

BTU-BLOCK™ Board



Product Description

BTU-BLOCK Board is comprised of the microporous material sealed in a thin polyethylene foil.

Product Line Overview

The BTU-BLOCK product line of microporous insulation is designed for use in high temperature industrial applications. BTU-BLOCK uses an optimized blend of raw materials to produce an insulation material with a uniquely low thermal conductivity. Unlike traditional fiber or ceramic based insulation, microporous insulation is based on ultra-fine particles of fumed silica, metal oxides and reinforcement fibers. These particles and fibers create a sub-micron pore structure that limits the convection of air, the conduction of heat, and the transmission of radiation. BTU-BLOCK insulation is designed to provide ultra-low thermal properties throughout the entire temperature range.

Benefits

- Reduce Energy Waste
- Reduce Temperature Variability
- Reduce Insulation Thickness
- Reduce Cold Face Temperatures

Features

- Use limit of 1800°F (982°C)
- Extremely low thermal conductivity
- High compressive strength
- Can be fabricated in the field
- Available in standard and hydrophobic grades

Applications

- Back-up insulation in high temperature production processes
 - Chemical Processing
 - Ceramic
 - Ferrous
 - Non-Ferrous
- Commercial ovens
- Hobby Kilns
- Commercial OEM products

Physical Characteristics

Continuous use limit, up to, °F (°C)	1800 (982)
Fired linear shrinkage, % (ASTM C356)	
24 hrs @ 1000°F (538°C)	0.3
24 hrs @ 1500°F (815°C)	0.6
24 hrs @ 1750°F (954°C)	1.3
Compression Resistance @ 18 pcf, psi (MPa) (ASTM C165)	
10% deformation	156 (1.08)
20% deformation	268 (1.85)
30% deformation	413 (2.85)
40% deformation	670 (4.62)

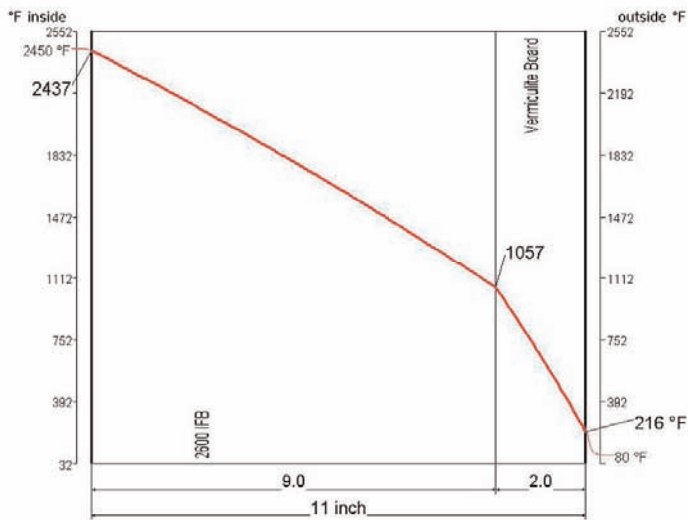
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Thermal Conductivity BTU·in./hr·ft²·°F (w/m·k) per ASTM C 201

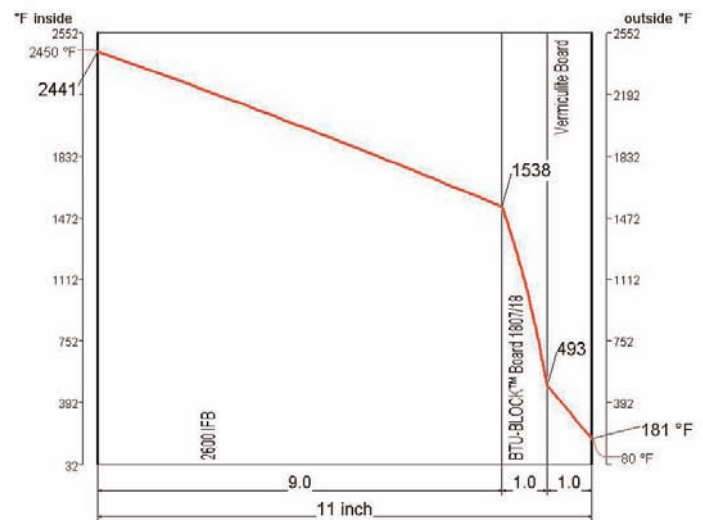
Mean Temperature

500°F (260°C)	0.16 (0.02)
1000°F (538°C)	0.21 (0.03)
1500°F (871°C)	0.30 (0.04)

Example of BTU-BLOCK Board In-Use Application



16% Reduction in cold face temperature,
216°F to 181°F (102°C to 83°C)



24% Reduction in energy waste,
(319 BTU/hr-ft² to 241 BTU/hr-ft²)

Environmental Considerations

Fumed silica based microporous insulations are sensitive to liquids due to the nature of their ingredients. Exposure to water, oils, etc will degrade the microporous structure. Care should be exercised in handling to prevent contact with liquids. Hydrophobic (waterproof) grade mixes are also available.

Standard Sizes

Density, pcf	Length, in	Width, in	Thickness Availability, in					
			0.50	0.75	1.00	1.25	1.50	2.00
18	24	18	-	-	X	X	X	X
20	24	18	X	X	X	X	X	-
22	24	18	X	X	X	X	-	-
25	24	18	X	X	X	-	-	-

Other sizes / densities are available upon request

The values given herein are typical average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Therefore, the data contained herein should not be used for specification purposes. Check with your Thermal Ceramics office to obtain current information.