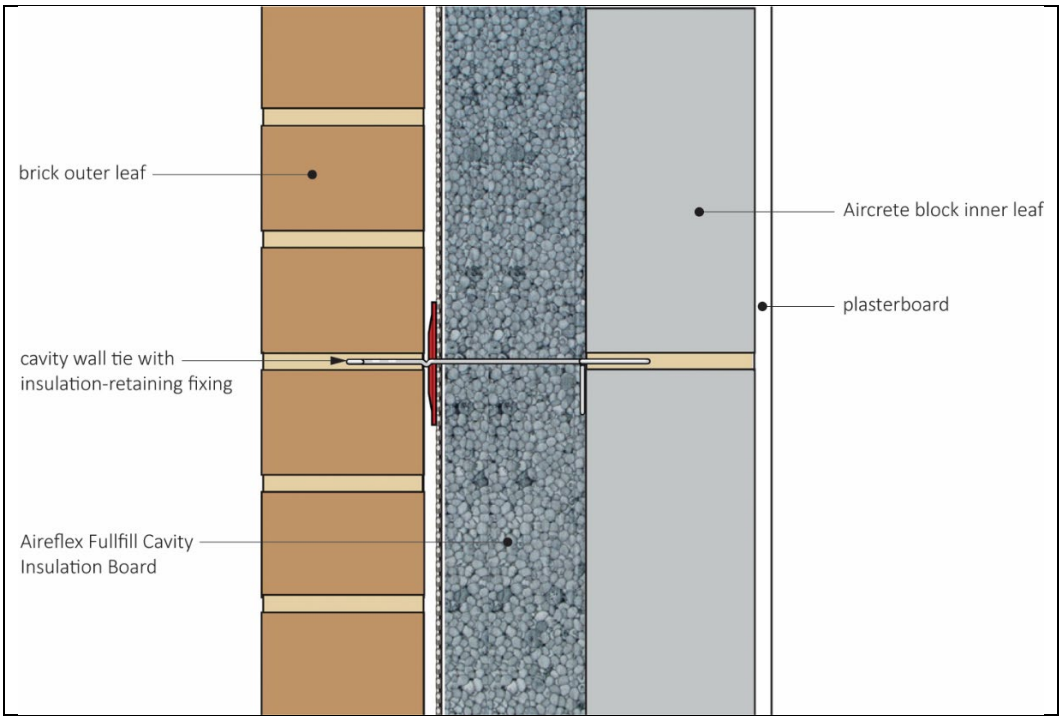
Figure 1 Typical installation detail including wall ties



A.5 The leading leaf is built up to the required height, with wall ties placed at a vertical height of 450 mm, ensuring the drip of the tie is located halfway across the 10 mm residual cavity width. Excess mortar is cleaned from the cavity face of the leading leaf, and the product placed on the wall ties, behind the retaining clips, to form a closely butt-jointed run. The product must be fitted with the foil surface facing towards the outer leaf.

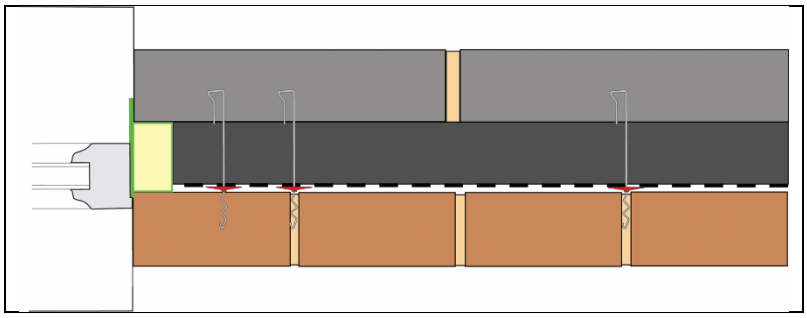
A.6 The second row of wall ties is fitted to retain the top of the product. It is essential that all wall ties slope downwards towards the outer leaf (see Figure 2) and at centres not exceeding 900 mm to ensure that each board is secured at a minimum of three points.

Figure 2 Installation of wall ties



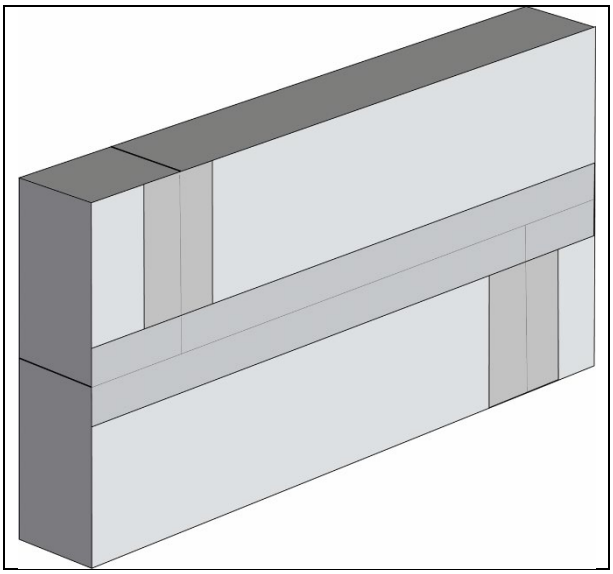
A.7 Additional wall ties at 300 mm vertical centres of all openings are recommended in BS EN 845-1 : 2013, BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005 and BS EN 1996-3 : 2006. For this product, this would involve piercing the boards and may introduce an unacceptable risk of water penetration. Therefore, it is recommended that an additional wall tie is included within 225 mm of the opening on each board course level to satisfy the structural requirements of the wall. See Figure 3.

Figure 3 Additional wall ties



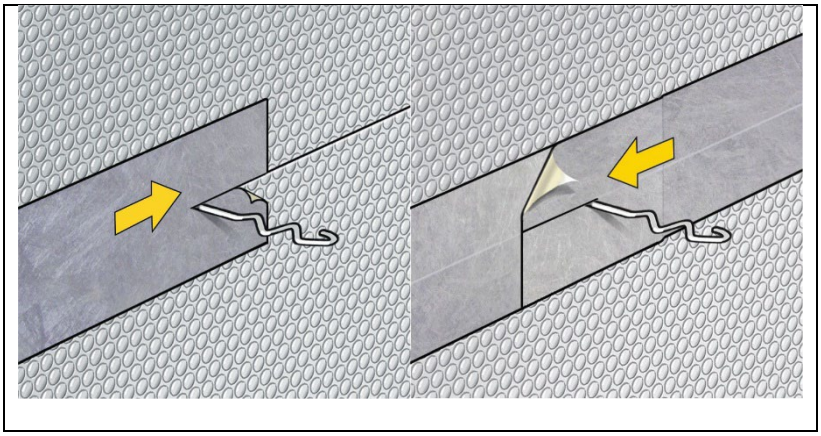
A.8 All joints should be sealed with self-adhesive Alreflex breathable tape, ensuring that the board joint is positioned centrally on the tape and that the tape is fully adhered across its entire surface and is not wrinkled or creased. Where necessary, additional layers may be used to ensure joints are sealed – see Figure 4.

Figure 4 Taped joint



A.9 To seal around wall ties, a 50 mm cut should be made down the centre of the tape so that it can be fitted around the tie as per Figure 5 (left image).The same process should be carried out on the next piece of tape as per Figure 5 (right image).

Figure 5 Tape around wall ties



A.10 The external leaf is built up to the same level as the insulation boards; a 10 mm residual clear cavity should be maintained to aid insulation and accommodate mortar squeeze.

A.11 The product should be butted with vertical joints staggered. Insulation boards and wall ties should be staggered as construction proceeds and carried up to the highest level of wall, except where protected by a cavity tray.

Mortar droppings

A.12 After each section of the leading leaf is built, excess mortar must be removed from the cavity face and mortar droppings cleaned from exposed edges of the installed product before installation of the next run. Use of a cavity board or a cavity batten will protect the installed product and help keep the cavity clean as the following leaf is built (see Figure 6).

Figure 6 Use of a cavity board

Wall openings

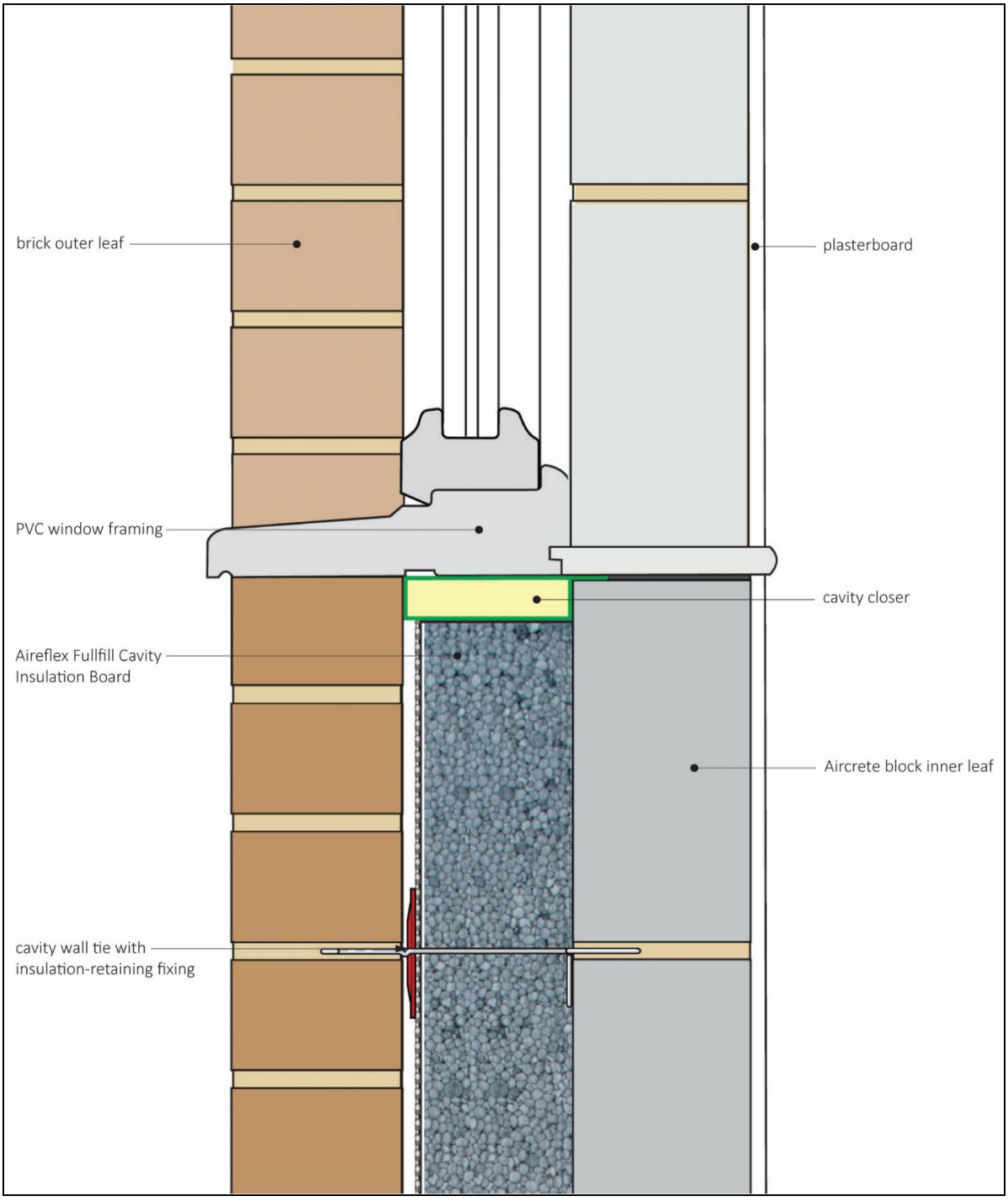
A.13 Where openings such as doors and windows are in close proximity, it is recommended that a continuous lintel or cavity tray is used. Individual lintels or cavity trays should have stop ends and be adequately drained.

Cut pieces

A.14 The product can be cut, using a sharp knife or fine-toothed saw, to fit around windows, doors or air bricks. It is essential that cut pieces completely fill the spaces for which they are intended and are adequately secured; gaps should not be left in the insulation.

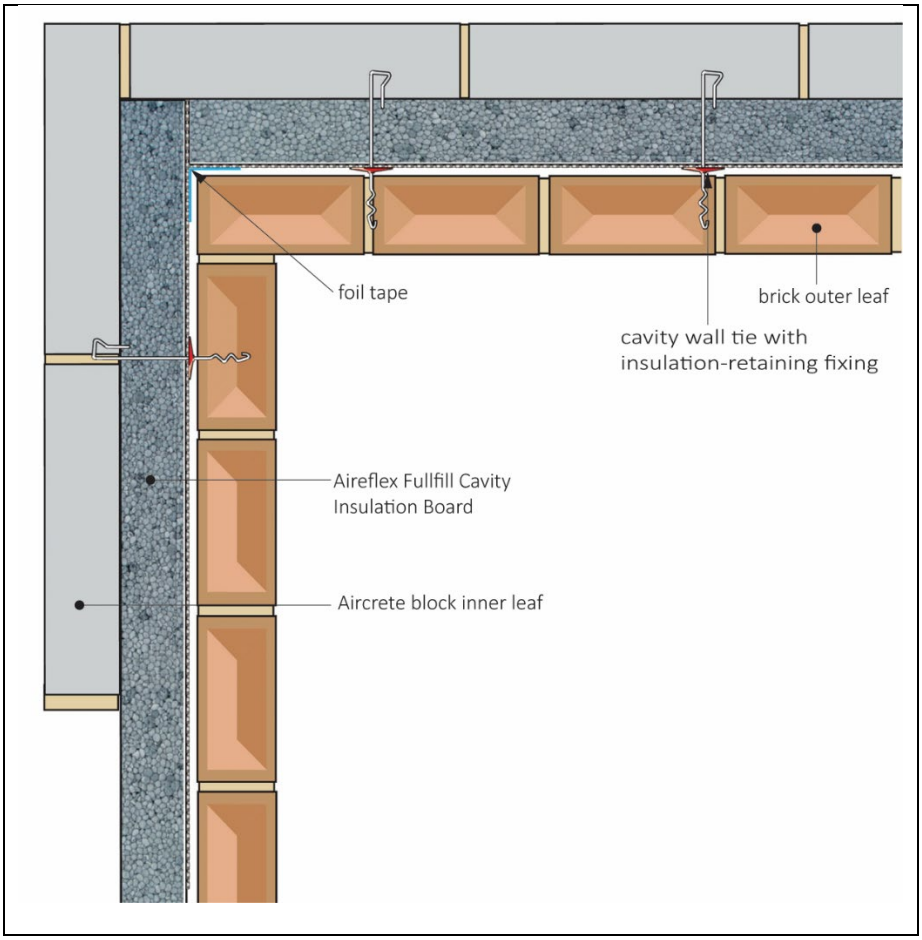
A.15 Proprietary cavity barriers/closers must be correctly installed at window and door reveals. See Figure 7.

Figure 7 Details around window and door reveals



A.16 Corner joints should be block bonded and taped with TE aluminium tape, ensuring that all edges are completely covered – see Figure 8.

Figure 8 Corner details



A.17 All building involving the produce, particularly interrupted work, must conform to BS EN 1996-2 : 2006, sections 3.2 *Acceptance, handling and storage of materials* and 3.6 *Curing and protective procedures during execution*.

Bibliography

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

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

BS 5250 : 2021 *Code of practice for control of condensation in buildings*

BS 8000-3 : 2020 *Workmanship on building sites — Code of practice for masonry*

BS EN 845-1 : 2013 + A1 : 2016 *Specification for ancillary components for masonry — Wall ties, tension straps, hangers and brackets*

BS EN 1603 : 2013 *Thermal insulating products for building applications – Determination of dimensional stability under constant normal laboratory conditions.(23°C and 50% RH)*

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 *UK National Annex to Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
BS EN 1996-1-2 : 2005 + A1 : 2012 Eurocode 6 : *Design of masonry structures — General rules — Structural fire design*
NA to BS EN 1996-1-2 : 2005 + A1 :2012 *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 + A1 : 2014 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 12087 : 2013 *Thermal insulating products for building applications — Determination of long term water absorption by immersion*

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 13163 : 2012 + A2 : 2016 *Thermal insulation products for buildings — Factory made expanded polystyrene (EPS) 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 methods*

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

BS EN ISO 10456 : 2007 *Building materials and products — Hygrothermal properties — Tabulated design values and procedures for determining declared and design thermal values*

BS EN ISO 14001 : 2015 *Environmental Management systems — Requirements with guidance for use*

BS EN ISO 22097 : 2023 *Thermal insulation for buildings — Reflective insulation products — Determination of thermal performance*

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