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Agrément Certificate

95/3212

Product Sheet 1

DRITHERM⁽¹⁾ CAVITY SLABS

DRITHERM CAVITY SLABS 32, 34 AND 37

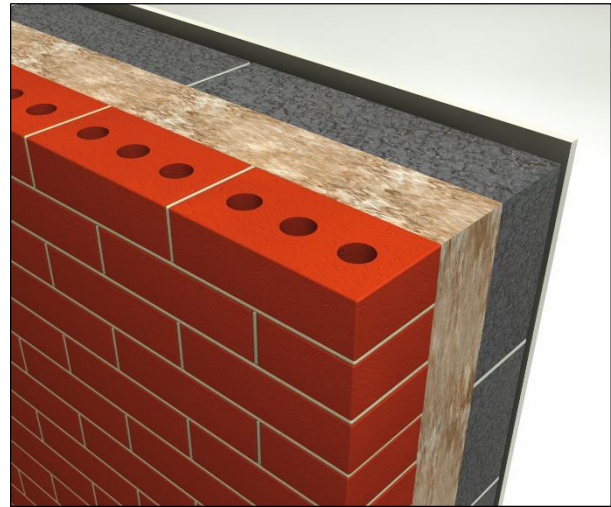
This Agrément Certificate Product Sheet ⁽²⁾ relates to DriTherm Cavity Slabs 32, 34 and 37, unfaced glass mineral wool slabs for use as full-fill thermal insulation in external masonry walls up to 25 metres in height, in new domestic and non-domestic buildings (additional requirements apply for buildings above 12 metres). The products are installed during construction.

(1) DriTherm is a registered trademark.

(2) 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 products have a declared thermal conductivity (λ_D) value of 0.032 to 0.037 $W \cdot m^{-1} \cdot K^{-1}$ (see section 6).

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

Condensation — the products will contribute to limiting the risk of condensation (see section 8).

Behaviour in relation to fire — the products have an A1 reaction to fire classification in accordance with BS EN 13501-1 : 2007 (see section 9).

Durability — the products are 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 products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Eighth issue: 23 January 2021

Originally certificated on 14 February 1996.

Certificate amended on 21 April 2021 to update product name.

Hardy Giesler
Chef 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.

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Regulations

In the opinion of the BBA, DriTherm Cavity Slabs 32, 34 and 37, 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:	B4(1)	External fire spread (structure)
Comment:		The products are unrestricted by this Requirement. See section 9.1 of this Certificate.
Requirement:	C2(a)	Resistance to moisture
Comment:		The products can contribute to satisfying this Requirement. See section 7.1 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The products can contribute to satisfying this Requirement. See section 7.2 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The products can contribute to satisfying this Requirement. See sections 8.1 and 8.4 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The products can contribute to satisfying this Requirement. See sections 6.1 and 6.2 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The products are 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 (application to Wales only)
Regulation:	26B	Fabric performance values for new dwellings (applicable to Wales only)
Comment:		The products 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 products are acceptable. 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 products are non-combustible and can contribute to satisfying the requirements of this Standard, with reference to clauses 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See section 9.1 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The products 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 products 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:	3.15	Condensation
Comment:		The products 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 and 8.5 of this Certificate.
Standard:	6.1(a)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The products can contribute to satisfying these Standards, with reference to clauses, or parts of, 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⁾ , 6.2.10 ⁽¹⁾⁽²⁾ , 6.2.11 ⁽¹⁾⁽²⁾ and 6.2.13 ⁽²⁾ . See sections 6.1 and 6.2 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The products 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 products can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4 ⁽¹⁾⁽²⁾ [Aspects 1 ⁽¹⁾⁽²⁾ and 2 ⁽¹⁾], 7.1.6 ⁽¹⁾⁽²⁾ [Aspects 1 ⁽¹⁾⁽²⁾ and 2 ⁽¹⁾] and 7.1.7 ⁽¹⁾⁽²⁾ [Aspect 1 ⁽¹⁾⁽²⁾]. See section 6.1 of this Certificate.
Regulation:	12	Building standards applicable to conversions
Comment:		All comments given for the products 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 products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	28(a)	Resistance to moisture and weather
Comment:		The products can contribute to satisfying this Regulation. See section 7.1 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The products can contribute to satisfying this Regulation. See section 7.2 of this Certificate.
Regulation:	29	Condensation
Comment:		The products can contribute to satisfying this Regulation. See section 8.1 of this Certificate.
Regulation:	36(a)	External fire spread — structure
Comment:		The products are unrestricted by this Regulation. See section 9.1 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Regulation:	40(2)	Target carbon dioxide emission rate
Comment:		The products can contribute to satisfying these Regulations. 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 2021

In the opinion of the BBA, DriTherm Cavity Slabs 32, 34 and 37, when used as full-fill cavity wall insulation, other than in very severe exposure locations with fair-faced masonry, 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*.

CE marking

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

Technical Specification

1 Description

DriTherm Cavity Slabs 32, 34 and 37 consist of layers of resin-bonded, water-repellent-treated glass mineral wool formed into slabs. The products have the nominal characteristics shown in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Length (mm)	1200
Width (mm)	455
Thickness (mm)	50 ⁽¹⁾ , 65 ⁽¹⁾ , 75, 85 ⁽²⁾ , 100, 125 and 150

(1) Available for the DriTherm Cavity Slab 37 only.

(2) Available for the DriTherm Cavity Slabs 32 and 37 only.

2 Manufacture

2.1 The raw materials are melted in an induction furnace, and the composition of the melted glass maintained at a prescribed chemical composition. The products are produced using Knauf fiberising ECOSE Technology.

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 being 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 BS EN ISO 9001 : 2015, ISO 14001 : 2015, DIN ISO 45001 : 2018 and ISO 50001 : 2011 by TUV NORD Cert GmbH (Certificates 44 100 190742, 44 104 190742, 44 126 190742 and 44 764 190742 respectively).

3 Delivery and site handling

3.1 The products 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 The products must be protected from prolonged exposure to sunlight, and stored dry, flat and raised above ground level (to avoid contact with ground moisture). Where possible, packs should be stored inside. If stored outside, they should be under cover, or protected with opaque polythene sheeting.

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

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

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on DriTherm Cavity Slabs 32, 34 and 37.

Design Considerations

4 General

4.1 DriTherm Cavity Slabs 32, 34 and 37 are satisfactory for use as full-fill cavity wall insulation and are effective in reducing the thermal transmittance (U value) of cavity walls with masonry inner and outer leaves (as shown in Figure 3), where masonry includes clay and calcium silicate bricks, concrete blocks, and natural and reconstituted stone blocks. Where natural stone is used, it should be dressed so that the cavity formed is uniform and both faces are parallel. The products are for use in new and existing domestic and non-domestic buildings, up to and including 25 metres in height. Additional requirements apply above 12 metres in height. It is essential that walls are designed and constructed to incorporate the precautions given in this Certificate to prevent moisture penetration.

4.2 Two or three 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 This Certificate covers the use of the products for full fill in any exposure zone. However, use of the products does not preclude the need to apply any external render coat or other suitable finish in severe exposure zones where such application would be normal practice.

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

- BS 8000-3 : 2001
- 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.

4.5 Other buildings not subject to these Regulations should also be built in accordance with the Standards given in section 4.4.

4.6 As with other forms of cavity wall insulation, where buildings need to comply with the *NHBC Standards 2021*, specifiers should observe the requirements of that document.

4.7 Cavity wall ties and, if required, any additional ties to BS EN 845-1 : 2013 and PD 6697 : 2010 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.

4.8 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 and fire dampers
- resistance to the ingress of precipitation, moisture and dangerous gases from the ground
- resistance to sound transmission when flanking separating walls and floors.

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

Buildings over 12 metres high and up to and including 25 metres high

4.10 Where the walls of a building are between 12 and 25 metres high, the following requirements also apply:

- from ground level, the maximum height of continuous cavity must not exceed 12 metres. Above 12 metres, the maximum height of continuous cavity 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
- the area to be insulated must not be 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.

5 Practicability of installation

The products are designed to be installed by a competent general builder, or a contractor, experienced with these types of products.

6 Thermal performance



6.1 Calculations of thermal transmittance (U value) of specific external wall constructions should be carried out in accordance with BS EN ISO 6946 : 2017 and BRE Report BR 443 : 2006, using the declared thermal conductivities (λ_D) given in Table 2 of this Certificate.

Table 2 Declared thermal conductivity (λ_D) values of the insulation

Product	Thickness (mm)	Declared thermal conductivity $W \cdot m^{-1} \cdot K^{-1}$
DriTherm Cavity Slab 37	50-150	0.037
DriTherm Cavity Slab 34	75-150	0.034
DriTherm Cavity Slab 32	75-150	0.032

6.2 The U value of a typical brick and block cavity wall construction will depend on the cavity width and the insulating value of the internal block leaf finish. Calculated U values for sample constructions are given in Table 3.

Table 3 Example U values⁽¹⁾

U value requirement (W·m ⁻² ·K ⁻¹)	Insulation thickness (mm) ⁽²⁾					
	13 mm dense plaster ⁽³⁾ 100 mm dense block ⁽⁴⁾			Plasterboard on dabs ⁽⁵⁾ 100 mm AAC block ⁽⁶⁾		
	DriTherm Cavity Slab 37	DriTherm Cavity Slab 34	DriTherm Cavity Slab 32	DriTherm Cavity Slab 37	DriTherm Cavity Slab 34	DriTherm Cavity Slab 32
0.18	200 ⁽⁷⁾	200 ⁽⁷⁾	170 ⁽⁷⁾	160 ⁽⁷⁾	150	150
0.19	185 ⁽⁷⁾	175 ⁽⁷⁾	160 ⁽⁷⁾	150	150	150
0.25	140 ⁽⁷⁾	125	125	115 ⁽⁷⁾	100	100
0.26	130 ⁽⁷⁾	125	125	100	100	85
0.27	125	125	125	100	100	85
0.28	125	125	125	100	100	85
0.30	115 ⁽⁷⁾	125	100	85	75	75
0.35	100	100	85	65	75	75

(1) 102.5 mm thick brick outer leaf with 17.3% mortar (0.88 W·m⁻¹·K⁻¹) and fixings correction for fully penetrating stainless steel (17 W·m⁻¹·K⁻¹) double-triangle ties (12.5 mm²) at 2.5 per m² bridging the insulation.

(2) Based upon incremental insulation thickness range in Table 1.

(3) 13 mm dense plaster with a thermal conductivity of 0.57 W·m⁻¹·K⁻¹.

(4) 100 mm dense block with a thermal conductivity of 1.13 W·m⁻¹·K⁻¹ and 6.6% mortar at 0.88 W·m⁻¹·K⁻¹.

(5) 12.5 mm plasterboard with a thermal conductivity of 0.25 W·m⁻¹·K⁻¹.

(6) 100 mm AAC block with a thermal conductivity of 0.12 W·m⁻¹·K⁻¹ and 6.6% mortar at 0.88 W·m⁻¹·K⁻¹.

(7) Thickness achieved with two layers of insulation.

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.

7 Water resistance



7.1 The products can be used in situations where they bridge 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 products 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:

- 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
- 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 insulation
- any dpc at ground level does not project into the cavity, as they can form a trap for mortar bridging
- insulation is properly installed and butt-jointed
- raked or recessed mortar joints are avoided in very severe exposure areas.

7.4 Window and door opening reveals should be constructed incorporating a cavity barrier/closer/dpc, as required.

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 : 2011, Annexes D and G, and the relevant guidance.

8.2 For the purposes of assessing the risk of interstitial condensation, the resin-bonded glass mineral wool vapour resistivity may be taken as approximately $5 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}\cdot\text{m}^{-1}$.

8.3 If the products are 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



8.4 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 junctions with other elements are designed in accordance with the guidance referred to in section 6.3.



8.5 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.

9 Behaviour in relation to fire



9.1 The products have an A1 reaction to fire classification⁽¹⁾ to BS EN 13501-1 : 2007 and are therefore defined as 'non-combustible' under the national Building Regulations.

(1) Exova reports WF 388511, 7 September 2017 and WF 358667, 10 November 2015. Copies can be obtained from the Certificate holder.

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

10 Maintenance

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

11 Durability



The products are unaffected by the normal conditions in a wall construction, and are 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 external leaf is constructed ahead of the internal leaf so that any mortar protruding into the cavity space from the back of the external leaf can be cleaned off before installing the products. 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.

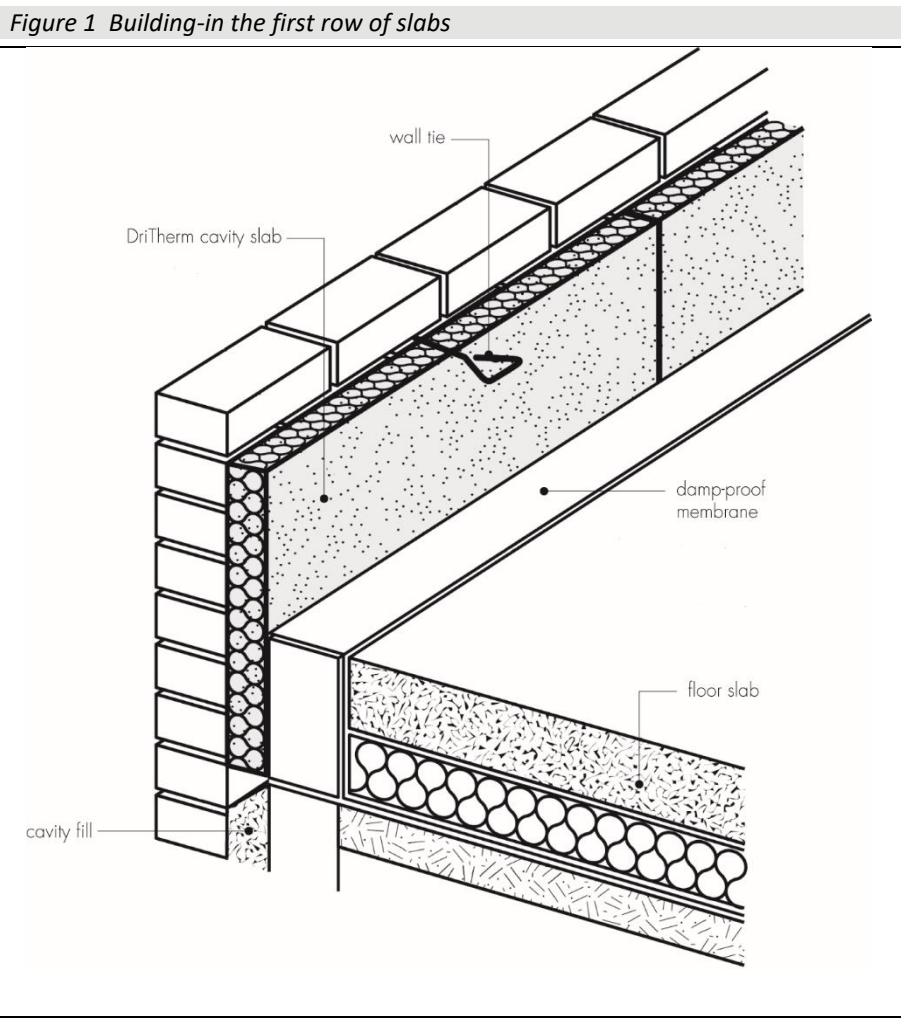
12.6 Where required, door and window reveals should incorporate a cavity barrier/closer. It is recommended that BBA-approved cavity barriers/closers are used.

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. The first run of slabs may commence below the dpc level to provide some edge insulation for the floor (see Figure 1).

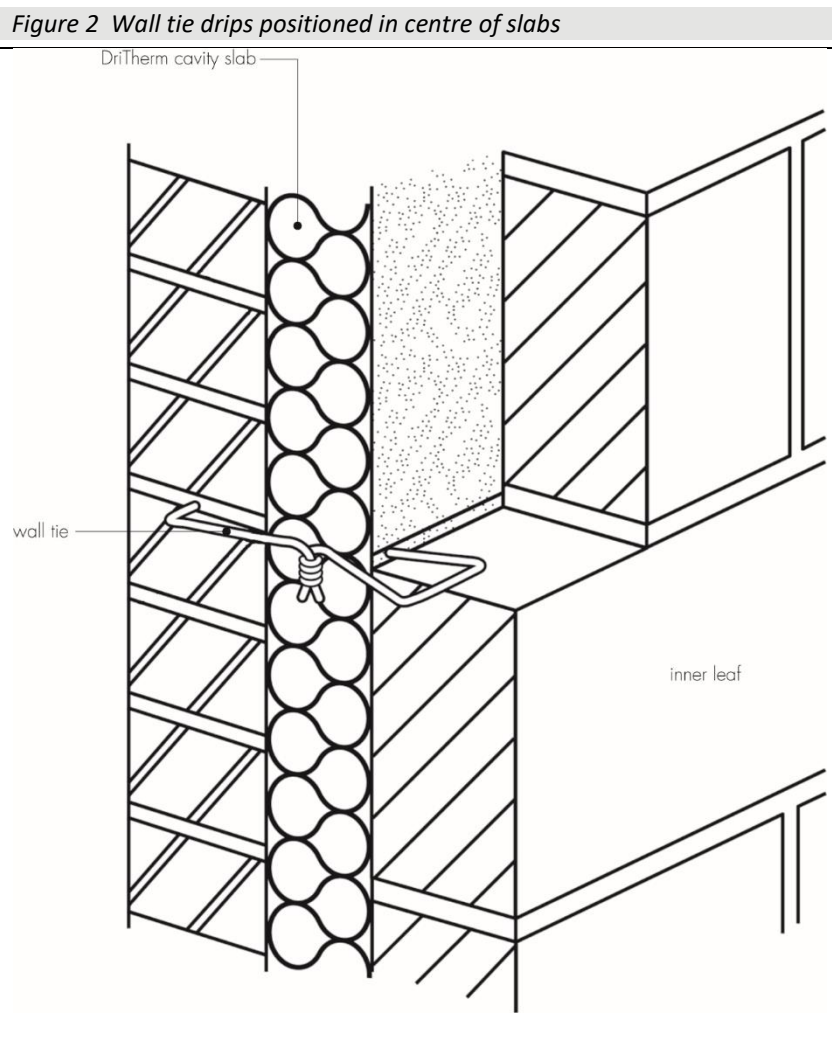
13.2 A section of the wall leaf is built up to a course above the next row of wall ties, which are placed at the usual spacing of 450 mm vertically and not more than 900 mm horizontally.

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



13.4 The drip on each of the upper wall ties is inserted into the top of the slabs and positioned to shed water away from the inner leaf. This is important to ensure that it functions correctly (see Figure 2).

13.5 The other leaf is built up to the same level as the slabs, with its inner face in contact with the slabs (see Figure 2).

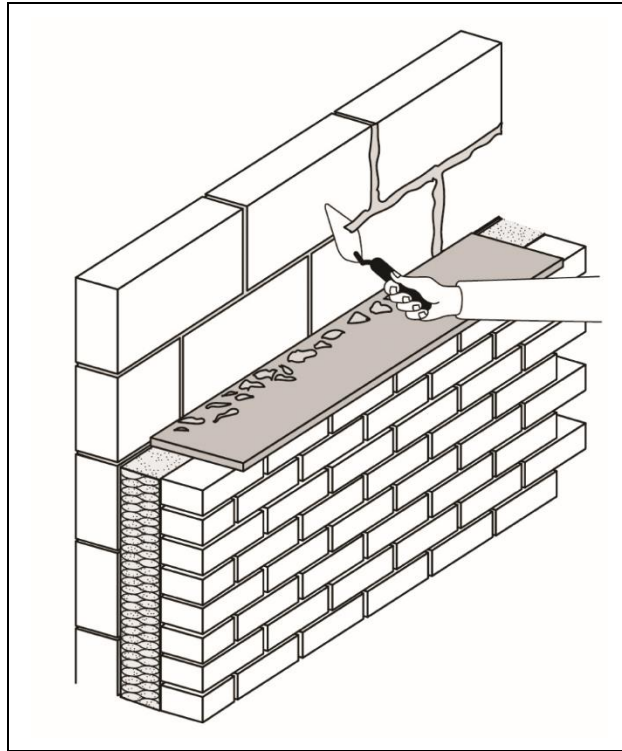


13.6 Successive sections of wall, incorporating wall ties, are constructed and the slabs installed.

Mortar droppings

13.7 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 the product. Use of a board is recommended to protect slab edges and make cleaning easier (see Figure 3).

Figure 3 Removal of excess mortar



Corners

13.8 It is recommended that 50 to 75 mm thick slabs are bent around corners. Thicker slabs should be close-butted to avoid cold bridges.

Wall openings

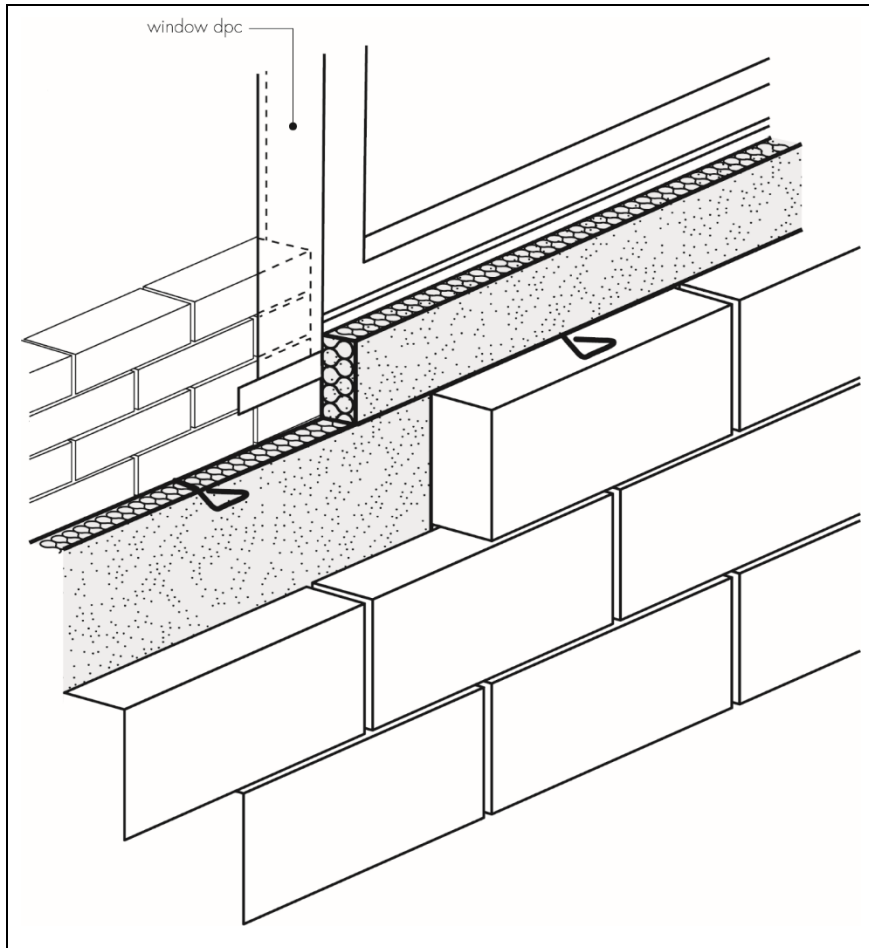
13.9 Where openings such as doors and windows are in proximity, it is recommended that a continuous lintel is used. Individual lintels should have stop-ends.

Cut pieces

13.10 The slabs can be cut with a sharp knife or a fine-tooth saw to fit features such as windows, doors, apertures and air bricks.

13.11 It is essential that cut pieces completely fill the spaces for which they are intended, and no gaps are left in the insulation (see Figure 4).

Figure 4 Use of cut pieces in/around gaps



13.12 Small pieces must be fitted with the fibre layer parallel to the plane of the wall.

Multi layers (when required)

13.13 The multi-layer insulation (see Table 3) is identical to the single-layer insulation, but the vertical joints in the second layer must not be coincident with the vertical joints in the first layer.

Protection

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

13.15 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*.

Technical Investigations

14 Tests

Results of tests were assessed to determine:

- density
- resistance to water penetration
- water uptake at saturation
- water absorption at high relative humidity
- dimensional accuracy.

15 Investigations

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

15.2 Calculations were undertaken to confirm the thermal conductivity (λ_D) value.

15.3 A condensation risk analysis was carried out.

15.4 A series of U value calculations 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

- BRE Report BR 262 : 2002 *Thermal insulation : avoiding risks*
- BRE Report BR 443 : 2006 *Conventions for U-value calculations*
- BS 5250 : 2011 + A1 : 2016 *Code of practice for control of condensation in buildings*
- BS 8000-3 : 2001 *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 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 ISO 6946 : 2017 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*
- BS EN ISO 9001 : 2015 *Quality management products — Requirements*
- DIN ISO 45001 : 2018 *Occupational health and safety management systems — Requirements with guidance for use*
- ISO 9001 : 2015 *Quality management systems — Requirements*
- ISO 14001 : 2015 *Environmental management systems — Requirements with guidance for use*
- ISO 50001 : 2011 *Energy management systems — Requirements with guidance for use*
- PD 6697 : 2010 *Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2*

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.