Product Information Sheet

Saffil® Blankets

DESCRIPTION

The Saffil® Blanket product family is a group of high temperature, lightweight, thermally efficient blankets manufactured from Saffil polycrystalline wool fibers that are designed for continuous use temperatures up to 1600°C (2912°F). Saffil fibers exhibit the highest degree of dimensional stability and chemical resistance out of Alkegen's high temperature insulating wool blanket portfolio, and they are particularly suited for the most extreme heat processing applications and thermal management challenges.

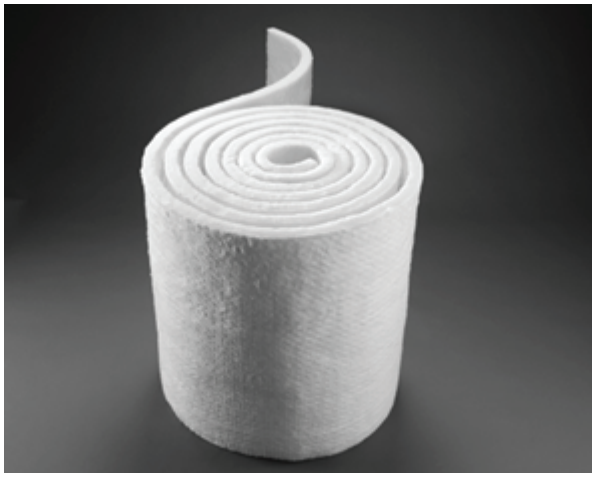
Saffil Blankets are virtually "shot" (unfiberized particles) free, making them an ideal candidate for applications where the presence of shot is undesirable. The low shot content (high fiber index) yields a blanket with extremely low thermal conductivity, outstanding consistency, and resiliency at elevated temperatures.

The high purity, "mullite" and "high alumina" chemical compositions of Saffil Blankets provides excellent chemical stability, as they are more resistant to fluxing by acids, concentrated alkalis, and general chemical attack than refractory ceramic fibers. Saffil 97 & 97+ Blankets (high alumina chemical composition) provide superior chemical stability and are particularly suited for use in highly reducing atmospheres and hydrogen furnace environments. If blankets become wet by water or steam, the thermal and physical properties remain unaffected after drying.

GENERAL CHARACTERISTICS

Saffil® Blanket products have the following outstanding characteristics:

- High temperature stability (up to 1600°C (2912°F))
- Resistance to chemical attack
- Exceptional insulating properties (Low Thermal Conductivity & Low Heat Storage)
- Virtually "shot" free
- Resistance to thermal shock
- Superior resiliency
- Good handling strength
- Excellent flexibility
- Light weight
- High vibration resistance



TYPICAL APPLICATIONS

Ferrous (Iron & Steel)
Continuous Annealing & Galvanizing Lines, Reheat Furnaces, Electric Arc Furnaces, Blast Furnaces, Forge Furnaces, Coke Ovens, Molten Metal Transfer Ladles & Preheat Stands

Ceramic & Glass
Porcelain Kilns, Technical Substrate Kilns, Refractory Production Kilns, Intermittent Kilns, Tunnel Kilns, Kiln Cars

Hydrocarbon Processing (Petrochemical & Refinery)
Cracking/Pyrolysis Furnaces, Fired Heaters, Reactor Vessels, Reformers

Aerospace
Heat Shields, High Temperature Seals, Ablative Shields

Pollution Control
Regenerative Thermal Oxidizers, Flares, Incinerators

General Use & Other Industries
Hydrogen & Reducing Atmosphere Furnaces, Semiconductor & Fuel-cells, Aluminum Furnaces, Burner Block Wraps, Expansion Joints

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TYPICAL PRODUCT PARAMETERS

	Saffil 72 Blanket	Saffil 72+ Blanket	Saffil 72HD Blanket	Saffil 97 Blanket	Saffil 97+ Blanket
Physical Properties					
Color	White	White	White	White	White
Classification Temperature*	1600°C (2912°F)	1600°C (2912°F)	1600°C (2912°F)	1600°C (2912°F)	1600°C (2912°F)
Melting Point	> 1870°C (3400°F)	> 1870°C (3400°F)	> 1870°C (3400°F)	> 1870°C (3400°F)	> 1870°C (3400°F)
Mean Fiber Diameter	4 - 5 Microns	6 - 7 Microns	4 - 6 Microns	3 - 4 Microns	5.5 - 7 Microns
Typical Fiber Index** (wt. %)	> 95%	> 95%	> 97%	> 99%	> 99%

Chemical Properties					
Typical Chemical Analysis (wt. %)					
Al_2O_3	72	72	72	97	97
SiO_2	28	28	28	3	3
Trace Elements	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Polypropylene Scrim***	None	None	None	Yes	Yes

Thermal Properties								
Thermal Conductivity (ASTM C201)								
Density, kg/m³ (lb/ft³)	96 (6)	128 (8)	96 (6)	128 (8)	145 (9)	170 (10.6)	96 (6)	96 (6)
Mean Temperature	Thermal Conductivity, W/m-K (Btu in/hr ft² °F)							
600°C (1112°F)	0.14 (1.0)	0.13 (0.9)	0.19 (1.3)	0.18 (1.2)	0.11 (0.8)	0.10 (0.7)	0.13 (0.9)	0.18 (1.2)
800°C (1472°F)	0.20 (1.4)	0.18 (1.2)	0.26 (1.8)	0.24 (1.7)	0.16 (1.1)	0.15 (1.0)	0.16 (1.1)	0.20 (1.4)
1000°C (1832°F)	0.29 (2.0)	0.25 (1.7)	0.37 (2.6)	0.33 (2.3)	0.22 (1.5)	0.20 (1.4)	0.23 (1.6)	0.29 (2.0)
1200°C (2192°F)	0.42 (2.9)	0.36 (2.5)	0.52 (3.6)	0.46 (3.2)	0.30 (2.1)	0.28 (1.9)	0.32 (2.2)	0.40 (2.8)

Permanent Linear Shrinkage (EN 1094-1)					
After 24 Hour Soak @ 1600°C (2912°F)	< 2.0%	< 2.0%	< 2.0%	< 4.0%	< 4.0%

*For polycrystalline wools, the Classification Temperature is also representative of its Continuous Use Temperature. The Continuous Use Temperature is a recommended maximum operating temperature for the material usage under clean, oxidizing atmosphere conditions. The classification temperature is the temperature at which irreversible linear shrinkage does not exceed a given value after a 24-hour heat soak test. For applications where long-term stability is not a requirement, products may be successfully used at temperatures well in excess of their Classification Temperature. For certain application conditions (specific chemical contaminants, reducing atmospheres, etc.), the Continuous Use Temperature may be reduced.

**Fiber Index is the amount of material (by weight %) that is fiber vs. "shot". Shot is globular grains of glass and is an undesired biproduct of the fiberization process. Saffil Blankets have extremely high fiber index, yielding a very clean polycrystalline wool blanket. By relation, the typical shot content (wt%) ≥45µm of Saffil 72HD Blanket is less than 3%

***Saffil 97 & 97+ Blankets contain a polypropylene carrier as received. Upon initial firing of the blanket, this will be burned out.

Data are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes. For assistance or further clarification, please contact your nearest Alkegen Application Engineering office.

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SIZE & AVAILABILITY

Saffil Blankets are produced and distributed worldwide; the standard packaging, density, and thickness offerings are shown below. Variations featuring other dimensions may be obtainable upon inquiry. To obtain information on specific roll size and packaging options, please reach out to your nearest Alkegen representative.

Saffil 72 Blanket

Thickness, mm (in)	Width, mm (in)	Length, mm (ft)
13 (0.5)	610 (24)	7200 (23.62)
25 (1)	610 (24)	7200 (23.62)

Available Density, kg/m³ (lb/ft³): 96 (6) & 128 (8)

Saffil 97 & 97+ Blanket

Thickness, mm (in)	Width, mm (in)	Length, mm (ft)
13 (0.5)	610 (24)	14400 (47.24)
25 (1)	610 (24)	7200 (23.62)

Available Density, kg/m³ (lb/ft³): 96 (6)

Saffil 72+ Blanket

Thickness, mm (in)	Width, mm (in)	Length, mm (ft)
13 (0.5)	610 (24)	10800 (35.43)
25 (1)	610 (24)	10800 (35.43)

Available Density, kg/m³ (lb/ft³): 96 (6) & 128 (8)

Saffil 72HD Blanket

Thickness, mm (in)	Width, mm (in)	Length, mm (ft)
9 (0.35)	1200 (47.25)	7200 (23.62)
13 (0.5)	1200 (47.25)	7200 (23.62)

Available Density, kg/m³ (lb/ft³): 145 (9) & 170 (10.6)

HEALTH AND SAFETY INFORMATION

Saffil 72+ Blankets and Saffil 97+ Blankets are manufactured with precise control to achieve mean fiber diameters between 5-7 µm, yielding a polycrystalline wool blanket with highly consistent properties and little to no respirable fibers as defined by the World Health Organization (WHO).

A Material Safety Data Sheet has been issued describing the health, safety, and environmental properties of this product, identifying the potential hazards and giving advice on handling precautions and emergency procedures. This must be consulted and fully understood before handling, storage, or use.

The test data shown are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes.

Product Information Sheets are periodically updated by Alkegen. Before relying on any data or other information in this Product Information Sheet, you should confirm that it is still current and has not been superseded. A Product Information Sheet that has been superseded may contain incorrect, obsolete and/or irrelevant data and other information.

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