

SCProbond™ – Ceramic Liners

Green Eco – exclusive representative of Silicon Carbide Products, Inc.

Wear Resistant Ceramics:

SCProbond™ N (Nitride Bonded Silicon Carbide) is our “workhorse” grade SiC material, exhibiting superior abrasion resistance over most silicon carbide grades and extending component lifetimes by 3 to over 10 times. This product offers extreme resistance to sliding abrasion, temperatures up to 1525°C, and flow of corrosive material. SCProbond™ N is ideal for replacing tedious tiling configurations with a seamless monolithic solution and is widely used in power generation, mining, bulk material handling, and for non-ferrous molten metal contact.

SCProbond™ TN (Nitride Bonded Silicon Carbide) is our second form of NBSiC developed specifically to address the disruption and losses due to unscheduled downtime. The “TN” refers to “Thick Nitrided” or “Through Nitrided” as the depth of nitrogen penetration for this grade exceeds that of a typical NBSiC product.

What is often seen in fired nitride bonded silicon carbide components thicker than ~3/4” is a less reacted center. This is because the nitrogen introduced at the firing stage will typically only penetrate so far into a cross section. SCProbond™ TN was developed by SCP specifically to correct this issue and has produced cross sections of 4” thickness without this unreacted center. This makes for an equalized wear-rate through a thick part. This grade also offers improved thermal shock resistance and strength gain with thermal cycling.

SCProbond™ R (Reaction Bonded Silicon Carbide) is formulated for use in extreme conditions, including sliding abrasion, corrosive environments, high service temperatures up to 1450°C, and is capable of conducting electricity. It is differentiated from a nitride bonded silicon carbide product by its lower porosity. This material has a more dense composition making it more suitable for sealing applications.

SCProbond™ SSiC (Sintered Silicon Carbide) is produced from extremely fine, sub-micron, silicon carbide powder and non-oxide sintering additives. This material withstands temperatures up to 1600°C and 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. SSiC maintains a density approximately the same as aluminum and is ideal for extremely demanding applications, including slip ring seals in chemical pumps, bearing bushes, high temperature burner nozzles, or as kiln furniture for exceedingly high application temperatures.