



Engineering Better Material Solutions

-PRODUCT SPECIFICATION-

AluMax™ Coating

Dense, strongly adherent and amorphous alumina coating applied using reactive DC pulsed magnetron sputtering is ideal for protecting metal and alloy components against high temperature oxidation. Because of its amorphous nature from room temperature to above 1000°C and microstructural stability at elevated temperatures, the coating is suitable for high temperature applications such as bond coat for thermal barrier coatings (TBC) system for the protection of hot gas components and also for semiconductor equipments.

Property	Alumina (Al ₂ O ₃)
Substrate	Steels, Superalloy, MCrAlY bond coat, Most Ceramics and many polymers
Structure	Amorphous
Deposition Temperature, °C	300
Use Temperature, °C	1100
Coating Thickness, μm	1-5
Substrate size	Up to 16"
Substrate geometry	Any shape, even complex ones
Thermal Conductivity W/m-K	30
Refractive index (λ = 0.589 μm)	1.765
Elastic Modulus, GPa	323
Hardness, DPHN	2000
Fracture Toughness, (MPa-m ^{1/2})	3.5
Thermal Expansion Co-efficient (10 ⁻⁶ /K)	7.8
Oxidation/Corrosion Resistance	Oxidation resistant up to 1100°C in air
Applications	<ul style="list-style-type: none"> High temperature oxidation protection of superalloy; TBCs for Hot-gas path components of gas turbines Semiconductor Equipment