Superwool® Inorganic Boards and Shapes

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Features

- Rigid, self-supporting fiber insulation
- Available in a variety of sizes and thicknesses
- Based on patented technology
- Reduces thickness of backup insulation up to 50% when replacing insulating firebrick or castables
- Low thermal conductivity and heat storage
- Non-wetting to molten aluminum

Product Description

Superwool inorganic boards are processed from a slurry consisting of Superwool bulk fiber and inorganic binders. Boards up to 36” wide may be ordered with both surfaces machined smooth to a close thickness tolerance.

Superwool is a low bio-persistent fiber, manufactured from pure raw materials and processed to offer excellent performance in high-temperature applications. Superwool offers an alternative to traditional solutions due to its high refractoriness and excellent non-wetting characteristics with molten aluminum.

Superwool provides stability and resistance to chemical attack. Exceptions include hydrofluoric acid, phosphoric acid and strong alkalis (e.g. NaOH, KOH). Superwool is unaffected by incidental spills of oil or water. Thermal and physical properties are restored after drying.

Superwool is ideally suited to individual applications and is available in a wide range of thicknesses and densities. The maximum continuous use temperature depends on the application. Refer to your local Thermal Ceramics representative for advice.

Applications

- Molten aluminum contact
- Furnace, kiln, and oven hot face linings
- Flue and chimney linings
- Insulation as backup to:
  - firebrick
  - insulating firebrick
  - refractory castables
  - rammed shapes
- Appliance and heat processing insulation

Type

Alkaline Earth Silicate (AES) Wool CAS number: 329211-92-9

Superwool® Inorganic Boards and Shapes

Boards and Shapes - Vacuum Formed Product Name	I-Superwool Plus	I-Superwool HT	I-Superwool HT H
Fiber Class	AES	AES	AES
Fiber Grade	Inorganic	Inorganic	Inorganic
Physical Properties			
Color	white	white	beige
Continuous Use Temperature, °F	1832	2150	2150
Continuous Use Temperature, °C	1000	1177	1177
Classification Temperature, °F	2012	2372	2372
Classification Temperature, °C	1100	1275	1275
Melting Temperature, °F	2372	-	-
Melting Temperature, °C	1275	-	-
Density, pcf	15-17	18	46
Denisty, kg/m^3	240-270	293	742
Modulus of Rupture, MOR, psi, fired at 1800°F	-	38	415
Modulus of Rupture, MOR, MPa, fired at 982°C	-	0.26	2.86
Compressive strength @ 5% deformation, psi	-	7	60
Compressive strength @ 5% deformation, Mpa	-	0.05	0.41
Compressive strength @ 10% deformation, psi	-	12	97
Compressive strength @ 10% deformation, Mpa	-	0.08	0.67
Permanent Linear Shrinkage, %, 24 hours			
1500°F (816°C)	2.2	0.51	1
1800°F (982°C)	2.3	0.93	2.5
2000°F (1093°C)	-	1.5	2.7
2200°F (1204°C)	-	1.7	2.8
Chemical Analysis, % weight basis after firing			
Alumina, Al_2O_3	trace	trace	trace
Silica, SiO_2	70	82	94
Calcium oxide + Magnesium oxide, CaO + MgO	24	16	5
Other	<1	<1	<1
Loss of Ignition, LOI	1.3	1.8	3.1
Thermal Conductivity, BTU•in/hr•ft^2, per ASTM C201			
500°F	0.43	-	-
1000°F	0.66	-	-
1500°F	1.01	-	-
Thermal Conductivity, W/m•K, per ASTM C201			
260°C	0.43	-	-
538°C	0.1	-	-
816°C	0.15	-	-