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Agrément Certificate  
**09/4709**  
Product Sheet 1

### COSYTHERM CAVITY WALL INSULATION

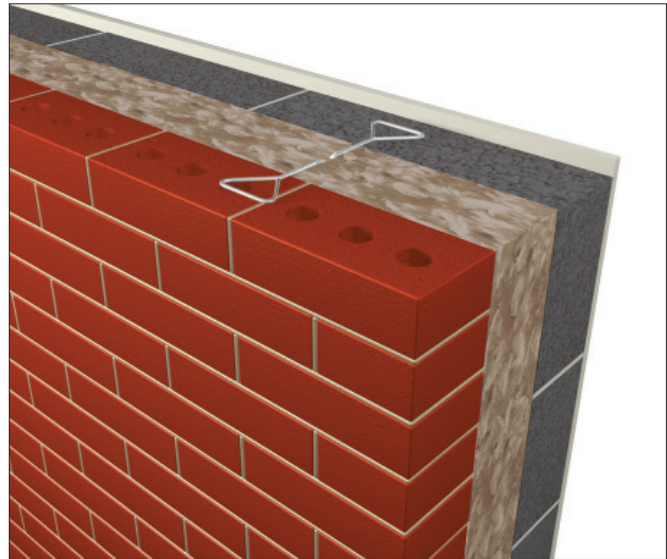
### COSYTHERM ECO WOOL CAVITY WALL INSULATION

#### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Cosytherm Eco Wool Cavity Wall Insulation, a glass wool material, injected in loose form with or without ECOSE Technology.

#### AGRÉMENT 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

**Practicability of installation** — the product must be installed by operatives trained and approved by the Certificate holder (see section 4).

**Thermal performance** — the product has a thermal conductivity of  $0.040 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$  (see section 5).

**Liquid water penetration** — the product will not allow water to cross the wall construction via the insulation (see section 6).

**Condensation** — walls will limit the risk of condensation provided the conditions stated within this Certificate are met (see section 7).

**Behaviour in relation to fire** — the Certificate holder has declared the product as non-combustible (see section 8).

**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 Agrément 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

Chris Hunt  
Head of Approvals — Physics

Greg Cooper  
Chief Executive

Date of First issue: 19 January 2010

*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](http://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.*

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# Regulations

In the opinion of the BBA, Cosytherm Eco Wool Cavity Wall Insulation, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



## The Building Regulations 2000 (as amended) (England and Wales)

<b>Requirement:</b> B3(4)	<b>Internal fire spread (structure)</b>
<b>Comment:</b>	The product is tested as non-combustible to BS EN ISO 1716 : 2002 and BS EN ISO 1182 : 2002 and therefore meets this Requirement and may be used in buildings of any purpose group. See sections 8.2 to 8.5 and 8.7 of this Certificate. It may also be regarded as a cavity barrier provided all of the cavity is filled.
<b>Requirement:</b> C2(a)(b)(c)	<b>Resistance to moisture</b>
<b>Comment:</b>	Tests by the BBA indicate that a wall incorporating this product can enable or contribute to enabling this Requirement provided the wall complies with the conditions set out in sections 3.5 to 3.8, 7.1 and 7.3 of this Certificate. The product does not absorb water by capillary action and may therefore be used in situations where it bridges the dpcs of the inner and outer leaf. See section 6 of this Certificate.
<b>Requirement:</b> L1(a)(i)	<b>Conservation of fuel and power</b>
<b>Comment:</b>	The product can contribute to meeting this Requirement. See sections 5.2 to 5.5 of this Certificate.
<b>Requirement:</b> Regulation 7	<b>Materials and workmanship</b>
<b>Comment:</b>	The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.



## The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b> 8(1)	<b>Fitness and durability of materials and workmanship</b>
<b>Comment:</b>	The product can contribute to a construction satisfying this Regulation. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b> 9	<b>Building standards — construction</b>
<b>Standard:</b> 2.4	<b>Cavities</b>
<b>Comment:</b>	Cavity barriers are not required provided all of the cavity is filled, with reference to clauses 2.4.1 <sup>(1)(2)</sup> and 2.4.2 <sup>(1)(2)</sup> See sections 8.6 and 8.7 of this Certificate.
<b>Standard:</b> 2.6	<b>Spread to neighbouring buildings</b>
<b>Comment:</b>	The product is non-combustible to BS EN ISO 1716 : 2002 and BS EN ISO 1182 : 2002 and may be used in any purpose group, with reference to clauses 2.6.5 <sup>(1)</sup> and 2.6.6 <sup>(2)</sup> . See sections 8.2 and 8.3 of this Certificate.
<b>Standard:</b> 3.4	<b>Moisture from the ground</b>
<b>Comment:</b>	The product can contribute to a construction satisfying this Standard, with reference to clause 3.4.1 <sup>(1)</sup> . The product can be used in situations where it bridges the dpc's of the inner and outer leaf. See section 6 of this Certificate.
<b>Standard:</b> 3.10	<b>Precipitation</b>
<b>Comment:</b>	The product will satisfy this Standard, with reference to clause 3.10.1 <sup>(1)</sup> provided it complies with the conditions set out in sections 3.5 to 3.8 of this Certificate. See also section 6 of this Certificate.
<b>Standard:</b> 3.15	<b>Condensation</b>
<b>Comment:</b>	The product can satisfy, or contribute to satisfy this Standard, with reference to clause 3.15.1 <sup>(1)</sup> , 3.15.3 <sup>(1)</sup> and 3.15.4 <sup>(1)</sup> . See sections 7.2 and 7.3 of this Certificate.
<b>Standard:</b> 6.1(a)(b)	<b>Carbon dioxide emissions</b>
<b>Standard:</b> 6.2	<b>Building insulation envelope</b>
<b>Comment:</b>	The product can contribute to satisfying clause, or parts of, clause 6.2.1 <sup>(1)</sup> . See sections 5.2 to 5.5 of this Certificate.
<b>Regulation:</b> 12	<b>Building standards — conversions</b>
<b>Comment:</b>	All comments given for this product under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)</sup> and Schedule 6 <sup>(1)</sup> . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2000 (as amended)

<b>Regulation:</b> B2	<b>Fitness of materials and workmanship</b>
<b>Comment:</b>	The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b> C4(a)	<b>Resistance to ground moisture and weather</b>
<b>Comment:</b>	Tests by the BBA indicate that a wall incorporating this product can satisfy this Regulation. See sections 3.5 to 3.8 of this Certificate. The product does not absorb water by capillary action and may therefore be used in situations where it bridges the dpcs of the inner and outer leaf. See section 6 of this Certificate.
<b>Regulation:</b> C5	<b>Condensation</b>
<b>Comment:</b>	Walls incorporating the product can meet this Regulation. See sections 7.1 and 7.3 of this Certificate.

Regulation:	E4(4)	Internal fire spread – Structure
Comment:	The product is non-combustible to BS 476-4 : 1970 and may be used in buildings of any purpose group. Cavity barriers are not required provided all of the cavity is filled. See sections 8.2 to 8.5 and 8.7 of this Certificate.	
Regulation:	F2(a)(i)	Conservation measures
Regulation:	F3	Target carbon dioxide Emissions Rate
Comment:	The product can satisfy or contribute to satisfying these Regulations. See sections 5.2 to 5.5 of this Certificate.	

## Construction (Design and Management) Regulations 2007

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

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

See section: 2 *Delivery and site handling.*

# Non-regulatory Information

## NHBC Standards 2008

NHBC accepts the use of Cosytherm Eco Wool Cavity Wall Insulation, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.1 *External masonry walls*.

# General

This Certificate relates to Cosytherm Eco Wool Cavity Wall Insulation, with or without ECOSE technology, for use as a full fill cavity wall insulation to reduce the thermal transmittance of cavity walls with masonry inner and outer leaves, in buildings up to 12 m in height.

ECOSE is a registered trademark.

# Technical Specification

## 1 Description

1.1 Cosytherm Eco Wool Cavity Wall Insulation, with or without ECOSE technology, consists of granulated glass wool fibres, treated with an inert water-repellent during manufacture. ECOSE binder technology is an alternative water-repellant system which is equivalent to the water-repellant originally used.

1.2 The length of the fibres and degree of granulation are subject to regular quality control checks by the manufacturer.

1.3 The target mean density for this product, when installed, is  $24 \text{ kg}\cdot\text{m}^{-3}$ . Local areas within the wall, when sampled over an area of  $0.5 \text{ m}^2$ , may have a density variation of  $\pm 5 \text{ kg}\cdot\text{m}^{-3}$ .

## 2 Delivery and site handling

The product is delivered to site in polythene wrapped bales weighing approximately 18.6 kg, which should not be opened until required for use. The bales are marked with the BBA identification mark incorporating the number of this Certificate.

# Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Cosytherm Eco Wool Cavity Wall Insulation.

# Design Considerations

## 3 General

3.1 Cosytherm Eco Wool Cavity Wall Insulation, is effective in reducing the thermal transmittance (U value) of external cavity walls, with masonry inner and outer leaves (where masonry includes clay and calcium silicate bricks, concrete blocks, natural and reconstituted stone blocks). It is essential that such walls are designed and constructed to incorporate the precautions given in this Certificate to prevent moisture penetration.

3.2 The product may be used in buildings up to and including 12 m in height subject to the conditions given in sections 3.11 to 3.13 and as follows:

- the cavity width must be a minimum 50 mm. It should be noted that to comply with the U value requirements, the design cavity width may need to be increased
- walls must be in a good state of repair and must show no evidence of frost damage
- mortar joints must not be raked or recessed and must not show evidence of more than hairline cracking

- normally the area to be insulated shall not be infill panels in a framed structure. However, where the walls to be injected can, in the opinion of the Certificate holder, be classified as sheltered and the external leaf brickwork has been in place for more than 10 years, then filling may be undertaken
- installation is carried out to the highest level on each wall unless the top edge of the insulation is protected by a cavity tray
- from ground level, the maximum height of continuous cavity wall must not exceed 12 m
- this Certificate covers the use of the product in areas where the exposure factor does not exceed 120 (factor calculated using BBA Information paper No 10).

3.3 As with all cavity wall insulation, the construction and detailing should comply with good practice as described in the BBA joint publication *Cavity Insulation of Masonry Walls – Dampness Risks and How to Minimise them*. They are particularly important in areas subject to severe or very severe driving rain as defined in BS 5628-3 : 2005.

### Partial filling

3.4 Whenever practicable, all of the cavity space from ground level to the roof or gable copings should be filled. Partial filling is allowed only:

- when separately insulating semi-detached or terraced properties. The cavity barrier used for this purpose is retained in the cavity and must be of a type approved by the BBA. Further details are available from the BBA or the approved installer
- up to the underside of a horizontal boundary, other than the roof, where that horizontal boundary is protected by a cavity tray or similar waterproof barrier
- where filling is carried out above a horizontal boundary
- when treating properties where the wall to be insulated is below a waterproof cladding (eg tile hung) and this cladding either extends up to the roof or is protected at the top by other means (eg window sills).

### Existing buildings



3.5 Existing buildings subject to the national Building Regulations should be suitable when assessed in accordance with relevant standards.

3.6 In an existing building, the product may be installed only:

- where there are no signs of dampness on the inner face of the cavity wall, other than those caused solely by condensation, and
- where the cavity is not being used as a source of combustion air or as a flue for ventilation purposes.

### New buildings

3.7 New buildings subject to the national Building Regulations should be constructed in accordance with the relevant recommendations of BS 5628-3 : 2005. In particular Clause 5.5 of the Code of practice *Exclusion of water* should be followed in that the designer should select a construction appropriate to the local wind-driven rain index paying due regard to the design detailing, workmanship and materials to be used.

3.8 Other new buildings not subjected to any of the above should also be built in accordance with BS 5628-3 : 2005 and BS 8000-3 : 2001.

3.9 As with any other form of cavity wall insulation, where buildings need to comply with *NHBC Standards 2008*, specifiers should observe the requirements of these documents.

3.10 In a new building where the product is to be installed:

- cavity battens or boards must be used to reduce the amount of mortar droppings left in the cavity
- injection of the product is to be left until the cavity is sealed from the weather, ie the roof is in place and the window and door openings are sealed.

3.11 To reduce the risk of water penetration, raked or recessed mortar joints should be avoided in high exposures areas.

3.12 The product is for use in any exposure zone in buildings up to 12 m in height. However, the use of the product does not preclude the need to apply any external render coat or other suitable finish in severe exposures zones where such application would be normal practice.

## 4 Practicability of installation

The product must be installed by operatives trained and approved by the Certificate holder (see section 14).

## 5 Thermal performance

5.1 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) *Conventions for U-value calculations*. The thermal conductivity may be taken as  $0.040 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ .



5.2 The U value of a typical brick and block cavity wall construction will depend on the thickness of the board, the cavity width and the insulating value of the internal block leaf and finish. Example U values are given in Table 1.

5.3 When considering insulation requirements, designers should refer to the detailed guidance contained in the documents supporting the national Building Regulations. The U values shown in Table 1 indicate that the product can enable a wall to achieve typical design U values referred to in those supporting documents. See Tables 2 and 3.

### New buildings

5.4 Walls with U values lower than (or the same as, for dwellings in Scotland) the relevant 'notional' value specified in section 5.3 will contribute to a building meeting its Target Emission Rate. Walls with higher U values will require additional energy saving measures in the building envelope and/or services.

5.5 The product can maintain, or contribute to maintaining, continuity of thermal insulation at junctions between external walls and other building elements. Example junction detail shown in Figure 1 will allow use of the default psi values for Accredited Construction details in Target Emission Rate calculations to SAP 2005 *The Government's Standard Assessment Procedure for Energy Rating of Dwellings* or the Simplified Building Energy Model (SBEM). Detailed guidance in this respect and on limiting heat loss by air infiltration can be found in:

**England and Wales** — *Limiting thermal bridging and air leakage: Robust construction details for dwellings and similar buildings* TSO 2002 or Accredited Construction Details (version 1.0)

**Scotland** — Accredited Construction Details (Scotland)

**Northern Ireland** — Accredited Construction Details (version 1.0).

### Existing buildings

5.6 For existing buildings, extensions and conversions, walls will be acceptable where they do not exceed the relevant U value in Tables 2 or 3 and junctions and openings comply with section 5.5 or BRE report (BR 262 : 2002) *Thermal insulation avoiding risks*.

**Table 1** Typical cavity wall U values ( $W \cdot m^{-2} \cdot K^{-1}$ )<sup>(1)</sup>

Insulation thickness (mm)	Dense concrete block ( $\lambda = 1.13 W \cdot m^{-1} \cdot K^{-1}$ ) <sup>(2)</sup>	Aerated concrete block with mortar ( $\lambda = 0.12 W \cdot m^{-1} \cdot K^{-1}$ and $0.88 W \cdot m^{-1} \cdot K^{-1}$ respectively) <sup>(3)</sup>
75	0.44	0.33
100	0.34	0.27
125	0.28	0.23

(1) Assumes fixings correction  $U_f < 3\%$  of nominal U value and 102 mm thick brick outer leaf.

(2) Block and plaster thermal conductivity  $1.13 W \cdot m^{-1} \cdot K^{-1}$  and  $0.57 W \cdot m^{-1} \cdot K^{-1}$  respectively.

(3) 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.

**Table 2** Typical design U values for walls — England and Wales, and Northern Ireland

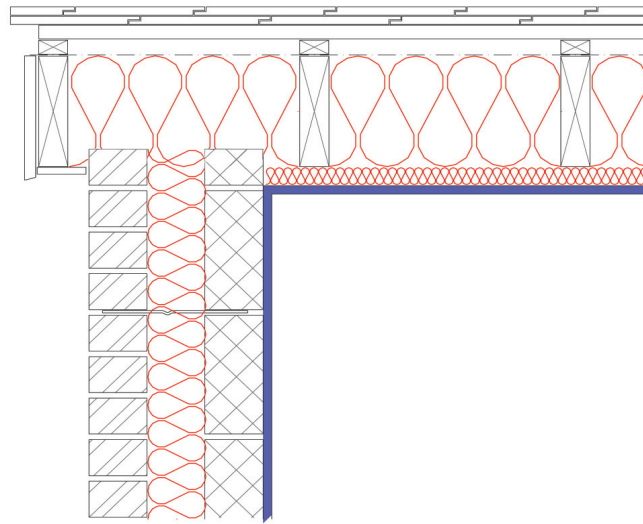
Construction type	$W \cdot m^{-2} \cdot K^{-1}$
Mean for new extensions <sup>(1)</sup>	0.30
'Notional' mean in SAP and SBEM and limit mean value for new-build	0.35
Mean for replacement, renovated and retained walls <sup>(1)</sup>	0.35
Individual limit for new-build and flexible approaches <sup>(1)</sup>	0.70

(1) Refer to relevant documents supporting the national Building Regulations for alternative/flexible approaches.

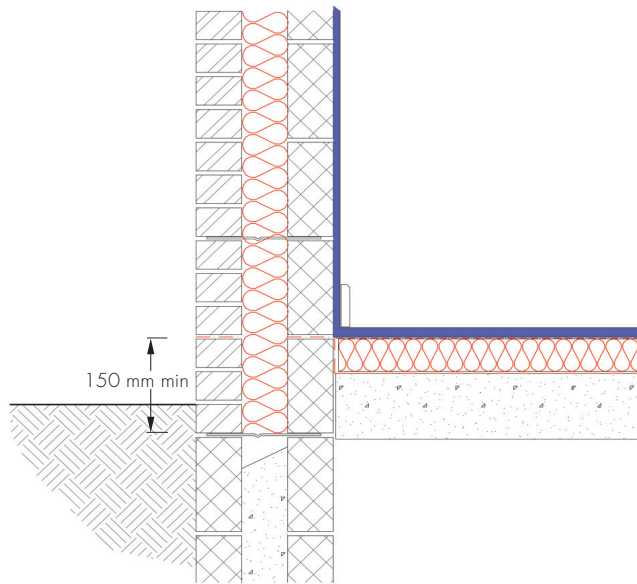
**Table 3** Typical design U values for walls — Scotland

Construction type	$W \cdot m^{-2} \cdot K^{-1}$
'Notional' mean for dwellings in SAP and the simplified approach:	
• solid fuel, package 6	0.20
• other fuels, packages 1–5	0.25
Mean for stand-alone buildings less than 50 m <sup>2</sup>	0.27
Mean for new extensions, conversions and alterations <sup>(1)</sup>	0.27
'Notional' mean for non-domestic in SBEM and limit mean for all new-build	0.30
Individual limit for; new-build, extensions, conversions, alterations and stand-alone domestic buildings less than 50 m <sup>2</sup> .	0.70

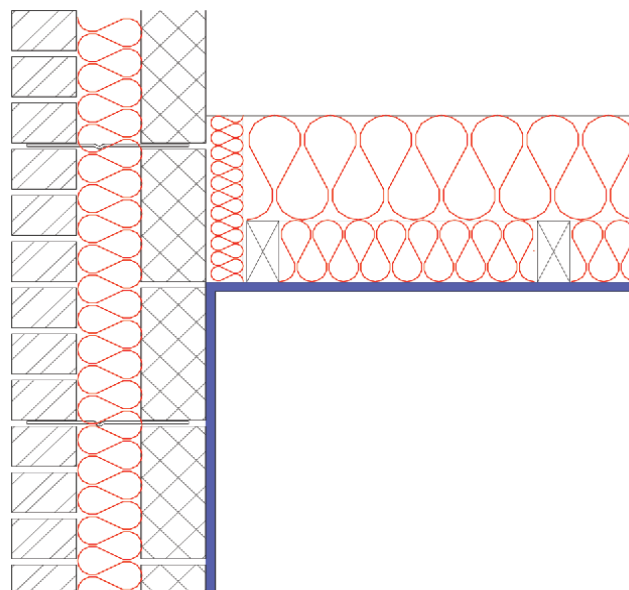
(1) Refer to relevant documents supporting the national Building Regulations for alternative/flexible approaches.



Gable wall – pitched roof junction



Wall-floor junction



Wall-ceiling junction

Ensure insulation and air barrier continuity and closely butt joints between insulation and adjacent materials

## 6 Liquid water penetration



Tests by the BBA confirm that constructions built in accordance with BS 5628-3 : 2005, will resist the transfer of precipitation to the inner leaf and satisfy the national Building Regulations:

**England and Wales** — Requirement C2(b)

**Scotland** — Mandatory Standard 3.10, clause 3.10.1

**Northern Ireland** — Regulation C4(a).

## 7 Condensation

### Surface condensation



7.1 Walls will limit the risk of surface condensation adequately 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 floors, roofs and openings are designed in accordance with *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings* TSO 2002 or BRE Information Paper IP 1/06 *Assessing the effects of thermal bridging at junctions and around openings*.



7.2 For buildings in Scotland, other constructions will also be acceptable where the thermal transmittance (U value) of the wall does not exceed  $1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$  at any point and openings and junctions with other elements comply with the guidance given in Section 8 of BS 5250 : 2002, BRE report (BR 262 : 2002) or Technical Booklet, Annex 6D, of the Scottish Building Regulations.

### Interstitial condensation



7.3 Walls will limit the risk of interstitial condensation adequately when they are designed and constructed in accordance with BS 5250 : 2002 (Section 8 and Annex D).

## 8 Behaviour in relation to fire

8.1 The product does not prejudice the fire-resistance properties of the wall or constitute a toxic hazard in fire.



8.2 The Certificate holder has declared the product is characterised as being non-combustible as tested to BS EN ISO 1716 : 2002 and BS EN ISO 1182 : 2002.

8.3 The product may be used as described in the national Building Regulations:

**England and Wales and Northern Ireland** — in buildings of every purpose group

**Scotland** — in domestic and non-domestic buildings.



8.4 The requirements of the Building Regulations relating to fire spread in cavity walls can be met in buildings of all purpose groups without the need for cavity barriers, provided the construction complies with the provisions detailed in:

**England and Wales** — Approved Document B, Volume 1, Diagram 13 and Volume 2, Diagram 34

**Northern Ireland** — Technical Booklet E, Diagram 3.5.

8.5 A summary of these provisions is given here:

- the wall must consist of masonry inner and outer leaves, each at least 75 mm thick
- the cavity must not be more than 300 mm (Northern Ireland only)
- the cavity must be closed at the top of the wall and at the top of any opening
- in addition to the insulation only the following combustible materials shall be placed in, or exposed to, the cavity:
  - timber lintels, window or door frames, or end of timber joists
  - pipe, conduit or cable
  - dpc, flashing, cavity closer or wall tie
  - domestic meter cupboard, provided that there are not more than two cupboards to a dwelling, the opening in the outer leaf is not more than 800 mm by 500 mm for each cupboard, and the inner leaf is not penetrated except by a sleeve not more than 80 mm by 80 mm, which is fire-stopped.



8.6 For buildings subject to the Building Standards in Scotland, cavity barriers are not required to limit the area of a cavity or at junctions with other wall cavities, but cavity barriers are required around openings, penetrations and junctions with roof or floor cavities, with reference to clauses 2.4.1, 2.6.5 and 2.6.6.



8.7 For constructions not covered by sections 8.4, 8.5 and 8.6 cavity barriers must be provided to comply with:

**England and Wales** — Approved Document B, Volume 1, Section 6 and Volume 2, Section 9

**Scotland** — Mandatory Standards 2.4 and 2.6, clauses 2.4.1, 2.6.0, 2.6.5 and 2.6.6

**Northern Ireland** — Technical Booklet E, Paragraphs 3.35 to 3.38.

## 9 Water vapour penetration

The product is not a water vapour control layer.

## 10 Maintenance

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

## 11 Durability



The product is durable, rot-proof, water resistant and sufficiently stable to remain effective as an insulation for the life of the building.

# Installation

## 12 Site survey

12.1 Prior to installation, a survey is carried out by a trained surveyor to ascertain the suitability of the property or properties for the product. A complete survey report is prepared and held at the installer's offices. Particular problems are specifically identified and any reasons for rejection of the work noted.

12.2 Quotations, tenders and invoices bear the BBA identification mark, incorporating the number of this Certificate.

## 13 Site preparation

13.1 The installing operative ensures that the property has been correctly surveyed and is suitable for insulation with the product. Any problems encountered during drilling which prevent compliance with this Certificate are referred to the installation company before proceeding.

13.2 Essential ventilation openings, such as those providing combustion air or underfloor ventilation, and all flues in the cavity wall must be checked. If adequate sleeving or other cavity closures are not present, installation must not proceed until these openings have been sleeved or otherwise modified to prevent blockage by the insulant.

## 14 Approved installers

Installation of the product is carried out by the Certificate holder and their approved installers, an approved installer being a company:

- required to satisfy an initial site installation check by the BBA prior to approval by the Certificate holder and is subject to the BBA Assessment and Surveillance Scheme for Installation of Cavity Wall Insulation
- approved by the Certificate holder and the BBA to install the product
- undertaken to comply with the Certificate holder installation procedure
- employing operatives who have been issued with appropriate identity cards by the Certificate holder; at least one member of each installation team must carry a card
- subject to supervision by the Certificate holder, including unannounced site inspections.

## 15 Supervision

15.1 Installation of the product should be carried out in accordance with the BBA Assessment and the Surveillance Scheme for Installation of Cavity Wall Insulation.

15.2 During installation, the following simple checks can be made, as an aid to determining that the installation conforms to the certificated method:

- the pattern of holes complies with the description given in section 16.3
- the injection of the material takes place at each hole, to complete the filling of the cavity space.

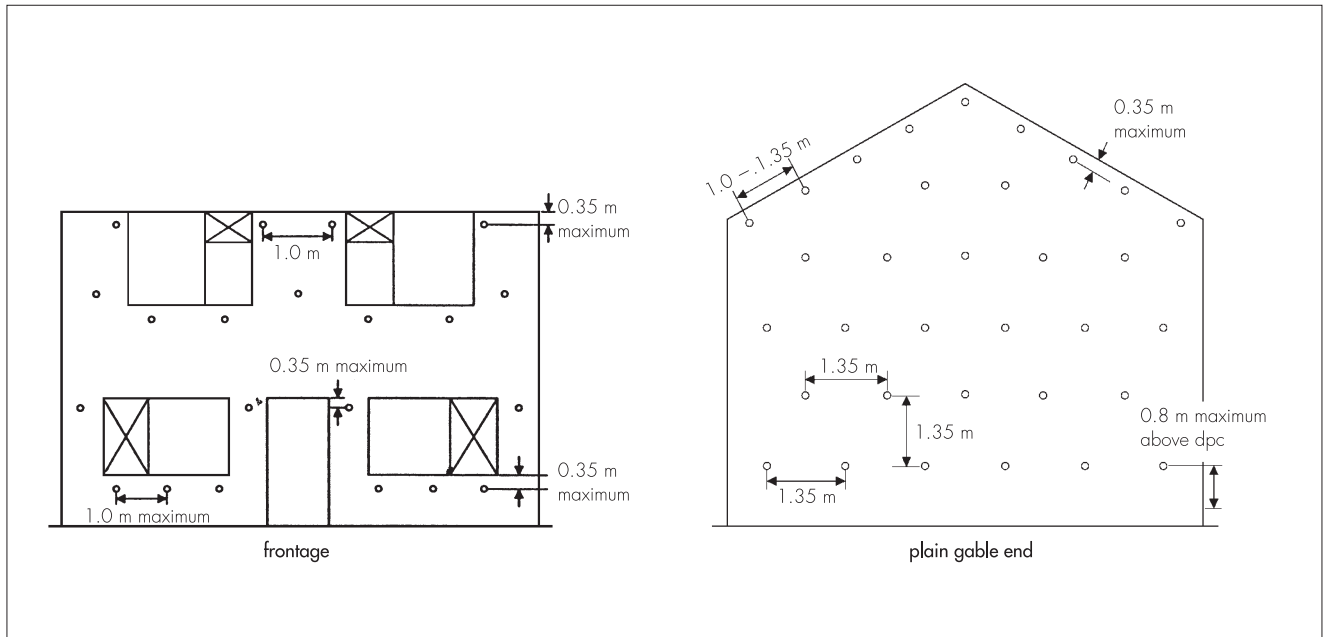
## 16 Procedure

16.1 The product is installed using an approved blowing machine marked with the appropriate BBA Certificate number. The installer provides all necessary hoses, drilling tools, equipment and materials for making good the walls after the installation of the product.

16.2 Where a semi-detached or terraced property is to be treated, the insulation is contained by inserting a cavity barrier at the line dividing the properties. This consists of a nylon brush which is retained within the cavity.

16.3 Holes of 22 mm or 25 mm in diameter to suit the diameter of the injection nozzle used (see section 17.4) are drilled in a diamond pattern at approximately 1.35 m centres. The topmost injection holes should not be more than 350 mm below the top of the cavity and not more than 1 m apart. The bottom row of holes should start approximately 800 mm above dpc level. Additional holes may be required to ensure complete filling around building features, eg under window sills around air bricks in column areas between doors and windows, at the tops of walls and under gables. Again, the topmost holes should not be more than 1 m apart under the horizontal boundaries and 1.35 m apart under the sloping boundary at the top of the gable end (see Figure 2).

Figure 2 Typical drilling patterns



16.4 The product is blown into the cavity under pressure through 25 mm clearance holes via a flexible pipe, fitted with either a 22 mm or 25 mm outside diameter injection nozzle, depending on the type of machine used. Filling proceeds from the bottom to the top of the walls and from one end of an elevation to the other.

16.5 After injection of the product, the wall is made good to match the existing finish as closely as possible. All necessary air vents are checked, eg those providing underfloor ventilation and combustion air for heating appliances. In all cases flues are carefully checked on completion of the installation by means of an appropriate test (eg a smoke test) to ensure they are not obstructed by the insulant.

## Technical Investigations

### 17 Tests

Tests were carried out on Cosytherm Eco Wool Cavity Wall Insulation to determine:

- the water resistance of a cavity wall, filled with the insulant
- adequacy of fill using specified installation machinery and drilling pattern.

### 18 Investigations

18.1 The manufacturing process of the granulated glass wool fibre was examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

18.2 Existing data on thermal properties, toxicity and properties in relation to fire were evaluated.

## Bibliography

- BS 476-4 : 1970 *Fire tests on building materials and structures — Non-combustibility test for materials*
- BS 5250 : 2002 *Code of practice for control of condensation in buildings*
- BS 5628-3 : 2001 *Code of practice for use of masonry — Materials and components, design and workmanship*
- BS 8000-3 : 2001 *Workmanship on building sites — Code of practice for masonry*
- BS EN ISO 1182 : 2002 *Plastics — Reaction to fire tests for building products — Non-combustibility test*
- BS EN ISO 1716 : 2002 *Reaction to fire tests for building products — Determination of the heat of combustion*
- BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

## 19 Conditions

19.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

19.2 Publications and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

19.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.

19.4 In granting this Certificate, the BBA is not responsible for:

- 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
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

19.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date 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. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.

