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Agrément Certificate
93/2884
Product Sheet 1

ROCKWOOL CAVITY WALL INSULATION

ROCKWOOL HIGH PERFORMANCE PARTIAL FILL CAVITY SLAB

This Agrément Certificate Product Sheet⁽¹⁾ relates to Rockwool High Performance Partial Fill Cavity Wall Slab, a resin-bonded rock mineral wool (MW) slab, for use as partial fill insulation to reduce the thermal transmittance of cavity walls in new buildings of a domestic or non-domestic nature with masonry inner and outer leaves, without height restriction (additional requirements apply for buildings above 12 m). The product is installed during construction.

(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 declared thermal conductivity (λ_D)* of 0.034 W·m⁻¹·K⁻¹ or 0.035 W·m⁻¹·K⁻¹ depending on thickness (see section 6).

Water resistance — the product will resist water transfer across the cavity of the walls (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 an A1 reaction to fire classification 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 an insulation for the life of the building (see section 11).



The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

A handwritten signature in black ink, appearing to read 'John Albon'.

John Albon — Head of Approvals
Construction Products

A handwritten signature in black ink, appearing to read 'Claire Curtis-Thomas'.

Claire Curtis-Thomas
Chief Executive

Date of First issue: 25 September 2015

Originally certificated on 3 March 1993

Certificate amended on 12 March 2019 to include Regulation 7(2) for England and associated text.

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 are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.*

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

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Regulations

In the opinion of the BBA, Rockwool High Performance Partial Fill Cavity Wall Slab, 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 sections 9.1 and 9.2 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The product is unrestricted by this Requirement. See sections 9.1 and 9.2 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 and 8.3 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 to 6.3 of this Certificate.
Regulation:	7	Materials and Workmanship (applicable to Wales only)
Regulation:	7(1)	Materials and Workmanship (applicable to England only)
Comment:		The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and Workmanship (applicable to England only)
Comment:		The product is unrestricted by this Regulation. See sections 9.1 and 9.2 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)
Comment:		The product can contribute to satisfying these Regulations. See sections 6.1 to 6.3 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The product can contribute to a construction satisfying this Regulation. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.6	Spread to neighbouring buildings
Comment:		The product is unrestricted by this Standard, with respect to clauses 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See sections 9.1 and 9.2 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 7.1 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product can contribute to satisfying this Standard, with reference to clause 3.10.1 ⁽¹⁾⁽²⁾ , provided it complies with the conditions set out in section 7.2 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 8.2 and 8.3 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying all or parts of clauses 6.1.1 ⁽¹⁾ , 6.1.2 ⁽²⁾ , 6.1.6 ⁽¹⁾ , 6.2.1 ⁽¹⁾⁽²⁾ , 6.2.3 ⁽¹⁾ , 6.2.4 ⁽²⁾ , 6.2.5 ⁽²⁾ , 6.2.9 ⁽¹⁾ and 6.2.11 ⁽²⁾ of these Standards. See sections 6.1 to 6.3 of this Certificate.
Regulation:	7	Materials and Workmanship (applicable to Wales only)
Regulation:	7(1)	Materials and Workmanship (applicable to England only)
Comment:		The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and Workmanship (applicable to England only)
Comment:		The product is unrestricted by this Regulation. See sections 9.1 and 9.2 of this Certificate.
Regulation:	12	Building standards applicable to conversions
Comment:		All comments given for 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	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.

Regulation:	28(a)	Resistance to moisture and weather
Comment:		The product can contribute to satisfying this Regulation. See section 7.1 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The product is unrestricted by this Regulation. See section 7.2 of this Certificate.
Regulation:	29	Condensation
Comment:		The product can contribute to satisfying this Regulation. See section 8.3 of this Certificate.
Regulation:	35(4)	Internal fire spread – structure
Comment:		The product is unrestricted by this Regulation. See sections 9.1 and 9.2 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The product is unrestricted by this Regulation. See sections 9.1 and 9.2 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Regulation:	40(2)	Target carbon dioxide emission rate
Comment:		The product can contribute to satisfying these Regulations. See sections 6.1 to 6.3 of this Certificate.

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, Principal Designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

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

Additional Information

NHBC Standards 2014

Subject to a 50 mm minimum residual cavity being maintained, NHBC accepts the use of Rockwool High Performance Partial Fill Cavity Wall Slab, 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. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 Rockwool High Performance Partial Fill Cavity Wall Slab consists of layers of bonded, water-repellent-treated rock mineral wool (MW), formed into resilient slabs using a resin binder.

1.2 The product has the nominal characteristics shown in Table 1.

Table 1 Nominal characteristics

Length (mm)		1200
Width (mm)		455
Thickness (mm)		50 to 230 (in 5 mm increments)
Density (kg·m ⁻³)	50 – 89 mm (mono density)	60
	≥ 90 mm (dual density)	Top layer (15 mm) – 80 Bottom layer – 45

1.3 All slabs have a belt mark covering one face. The slabs are normally positioned with this face outermost.

2 Manufacture

2.1 Raw materials, mixed to a controlled formulation, are melted in a furnace to produce molten rock. Rock fibres are produced from the molten rock using a rotary spinning process. The fibres are treated with a resin and formed into a continuous matt to the required thickness. The matt then passes into an oven which cures the resin. Slabs are then cut to the required dimensions.

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 Rockwool Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 (Certificate FM 02262) and BS EN ISO 14001 : 2004 (Certificate EMS 70301) by BSI.

3 Delivery and site handling

3.1 Slabs are delivered to site compression-wrapped in polythene. Each pack carries a label bearing the manufacturer's name, product description, essential instructions for installation and the BBA logo incorporating the number of this Certificate.

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

3.3 It is recommended that dust masks, gloves and long-sleeved clothing should be worn during cutting and handling of the slabs.

3.4 Damaged, contaminated or wet slabs must be discarded.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Rockwool High Performance Partial Fill Cavity Wall Slab.

Design Considerations

4 Use

4.1 Rockwool High Performance Partial Fill Cavity Wall Slab is satisfactory for use as partial fill cavity wall insulation and is effective in reducing the thermal transmittance (U value) of new external cavity walls with masonry inner and outer leaves (where masonry includes clay and calcium silicate bricks, concrete blocks, natural and reconstituted stone blocks). The product is for use in new domestic and non-domestic buildings without height restriction (additional requirements apply above 12 m). It is essential that such walls are designed and constructed to incorporate the precautions in this Certificate to prevent moisture penetration.

4.2 New buildings subject to the national Building Regulations should be designed and constructed in accordance with the relevant recommendations of:

- BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006 and their UK National Annexes
- BS EN 845-1 : 2013 and BS 8000-3 : 2001.

4.3 Other new buildings not subject to these Regulations should also be built in accordance with the Standards given in section 4.2 of this Certificate.

4.4 Cavity wall ties with insulation-retaining fixings and, if required, any additional ties to BS EN 845-1 : 2013 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.

4.5 The use of cavity battens or boards is strongly recommended to prevent thermal bridging by mortar droppings.

Buildings up to and including 12 metres high

4.6 The minimum residual cavity width to be maintained during construction must be 25 mm. To achieve this, a greater nominal residual cavity width may need to be specified at the design stage (to allow for inaccuracies inherent in the building process). The specifier may either:

- design a nominal residual cavity width of 50 mm (a residual cavity nominally at least 50 mm wide will be required by the NHBC), or
- design 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 boards, or by using the data from their respective manufacturers). Allowances may need to be made for the quality of building operatives and the degree of site supervision or control available. The limitations in respect of exposure of the proposed building as set out in Table 2 must also be observed.

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 : 2005), 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.

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

Buildings over 12 metres in height

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

- 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 weep holes discharging to the outside
- 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. Increased site supervision is recommended during installation of the products
- 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 the inclusion of cavity trays with weep holes.

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) of specific external wall constructions should be carried out in accordance with BS EN ISO 6946 : 2007 and BRE Report BR 443 : 2006, using the insulation's declared thermal conductivity (λ_D)* as given in Table 3.

Table 3 Thermal conductivities of the insulation

Thickness (mm)	Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$)
50 – 89	0.034
≥ 90	0.035

6.2 The U value of a completed wall will depend on the insulation thickness, number and type of fixings, the insulating value of the substrate masonry and its internal finish. Calculated U values for example constructions are given in Table 4.

Table 4 Example U values⁽¹⁾ — partial fill insulation (50 mm residual cavity)

U value ($W \cdot m^{-2} \cdot K^{-1}$)	Insulation thickness (mm)	
	13 mm dense plaster ⁽²⁾ 100 mm dense block ⁽³⁾	Plasterboard on dabs 100 mm AAC block ⁽⁴⁾
0.18	185	155
0.19	170	140
0.25	125	95
0.26	120	85
0.27	115	80
0.30	100	70
0.35	80	55

(1) Assumes air gap correction, $\Delta U=0.01$. Assumes fixings correction for fully-penetrating stainless steel fixings ($17 W \cdot m^{-1} \cdot K^{-1}$) at $2.5m^2$ with cross-sectional area of $12.5mm^2$. Construction includes 102.5 mm thick brick outer leaf and a 50 mm residual cavity.

(2) Plaster thermal conductivity $0.57 W \cdot m^{-1} \cdot K^{-1}$.

(3) Block and mortar thermal conductivity $1.13 W \cdot m^{-1} \cdot K^{-1}$ and $0.88 W \cdot m^{-1} \cdot K^{-1}$ respectively.

(4) Block and mortar thermal conductivity $0.12 W \cdot m^{-1} \cdot K^{-1}$ and $0.88 W \cdot m^{-1} \cdot K^{-1}$ respectively.

Junctions

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.

6.4 The Certificate holder has at least one member of staff who has been deemed competent by the BBA under the BBA/TIMSA Scheme for Calculation Competency (U value and Condensation Risk Analysis). Competent persons should be contacted for accurate, quality-assured U value and condensation risk analysis. The Certificate of Competency can be found on the BBA website (www.bbacerts.co.uk) as Certificate CS/1002.

7 Water resistance



7.1 Where the product is 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 relevant requirements and provisions of the national Building Regulations.

7.2 When the product is properly installed in accordance with this Certificate, it will resist any water transfer across the cavity to the inner leaf.

7.3 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 weep holes 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 slabs
- insulation slabs are properly installed and butt jointed
- dpc's 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

Surface condensation



8.1 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.



8.2 For buildings in Scotland, wall constructions will be acceptable when the thermal transmittance (U value) does not exceed $1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in BS 5250 : 2011 Annex G. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 6.3 of this Certificate.

Interstitial condensation



8.3 Walls will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2011, Annexes D and G, and the relevant guidance.

8.4 The product has a nominal vapour resistivity of $5 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}\cdot\text{m}^{-1}$.

9 Behaviour in relation to fire



9.1 The product has a reaction to fire classification of A1 in accordance with BS EN 13501-1 : 2007.

9.2 The product is classified as 'non-combustible' and is not subject to any restriction on building height or proximity to boundaries.

9.3 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 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 (see section 11), maintenance is not required.

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.

12 General

12.1 The Certificate holder's specialists, experienced in site practice and installation will, on request, attend the site to provide demonstrations to ensure correct installation from the outset.

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

12.3 It is recommended that the internal leaf be constructed ahead of the external leaf, as the slabs are fastened to the cavity face of the internal leaf. It is essential that the spacing of wall ties/clips allows one long edge of each slab to be secured at a minimum of two points. 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.

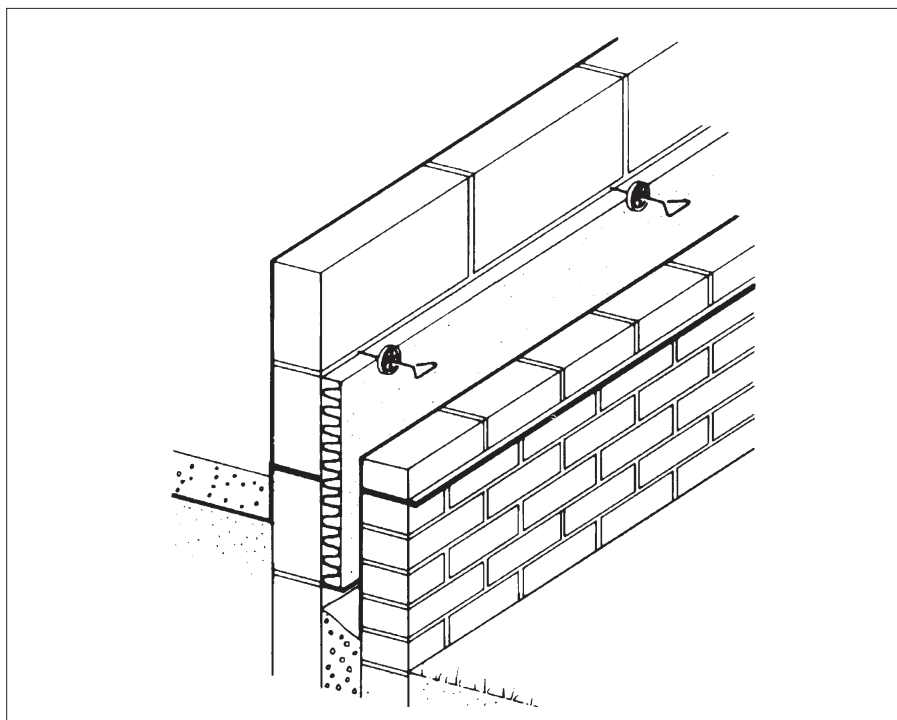
12.5 If installation of the slabs is terminated below the highest level of the wall, the top edge of the insulation must be protected by a cavity tray and alternate perpend joints raked out to provide adequate drainage of water from this tray.

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 A section of the internal leaf is built with the first row of wall ties, at approximately 600 mm horizontal spacings, where the insulation is to begin. The wall ties should not be placed directly on the dpc. The first run of slabs should commence below the dpc level to provide some edge insulation for the floor (see Figure 1).

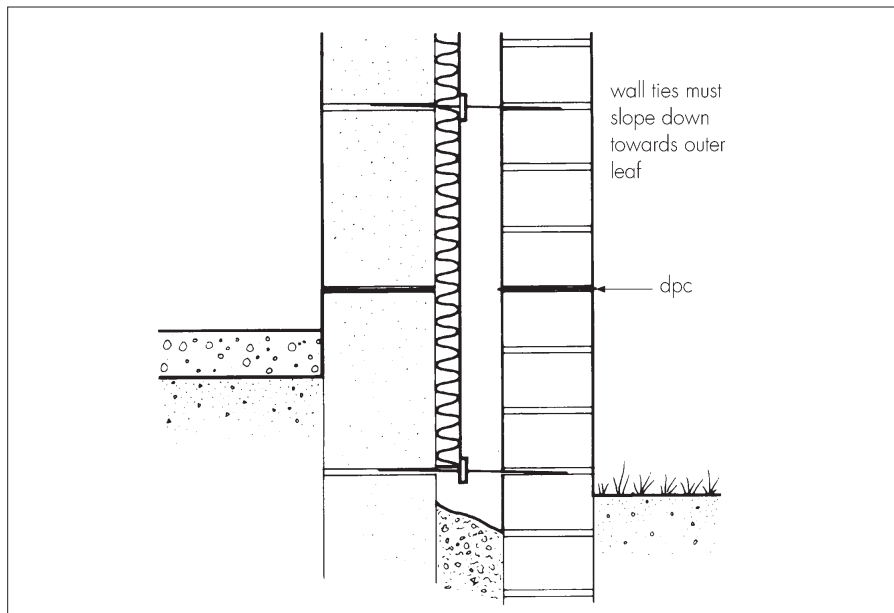
Figure 1 Insulation installed below dpc level to provide edge insulation for floor



13.2 The internal (leading) leaf is then built up to the required height, with wall ties placed at a vertical spacing of 450 mm, ensuring the drip of the tie is located halfway across the residual cavity width. Excess mortar should be cleaned from the cavity face of the leading leaf, and the slabs compressed slightly between the upper and lower wall ties, behind the retaining clips, to form a closely butt-jointed run.

13.3 The second row of wall ties is fitted to retain the tops of the slabs. It is essential that all wall ties slope downwards towards the external leaf (see Figure 2), and are placed at centres not exceeding 600 mm to ensure that each slab is secured at a minimum of four points. It is also important that the first row of insulation slabs should not be in contact with the ground.

Figure 2 Installation of wall ties



13.4 Additional ties may be required to satisfy the structural requirements of BS EN 845-1 : 2013, BS EN 1996-1-1 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006 to ensure adequate retention of slabs or cut pieces.

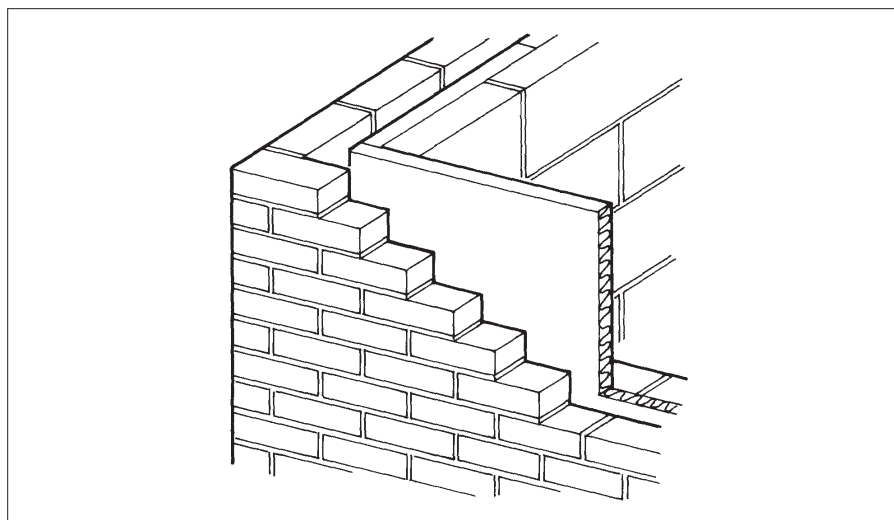
13.5 The external (following) leaf is built up to the level of the top of the slabs.

13.6 All slabs should be butted with vertical joints staggered. Insulation slabs 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.

13.7 Where additional ties are required, at less than 450 mm vertical spacing, the slabs must be cut and neatly fitted around them. Under no circumstances should they be impaled over ties.

13.8 The slabs should be close-butted at corners (see Figure 3). It is recommended that whole slabs should be used at corners, but if this is not possible the butting face should be factory cut.

Figure 3 Slabs close-butted at corner



Mortar droppings

13.9 After each section of the leading leaf is built, excess mortar should be removed from the cavity face and mortar droppings cleaned from exposed edges of the installed slabs, before installation of the next run of slabs. Use of a cavity board or a cavity batten will protect the installed slab edges and help to keep the cavity clean as the following leaf is built (see Figures 4 and 5).

Figure 4 Use of cavity batten

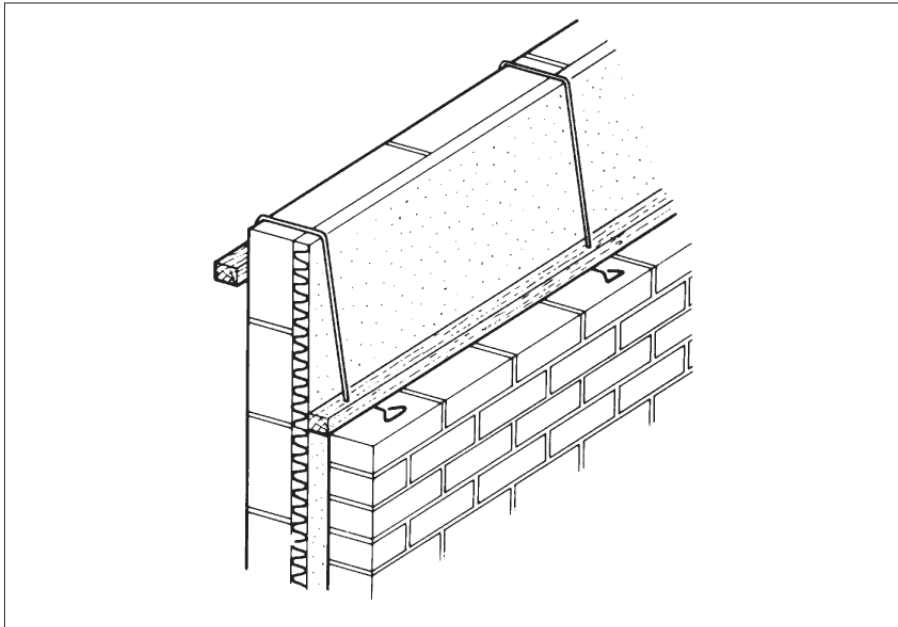
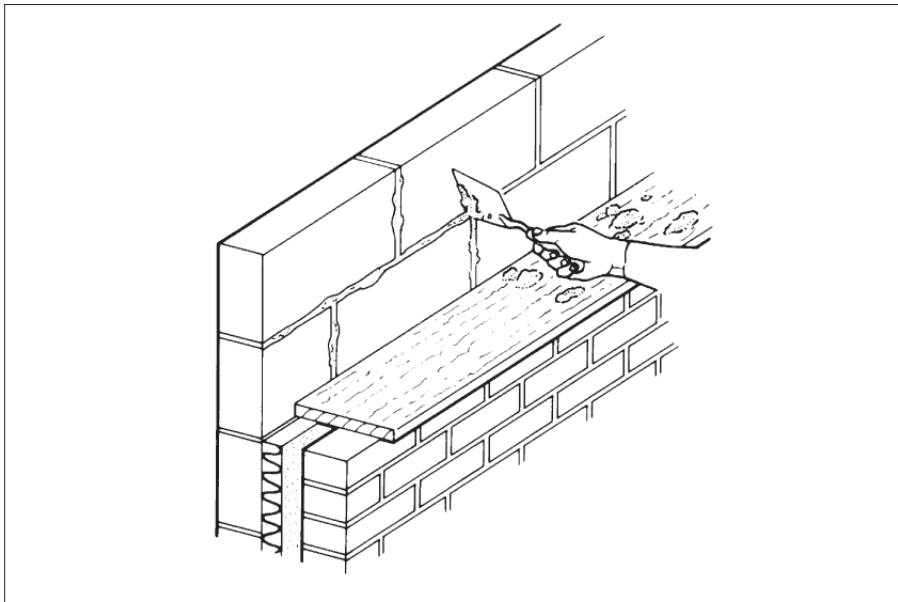


Figure 5 Use of cavity board



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 stopends and be adequately drained.

Cut pieces

13.11 The product can be cut, using a sharp knife or fine-toothed saw, to fit openings, eg around windows, doors and airbricks. It is essential that cut pieces completely fill the spaces for which they are intended and are adequately secured.

Protection

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

13.13 All building involving the products, 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*.

14 Tests

Results of tests were assessed to determine:

- resistance to rain penetration of an insulated cavity wall
- thermal conductivity
- dimensional accuracy
- dimensional stability under specific temperature and humidity conditions
- water absorption
- water vapour transmission
- density of air dry slabs
- efficiency of fixing system.

15 Investigations

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

15.2 A condensation risk analysis was carried out.

15.3 A series of U value calculations was carried out.

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

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

Bibliography

BS 5250 : 2011 *Code of practice for control of condensation in buildings*

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 : 2001 *Workmanship on building sites — Code of practice for masonry*

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

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

BS EN 13162 : 2012 *Thermal insulation products for buildings — Factory made mineral wool (MW) products — Specification*

BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

BS EN ISO 14001 : 2004 *Environmental management systems — Requirements with guidance for use*

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

BRE Report (BR 443 : 2006) *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.