

FUSED SILICA
HOT PRESS PLATENS
CASTABLE CERAMICS
FIRED SHAPES
AEROSPACE TOOLING

Foundry Service & Supplies, Inc.

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HI-TEMP INSULATIONS
CALCIUM SILICATE BOARDS
MILLBOARD AND BLANKET
PAPERS AND CEMENTS
CUTTING AND FABRICATING

 **Thermal Ceramics**
INNOVATIVE SOLUTIONS FOR HEAT-INTENSIVE PROBLEMS

**KAOWOOL[®] LOW
TEMPERATURE**

KAOWOOL VACUUM FORMED

KAOWOOL LOW TEMPERATURE VACUUM FORMED PRODUCTS

Thermal Ceramics vacuum formed products are a rigid self-supporting fiber insulation manufactured from a slurry consisting of Kaowool ceramic fibers and binders. Thermal Ceramics products offer excellent thermal conductivity, strength and thermal stability at elevated temperatures. Thermal Ceramics products 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 achieved with post treatments. Board capabilities are 48 x 36 x 1/4 to 3" with the exception of PM Board which can be made 1/8" thick.

Kaowool PM is manufactured to close tolerances with an excellent surface finish. Kaowool PM has a good thermal conductivity and can easily be die-cut.

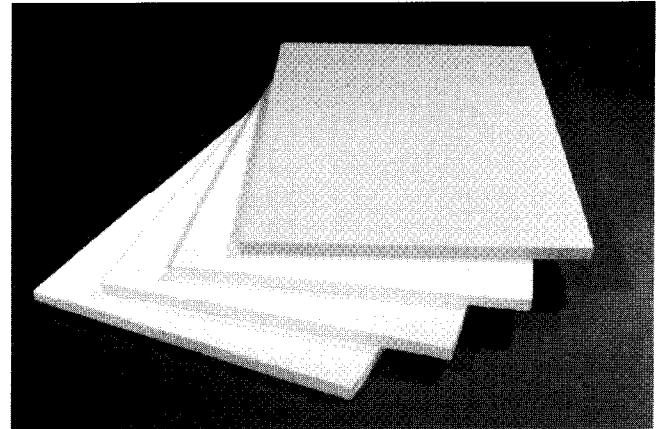
Kaowool M is a low cost general duty insulation product available in a variety of sizes and thicknesses. Kaowool M is a rigid self-supporting product that can be produced in different strength ranges to fit individual applications.

Kaowool S is a higher strength product with good non-ferrous molten metal resistance.

Kaowool HD is a low cost high strength product recommended for tough mechanical stress areas. Also, very good for back-up behind dense refractories.

Kaowool HS is a high strength product recommended for tough mechanical stress areas. Also, very good for back-up behind dense refractories.

Kaowool HS45 is designed for a temperature rating of 2400°F with very high compressive and flexural strengths. Each board is machined to a thickness tolerance +1/4- 1/16". Kaowool HS45 is non-wetting to molten aluminum metal and exhibits good resistance to chemical attack.



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 temperature.

Typical Applications

- Appliance and heat processing insulation
- Back up in steel ladle and torpedo cars
- Backup insulation to dense refractories
- Combustion chamber construction
- Expansion joint material
- Flue and chimney linings
- Furnace, kiln, and oven hot face linings
- General molten metal contact
- Glass coffin walls
- Glass regenerator insulation
- Glass tank side, end wall and port neck
- Glass tank wall and port neck insulation
- Heat shields
- High temperature gaskets and seals
- High mechanical stress areas
- Kiln furniture
- Trough linings in contact with aluminum

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Ceramic Fiber • Insulating Firebrick • Refractory Castables and Monolithics • Mortars • Firebrick • Fired Refractory Shapes

KAOWOOL VACUUM FORMED

	Kaowool PM	Kaowool M	Kaowool S	Kaowool HD	Kaowool HS	Kaowool HS-45
Physical Properties						
Color.....	white	beige	brown	beige	beige	white
Nominal density, pcf.....	15	17	20	26	28	42
Maximum temperature rating, °F.....	2300	2300	2300	2400	2300	2400
Continuous use limit, °F.....	2100	2000	2000	2300	2200	2400
Melting point, °F.....	3200	3200	3200	3200	3200	2800
Modulus of rupture, psi.....	175-250	100-130	150-180	150 - 175	230-260	450-550
Compressive strength, psi						
@ 5% deformation.....	15-25	20-30	30-50	50 -70	60-80	200-250
@ 10% deformation.....	25-40	30-40	50-60	70 - 90	80-100	250-300
Linear shrinkage, %						
24 hrs @ 1500°F.....	0.2	1.2	1.0	0.1	0.8	0.5
24 hrs @ 1800°F.....	1.9	2.2	2.0	1.4	1.9	0.7
24 hrs @ 2000°F.....	2.4	2.8	2.3	2.5	2.1	0.4
24 hrs @ 2200°F.....	3.4	-	-	2.8	0.2	0.6
24 hrs @ 2400°F.....	-	-	-	-	+0.3	+0.8
Chemical Analysis						
Alumina, Al ₂ O ₃	44	42	46	41	18	55
Silica, SiO ₂	56	56	53	53	81	35
Calcium Oxide, CaO.....	-	-	-	5	-	8
Other.....	<1	2	-	-	-	2
Loss of Ignition.....	4-7	4-7	5-8	5-8	5-8	5-8
Organic Material.....	3-6	3-6	4-7	4-7	4-7	4-7
Thermal Conductivity, BTU•in/hrs•ft²•°F						
Mean temperature						
@ 500°F.....	0.40	0.47	0.59	0.57	0.68	1.02
@ 1000°F.....	0.59	0.71	0.80	0.80	0.84	0.96
@ 1500°F.....	0.87	1.04	1.12	1.13	1.12	1.16
@ 2000°F.....	1.27	1.52	1.58	1.60	1.58	1.72

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.