

Isofrax™ 1260C Paper

Introduction

Isofrax™ 1260C Paper is a unique product which is manufactured by forming Isofrax 1260C Fibre in a nonwoven matrix. The fibres are randomly oriented during manufacture, then held in place with a latex binder system. A specialized, statistically controlled paper-making process is utilized to form uniform, lightweight, flexible materials, including Isofrax 1260C Paper.

Isofrax 1260C Fibre, the fibre utilized in Isofrax 1260C Paper, is a revolutionary new fibre that utilizes a unique, patented silica-magnesia chemistry to solve a variety of demanding, high-temperature application problems. Isofrax 1260C Fibre is the product of a long-term research and development effort by Unifrax to produce a fibre which has the high temperature performance characteristics required in many applications at temperatures up to 1260°C/2300°F and also meets European regulatory requirements (Directive 97/69/EC).

Isofrax 1260C Paper exhibits excellent chemical stability and resistance to attack from most corrosive agents. Exceptions include hydrofluoric acid, phosphoric acid and strong alkalis. Isofrax 1260C Paper also provides superior wetting resistance to molten aluminum alloys at high temperatures.

Isofrax 1260C Paper will generate small amounts of smoke and trace element outgassing during initial exposure to temperatures above 230°C (446°F).

Isofrax 1260C Paper Advantages

Isofrax 1260C Paper offers many unique problem-solving advantages which include:

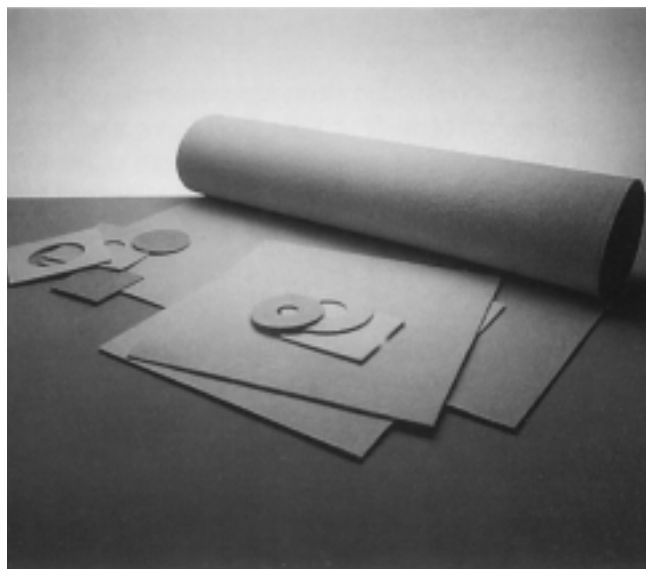
- High-temperature stability (see Table 1)
- Low thermal conductivity
- Meets European regulatory requirements
- Flexibility
- Easy to wrap, shape, or cut
- Margin of safety

Typical Product Properties

Colour	White
Melting Point	>1500°C (2730°F)
Temperature Grade	1260°C (2300°F)
Recommended Operating Temperature ¹	1175°C (2147°F)
Average Tensile Strength	385 kPa (55 psi)
Compression	% Deformation
11 kPa (2 psi)	10%
32 kPa (5 psi)	25%
175 kPa (25 psi)	50%

Note:

(1) The recommended operating temperature is determined by irreversible linear change criteria, not melting point.



Applications

Isofrax 1260C Paper is used in many different applications, which include:

- Automotive and aerospace heat shields
- Gaskets for ovens, stoves, heaters and other appliances
- Highly efficient refractory backup insulation in ladles, glass tanks and other high-temperature furnaces
- Automotive muffler insulation
- Insulating wrap for shrouds/stopper rods in steel manufacturing
- Investment casting mold wrap
- Thermocouple tube protection

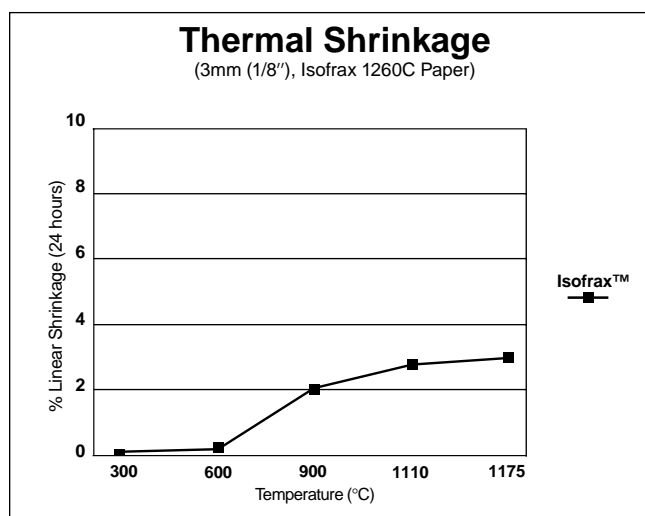


TABLE 1. Thermal stability of Isofrax 1260C Paper.

Typical Product Parameters

Density	160 kg/m ³ (10 pcf)
Fibre Index	70% Wt ⁽²⁾
LOI (including binder)	7 to 10% Wt
Thickness (mm)	1, 2, 3, 6 (0.04", 0.08", 0.12", 0.24")
Width (mm)	610, 1220 (24", 48")

For additional information about product performance or to identify the recommended product for your application, please contact the Unifrax Application Engineering Group at 716-278-3899.

Note:

(2) Fibre index is measured using the conical elutriation method.

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

Insulating Value

The following table summarizes the insulating characteristics of Isofrax 1260C Paper. All heat flow calculations are based on a surface emissivity factor of 0.90, an ambient temperature of 27°C (80°F) and zero km/h (mph) wind velocity, unless otherwise stated.

Insulation Thickness	3mm (0.12z)	6mm (0.24z)
Hot Face	Cold Face (°C/°F)	(°C/°F)
650°C (1202°F)	(377/711)	(296/565)
900°C (1652°F)	(513/956)	(408/766)
1175°C (2147°F)	(659/1218)	(530/985)

Isofrax 1260C Paper can be used in conjunction with hard refractory materials to improve the insulating value and reduce heat loss of the lining system. The following table shows a typical application using 230 mm (9") of Super Duty Firebrick as the hot face with Isofrax 1260C Paper as backup insulation.

Insulation Thickness	3mm (0.12z)	6mm (0.24z)
Hot Face	Cold Face (°C/°F)	(°C/°F)
650°C (1202°F)	(163/325)	(150/302)
900°C (1652°F)	(205/401)	(190/375)
1175°C (2147°F)	(248/478)	(233/451)

Health and Safety Information

Isofrax Thermal Insulation from Unifrax Corporation, according to Directive 97/69/EC, possesses a fibre chemistry within the regulatory definition of a "man-made vitreous (silicate) fibre with random orientation with alkaline oxide and alkaline earth oxide content greater than 18% by weight." Isofrax fibres 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, Isofrax Thermal

Insulation does not require additional labeling or further testing. In addition, Intratracheal Instillation Biopersistence Testing per the German Hazardous Substance Ordinance has been conducted on Isofrax fibres with results that are below German regulatory thresholds. Refer to the product Material Safety Data Sheet (MSDS) for recommended work practices and other product safety information.