NSAI Agrément

IRISH AGRÉMENT BOARD
CERTIFICATE NO. 24/0445
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ROCKWOOL NyRock® Cavity Slab 032
Cavity Wall Insulation

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 TGD Part D of the second schedule of the **Building Regulations 1997 to 2023**



PRODUCT DESCRIPTION:

This Certificate relates to ROCKWOOL NyRock Cavity Slab 032. The product is a semi rigid, unfaced, stone wool insulation slab including a water repellent hydrophobic agent to assist in the prevention of moisture transmission between the outer an inner leaf of a wall in which it is installed.

ROCKWOOL NyRock Cavity Slab 032 achieves a Euroclass A1 non-combustibility classification as defined in EN 13501-1

The product is available in 455mm x 1200mm slabs to suit standard vertical wall tie spacings allowing a closely knitted joint with adjacent slabs. Thicknesses up to 200mm are available.

In the opinion of NSAI, the ROCKWOOL NyRock Cavity Slab 032 product, as described in this Certificate, complies with the requirements of the Building Regulations 1997 to 2023.

USE:

NyRock Cavity Slab 032 is used as a thermal insulation in a full fill or partial fill application for external masonry cavity walls in new domestic and non-domestic buildings and for extensions in new domestic and non-domestic existing buildings. In full fill applications, it is approved for use up to 25 meters in height, with additional requirements applying for buildings above 12 meters in height. In partial fill applications, it is approved for use, without height restrictions, but additional requirements apply for buildings above 25 meters in height. The product is installed during construction of the external wall.

Readers are advised to check that this Certificate has not been withdrawn or superseded by a later issue by contacting NSAI Agrément, NSAI, Santry, Dublin 9 or online at www.nsai.ie

MANUFACTURE AND MARKETING:

The product is manufactured and marketed by:

ROCKWOOL Ltd
Wern Tarw
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1.1 ASSESSMENT

In the opinion of NSAI Agrément, ROCKWOOL NyRock Cavity Slab 032, if used in accordance with this certificate, meets the requirements of the following clauses of the Irish Building Regulations:

Part D - Materials and Workmanship

D3 – Proper Materials
D1 – Materials and Workmanship
ROCKWOOL NyRock Cavity Slab 032 is comprised of 'proper materials', i.e. materials which are fit for their intended use and for the conditions in which they are to be used.

Part B – Fire Safety
B3 & B8– Internal Fire Spread (Structure)
B4 & B9 External Fire Spread

ROCKWOOL NyRock Cavity Slab 032 is non-combustible, achieving a reaction to fire classification of A1, as defined in EN13501-1[17] and may be used in masonry cavity walls in buildings of every purpose group to meet the relevant requirements of TGD Part B.

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

Part F – Ventilation
F1 – Means of ventilation

Part J – Heat Producing Appliances
J3 – Protection of Building

Part L – Conservation of Fuel and Energy
L1 & L6 - Dwellings
L1 & L5 - Buildings other than Dwellings

2.1 PRODUCT DESCRIPTION

ROCKWOOL NyRock Cavity Slab 032 is a semi rigid stone wool insulation slab featuring a water repellent agent, which assists in helping prevent moisture transmission between the outer an inner leaf of the wall, when installed as a full-fill or partial-fill insulation during construction.

ROCKWOOL NyRock Cavity Slab 032 achieves a Euroclass A1 non-combustibility classification as defined in EN 13501-1[17].

The product is manufactured in 455mm width slabs to suit standard vertical wall tie spacings, and to provide closely knitted joints with adjacent slabs. See Table 1 for the products nominal characteristics.

The product is suitable for use in a full fill application in thicknesses of 100mm to 200mm, and in a partial fill application in thicknesses of 50mm to 200mm.

Table 1: Nominal Dimensions

Size (mm)	1200 x 455
Thickness	50 to 200mm*

- **Full fill applications in thicknesses of 100 - 200mm**
- **Partial fill applications in thickness of 50 – 200mm.**
- **Other slab thicknesses within the above range are available on request.**

2.2 MANUFACTURE

The product is manufactured to meet the requirements of I.S. EN 13162[1]. Raw materials, mixed to a controlled formulation, are melted in a furnace to produce molten stone. Stone fibres are produced from the molten stone using a rotary spinning process. The fibres are treated with a resin and formed into a continuous length of insulation to the required thickness. The insulation then passes into an oven which cures the resin. The insulation is then cut to the required dimensions to form the slabs.

The management systems of the manufacturer has been assessed and registered as meeting the requirements of ISO 9001[2] and ISO 14001[3] by BSI (Certificates FM 02262 and EMS 70301 respectively).

2.3 CAVITY WALL TIES

Cavity wall ties of the correct type shall be installed where required and be selected according to structural requirements, cavity size, building height, location and specification requirements of I.S. EN 845-1[4], austenitic stainless steel.

They shall be installed to meet structural stability requirements of I.S. EN 1996-1-1[5], I.S. EN 1996-2[6]and I.S. EN 1996-3[7].

Wall ties should be built in and not pushed into joints. They should be positioned so that they slope downwards towards the outer leaf with the drip facing downwards and shall be placed in rows aligned to the slab edge i.e. not staggered. Care should be taken to avoid having ties with mortar droppings, as this can act as a carrier for moisture transmission to the inner leaf.

Wall ties should be long enough to be embedded a minimum of 50mm into each leaf. Where cavity widths are over 100mm and where dwellings are exposed to severe and very severe winds, including on exposed and elevated locations of over 150m above sea levels as well as coastal locations, site specific assessment of wall ties requirements shall be undertaken. The wall tie spacing in the procedure 2.5.2 may still be acceptable, if used in conjunction with stiffer wall tie types – e.g. Type 1 or 2 in accordance with PD 6697[20].

Additional ties may be required to satisfy the structural requirements and/or to ensure adequate retention of insulation slabs or cut pieces.

The first row of insulation boards or batts should be supported on wall ties, with a minimum of two ties to each slab coinciding with the horizontal joints in the insulation.

Wall ties specification shall be defined by a Chartered Structural Engineer as required, taking into account minimum spacing of wall ties in accordance with TGD Part A, Section 1. Extra wall ties are required at the jamb of openings and movement joints as described in Diagram 9 of TGD Part A to the Irish Building regulations.

2.4 DELIVERY, STORAGE AND MARKING

The slabs are delivered to site in polythene-wrapped packs. Each pack contains a label bearing the manufacturer's name, slab dimensions and the NSAI identification mark, incorporating the number of this Certificate.

It is recommended that dust masks, gloves and long sleeved clothing are worn during the cutting and handling of the product.

The slabs should be stored clear of the ground, on a clean level surface and preferably under cover to protect them from prolonged exposure to moisture or mechanical damage.

Packs should be stored under cover until required for use. Damaged or contaminated products must not be used, with wet products to be fully dried out before use.

2.5 INSTALLATION PROCEDURE

2.5.1 General

Adequate supervision of the installation must be maintained and the Certificate holder's specialists should be offered right of access to site to ensure correct installation if required.

It is recommended that the internal leaf is constructed ahead of the external leaf so that any mortar protruding into the cavity space from the back of the external leaf can be cleaned off before installing the product. Slabs must not be pushed into a completed cavity.

Any mortar protruding into the cavity space from the back of the internal leaf shall be cleaned off before installing the product. Boards should be protected from inclement weather during breaks in the installation process.

As recommended in SR 325[8], no more than two courses of block should be laid on the preceding course before installation of the insulation.

Workmanship should be in accordance with BS 8000-3[9].

Vertical joints in the slabs must be staggered and all joints tightly butted. Where penetrations occur in the cavity, the slabs should be carefully cut to fit.

If installation of the slabs is terminated below the highest level of the wall, the top edge of the insulation must be protected by a cavity tray and alternate perpend joints raked out, to provide adequate drainage of water from the tray.

Where required, door and window reveals should incorporate a cavity barrier/closer. It is recommended that approved cavity barriers/closers are always used.

2.5.2 Procedure

The installation of insulation shall commence at least 225mm below the top floor insulation to prevent thermal bridging below the DPC.
See Figure 1.

Slabs must fit flush against the internal leaf. For full-fill applications, to accommodate discrepancies in the outer wall leaf, a maximum 10mm localised residual cavity may be accommodated, if required, between the insulation slab and the external wall leaf.

When used in full fill applications, wall ties should be applied at maximum 900mm centres horizontally and 450mm vertically.

When used in partial fill applications, wall ties should be at 600mm centres horizontally and 450mm vertically.

The width of the first course of slabs can be cut to suit the height of the next row of wall ties. The width of cut slabs should always be 5 mm greater than the width to be insulated, e.g. wall tie centres.

Wall ties should be built in, and not pushed into joints. They should be positioned so that they slope downwards towards the outer leaf and be positioned in rows i.e. not staggered.

Additional ties may be required to satisfy the structural requirements and/or to ensure adequate retention of slabs or cut pieces.

It is recommended that any mortar protruding into the cavity space from the back of the leading leaf is cleaned off before installing the slabs.

A complete section of the leading leaf shall be built up to one course above the next row of wall ties spaced at a maximum of 900mm horizontally for full fill applications (Figure 2) or 600mm for partial fill applications (Figure 3), to ensure that each slab is secured at a minimum of three points in accordance with I.S. EN 1996-1-2[10]. All mortar joints shall be properly filled, particularly the perpends joints (see Figure 7).

Slabs shall be compressed slightly and placed between the upper and lower wall ties to form a closely jointed run.

Before installing each course of slabs, excess mortar must be removed from the inside face of the leading leaf, and mortar droppings cleaned from the exposed edges of the slabs. This is made easier using a cavity board (Figure 4). This sequence should be maintained progressively until the wall plate or cavity tray is reached. It is important for the insulation to be installed to the highest level of each wall with all areas of the wall insulated.

At corner joints, edges must be cut accurately to ensure close butting (see Figure 6).

With openings such as doors and windows, it is recommended that a continuous lintel or cavity tray is used. Individual lintels or cavity trays should have stop-ends and be adequately drained. Slabs should be cut to butt tightly against the cavity barrier/closer/dpc or wall ties.

Vents to is installed as required (and not obstructed by the NyRock Cavity Slab), to meet the requirements of TGD Part F of the Irish Building regulations.

All slabs shall be cut cleanly, using a sharp, long bladed knife and a straight edge. It is essential that cut pieces of slabs completely fill the spaces for which they are intended and are adequately secured. Gaps must not be left in the insulation.

It is essential that all the joints between the insulation slabs are clean and tightly butted.

The outer wall leaf is then built up to the same level as the slabs. This sequence is repeated to the top of the wall. Alternatively, the top of the slabs can be protected by using a cavity tray.

Where two or three layers of the insulation slabs are to be used, to achieve the required wall U-value, a similar procedure must be followed as for the single layer. The first layer is fitted against the leading leaf of the masonry, followed by the second and or third layer. See Figure 5. When multi layering, ensure that the vertical joints between the outer slabs are staggered to those of the inner slabs.

For cavities exceeding 150 mm, the Certificate holder's instructions must be followed regarding the type of ties and wall tie and spacing to be used, and the installation should be carried out in accordance with I.S. EN 1996-1-2[10], I.S. EN 1996-2[6] and I.S. EN 1996-3[7].

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 ROCKWOOL NyRock Cavity Slab 032 will be constructed in accordance with the requirements of the Building Regulations, 1997 to 2023. The construction of the inner and outer leaves is the responsibility of the main building contractor.

Exposed areas of slabs should always be covered at the end of the day's work or in driving rain.

For all buildings utilising the ROCKWOOL NyRock Cavity Slab 032 product, particularly when the construction work is interrupted, full compliance with the requirements of I.S. EN 1996-2[6], particularly Clauses 3.2 acceptance, handling and storage of materials and 3.6 Curing and protection, must be adhered to.

Where required, Radon barriers or stepped DPMs should be dressed over the cavity either dissecting the slab or dressed behind the riser slab and across the cavity below the insulation. The insulation should be butted tightly either side of the barrier to provide thermal continuity.

It is recommended that drainage/weep holes be provided at approximately 1m centres in the perpend block joints above radon membrane/DPM level. See Figure 1.

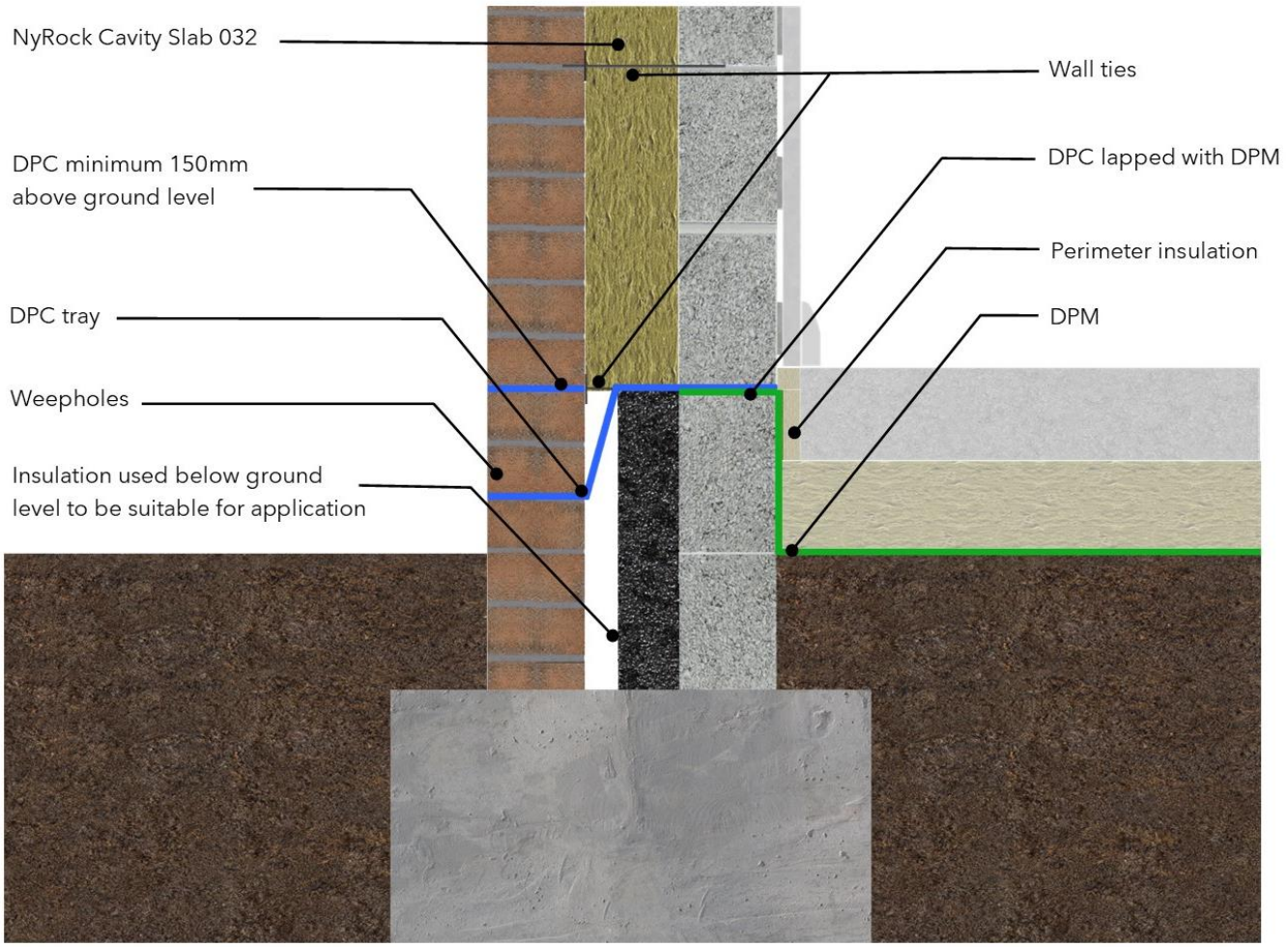


Figure 1 – Build-up at ground level



Figure 2 Wall tie positioning –
Full fill aplication

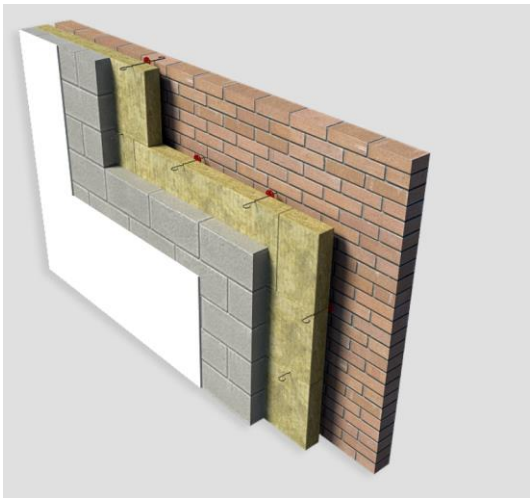


Figure 3 Wall tie positioning –
Partial fill aplication



Figure 4 Use of cavity board for
clearing off mortar



Figure 5 Slab multi-layering

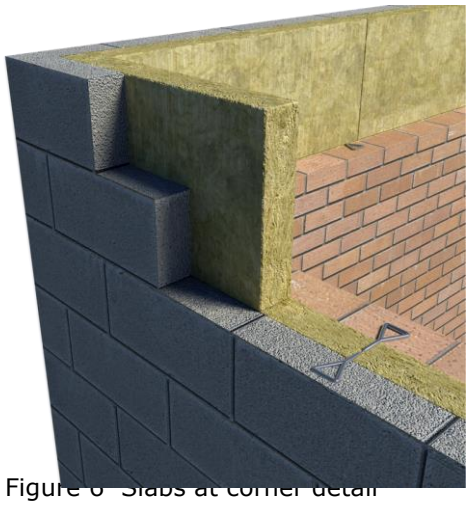


Figure 6 Slabs at corner detail

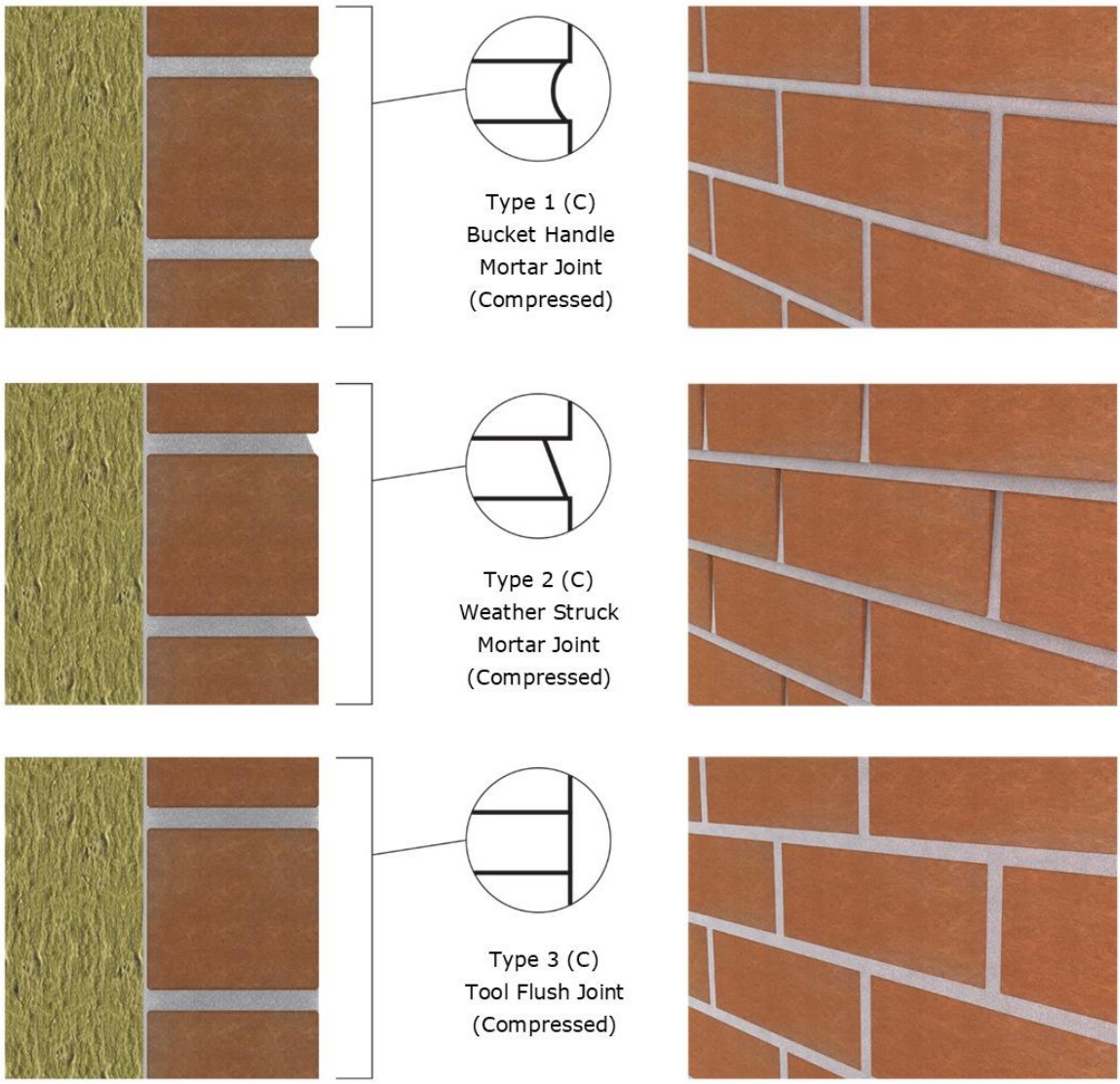


Figure 7 Brick Mortar Joint Profiles

3.1 NyRock Cavity Slab 032 when installed in accordance with this Certificate, is effective in reducing the 'U' value (thermal transmittance) of new external masonry cavity walls, or calcium silicate bricks, concrete blocks, or natural and reconstituted stone blocks. It is essential that such walls are designed and constructed to prevent moisture penetration.

Mortar joints in un-rendered brickwork (both bed and perpend joints), where allowable, should be well compressed and tool finished to limit absorption and to provide a good seal between the mortar and the brick while minimising shelving where moisture may ledge.

Figure 7 shows various accepted brick finish mortar joints examples.

1(C): Bucket Handle Mortar Joint (Compressed)
2(C): Weather Struck Mortar Joint (Compressed)
3(C): Tool Flush Joint (Compressed)

In prolonged periods of driving rain, water will penetrate the outer leaf of a masonry wall. In very severe exposure locations, fair faced masonry with full cavity insulation is not permitted and raked or recessed mortar joints are to be avoided.

3.2 As with all cavity wall insulation, the construction detailing must comply with good building practice and meet DoEHLG Acceptable Construction Details requirements.

3.3 This Certificate covers the use of the product for full fill and partial fill, in any exposure zone as long as the wall is designed and built to meet the requirements of Eurocode 6 and BS 8000-3[9], to ensure no moisture will be transferred through to the inner face of the outer wall leaf. The use of the product does not preclude the need to apply any external render coat or other suitable finish in severe, or very severe, exposure zones where such application is deemed a requirement of the design specification.

As with other forms of cavity wall insulation, where buildings need to comply with National Standards, specifiers should observe the requirements of that document.

Buildings subject to the national Building Regulations should be constructed in accordance with the relevant recommendations of:
I,S. EN 1996-1-1[5], I.S. EN 1996-1-2[10], I.S. EN 1996-2[6] and I.S. EN 1996-3[7], I.S EN 845-1[4] and BS 8000-3[9].

Cavity wall ties and, if required, any additional ties to I.S. EN 845-1[4] and PD 6697[20] should be used for structural stability in accordance with I.S. EN 1996-1-1[5], I,S EN 1996-2[6] and I.S. EN 1996-3[7].

Care must be taken in the overall design and construction of walls incorporating the product to ensure the provision of appropriate:
- cavity trays and damp-proof courses (dpc).
- cavity barriers.
- resistance to the ingress of precipitation, moisture and dangerous gases from the ground
- resistance to sound transmission, including flanking sound transmission, at separating walls and floors.

3.4 Full Fill Applications
NyRock Cavity Slab 032, is satisfactory for use as full fill cavity wall insulation and is used to reduce the thermal transmittance (U value) of external cavity walls with masonry inner and outer leaves in new domestic and non-domestic buildings up to and including 25 metres in height (although additional requirements apply above 12 metres in height). It is essential that walls are designed and constructed to incorporate the precautions given in this Certificate to prevent moisture penetration.

An external render coat or other suitable finish should be applied in locations where such application would be normal practice; care should be taken to ensure that the residual cavity is not bridged by mortar.

3.4.1 Buildings up to and including 12 m in height

The following design conditions must be ensured:

- The insulation completely fills the cavity.
- The insulation thickness remains constant where possible. Should any change in vertical thickness occur, a horizontal damp-proof cavity tray should separate each thickness change.
- A minimum insulation thickness of 100 mm is maintained where possible. Where, for structural reasons, the insulation thickness is reduced, e.g. by the intrusion of ring beams, the manufacturer's advice shall be sought. In such instances, additional measures may be required to achieve the target U value and to avoid thermal bridging.

3.4.2 Buildings over 12 metres high and up to and including 25 metres in hight

Where the walls of a building are between 12 and 25 metres high, the following requirements also apply:

• from ground level, the maximum height of a continuous cavity must not exceed 12 metres. Above 12 metres, the maximum height of a continuous cavity must not exceed 7 metres. In both cases, breaks should be in the form of continuous horizontal cavity trays and weepholes discharging any moisture to the outside of the building.

3.5 Partial Fill Applications

NyRock Cavity Slab 032 is also suitable for use in partial fill applications to reduce the thermal transmittance (U value) of external cavity walls with masonry inner and outer leaves. The product is for use in new domestic and non-domestic buildings without height restrictions (although additional requirements apply above 25 metres in height). It is essential that walls are designed and constructed to incorporate the precautions given in this Certificate to prevent moisture penetration.

3.5.1 Buildings up to and including 25 meters in hight

The residual cavity width to be maintained during construction is 50 mm. This may be reduced to 25 mm in isolated areas due to individual construction features. This may be achieved by designing a cavity width which takes into account the dimensional tolerances of the components which make up the wall (by reference to the applicable standards relating to the bricks, blocks and slabs), or by using the data from the respective manufacturers. Allowances may need to be made for the quality of building operatives and the degree of site supervision or control available, and for the limitations in respect of exposure of the proposed building. In such instances, additional measures may be required to achieve the target U value and avoid thermal bridging**.**

From ground level, the maximum height of continuous cavity walls must not exceed 12 metres; above 12 metres, the maximum height of continuous cavity walls must not exceed 7 metres. In both cases, breaks should be in the form of continuous horizontal cavity trays and weepholes discharging to the outside.

An external render coat or other suitable finish should be applied in locations where such application would be normal practice; care should be taken to ensure that the residual cavity is not bridged by mortar.

3.5.2 Buildings over 25 metres in height

The width of the residual clear cavity to be achieved is to be in excess of 50 mm, and the following additional requirements apply:

- The specifier must take extra care when detailing to ensure that the introduction of the insulation does not affect the weather resistance of the wall. Above average site supervision is recommended during installation of the product.
- Where, for structural reasons, the cavity width is reduced, eg by the intrusion of ring beams, a minimum residual cavity width of 25 mm must be maintained and extra care must be taken with fixings and weatherproofing, e.g. the inclusion of cavity trays with weepholes. In such instances, additional measures may be required to achieve the target U value and avoid thermal bridging**.**

3.6 Data obtained by NSAI Agrément confirms that a masonry wall incorporating NyRock Cavity Slab 032 in accordance with this certificate, the manufacturer's instructions and constructed in accordance with the relevant recommendations of Eurocode 6 and SR 325[8], and adequately maintained throughout their life (as required), will not transmit water to the inner leaf.

3.7 The product can be used in situations where it bridges the damp–proof course (DPC) in walls, but must be kept clear of contact with the ground by supporting the lowest row of installed insulation boards on wall ties providing a minimum clearance of 100mm between the bottom of the boards and the cavity ground level. Perpend block joints to incorporate drainage holes shall be included where required.

3.8 The type and spacing of wall ties must conform to structural design requirements and will be dependent on, cavity width, wall length and height, and opening sizes. The effect of the wall ties should be included in the calculations for the thermal performance of the final construction.

3.9 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 to structural stability and fire safety in accordance with Technical Guidance Documents (TGD), Parts A and B of the Building Regulations.

If required and upon request, the Certificate holder's specialists can attend the site to provide demonstrations to ensure correct installation of the NyRock Cavity Slab 032.

3.10 In all situations, it is particularly important to ensure during installation that:

- installation is carried out to the highest level on each wall, or the top edge of the insulation is protected by a cavity tray
- cavity trays are used with appropriate stop ends and weep holes at lintel level
- cavity battens and/or boards are used during construction to prevent bridging by mortar droppings
- wall ties are installed correctly and are thoroughly clean
- excess mortar is cleaned from the cavity face of the leading leaf and any debris removed from the cavity
- mortar droppings are cleaned from the exposed edges of installed slabs
- dpc at ground level does not protrude into the cavity as they can form a trap for mortar bridging
- insulation slabs are properly installed and butt-jointed
- raked or recessed mortar joints are avoided in very severe exposure areas. See also Cl. 3.1 of this Certificate.
- Window and door opening reveals should be constructed incorporating a cavity barrier/closer/dpc, as required.

4.1 BEHAVIOUR IN FIRE

ROCKWOOL NyRock Cavity Slab 032 has a reaction to fire classification of A1 to I.S. EN 13501-1[17].

Designers should refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity closers and barriers, fire stopping of service penetrations and combustibility limitations for other materials and components used in the overall wall construction.

4.2 WATER PENETRATION

Test data reviewed shows, that when the product is properly installed in accordance with this Certificate, and the manufacturers instructions, it will resist water transfer across the cavity to the inner leaf.

4.3 CONDENSATION RISK

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 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 may experience a lower level of thermal performance.

Walls should be designed for U-Values to Part L of the Building Regulations, and 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. The as shown images in this certificate have been assessed to show compliance with Acceptable Construction Details (ACD's) to TGD Part l of the Irish Building Regulations. Where construction details differ from these ACD's, thermal modelling by an NSAI approved thermal modeller shall be carried out to meet the requirements of TGD Part L of the Irish Building Regulations.

4.3.2 Interstitial condensation

If the product is to be used in the external walls of rooms expected to have high humidity, care must be taken to provide adequate permanent ventilation to avoid possible problems from the formation of interstitial condensation in the internal wall leaf.

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[12] 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.

Alternatively, a steady state condensation risk analysis can be performed to I.S. EN ISO 13788[18]. Further guidance may be obtained from BS5250[11].

For the purposes of assessing the risk of interstitial condensation, the water vapour resistance factor (μ) of the insulation may be taken as 1.

Walls will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250[11], and other relevant guidance.

4.4 THERMAL INSULATION

Calculations of the thermal transmittance (U-value) of specific constructions should be carried out in accordance with I.S. EN ISO 6946[13] using a thermal conductivity (λ-value) as outlined in Table 3 of this certificate (taken from the clients DoP . The U-value of a construction will depend on the materials used and the design. Examples of U-value calculations are given in Tables 2 and 3 for both full fill and partial fill applications.

A full listing of U-value calculations, along with AutoCAD building details on which calculations are based are available from the certificate holder on request. End users should seek guidance from the certificate holder on U-values that can be achieved.

The product can contribute to maintaining continuity of thermal insulation at junctions between elements and around openings. Guidance in this respect, and on limiting heat loss by air infiltration, can be found in the documents supporting the Irish Building Regulations, including the DoEHLG Acceptable Construction Details requirements .

4.5 LIMITING THERMAL BRIDGING

The linear thermal transmittance ψ (Psi) describes the heat loss associated with junctions and around openings. The certificate holder has carried out ψ-value calculations for a wide range of thermally bridged junctions for new build. A full listing of ψ-value calculations, along with AutoCAD building details on which calculations are based, are available from the certificate holder on request.

For window jambs, door reveals and all building junctions, when shown to be equivalent or better than junctions detailed in the DoEHLG publication Limiting Thermal Bridging & Air Infiltration – Acceptable Construction Details, then it is acceptable to use the linear thermal transmittance values outline in Table D1 of Appendix D of TGD to Part L of the Building Regulations. When all bridged junctions within a building comply with the requirements of Table D1 of appendix D of TGD to Part L, the improved 'y' factor of 0.08 can be entered into the Dwelling Energy Assessment Procedure (DEAP) Building Energy Rating (BER) calculation.

Where either of the above options are shown to be valid, or when the required values cannot be achieved, all relevant details should be recorded on the 'Certificate of Compliance' for that project for use in future BER calculations.

Ψ-values for other junctions outside the scope of this certificate should be assessed in accordance with the BRE IP1/06[14] and BRE Report BR 497[15] in accordance with appendix D of TGD to Part L of the Building Regulations.

4.6 ELECTRICAL & PLUMBING SERVICES

The positioning and future access to all plumbing and electrical cabling services should be carefully considered during the design phase of the construction.

Electrical installations should meet all requirements of I.S 10101[16]. ROCKWOOL NyRock Cavity Slab 032 shall not be placed in direct contact with electrical cables.

4.7 DURABILITY

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

Under normal service conditions, the product will have a life equivalent to the structure in which it is incorporated, provided it is installed in accordance with this Certificate and the Certificate holder's instructions and the building is constructed in accordance with the relevant recommendations of Eurocode 6 and SR 325[8], and adequately maintained throughout its life (as required).

4.8 MAINTENANCE

As the product is confined and protected within the wall cavity it will remain durable without the necessity for maintenance.

4.9 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING:

- efficiency of the construction process
- resistance to rain penetration of an insulated cavity wall
- reaction to fire
- thermal conductivity
- water absorption
- density of air-dry slabs
- dimensional accuracy
- dimensional stability

4.10 OTHER INVESTIGATIONS

- Existing data on the ability of the installed product to limit thermal bridging was assessed.
- 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, durability and performance.
- Driving rain resistance was assessed.
- A series of U value calculations were carried out.

4.11 CE MARKING

The manufacturer has taken responsibility of CE marking the NyRock Cavity Slab 032 products in accordance with harmonised European Standard I.S. EN 13162[1]. The NSAI assessment of the products characteristics was performed against the Certificate holders Declaration of Performance (DoP) listed below, which should be referenced for the essential characteristic values of the certified product:

NyRock Cavity Slab 032:
RWUK-CE-0255-01_english _ April 2022[19]

NSAI Agrément

Table 2: External Masonry Walls – Estimated U Values W/(m²K) - Partial Fill								
NyRock Cavity Slab 032 Partial Fill	λ W/(m.K)	**Rendered Cavity Wall - Type I**						
		Insulation Thickness [2]						
		100[1]	125[1]	150[1]	160[1]	170[1]	180[1]	200[1]
		U-value (W/m²K)						
Dense Block Inner Leaf 13mm Dense Plaster	0.032	0.27	0.22	0.19	0.18	0.17	0.16	0.15
NyRock Cavity Slab 032 Partial Cavity fill		**Brick Cavity Wall - Type II**						
		Insulation Thickness [2]						
		100[1]	125[1]	150[1]	160[1]	170[1]	180[1]	200[1]
		U-value (W/m²K)						
Dense Block Inner Leaf - 13mm Dense Plaster	0.032	0.27	0.22	0.19	0.18	0.17	0.17	0.15

Wall Type I - 19mm external render on 100mm dense outer block + filled/partially filled cavity width as shown in Table 1 + /***/100mm dense inner block with 13mm Gypsum plaster.
Wall Type II - 102.5mm external brick + filled/partially filled cavity width as shown in Table 1 +100mm dense inner block 13mm Gypsum plaster.

[1]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. It is assumed that cavity walls will be constructed in accordance with the requirements of the Irish Building Regulations, 1997 to 2023.

[2]Insulation thickness referenced above is for partial fill applications and represents the insulation thickness only. A residual 50mm clear cavity exists in these instances. E.g. For a insulation thickness of 100mm, the full cavity width is 150mm.

Table 3: External Masonry Walls – Estimated U Values W/(m²K) - Full Fill								
NyRock Cavity Slab 032 Full Fill	λ W/(m.K)	**Rendered Cavity Wall - Type I**						
		Insulation Thickness [2]						
		100[1]	125[1]	150[1]	160[1]	170[1]	180[1]	200[1]
		U-value (W/m²K)						
Dense Block Inner Leaf 13mm Dense Plaster	0.032	0.29	0.23	0.20	0.19	0.18	0.17	0.15
NyRock Cavity Slab 032 Full fill		**Brick Cavity Wall - Type II**						
		Insulation Thickness [2]						
		100[1]	125[1]	150[1]	160[1]	170[1]	180[1]	200[1]
		U-value (W/m²K)						
Dense Block Inner Leaf - 13mm Dense Plaster	0.032	0.28	0.23	0.20	0.18	0.17	0.17	0.15

Wall Type I - 19mm external render on 100mm dense outer block + filled/partially filled cavity width as shown in Table 1 + /***/100mm dense inner block with 13mm Gypsum plaster.
Wall Type II - 102.5mm external brick + filled/partially filled cavity width as shown in Table 1 +100mm dense inner block 13mm Gypsum plaster.

[1]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 Irish Building Regulations. It is assumed that cavity walls will be constructed in accordance with the requirements of the Irish Building Regulations, 1997 to 2023.

[2] Insulation thickness referenced above is for full fill applications and represents the insulation thickness fully filling the cavity

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 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 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.

Bibliography

[1] I.S. EN 13162:2012 + A1:2015: *Thermal insulation products for buildings – Factory made mineral wool (MW) products- Specification.*

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[4] I.S. EN 845-1:2013: *Specification for ancillary components for masonry — Ties, tension straps, hangers and brackets.*

[5] I.S. EN 1996-1-1:2022 (Eurocode 6): +A1 2012: *Design of masonry structures — General rules for reinforced and unreinforced masonry structures.*

[6] I.S. EN 1996-2: 2006 (Eurocode 6): Design of masonry structures — Design considerations, selection of materials and execution of masonry.

[7] I.S EN 1996-3: 2023: *Design of masonry structures : Simplified calculation methods for unreinforced masonry structures.*

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[16] I.S. 10101+AC1:2020: *Nation Rules for Electrical Installations.*

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[19] Rockwool Cavity Slab 032 DoP *: RWUK -CE-0255-01_english _ April 2022*

[20] PD 6697:2019 Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2

NSAI Agrément

This Certificate No. **24/0445** is accordingly granted by the NSAI to Rockwool Ltd on behalf of NSAI Agrément.

Date of Issue: 20th September 2024

Signed



Kevin D. Mullaney
Director of Certification, NSAI

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.nsai.ie