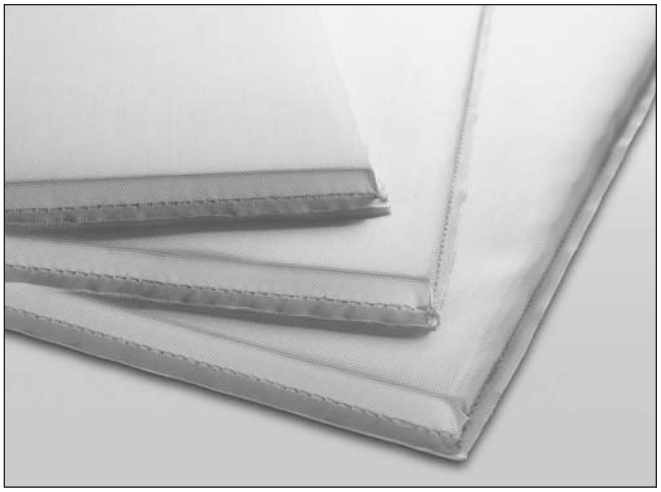
Product Information Sheet

Excelfrax® 1900 Panel



Introduction

Unifrax Corporation's Excelfrax® product line, based on advanced microporous insulation technology, is a family of products which all exhibit superior insulating characteristics. Excelfrax microporous insulation is composed of inorganic oxides, primarily fumed silica. Silicates and opacifiers are added to improve the material performance.

Microporous materials are very efficient insulation products. These products actually have thermal conductivity values lower than still air. This performance is based on the ability of microporous insulation to block the three modes of heat transfer (i.e., conduction, convection, and radiation).

An Excelfrax 1900 Panel consists of high-temperature microporous board which is completely encapsulated in a high-temperature textile. This textile provides several advantages, which include:

- Improved strength and mechanical protection
- Ease of handling
- Improved surface for bonding panels to walls and other insulation

General Characteristics

The Excelfrax 1900 Panel offers users a number of important advantages:

- Extremely low thermal conductivity saves space, weight and energy.
  - Increases capacity of ladles, kilns, industrial ovens and commercial appliances while maintaining thermal performance.
  - Reduces weight while maintaining thermal performance. This weight reduction can reduce structural requirements for furnaces and other high-temperature vessels.
  - Saves energy and reduces operating costs by reducing heat loss in conventional refractory linings.
- Thermal stability – Excelfrax 1900 Panel core material is designed to withstand continuous operating temperatures up to 1922°F (1050°C).
- Consistent operating temperatures – Due to the superior insulating characteristics of Excelfrax 1900 Panel, processes may be easier to regulate and control, which often results in a more consistent final product.
- Square corners on panels allow for better lining installations.
- Strong core material provides improved internal integrity of panel.
- Easy to fabricate – Excelfrax 1900 Panel insulation can be fabricated with commonly available tools.

Other Product Properties

- Resistance to Thermal Shock – Excelfrax 1900 Panel is resistant to thermal shock caused by both high and low temperatures.
- Wetting – Wetting agents such as water, liquid detergents, oil, petroleum, alcohol, etc. can have an adverse effect on Excelfrax 1900 Panel since these liquids can destroy the microporous structure of the product. The high-temperature textile barrier on Excelfrax 1900 Panel greatly reduces the amount of moisture exposure to the panel. When fabricating Excelfrax 1900 Panels, care should be taken to seal the exposed areas if moisture is present in the application.
- Storage – Excelfrax 1900 Panel can be stored indefinitely and should be handled and stored in liquid-free conditions. Moist air or steam does not adversely affect the stability of Excelfrax.

Refer to the product Material Safety Data Sheet (MSDS) for recommended work practices and other product safety information.

Typical Product Properties

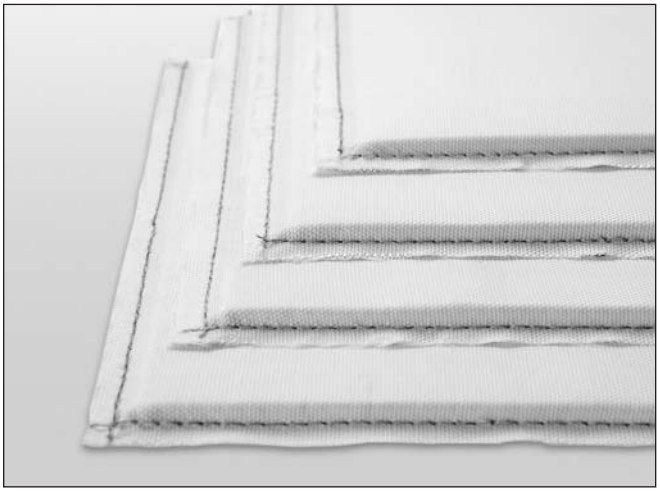
	Excelfrax 1900 Panel
Color	White
Continuous Use Temperature (°F)	
Core Material	1922 °F (1050°C)
Glass Fabric	1472 °F (800°C)
Specific Heat KJ/Kg°K (BTU/Lb °F) at 400°C (752°F)	1.05 (0.25)
Cold Compression Strength (N/mm^2)	2.0
Hot Compression Strength (N/mm^2) at 700°C (1292°F)	1.3
Flexural Strength Core Material (N/mm^2)	0.17
Shrinkage – Single sided (12 hour, 1000°C (1832°F))	0.5%
Shrinkage – All sides, long term (24 hr.)	
800°C (1472°F)	0.6%
900°C (1652°F)	1.3%
1000°C (1832°F)	3.1%
Thermal Conductivity (DIN EN 12667) W/mK (Btu-in/hr ft^2°F)	
At mean temperature of	
50°C (122°F)	0.022 (0.152)
100°C (212°F)	0.023 (0.159)
200°C (392°F)	0.025 (0.173)
300°C (572°F)	0.028 (0.194)
400°C (752°F)	0.032 (0.221)
500°C (932°F)	0.037 (0.256)
600°C (1112°F)	0.045 (0.311)
700°C (1292°F)	0.053 (0.367)
800°C (1472°F)	0.064 (0.443)

Compression	400°C	800°C
1%	0.090 MPa	0.117 MPa
3%	0.288 MPa	0.364 MPa
5%	0.494 MPa	0.617 MPa
10%	1.029 MPa	1.263 MPa

Typical Product Parameters

	Excelfrax 1900 Panel
Density kg/m^3 (pcf)	280 (17.5)
Chemical Composition	
SiO_2	80%
$ZrSiO_4$	15%
Others	5%
Thicknesses*	
mm	10, 12, 15, 17, 20, 25
in	0.4, 0.5, 0.6, 0.7, 0.8, 1.0
Panel Sizes*	
mm	600 x 500 , 1000 x 600
in	23.6 x 19.7 , 39.4 x 23.6

*Refer to Unifrax Price Sheet to determine stock sizes and product availability.



Excelfrax® microporous insulation products are available in several other product forms including: Excelfrax 1800 Board, Excelfrax 1800 Flexliner, and Excelfrax 200 VIP. Please refer to Unifrax product information sheets, Forms C-1500 and C-1501 for further information.

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.

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.

Form C-1507
Effective 7/06

Printed in USA

Unifrax Corporation
Corporate Headquarters
2351 Whirlpool Street
Niagara Falls, New York 14305-2413
Telephone: 716-278-3800
Telefax: 716-278-3900
Internet: www.unifrax.com
Email: info@unifrax.com