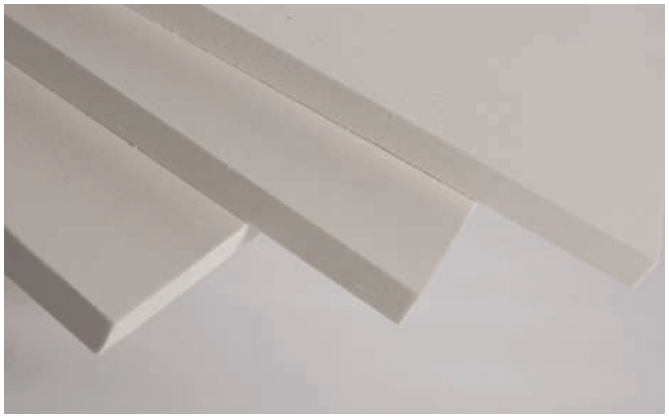
Superwool® Vacuum Formed Products



Product Description

Superwool boards are processed from a slurry consisting of Superwool bulk fiber and organic binders. Each board has cut edges for controlled squareness and trueness. Boards up to 36" wide may be ordered with both surfaces machined smooth to a close thickness tolerance.

Superwool is a low biopersistent 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 alkalies (i.e. 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 advise.

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

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

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

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Physical Properties

	Superwool 607	Superwool 607 Minimox	Superwool 607 PM	Superwool I-607	Superwool Alfibond 607	Superwool 607 HT
Color	white	white	beige	white	white	white
Continuous use limit, °F (°C)	1832 (1000)	1832 (1000)	1832 (1000)	1832 (1000)	1832 (1000)	2150 (1177)
Maximum use limit,°F (°C)	2012 (1100)	2012 (1100)	2012 (1100)	2012 (1100)	2012 (1100)	2372 (1275)
Melting point, °F (°C)	2327 (1275)	2327 (1275)	2327 (1275)	2327 (1275)	2327 (1275)	-
Density, pcf	20 - 22	14 - 16	15 - 17	15 - 17	23 - 27	20 - 22
(kg/m^3)	(320 - 350)	(224 - 256)	(240 - 270)	(240 - 270)	(368 - 432)	(320 - 352)
Modulus of rupture, psi	300	300	200 - 250	-	-	200 - 250
(MPa)	(2)	(2)	(1.4 - 1.7)	-	-	(1.4 - 1.7)
Compressive strength, psi (Mpa)						
@ 5% deformation	55 (0.38)	55 (0.38)	15 - 25 (0.10 - 0.17)	-	-	60 (0.41)
@ 10% deformation	60 (0.41)	60 (0.41)	23 - 40 (0.16 - 0.28)	-	-	70 (0.48)
Permanent Linear change, %						
24 hrs @ 1500°F (816°C)	2.0	2.0	-	2.2	-	0.25
24 hrs @ 1800°F (982°C)	2.5	2.5	1.0	2.3	-	0.25

Chemical Analysis, %

Silica, SiO_2	67	69	67	70	50	70 - 80
Alumina, Al_2O_3	trace	trace	trace	trace	29	-
Calcium Oxide + Magnesium Oxide, CaO + MgO	27	26	27	24	17	18 - 25
Other	1	1	1	<1	<1	<3
Loss of ignition	4 - 7	4 - 7	2 - 4	1.3	6 - 9	3 - 6
Organic material	3 - 6	<3	-	trace	trace	-

Thermal Conductivity, Btu•in/hr•ft^2•°F (w/m•k), ASTM 201

Mean temperature						
@ 500°F (260°C)	0.39 (0.06)	0.39 (0.06)	0.40 (0.06)	0.43 (0.06)	0.60 (0.08)	0.40
@ 1000°F (538°C)	0.65 (0.09)	0.65 (0.09)	0.62 (0.09)	0.66 (0.10)	0.86 (0.12)	0.62
@ 1500°F (816°C)	1.04 (0.15)	1.04 (0.15)	0.99 (0.14)	1.01 (0.15)	1.23 (0.18)	1.04
@ 1800°F (982°C)	1.35 (0.19)	1.35 (0.19)	-	-	-	-
@ 2000°F (1093°C)	-	-	-	-	1.77 (0.25)	1.51

Standard Sizes

Thickness range, in	½ - 3	½ - 3	⅛ - ¼	½ - 6	½ - 6	½ - 3
(mm)	(12.5 - 75)	(12.5 - 75)	(13.2 - 6.4)	(12.5 - 150)	(12.5 - 150)	(12.5 - 75)
Standard board sizes, in (mm)	18 x 24 (450 x 600), 36 x 24 (900 x 600), 18 x 48 (450 x 1200), 36 x 48 (900 x 1200)					

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.