

Silplate® Board

DESCRIPTION

Silplate® Board is a structural insulation product that is capable of withstanding high temperatures under high compressive loads, whilst still maintaining low thermal conductivity. Made from high-performance Alkegen fibers and carefully selected binders, the Silplate Board is particularly suited for backup insulation in transportation and liquid metal treatment equipment.

When used in molten metal transport equipment the board physical properties remain stable, even under the highest operating temperatures, leading to improved stability to the whole lining system and mitigation of potential joint attacks to the working lining bricks. The Silplate lining results in a lower shell temperature, increased capacity volume, higher operational safety and delivers significant energy savings. Silplate Boards provide excellent chemical stability, resisting the attack of most acids and corrosive agents.

Silplate Board has uniform density throughout its thickness, and a high modulus of rupture. They are supplied in standard dimensions and are fast and easy to install.



GENERAL CHARACTERISTICS

- High temperature and dimensional stability
- Low thermal conductivity
- Excellent flexural and hot compressive strength
- Resistance to thermal shock
- Superior resistance to molten metal attack

TYPICAL APPLICATIONS

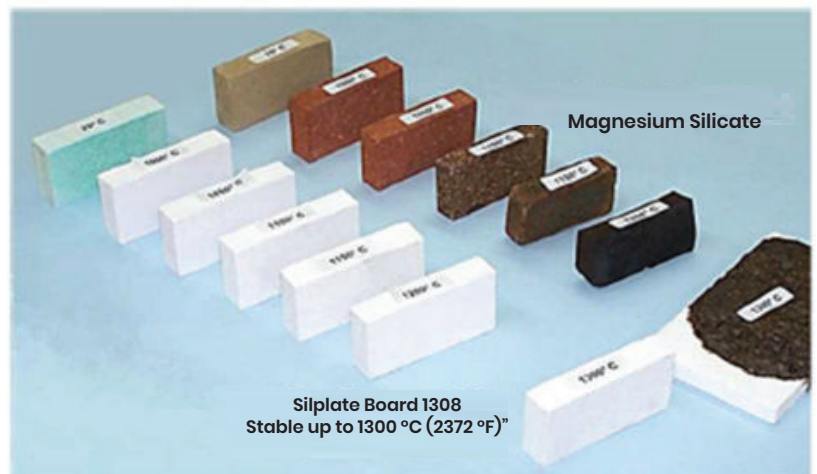
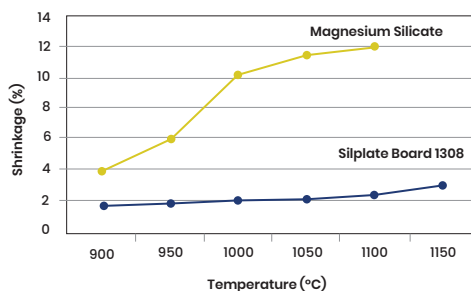
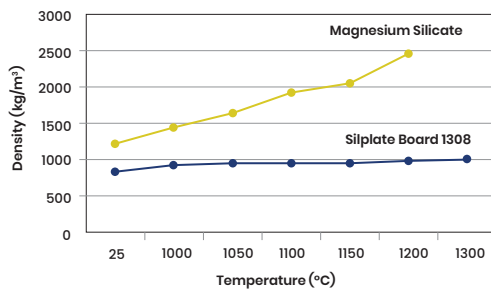
Equipment	1108	1208 HS	1308	1108 SI	1212 S
Steel and Pig Iron Ladle	✓	✓	✓	✓	✓
Tundish	✓	✓		✓	✓
Torpedo Car	✓	✓	✓	✓	✓
Converter/BOF			✓		
Electric Arc Furnace	✓	✓	✓	✓	✓

Information on other applications is available upon request. Any new and/or special use of these products, whether in an application listed in our literature, is advised to be submitted to our Alkegen Application Engineering department for review and guidance on material selection.

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TYPICAL PRODUCT PARAMETERS

Silplate Board	1108	1208 HS	1308	1108 SI	1212 S
Physical Properties					
Colour	White	Cream	Green	Cream	White
Max Operating Temperature, °C (°F)	1100 (2012)	1200 (2192)	1340 (2444)	1100 (2012)	1200 (2192)
Product Density, kg/m ³ (lb/ft ³)	750 (47)	950 (59)	850 (53)	950 (59)	850 (53)
Flexural Strength, MPa (psi)	2.4 (348)	2.4 (348)	2.4 (348)	2.4 (348)	2.4 (348)
Compressive Strength – Cold, MPa (psi)	8.0 (1160)	8.0 (1160)	8.0 (1160)	8.0 (1160)	10 (1450)
Compressive Strength – Hot at 500 °C (932 °F) (R100–Lucideon Test Method), MPa (psi)	28.9 (4192)	8.0 (1160)	32.1 (4656)	8.0 (1160)	12 (1740)
Loss on ignition (wt.%)	< 0.5	< 12	< 0.5	< 12	< 0.5
Thermal Properties					
Mean Temperature	Thermal Conductivity, W/m-K (BTU in/hr ft ² °F)				
400 °C (752 °F)	0.156 (1.082)	0.180 (1.249)	0.161 (1.117)	0.210 (1.457)	0.155 (1.075)
600 °C (1112 °F)	0.180 (1.249)	0.195 (1.353)	0.182 (1.263)	0.260 (1.804)	0.180 (1.249)
800 °C (1472 °F)	0.212 (1.471)	0.235 (1.630)	0.221 (1.533)	0.310 (2.151)	0.207 (1.436)
Permanent Linear Shrinkage (%) 24 Hour Soak					
1100 °C (2012 °F)	< 2			< 2	
1200 °C (2192 °F)		< 2			< 2
1340 °C (2444 °F)			< 2		



Product Information Sheet



Silplate® Board

AVAILABILITY

Standard Board Dimensions

Product	Thickness, mm (inch)									Width, mm (inch)	Length, mm (inch)
	8 (0.32)	10 (0.39)	12 (0.47)	13 (0.51)	16 (0.63)	20 (0.79)	25 (0.98)	38 (1.50)	50 (1.97)		
1108, 1308, 1212 S	✓	✓	✓		✓	✓	✓	✓	✓	101 (4)	416 (16)
1208 HS (US plant)		✓		✓	✓	✓	✓				
1208 HS (Indian plant)		✓	✓		✓	✓	✓	✓	✓		
1108 SI	✓	✓									

For non-standard dimensions such as tapered board tiles 101/91 x 416mm, please consult your Alkegen representative.

SILPLATE BOARD PRODUCT RANGE

Silplate Boards were developed to offer class-leading structural boards that offer an optimised combination of low thermal conductivity, high compressive strength and high temperature stability, all of which are maintained over time and through use over multiple process cycles.

Product grades 1108 SI and 1212 S are based on Insulfrax fibers. Insulfrax is an AES (Alkaline Earth Silicate) wool that is exonerated from classification by virtue of Note Q, as detailed under regulation (EC) No. 1272/2008 (CLP) and as such is considered to be a low biopersistent (LBP) substance.

HANDLING INFORMATION

A Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on handling precautions and emergency procedures. This must be consulted and fully understood before handling, storage or use.

The following are registered trademarks of Alkegen: Silplate®, Insulfrax®.

The test data shown are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes. Product Information Sheets are periodically updated by Alkegen. Before relying on any data or other information in this Product Information Sheet, you should confirm that it is still current and has not been superseded. A Product Information Sheet that has been superseded may contain incorrect, obsolete and/or irrelevant data and other information.

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