



Thermal Ceramics high temperature vacuum formed boards are rigid and self-supporting. These products offer excellent thermal conductivity, strength and thermal stability at elevated temperatures and have the capability to withstand chemical attack. Exceptions include hydrofluoric acid, phosphoric acid and strong alkalis. A small amount of combustible binder will burn out at approximately 300°F. Additional hardness and strength can be reached with post treatments. Board capabilities are 48 x 36 x ¼ to 3" (120 x 90 x 0.625 to 7.5cm).

**Kaowool HT** is a low cost high temperature product designed for use up to 2600°F (1427°C). Kaowool HT is a rigid self-supporting product produced in a variety of sizes and thicknesses.

**Kaowool 2600** using high alumina fibers along with Kaowool ceramic fibers is an excellent dimensional stable product at 2600°F (1427°C) where minimal shrinkages are very important.

**Kaowool 2800M** is processed using a blend of high purity ceramic fibers and high temperature mulite fibers. This combination produces a product with improved high temperature stability. Kaowool exhibits excellent shrinkage and mechanical strengths after firing for temperatures up to 2800°F (1538°C).

**Kaowool 3000M** is processed using a blend of high purity ceramic fibers and high temperature mulite fibers and alumina mix. Kaowool 3000M has excellent temperature stability, shrinkage and mechanical strengths after firing for temperatures up to 2900°F (1593°C).

**Kaowool 3000** is processed using a blend of high purity ceramic fibers, high temperature alumina fibers and binders. Kaowool 3000 has a continuous use limit up to 2800°F (1538°C).

**Kaowool 17C** is processed using a blend of high purity ceramic fibers, high temperature alumina fibers and binders. This combination produces a product with improved high tem-

perature stability. Kaowool 17C exhibits excellent shrinkage and mechanical strengths after firing for temperatures up to 2900°F (1593°C).

#### Applications

- Appliance and heat processing
- Backup insulation to dense refractories
- Bullnose tiles
- Burner blocks
- Combustion chamber construction
- Expansion joint material
- Flue and chimney linings
- Furnace components
- Furnace door linings
- Furnace, kiln, and oven hot face linings
- Glass regenerator insulation
- Heat shields
- High temperature gaskets and seals
- Peep door frames and plugs
- Shapes in ammonia reformers

#### Chemical Properties

Caution should be exercised during initial heating. Adequate ventilation should be provided to avoid potential flash ignition of the binder out-gassing or avoid air entry while at elevated temperatures.

# Kaowool® High Temperature Boards

## Product Information

Physical Properties	Kaowool HT	Kaowool 2600	Kaowool 2800M	Kaowool 3000M	Kaowool 3000	Kaowool 17C
Color	yellow	blue	yellow/green	gold	pink	orange
Nominal density, pcf (kg/m <sup>3</sup> )	21 (336)	15 (240)	12 (192)	14 (224)	13 (208)	14 (224)
Maximum temperature rating, °F (°C)	2600 (1427)	2600 (1427)	3000 (1649)	3100 (1704)	3000 (1649)	3100 (1704)
Continuous use limit, up to °F (°C)	2600 (1427)	2600 (1427)	2800 (1538)	2900 (1593)	2800 (1538)	2900 (1593)
Melting point °F (°C)	3200 (1760)	3200 (1760)	3200 (1760)	3300 (1816)	3300 (1816)	3300 (1816)
Modulus of rupture, psi (Mpa)	160 (1.10)	110 (0.75)	115 (0.79)	125 (0.86)	70 (0.48)	70 (0.48)
Compressive strength, psi (Mpa)						
@ 5% deformation	60 (0.43)	30 (0.21)	25 (0.17)	30 (0.21)	20 (0.14)	20 (0.14)
@ 10% deformation	90 (0.62)	40 (0.28)	30 (0.21)	35 (0.24)	25 (0.17)	25 (0.17)
Linear shrinkage, %						
24 hrs @ 1500°F (815°C)	0.5	0.3	0.3	0.3	0.3	1.2
24 hrs @ 1800°F (982°C)	1.6	0.3	0.3	0.1	0.1	0.4
24 hrs @ 2000°F (1093°C)	2.3	0.6	0.3	0.1	0.0	0.3
24 hrs @ 2200°F (1204°C)	–	0.7	–	–	0.4	0.4
24 hrs @ 2400°F (1371°C)	–	0.8	0.8	0.5	0.5	0.5
24 hrs @ 2500°F (1371°C)	–	1.0	–	–	–	–
24 hrs @ 2600°F (1371°C)	3.5	1.4	0.9	0.4	0.6	0.0
24 hrs @ 2800°F (1371°C)	–	–	0.6	0.2	+1.5	+0.3
24 hrs @ 2900°F (1371°C)	–	–	–	0.9	–	+0.5

### Chemical Analysis

Alumina, Al <sub>2</sub> O <sub>3</sub>	33	51	53	71	66	81
Silica, SiO <sub>2</sub>	53	49	47	29	34	19
Zirconia, ZrO <sub>2</sub>	13	–	–	–	–	–
Other	1	<1	<1	<1	<1	<1
Loss of Ignition	7-9	7-9	7-9	7-9	7-9	7-9
Organic Material	6 - 8	6-8	6-8	6-8	6-8	6-8

### Thermal Conductivity

BTU•in/hrs•ft<sup>2</sup>•°F (w/m•k) (ASTM C 201)

Mean temperature

@ 500°F (260°C)	0.47 (0.07)	0.45 (0.06)	0.43 (0.06)	0.48 (0.07)	0.47 (0.07)	0.47 (0.07)
@ 1000°F (538°C)	0.68 (0.10)	0.67 (0.09)	0.68 (0.10)	0.66 (0.09)	0.67 (0.09)	0.61 (0.09)
@ 1500°F (816°C)	1.01 (0.15)	1.01 (0.15)	1.06 (0.15)	0.97 (0.14)	0.98 (0.14)	0.88 (0.13)
@ 2000°F (1093°C)	–	1.49 (0.21)	1.62 (0.23)	1.42 (0.20)	1.41 (0.20)	1.31 (0.19)
@ 2500°F (1371°C)	–	–	2.40 (0.35)	2.06 (0.30)	1.92 (0.28)	1.95 (0.28)

Data are average results of tests conducted under standard procedures and are subject to variation.

Data contained in this brochure are intended as a guide only. For specifications and estimating purposes, contact your nearest Thermal Ceramics representative.

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