

Product Information Sheet

Fiberfrax®

Fiberfrax® Durablanket® S

DESCRIPTION

The Fiberfrax® Durablanket product family is a group of lightweight, thermally efficient ceramic fiber insulating materials that combine the advantages of dimensional stability at high temperatures with complete resistance to thermal shock. Featuring a broad range of thermal capabilities and physical characteristics, this product family provides proven and effective solutions to a variety of heat processing applications and thermal management challenges.

Fiberfrax® Durablanket® S is a high strength, needled insulating blanket, made from spun Fiberfrax ceramic fibers. The extra-long spun fibers, cross-locked through a unique forming process, produce a blanket with exceptional handling strength. Fiberfrax Durablanket S is completely inorganic and available in a variety of sizes and densities.

The high-purity chemical composition of Fiberfrax Durablanket S provides improved performance and service life in applications where fluxing or chemical attack occurs. Having excellent chemical stability, Fiberfrax Durablankets are unaffected by most chemicals except hydrofluoric acid, phosphoric acid, and concentrated alkalis. If blankets become wet by water or steam, the thermal and physical properties remain unaffected after drying.

GENERAL CHARACTERISTICS

Fiberfrax® Durablanket® S products have the following outstanding characteristics:

- Exceptional insulating properties (Low Thermal Conductivity & Low Heat Storage)
- High temperature stability, up to 1260°C (2300°F)
- Resistance to thermal shock
- Good handling strength
- Excellent flexibility & resiliency
- Light weight
- Good sound absorption
- Completely inorganic

Fiberfrax Durablankets are classified by Underwriters Laboratories (UL), per UL 723 (ASTM E-84). Flame Spread Rating = 0, Smoke Developed Rating = 0.

Information on other applications is available upon request. Any new and/or special use of these products, whether in an application listed in our literature, is advised to be submitted to our Alkegen Application Engineering department for review and guidance on material selection.



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
- **Hydrocarbon Processing (Petrochemical & Refinery)**
Fired Heaters, Cracking/Pyrolysis Furnaces, Reformers, Crude Furnaces, Cokers
- **Non-Ferrous (Aluminum)**
Aluminum Transfer Ladle Covers, Aluminum Melting/Holding Furnace Doors, Carbon Baking Furnace Covers, Casting
- **Ceramic & Glass**
Car Bottom Kilns, Shuttle Kilns, Bell Kilns, Tunnel Kilns, Kiln Cars
- **Pollution Control**
Regenerative Thermal Oxidizers (RTO), Flares, Combustion Chambers / Exhaust Stacks, Incinerators, Air Heaters
- **Power Generation**
Heat Recovery Steam Generators (HRSG) Duct Insulation, Gas & Steam Turbine Exhaust Insulation, Silencer Panels
- **General Use & Other Industries**
High Temperature Furnaces, Back-Up Insulation, High Temperature Seals & Gaskets, Appliance Insulation, Heat Shields & Maintenance Blanket, Expansion Joints, Stress Relieving Blankets

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TYPICAL PRODUCT PARAMETERS

Fiberfrax® Durablanket® S				
Physical Properties				
Color	White			
Temperature Classification*, °C (°F)	1260 (2300)			
Continuous Use Temperature**, °C (°F)	1180 (2150)			
Melting Point, °C (°F)	>1760 (3200)			
Mean Fiber Diameter, Microns	3 – 4			
Chemical Properties				
Typical Chemical Analysis (wt. %)				
Al ₂ O ₃	42 – 47			
SiO ₂	53 – 58			
Trace Elements	< 1			
Thermal Properties				
Thermal Conductivity (ASTM C201)				
Density, kg/m³ (lb/ft³)	64 (4)	96 (6)	128 (8)	160 (10)
Mean Temperature	Thermal Conductivity, W/m-K (Btu in/hr ft² °F)			
200°C (392°F)	0.06 (0.42)	0.06 (0.42)	0.05 (0.35)	0.06 (0.42)
400°C (752°F)	0.09 (0.62)	0.09 (0.62)	0.08 (0.55)	0.08 (0.55)
600°C (1112°F)	0.18 (1.25)	0.14 (0.97)	0.12 (0.83)	0.11 (0.76)
800°C (1472°F)	0.27 (1.87)	0.22 (1.53)	0.18 (1.25)	0.16 (1.11)
1000°C (1832°F)	0.42 (2.91)	0.36 (2.50)	0.28 (1.94)	0.21 (1.46)
Permanent Linear Shrinkage (EN 1094-1)				
After 24 Hour Soak @ 1260°C (2300°F)	< 3.5%			
Mechanical Properties				
Average Tensile Strength (EN 1094-1)				
Density, kg/m³ (lb/ft³)	64 (4)	96 (6)	128 (8)	160 (10)
Tensile Strength, kPa (psi)	35 (5)	55 (8)	75 (11)	95 (14)

*The Classification Temperature is not a definition of the operational temperature use limit of these products, especially when long-term physical or dimensional stability is a factor. 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 continuous use applications requiring long-term stability, routine practice is to utilize materials in respect to their continuous use temperature.

**The Continuous Use Temperature is a recommended maximum operating temperature for the material usage under clean, oxidizing atmosphere conditions. For certain application conditions (specific chemical contaminants, reducing atmospheres, etc.), the Continuous Use Temperature may be reduced.

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

Durablanket S					
Thickness	Density, kg/m³ (lb/ft³)				Roll Length
mm (in)	64 (4)	96 (6)	128 (8)	160 (10)	m (ft)
6 (0.25)	NA	✓	✓	NA	15.2 (50)
13 (0.5)	✓	✓	✓	*	7.6 (25)
25 (1)	✓	✓	✓	✓	7.6 (25)
38 (1.5)	*	✓	✓	*	3.8 (12.5)
50 (2)	✓	✓	✓	*	3.8 (12.5)

Standard roll widths are 0.6m (24") and 1.2m (48")
✓ Standard Size Offering
* Non-Standard Offering (subject to higher minimum order quantities)
NA – Not Available
Durablankets are produced and distributed worldwide; however, packaging, density, and thickness may differ based on regional needs.
To obtain information on specific packaging options please reach out to your nearest Alkegen representative.

HEALTH AND SAFETY INFORMATION

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 information contained in this publication is for illustrative purposes only and is not intended to create any contractual obligation. The following are registered trademarks of Alkegen: Fiberfrax, Durablanket. 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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