



5MS.006

Rigid Insulation

SIZAL[®]CELL

Applications

- Insulation panels for industrial or laboratory installations
- Furnace linings (electric and gas)
- Furnace, burner or turbine components.
- Mechanical parts, part supports, and more.
- Repairs

Physical variables included in this documentation are provided by way of indication only and do not, under any circumstances, constitute a contractual undertaking. Please contact our technical service if you require any additional information.

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Overview

Our SIZAL[®] range is a complete line of thermal insulators that open the way to many industrial or laboratory applications up to temperatures of 1,800 °C. The mechanical and thermal performance of SIZAL[®] products guarantee substantial savings in terms of energy and costs.

SIZAL[®]CELL is a range of non-fibrous insulation products manufactured from alumina microspheres. Ultra-light, SIZAL[®]CELL is designed for high-temperature applications up to 1,650 °C.

The main component of the insulation is a microsphere made from alumina. An exclusive and innovative process allows the industrial production of this unique element. The internal structure of the cell is a honeycomb-like thread that ensures the mechanical quality of the insulation, whatever the temperature of use. A specific binder means the assembly is homogeneous - this particular construction is light and porous and, consequently, insulating and mechanically efficient.

Main Characteristics

- Guaranteed use up to 1,650 °C
- Density up to 700 kg/m³
- Low thermal conductivity
- Low shrinkage
- Easy to set up (homogeneous structure)
- Very light, dust-free
- Effective in all atmospheres
- Excellent thermal shock resistance
- No carcinogenic classification

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Available Products

Available Formats

- Boards or semi-boards
- Customised cuts

Product	Type	Standard Dimensions	Max. Dimensions*
1260-380 1430-380 1540-380 1650-420 1705-420	Board	900 x 600 x 50 mm	650 x 480 x 70 mm 960 x 650 x 50 mm

Customized designs are available on request.
*Min. order required

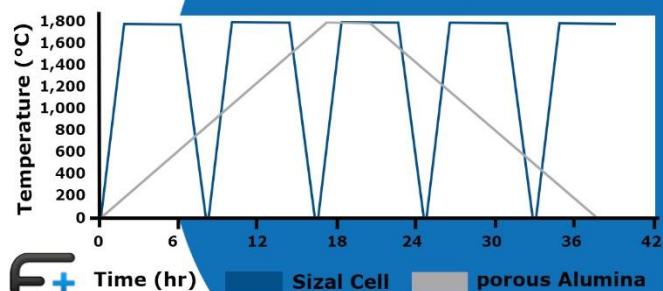
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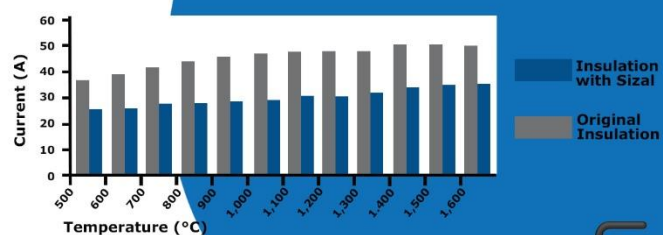
MAXIMUM RESISTANCE TO THERMAL SHOCK

Comparison of hot/cold cycles



LOW THERMAL CONDUCTIVITY

Actual Energy Saving
in a modified commercial furnace



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Mise en œuvre de l'isolant rigide SIZAL[®]CELL

Applications

Insulation Panels

SIZAL[®] is a high-end insulation solution for the thermal management of your industrial installations or laboratories.

Customised Parts

Our machining centres are equipped with suction systems, specific cutting tools, and fastening systems for more fragile parts in order to guarantee the best possible quality.

SIZAL[®] products have good machinability thanks to their homogeneous structure. However, the minimum tolerance values are $\pm 0,5$ mm because of the porosities size.

Furnace Linings and Components

The quality of SIZAL[®] products is compatible with the construction and renovation of gas and electric furnaces. The use of this material permits greater compactness, with a resulting improvement in efficiency and energy saving.

Mechanical strength tests executed in electric furnaces of various designs, under both reducing and oxidizing atmospheres, have confirmed the exceptional resistance of SIZAL[®]CELL, particularly in response to high-amplitude hot and cold cycles, from 100 to 800 °C in less than an hour.

Repairs

In the event of problems, our team can propose appropriate solutions for the improvement of the service life of your existing components. If an element is beyond repair, tailor-made reproduction is possible, with rapid delivery.

Certain claddings, refractory cements and adhesive compounds can also improve the performance of components.

SIZAL[®]CELL permits the advantageous replacement of conventional refractory materials, refractory cement or fibrous insulation bricks, silica-alumina, etc.

Property		Unit	1260-380	1430-380	1540-380	1650-420	1705-420
Item N°			223-2300	223-2600	223-2800	223-3000	223-3100
Chemical Composition	Al ₂ O ₃	%	50.2	59.8	65,3	70.4	80.5
	SiO ₂		46.4	38.1	32,1	28.5	17.8
	Other		3.4	2.1	2,6	1.1	1.7
Mineral Phase			Mullite Corundum Anorthite	Mullite Corundum Anorthite	Mullite Corundum	Mullite + Corundum	Mullite + Corundum
Density		kg/m ³	350	380	380	420	420
Open Porosity		%	88	87	86	86	87
Classification Temperature		°C	1,260	1,430	1,540	1,650	1,700
Max. Operating Temperature		°C	1,160	1,330	1,440	1,550	1,600
Max. Peak Temperature		°C	1,210	1,380	1,490	1,600	1,650
Thermal Conductivity	200 °C	W.m ⁻¹ .K ⁻¹	0.13	0.15	0.2	0.18	0.17
	400 °C		0.14	0.17	0.21	0.21	0.19
	600 °C		0.17	0.19	0.22	0.24	0.21
	800 °C		0.19	0.22	0.24	0.26	0.25
	1,000 °C		0.21	0.25	0.27	0.3	0.28
	1,200 °C		-	0.28	0.3	0.33	0.31
Cold Compressive Strength		MPa	1.2	2.6	3.1	4.2	2.9
Cold Tear Resistance		MPa	0.7	0.9	2.0	2.6	1.8
Linear Shrinkage after 24 hr at Peak Temperature		%	0.3	0.33	0.12	0.43	0.29