

Insulfrax® S Blanket

Introduction

Insulfrax® S Blanket from Unifrax was developed from a calcium, magnesium, silicate chemistry to provide thermal insulation at continuous operating temperatures up to 2012°F (1100°C). Insulfrax S Blanket also meets European regulatory requirement (Directive 97/69/EC). Insulfrax S fiber chemistry has been combined with Unifrax's proprietary fiber spinning technology to create a specialty high-temperature blanket with superior thermal and mechanical properties.

Insulfrax S blanket is used in a wide range of applications including refractory linings, thermal insulation, appliances, and molten metals transfer.

General Characteristics

Insulfrax S Blanket is a flexible, strong, lightweight, needled blanket produced from Insulfrax Fiber. Mechanical needling of the spun Insulfrax fibers eliminates the need for binders in the product's manufacture and results in a product with high tensile strength. Since Insulfrax S Blanket is completely inorganic, the product exhibits no smoke generation or outgassing in service. Insulfrax S Blanket combines low thermal conductivity with excellent resistance to thermal shock. Note that high humidity and wetting with water prior to service has little effect on Insulfrax S Blanket.

A series of green dots on the surface of the blanket make identification, tracking, and inspection of Insulfrax S Blanket simple on the job site or in the fabrication shop.

The Insulfrax Fiber calcium, magnesium, silicate chemistry provides superior wetting resistance to molten aluminum alloys. Testing with corrosive aluminum alloys at elevated temperatures has proven that Insulfrax fibers are superior to traditional alumina/silica refractory ceramic fibers.

Product Forms

Insulfrax S Blanket is available in the following standard forms:

- Thickness (mm) 13, 25, 38, 50
- Density (kg/m³) 64, 96, 128
- Width (mm) 610, 1220
- Length (mm) 3660, 4880, 7320, 14640

Non-standard sizes are available by contacting Unifrax customer service.



Applications

Insulfrax S Blanket is classified by Underwriters Laboratories (UL), per UL 723 (ASTM E-84). Flame Spread Rating = 0, Smoke Developed Rating = 0. High tensile strength and excellent thermal properties combine to make Insulfrax S Blanket the product of choice for a wide range of applications in a number of industries:

Appliances

- Residential self-cleaning ovens
- High-temperature commercial cooking appliances

Hearth Products

- Chimney Insulation

Primary Metals

- Expansion joint seals
- Aluminum transfer ladle covers
- Backup insulation for dense refractory linings
- Backup insulation for refractory ceramic fiber or Isofrax® linings
- Maintenance blanket
- Heat shields

Metals Processing

- Stress relieving blankets
- Seals and gaskets

Petrochemical/Power

- Reusable insulating pads
- External boiler and duct insulation

Ceramic and Glass

- Glass tank crown insulation
- Expansion joints
- Carbon baking furnace covers

Typical Product Parameters

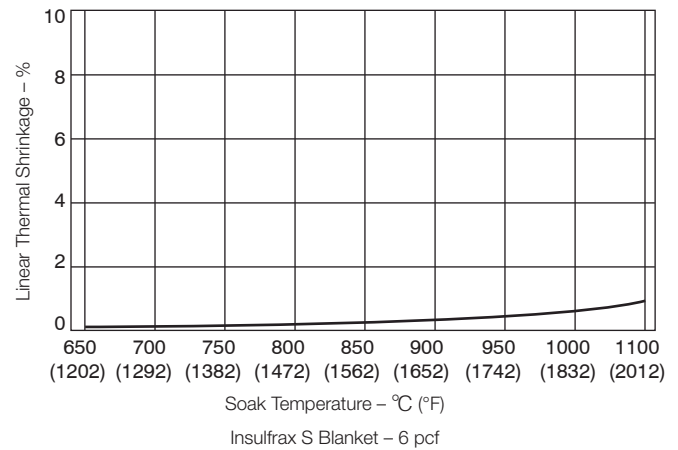
Chemical Analysis (%)

SiO ₂	61 - 67
CaO	27 - 33
MgO	2 - 7
Other	<1
Average Fiber Diameter (microns)	3 - 5
Fiber Index (%) ¹	55 - 60

¹ Fiber Index is measured using the conical elutriation method.

Thermal Shrinkage

Insulfrax S Blanket Thermal Shrinkage Data*



*Shrinkage Test Performed at Soak Temperatures for 24 Hours.

Typical Product Properties

Product Form	Color	Temperature Grade(1)	Recommended Operating Temperature(2)	Melting Point	Specific Heat	Specific Gravity	Average Tensile Strength
Insulfrax S	White	1260°C 2300°F	1100°C 2012°F	1310°C 2390°F	1000j/kgk 1000°C	2.67 (g/cm ³)	4.0 psi/4 PCF 5.0 psi/6 PCF 7.0 psi/8 PCF

⁽¹⁾Temperature Grade based on European Norm 1094 (EN1094)

⁽²⁾The recommended operating temperature of Insulfrax products is determined by irreversible linear change criteria, not melting point.

Health and Safety Information

Insulfrax Thermal Insulation from Unifrax, according to Directive 97/69/EC, possesses a fiber chemistry within the regulatory definition of a “man-made vitreous (silicate) fiber with random orientation with alkaline oxide and alkaline earth oxide content greater than 18% by weight.” Insulfrax fibers have been tested pursuant to EU protocol ECB/TM/26, Revision 7, Nota Q, Directive 97/69/EC, with results that are below regulatory thresholds. As a result, Insulfrax Thermal Insulation does not require additional labeling or further testing. Refer to the product Material Safety Data Sheet (MSDS) for recommended work practices and other product safety information.

For additional information about product performance or to identify the recommended product for your application, please contact the Unifrax Application Engineering Group at 716-278-3888.

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