

Knauf Insulation Ltd

PO BOX 10
Stafford Road
St Helens
Merseyside WA10 3NS

Tel: 01744 766666

e-mail: technical.uk@knaufinsulation.com

website: www.knaufinsulation.co.uk



Agrément Certificate

19/5609

Product Sheet 3

KNAUF INSULATION

ROCKSILK RAINSCREEN SLAB FOR CAVITY WALLS

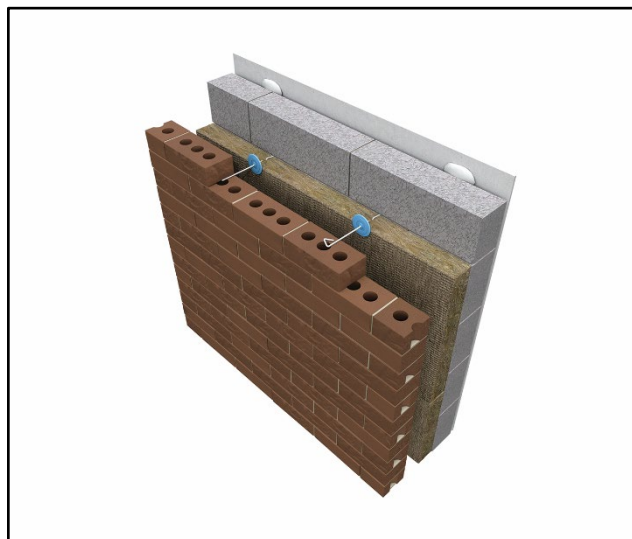
This Agrément Certificate Product Sheet⁽¹⁾ relates to Rocksilk⁽²⁾ RainScreen Slab for Cavity Walls, a mineral wool insulation slab for use as partial-fill thermal insulation in new external masonry or reinforced concrete cavity walls of domestic and non-domestic buildings, without height restriction (additional requirements apply for buildings above 25 metres). The product is installed during construction.

(1) Hereinafter referred to as 'Certificate'.

(2) Rocksilk is a registered trademark.

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 declared thermal conductivity (λ_D) of $0.034 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ (see section 6).

Water resistance — the product will resist the transfer of water across the cavity (see section 7).

Condensation — the product can contribute to limiting the risk of condensation (see section 8).

Behaviour in relation to fire — the product has a reaction to fire classification of Class A1 to BS EN 13501-1 : 2007 (see section 9).

Durability — the product is durable, rot proof, water resistant and sufficiently stable to remain effective as insulation for the life of the building in which it is incorporated (see section 12).

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: 25 April 2022

Hardy Giesler
Chief Executive Officer

The BBA is a UKAS accredited certification body – Number 113.

The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

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

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

British Board of Agrément

Bucknalls Lane
Watford
Herts WD25 9BA

©2022

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

Regulations

In the opinion of the BBA, Rocksilk RainScreen Slab for Cavity Walls, 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 is unrestricted by this Requirement. See section 9.1 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The product is unrestricted by this Requirement. See section 9.1 of this Certificate.
Requirement:	C2(a)	Resistance to moisture
Comment:		The product can contribute to satisfying this Requirement. See section 7.1 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The product can contribute to satisfying this Requirement. See section 7.2 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The product can contribute to satisfying this Requirement. See sections 8.1, 8.2 and 8.4 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 11 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The product is unrestricted by this Regulation. See section 9.1 of this Certificate.
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 consumption rates for new buildings (applicable to Wales only)
Regulation:	26B	Fabric performance values for new dwellings (applicable to Wales only)
Comment:		The product can contribute to satisfying these Regulations. 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 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.4	Cavities
Comment:		The product is unrestricted by this Standard, with reference to clauses 2.4.2 ⁽¹⁾⁽²⁾ , 2.4.4 ⁽¹⁾ and 2.4.6 ⁽²⁾ . See section 9.1 of this Certificate.

Standard: Comment:	2.6	Spread to neighbouring buildings The product is unrestricted by this Standard, with reference to clauses 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See section 9.1 of this Certificate.
Standard: Comment:	3.4	Moisture from the ground 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 7.1 of this Certificate.
Standard: Comment:	3.10	Precipitation 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 7.2 of this Certificate.
Standard: Comment:	3.15	Condensation 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 8.1, 8.2 and 8.5 of this Certificate.
Standard: Comment:	6.1(b)	Carbon dioxide emissions The product can contribute to satisfying this Standard, with references to clauses, or parts of, 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: Comment:	6.2	Building insulation envelope The product can contribute to satisfying this Standard, with references to clauses, or parts of, 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: Comment:	7.1(a)(b)	Statement of sustainability 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: Comment:	12	Building standards applicable to conversions 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: Comment:	23	Fitness of materials and workmanship The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation: Comment:	28(a)	Resistance to moisture and weather The product can contribute to satisfying this Regulation. See section 7.1 of this Certificate.
Regulation: Comment:	28(b)	Resistance to moisture and weather The product can contribute to satisfying this Regulation. See section 7.2 of this Certificate.

Regulation: Comment:	29	Condensation The product can contribute to satisfying this Regulation. See sections 8.1 and 8.2 of this Certificate.
Regulation: Comment:	35(4)	Internal fire spread - structure The product is unrestricted by this Regulation. See section 9.1 of this Certificate.
Regulation: Comment:	36(a)	External fire spread (structure) The product is unrestricted by this Regulation. See section 9.1 of this Certificate.
Regulation: Comment:	39(a)(i)	Conservation measures The product can contribute to satisfying this Regulation. See sections 6.1 and 6.2 of this Certificate.
Regulation: Comment:	40(2)	Target carbon dioxide emission rate 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

NHBC Standards 2022

In the opinion of the BBA, subject to a 50 mm minimum residual cavity being maintained, NHBC accepts the use of Rocksilk RainScreen Slab for Cavity Walls, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.1 *External Masonry Walls*.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13162 : 2012.

Technical Specification

1 Description

Rocksilk RainScreen Slab for Cavity Walls comprises slabs of rigid rock mineral wool (MW) treated with a water-repellent additive; the slabs have the nominal characteristics shown in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Length (mm)	1200
Width (mm)	455
Thickness (mm) ⁽¹⁾	50, 80, 100, 150 and 220
Edge profile	Square

(1) Other slab thicknesses within the above range are available on request.

2 Manufacture

2.1 The slabs are manufactured from molten rock which is spun into rock mineral wool. A thermosetting binder is added, and the material is collected in the form of a blanket which is folded back (upon itself) to give the required product density. The blanket is then cured in a heated oven to form the required product, which is cut, trimmed and packaged.

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 Knauf Insulation Ltd has been assessed and registered as meeting the requirements of ISO 9001 : 2015 and ISO 14001 : 2015 by TÜV NORD (Certificates 44 100 190742 and 44 104 190742 respectively).

3 Delivery and site handling

3.1 Slabs are delivered to site in polythene-wrapped packs. Each pack contains a label with the Certificate holder's name, slab dimensions and the BBA logo incorporating the number of this Certificate.

3.2 On site, the product should be stored clear of the ground on a clean level surface and preferably under cover to protect it from prolonged exposure to moisture or mechanical damage.

3.3 It is recommended that dust masks, gloves and long-sleeved clothing are worn when cutting and handling the product. Large-scale machining should be connected to a dust-extraction system.

3.4 Damaged, contaminated or wet slabs must not be used.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Rocksilk RainScreen Slab for Cavity Wall application.

Design Considerations

4 Use

4.1 Rocksilk RainScreen Slab for Cavity Walls is satisfactory for use as partial fill cavity wall insulation and is effective in reducing the thermal transmittance (U value) of external cavity walls with reinforced concrete or masonry inner leaves (where masonry includes clay and calcium silicate bricks, concrete blocks, and natural and reconstituted stone blocks) and a masonry outer leaf. The product is for use in new domestic and non-domestic buildings without height restriction (additional requirements apply above 25 metres). It is essential that walls are designed and constructed to incorporate the precautions given in this Certificate to prevent moisture penetration.

4.2 Two layers of slabs can also be installed if necessary in order to achieve the required U values (see section 6.2). In this case, vertical joints between the outer slabs must be staggered to those of the inner slabs.

4.3 As with other forms of cavity wall insulation, where buildings need to comply with *NHBC Standards 2022*, specifiers should observe the requirements of that document.

4.4 Buildings subject to the national Building Regulations should be designed and constructed in accordance with the relevant recommendations of:

- BS 8000-3 : 2020
- BS EN 845-1 : 2013
- BS EN 1992-1-1 : 2004 and its UK National Annex
- BS EN 1992-1-2 : 2004 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 Other new buildings not subject to these Regulations should also be built in accordance with the Standards given in section 4.4.

4.6 Cavity wall ties with insulation-retaining fixings and, if required, any additional ties to BS EN 845-1 : 2013 and PD 6697 : 2019 should 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.

4.7 The use of cavity battens and/or boards during construction is strongly recommended to prevent bridging by mortar droppings.

4.8 It is recommended that installation is continuous up to the highest level on each wall. The cavity must be capped in brick, block or suitable board material.

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

- cavity trays and damp-proof courses (dpc)
- cavity barriers/closers and fire stopping
- resistance to the ingress of precipitation, moisture and dangerous gases from the ground
- resistance to sound transmission when flanking separating walls and floors.

Buildings up to and including 25 metres high

4.10 The residual cavity width to be maintained during construction is 50 mm. This may reduce to 25 mm in isolated areas due to individual construction features (a minimum of 50 mm residual cavity width is required by the *NHBC Standards 2022*). This may be achieved by designing a cavity width which takes into account the dimensional tolerances of the components which make up the wall (by reference to the British Standards relating to the bricks, blocks and batts), or by using the data from the respective manufacturers. Allowances may need to be made for the quality of building operatives and the degree of site supervision or control available, and for the limitations in respect of exposure of the proposed building (as set out in Table 2 of this Certificate).

Table 2 Maximum allowable total exposure factors of different constructions

Construction	Maximum allowable exposure factor (E) ⁽¹⁾
All external masonry walls protected by: rendering (to BS EN 13914-1 : 2016); tile hanging; slate hanging; or timber, plastic or metal weatherboarding or cladding	No restriction
One or more external masonry walls constructed from facing clay brickwork or natural stone, (the porosity of which exceeds 20% by volume). Mortar joints must be flush-pointed or weatherstruck	100
One or more external masonry walls constructed from calcium silicate bricks, concrete blocks, reconstituted stone, or natural stone (the porosity of which is less than 20% by volume), or any material with raked mortar joints	88

(1) To BS 5618 : 1985

4.12 From ground level, the maximum height of continuous cavity walls must not exceed 12 metres; above 12 metres, the maximum height of continuous cavity walls must not exceed 7 metres. In both cases, breaks should be in the form of continuous horizontal cavity trays and weepholes discharging to the outside.

4.13 An external render coat or other suitable finish should be applied in locations where such application would be normal practice; care should be taken to ensure that the residual cavity is not bridged by mortar.

Buildings over 25 metres in height

4.14 The width of the residual clear cavity to be achieved is to be in excess of 50 mm, and the following additional requirements apply:

- the specifier must take extra care when detailing to ensure that the introduction of the insulation does not affect the weather resistance of the wall. Above average site supervision is recommended during installation of the product
- where, for structural reasons, the cavity width is reduced, eg by the intrusion of ring beams, a minimum residual cavity width of 25 mm must be maintained and extra care must be taken with fixings and weatherproofing, eg by the inclusion of cavity trays with weepholes.

5 Practicability of installation

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

6 Thermal performance



6.1 Calculations of the thermal transmittance (U value) should be carried out in accordance with BS EN ISO 6946 : 2017 and BRE Report BR 443 : 2019 using the insulation's declared thermal conductivity (λ_D) of $0.034 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$.

6.2 The U value of a completed wall will depend on the insulation thickness, cavity width, number and type of fixings and the insulating value of the substrate masonry and its internal finish. Calculated U values for sample constructions are given in Table 3.

Table 3 Example cavity wall U values⁽¹⁾

U value requirement (W·m ⁻¹ ·K ⁻¹) ⁽¹⁾	Insulation thickness (mm)		
	13 mm dense plaster ⁽²⁾ 100 mm dense block ⁽³⁾	Plasterboard on dabs ⁽⁴⁾ 100 mm AAC block ⁽⁵⁾	150 mm Reinforced Concrete ⁽⁶⁾
0.17	180 ⁽⁷⁾	150	180 ⁽⁷⁾
0.18	180 ⁽⁷⁾	150	180 ⁽⁷⁾
0.20	150	130 ⁽⁷⁾	150
0.21	150	130 ⁽⁷⁾	150
0.22	150	130 ⁽⁷⁾	130 ⁽⁷⁾
0.23	130 ⁽⁷⁾	100	130 ⁽⁷⁾
0.25	130 ⁽⁷⁾	100	130 ⁽⁷⁾
0.26	130 ⁽⁷⁾	100	130 ⁽⁷⁾
0.27	130 ⁽⁷⁾	80	100
0.28	100	80	100
0.30	100	80	100
0.35	80	80	80

(1) Assumes fixings correction for fully penetrating stainless steel ($\lambda = 17 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$) cavity wall ties at 2.5 m^2 with a cross-sectional area of 12.5 mm^2 and a 50 mm air cavity ($R = 0.180 \text{ m}^2 \cdot \text{K}^{-1} \cdot \text{W}^{-1}$). Construction includes 102.5 mm thick brick outer leaf ($\lambda = 0.77 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$).

(2) 13 mm plaster thermal conductivity ($\lambda = 0.57 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$).

(3) 100 mm dense block and mortar thermal conductivity 93.4% ($\lambda = 1.13 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$) and 6.6% ($\lambda = 0.88 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$) respectively.

(4) 15 mm air cavity ($R = 0.170 \text{ m}^2 \cdot \text{K}^{-1} \cdot \text{W}^{-1}$) bridged at 20% with plasterboard adhesive ($\lambda = 0.43 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$) and 12.5 mm Plasterboard thermal conductivity ($\lambda = 0.25 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$).

(5) 100 mm AAC block and mortar thermal conductivity 93.4% ($\lambda = 0.12 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$) and 6.6% ($\lambda = 0.88 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$) respectively.

(6) 150 mm reinforced concrete with 1% steel ($\lambda = 2.3 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$) 15 mm air cavity ($R = 0.170 \text{ m}^2 \cdot \text{K}^{-1} \cdot \text{W}^{-1}$) bridged at 20% with plasterboard adhesive ($\lambda = 0.43 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$) and 15 mm Plasterboard thermal conductivity ($\lambda = 0.25 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$).

(7) Thickness achieved with two layers of insulation.

6.3 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.

7 Water resistance



7.1 When the product is used in situations where it bridges the 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.

7.2 Constructions incorporating the product, and built in accordance with the Standards listed in section 4.4, will resist the transfer of precipitation to the inner leaf and satisfy the national Building Regulations.

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

- cavity wall ties are installed correctly, are thoroughly clean and slope downwards towards the outer face of the construction
- 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 slabs
- insulation slabs are properly installed and butt-jointed
- installation is carried out to the highest level on each wall, or the top edge of the insulation is protected by a cavity tray
- a cavity tray, stop-ends and weepholes are provided at lintel level
- cavity battens and/or boards are used during construction to prevent bridging by mortar droppings
- damp-proof course (dpc) membranes at ground level do not project into the cavity (as they can form a trap for mortar bridging)
- raked or recessed mortar joints are avoided in very severe exposure areas.

8 Condensation

Interstitial condensation



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

8.2 For the purposes of assessing the risk of interstitial condensation, the water vapour resistance factor (μ) of the insulation may be taken as 1.

8.3 A vapour control layer (VCL) should be used in all constructions, should the condensation risk analysis show this is necessary.

8.4 If the product is to be used in the external walls 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



8.5 In England and Wales, walls will adequately limit the risk of surface condensation 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 6.3 of this Certificate.



8.6 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 6.3 of this Certificate.

9 Behaviour in relation to fire



9.1 The product is classified as Class A1 in accordance with BS EN 13501-1 : 2007⁽¹⁾, and is not subject to any restriction on building height or proximity to boundaries.

(1) Report no. 355031, Date: 28 July 2015. Exova Warringtonfire.

9.2 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 barriers/closers, fire stopping of service penetrations and combustibility limitations for other materials and components used in the overall wall construction.

10 Maintenance

As the product is confined within the wall cavity and has suitable durability, maintenance is not required (see section 11).

11 Durability



The product is unaffected by the normal conditions in a wall, and is durable, rot proof, water resistant and sufficiently stable to remain effective as insulation for the life of the building.

Installation

12 General

12.1 The Certificate holder will provide on-site demonstrations on request, to ensure correct installation from the outset.

12.2 Adequate supervision of the installation should be maintained and the Certificate holder must have right of access to site to ensure correct installation.

12.3 It is recommended that the internal leaf is constructed ahead of the external leaf, as the slabs are fastened to the cavity face of the internal leaf. Slabs must not be pushed into a completed cavity.

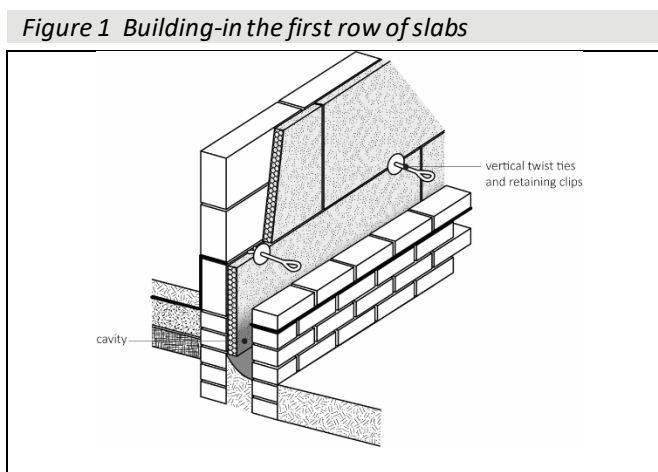
12.4 Vertical joints in the slabs must be staggered and all joints tightly butted. Where protrusions occur in the cavity, the slabs should be carefully cut to fit.

12.5 If installation of the slabs 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.

12.6 Where required, door and window reveals should incorporate a cavity barrier/closer. It is recommended that BBA-approved cavity barriers/closers are used.

13 Procedure

13.1 Walls are constructed in the conventional manner, with the first row of wall ties where the insulation is to begin, but not on the dpc, and at approximately 600 mm horizontal spacing. Any mortar snots on the ties or cavity tray should be cleaned. The first run of slabs may commence below the dpc level to provide some edge insulation for the floor (see Figure 1).

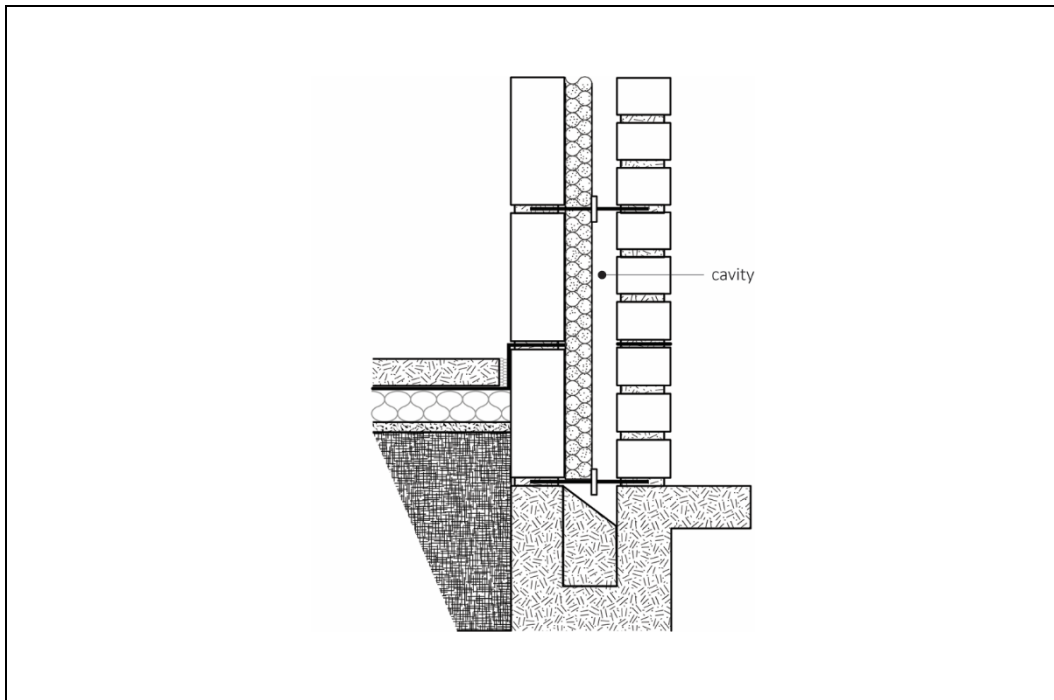


13.2 A section of the leading leaf is built up to a course above the next row of wall ties, which are placed at the usual spacing of 450 mm vertically and not more than 900 mm horizontally. Excess mortar should be cleaned from the cavity face of the internal leaf.

13.3 The slabs are compressed slightly and placed between the upper and lower wall ties to form a closely butt-jointed run and held in place behind insulation retaining clips (see Figure 1).

13.4 Wall ties need to be inserted so they slope downwards towards the external leaf, ensuring the drip of the tie is located halfway across the residual cavity width to shed water away from the internal leaf (see Figure 2). It is also important that the first row of slabs are not in contact with the ground.

Figure 2 Partial fill wall tie detail



13.5 The following leaf is then built up to the same level as the slabs, with a minimum 50 mm cavity maintained between the slabs and the external leaf (see Figure 2).

13.6 Successive sections of wall, incorporating wall ties, are constructed and the slabs installed.

13.7 Slabs should be installed to the highest level of each wall (see section 12.5).

Mortar droppings

13.8 After each section of the wall leaf is built, excess mortar should be removed and mortar droppings cleaned from exposed edges of the installed product before installation of the next section. Use of a cavity board or a cavity batten will protect the installed product edges and help to keep the cavity clean as the following leaf is built (see Figure 4).

Figure 3 Use of a cavity board when clearing off mortar

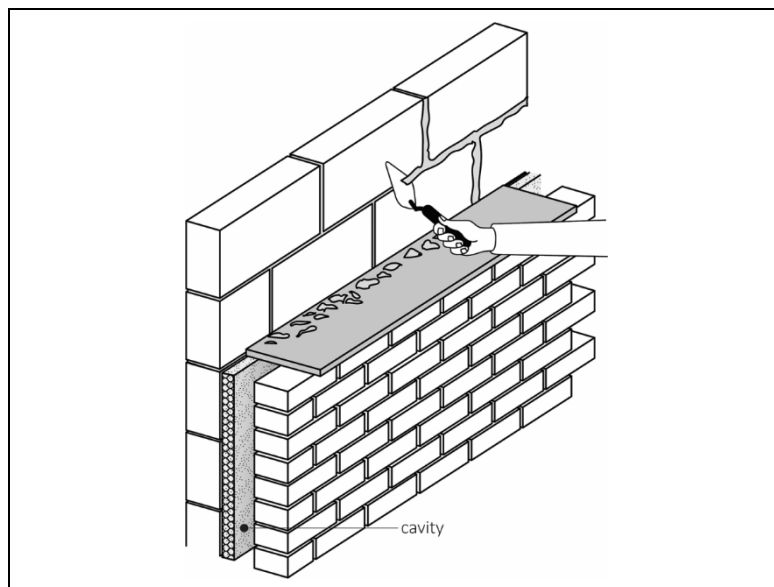
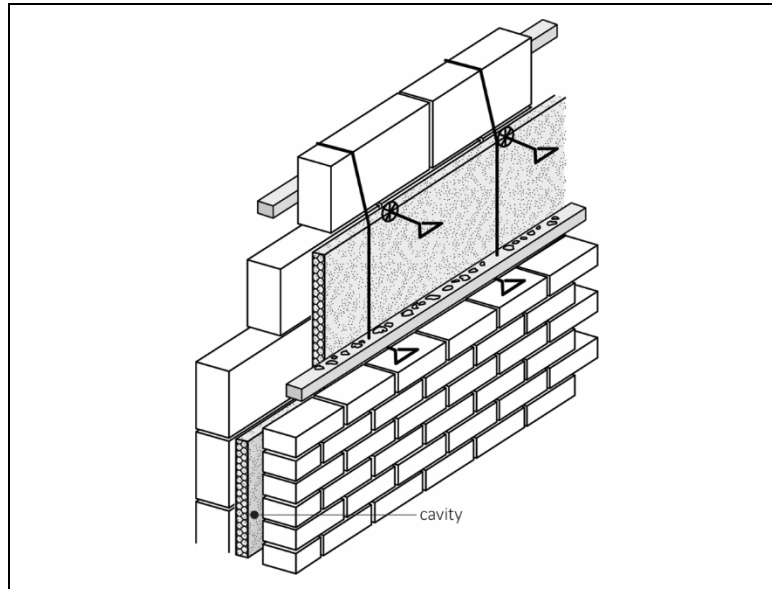


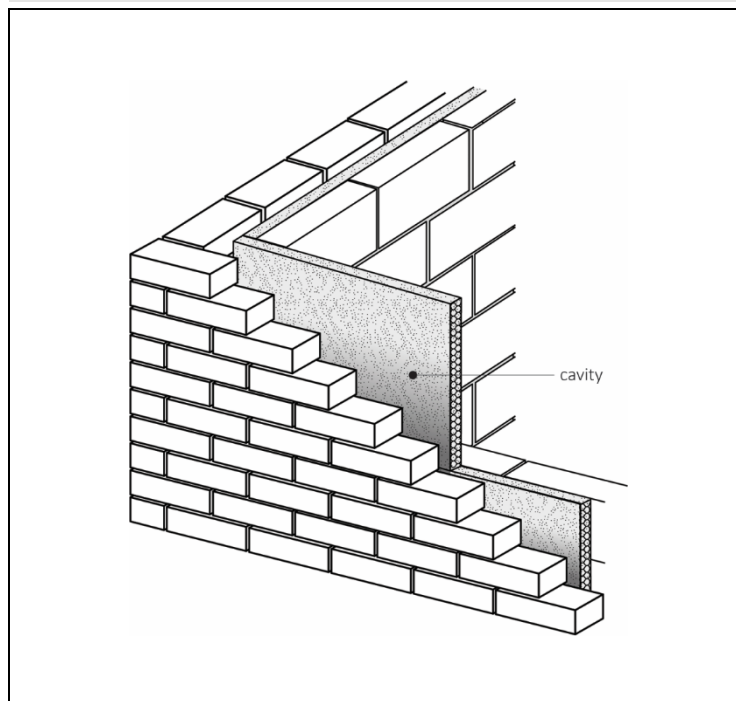
Figure 4 Use of cavity battens



Corners

13.9 Slabs should be closely butted at corners (see Figure 5) to avoid cold bridges (uncut slabs should be used for this purpose).

Figure 5 Slabs at corner detail



Wall openings

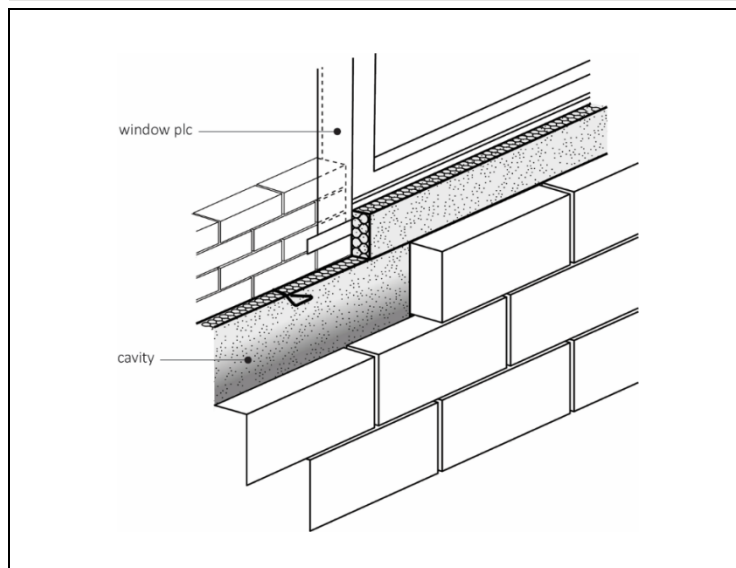
13.10 Where openings such as doors and windows are in close proximity, it is recommended that a continuous lintel or cavity tray is used. Individual lintels or cavity trays should have stop ends and be adequately drained. Slabs should be cut to butt tightly against the cavity barrier/closer/dpc.

Cut pieces

13.11 Slabs can be cut, using a sharp knife or fine-toothed saw, to fit around windows, doors, apertures, air bricks etc. The slabs can also be cut at angles to create chamfered samples to fit around lintels. It is essential that cut pieces of

slab completely fill the spaces for which they are intended and are adequately secured; gaps must not be left in the insulation (see Figure 6).

Figure 6 Cut pieces are used to fill gaps



13.12 Small pieces of slab must be fitted, with the fibre layer parallel to the plane of the wall, so their faces (not their edges) are against the face of the wall.

Multi layers (when required)

13.13 When installing multi layers of slabs, a similar procedure must be followed as for the single layer (see sections 13.1 to 13.12). The first layer is fitted against the outer masonry leaf followed by the second layer. The vertical joints in the second layer must not be coincident with the vertical joints in the first layer.

13.14 For cavities exceeding 150 mm, the Certificate holder's instructions must be followed regarding the type of ties to be used, and the installation should be carried out in accordance with BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006.

Protection

13.15 Exposed areas of slabs should always be covered at the end of the day's work or in driving rain.

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

Technical Investigations

14 Tests

Results of tests were assessed to determine:

- reaction to fire
- thermal conductivity
- dimensional stability
- short term water absorption
- slab dimensions.

15 Investigations

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

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

15.3 A series of U value calculations was carried out.

15.4 A condensation risk analysis was carried out.

15.5 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

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

BS 5618 : 1985 *Code of practice for thermal insulation of cavity walls (with masonry or concrete inner and outer leaves) by filling with urea-formaldehyde (UF) foam systems*

BS 8000-3 : 2020 *Workmanship on construction sites. Masonry. Code of practice*

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

BS EN 1992-1-1 : 2004 + A1 : 2014 *Eurocode 2: Design of concrete structures — General rules and rules for buildings*
NA + A2 : 14 to BS EN 1992-1-1 : 2004 + A1 : 2014 *UK National Annex to Eurocode 2: Design of concrete structures — General rules and rules for buildings*

BS EN 1992-1-2 : 2004 + A1 : 2019 *Eurocode 2: Design of concrete structures — General rules — Structural fire design*
NA to BS EN 1992-1-2 : 2004 *UK National Annex to Eurocode 2: Design of concrete structures — General rules — Structural fire design*

BS EN 1996-1-1 : 2005 + A1 : 2012 *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 + 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 13162 : 2012 + A1 : 2015 *Thermal insulation products for buildings — Factory made mineral wool (MW) products — Specification*

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

BS EN 13914-1 : 2016 *Design, preparation and application of external rendering and internal plastering — External rendering*

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

ISO 9001 : 2015 *Quality management systems — Requirements*

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

PD 6697 : 2019 *Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2*

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

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

16 Conditions

16.1 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.

16.2 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.

16.3 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.

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

16.5 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.

16.6 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.