

## Fibermass<sup>®</sup> Ceramic Fiber Blocks

Fibermass<sup>®</sup> ceramic fiber blocks combine advancements in fiber chemistry and manufacturing technology to provide an economical lining material for a wide range of heat processing equipment.

The Fibermass manufacturing technique bonds layers of refractory ceramic fiber blanket into a strong, pliable fiber block. Spun ceramic fiber blankets which feature high tensile strength for improved resistance to mechanical abuse, vibration and gas velocity are used in the construction of Fibermass blocks. A proprietary fiber treatment decreases fiber dusting and irritation while increasing block flexibility, making the block easy to compress into place. Blocks are available in two temperature grades based on construction from Durablanket<sup>®</sup> HP-S or Durablanket 2600. The availability of standard or high-density blocks in each temperature grade results in a product which meets a wide range of application needs.

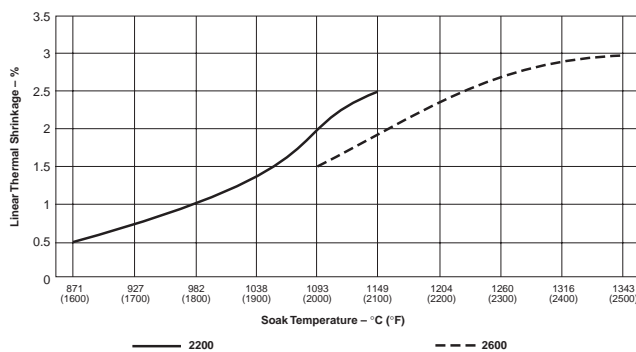
Fibermass ceramic fiber blocks offer many of the same advantages as other Anchor-Loc<sup>®</sup> or Fiberwall<sup>®</sup> furnace linings when compared to refractory construction. They are:

- Faster temperature cycling
- Lower fuel costs
- Lower installation cost
- Resistance to thermal shock
- Lower heat storage
- Increased productivity
- Easier repairs

### Typical Product Properties

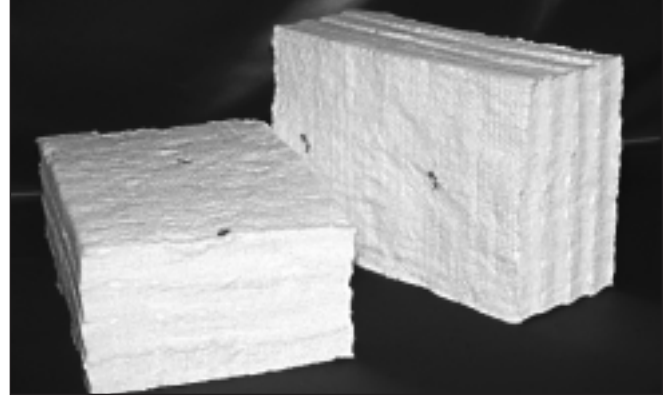
#### Thermal Shrinkage

#### Fibermass Thermal Shrinkage Data\*



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

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



Module Type	Temperature Grade	Recommended Operating Temperature*
Fibermass 2200 Ceramic Fiber Blocks	1260°C (2300°F)	1149°C (2100°F)
Fibermass 2600 Ceramic Fiber Blocks	1427°C (2600°F)	1343°C (2450°F)

\*The recommended operating temperature of Fiberfrax<sup>®</sup> products is determined by irreversible linear change criteria, not melting point.

#### APPLICATIONS<sup>(1)</sup>

- Low mass kiln cars
- Gas Turbine exhaust ducts
- Duct and stack linings
- Regenerative thermal oxidizer
- Furnace lining insulation for high-temperature applications
- Roller hearth furnace linings
- HRSG linings
- Furnace hearths
- Boiler insulation

<sup>(1)</sup>Note that metallic support hardware is required in many applications and may be purchased separately from Unifrax.

## Typical Product Parameters

### Chemical Analysis Fibermass Blocks

	2200°F	2600°F
Al <sub>2</sub> O <sub>3</sub>	43-47%	29-31%
SiO <sub>2</sub>	53-57%	53-55%
ZrO <sub>2</sub>	–	15-17%
Na <sub>2</sub> O	<.5%	–

Module Type	Construction	Module Density
Fibermass 2200 Ceramic Fiber Blocks	Edge Grain Durablanket HP-S	128 kg/m <sup>3</sup> (8 lb/ft <sup>3</sup> ) 160 kg/m <sup>3</sup> (10 lb/ft <sup>3</sup> )
Fibermass 2600 Ceramic Fiber Blocks	Edge Grain Durablanket 2600	160 kg/m <sup>3</sup> (10 lb/ft <sup>3</sup> ) 192 kg/m <sup>3</sup> (12 lb/ft <sup>3</sup> )

### Fibermass Blocks

#### Fibermass 2200 Blocks – 128 kg/m<sup>3</sup> (8 lbs/ft<sup>3</sup>)

Hot Face °C (°F)	Insulation Thickness – mm (in) Cold Face Temperature –	102 (4) °C (°F)	152 (6) °C (°F)	203 (8) °C (°F)	254 (10) °C (°F)
649 (1200)		75 (167)	61 (143)	53 (126)	49 (121)
871 (1600)		111 (232)	88 (192)	76 (169)	68 (155)
1093 (2000)		155 (312)	123 (255)	105 (221)	92 (199)

#### Fibermass 2200 Blocks – 160 kg/m<sup>3</sup> (10 lbs/ft<sup>3</sup>)

Hot Face °C (°F)	Insulation Thickness – mm (in) Cold Face Temperature –	102 (4) °C (°F)	152 (6) °C (°F)	203 (8) °C (°F)	254 (10) °C (°F)
649 (1200)		97 (160)	58 (137)	51 (125)	47 (117)
871 (1600)		104 (220)	83 (183)	72 (162)	64 (148)
1093 (2000)		143 (291)	114 (238)	97 (202)	86 (187)

#### Fibermass 2600 Blocks – 160 kg/m<sup>3</sup> (10 lbs/ft<sup>3</sup>)

Hot Face °C (°F)	Insulation Thickness – mm (in) Cold Face Temperature –	152 (6) °C (°F)	203 (8) °C (°F)	254 (10) °C (°F)	305 (12) °C (°F)
1149 (2100)		122 (252)	103 (219)	91 (197)	83 (182)
1260 (2300)		139 (283)	118 (245)	104 (220)	94 (202)
1316 (2400)		148 (299)	126 (259)	111 (232)	100 (212)

#### Fibermass 2600 Blocks – 192 kg/m<sup>3</sup> (12 lbs/ft<sup>3</sup>)

Hot Face °C (°F)	Insulation Thickness – mm (in) Cold Face Temperature –	152 (6) °C (°F)	203 (8) °C (°F)	254 (10) °C (°F)	305 (12) °C (°F)
1149 (2100)		117 (243)	100 (212)	88 (191)	80 (176)
1260 (2300)		133 (272)	113 (236)	100 (212)	90 (194)
1316 (2400)		141 (287)	120 (248)	106 (223)	95 (204)

All heat flow calculations are based on a surface emissivity factor of .90, an ambient temperature of 27°C (80°F) and zero wind velocity, unless otherwise stated.

All thermal conductivity values for Fiberfrax materials have been measured in accordance with ASTM Test Procedure C-177. When comparing similar data, it is advisable to check the validity of all thermal conductivity values and ensure the resulting heat flow calculations are based on the same condition factors. Variations in any of these factors will result in significant differences in the calculated data.

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.

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Product Information Sheets are periodically updated by Unifrax. Before relying on any data or other information in this Product Information Sheet, you should confirm that it is still current and has not been superseded. A Product Information Sheet that has been superseded may contain incorrect, obsolete and/or irrelevant data and other information.

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