

SSiC

Sintered Silicon Carbide

SCProbond™ SSiC is sintered silicon carbide produced from extremely fine, sub-micron, silicon carbide powder and non-oxide sintering additives. It is processed using forming methods typical for many other ceramics, then sintered at 2,200°C in an inert gas atmosphere. Sintered silicon carbide displays outstanding performance among high temperature ceramics complemented by a multitude of severe-application advantages. Users can expect excellent corrosion resistance, thermal shock resistance, thermal conductivity, good resistance to wear in abrasive and sliding environments, and a hardness second only to diamond, all while maintaining a density approximately the same as aluminum. SCProbond™ SSiC is ideal for extremely demanding applications and temperatures up to 1600°C, including slip ring seals in chemical pumps, bearing bushes, high temperature burner nozzles, or as kiln furniture for exceedingly high application temperatures.

Physical Properties:

Property	Value
Density	>3.08 g/cc (192.28 lb/ft ³)
Application Temperature	1600°C (2912°F)
Open Porosity	< 0.1 %
Bending Strength	480-600 MPa (69,500 - 87,000psi)
Broken Strength	1950-2600 MPa (282,000 – 377,000psi)
Modulus of Elasticity	420-450 GPa (60x10 ⁶ - 65x10 ⁶ psi)
Thermal Conductivity	74 W/m·K
Coefficient of Thermal Expansion	4.5 x10 ⁻⁶ /°C (2.5 x10 ⁻⁶ /°F)
Rigidity	2150-2450

Typical Applications:

- Nozzles
- Cyclones
- Slip Ring Seals
- Spigots
- Impeller Rings
- Apexes
- Valves
- Suction Pumps
- Dust Collectors
- Cones
- Chutes
- Autoclave Parts
- Vessel and Pipe Linings
- Bearing Seals