

FIBRAN^{geo} BP 40

Rigid Stonewool insulation board with knit fibres



Product Description

FIBRAN^{geo} BP 40 Rigid Stonewool insulation board with knit fibres is rigid, pressure and delamination resistant, 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.

FIBRAN^{geo} BP 40 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
- High pressure and delamination 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

FIBRAN_{geo} BP 40 is suitable for use in all building types and constructions subject to high mechanical load (pressure or delamination).

- A) Wall thermal - acoustic - fire insulation:
 - Wall external thermal insulation composite system (ETICS)
 - Insulation of ventilated facade (e.g. dry board cladding, marble, ceramic tile, metal panels)
 - Metal stonewool composite wall panel
- B) Floors thermal - acoustic - fire insulation:
 - Pilotis external thermal insulation composite system (ETICS)
 - Floating concrete screed floor (e.g. marble, tile, industrial floor finish)
 - Floating dry floor (e.g. solid wood/laminate flooring finish)
- C) Roof thermal - acoustic - fire insulation:
 - Concrete roof / steel deck with polymer waterproofing membrane on insulation
 - Roof deck with floating concrete screed
 - Metal stonewool composite roof panel
- D) 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 | 6 | 4,32 | 20 | 86,40 |
| 50 | 600 | 1200 | 6 | 4,32 | 16 | 69,12 |
| 60 | 600 | 1200 | 5 | 3,60 | 16 | 57,60 |
| 70 | 600 | 1200 | 4 | 2,88 | 18 | 51,84 |
| 80 | 600 | 1200 | 4 | 2,88 | 14 | 40,32 |
| 100 | 600 | 1200 | 2 | 1,44 | 24 | 34,56 |
| 120 | 600 | 1200 | 2 | 1,44 | 20 | 28,80 |
| 140 | 600 | 1200 | 2 | 1,44 | 18 | 25,92 |
| 160 | 600 | 1200 | 2 | 1,44 | 14 | 20,16 |



Other dimensions are available upon request.

Facings

FIBRAN_{geo} BP 40 is available with the following standard facings to meet particular application requirements:

- FIBRAN_{geo} BP 40 -AL Aluminum foil reinforced with fibreglass net
- FIBRAN_{geo} BP 40 -AX Aluminum kraft paper foil reinforced with fibreglass net
- FIBRAN_{geo} BP 40 -XA Kraft paper



Designation code:

MW(Mineral Wool)-EN 13162-T7-CS(10)40-PL(5)550-TR15-CP2-WS-WL(P)-MU1-SD27-AW0,95-AF60

| Technical Characteristics | Symbol EN-13162 | Unit | Value | EN standard |
|--|--------------------|----------------------|-------------------------|----------------------------------|
| Declared thermal conductivity at 10 °C | λ_D | W/(mK) | 0,039 | 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 | T7 (0 , +10%) | EN 13162 |
| Tensile strength perpendicular to faces | TR | kPa | 15 | EN 1607 |
| Compressive Stress at 10% thickness deformation | CS(10) | kPa | 40 | EN 826 |
| Shear Strength | SS | kPa | 20 | EN 12090 |
| Point Load (applied on a small area of 50 cm ²) at 5 mm thickness deformation | PL(5) | N | 550 | EN 12430 |
| Compressibility The difference between the unloaded thickness and the loaded thickness, ($C_p = d_L - d_B$)* | CP | mm | 2 | EN 13162 EN 12431 |
| Design Load | - | kN/m ² | 12 | EN 13162 |
| Dynamic Stiffness , s' (Board Thickness 50 mm) | SD | MN/m ³ | 27 | EN 29052-1 |
| 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 | 60 | EN 29053 |
| Weighted Sound Absorption Coefficient α_w (Board Thickness 50 mm) | AW | - | 0,95 (Class A) | EN ISO 11654 EN ISO 354 |
| Density, ρ | - | kg/m ³ | 110 - 160 | EN 1602 |

* d_L = thickness under of load 0,25 kPa

d_B = thickness under of load 2 kPa and preload +/- 48 kPa

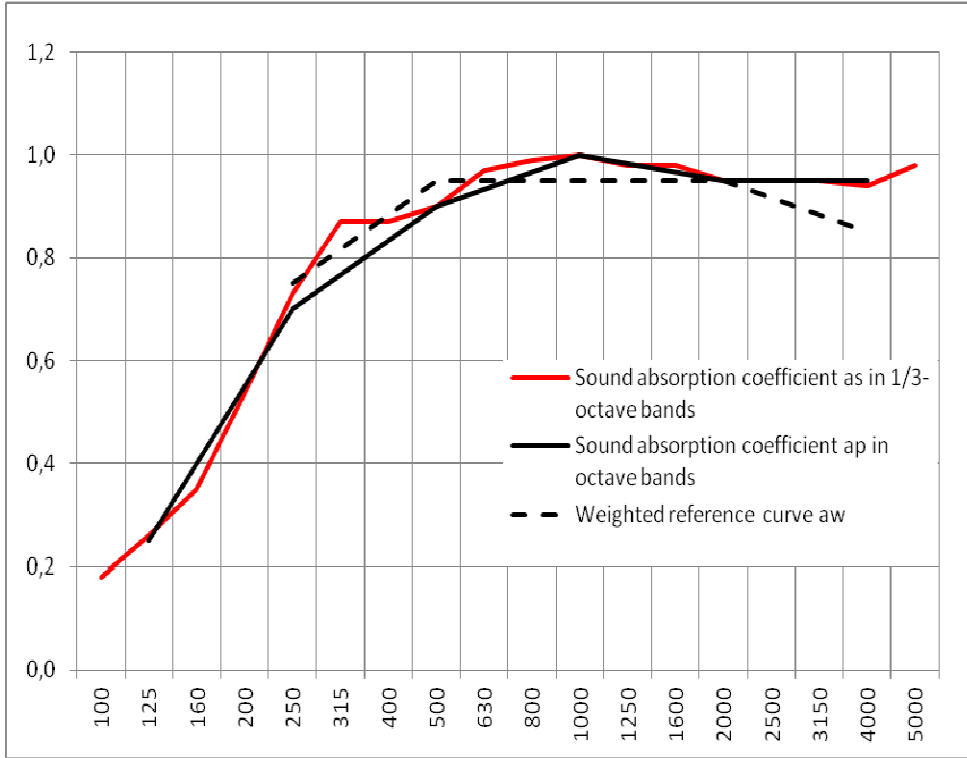
Thermal resistance R

| | | | | | | | | | | | | |
|--------------------|-------|--------------------|------|------|------|------|------|------|------|------|------|----------|
| Nominal thickness | d_N | mm | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | EN 823 |
| Thermal resistance | R_D | m ² K/W | 1,00 | 1,25 | 1,50 | 1,80 | 2,05 | 2,55 | 3,05 | 3,55 | 4,10 | EN 13162 |

Sound Absorption Coefficient α_s (EN ISO 354)

(Board Thickness 50 mm)

Test Report: CSI 0027/DC/ACU/10-2



| Frequency (Hz) | α_s | α_p | α_w |
|----------------|------------|------------|-------------|
| 125 | 0,26 | 0,25 | |
| 250 | 0,73 | 0,70 | 0,75 |
| 500 | 0,90 | 0,90 | 0,95 |
| 1000 | 1,00 | 1,00 | 0,95 |
| 2000 | 0,95 | 0,95 | 0,95 |
| 4000 | 0,94 | 0,95 | 0,85 |

Weighted Sound Absorption Coefficient $\alpha_w = 0,95$ - Class A (EN ISO 11654)

Noise Reduction Coefficient **NRC = 0,90** (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 conform to the European Directive 89/106/EEC since 2004.

In compliance with the above Construction Products Directive, all types of FIBRAN^{geo} stonewool products hold the CE marking. Further, they are in conformity with the European Norm EN 13162, which refers to mineral wool insulation products used in building applications.

FIBRAN^{geo} BP 40 products are also certified in compliance with ETAG 004 Directive for use in External Thermal Insulation Composite Systems (ETICS)

- Notified Bodies: 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.

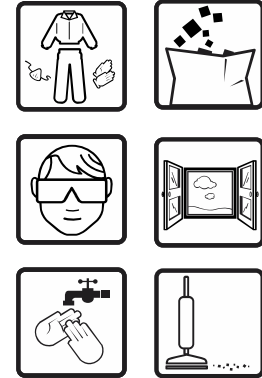
Moreover, according to EC Regulation 790/2009 (August 10, 2009) they are not classified as products that cause skin irritation.

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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