

# FIBRAN<sup>geo</sup> B-051

Rigid Stonewool insulation board



## Product Description

**FIBRAN<sup>geo</sup> B-051 Rigid Stonewool insulation board** is rigid, pressure 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<sup>geo</sup> B-051** 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 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-051** is suitable for use in all building types and constructions subject to high mechanical load.

Floors thermal - acoustic - fire insulation:

- Floating concrete screed floor (e.g. marble, tile, industrial floor finish)
- Floating dry floor (e.g. solid wood/laminate flooring finish)

Roof thermal - acoustic - fire insulation:

- Concrete roof / steel deck with polymer waterproofing membrane on insulation
- Roof deck with floating concrete screed

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 <sup>2</sup> ]	Packages/ pallet [pc]	Quantity/ pallet [m <sup>2</sup> ]
20	600	1200	12	<b>8,64</b>	20	172,80
30	600	1200	8	<b>5,76</b>	20	115,20
40	600	1200	6	<b>4,32</b>	20	86,40
50	600	1200	5	<b>3,60</b>	20	72,00
60	600	1200	4	<b>2,88</b>	20	57,60
70	600	1200	3	<b>2,16</b>	22	47,52
80	600	1200	3	<b>2,16</b>	20	43,20
100	600	1200	2	<b>1,44</b>	24	34,56
120	600	1200	2	<b>1,44</b>	20	28,80
140	600	1200	2	<b>1,44</b>	16	23,04
160	600	1200	2	<b>1,44</b>	14	20,16
180	600	1200	1	<b>0,72</b>	28	20,16
200	600	1200	1	<b>0,72</b>	24	17,28



\*Other dimensions are available upon request.

## Facings

**FIBRANgeo B-051** is also available with the following standard facings to meet particular application requirements:

- **FIBRANgeo B-051-AL** Aluminum foil reinforced with fibreglass net
- **FIBRANgeo B-051-AX** Aluminum kraft paper foil reinforced with fibreglass net
- **FIBRANgeo B-051-YM** Black non-woven fibreglass fleece
- **FIBRANgeo B-051-YA** White non-woven fibreglass fleece
- **FIBRANgeo B-051-XA** Kraft paper



Designation code:

**MW(Mineral Wool)-EN 13162-T6-CS(10)20-PL(5)200-CP2-WS-WL(P)-MU1-SD10-AW0,95-AFr60**

Technical Characteristics	Symbol EN 13162	Unit	Value	EN standard
Declared thermal conductivity at 10 °C	$\lambda_D$	W/(mK)	<b>0,035</b>	EN 13162 EN 12667 EN 12939
Nominal thickness	$d_N$	mm	20 - 200	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	1,03	ISO 10456
Thickness tolerance	T	Class	T6 (-5% , +15%)	EN 13162
Compressive Stress at 10% thickness deformation	CS(10)	kPa	20	EN 826
Point Load (applied on a small area of 50 cm <sup>2</sup> ) at 5 mm thickness deformation	PL(5)	N	200	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 <sup>2</sup>	7	EN 13162
Dynamic Stiffness , $s'$ (Board Thickness 50 mm)	SD	MN/m <sup>3</sup>	10	EN 29052-1
Short Term Water Absorption for 24 h	WS	kg/m <sup>2</sup>	<1	EN 1609
Long Term Water Absorption for 28 days	WL(P)	kg/m <sup>2</sup>	<3	EN 12087
Water vapour diffusion resistance factor $\mu$	MU	-	1	EN 12086
Air flow resistivity, $r$	AF <sub>r</sub>	kPa s/m <sup>2</sup>	60	EN 29053
Weighted Sound Absorption Coefficient $\alpha_w$ (Board Thickness 50 mm)	AW NRC	-	0,95 Class A 0,90	EN ISO 11654 EN ISO 354
Density, $\rho$	-	kg/m <sup>3</sup>	150	EN 1602

\*  $d_L$  = thickness under of load 0,25 kPa

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

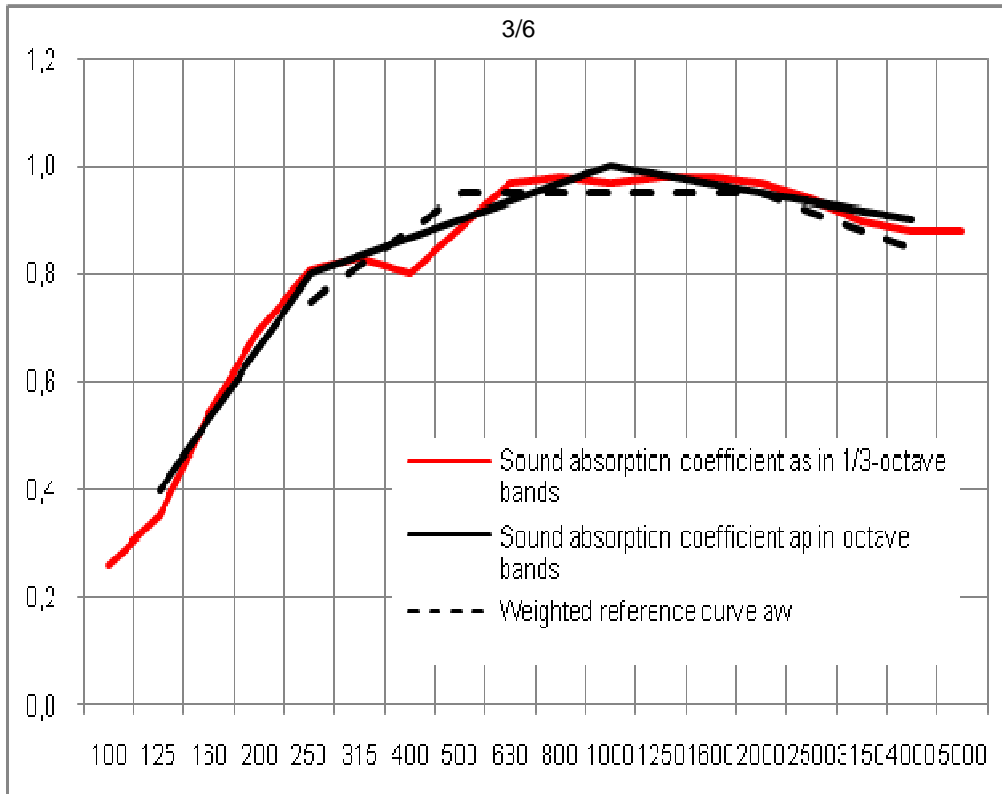
### Thermal resistance R

Nominal thickness	$d_N$	mm	20	30	40	50	60	70	80	100	120	140	160	180	200	EN 823
Thermal resistance	$R_D$	m <sup>2</sup> K/W	0,55	0,85	1,10	1,40	1,70	2,00	2,25	2,85	3,40	4,00	4,55	5,10	5,70	EN 13162

Sound Absorption Coefficient  $\alpha_s$  (EN ISO 354)

(Board Thickness 50 mm)

Test Report: I.G. / 168183



Frequency (Hz)	$\alpha_s$	$\alpha_p$	$\alpha_w$
125	0,35	0,40	
250	0,81	0,80	0,75
500	0,89	0,90	<b>0,95</b>
1000	0,97	1,00	0,95
2000	0,97	0,95	0,95
4000	0,88	0,90	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 **FIBRANgeo** stonewool insulation products meet the QUALITY and SAFETY requirements of the European Standards.

***The quality of FIBRANgeo 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 **FIBRANgeo** 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 **FIBRANgeo** 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 **FIBRANgeo** 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<sup>geo</sup>** 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<sup>geo</sup>** 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<sup>geo</sup>** products all design requirements should be taken into consideration.

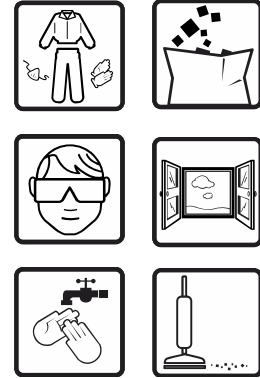
**FIBRAN<sup>geo</sup>** products should be protected from impregnation, prior to and during application.

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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