

INSULWOOL

Product Technical Statement V2-0324

Product Description:

INSULWOOL® is commonly used to insulate buildings as a thermal blanket on the exterior. The product can contribute to the energy efficiency of a building, and it also gives additional benefits to fire performance and acoustics. While INSULWOOL® is primarily used as boards or rolls for external insulation of facades it can also be used in a variety of applications such as:

- Warm Roofs
- Internal walls
- Inter story floors
- HVAC Insulation

INSULWOOL® is also acceptable as an internal insulation. <https://www.branz.co.nz/energy-efficiency/house-insulation-guide>

Mineral Wool is man-made vitreous (silicate) fibres with random orientation with alkaline oxide and alkali earth oxide ($\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}+\text{MgO}+\text{BaO}$) content greater than 18% by weight.

Raw Material	The relative Percentage of components (%)
Natural stone from non-scarce sources	95%
Binder in the form of Resin	4%
Mineral oils to help repel water	<0.3%

Raw materials, mixed to 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 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.

Sizes & Densities:

- 100Kg/m³ 50x600x1200 Pad - (0.72m²)
- 120Kg/m³ 50x600x1200 Pad - (0.72m²)
- 100Kg/m³ 80x600x1200 Pad - (0.72m²)
- 120Kg/m³ 80x600x1200 Pad - (0.72m²)
- 100Kg/m³ 50x600x3000 Roll - (1.8m²)

- 120Kg/m³ 50x600x3000 Roll- (1.8m²)

Thermal Performance:

- $0.03p4 \text{ W/(m} \cdot \text{K)} \mid R=\text{Th(m)}/\lambda(\text{W/mK})$
- 100Kg/m³ 50mm Pads/Rolls – R1.47
- 100Kg/m³ 80mm Pads – R2.35
- 120Kg/m³ 50mm Pads/Rolls – R1.47
- 120Kg/m³ 80mm Pads– R2.35

Material Weights

Item Weight P/m² -Selection dependent

- 50mm 100Kg/m³ – 5kg/m²
- 50mm 120Kg/m³ - 6kg/m²
- 80mm 100Kg/m³ – 8kg/m²
- 80mm 120Kg/m³ – 9kg/m²

Slabs



Rolls



Typical product installation (not limited to):

Before use, it's recommended you read the New Zealand Work Safety Guidelines, refer to

<https://www.worksafe.govt.nz/topic-and-industry/dust/safe-manufacturing-and-use-of-synthetic-mineral-fibre-products/>

- Installation of the product should be in accordance with good building practices.
- The product can be cut using a fine-toothed saw or sharp knife, but care must be taken to avoid damage, particularly the edges.
- Ensure tight fit between slabs. Trimming must be accurate to achieve close-butt joints and continuity of insulation.
- Slabs should be close butted at all vertical and horizontal joints. The horizontal joint of the insulation should be staggered, in a brick pattern, and in accordance with good practice.
- For a typical installation, a breathable membrane is placed between the sheathing board and the product. Refer to the project design and consent documents if applicable.

Refer to the Installation Guide at www.thebuildingagency.co.nz

Scope of Use:

- INSULWOOL® for use in rain-screen cladding systems is satisfactory for use as partial fill cavity wall insulation and is effective in reducing the U value (thermal transmittance) of external walls of timber-frame, steel-frame, reinforced concrete frame, or masonry buildings. The product is for use in new or existing domestic or non-domestic buildings. It is imperative that walls are designed and constructed to incorporate the normal precautions against moisture ingress, including the use of a breathable membrane.
- Certain rain-screen cladding systems, such as those with open joints, may require the addition of a breather membrane incorporated into the system. This requirement is determined by the designer and is outside the scope of this Product Technical Statement (V4-0723).

Limitations:

- Certain cladding and rain screens, such as those with open joints, may require the addition of a breathable membrane incorporated into the system design. The requirement of a membrane is determined by the system designer.
- Sheathing or bracing for frame elements. INSULWOOL® must not be relied on to provide and structural contribution, e.g., racking strength.
- Resistance to the ingress of perception and moisture from the ground.
- For timber constructions, installation must not be carried out until the moisture content of the frame is less than 20%.
- The construction should be made weathertight as soon as is practically possible to ensure maximum protection of the INSULWOOL®.

Compliance with the NZBC: The following clauses of the NZBC are applicable to INSULWOOL® and it complies with these requirements as explained below.

- INSULWOOL® provides no structural stability to the building and forms part of the cladding or rain screen system.
- INSULWOOL® must be self-supporting and unable to slump in the cavity
Refer to www.thebuildingagency.co.nz

Durability - B2: Clause B2.3.1 (a) (b) and B2.3.2 (b) Alternative Solution

- Meets the 15-year durability requirements of B.2.3.1 (B) with a service life of 50+ years.
- As INSULWOOD® is confined between the wall and the cladding or rain screen, and has suitable durability, and provided the integrity of the cladding or rain screen is maintained throughout the life of the product then maintenance is not required.
- INSULWOOL® is unaffected by the normal conditions in a wall and is durable, water-resistant, and sufficiently stable to remain effective as insulation.
Refer to www.thebuildingagency.co.nz

Fire Performance – C: Clause C3.4 (a), C3.7 (a) Alternative Solution

- INSULWOOL® tested to EN13501.1 and has a reaction to fire classification A1
- INSULWOOL® tested to ASTM E84
Refer to www.thebuildingagency.co.nz

External Moisture – Clauses E2.3.2, E2.3.3, E2.3.5, E2.3.6 & E3.3.1 Alternative Solution

- INSULAWOOL® must be designed within the cladding or rain screen cavity system that is E2

compliant and is fixed over a drained & ventilated cavity.

- The moisture content of the construction materials at the time of installing and enclosing the insulation must meet the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 10.2 a), or a lower moisture content if required by the lining manufacturer.
- The walls and roofs of buildings constructed in accordance with the Schedule Method for Compliance with NZBC Clause H1.3.2 E will have sufficient thermal resistance. Other buildings could require greater thermal insulation to comply with NZBC Acceptable Solution E3/AS1 standards than they would comply with the energy efficiency provisions alone.

Refer to www.thebuildingagency.co.nz

Hazardous Building Materials - F2: Clause F2.3.1. Alternative Solution

- INSULWOOL® is free of asbestos and meets the Odor Emissions test standards ASTM C612-14 & ASTM C1304-08. Refer to the Environmental Product Declaration

Refer to www.thebuildingagency.co.nz

Sources of Information

- ISO14001:2015 - China Classification Society Certification Company refer 00520E1035R3M
- ISO9001:2015 – China Classification Society Certification Company refer 00520Q1034R4M
- ISO45001:2018 – Occupational Health & Safety Management System Cert 00520E1035R1M
- Asbestos - refer to Hills Laboratories Lab no 2255955 dated 09/10/2019
- Reaction to Fire – EN13501-1:2007 – SGS reference no SHIN160802959CCM CNASL7877
- ASTM C612-14 - SGS refer no TP19-007734 Testing CNAS L7877
- ASTM E84-18 - SGS refer no TP19-007734 Testing CNAS L7877
- New Zealand Building Code B2 Durability – Expert opinion Oculus refer no J200086
- MSDS – Material Safety Data Sheet – 09/04/2020
- Huali Mill Test Certificate – refer to certificate no HL19053100 – 16/09/2019
- Huali Thermal Insulation Rockwool Products Pre-Qualification Document 09/06/2020

For further information, please contact The Building Agency email: info@buildingagency.co.nz