

SCProbond™ TN

Thick Nitride Bonded Silicon Carbide

Description: SCProbond™ TN is characterized by excellent wear properties in severe industrial environments. This superior grade of nitride bonded silicon carbide exhibits deep nitriding in comparison to other grades of NBSC making it the perfect choice when thick cross sections are required. It exhibits good resistance to high temperatures even in demanding abrasive applications and has better impact resistance than most silicon carbide grades. Due to its unique properties and ability to be cast into final shape, it is recommended for use in areas where sustained predictable wear is desired such as power plants and in mining for bulk material handling and protective wear linings.

Ordering Information: Part Number: SCProbond™ TN

Product Advantages: Up to 4" Thick Nitride layer for predictable wear performance
Excellent thermal shock resistance — TN gains strength after thermal cycling
Corrosion resistant
Near net shape in casting reduces overall cost

Property	Unit	Value
Density	g/cc	2.60-2.72
	lb/ft ³	162-169
Apparent Porosity	%	13-16
C704 Abrasion Loss (volumetric)	cc	1.7-2.1
C1421 Fracture Toughness	MPa*m ^{1/2}	4.22
Modulus of Rupture	MPa	67
3 Point Loading	psi	9700
Maximum safe operating temperature (Dependent upon atmosphere)	°C	1525
	°F	2777
C1171 Thermal Cycling	Psi	10% Gain after thermal cycling
Thermal Conductivity	W/m°K	18
Coefficient of Thermal Expansion	@ 1200°C	x10-6/°C 4.9
	@ 1200°F	x10-6/°F 2.7



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Typical Applications

Ash handling sweeps	Impellers
Centrifuge components	Liners
Chutes	Molten metal pump protective sleeves
Coal handling components	Pump components
Coal preparation applications	Reactor liners
Cyclones	Spray nozzles
Frac sand sweeps, elbows,	Transitions
Valve body liners	Wear blocks
Refractory	Complex custom shapes

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