

NSAI

Agrément

IRISH AGRÉMENT BOARD CERTIFICATE NO. 05/0222

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Rockwool Blown Cavity Wall Insulation System Isolent de murs à double paroi Kerndämmung

NSAI Agrément (Irish Agrément Board) is designated by Government to carry out European Technical Assessments. NSAI Agrément Certificates establish proof that the certified products are '**proper materials**' suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2014**.



PRODUCT DESCRIPTION:

This Certificate relates to the Rockwool Blown Cavity Wall Insulation System.

Rockwool Blown Cavity Wall Insulation System consists of rock wool fibre material which is injected in loose form into the cavity walls.

This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2014.

USE:

The product is used for the thermal insulation of new or existing masonry cavity walls up to 12 meters in height, subject to the conditions contained in Part 3 of this Certificate. It also facilitates the control of surface and interstitial condensation in walls.

Filling a residual cavity where the wall is partially filled with rigid insulation board (partial fill), is not approved by this Certificate.

MANUFACTURE AND MARKETING:

The product is manufactured and marketed by:

Rockwool Ltd.
Pencode, Bridgend,
Mid Glamorgan CF35 6NY, UK.
Tel:0044 1656 862621 Fax:0044 1656 862302
Email: technical.solutions@rockwool.co.uk
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Readers are advised to check that this Certificate has not been withdrawn or superseded by a later issue by contacting NSAI Agrément, NSAI, Santry, Dublin 9 or online at www.nsai.ie

1.1 ASSESSMENT

In the opinion of NSAI Agrément, Rockwool Blown Cavity Wall Insulation if used in accordance with this certificate, can meet or contribute to meeting the requirements of TGD Part L of the Irish Building Regulations 1997 to 2014 as indicated in Section 1.2 of this Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2014**REQUIREMENT:*****Part B – Fire Safety*****B3 – Internal fire spread (Structure)**

Rockwool Blown Cavity Wall Insulation is non-combustible and may be used in masonry cavity walls in buildings of every purpose group (see Section 4.1 of this Certificate).

Part C – Site Preparation and Resistance to Moisture**C4 – Resistance to Weather and Ground Moisture**

Rockwool Blown Cavity Wall Insulation can meet the relevant requirements of TDG Part C4, when installed in accordance with this Certificate.

Part D – Materials and Workmanship

D1 - Rockwool Blown Cavity Wall Insulation used in accordance with this NSAI Agrément Certificate will meet the requirements of TGD Part D1.

D3 – Rockwool Blown Cavity Wall Insulation, as certified in this NSAI/Agrément Certificate, is manufactured from materials which are 'proper materials' fit for their intended use (see Part 4 of this Certificate).

Part F – Ventilation**F1 – Means of ventilation**

The systems as certified can be incorporated into structures that will meet the requirements of this Regulation. (see Cl. 2.4.2 of this Certificate).

Part J – Heat Producing Appliances**J3 – Protection of Building**

In the opinion of NSAI Agrément, Rockwool Blown Cavity Wall Insulation if used in accordance with this Certificate can meet the requirements of Part J of the Building Regulations 1997 to 2014.

Part L – Conservation of Fuel and Energy**L1 – Conservation of Fuel and Energy**

U value calculations may be based on a manufacturer's declared thermal conductivity ($\lambda_{90/90}$ value) of 0.039 W/(mK) for the Rockwool Blown Cavity Wall Insulation system.

Walls using Rockwool Blown Cavity Wall Insulation can meet the current U-value requirements in Full Fill Cavity Wall Insulation applications depending on the cavity width (see Table 1 and Ci. 4.4 of this Certificate).

2.1 PRODUCT DESCRIPTION

Rockwool Blown Cavity Wall Insulation System consists of rock wool fibre material which is injected in loose form into the cavity walls.

The target mean density for this product when installed is 40 kg/m³. Local areas within the wall when sampled over an area of 0.5 m² may have a density variation of ±10 kg/m³.

2.2 MANUFACTURE

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.

2.3 DELIVERY, STORAGE AND MARKING

Rockwool Blown Cavity Wall Insulation is supplied in polythene wrapped bales, weighing approximately 25 kg, which should remain closed until required for use. Each bale shows the manufacturer's name and product description, and batch number together with the NSAI Agrément identification mark and Certificate number.

2.4 INSTALLATION PROCEDURE

2.4.1 Site Survey

A survey, as defined in Appendix A of the NSAI Agrément Assessment & Surveillance Scheme for Cavity Wall Insulation (CWI), is carried out prior to installation by a trained Rockwool Blown Cavity Wall Insulation surveyor, acting on behalf of the Manufacturer/ Approved Installer who will ascertain the suitability of the property or properties for the Rockwool Blown Cavity Wall Insulation System.

A complete survey report (including a borescope survey) is prepared before installation and held at the Approved Installer's offices. Particular problems are specifically identified and any reasons for rejection of the work are noted.

Quotations, tenders and invoices shall bear the NSAI Agrément identification mark incorporating the number of this Certificate and the installer's registration number.

2.4.2 Site Preparation

Before commencing work, the installing operative ensures that the property has been correctly surveyed and is suitable for insulation with the Rockwool Blown Cavity Wall Insulation System.

Any problems encountered during drilling which prevent compliance with this Certificate are referred to the Certificate Holder before proceeding.

Filling a residual cavity where the wall is partially filled with rigid insulation board (partial fill), is not approved by this Certificate.

2.4.2.1 Ventilation

All ventilation openings such as that providing combustion air or under floor 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.

When installing the Rockwool Blown Cavity Wall Insulation System, the works to be undertaken must not compromise the existing ventilation provisions in the home.

When these existing ventilation provisions do not meet the requirements of Part F of the Building Regulations, the homeowner should be informed and remedial action should be taken before the cavity wall insulation system is installed.

2.4.3 Approved Installers

Installation of the Rockwool Blown Cavity Wall Insulation System shall be carried out by Rockwool Ltd. or by their Approved Installers who:

- 1) Are registered with the NSAI Agrément CWI scheme.
- 2) Are approved by Rockwool Ltd. and NSAI Agrément to install the product.
- 3) Have undertaken to comply with the Rockwool Ltd. Installation Procedure.
- 4) All technicians and surveyors have been trained and issued with appropriate identity cards by Rockwool Ltd. All members of each installation team must carry a card verifying this training and registration.
- 5) Are subject to supervision by Rockwool Ltd., including unannounced site inspections, in accordance with the NSAI Agrément Assessment/Surveillance Scheme.

2.4.4 Procedure

Rockwool Blown Cavity Wall Insulation is installed using an approved blowing machine marked with the appropriate NSAI Agrément Certificate number.

The installer provides all necessary hoses, drilling tools, equipment and materials for making good the walls after the installation of Rockwool Blown Cavity Wall Insulation is completed.

The installer provides all necessary hoses, drilling tools equipment and materials for making good the walls after the installation of the Rockwool Blown Cavity Wall Insulation System.

Prior to the commencement of every filling operation it is essential that the relative density of the material to be installed is checked. This is carried out by filling a specially designed test box using appropriate nozzle size as described in the Cavity Wall Insulation System Manuals.

Where a semi-detached or terraced property is to be insulated, the insulation is contained by inserting a cavity barrier at the line dividing the properties. This consists of an appropriate sized nylon brush. After filling, the cavity barrier is retained in the cavity and the drill holes filled. The nylon brush can also be used to prevent the blocking of under floor vents with the blown fibre where these have not been previously sleeved. The tops of cavity walls must be closed.

A complete survey of property to be filled (including a borescope survey) must be preformed and rectification action taken as required, before proceeding. Holes of 17 mm or 24 mm diameter are drilled in a W 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 0.7 m apart. Additional holes may be required to ensure complete filling around 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). Care should be taken when drilling near to the services supply box, distribution points, wall mounted lights etc. to prevent damage to hidden services runs within the property. In some circumstances access for drilling injection holes and filling with insulation may be limited by features and obstructions such as garages, carports, cladding or conservatories. Refer to the Certificate Holder for advice.

Injection

The product is injected into the cavity (having determined the correct density (by Box Test) through a flexible pipe fitted with a 17 mm or 24 mm diameter tapered non-directional injection nozzle through drilled 18 mm or 25 mm diameter holes, respectively. The material is blown into the cavity under pressure using the approved blowing equipment. Filling proceeds from the bottom to the top of the walls and from one end of an elevation to the other. Holes beneath ground-floor windows are injected first and filling then continues upwards until a complete fill has been achieved.

Where two pipes are used, the nozzles should commence filling in different elevations at a stop-end (e.g. doorway) in the first horizontal row of holes and continue filling for two or three holes. One nozzle can 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.

Installation should be carried out in accordance with the NSAI Agrément Surveillance Scheme.

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

- 1) Check that the pattern of holes complies with the description given in Section 2.4 of this Certificate.
- 2) Check that the injection of the material takes place at each hole, to complete the filling of the cavity space.

Completion

After injection, the wall is made good to match the existing finish as closely as possible using mortar or similar waterproofing mix. All trunked air vents are checked, e.g. those providing underfloor ventilation and combustion air for heating appliances.

In all cases flues are carefully checked before and after the installation by means of an appropriate test (e.g. a smoke test) to ensure they are not obstructed by the insulant and the result recorded on the Technicians safety check sheet which is then filed with the job records.

Any insulant that has been blown through the top of the cavity into the loft space is removed and any points of leakage sealed.

3.0 GENERAL

3.1 The Rockwool Blown Cavity Wall Insulation System, when installed in accordance with this Certificate, is effective in reducing the U-value (thermal transmittance) of external masonry cavity walls, using clay or calcium silicate bricks, concrete blocks, natural stone or reconstituted stone masonry units. It is essential that such walls are designed and constructed to prevent moisture penetration in accordance with the Building Regulations.

The Rockwool Blown Cavity Wall Insulation System is certified for use to fill the cavity in a wall consisting of two leaves of masonry construction (as detailed in the certificate) only. It has not been approved for use on masonry cavity block (hollow block), timber or steel frame construction.

Where required, the installer shall confirm the suitability of the masonry construction with the masonry manufacturer.

3.2 Rockwool Blown Cavity Wall Insulation is capable of meeting or contributing to the 'U' value requirements of TGD Part L to Building Regulations 1997 to 2014, (See Cl. 4.4 and Table 1 of this certificate).

3.3 The construction details of the building where the insulation is to be installed should comply with all relevant standards and good building practice (See Cl. 3.7 of this Certificate).

This certificate only relates to buildings which conform to the design conditions set out here, where the Certificate Holder or Registered Installer has carried out a complete assessment of the wall including a borescope survey, as set out in the Rockwool Installation Manual and has deemed the walls suitable for filling by signing the survey sheet.

3.4 Cavity walls with the outer leaf constructed using unrendered (fair-faced) block work are not suitable for full-fill cavity wall insulation. They are therefore not approved by this Certificate.

3.5 Assessment Criteria

There are separate procedures for assessing suitability of existing and new buildings for Rockwool Blown Cavity Wall Insulation. For the purposes of this Agrément Certificate, "existing buildings" are defined as buildings in excess of three years old. New buildings are defined as buildings up to 3 years old.

3.5.1 Assessment of Existing Buildings:-

Existing buildings should be assessed in accordance with BS 8208: Part 1:1985 *Guide for the assessment of suitability of external cavity walls, for filling with thermal insulants – Existing traditional cavity construction*. In addition the requirements of Rockwool Installation Manual must be referenced during this assessment process.

This includes the mandatory use of a borescope at a number of locations on each wall to be filled, to assess the condition of the inner faces of the masonry and to ensure a clear void exists. The findings of this survey shall be recorded on the assessment survey sheet.

In the case of fair faced brickwork recessed mortar joints are not suitable for filling. Only tool flush joint brickwork is acceptable, subject to the following conditions:

- The minimum cavity width for existing buildings is 50 mm.
- There are no signs of dampness on the inner face of the cavity.
- Mortar joints must be in good condition and free from defects which may allow water ingress.

Consideration must also be given to the exposure of the building, but particular reference to the Assessment of exposure zones defined in Section 3.5.2.1 of this Certificate is not required.

3.5.2 Assessment of New Buildings:-

For new buildings (which may not exhibit visible evidence of exposure damage) an assessment of the Exposure Zones where the property is located, including topography factors must be performed. All restrictions identified in this section of the certificate must be applied. In addition a borescope inspection shall be performed at a number of locations on each wall to be filled, to assess the condition of the inner faces of the masonry and to ensure a clear void exists. The findings of this survey shall be recorded on the assessment survey sheet.

3.5.2.1 Assessment of Exposure Zones

During the assessment phase of new buildings for cavity wall insulation the topography factor of the site must be taken into account in all exposure zones. The topography factor takes account of local features such as hills, cliffs, escarpments or ridges where dwellings are located, which can significantly affect the wind speed in their vicinity. It should be derived for each wind direction considered.

Reference should be made to BS 8104:1992 (*Code of practice for assessing exposure of walls to wind driven rain*) for guidance in this regard. Appendix C of that code makes reference to the topography factor which details the method of calculation of the wind driven rain index for exposed sites in all zones.

It is only after all relevant factors are considered and calculations carried out that a true assessment of the work content for a particular building be determined. Figure 2 identifies the two exposure zones for wind driven rain appropriate to this certificate as follows:

3.5.2.1.1 Normal Exposure

Normal exposure to wind-driven rain applies in districts where the driving rain index is less than 5m²/sec/year however; some areas may require modification to calculations in order to cater for particular individual sites where the topography of a site warrants it (see Figure 2). Appendix C of BS 8104:1992 together with information provided by the Irish meteorological office should be consulted.

In **normal exposure** areas, the types of outer leaf masonry finishes where the Rockwool Blown Cavity Wall Insulation System is suitable are as follows:

- Impervious cladding and rendered walls with a minimum cavity width of 50 mm and up to 12m in height, and
- Fair faced unrendered brickwork with tooled flush joints up to two storeys in height with a minimum cavity width of 50 mm.
- Walls must be in a good state of repair with no evidence of frost damage. Mortar joints must not show evidence of damage which would cause water ingress.

3.5.2.1.2 Severe Exposure

Severe exposure to wind-driven rain applies in districts where the driving rain index is 5m²/sec/year or greater (see Figure 2).

In **severe exposure** areas the type of outer leaf masonry finish where the Rockwool Blown Cavity Wall Insulation System is suitable is:

- Impervious cladding and rendered walls with a minimum cavity width of 50 mm and up to 12m in height.
- Walls must be in a good state of repair with no evidence of frost damage and no evidence of damage which would cause water ingress.

Unrendered brickwork is not suitable for full-fill cavity wall insulation in the severe exposure zones

3.5.3 Assessment of All Buildings

For both Existing and New Buildings, competent installation is critical. A complete survey of both the internal and external areas of the building (including a borescope survey) must be performed by a trained Rockwool Blown Cavity Wall Insulation surveyor and a report prepared and held at the Approved Installers office. Factors to consider include:

- Form of construction and site conditions
- Age of building
- Structural condition
- Size of cavity
- Exposure to wind and driven rain

Installers should be trained to recognise where high exposure and less-than-ideal construction features may cause problems.

For example, it would be inappropriate to insulate a property where poor maintenance has created areas of damp within the dwelling, before the defects have been remedied.

3.6 Filling cavities in sections of the building

In both new and existing buildings, all of the cavity space from ground level to roof or gable copings must be filled. Filling a section of the cavity is only allowed in the following situations:

- 1) When separately insulating semi-detached or terraced properties. Use of the type of cavity barrier defined in Section 2.4.4 of this Certificate must be employed.
- 2) Up to the underside of a horizontal boundary, other than the roof, where that boundary is protected by a cavity tray or similar waterproof barrier which must not be distorted or damaged by the installation process.
- 3) Where filling is carried out above a horizontal boundary where that boundary is protected by a cavity tray or similar waterproof barrier which must not be distorted or damaged by the installation process.
- 4) Where the wall to be insulated is below a waterproof cladding (e.g. tile hung) and this cladding either extends up to the roof or is protected at the top by other means (e.g. window sills with adequate waterproof barrier system).

3.7 Structures

A visual inspection of the wall shall be performed to identify any obvious defects. These defects and their root cause shall be rectified before filling with fibre is performed. The advice of a building professional may be required in such instances.

The construction of walls with cavities in excess of 110 mm requires adjustments to lintels, wall ties, cavity barriers etc. It is therefore necessary that cavity walls are adequately designed in respect of structural stability; fire safety and thermal bridging in accordance with Parts A, B and L of the Building Regulations.

In new build situations where extra wall ties may have been used, the density of wall ties shall be considered when calculating the U-value of the wall.

3.8 General Requirements

Any defects recorded which may affect the performance of the installed insulation system must be rectified to the satisfaction of the Approved Installer before work commences.

Filling a residual cavity where the wall is partially filled with rigid insulation board (partial fill) is not approved by this Certificate.



- Maximum height above dpc to be 1.0 metre.
- Maximum distance from all corners or other vertical features to be 1.0 metre.
- Maximum centres for fill holes horizontally and vertically 1.5 metres.
- Maximum distance below soffit on sloping gable 0.35 metres at 1.0 metre centres.
- Maximum distance below windows or horizontal soffit to be 0.35 metres
- Additional holes may be required to ensure complete filling around building features.

Figure 1: Typical Rockwool Blown CWI Drilling Pattern in a Detached Dwelling

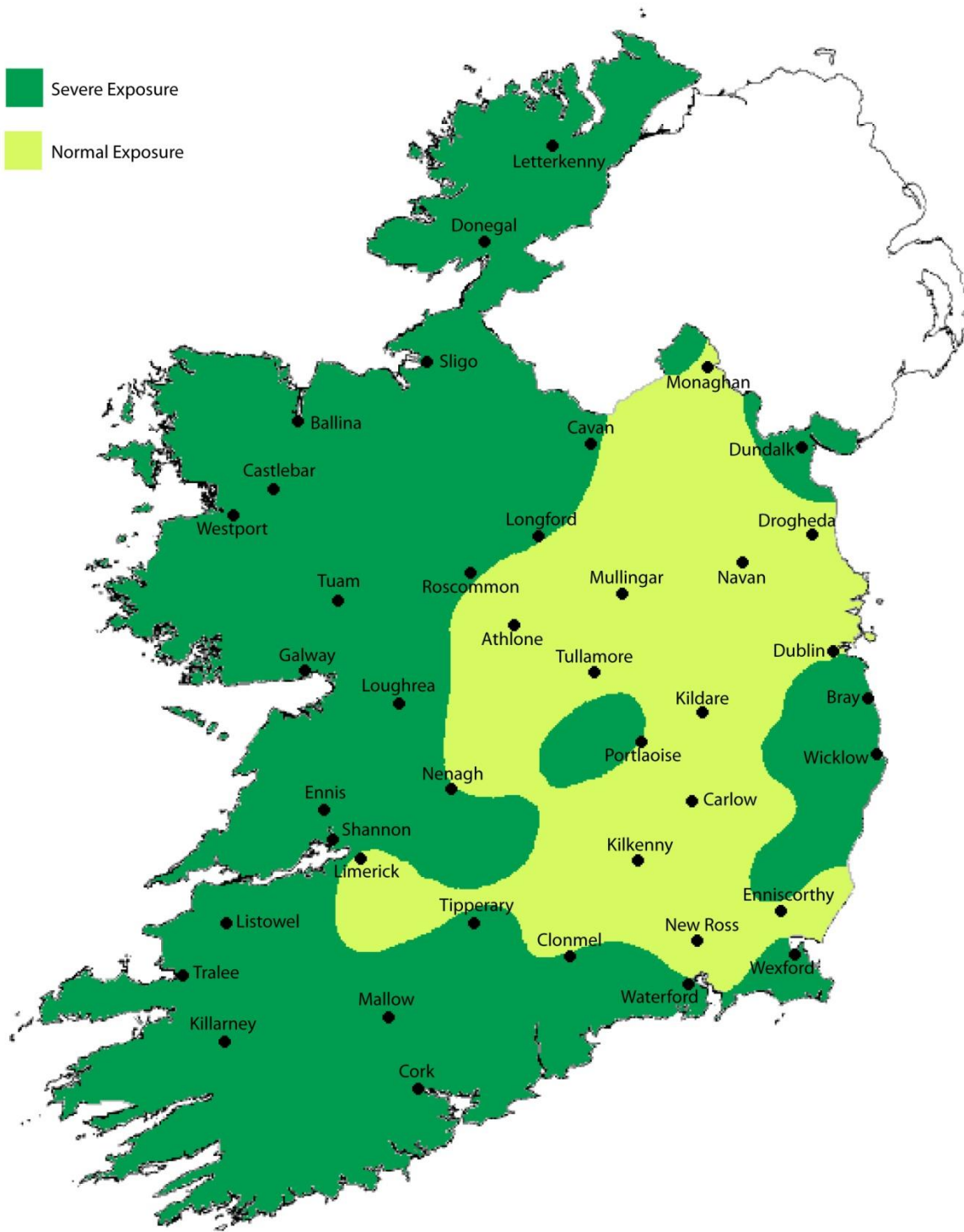


Figure 2: Driving Rain Map (Indicative only – Not to scale)

4.1 BEHAVIOUR IN FIRE

4.1.1 The use of the product does not prejudice the fire resistance properties of the wall. The manufactures declared performance in relation to Fire is shown in Table 2 of this Certificate.

When using this product, the requirements of the Building Regulations 1997 to 2014 relating to fire spread in cavity walls can be met in most purpose groups without the need for cavity barriers provided the walls are constructed in accordance with the following provisions of the TGD to Part B Fire:

1. The wall must consist of masonry inner and outer leaves, each at least 75 mm thick.
2. The cavity must be closed at the top of walls and any other opening.
3. In addition to the product, only the following combustible materials shall be placed in, or exposed to, the cavity:
 - a) timber lintel, window or door frame, or end of timber joist
 - b) pipe, conduit
 - c) dpc flashing closer or wall tie
 - d) 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 fire-stopped sleeve not more than 80 mm by 80 mm.
 - e) thermal insulating material
 - f) in respect of purpose groups 3 – 8 the cavities are sub-divided so that the distance between cavity barriers does not exceed the dimensions given in sub-section 3.3 of the TGD to Part B

4.1.2 For buildings constructed of masonry cavity walls (as detailed in this certificate), in accordance with the Building Regulations 1997 to 2014 the product may be used in buildings of every purpose group.

4.1.3 Rockwool Blown Cavity Wall Insulation is non-combustible and does not constitute a toxic hazard in fire.

4.2 LIQUID WATER PENETRATION

4.2.1 Test data obtained by NSAI Agrément confirms that the masonry cavity wall built to determine the effects of water resistance incorporating the Rockwool Blown Cavity Wall Insulation System did not transmit water to the inner leaf. The manufactures declared performance in relation to Water Absorption is shown in Table 2 of this Certificate.

4.2.2 The Rockwool Blown Cavity Wall Insulation System, when used in accordance with this Certificate, presents no significant risk of water penetration.

4.3 CONDENSATION RISK

The Rockwool Blown Cavity Wall Insulation System is not a water vapour barrier.

4.3.1 Internal Surface Condensation

When improving the thermal performance of the external envelope of a building through the use of Cavity Wall Insulation, designers need to consider the impact of these improvements on other untouched elements of the building. As referenced in Cl. 4.5 of this Certificate, thermally bridged sections of the envelope such as window jambs, sills, heads, internal wall and floor junctions and eaves will experience a lower level of increased thermal performance. The ability to improve these junctions can be limited due to physical restrictions on site. As a result, best practice should be adopted in order to limit the risk of internal surface condensation which can result in dampness and mould growth.

When site limiting factors give rise to substandard levels of insulation at bridged junctions, guidance should be sought from the Certificate holder as to acceptable minimum requirements.

4.3.2 Interstitial Condensation

When a potential interstitial condensation risk is identified at design stage, a condensation risk analysis must be carried out. A transient hygrothermal (condensation) risk analysis in accordance with I.S. EN 15026 *Hygrothermal performance of building components and building elements - Assessment of moisture transfer by numerical simulation* can be used to predict one dimensional transient heat and moisture transfer in multi-layer building envelope components subjected to non steady climate conditions on either side. When a problem is identified, the design shall be modified as appropriate to reduce the risk of interstitial condensation to acceptable levels.

Table 1: External Walls – Estimated U Values $W/(m^2 K)^1$

Cavity fill	λ W/(m.K)*	Rendered Cavity Wall - Type I										
		Unventilated Cavity (mm)										
		50	60	70	80	90	100	110	120 ²	130 ²	140 ²	150 ²
Uninsulated Type I wall	Air	1.695										
Rockwool Cavity Bead	0.039	0.60	0.52	0.46	0.41	0.37	0.34	0.31	0.29	0.27	0.25	0.24
		Brick Cavity Wall - Type II										
Uninsulated Type II wall	Air	1.635										
Rockwool Cavity Bead	0.039	0.58	0.51	0.45	0.40	0.37	0.33	0.31	0.29	0.27	0.25	0.23

Wall Type I - 19mm external render on 100/100/100 block cavity wall (clear cavity) with 12.5mm internal plasterboard
Wall Type II - 102.5mm external brick (clear cavity), 100 block inner leaf with 12.5mm internal plasterboard
 (Internal plasterboard – dabbed or mechanically fixed without air gap or insulation).

Specialist advice should be sought for cavity widths in excess of 150mm.

¹ The above U values represent the most optimistic values achievable for the wall constructions shown filled with the Rockwool cavity wall insulation system. U values quoted will be affected by the installed density of the product. Installers should provide records of the volume of fibre used in each installation in order to more accurately determine actual U Values.

² The construction of walls with cavities in excess of 110mm wide requires adjustments to lintels, wall ties, cavity barriers, etc. It is therefore necessary that cavity walls are adequately designed in respect of structural stability and fire safety in accordance with Parts A and B of the Building Regulations. For Table 1 it is assumed that cavity walls containing full-fill fibre will be constructed in accordance with the requirements of the Building Regulations, 1997 to 2014.

Alternatively, a steady state condensation risk analysis to I.S EN 13788:2002: *Hygrothermal performance of building components and building elements - Internal surface temperature to avoid critical surface humidity and interstitial condensation - Calculation methods* must be performed at a minimum.

Further guidance may be obtained from BS5250:2011: *Code of practice for control of condensation in buildings*.

4.4 THERMAL INSULATION

U-value calculations may be based on a manufacturers declared thermal conductivity* ($\lambda_{90/90}$ value) of 0.039 W/(mK) for the Rockwool Blown Cavity Wall Insulation system. See Table 2.

U-values for external walls can be obtained in typical cavity wall constructions as indicated in Table 1.

Where the calculated wall U-value does not meet the relevant requirement of the Building Regulations, additional energy improvement measures will be required to meet the backstop elemental U-values outlined in TGD Part L to the Irish Building Regulations.

4.5 LIMITING THERMAL BRIDGING

The linear thermal transmittance “ Ψ ” (Psi) describes the additional heat loss associated with junctions and around openings. The product can maintain, or contribute to maintaining, continuity of thermal insulation at junctions between elements and openings.

The requirements of TGD Part L, Appendix D applies to all thermal bridges. Further details on applicable junctions should be sought from an NSAI registered Thermal Modeller.

It is recommended that continuity of the blown fibre insulation be maintained to limit the instances of thermal bridging, to maintain internal surface temperatures at sufficiently high levels in order to minimise the risk of surface condensation and mould growth.

4.6 DURABILITY

The Rockwool Blown Cavity Wall Insulation is rot-proof, water repellent and durable. When installed in accordance with this certificate, it is sufficiently stable to prevent settlement and will remain effective as an insulant for the life of the building. The manufacturers declared performance in relation to Settlement is shown in Table 2 of this Certificate.

Should it ever become necessary, for whatever reason, to remove the material from the cavity void, Rockwool Blown Cavity Wall Insulation can be evacuated from the cavity void. The advice of the Certificate Holder should be sought in all such instances.

4.7 MAINTENANCE

As the product is confined within the wall cavity and has suitable durability (See Cl. 4.6 of this certificate), maintenance is not required.

4.8 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING

- Efficiency of fill in clear cavities using the Specified equipment and drilling pattern.
- Density of fill.
- Water resistance of filled cavity.

4.9 OTHER INVESTIGATIONS

- Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on structural stability and durability were assessed. The absence of chloro-fluorocarbon gases 'CFCs' was established.
- The manufacturing process was examined including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- Site visits were conducted to assess the practicability of installation.
- Driving rain resistance was assessed.
- A condensation risk analysis of the system was performed.

4.10

The Certificate holder has taken responsibility of CE marking the product in accordance with Harmonised European Standard EN14064-1 :2010. An asterisk (*) appearing in this Certificate indicates that data shown is given in the manufacturers Declaration of performance. See Table 2.

Table 2: Manufacturers Declared Values of Essential characteristic *

Essential Characteristics	EN 14064-1 Clause	Manufacturers Declared Value
Thermal conductivity (W/mK)*	4.2.1	0.039 ($\lambda_{90/90}$)
Reaction to fire *	4.2.4	A1
Short term water absorption *	4.3.3	WS
Settlement*	4.2.3	S1
Water Vapour Transmission*	4.3.4	MU1

5.1 National Standards Authority of Ireland ("NSAI") following consultation with NSAI Agrément has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from latest date of revision so long as:

- (a) the specification of the product is unchanged.
- (b) the Building Regulations 1997 to 2014 and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.
- (c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.
- (d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.
- (e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.
- (f) the registration and/or surveillance fees due to NSAI Agrément are paid.

5.2 The NSAI Agrément mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the NSAI Agrément mark and certification number and must remove them from the products already marked.

5.3 In granting Certification, the NSAI makes no representation as to;

- (a) the absence or presence of patent rights subsisting in the product/process; or
- (b) the legal right of the Certificate holder to market, install or maintain the product/process; or
- (c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.

5.4 This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

5.5 Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act 2005, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.

5.6 The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.

5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, 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 Certification.

NSAI Agrément

This Certificate No. **98/0031** is accordingly granted by the NSAI to **Rockwool Ltd.** on behalf of NSAI Agrément.

Date of Issue: May 2005

Signed



Seán Balfe

Director of NSAI Agrément

Readers may check that the status of this Certificate has not changed by contacting NSAI Agrément, NSAI, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. www.nsaie.ie

Revisions:

February 2014: To add additional information and other general changes.

September 2015: To make general text changes.