



SAFSEAL 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.

Description

SAFSEAL is lightweight, intumescent and dust free. It is supplied as a flexible sheet, which is easily cut to shape.

The SAFFIL Fibres are held in compression by an acrylic polymer binder. When SAFSEAL is exposed to temperature in excess of 450°C the binder burns off and an expansion in its thickness occurs.

The product after firing demonstrates all of the normal properties associated with SAFFIL MAT. For more detailed information on these properties refer to the SAFFIL MAT data sheet.

Benefits

Expansion

The highly resilient and flexible SAFFIL Fibres show incredible recovery after exposure to heat. Depending on the grade, expansion can be up to six times the original thickness.

Furnace lining life can be extended and installation of the lining can be made easier using SAFSEAL'S expansion characteristics.

The use of SAFSEAL as an installation aid or as a means of upgrading a lining specification allows considerable cost savings to be made.

Resilience

Control of the crystalline microstructure during manufacture and high classification temperature result in a highly resilient fibre even when exposed to elevated temperatures.

Refractoriness

Low shrinkage at high temperature (1600°C) ensures long life in the most demanding applications.

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.

Typical Applications

SAFFIL SAFSEAL is widely used as an expansion gap filling in the construction of industrial furnaces, kilns and in the manufacture of high temperature seals and gaskets. SAFSEAL can be used in the installation of new refractory linings to overcome the effects of shrinkage in Ceramic Fibre linings and to accommodate expansion, in dense refractory installations.



The high classification temperature of SAFSEAL allows particularly difficult application areas to be addressed, such as areas local to burners. The installation of Ceramic Fibre modular linings is made easier by utilising the heat of the furnace to make the SAFSEAL expand to obtain maximum compression between the rows of modules.



SAFSEAL - Technical Data

Classification Temperature	°C	1600		
Properties measured at ambient (23°C / 50% RH)				
Colour		White		
Solubility in water		Insoluble		
Fibre diameter (median)	Micron	3.0 - 3.5		
Properties measured after exposure to 450°C				
As SAFFIL MAT (See MAT Data Sheet)				
Chemical Composition				
Aluminium Oxide	%	95 - 97		
Silica	%	3 - 5		
Trace elements	%	<0.5		
Organic Material (Measured by Weight)	%	<15		
Standard Availability				
	Density (Kg/m ³)		Thickness (mm)	
	Unfired	Fired	Unfired	Fired
SAFSEAL 4X (7mm th sheet)	175	42	7	28

Standard dimension of sheet is 1300 x 600 x 7mm thick. Non standard dimension and specification sheets are available on request.

Standard Packaging:- SAFSEAL is packed in cardboard boxes

Additional Information

- MAT Product Data 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.

Head Office Address

SAFFIL Ltd
 Pilkington Sullivan Site,
 Tanhouse Lane,
 Widnes,
 Cheshire.
 WA8 0RY
 U K

Tel + 44 (0) 151 422 6700
 Fax + 44 (0) 151 422 6701
 Web <http://www.saffil.com>

