

Unifrax Excelfrax® 1900 Panel Microporous Insulation

Category : Ceramic , Oxide , Silicon Oxide

Material Notes:

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. 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, and improved surface for bonding panels to walls and other insulation.

General Characteristics
 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 installation
 Strong core material provides improved internal integrity of panel
 Easy to fabricate - Excelfrax 1900 Panel insulation can be fabricated with commonly available tools

Information Provided by Unifrax I LLC

Order this product through the following link:

http://www.lookpolymers.com/polymer_Unifrax-Excelfrax-1900-Panel-Microporous-Insulation.php

Physical Properties	Metric	English	Comments
Density	0.280 g/cc	0.0101 lb/in ³	

Mechanical Properties	Metric	English	Comments
Flexural Strength	0.170 MPa	24.7 psi	Core Material
Compressive Strength	2.00 MPa	290 psi	Cold
	1.30 MPa	189 psi	
	@Temperature 700 °C	@Temperature 1290 °F	

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.05 J/g-°C	0.251 BTU/lb-°F	
	@Temperature 400 °C	@Temperature 752 °F	
Thermal Conductivity	0.0220 W/m-K	0.153 BTU-in/hr-ft ² -°F	
	@Temperature 50.0 °C	@Temperature 122 °F	
	0.0230 W/m-K	0.160 BTU-in/hr-ft ² -°F	

Thermal Properties	Metric @ Temperature 100 °C	English @ Temperature 212 °F	Comments
	0.0250 W/m-K	0.174 BTU-in/hr-ft ² -°F	
	@Temperature 200 °C	@Temperature 392 °F	
	0.0280 W/m-K	0.194 BTU-in/hr-ft ² -°F	
	@Temperature 300 °C	@Temperature 572 °F	
	0.0320 W/m-K	0.222 BTU-in/hr-ft ² -°F	
	@Temperature 400 °C	@Temperature 752 °F	
	0.0370 W/m-K	0.257 BTU-in/hr-ft ² -°F	
	@Temperature 500 °C	@Temperature 932 °F	
	0.0450 W/m-K	0.312 BTU-in/hr-ft ² -°F	
	@Temperature 600 °C	@Temperature 1110 °F	
	0.0530 W/m-K	0.368 BTU-in/hr-ft ² -°F	
	@Temperature 700 °C	@Temperature 1290 °F	
	0.0640 W/m-K	0.444 BTU-in/hr-ft ² -°F	
	@Temperature 800 °C	@Temperature 1470 °F	
Maximum Service Temperature, Air	800 °C	1470 °F	continuous, glass fabric
	1050 °C	1920 °F	continuous, core material
Shrinkage	0.50 %	0.50 %	Single sided
	@Temperature 1000 °C, Time 43200 sec	@Temperature 1830 °F, Time 12.0 hour	
	0.60 %	0.60 %	All sides, long term
	@Temperature 800 °C, Time 86400 sec	@Temperature 1470 °F, Time 24.0 hour	
	1.3 %	1.3 %	All sides, long term
	@Temperature 900 °C, Time 86400 sec	@Temperature 1650 °F, Time 24.0 hour	
	3.1 %	3.1 %	All sides, long term
	@Temperature 1000 °C, Time 86400 sec	@Temperature 1830 °F, Time 24.0 hour	

Component Elements Properties	Metric	English	Comments
SiO ₂	80 %	80 %	

Descriptive Properties	Value	Comments
Color	White	
Other Inorganics (%)	5	
ZrSiO4 (%)	15	

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