

Refractory Ceramic Fiber Blanket



Product Description

Kaowool® Blanket offers excellent handleability and high temperature stability.

Kaowool RT Blanket is produced from a blend of high quality alumina, silica and kaolin using the spinning process. It is a highly cost effective alternative to Cerablanket with its 2300°F (1260°C) maximum temperature rating.

Cerablanket® is produced from exceptionally pure oxides of alumina and silica using the spinning process. Cerablanket fibers have been optimized for high handling strength and offers excellent handleability and high temperature stability.

Cerachem® Blanket a 2600°F (1427°C) maximum temperature rated 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.

Cerachrome® Blanket is made from spun alumina-silica-chromia fiber. Cerachrome Blanket with its chromia-stabilized chemistry offers improved long term shrinkage characteristics.

Mesh Enclosure is available for many blanket products. The wire mesh alloy used is determined by the atmosphere and temperature the enclosed product will see in service. Alloys of wire mesh used are:

304SS 1200°F (649°C)

430SS 1300°F (704°C)

Inconel 600 2000°F (1093°C)

The three methods of closure used in these mesh enclosed products are alloy wire, stainless steel tufting buttons, and stainless steel staples.

Features

- Excellent insulating performance
- Mechanically needed for strength and surface integrity
- Provide excellent resistance to most chemical attacks
- Unaffected by oil or water
- No organic binders

Applications

- Furnace and kiln linings
- Boiler insulations
- Glass furnace insulation
- Furnace door seals
- Duct linings
- Pipe insulations
- Mold wrpas
- Thermal barriers for automotive industry
- Stress relieving
- Nuclear insulation applications
- Steam and gas turbine insulation

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Physical Properties

	Kaowool	Kaowool RT	Cerablanket	Cerachem	Cerachrome
Color	off white	off white	white	white	blue/green
Density, pcf (kg/m ³)	3, 4, 6, 8, 10, 12 (48, 64, 96, 128, 160, 192)	4, 6, 8 (64, 96, 128)	3, 4, 6, 8 (48, 64, 96, 128)	4, 6, 8, 10 (64, 96, 128, 160)	4, 6, 8 (64, 96, 128)
Thickness, in. (mm)	½ - 1 (3.125-50)	½ - 2 (25-50)	¼ - 2 (6.25-50)	½ - 2 (12.5-50)	½ - 2 (12.5-50)
Continuous use limit, °F (°C)	2000 (1093)	2000 (1093)	2150 (1177)	2400 (1315)	2500 (1371)
Classification temp. rating, °F (°C)	2300 (1260)	2300 (1260)	2400 (1315)	2600 (1426)	2600 (1426)
Melting point, °F(°C)	3200 (1760)	3200 (1760)	3200 (1760)	3200 (1760)	3200 (1760)

Chemical Analysis, %, weight basis after firing

Alumina, Al ₂ O ₃	45	35 - 47	46	35	43
Silica, SiO ₂	50 - 55	49 - 54	54	50	54
Ferric oxide, Fe ₂ O ₃	1.0	0.05 - 1.5	0.05	0.05	-
Titanium oxide, TiO ₂	1.7	0.05 - 1.9	-	-	-
Calcium oxide, CaO	0.1	0.05	0.05	0.05	-
Magnesium oxide, MgO	trace	0.05	0.05	0.05	-
Alkalies as, Na ₂ O	0.2	0.2	0.2	0.2	-
Boron Oxide, B ₂ O ₃	0.08	-	-	-	-
Chromium Oxide, Cr ₂ O ₃	-	-	-	-	3
Zirconia	-	0 - 15	-	15	-
Other	-	0 - 3	trace	trace	trace
Leachable chlorides	< 10 ppm	< 10 ppm	< 10 ppm	< 10 ppm	< 10 ppm

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

Mean temperature, 8pcf					
@ 500°F (260°C)	0.44 (0.06)	0.44 (0.06)	0.44 (0.06)	0.44 (0.06)	0.44 (0.06)
@ 1000°F (538°C)	0.87 (0.12)	0.93 (0.13)	0.93 (0.13)	0.93 (0.13)	0.93 (0.13)
@ 1500°F (816°C)	1.45 (0.21)	1.60 (0.23)	1.60 (0.23)	1.60 (0.23)	1.60 (0.23)
@ 1800°F (982°C)	1.83 (0.26)	2.05 (0.30)	2.05 (0.30)	2.05 (0.30)	2.05 (0.30)
@ 2000°F (1093°C)	2.09 (0.30)	-	2.34 (0.34)	2.34 (0.34)	2.34 (0.34)
Mean temperature, 6pcf					
@ 500°F (260°C)	0.47 (0.07)	0.47 (0.07)	0.47 (0.07)	0.47 (0.07)	0.47 (0.07)
@ 1000°F (538°C)	1.01 (0.15)	1.05 (0.15)	1.06 (0.15)	1.06 (0.15)	1.06 (0.15)
@ 1500°F (816°C)	1.73 (0.25)	1.90 (0.27)	1.90 (0.27)	1.90 (0.27)	1.90 (0.27)
@ 1800°F (982°C)	2.19 (0.32)	2.45 (0.35)	2.45 (0.35)	2.45 (0.35)	2.45 (0.35)
@ 2000°F (1093°C)	-	2.83 (0.41)	2.83 (0.41)	2.83 (0.41)	2.83 (0.41)
Mean temperature, 4 pcf					
@ 500°F (260°C)	0.54 (0.08)	0.54 (0.08)	0.54 (0.08)	0.54 (0.08)	0.54 (0.08)
@ 1000°F (538°C)	1.29 (0.19)	1.34 (0.19)	1.34 (0.19)	1.34 (0.19)	1.34 (0.19)
@ 1500°F (816°C)	2.30 (0.33)	2.48 (0.36)	2.48 (0.36)	2.48 (0.36)	2.48 (0.36)
@ 1800°F (982°C)	2.96 (0.43)	3.23 (0.47)	3.23 (0.47)	3.23 (0.47)	3.23 (0.47)
@ 2000°F (1093°C)	-	-	3.74 (0.54)	3.74 (0.54)	3.74 (0.54)

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.