

## Rockwool Ltd

26/28 Hammersmith Grove  
Hammersmith  
London W6 7HA

Tel: 01656 862621 Fax: 01656 862302  
e-mail: CustomerSupportCentre@rockwool.co.uk  
website: www.rockwool.co.uk



Agrément Certificate  
**89/2316**  
Product Sheet 1

## ROCKWOOL CAVITY WALL INSULATION

## ROCKWOOL ENERGYSAVER CAVITY WALL INSULATION

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Rockwool EnergySaver Cavity Wall Insulation, a granulated rock mineral wool fibre material injected in loose form, for use in external masonry walls up to and including 12 m in height, with nominal cavity widths not less than 50 mm, in new and existing domestic and non-domestic buildings. The product may also be used in buildings over 12 m in height where a height restriction waiver has been issued by the Certificate holder.

(1) Hereinafter referred to as 'Certificate'.

### CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

### KEY FACTORS ASSESSED

**Thermal properties** — the product has a declared thermal conductivity\* ( $\lambda_D$ ) of  $0.039 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$  (see section 6).

**Water penetration** — the product will resist the transfer of water across the cavity to the inner leaf (see section 7).

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

**Behaviour in relation to fire** — the product is classified Class A1 in accordance with BS EN 13501-1 : 2007 and hence is therefore classified as non-combustible (see section 9).

**Durability** — the product is durable, rot-proof, water resistant and sufficiently stable to remain effective as an insulation for the life of the building (see section 11).



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

On behalf of the British Board of Agrément

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

John Albon — Head of Approvals  
Energy and Ventilation

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

Claire Curtis-Thomas  
Chief Executive

Date of First issue: 16 June 2014

Originally certificated on 11 October 1989

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

*The BBA is a UKAS accredited certification body – Number 113.*

*The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at [www.bbacerts.co.uk](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.*

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

### British Board of Agrément

Bucknalls Lane  
Watford  
Herts WD25 9BA

©2014

tel: 01923 665300  
[clientservices@bbacerts.co.uk](mailto:clientservices@bbacerts.co.uk)  
[www.bbacerts.co.uk](http://www.bbacerts.co.uk)

# Regulations

In the opinion of the BBA, Rockwool EnergySaver Cavity Wall Insulation, if installed, used and maintained in accordance with this Certificate, will meet or contribute to meeting 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)

<b>Requirement:</b>	<b>C2(a)</b>	<b>Resistance to moisture</b>
<b>Comment:</b>		The product can contribute to satisfying this Requirement. See section 7.1 of this Certificate.
<b>Requirement:</b>	<b>C2(b)</b>	<b>Resistance to moisture</b>
<b>Comment:</b>		The product can contribute to satisfying this Requirement. See section 7.2 of this Certificate.
<b>Requirement:</b>	<b>C2(c)</b>	<b>Resistance to moisture</b>
<b>Comment:</b>		The product can contribute to satisfying this Requirement. See sections 8.1 and 8.3 of this Certificate.
<b>Requirement:</b>	<b>L1(a)(i)</b>	<b>Conservation of fuel and power</b>
<b>Comment:</b>		The product can contribute to satisfying this Requirement. See sections 6.1 and 6.3 of this Certificate.
<b>Regulation:</b>	<b>7</b>	<b>Materials and workmanship (applicable to Wales only)</b>
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship (applicable to England only)</b>
<b>Comment:</b>		The product is an acceptable material. See section 11.1 and the Installation part of this Certificate.
<b>Regulation:</b>	<b>7(2)</b>	<b>Materials and workmanship (applicable to England only)</b>
<b>Comment:</b>		The product is unrestricted by this Regulation. See section 9 of this Certificate.
<b>Regulation:</b>	<b>26</b>	<b>CO<sub>2</sub> emission rates for new buildings</b>
<b>Regulation:</b>	<b>26A</b>	<b>Fabric energy efficiency for new buildings (applicable to England only)</b>
<b>Comment:</b>		The product can contribute to satisfying these Regulations. See sections 6.1 and 6.3 of this Certificate.



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

<b>Regulation:</b>	<b>8(1)</b>	<b>Durability, workmanship and fitness of materials</b>
<b>Comment:</b>		The product can contribute to satisfying this Regulation. See section 11.1 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
<b>Standard:</b>	<b>3.4</b>	<b>Moisture from the ground</b>
<b>Comment:</b>		The product can contribute to satisfying this Standard, with reference to clause 3.4.1 <sup>(1)(2)</sup> . See section 7.1 of this Certificate.
<b>Standard:</b>	<b>3.10</b>	<b>Precipitation</b>
<b>Comment:</b>		The product can contribute to satisfying this Standard, with reference to clause 3.10.1 <sup>(1)(2)</sup> provided it complies with the conditions set out in section 7.2 of this Certificate.
<b>Standard:</b>	<b>3.15</b>	<b>Condensation</b>
<b>Comment:</b>		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1 <sup>(1)(2)</sup> , 3.15.4 <sup>(1)(2)</sup> and 3.15.5 <sup>(1)(2)</sup> . See sections 8.2 and 8.3 of this Certificate.
<b>Standard:</b>	<b>6.1(b)</b>	<b>Carbon dioxide emissions</b>
<b>Standard:</b>	<b>6.2</b>	<b>Building insulation envelope</b>
<b>Comment:</b>		The product can contribute to satisfying clauses, or parts of, 6.1.1 <sup>(1)</sup> , 6.1.2 <sup>(2)</sup> , 6.1.6 <sup>(1)</sup> , 6.2.1 <sup>(1)(2)</sup> , 6.2.3 <sup>(1)</sup> , 6.2.4 <sup>(2)</sup> , 6.2.5 <sup>(2)</sup> , 6.2.6 <sup>(1)</sup> , 6.2.7 <sup>(1)</sup> , 6.2.8 <sup>(1)(2)</sup> , 6.2.9 <sup>(1)(2)</sup> , 6.2.10 <sup>(1)(2)</sup> , 6.2.11 <sup>(1)(2)</sup> , 6.2.12 <sup>(2)</sup> and 6.2.13 <sup>(1)(2)</sup> of these Standards. See sections 6.1 and 6.3 of this Certificate.
<b>Standard:</b>	<b>7.1(a)(b)</b>	<b>Statement of sustainability</b>
<b>Comment:</b>		The product 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 product can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4 <sup>(1)(2)</sup> [Aspects 1 <sup>(1)(2)</sup> and 2 <sup>(1)</sup> ], 7.1.6 <sup>(1)(2)</sup> [Aspects 1 <sup>(1)(2)</sup> and 2 <sup>(1)</sup> ] and 7.1.7 <sup>(1)(2)</sup> [Aspect 1 <sup>(1)(2)</sup> ]. See section 6.1 of this Certificate.
<b>Regulation:</b>	<b>12</b>	<b>Building standards applicable to conversions</b>
<b>Comment:</b>		All comments given for this product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2012

<b>Regulation:</b>	<b>23</b>	<b>Fitness of materials and workmanship</b>
<b>Comment:</b>		The product is an acceptable material. See section 11.1 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>28(a)</b>	<b>Resistance to moisture and weather</b>
<b>Comment:</b>		The product can contribute to satisfying this Regulation. See section 7.1 of this Certificate.
<b>Regulation:</b>	<b>28(b)</b>	<b>Resistance to moisture and weather</b>
<b>Comment:</b>		The product can contribute to satisfying this Regulation. See section 7.2 of this Certificate.

Regulation:	29	Condensation
Comment:	The product can contribute to satisfying this Regulation. See section 8.3 of this Certificate.	
Regulation:	39(a)(i)	Conservation measures
Regulation:	40(2)	Target carbon dioxide emission rate
Comment:	The product can contribute to satisfying these Regulations. See sections 6.1 and 6.3 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: 3 *Delivery and site handling* (3.1) of this Certificate.

## Additional Information

### NHBC Standards 2014

NHBC accepts the use of Rockwool EnergySaver Cavity Wall Insulation, other than in very severe exposure locations with fair-faced masonry, provided it is installed and used in accordance with this Certificate, in relation to *NHBC Standards, Chapter 6.1, External masonry walls*.

### CE marking

The Certificate holder has taken the responsibility of CE marking the product in association with harmonised European Standard BS EN 14064-1 : 2010. An asterisk (\*) appearing in this Certificate indicates that data shown is given in the manufacturer's Declaration of Performance.

## Technical Specification

### 1 Description

1.1 Rockwool EnergySaver Cavity Wall Insulation is a granulated rock mineral wool fibre, treated with a water-repellent additive.

1.2 The target mean density of this product when installed is 40 kg·m<sup>-3</sup> over the entire installation. Individual areas within the wall must not have an absolute density variation of more than ±10 kg·m<sup>-3</sup> from the target mean density when measured over an area of 0.5 m<sup>2</sup>.

### 2 Manufacture

2.1 Material, previously sprayed with silicone oil and mineral oil as part of the main fiberizing process, is placed on a collecting belt that feeds the material into a 'flake breaker' mill to reduce the mass to discreet fragments in a controlled and repeatable manner.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

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

### 3 Delivery and site handling

3.1 The product is delivered to site in polythene-wrapped bales weighing 25 kg nominal, which should not be opened until required for use. The bales are marked with the BBA logo incorporating the number of this Certificate.

3.2 It is essential that the product is stored raised off the ground, inside or under cover on a dry, level surface and protected from rain, snow and other sources of dampness. Nothing should be stored on top of product.

3.3 Damaged bales, contaminated or wet materials must not be used.

## Assessment and Technical Investigations

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

## 4 General

4.1 Rockwool EnergySaver Cavity Wall Insulation is satisfactory for use as an injected cavity wall insulation and 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). The product is for use in new and existing domestic and non-domestic buildings up to and including 12 m in height, with cavity widths not less than 50 mm. It is essential that such walls are designed and constructed to incorporate the precautions given in this Certificate to prevent moisture penetration.

4.2 This Certificate covers the use of the product in the following hard to treat (HTT) applications:

- a partially filled cavity, see section 4.6.
- a building in excess of three storeys, see section 19.

4.3 This Certificate covers the use of the product in any exposure zone, subject to the following conditions being met. They are particularly important in areas subject to severe or very severe driving rain:

- a site survey should be carried out prior to installation (see sections 12 and 14)
- the minimum cavity width must be not less than 50 mm
- walls must be in good state of repair and show no evidence of frost damage
- mortar joints must not show evidence of more than hairline cracking. Raked or recessed mortar joints should be avoided in very severe exposure areas.

4.4 The NHBC does not accept the use of full fill insulation in very severe exposure locations with fair-faced masonry.

### Partial filling — omitted areas

4.5 Whenever practicable, all of the cavity space from ground level to the roof or gable copings should be filled, except when:

- separately insulating semi-detached or terraced properties. The cavity barrier used for this purpose is retained in the cavity and must be as defined in section 17.3
- filling 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
- 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)
- treating areas of wall where access for drilling may be limited by features such as carports and conservatories as defined in sections 18.8 and 18.9.

### Partial fill — residual cavities<sup>(1)</sup>

4.6 This Certificate covers the use of the product for topping up of residual cavities in partial fill installations, subject to the following conditions being met.

- prior to installation, a site survey must be carried out by a BBA Approved Assessor (see section 13)
- the existing built-in insulation in the cavity is one of the following:
  - expanded polystyrene (EPS) boards
  - foil-faced polyisocyanurate (PIR), polyurethane (PUR) or phenolic (PF) boards
- the minimum residual cavity width is not be less than 50 mm
- installation is carried out by a BBA Approved installer, trained to work on this type of installation
- all other conditions in section 4.3 are met.

(1) Partial fill installations relate to existing constructions where insulation, in the form of batts or boards, has previously been built into a wall and there is a residual cavity.

### Existing buildings

4.7 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, and
- the cavity is not being used as a source of combustion air or as a flue for ventilation purposes.

### New buildings

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

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

4.9 Other new buildings not subject to regulatory requirements should also be built in accordance with the Standards identified in section 4.8.

4.10 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 should be left until the cavity is sealed from the weather, ie the roof is in place and the window and door openings sealed.

## 5 Practicability of installation

The product must be installed by operatives trained and approved by the Certificate holder and subsequently approved by the BBA. The Certificate holder operates an Approved Installer Scheme<sup>(1)</sup> for this product under which the installers are approved, registered and regularly reviewed by the Certificate holder to demonstrate that they are competent to carry out installations of the product in accordance with this Certificate. Details of Approved Installers are available from the Certificate holder. Approved Installers are responsible for each installation of the product that they undertake (see section 15).

(1) The Certificate holder's records relating to their Approved Installer Scheme will be audited annually by the BBA as part of its programme of surveillance.

## 6 Thermal properties

 6.1 Calculations of the thermal transmittance (U value) of specific external wall constructions should be carried out in accordance with BS EN ISO 6946 : 2007 and BRE Report BR 443 : 2006, using the insulation's declared thermal conductivity\* ( $\lambda_D$ ) of 0.039 W·m<sup>-1</sup>·K<sup>-1</sup>.

6.2 Where an existing wall is subject to national Building Regulations, for example, subject to a material change of use, designers should take account of the relevant guidance relating to technical and economic feasibility and target U values in the documents supporting those Regulations.

 6.3 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 and finish. Calculated U values for example constructions are given in Table 1 for existing buildings and Table 2 for new buildings.

Table 1 Example cavity wall U values<sup>(1)</sup> — existing buildings/retained walls

Cavity width/insulation thickness (mm)	U values (W·m <sup>-2</sup> ·K <sup>-1</sup> )	
	13 mm dense plaster <sup>(2)</sup> 100 mm dense block <sup>(3)</sup>	Plasterboard on dabs 100 mm AAC block <sup>(4)</sup>
50	0.60	0.42
75	0.43	0.33
100	0.34	0.27
125	0.28	0.23

(1) Assumes fixings correction for fully penetrating mild steel fixings (50 W·m<sup>-1</sup>·K<sup>-1</sup>) at 2.5 per m<sup>2</sup> with cross sectional area of 12.5 mm<sup>2</sup> nominal U value and 102 mm thick brick outer leaf.

(2) Plaster thermal conductivity 0.57 W·m<sup>-1</sup>·K<sup>-1</sup>.

(3) Block and mortar thermal conductivity 1.13 W·m<sup>-1</sup>·K<sup>-1</sup> and 0.88 W·m<sup>-1</sup>·K<sup>-1</sup> respectively.

(4) Block and mortar thermal conductivity 0.12 W·m<sup>-1</sup>·K<sup>-1</sup> and 0.88 W·m<sup>-1</sup>·K<sup>-1</sup> respectively.

Table 2 Example cavity wall U values<sup>(1)</sup> — new buildings

U value requirement (W·m <sup>-2</sup> ·K <sup>-1</sup> )	Insulation thickness (mm)	
	13 mm dense plaster <sup>(2)</sup> 100 mm dense block <sup>(3)</sup>	Plasterboard on dabs 100 mm AAC block <sup>(4)</sup>
0.18	195	170
0.19	190	160
0.25	140	110
0.26	135	105
0.27	130	100
0.28	125	95
0.30	115	85
0.35	100	70

(1) Assumes fixings correction for fully penetrating stainless steel fixings (17 W·m<sup>-1</sup>·K<sup>-1</sup>) at 2.5 per m<sup>2</sup> with cross sectional area of 12.5 mm<sup>2</sup> nominal U value and 102 mm thick brick outer leaf.

(2) Plaster thermal conductivity 0.57 W·m<sup>-1</sup>·K<sup>-1</sup>.

(3) Block and mortar thermal conductivity 1.13 W·m<sup>-1</sup>·K<sup>-1</sup> and 0.88 W·m<sup>-1</sup>·K<sup>-1</sup> respectively.

(4) Block and mortar thermal conductivity 0.12 W·m<sup>-1</sup>·K<sup>-1</sup> and 0.88 W·m<sup>-1</sup>·K<sup>-1</sup> respectively.

## Junctions

6.4 The product can maintain, or contribute to maintaining, continuity of thermal insulation at junctions between elements and openings. For Accredited Construction Details, the corresponding  $\psi$ -values (Psi) in BRE Information Paper IP 1/06, Table 3, may be used in carbon emission calculations in Scotland and Northern Ireland. Detailed guidance for other junctions and on limiting heat loss by air infiltration can be found in:

**England and Wales** — Approved Documents to Part L and, for new thermal elements to existing buildings, Accredited Construction Details (version 1.0). See also SAP 2009 Appendix K and the *iSBEM User Manual* for new-build

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

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

## 7 Water penetration



7.1 The product can be used in situations where it bridges the damp-proof course (dpc) in walls; dampness from the ground will not pass through to the inner leaf provided the wall is detailed in accordance with the requirements and provisions of the national Building Regulations:

**England and Wales** — Approved Document C, section 5

**Scotland** — Mandatory Standard 3.4, clause 3.4.1<sup>(1)(2)</sup>

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Technical Booklet C, Sections 6.3 to 6.6.

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

## 8 Condensation

### Surface condensation



8.1 Walls will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed  $0.7 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$  at any point and the junctions with other elements are designed in accordance with the guidance referred to in section 6.4 of this Certificate.



8.2 For buildings in Scotland, constructions will be acceptable where 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 6.4 of this Certificate.

### Interstitial condensation



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

## 9 Behaviour in relation to fire



The fire classification\* of the product is Class A1 in accordance with BS EN 13501-1 : 2007 and is, therefore, classified as non-combustible.

## 10 Maintenance

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

## 11 Durability



11.1 The product is unaffected by the normal conditions in a wall, and it is durable, rot-proof, water resistant and sufficiently stable to remain effective as insulation for the life of the building.

11.2 Should it become necessary for any reason, the product can be evacuated from the cavity void.

## Installation

### 12 Site assessment

12.1 Prior to the installation, an assessment is carried out by a trained assessor, who may also be the installing technician, to ascertain the suitability of the property or properties to receive Rockwool EnergySaver Cavity Wall Insulation. An assessment report is prepared and held at the installer's offices. Particular problems are specifically identified and any reasons for rejection of the work noted. Care should be taken at this stage for the assessor and the party commissioning the work to identify, and agree in writing as appropriate, any areas of the wall that will not be filled (see section 18.8 and 18.9) and any special requirements for making good (see section 18.6).

12.2 Assessment of hard to treat (HTT) properties must be carried out by a member of the BBA Approved Assessor Scheme for Assessing the Suitability of Buildings for the Installation of Cavity Wall Insulation (see section 13 of this Certificate). The assessment of partial fill cavities requires additional checks, as detailed in *BBA Policy 18: Requirements for Surveying of Hard to Treat Cavity Walls*<sup>(1)</sup>.

(1) Available on the BBA website, ([www.bbacerts.co.uk](http://www.bbacerts.co.uk)).

## 13 Approved Assessors

All assessors of HTT properties must be BBA-approved, and registered with the BBA as part of the BBA Approved Installer and Assessor schemes. The BBA will monitor all Approved Assessors as part of the surveillance operated over BBA Approved Installers. BBA Inspectors will audit installation records during the annual office inspection to ensure that all HTT cavities have been filled in accordance with the relevant system Certificate including, where appropriate, that the property has been surveyed by an Approved Assessor.

## 14 Site preparation

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

14.2 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.

14.3 Wherever practicably possible, all uncapped cavity walls must be sealed prior to installation, for example, with plugs of mineral fibre.

## 15 Approved installers

Installation of the product is carried out by the Certificate holder or their Approved Installers. An Approved Installer is defined as a company:

- required to satisfy an initial site installation check by the BBA following 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
- having undertaken to comply with the Certificate holder's installation procedure
- employing technicians 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 inspections by the Certificate holder, who oversees the activities of Approved Installers. It is a requirement that the Certificate holder undertakes inspections of each card-carrying technician using their product, and maintains records, as detailed in the *BBA Assessment and Surveillance Scheme for BBA Approved Installers of Cavity Wall Insulation*.

## 16 Supervision

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

16.2 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 18.1
- injection of material takes place in each hole, to complete the filling of the cavity space.

## 17 General

17.1 The installation of the product is undertaken using blowing machines tested and accepted for use with the product by the BBA.

17.2 The installer provides all necessary hoses, drilling tools, equipment and materials for making good the walls after the installation.

17.3 Where a semi-detached or terraced property is to be insulated, a cavity brush is inserted at the line dividing the properties to contain the insulation. This consists of a continuous nylon brush which is left in place when the installation is completed.

## 18 Procedure

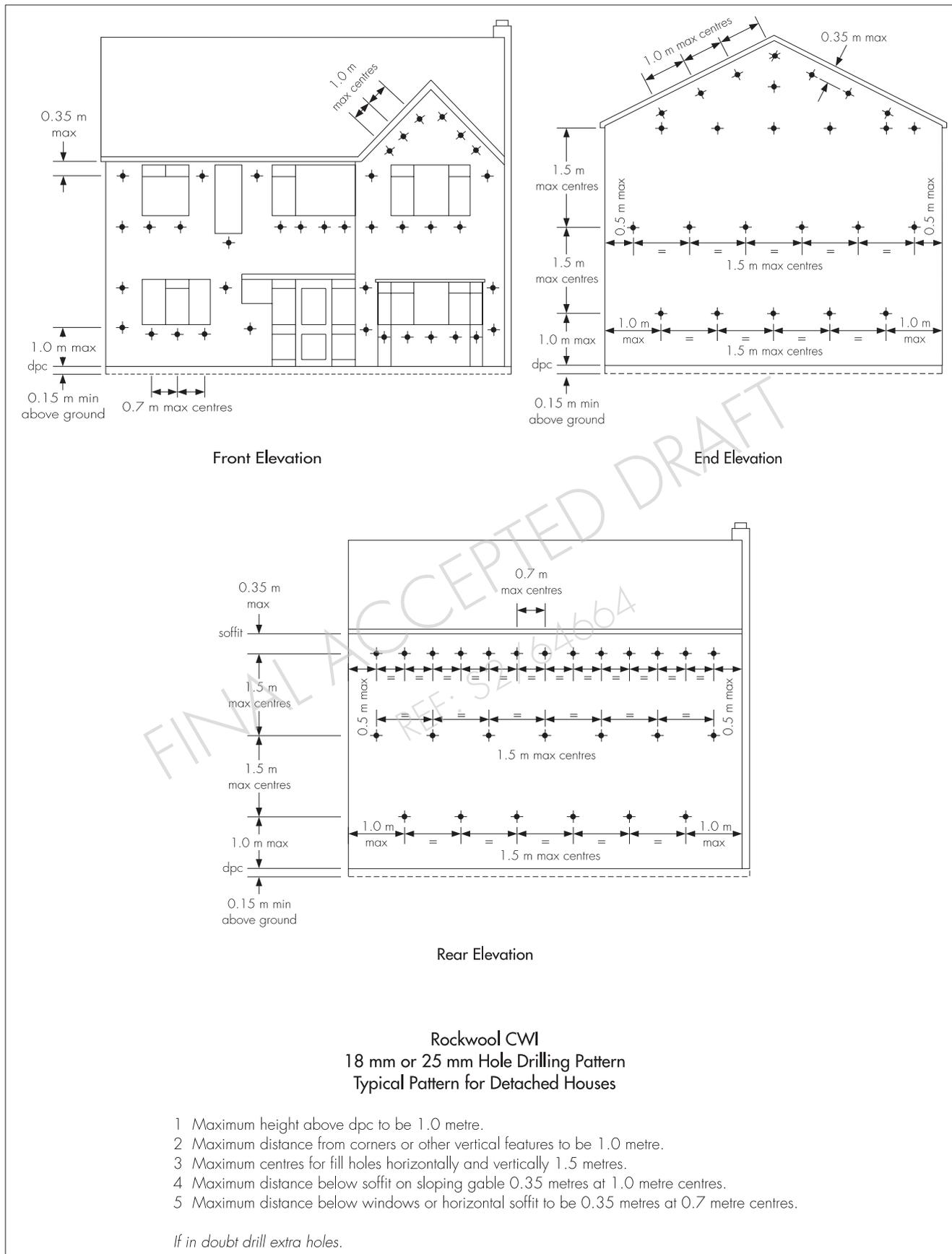
### Standard

18.1 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 0.35 m below the upper edge of the cavity and not more than 0.7 m apart. 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. The second row of holes should be drilled at a maximum height of 1.5 m above the first row. The maximum distance of holes from corners of the building or other vertical features should not be more than 1.0 m (see Figure 1). An additional hole must be drilled 0.35 m under any

service bridging the cavity ie air bricks, balanced flues, extractor fans, water pipes etc. Further holes may be required to ensure complete filling around building features, eg under window sills and at the tops of walls and under gables.

18.2 Further to the procedure described in 18.1, an additional hole must be drilled 0.15 m below bearing and 0.25 m from window edge below all lintels. The exact location of the chimney or flue on an external wall must be determined so the hole pattern can be adjusted. Holes must be drilled 0.5 m either side of the centre line of the chimney or flue.

Figure 1 Standard drilling pattern



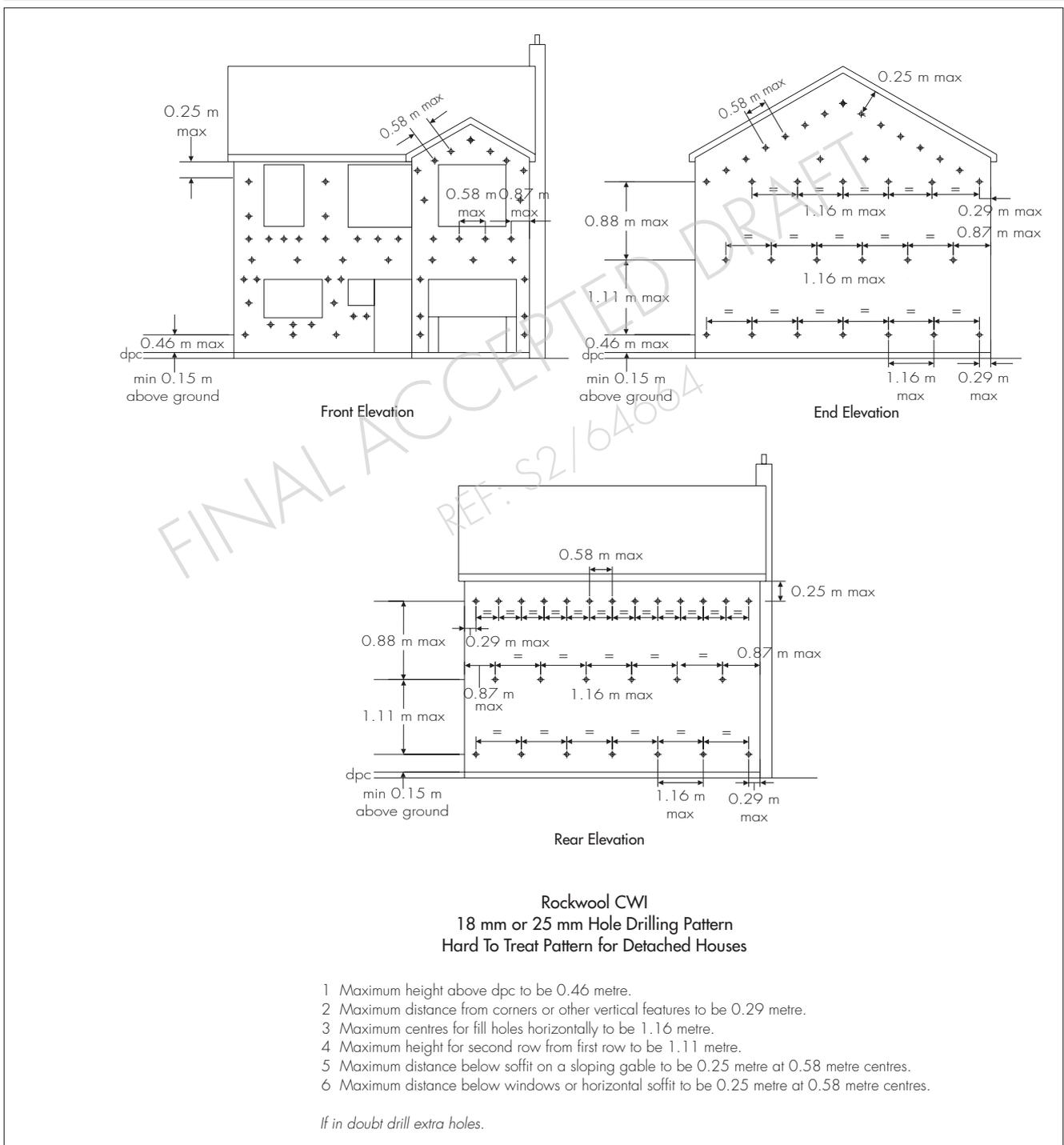
18.3 The material is blown into the cavity under pressure through a flexible pipe fitted with either a 17.5 mm or 24.5 mm diameter tapered injection nozzle through 18 mm or 25 mm diameter holes, respectively. Filling proceeds from the bottom to the top of the walls and from one end of an elevation to the other.

**Partial fill**

18.4 Injection holes of appropriate diameter are drilled in a W pattern at approximately 1.16 m centres. The topmost injection holes should not be more than 0.25 m below the upper edge of the cavity and not more than 0.58 m apart. The first row of holes should be 0.46 m above dpc except below ground-floor windows where holes are drilled at centres not exceeding 0.58 m and 0.25 m below the sill. The second row of holes should be drilled at a maximum height of 1.11 m above the first row. Subsequent rows should be drilled at a maximum height of 0.88 m above the preceding row. The maximum distance of holes from corners of the building or other vertical features should not be more than 0.29 m (see Figure 2). An additional hole must be drilled 0.25 m under any service bridging the cavity ie air bricks, balanced flues, extractor fans, water pipes etc. Further holes may be required to ensure complete filling around building features, eg under window sills and at the tops of walls and under gables.

18.5 Installation is completed as described in section 18.2 and 18.3 above, however, where the existing insulation is in the form of foil-faced polyisocyanurate (PIR), polyurethane (PUR) or phenolic (PF) boards, only the 24.5 mm diameter tapered injection nozzle through 25 mm diameter holes, can be used.

Figure 2 Partial fill drilling pattern



## Finishing

18.6 After injection, the drill holes are fully filled with mortar of a similar type, colour, texture and weathertightness to that of the existing wall. Where a wall requires a high degree of colour matching, the level of finish matching should be agreed in writing during the site assessment. All trunked air vents, eg those providing underfloor ventilation and combustion air for heating appliances are checked – any obstructions must be cleared. All flues must be carefully checked by an appropriate test (eg a smoke test) to verify that they are clear and unobstructed.

18.7 Insulant blown through the top of the cavity into the loft space is removed and any points of leakage sealed (see section 14.3).

## Omitted areas

18.8 In some circumstances access for drilling injection holes and filling with insulation may be limited by features such as carports, conservatories, cladding and tiling. The practicability of safely accessing and making good these areas, or installing the insulation through the inner leaf, may outweigh the benefits of insulating these areas.

18.9 It is permissible to omit such areas only when:

- a full justification detailing the reasons to omit areas is included in the survey report
- the assessor obtains written consent for omitting any areas of the wall from the party commissioning the work. The assessor must inform the commissioning party in writing, that heat loss through uninsulated areas will not be reduced and that they will also be subject to a slightly higher risk of condensation.

## 19 Height restriction waivers

19.1 Rockwool EnergySaver Cavity Wall Insulation is for use in buildings up to and including 12 m in height, in domestic and non-domestic buildings. The product may also be used in buildings over 12 m in height where a height restriction waiver has been issued by the Certificate holder.

19.2 The Certificate holder has a detailed programme for the assessment of buildings over 12 m, as approved and maintained under surveillance by the BBA. Each installation beyond 12 m must be individually assessed by the Certificate holder against this agreed assessment programme and documented approval given prior to the commencement of work.

## Technical Investigations

## 20 Tests

Results of tests were assessed to determine:

- resistance to rain penetration of an insulated cavity wall
- adequacy of fill using specified installation machinery and drilling pattern
- thermal conductivity
- short term water absorption by partial immersion
- characterisation of the product.

## 21 Investigations

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

21.2 The Certificate holder's training arrangements were evaluated.

21.3 An assessment of the practicability of installation was carried out.

21.4 A condensation risk analysis was carried out.

21.5 A series of U value calculations was carried out.

21.6 A calculation was undertaken to confirm the thermal conductivity ( $\lambda_p$ ).

21.7 An assessment of the products suitability for topping up of residual cavities in partial fill installations.

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

## Bibliography

- BS 5250 : 2011 *Code of practice for control of condensation in buildings*
- BS 8000-3 : 2001 *Workmanship on building sites — Code of practice for masonry*
- BS EN 1996-1-1 : 2005 *Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
- NA to BS EN 1996-1-1 : 2005 *UK National Annex to Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
- BS EN 1996-1-2 : 2005 *Eurocode 6 — Design of masonry structures — General rules — Structural fire design*
- NA to BS EN 1996-1-2 : 2005 *UK National Annex to Eurocode 6 — Design of masonry structures — General rules — Structural fire design*
- BS EN 1996-2 : 2006 *Eurocode 6 — Design of masonry structures — Design considerations, selection of materials and execution of masonry*
- NA to BS EN 1996-2 : 2006 *UK National Annex to Eurocode 6 — Design of masonry structures — Design considerations, selection of materials and execution of masonry*
- BS EN 1996-3 : 2006 *Eurocode 6 — Design of masonry structures — Simplified calculation methods for unreinforced masonry structures*
- NA to BS EN 1996-3 : 2006 *UK National Annex to Eurocode 6 — Design of masonry structures — Simplified calculation methods for unreinforced masonry structures*
- BS EN 13501-1 : 2007 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*
- BS EN 14064-1 : 2010 *Thermal insulation products for buildings — In-situ formed loose-fill mineral wool (MWW) products — Specification for the loose-fill products before installation*
- BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*
- BS EN ISO 9001 : 2008 *Quality Management Systems — Requirements*
- BS EN ISO 14001 : 2004 *Environmental management systems — Requirements with guidance for use*
- BRE Information Paper IP 1/06 *Assessing the effects of thermal bridging at junctions and around openings*
- BRE Report (BR 262 : 2002) *Thermal insulation : avoiding risks*
- BRE Report (BR 443 : 2006) *Conventions for U-value calculations*

## 22 Conditions

22.1 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.

22.2 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.

22.3 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.

22.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

22.5 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.

22.6 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.