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**Agrément
Certificate
No 89/2316**
Fourth issue*

Designated by Government
to issue
European Technical
Approvals

ROCKWOOL CAVITY WALL INSULATION

Isolation de murs à double paroi
Kerndämmung

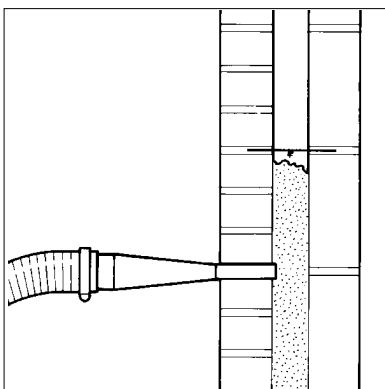
Product

• THIS CERTIFICATE REPLACES CERTIFICATE No 87/1813 AND RELATES TO ROCKWOOL CAVITY WALL INSULATION, A ROCK WOOL FIBRE MATERIAL INJECTED IN LOOSE FORM.

• The product is for use in buildings up to and including 25 metres in height.


• It is used to reduce the thermal transmittance of completed new or existing cavity walls with masonry inner and outer leaves.

• It is essential that new and existing walls comply with the conditions set out in the Design Data and Installation parts of this Certificate. Installation must be carried out by installers trained by the Certificate holder, and approved jointly by the Certificate holder and the BBA under the BBA Surveillance Scheme for cavity wall insulation.




Building Regulations

1 The Building Regulations 1991 (as amended 1994) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of cavity wall insulation with the Building Regulations. In the opinion of the BBA, Rockwool Cavity Wall Insulation, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement: B3(4)	Internal fire spread (structure)
Comment:	The product is non-combustible and may be used in buildings of any purpose group. It may also be regarded as a cavity barrier provided all of the cavity is filled. See sections 7.2 and 7.3 of this Certificate.
Requirement: C4	Resistance to weather and ground moisture
Comment:	The product can meet this Requirement. See sections 6.5, 6.9 and 8.2 of this Certificate. The product does not absorb water by capillary action and may therefore be used in situations where it bridges the dpc's of the inner and outer leaf. See section 8.1 of this Certificate.
Requirement: L1	Conservation of fuel and power
Comment:	The product can meet this Requirement. See sections 10.2 and 10.3 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The product is acceptable. See section 11 of this Certificate.

2 The Building Standards (Scotland) Regulations 1990 (as amended)

 In the opinion of the BBA, Rockwool Cavity Wall Insulation, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and Technical Standards as listed below.

Regulation: 10	Fitness of materials
Standard: B2.1	Selection and use of materials and components
Comment:	The product is acceptable.
Regulation: 12	Structural fire precautions
Standard: D2.2	Non-combustibility
Comment:	The product is non-combustible and may be used in buildings of any purpose group. See section 7.2 of this Certificate.
Standard: D4.1	Concealed spaces (cavities)
Comment:	No cavity barriers are required provided all of the cavity is filled. See section 7.3 of this Certificate.
Regulation: 17	Preparation of sites and resistance to moisture
Standard: G2.6	Resistance to moisture from the ground
Comment:	The product does not absorb water by capillary action and may therefore be used in situations where it bridges the dpc's of the inner and outer leaf. See section 8.1 of this Certificate.

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Standard:	G3.1	Resistance to precipitation
Comment:		The product can satisfy this Standard. See sections 6.5, 6.9 and 8.2 of this Certificate.
Regulation:	22	Conservation of fuel and power
Standard:	J2.1	Standards for buildings in purpose group 1
Comment:		The product will enable, or contribute to enabling, a wall to satisfy the requirements of the Elemental Standards (Method 1) for maximum U values given in the table to Standard J2.2. See sections 10.2 and 10.3 of this Certificate.
Standards:	J3.1	Standards for buildings in purpose groups 2 to 7
Comment:		The product will enable, or contribute to enabling, a wall to satisfy the requirements of the Elemental Standards for maximum U values given in the table to Standard J3.2. See sections 10.2 and 10.3 of this Certificate.

3 The Building Regulations (Northern Ireland) 1994 (as amended 1995 and 1997)



In the opinion of the BBA, Rockwool Cavity Wall Insulation, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 11 of this Certificate.
Regulation:	C5	Resistance to ground moisture and weather
Comment:		The product can satisfy this Regulation. See sections 6.5, 6.9 and 8.2 of this Certificate. The product does not absorb water by capillary action and may therefore be used in situations where it bridges the dpc's of the inner and outer leaf. See section 8.1 of this Certificate.
Regulation:	E6	Internal fire spread — Structure
Comment:		The product is non-combustible and may be used in buildings of any purpose group. No cavity barriers are required provided all of the cavity is filled. See sections 7.2 and 7.3 of this Certificate.
Regulation:	F2	Conservation of fuel and power
Comment:		The product can satisfy this Regulation. See sections 10.2 and 10.3 of this Certificate.

Technical Specification

4 Description

4.1 Rockwool Cavity Wall Insulation consists of rock wool fibres which are treated with an inert water repellent during manufacture. The length of the fibres and degree of granulation are subject to regular quality control checks by the manufacturer.

4.2 When installed, the target mean density for the product is 40 kgm^{-3} . Local areas within the wall, when sampled over an area of 0.5 m^2 , may have a density variation of $\pm 10 \text{ kgm}^{-3}$.

5 Delivery and site handling

The product is delivered to site in polythene wrapped bales weighing approximately 25 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.

Design Data

6 General

6.1 When installed in accordance with this Certificate, Rockwool Cavity Wall Insulation is effective in reducing the U value (thermal transmittance) 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 normal precautions to prevent moisture penetration.

6.2 The product may be used in buildings up to and including 25 metres in height subject to the conditions given in sections 6.11 to 6.13 of this Certificate 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 (see section 10.3).

- 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 the filling may be undertaken (see also section 10.4 of this Certificate).
- 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 metres. Above 12 metres, the maximum height of continuous cavity wall must not exceed 7 metres. In both cases breaks should be in the form of continuous horizontal cavity trays discharging to the outside.
- This Certificate covers the use of the product in areas where the exposure factor does not exceed 120 (factor calculated using BBA Information No 10).
- For walls above 12 metres in height, see sections 6.11 to 6.13 of this Certificate.

6.3 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.

Partial filling

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

- 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).



6.5 New buildings subject to the national Building Regulations should be constructed in accordance with the relevant recommendations of BS 5628 : Part 3 : 1985. In particular Clause 21 of the Code of Practice *Exclusion of moisture* 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. The relevant recommendations of BS 8000 : Part 3 : 1989 should also be followed. The relevant recommendations of Section 3 of BS 5390 : 1976(1984) should be followed where the wall incorporates stone or cast stone.

6.6 Other new buildings not subject to these Regulations should also be built in accordance with BS 5628 : Part 3 : 1985, BS 5390 : 1976(1984) and BS 8000 : Part 3 : 1989.

6.7 As with any other form of cavity wall insulation, where buildings need to comply with NHBC Standards or Zurich Municipal Technical Manual, specifiers should observe the requirements of these documents.

6.8 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.

Existing buildings



6.9 Existing buildings subject to the national Building Regulations should be suitable when assessed in accordance with BS 8208 : Part 1 : 1985.

6.10 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.

Buildings over 12 metres and up to 25 metres

6.11 The Certificate holder must carry out a detailed programme of assessment of the project, including an examination of the detailed design plans where available, documentation as to the quality of construction, and monitor the quality of installation as work proceeds. The installer must carry out a random survey of the cavity before commencing work and a detailed examination of the cavity as work progresses.

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6.12 Certification will relate only to buildings where the Certificate holder has given written approval for the use of the product in a particular building.

6.13 The specifier must take extra care when detailing the design plans to ensure that the introduction of the insulation does not affect the weather resistance of the wall. The construction and detailing should comply with good practice (see section 6.3). Above average site supervision is recommended during the installation of the product.

7 Behaviour in relation to fire

7.1 The product does not prejudice the fire resistance properties of the wall.



7.2 A sample of the product tested to BS 476 : Part 4 : 1970(1984) achieved the classification 'Non-combustible'.

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

England and Wales

in buildings of every purpose group

Scotland and Northern Ireland

in buildings of any occupancy or purpose group.

7.4 The product does not constitute a toxic hazard in fire.

8 Liquid water penetration



8.1 It can be demonstrated from tests that the product does not absorb water by capillary action. When the product is used in situations where it bridges the damp-proof course in walls, dampness from the ground will not pass through to the inner leaf, so meeting the requirements of the national Building Regulations:

England and Wales

Approved Document C4 — provided the wall is detailed in accordance with the technical solution in paragraph 4.4(c).

Scotland

Standard G2.6.

Northern Ireland

Regulation C5.

8.2 Tests on precipitation through walls can confirm that provided the wall incorporating the product is built in accordance with BS 5628 : Part 3 : 1985 it can satisfy the national Building Regulations:

England and Wales

Requirement C4.

Scotland

Standard G3.1.

Northern Ireland

Regulation C5.

9 Water vapour penetration

The product does not constitute a vapour control layer. A water vapour permeability of 5.5 MNgsm^{-1} may be assumed in any condensation risk analysis.

10 Thermal insulation

10.1 For the purposes of U value calculations to determine if the requirements of the Building (or other statutory) Regulations are met, the thermal conductivity (λ value) of the insulation may be taken as $0.039 \text{ Wm}^{-1}\text{K}^{-1}$.



10.2 The requirement for limiting the heat loss through the building fabric can be satisfied if the U values of the building elements do not exceed the maximum values in the relevant Elemental Approach given in the national Building Regulations:

England and Wales

Approved Document L. The effect of thermal bridges should be taken into account.

Scotland

Technical Standards, Part J. The effect of thermal bridges should be taken into account.

Northern Ireland

Technical Booklet F.

10.3 Guidance is also given in these documents on selecting the thickness of insulation required to enable a wall to achieve the desired U value. Alternative approaches to the Elemental Method are also described which allow for some flexibility in design of U values for individual constructional elements.

10.4 If the product is proposed for installing into the cavities of infill panels in framed structures the frame itself will not become insulated. Therefore there is a risk of thermal bridging at columns and slabs, thus condensation may appear on internal surfaces where this bridging occurs. The likelihood of a problem arising depends on a number of factors, including the lifestyle of the occupants, levels of heating and ventilation, as well as whether the windows are double glazed, etc. Therefore a risk assessment should be undertaken by the Certificate holder and the customer informed of the potential for problems to develop before the work is carried out.

11 Durability



The product is a durable material, rot-proof and water repellent. When installed it is sufficiently compacted to prevent settlement and will remain effective as an insulant for the life of the building provided the installation is in accordance with this Certificate.

12 Site survey

12.1 A survey is carried out by a trained surveyor prior to installation to ascertain the suitability of the property or properties for Rockwool Cavity Wall Insulation. 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, are 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 is carried out by Rockwool Ltd and their approved installers, an approved installer being a company that:

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

15 Supervision

15.1 Installation of the product should be carried out in accordance with the BBA Assessment and Surveillance Scheme, for installers 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 should comply with the description given in section 16.2 of this Certificate.
- The injection of the material takes place at each hole, to complete the filling of the cavity space.

16 Procedure

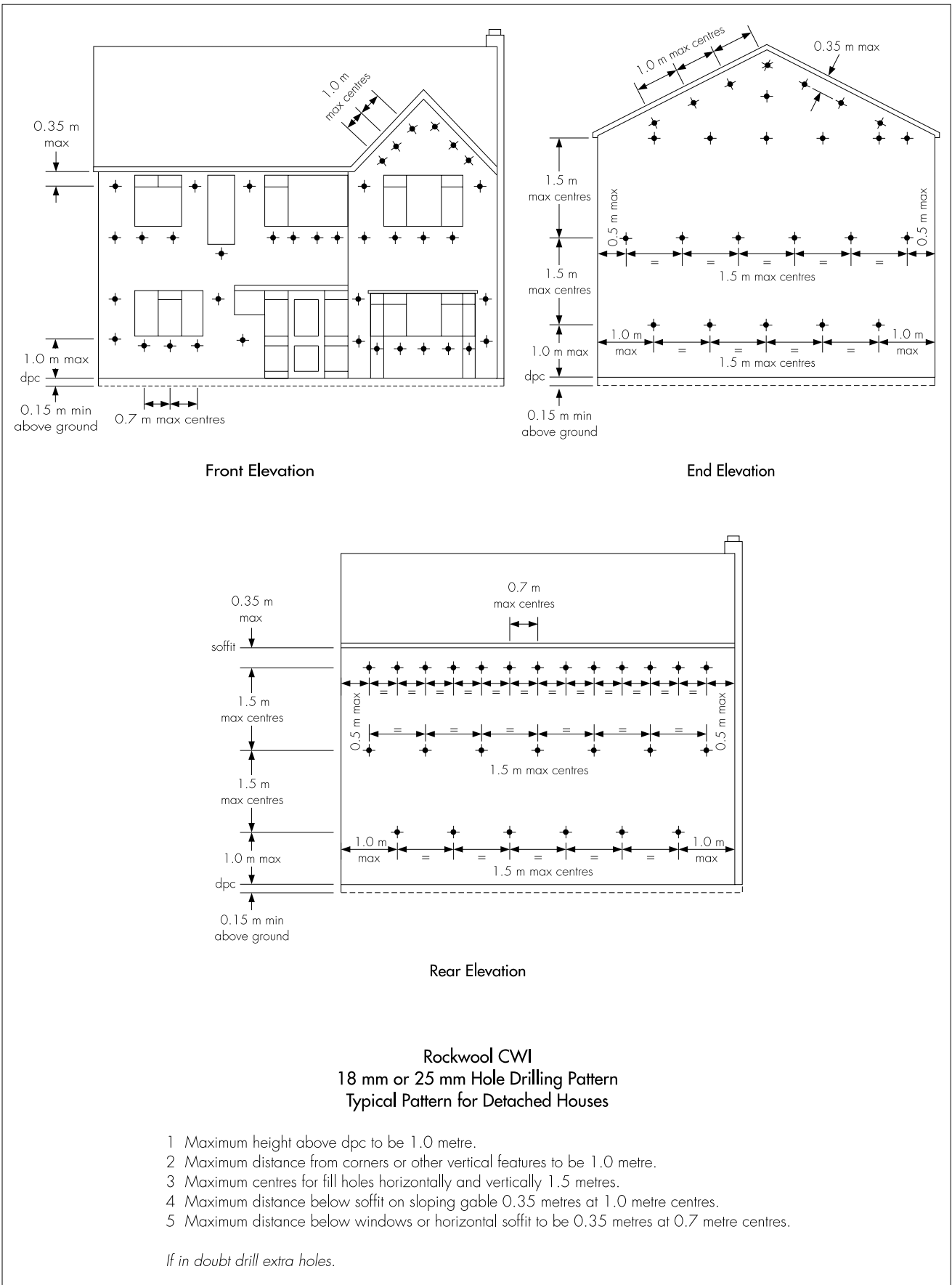
16.1 The product is installed using an approved blowing machine marked with the appropriate BBA Certificate number. The installer provides all necessary hoses, drilling tools, equipment and materials for making good the walls after installation of the product.

16.2 Injection holes of appropriate diameter are drilled in a W pattern at approximately 1.5 m centres. The topmost injection holes should not be more than 350 mm below the upper edge of the cavity and not more than 0.7 m apart. Additional holes may be required to ensure complete filling round building features (for example, under window sills and around air bricks, at the tops of walls and under gables). The first row of holes should be 1.0 m above dpc except below ground-floor windows where holes are drilled at centres not exceeding 0.7 m (ie three bricks) and 0.35 m below the sill. At corners of the building, holes should not be more than 1.0 m from the edge (see Figure 1).

16.3 The product is blown into the cavity under pressure through a flexible pipe fitted with a 17 mm or 24 mm diameter tapered injection nozzle through 18 mm or 25 mm diameter holes, respectively. Filling proceeds from the bottom to the top of the walls and from one end of an elevation to the other.

16.4 After injection 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.

Figure 1 Drilling pattern



Technical Investigations

The following is a summary of the technical investigations carried out on Rockwool Cavity Wall Insulation.

17 Tests

Tests were carried out to determine:

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

18 Other investigations

18.1 The manufacturing process for the granulated glass wool 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.

18.3 A site visit was carried out to ensure that the installation procedure is satisfactory.

18.4 The company's training arrangements were examined and approved.

Bibliography

BS 476 *Fire tests on building materials and structures*

Part 4 : 1970(1984) *Non-combustibility test for materials*

BS 5390 : 1976(1984) *Code of practice for stone masonry*

BS 5628 *Code of practice for use of masonry*

Part 3 : 1985 *Materials and components, design and workmanship*

BS 8000 *Workmanship on building sites*

Part 3 : 1989 *Code of practice for masonry*

BS 8208 *Guide to assessment of suitability of external cavity walls for filling with thermal insulants*

Part 1 : 1985 *Existing traditional cavity construction*

BBA Information No 10 *Methods of Assessing the Exposure of Buildings for Cavity Wall Insulation*

Conditions of Certification

19 Conditions

19.1 Where reference is made in this Certificate to any Act of Parliament, Regulation made thereunder, Statutory Instrument, Code of Practice, British Standard, manufacturer's instruction or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certificate.

19.2 The quality of materials and the method of manufacture have been examined and found satisfactory by the BBA and must be maintained to this standard during the period of validity of this Certificate. This Certificate will remain valid for an unlimited period provided:

- (a) the specification of the product is unchanged; and
- (b) the manufacturer continues to have the product checked by the BBA.

19.3 This Certificate will apply only to the product that is installed, used and maintained as set out in this Certificate.

19.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of patent or similar rights subsisting in the product; and
- (b) the legal right of the Certificate holder to market, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

19.5 It should be noted that any recommendations relating to the safe use of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory or Common Law duties of care, or of any duty of care which exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory or Common Law duties 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 use of this product.



In the opinion of the British Board of Agrément, Rockwool Cavity Wall Insulation is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 89/2316 is accordingly awarded to Rockwool Ltd.

On behalf of the British Board of Agrément

Date of Fourth issue: 25th March 1998

Director

**Original Certificate issued 11th October 1989. This amended version includes reference to walls up to 25 m high, Rockwool Ltd's own site procedures and the revised Building Regulations.*