

# Snow Shoe Refractories, LLC

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**SPARTAN® 99**

## Product Data

### Scope:

A high purity alumina refractory exhibiting superior resistance to creep over extended periods. It will find application in induction furnaces, hazardous waste incinerators, and in areas requiring good thermal shock resistance and low silica content.

**PCE:** 38+

### Chemical Analysis (Wt.% - Calcined Basis)

SiO <sub>2</sub>	0.9
Al <sub>2</sub> O <sub>3</sub>	98.5
TiO <sub>2</sub>	0.0
Fe <sub>2</sub> O <sub>3</sub>	0.0
CaO	0.1
MgO	0.1
Alkalies	0.4

### Physical Properties

	<u>English Units</u>	<u>SI Units</u>
<b>Bulk Density</b>	(lbs/ft <sup>3</sup> ) 192 - 202	(kg/m <sup>3</sup> ) 3070 - 3230
<b>Apparent Porosity (%)</b>		14 - 18
<b>Modulus of Rupture</b>	(psi)	(MPa)
at 68°F (20°C)	2,900 - 4,500	20.0 - 31.1
at 1500°F (815°C)	2,600 - 4,600	18.0 - 31.8
at 2500°F (1370°C)	300 - 550	2.1 - 3.8
<b>Crushing Strength</b>	(psi)	(MPa)
at 68°F (20°C)	7,000 - 12,000	48.4 - 82.9
<b>Linear Change (%)</b>		
after 2910°F (1600°C) reheat		+/- 0.0 to + 0.15
<b>Hot Load Deformation (%)</b>		
25 psi load at 3000°F (1650°C)		-0.8
<b>Loss of Strength (%)</b>		
5 cycles to 2200°F (1200°C)		20 - 45

The data given above are average results of our common sized products and are subject to variation. One standard deviation is given when adequate data is available. These results should not be used for specification purposes.

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