



Properties & Performance

Characteristics and Properties

Composition of Insulation

Al ₂ O ₃ (Alumina).....	38%
SiO ₂ (Silica).....	62%
Organics	0%

Bond.....Silica

Bulk Density

gm/cm³, (lb/cu. ft.) 0.28 (18)

Thermal Conductivity

W/m ² K (Btu/hr ² F in.)	
400°C (752°F).....	0.10 (0.8)
1100°C (2012°F)	0.22 (1.5)

Flexural Strength MPa (Psi)

As received	0.17 (25)
After 24 hrs. at 1000°C.....	0.354 (51.34)

Compressive Strength MPa (Psi)

10% Deflection 0.054 (7.83)

Stability—Linear Shrinkage

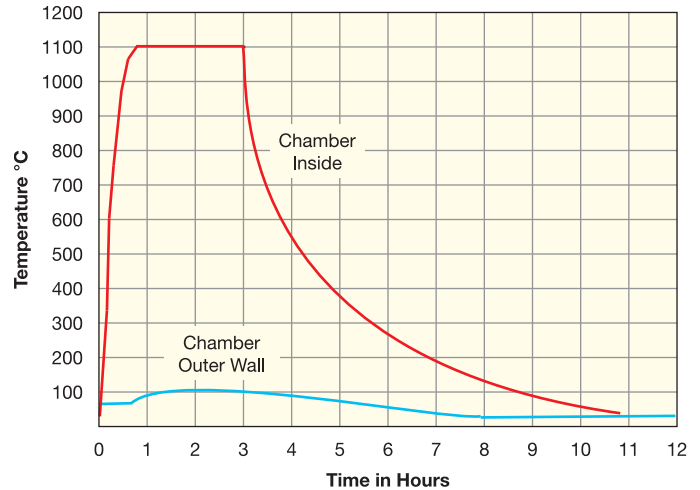
24 hrs. at temperature	
800°C (1472°F).....	0.3%
1000°C (1832°F)	1.8%
1200°C (2192°F)	2.5%

Performance Characteristics

Performance of a Typical Round Ceramic Fiber Heater

The performance data represented in the chart was obtained by combining a Fiber Insulated Heater with 3" discs of insulation top and bottom. This assembly, which can be representative of many industrial and laboratory heating applications, was cycled with no load. Cool down rates were determined by turning the power off. Assembly was left intact. The “outside wall” temperature was measured on the external surface of the sidewall.

Time vs. Temperature of a Typical Full Round High Temperature Ceramic Fiber Heater
5.5" I.D. x 12" H x 11" O.D.



Performance of a Typical Rectangular Furnace

Test chamber left and right walls fabricated from Standard Fiber Insulated Heaters (24" x 36" x 5") and insulation boards. This size chamber, approximately 10 cubic feet, was chosen to best reflect performance characteristics of flat panel heaters as

used in a broad section of industrial applications. Chamber walls, roof and floor are 5" thick insulation. Cool down rate was plotted with data generated after element power was turned off. Chamber door remained closed. Chamber contained no load.

Time vs. Temperature of an (approx.) 10 cubic foot furnace chamber incorporating Tempco's Ceramic Fiber Heaters.

