



Kaowool Blanket, Cerawool® Blanket, Cerablanket®, Cerachem® Blanket and Cerachrome® Blanket are air laid into a continuous mat and mechanically needled for added strength and surface integrity. Blanket products do not contain organic binders. Thermal Ceramic Blankets provide excellent resistance to chemical attack. Exceptions include hydrofluoric acid, phosphoric acid, and strong alkalis (ie.  $\text{Na}_2\text{O}$ ,  $\text{K}_2\text{O}$ ). Thermal Ceramic Blankets are unaffected by oil or water. Thermal and physical properties are restored after drying.

#### **Kaowool B Blanket**

Kaowool B Blanket is produced from blown alumina-silica fiber. It is an alternative for lower use limits up to 1800°F (982°C).

#### **Cerawool Blanket**

Cerawool spun refractory fiber blankets are formed from alumina, silica and other refractory oxides. Cerawool blanket meets a wide range of backup insulation applications in furnace, kilns and other high-temperature equipment.

#### **Kaowool Blanket**

Kaowool blanket is produced from kaolin, a naturally occurring alumina-silica fire clay. Kaowool, the world's most recognizable name in ceramic fiber blanket, is available in a wide variety of densities and sizes. Kaowool blanket offers excellent handleability and high temperature stability. This allows it to meet a wide range of hot face and backup insulation applications in furnaces, kilns and other equipment requiring high temperature heat containment.

#### **Kaowool Blanket S**

Kaowool Blanket S is produced from high quality spun fibers. It is available in a wide variety of densities and sizes, and offers a highly cost effective alternative to Cerablanket with its 2300°F (1260°C) maximum temperature rating.

#### **Cerablanket**

Cerablanket is produced from exceptionally pure oxides of alumina and silica using the spinning process. The resultant quality spun fibers have been optimized for high handling strength, with on average the highest tensile strength of any Thermal Ceramics ceramic fiber blanket. Cerablanket is available in a wide variety of densities and sizes. Cerablanket offers excellent handleability and high temperature stability which allows it to meet a wide range of hot face and back up insulation applications in furnaces, kilns and other equipment requiring high temperature heat containment.

#### **Cerachem Blanket**

Cerachem Blanket is a 2600°F (1427°C) maximum temperature rated refractory blanket formed from a unique, patented, spun alumina-silica-zirconia fiber. It is specially designed for applications where high fiber tensile strength, low thermal conductivity and low shrinkage are required. Cerachem Blanket is used extensively in high temperature units in the ceramic, chemical processing, and ferrous metal industries. Thermal Ceramics Cerachem refractory blankets are ideal for a wide range of hot face lining and backup insulation applications in furnaces, kilns and other high temperature equipment.

#### **Cerachrome Blanket**

Made from spun alumina-silica-chromia fiber, Cerachrome Blanket is well suited for hot face lining applications where higher temperatures are encountered, such as soaking pit covers, reheat and forging furnaces. Cerachrome Blanket with its chromia-stabilized chemistry offers improved long term shrinkage characteristics over zirconia containing blankets such as Cerachem. Cerachrome Blanket effectively fills the gap between zirconia blankets and high alumina products.

# Blanket Products

## Product Information

| Physical Properties           | Kaowool B                    | Cerawool      | Kaowool          | Kaowool S   | Cerablanket   | Cerachem      | Cerachrome    |
|-------------------------------|------------------------------|---------------|------------------|-------------|---------------|---------------|---------------|
| Color                         | tan                          | white         | tan              | white       | white         | white         | blue/green    |
| Density, pcf                  | 4, 6, 8                      | 4, 6, 8       | 3, 4, 6, 8, 12   | 4, 6, 8     | 3, 4, 6, 8    | 4, 6, 8       | 4, 6, 8       |
| Thickness, In.,<br>(50)       | 1-2 (25-50)<br>½-2 (12.5-50) | ½-2 (12.5-50) | 1/8-2 (3.125-50) |             | ½-2 (12.5-50) | ¼-2 (6.25-50) | ½-2 (12.5-50) |
| Melting point, °F(°C)         | 3200 (1760)                  | 3200 (1760)   | 3200 (1760)      | 3200 (1760) | 3200 (1760)   | 3200 (1760)   | 3200 (1760)   |
| Max. cont. use limit, °F (°C) | 1800 (982)                   | 1800 (982)    | 2000 (1093)      | 2000 (1093) | 2150 (1177)   | 2400 (1315)   | 2500 (1371)   |
| Max. temp. rating, °F (°C)    | –                            | –             | 2300 (1260)      | 2300 (1260) | 2400 (1315)   | 2600 (1426)   | 2600 (1426)   |

### Chemical Analysis, (Nominal)

|  |       |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|-------|-------|
| Alumina, Al <sub>2</sub> O <sub>3</sub>        | 45    | 40-48 | 45    | 35-46 | 46    | 35    | 43    |
| Silica, SiO <sub>2</sub>                       | 50-55 | 50-54 | 50-55 | 50-54 | 54    | 50    | 54    |
| Ferric oxide, Fe <sub>2</sub> O <sub>3</sub>   | 1.0   | 0.05  | 1.0   | 0.05  | 0.05  | 0.05  | –     |
| Titanium oxide, TiO <sub>2</sub>               | 1.7   | –     | 1.7   | –     | –     | –     | –     |
| Calcium oxide, CaO                             | 0.1   | 0.05  | 0.1   | 0.05  | 0.05  | 0.05  | –     |
| Magnesium oxide, MgO                           | trace | 0.05  | trace | 0.05  | 0.05  | 0.05  | –     |
| Alkalies, as, Na <sub>2</sub> O                | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | –     |
| Boron Oxide, B <sub>2</sub> O <sub>3</sub>     | 0.08  | –     | 0.08  | –     | –     | –     | –     |
| Chromium Oxide, Cr <sub>2</sub> O <sub>3</sub> | –     | –     | –     | –     | –     | –     | 3     |
| Zirconia                                       | –     | –     | –     | 0-15  | –     | 15    | –     |
| Other  | 1-2   | 1-2   | –     | 0-3   | trace | trace | trace |

### Thermal Conductivity, BTU•in./hr•ft<sup>2</sup>•°F (ASTM C 201)

|                         |      |      |      |      |      |      |      |
|-------------------------|------|------|------|------|------|------|------|
| Mean temperature, 8pcf  |      |      |      |      |      |      |      |
| @ 500°F                 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| @ 1000°F                | 0.87 | 0.93 | 0.87 | 0.93 | 0.93 | 0.93 | 0.93 |
| @ 1500°F                | 1.45 | 1.60 | 1.45 | 1.60 | 1.60 | 1.60 | 1.60 |
| @ 1800°F                | –    | –    | 1.83 | 2.05 | 2.05 | 2.05 | 2.05 |
| @ 2000°F                | –    | –    | –    | –    | 2.65 | 2.65 | 2.65 |
| Mean temperature, 6pcf  |      |      |      |      |      |      |      |
| @ 500°F                 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 |
| @ 1000°F                | 1.01 | 1.06 | 1.01 | 1.05 | 1.06 | 1.06 | 1.06 |
| @ 1500°F                | 1.73 | 1.90 | 1.73 | 1.90 | 1.09 | 1.09 | 1.09 |
| @ 1800°F                | –    | –    | 2.19 | 2.45 | 2.45 | 2.45 | 2.45 |
| @ 2000°F                | –    | –    | –    | 2.83 | 2.83 | 2.83 | 2.83 |
| Mean temperature, 4 pcf |      |      |      |      |      |      |      |
| @ 500°F                 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| @ 1000°F                | 1.29 | 1.34 | 1.29 | 1.34 | 1.34 | 1.34 | 1.34 |
| @ 1500°F                | 2.30 | 2.48 | 2.30 | 2.48 | 2.48 | 2.48 | 2.48 |
| @ 1800°F                | –    | –    | 2.96 | 3.23 | 3.23 | 3.23 | 3.23 |
| @ 2000°F                | –    | –    | –    | –    | 3.74 | 3.74 | 3.74 |

### Military Specifications and Approvals

|              |                  | Water Leachable Elements on Surface of Fiber, typical quantities, PPM |     |          |     |
|--------------|------------------|---|-----|----------|-----|
| Mil-1-23128A | 3, 6 pcf blanket | Boron   | 40  | Sulphur  | 10  |
| Mil-1-24244  | All blankets     | Chlorine  | <10 | Sodium   | 40  |
| Mil-1-23128B | 6, 8 pcf blanket | Fluorine  | <5  | Silicate | 125 |

### Acoustical performance per ASTM C-423 A and E-795, Sound Absorption Coefficient

| Kaowool Blanket | 250Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | NRC  |
|-----------------|-------|--------|---------|---------|---------|------|
| 1"- 4 pcf       | 0.29  | 1.00   | 1.04    | 0.99    | 0.98    | 0.85 |
| 1"- 8 pcf       | 0.50  | 0.92   | 0.91    | 0.91    | 0.94    | 0.80 |
| 2"- 4 pcf       | 0.92  | 1.01   | 1.01    | 1.03    | 1.10    | 1.00 |
| 2"- 8 pcf       | 0.80  | 0.72   | 0.86    | 0.92    | 1.02    | 0.85 |

Data are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes. Refer to the Material Safety Data Sheet (MSDS) for recommended work practices and other product safety information.

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