



BLANKET PRODUCT DATA SHEET



Introduction

SAFFIL Alumina Fibres are high purity polycrystalline fibres designed for use in applications up to 1600°C. Since their development in the early 1970's SAFFIL Fibres have been used successfully to overcome problems in demanding high temperature insulation and many other speciality applications.

Health and Safety

SAFFIL Fibres were designed with the expert advice of toxicologists to minimise the potential for biological activity.

The fibres are produced in a novel spinning process from a viscous aqueous solution to give a narrow diameter distribution. They are all then subjected to a controlled heat treatment to develop a polycrystalline microstructure.

An extensive series of toxicological tests were carried out on the fibre, involving inhalation, injection and feeding studies. All results were negative, with no fibrogenic, carcinogenic or other toxic effects found. Low Silica levels ensure that there is no possibility of Cristobalite formation after exposure to high temperature.

SAFFIL Fibres are not subject to European regulatory constraints and do not require a hazard warning label or special handling procedures for installation or disposal after use.

Properties and Benefits

Refractoriness

Low shrinkage at high temperature (1600°C) ensures long life in the most demanding applications. High fuel and maintenance cost savings can be made.

Stability of the material at high temperature removes the problem of lining degradation over time which can result in premature lining failure or costly contamination of product.

Thermal Conductivity

Very low shot levels translate into low thermal conductivity almost half that of other types of insulating fibre per kilogram. Significant fuel savings are possible resulting in rapid payback on investment.

Substantially thinner linings offer the designer increased capacity within existing furnaces or opportunities for savings in new furnace projects.

Resistance to Chemical Attack

The high levels of Alumina, low Silica and trace element levels ensure chemical stability in the majority of industrial process conditions.

Resilience

Control of the crystalline microstructure during manufacture and high classification temperature result in a highly resilient fibre even when exposed to elevated temperatures. Additionally the expansion occurs in the product after firing, this property contributes to reducing gaps in modular linings ensuring long maintenance free life.

Thermal Shock Resistant

The low heat storage and fibrous structure avoid the problems normally caused by thermal shock. Faster cycle times are possible that offer advantages in the form of reduced fuel consumption and increased capacity.

Typical Applications

SAFFIL BLANKET is used to form stack bonded and convoluted modules for use in the lining of kilns furnaces and heaters in all industry sectors. The modules are supplied in the form of mechanically fixed or veneering modules.

SAFFIL BLANKET is extremely resilient and flexible which makes it an ideal material for expansion gap filling, seals and as a backing lining in the construction of industrial furnaces and kilns.



BLANKET - Technical Data

Classification Temperature	°C	1600
Properties measured at ambient (23°C / 50% RH)		
Colour		White
Solubility in water		Insoluble
Odour		Odourless
Fibre diameter (Median)	Micron	3.0 - 3.5
Shot content (Non fibrous material)		negligible
Tensile strength	MPa	2000
Properties when exposed to high temperature		
Melting Point	°C	>2000
Shrinkage (6 hours at 1500°C)	%	<4
Loss on ignition (2 hours at 800°C)	%	0
Chemical Composition		
Aluminium Oxide	%	95 - 97
Silica	%	3 - 5
Trace elements	%	<0.5
Polypropylene scrim added by weight*	%	<3

* When firing the blanket for the first time a small amount of organic burnout will occur.
For more information consult the SAFFIL Technical Service Department.

Specific Heat Capacity @ 1000°C 1.00kj/kg.K

Thermal Conductivity (W/mK)								
Mean Temperature °C	200	400	600	800	1000	1200	1400	1600
96 Kg/M ³ Stacked BLANKET	0.080	0.119	0.192	0.303	0.423	0.562	0.701	0.841
96 Kg/M ³ Linear laid BLANKET	0.040	0.062	0.101	0.164	0.233	0.315	0.395	0.476

Standard Availability

	Density (Kg/m ³)	Length (mm)	Width (mm)	Thickness (mm)
Rolls (Nominal)	96	14600	610	13
Rolls (Nominal)	96	7300	610	25

Standard Packaging:- BLANKET is supplied in rolls packed in cardboard cartons (570 x 570 x 670mm)

Additional Information

- BLANKET Product Information Sheet.
- Chemical Safety Data Sheet.
- Technical Service Department

The values given herein are typical average values obtained in accordance with accepted testing methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice.

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