



High-performance paper and felt products from Thermal Ceramics are the preferred choice over traditional fiberglass, textile, or metal products for thermal, acoustical, or filtration management.

Kaowool Flex-Wrap is produced from a blend of Kaowool high purity ceramic fibers and organic binders in a unique paper making process. Due to its low organic binder content, offgassing is at a minimum. This specialty paper is noted for its excellent flexibility, outstanding handling characteristics, and high insulating value at high temperatures.

Kaowool 500, 700, and 900 Grade paper products are produced from Kaowool high purity fibers and organic binders in a unique paper making process. Each of these paper products are noted for their excellent tensile strengths and outstanding handling characteristics. The 900 grade paper is manufactured from cleaned Kaowool high purity ceramic fibers resulting in a premium paper product with low shot (unfiberized material) content.

Kaowool 2000 Grade paper is produced from cleaned Kaowool high purity ceramic fibers and organic binders in a unique process. The special cleaning process which removes the majority of unfiberized material prior to formation of paper, makes a premium grade paper product with a very high quality surface finish and texture.

Kaowool 2600 Grade paper is produced from a blend of Kaowool and Cerachem® ceramic fibers and organic binders in a unique paper making process. The various features of Kaowool 2600 make it an excellent choice for higher temperature heat treating and gasketing applications where standard ceramic fiber papers break down.

Kaowool 3000 Grade paper is produced from Saffil® alumina fibers and organic binders in a unique paper making process.

Features

Kaowool Flex-Wrap

- Low thermal conductivity and heat storage
- Excellent flexibility for wrapping applications
- Easily die cut to form complex shapes for high temperature gasketing
- Thin, flexible high temperature insulation

Kaowool 500, 700, and 900 Grade Paper

- Low thermal conductivity and heat storage
- Thin, flexible high temperature insulation
- Easily die-cut to form complex shapes for high temperature gasketing
- Conforms easily to complex shapes
- Excellent backup and expansion joint material

Kaowool 2000 Grade Paper

- Very low thermal conductivity and heat storage
- Extremely low (unfiberized material) content
- Excellent high temperature parting agent
- Thin, flexible high temperature insulation
- Excellent tensile strength
- Easily die cut for gasketing applications

Kaowool 2600 Grade Paper

- Excellent stability and shrinkage characteristics at elevated temperatures
- Low thermal conductivity and heat storage
- Excellent high temperature parting agent
- Thin, flexible high temperature insulation
- Excellent tensile strength
- Easily die-cut for high temperature gasketing applications

Kaowool 3000 Grade Paper

- High alumina, fiber index and purity
- Outstanding high temperature stability
- Thin, flexible, high temperature insulation
- Easily die-cut to form complex shapes for high temperature gasketing
- Conforms easily to complex shapes
- Excellent high temperature parting agent
- Excellent high temperature backup and expansion joint material

Applications

- High temperature gaskets and seals
- Refractory back-up insulation
- Appliance insulation
- Separating media for heat treating metals
- High temperature filtration
- High temperature expansion joint packing
- Glassware separating media
- Parting agent for brazing operations
- Hot face and backup lining for lab furnaces
- Aluminum distributor pan lining
- Super alloy ingot mold lining and hot tapes.

| Physical Properties | Flex-Wrap | 500 | 700 | 900 | 2000 | 2600 | 3000 |
|--|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| | | Grade | Grade | Grade | Grade | Grade | Grade |
| Color | white | white | white | white | white | white | white |
| Nominal density, pcf (kg/m ³) | 11-13 (176-208) | 12-14 (192-224) | 11-13 (176-208) | 10-12 (160-192) | 11-14 (176-224) | 10-13 (160-208) | 7-10 (112-160) |
| Fiber index, % | 50 | 50 | 55 | 70 | 80 | 55 | 99 |
| Continuous use limit, ^o (°C) | (1176) | (1176) | (1176) | (1176) | (1176) | (1343) | (1538) |
| Max. temp rating, ^o (°C) | (1260) | (1260) | (1260) | (1260) | (1260) | (1426) | (1648) |
| Melting point, ^o (°C) | 3200 (1760) | 3200 (1760) | 3200 (1760) | 3200 (1760) | 3200 (1760) | 3200 (1760) | 3600 (1982) |
| Tensile strength, psi (Mpa) | 35-50 (0.24-0.34) | 75-100 (0.51-0.68) | 85-125 (0.72-0.89) | 75-100 (0.51-0.68) | 75 - 100 (0.41) | 75-100 (0.68-0.79) | 25-40 (0.17-0.27) |
| Fired tensile strength | 2 - 3 | 2 - 3 | 2 - 3 | 2 - 3 | 2 - 3 | 2 - 3 | - |
| Thickness, in. (cm) | 1/16 to 1/4 (0.15 to 0.625) | 1/16 to 1/4 (0.15 to 0.625) | 1/32 to 1/4 (0.08 to 0.625) | 1/32 to 1/4 (0.08 to 0.625) | 1/32 to 1/4 (0.08 to 0.625) | 1/16 to 1/4 (0.15 to 0.625) | 1/32 to 1/4 (0.08 to 0.625) |
| Width, in.(mm) | 24,48 (60,120) | 12,24,48 (30,60,120) | 12,24,48 (30,60,120) | 12,24,48 (30,60,120) | 12,24,48 (30,60,120) | 12,24,48 (30,60,120) | 24 (60) |

Chemical Analysis

| | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|
| Alumina, Al ₂ O ₃ | 47 | 47 | 47 | 47 | 47 | 35 | 95 |
| Silica, SiO ₂ | 53 | 53 | 53 | 53 | 53 | 51 | 5 |
| Zirconia, ZrO ₂ | - | - | - | - | - | 14 | - |
| Other | trace | trace | trace | trace | trace | trace | trace |
| Loss Of Ignition | 3 - 7 | 6-10 | 6-10 | 6-10 | 6-10 | 6-10 | 6-10 |

Thermal Conductivity, BTU•in/hr•ft² (w/m•k) (ASTM C 201)

| | | | | | | | |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| @ 500° (260°C) | 0.39 (0.06) | 0.43 (0.06) | 0.40 (0.06) | 0.38 (0.05) | 0.38 (0.05) | 0.37 (0.05) | 0.36 (0.05) |
| @ 1000° (538°C) | 0.69 (0.10) | 0.69 (0.09) | 0.63 (0.09) | 0.61 (0.09) | 0.56 (0.08) | 0.63 (0.09) | 0.53 (0.08) |
| @ 1500° (816°C) | 0.96 (0.14) | 1.07 (0.15) | 0.95 (0.14) | 0.94 (0.14) | 0.80 (0.11) | 1.02 (0.15) | 0.80 (0.11) |
| @ 2000° (1093°C) | - | 1.58 (0.23) | 1.38 (0.20) | 1.40 (0.20) | 1.11 (0.16) | 1.57 (0.23) | 1.20 (0.17) |
| @ 2200° (1204°C) | - | - | - | - | - | 1.85 (0.27) | - |
| @ 2400° (1316°C) | - | - | - | - | - | 2.16 (0.31) | - |
| @ 2500° (1371°C) | - | - | - | - | - | - | 1.78 (0.26) |
| @ 2600° (1427°C) | - | - | - | - | - | 2.52 (0.36) | - |
| @ 2800° (1538°C) | - | - | - | - | - | - | 2.22 (0.32) |

Chemical Properties

A small amount of organic combustible binder will burn out at approximately 300° (149°C). **Caution should be exercised during the initial heating. Adequate ventilation should be provided to avoid potential flash ignition of the binder out-gassing or avoid air entry while at elevated temperature.**

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.

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