SCProbond™ Thermal Processing Solutions

Silicon Carbide Applications in Industrial Process Heating

Industrial thermal processing applications are among the most demanding environments, requiring materials that can withstand extreme temperatures, rapid thermal cycling, and chemically aggressive conditions. Components must deliver high temperature capability, thermal shock resistance, and long-term durability.

Silicon carbide is one of the few material systems capable of meeting these demands. SCProbond™ Silicon Carbide is an engineered ceramic that provides high strength (~10,000 psi MOR), near-diamond hardness, and a maximum sustained service temperature of approximately 1525°C, along with excellent resistance to wear, chemical attack, and thermal shock.

SCP supports a range of silicon carbide material options—including nitride bonded, reaction bonded, and sintered—allowing material selection to be aligned with specific performance requirements such as abrasion resistance, density, or impact conditions.

Our near-net shape manufacturing process enables complex, customized geometries to fit specific equipment constraints, helping increase throughput, extend component life, and reduce maintenance.

At SCP, our team strives to create efficient, cost-effective, monolithic SiC solutions customized with the spatial efficiency and thermal resistance properties required of the following typical industrial process heating components:

- Crucibles
- Saggars
- Setters
- Pusher Plates
- Burners
- Bricks
- Tiles
- Support Bars / Posts / Beams
- Immersion Heater Tubes
- Heating Element Holders
- Thermocouple Protection Tubes
- Reactor Sleeves
- Sight Tubes
- Muffles

SCP Silicon Carbide Products

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