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**Agreement
Certificate
No 88/1976**
*Second issue**

Designated by Government
to issue
European Technical
Approvals

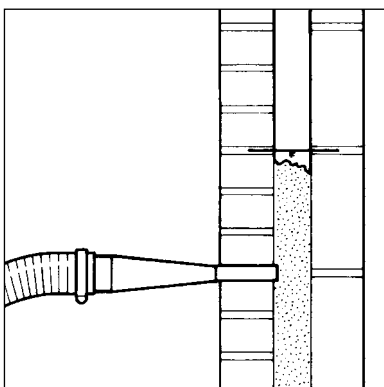
Product

• THIS CERTIFICATE REPLACES CERTIFICATE No 85/1463 AND RELATES TO INSTAFIBRE YELLOW WOOL CAVITY WALL INSULATION, FIBRE INJECTED IN LOOSE FORM.

• The product is for use in buildings up to and including 12 metres in height, subject to the conditions contained in the Design Data part of this Certificate.

• 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 under the BBA Surveillance Scheme for cavity wall insulation by installers trained by the Certificate holder, and approved jointly by the Certificate holder and the BBA.



INSTAFIBRE YELLOW WOOL CAVITY WALL INSULATION

Isolation de murs à double paroi
Kerndämmung

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, InstaFibre Yellow Wool 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 to BS 476 : Part 4 : 1970(1984) and therefore meets this Requirement in buildings of every purpose group. See sections 7.1 to 7.3 of this Certificate. It may also be regarded as a cavity barrier provided all of the cavity is filled.

Requirement: **C4**

Resistance to weather and ground moisture

Comment:

Tests for water resistance carried out by the BBA indicate that a wall filled with the product meets this Requirement provided the wall complies with the conditions set out in sections 6.2, 6.3 and 6.5 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 sections 8.2 and 8.3 of this Certificate.

Requirement: **L1**

Conservation of fuel and power

Comment:

It can be shown from example calculations that the masonry cavity wall construction with plasterboard on dabs, Example 6 in Appendix A of Approved Document L, will achieve a U value of $0.45 \text{ Wm}^{-2}\text{K}^{-1}$, and satisfy this Requirement, where a minimum cavity width of 62 mm is filled with the product. See sections 10.2 to 10.4 of this Certificate.

Requirement: **Regulation 7**

Materials and workmanship

Comment:

The product is an acceptable material. See section 11 of this Certificate.

†The Building Regulations (Amendment) Regulations 1994 come into force variously from 1st September 1994; Requirements F1 and L1 being effective from 1st July 1995. Prior to these dates the Building Regulations 1991 apply.

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



In the opinion of the BBA, InstaFibre Yellow Wool 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**

Selection and use of materials, fittings, components and other manufactured products

Comment:

The product is an acceptable material.

Regulation: **12**

Structural fire precautions

Standard: **D2.3**

Non-combustibility

Comment:

The product is non-combustible to BS 476 : Part 4 : 1970(1984) and may be used in buildings of any purpose group. See sections 7.1, 7.2 and 7.4 of this Certificate.

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Standards:	D2.19-2.21	Cavity barriers
Comment:		No cavity barriers are required provided all of the cavity is filled. See section 7.4 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 8.4 of this Certificate.
Standard:	G3.1	Resistance to precipitation
Comment:		Tests by the BBA indicate that a wall filled with the product will satisfy this Standard provided it complies with the conditions set out in sections 6.2, 6.3 and 6.5 of this Certificate. See also section 8.5 of this Certificate.
Regulation:	22	Conservation of fuel and power
Standard:	J2.2	Performance standards
Comment:		It can be shown from example calculations that any masonry cavity wall construction described in the Table to wall type 2 in the deemed-to-satisfy provisions for Part J will achieve a U value of $0.45 \text{ Wm}^{-2}\text{K}^{-1}$, and satisfy this Standard, where a minimum cavity width of 70 mm is filled with the product. See sections 10.2 and 10.3 of this Certificate.

3 The Building Regulations (Northern Ireland) 1994



In the opinion of the BBA, InstaFibre Yellow Wool 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 an acceptable material. See section 11 of this Certificate.
Regulation:	C5	Resistance to ground moisture and weather
Comment:		Tests by the BBA indicate that a wall filled with the product will satisfy this Regulation provided it complies with the conditions set out in sections 6.2, 6.3 and 6.5 of this Certificate. See also section 8.5 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 8.4 of this Certificate.
Regulation:	E6	Internal fire spread — structure
Comment:		The product is non-combustible to BS 476 : Part 4 : 1970(1984) and may be used in buildings of any purpose group. See sections 7.1, 7.2 and 7.4 of this Certificate. No cavity barriers are required provided all of the cavity is filled.
Regulation:	F2	Conservation of fuel and power
Comment:		It can be shown from example calculations that any cavity masonry construction, Wall Type 2B described in Technical Booklet F, will achieve a U value of $0.45 \text{ Wm}^{-2}\text{K}^{-1}$, and satisfy this Regulation, where a minimum cavity width of 74 mm is filled with the product. See sections 10.2 and 10.3 of this Certificate.

Technical Specification

4 Description

4.1 InstaFibre Yellow Wool Cavity Wall Insulation consists of granulated glass wool fibres treated with an inert water repellent during manufacture.

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

4.3 The target mean density for this product when installed is 20 kgm^{-3} . Local areas within the wall, when sampled over an area of 0.5 m^2 , may have a density variation of $\pm 5 \text{ kgm}^{-3}$.

5 Delivery and site handling

The product is delivered to site in sealed white polythene bags with black lettering, weighing approximately 11 kg or 15 kg, which should not be opened until required for use. The bags are marked with the BBA identification mark incorporating the number of this Certificate.

Design Data

6 General

6.1 InstaFibre Yellow Wool Cavity Wall Insulation, when installed in accordance with this Certificate, is effective in reducing the U value

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(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 so as to incorporate normal precautions to prevent moisture penetration.



6.2 Existing buildings subject to the Building Regulations 1991 (as amended 1994) (England and Wales), the Building Standards (Scotland) Regulations 1990 (as amended) or the Building Regulations (Northern Ireland) 1994 should be suitable when assessed in accordance with BS 8208 : Part 1 : 1985.

6.3 New buildings subject to the Building Regulations 1991 (as amended 1994) (England and Wales), the Building Standards (Scotland) Regulations 1990 (as amended) or the Building Regulations (Northern Ireland) 1994 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 Section 3 of BS 5390 : 1976(1984) should be followed where the wall incorporates stone or cast stone.

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



6.5 The following design conditions have been taken from 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:

- (1) the cavity width must be at least 50 mm
- (2) walls must be in a good state of repair and must show no evidence of frost damage
- (3) mortar joints must not show evidence of more than hairline cracking. Raked or recessed mortar joints should be avoided in high exposure areas.

Partial filling

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

- (1) when separately insulating semi-detached or terraced properties; the type of cavity barrier used for this purpose must be as defined in section 16.2 of this Certificate
- (2) 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

(3) where filling is carried out above a horizontal boundary, and

(4) 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

6.7 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.

New buildings

6.8 In a new building where the product is to be installed, injection of the product must be left until the cavity is sealed from the weather, ie the roof is in place and the window and door openings are sealed.

Use

6.9 This Certificate covers the use of the product in any exposure zone, subject to the above conditions being met.

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 For buildings subject to the Building Regulations 1991 (as amended 1994) (England and Wales) the product may be used in buildings of every purpose group.



7.4 For buildings subject to the Building Standards (Scotland) Regulations 1990 (as amended) or the Building Regulations (Northern Ireland) 1994 the product may be used in buildings of any purpose group.

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

8 Liquid water penetration

8.1 Tests by the BBA confirm that a masonry wall built to the requirements of BS 5628 : Part 3 : 1985 and incorporating the product does not transmit water to the inner leaf.



8.2 The product should not adversely affect the water resistance of an external wall, provided it is installed in accordance with this Certificate.

8.3 Tests by the BBA also demonstrate that the product does not absorb water by capillary action; when used in situations where it bridges the dpc in walls, dampness from the ground will not pass through provided the wall is detailed in accordance

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with the Technical Solution shown in paragraph 4.4 (c) of Approved Document C of the Building Regulations 1991 (as amended 1994) (England and Wales).



8.4 Tests also show that the product will satisfy Standard G2.6 for compliance with the Building Standards (Scotland) Regulations 1990 (as amended) and Regulation C5 of the Building Regulations (Northern Ireland) 1994 where the product bridges the dpc's of the inner and outer leaf.

8.5 Tests by the BBA confirm that provided the wall incorporating the product is built in accordance with BS 5628 : Part 3 : 1985 it can satisfy Standard G3.1 for compliance with Building Standards (Scotland) Regulations 1990 (as amended) and Regulation C5 of the Building Regulations (Northern Ireland) 1994.

9 Water vapour penetration

The product is not a water vapour barrier.

10 Thermal insulation

10.1 For the purpose 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 will be satisfied if the U values of the building elements do not exceed the maximum values in the relevant Elemental Approach given in:

Approved Document L (1995 Edition) to the Building Regulations 1991 (as amended 1994) (England and Wales), or

Part J of the Technical Standards for compliance with the Building Standards (Scotland) Regulations 1990 (as amended), or

Technical Booklet F to the Building Regulations (Northern Ireland) 1994.

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



10.4 For constructions subject to the Building Regulations 1991 (as amended 1994) (England and Wales) the effect of thermal bridging should be taken into account in any U value calculations.

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.

Installation

12 Site survey

12.1 A survey is carried out prior to installation by a trained surveyor to ascertain the suitability of the property or properties for InstaFibre Yellow Wool Cavity Wall Insulation. A complete survey report is prepared and held at the installers' 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 Instafoam & Fibre Ltd and their approved installers, an approved installer being a company which:

- (1) is required to satisfy an initial site installation check by the BBA prior to approval by Instafoam & Fibre Ltd and is subject to the BBA Surveillance Scheme
- (2) is approved by Instafoam & Fibre Ltd and the BBA to install the product
- (3) has undertaken to comply with Instafoam & Fibre Ltd's installation procedure
- (4) is employing operatives who have been issued with appropriate identity cards by Instafoam & Fibre Ltd. At least one member of each installation team must carry a card
- (5) is subject to supervision by Instafoam & Fibre Ltd, including unannounced site inspections.

15 Supervision

15.1 Installation should be carried out in accordance with the BBA Surveillance Scheme.

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

(1) Check that the pattern of holes complies with the description given in section 16.3 of this Certificate.

(2) Check that the injection of the product 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 in the cavity.

16.3 Injection holes 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 upper edge of the cavity and not more than 1.0 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 and around airbricks, at the tops of walls and under gables. Again, the topmost holes should not be more than 1.0 m apart under the horizontal boundaries and 1.35 m apart under the sloping boundary at the top of the gable end (see Figures 1 and 2).

16.4 The material is blown into the cavity, under pressure, through either one or two flexible pipes. Where one pipe only is used filling proceeds from the bottom to the top of the walls and from one end of an elevation to the other. Where two pipes are used the nozzles should commence filling in different elevations at a stop-end (eg doorway) in the first horizontal row of holes and continue filling for two or three holes. One nozzle can then be used above the other on the next row of holes, ensuring that the area below has been completely filled. Injection can continue, using this method from one end of an elevation to the other throughout the property. At no time should both nozzles be used in adjacent holes.

16.5 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 that they are not obstructed by the insulant.

Figure 1 Typical drilling pattern — frontage

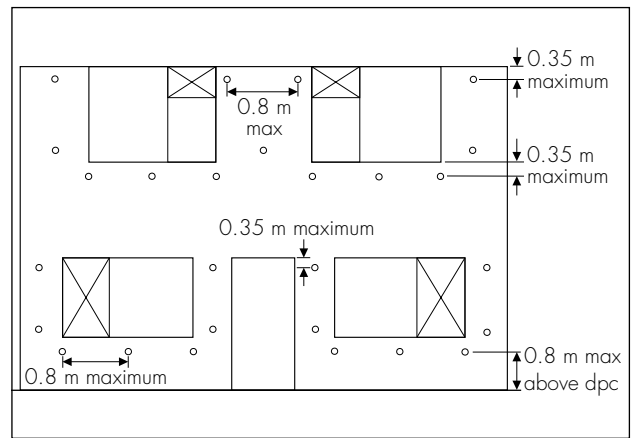
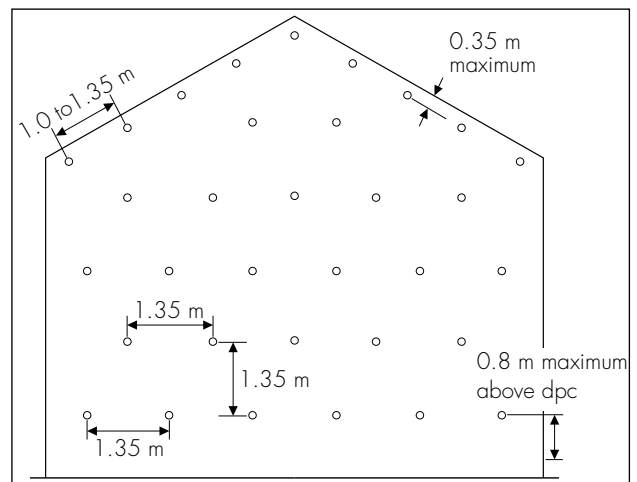


Figure 2 Typical drilling pattern — plain gable end



Technical Investigations

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

17 Tests

Tests were carried out to determine:

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

18 Other investigations

18.1 A re-examination was made of the data on which the previous Certificate was based. The conclusions drawn from the original data remain valid.

18.2 No failure of the product in use has been reported to the BBA.

18.3 Regular site inspections have been carried out by the BBA during the life of the previous Certificate.

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 8208 *Guide to assessment of suitability of external cavity walls for filling with thermal insulants*
Part 1 : 1985 *Existing traditional cavity construction*

Conditions of Certification

19 Conditions

19.1 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 that:

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

19.2 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.

19.3 In granting this Certificate, the BBA makes no representation as to the presence or absence of patent rights subsisting in the product and/or as to the legal right of InstaFibre Ltd to market, install or maintain the product.

19.4 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 re-state the requirements of the Health and Safety at Work etc Act 1974, or of any other statutory or Common Law duties of care, or of any duty of care which may in the future exist; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any other 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 incurred in respect of personal injury arising as a direct or indirect result of the use of this product.



In the opinion of the British Board of Agrément, InstaFibre Yellow Wool Cavity Wall Insulation is fit for its intended use if used as set out in this Certificate. Certificate No 88/1976 is accordingly awarded to InstaFibre Ltd.

On behalf of the British Board of Agrément

Date of issue: 14th September 1988

Director

**Amended Certificate issued 17th February 1995 to include references to the revised Building Regulations.*