

Cerafelt® and Cerachrome® Felt

Datasheet Code US: 5-14-804

SDS: 255 / 258

Product Description

Cerafelt products are lightweight, flexible refractory fiber insulators formed from exceptionally pure refractory oxides and bonded with an organic binder.

These products are recommended for a wide range of high temperature industrial applications such as expansion joints in kilns, furnaces, and boiler walls, and high-temperature gaskets.

When used as a gasket, Cerafelt exhibits excellent resistance to penetration from molten metals, both ferrous and nonferrous. This unique property, coupled with its ease of fabrication, makes it ideal for ingot stool seals, stopper rod gaskets, and gaskets for aluminum billet casting.

Features

- Lightweight and flexible
- Low thermal conductivity and heat storage

Applications

- Expansion joints
- Gaskets
- Molten metal resistant insulation

| Airflow Resistance, cfm/in, wc/ft ² /in | | | | | | | | |
|---|---|--------|---------|----------|----------|----------|----------|-----------------------------|
| Temperature | Cerfelt and Cerachrome, Density, pcf (kg/m ³) | | | | | | | |
| | 4 (64) | 5 (96) | 8 (128) | 10 (160) | 12 (192) | 14 (224) | 18 (288) | 24 (385) |
| 75°F (24°C) | 64.4 | 31.1 | 18.9 | 12.8 | 8.9 | 6.7 | 4.3 | 2.6 |
| 1000°F (538°C) | 32.2 | 15.6 | 9.4 | 6.4 | 4.4 | 3.3 | 2.2 | 1.6 |
| 2000°F (1093°C) | 23.6 | 11.2 | 6.8 | 4.3 | 3.2 | 2.4 | 1.3 | 0.9 |
| Sound Absorption Coefficients, 8 pcf (128 kg/m ³) | | | | | | | | |
| Thickness, in (mm) | Cerfelt and Cerachrome, cycles per second | | | | | | | Noise Reduction Coefficient |
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | | |
| 1/2 (13) | 0.7 | 12 | 45 | 72 | 77 | 85 | 50 | |
| 1 (25) | 21 | 69 | 86 | 84 | 86 | 99 | 80 | |
| 2 (51) | 92 | 78 | 81 | 83 | 81 | 79 | 80 | |
| 3 (76) | 65 | 80 | 83 | 88 | 85 | 83 | 85 | |

* Noise Reduction Coefficient – The average of the sound absorption coefficients at frequencies of 250, 500, 1000 and 2000 cycles per second.

Cerafelt® and Cerachrome® Felt

| Felt Product Name | Cerafelt | Cerachrome |
|--|----------------------------|-------------------|
| Fiber Class | RCF | RCF |
| Physical Properties | | |
| Color | cream/tan | blue/green |
| Classification Temperature, °F | 2300 | 2600 |
| Classification Temperature, °C | 1600 | 1427 |
| Density, pcf | 4, 6, 8, 10, 12, 24 | 6, 8, 12, 24 |
| Density, kg/m ³ | 64, 96, 128, 160, 192, 385 | 96, 128, 160, 385 |
| Chemical Analysis, % weight basis after firing | | |
| Alumina, Al ₂ O ₃ | 46 | 43 |
| Silica, SiO ₂ | 54 | 54 |
| Chromium oxide, Cr ₂ O ₃ | - | 3 |
| Other | trace | trace |
| Loss of Ignition, LOI | 3-9 | 3-9 |
| Thermal Conductivity, BTU•in/hr•ft², per ASTM C201 | | |
| <u>Density, pcf</u> | <u>8</u> | <u>8</u> |
| 500°F | 0.46 | 0.43 |
| 1000°F | 0.94 | 0.87 |
| 1500°F | 1.58 | 1.49 |
| 2000°F | 2.29 | 2.18 |
| Thermal Conductivity, W/m•K, per ASTM C201 | | |
| <u>Density, kg/m³</u> | <u>128</u> | <u>128</u> |
| 260°C | 0.07 | 0.06 |
| 538°C | 0.14 | 0.13 |
| 816°C | 0.23 | 0.21 |
| 1093°C | 0.33 | 0.31 |

| Thickness In (mm) | Density, pcf | | | | | | Length x Width In (mm) |
|----------------------|--------------|---------------------------------|---------------------------------|-----------------|------------------------------|------------------------------|---|
| | 4 (64) | 6 (96) | 8 (128) | 10 (160) | 12 (192) | 24 (385) | |
| 1/8 (3) | - | - | - | - | Cerafelt | Cerafelt | 96 x 48 (2438 x 1220) - standard for Cerafelt and Cerachrome Felt |
| ¼ (6) | - | Cerafelt | Cerafelt | Cerachrome Felt | Cerafelt | Cerafelt, Cerachrome Felt | |
| ½ (13) | Cerafelt | Cerafelt, Cerachrome Felt | Cerafelt, Cerachrome Felt | Cerafelt | Cerafelt, Cerachrome Felt | Cerafelt, Cerachrome Felt | |
| ¾ (19) | - | - | - | Cerafelt | Cerafelt | - | |
| 1 (25) | Cerafelt | Cerafelt, Cerachrome Felt | Cerafelt, Cerachrome Felt | Cerafelt | Cerafelt | - | |
| 1-1/2 (38) | Cerafelt | - | - | - | - | - | |
| 2 (51) | Cerafelt | - | - | - | - | - | |

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 Morgan Advanced Materials office to obtain current information.