

FIBRANgeo B-040

Flexible Stonewool insulation board



Product Description

FIBRANgeo B-040 Flexible Stonewool insulation board is industrially produced from molten rock spun into fibres.

It is classified as mineral wool product for use in building insulation, according to the European Standard EN 13162 (MW - Mineral Wool insulation products).

Stonewool is a natural inorganic fibrous material, widely recognised for its thermal and sound insulating properties, as well as its excellent performance towards fire protection.

FIBRANgeo B-040 is produced from mineral rock, initially fused in an electric furnace at 1520°C and then spun into fibres. The loose stonewool fibres, with the addition of adhesive resin, oil and special silicon compounds that provide hydrophobicity, become cohesive, elastic, non-hygroscopic and water-repellent, formed in boards and finally shrink-wrapped in PE film in packages. The non-use of fossil fuels (e.g. coke) as a main production fuel minimises polluting gas emissions in the environment.

Advantages

- Excellent thermal insulation
- Excellent sound absorption and sound reduction
- Non-combustible material with excellent fire resistance
- Open hive structure material with very low water vapour diffusion resistance, similar to the resistance of air ($\mu=1$), enhances the building elements' breathability
- Water repellent and non-hygroscopic
- Natural, inorganic, odourless, chemically inert (practically neutral PH)
- Lightweight, easy to handle, cut and install
- Resistant to vibrations
- Does not allow the development of micro-organisms, insects or rodents
- Recyclable
- Friendly to the environment and to the end user

Applications

FIBRANgeo B-040 is suitable for use in all building types and constructions.

Thermal-acoustic-fire insulation of cavity in **vertical** building elements, such as:

- Twin-skin metal wall cladding (on site construction) with core insulation
- Masonry cavity walls
- Dry construction walls with core insulation (gypsum boards, timber panels, etc.)
- Masonry walls with dry lining / cladding (gypsum boards, cement boards, metal panels, etc.)
- Walls with perforated dry lining (gypsum panels, metal panels, etc.)

Thermal-acoustic-fire insulation of cavity in **horizontal** building elements, such as:

- Twin-skin metal roof cladding (on site construction) with core insulation
- Between roof frame elements (rafters, beams, joists)
- On attic ceiling lining
- Between timber floor joists
- Pilotis external insulation with dry board cladding
- Dry construction ceiling (gypsum board, etc.)
- On non-perforated suspended ceiling lining
- On perforated ceiling lining

Construction of:

- Acoustic-thermal-fire insulating panels
- Acoustic-thermal-fire insulating doors

Packaging

| Thickness [mm] | Width [mm] | Length [mm] | Boards/package [pc] | Quantity/package [m ²] | Packages/pallet [pc] | Quantity/pallet [m ²] |
|----------------|------------|-------------|---------------------|------------------------------------|----------------------|-----------------------------------|
| 40 | 600 | 1200 | 12 | 8,64 | 10 | 86,40 |
| 50 | 600 | 1200 | 10 | 7,20 | 10 | 72,00 |
| 60 | 600 | 1200 | 8 | 5,76 | 10 | 57,60 |
| 70 | 600 | 1200 | 7 | 5,04 | 10 | 50,40 |
| 80 | 600 | 1200 | 6 | 4,32 | 10 | 43,20 |
| 100 | 600 | 1200 | 5 | 3,60 | 10 | 36,00 |
| 120 | 600 | 1200 | 4 | 2,88 | 10 | 28,80 |
| 140 | 600 | 1200 | 3 | 2,16 | 12 | 25,92 |
| 160 | 600 | 1200 | 3 | 2,16 | 10 | 21,60 |

Other dimensions are available upon request.



Facings

FIBRANgeo B-040 is also available with the following standard facings to meet particular application requirements:

- **FIBRANgeo B-040-AL** Aluminum foil reinforced with fibreglass net
- **FIBRANgeo B-040-AX** Aluminum kraft paper foil reinforced with fibreglass net
- **FIBRANgeo B-040-YM** Black non-woven fibreglass fleece
- **FIBRANgeo B-040-YA** White non-woven fibreglass fleece
- **FIBRANgeo B-040-XA** Kraft paper



Designation code:

MW(Mineral Wool) - EN 13162 - T4 - WS - WL(P) - MU1 - AW1 - AFr15

| Technical Characteristics | Symbol EN-13162 | Unit | Value | EN standard |
|---|--------------------|----------------------|-------------------------|----------------------------------|
| Declared thermal conductivity at 10 °C | λ_D | W/(mK) | 0,034 | EN 13162 EN 12667 EN 12939 |
| Nominal thickness | d_N | mm | 40 - 160 | EN 823 |
| Fire classification | - | Class | A1 (Non-combustible) | EN 13501-1 |
| Melting temperature | - | °C | >1000 | DIN 4102-17 |
| Specific heat capacity | c | kJ/kg*K | 0,84 | - |
| Thickness tolerance | T | Class | T4 (-3 , +5 mm) | EN 13162 |
| Tensile strength parallel to faces | σ_t | kPa | 12 | EN 1608 |
| Short Term Water Absorption for 24 h | WS | kg/m ² | <1 | EN 1609 |
| Long Term Water Absorption for 28 days | WL(P) | kg/m ² | <3 | EN 12087 |
| Water vapour diffusion resistance factor μ | MU | - | 1 | EN 12086 |
| Air flow resistivity, r | AF _r | kPa s/m ² | 15 | EN 29053 |
| Weighted Sound Absorption Coefficient α_w (Board Thickness 50 mm) | AW NRC | - | 1 Class A 0,95 | EN ISO 11654 EN ISO 354 |
| Density, ρ | - | kg/m ³ | 40 | EN 1602 |

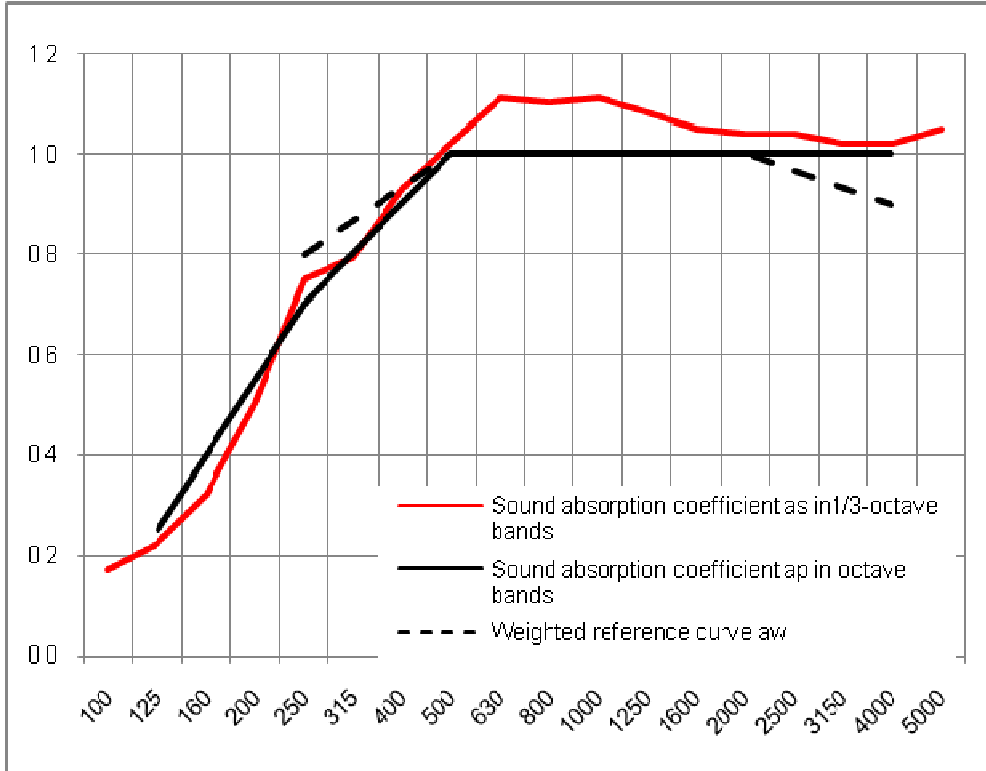
Thermal resistance R

| | | | | | | | | | | | | |
|--------------------|-------|--------------------|------|------|------|------|------|------|------|------|------|----------|
| Nominal thickness | d_N | mm | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | EN 823 |
| Thermal resistance | R_D | m ² K/W | 1,15 | 1,45 | 1,75 | 2,00 | 2,35 | 2,95 | 3,50 | 4,10 | 4,70 | EN 13162 |

Sound Absorption Coefficient α_s (EN ISO 354)

(Board Thickness 50 mm)

Test Report: I.G. / 168184



| Frequency (Hz) | α_s | α_p | α_w |
|----------------|------------|------------|------------|
| 125 | 0,22 | 0,25 | |
| 250 | 0,75 | 0,70 | 0,80 |
| 500 | 1,02 | 1,00 | 1,00 |
| 1000 | 1,11 | 1,00 | 1,00 |
| 2000 | 1,04 | 1,00 | 1,00 |
| 4000 | 1,02 | 1,00 | 0,90 |

Weighted Sound Absorption Coefficient $\alpha_w = 1$ - **Class A** (EN ISO 11654)

Noise Reduction Coefficient **NRC = 0,95** (ASTM 423)



Certifications

All **FIBRAN^{geo}** stonewool insulation products meet the QUALITY and SAFETY requirements of the European Standards.

The quality of FIBRAN^{geo} products is assured in accordance with EN 13162 and EN 13172 standards.

These standards establish the type and frequency of measurements executed both by recognised and independent institutions, as well as by FIBRAN laboratories.

CE Certification

All **FIBRAN^{geo}** stonewool insulation products have been certified according to the European Directive 89/106/EEC since 2004, and today conform to the European Regulation 305/2011 as this replaced the above mentioned Directive.

In compliance with the above Construction Products Regulation, all types of **FIBRAN^{geo}** stonewool products hold the CE marking and are in conformity with the European Norm EN 13162, which refer to mineral wool insulation products for building applications.

In accordance with the aforementioned Standards, every insulation product acquires a designation code which declares its technical characteristics.

FIBRAN has issued Declaration of Performance (DoP) Certificates for all product types, available on the company website: <http://www.fibran.gr/dop/>.

The Initial Type Test (ITT) as well as the Factory Production Control (FPC) have been performed by the following European Notified bodies for CE marking:

- Forschungsinstitut für Wärmeschutz e.V. München (FIW): Identification Number 0751
- Materialprüfanstalt für das Bauwesen Hannover (MPA BAU): Identification Number 0764

EUCEB Certification

All **FIBRAN^{geo}** stonewool insulation products also carry the certification mark EUCEB (European Certification Board for Mineral Wool Products). EUCEB is an independent organization whose procedures ensure compliance of mineral wool insulation products with the Directive's 97/69/EC, Note Q, regarding their fibres biosolubility and their non-classification as 'carcinogenic' materials.

Moreover, according to EC Regulation 790/2009 (August 10, 2009) they are not classified as products that cause skin irritation.

ISO 9001:2008 Certification

The quality management system of FIBRAN S.A. complies with EN ISO 9001:2008 for the design and manufacture of Mineral Wool (MW), as certified by the independent body TÜV NORD CERT, with initial Certificate Registration No. 04 100 960680.

Handling and Storage

FIBRAN^{geo} products should be stored indoors. If stored outdoors, they must be protected from impregnation. Pallets shrink-wrapped weather tightly in PE film may be stored outside. Separate packages should be placed on a flat pallet, not in direct contact with the ground.

If part of the product gets wet, it must be dried before installation. Stonewool dries quickly and its insulating properties remain unchanged after drying.

FIBRAN^{geo} products are chemically inert and do not allow the growth of micro-organisms, insects or rodents.

Handling, loading and unloading of the products should be carried out with care, to avoid damage both the packaging and the boards' edges.

Application and Personal Protection

For the selection and application of **FIBRAN^{geo}** products all design requirements should be taken into consideration.

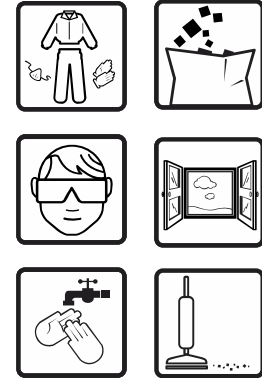
FIBRAN^{geo} products should be protected from impregnation, prior to and during application.

The packaging film should be removed with care just before installation.

Working areas should be kept clean. Unnecessary or extensive contact of the skin and eyes with products off-cuts, fibres and dust should be avoided, and protective wear should be used (gloves, goggles, hats).

Sufficient ventilation of the working areas should be ensured, whilst power cutting tools should always be provided with a mechanical system of dust intake.

Stonewool products are not considered hazardous waste. Waste disposal should be carried out according to State and Local regulations.



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