

InnerArmor Sliding Wear Coating Specifications

InnerArmor®

InnerArmor Sliding Wear Coating delivers wear resistance in wet, dry, oil, or drilling mud environments for applications such as reciprocating pistons and pumps.

	Hard Coating	Ultra-Hard Coating
Environment	Wet, Dry, Oil, Drilling Mud	Dry, Oil
Hardness	1200 HV / 12 GPa (1000–1500 HV)	2500 HV / 25 GPa (2000–3000HV)
Young's Modulus (E-Modulus)	100 GPa (100–120 GPa)	170 GPa (150–200 GPa)
Sliding Wear Rate (25N load w/ WC sphere surface)	Typical 5.0E-07 mm ³ /Nm (Dry)	Typical 5.0E-07 mm ³ /Nm (Dry)
Coefficient of Friction (25N load with WC sphere surface)	< 0.05 (Dry)	< 0.05 (Dry)
Coating Thickness	1–60 microns	1–30 microns
Color	Grey-Black	Grey-Black
Applicable Substrates	Carbon Steel, Stainless Steel, Al, Inconel® 718, Ti/Ti Alloys, Ni/Ni Alloys	Carbon Steel, Stainless Steel, Al, Inconel® 718, Ti/Ti Alloys, Ni/Ni Alloys
Max Environment Temperature	Up to 752°F (400°C)	Up to 752°F (400°C)
Deposition Rate	Typical > 0.7 micron/minute	Typical > 0.5 micron/minute
Deposition Temperature	248°F–392°F (120°C–200°C) (substrate dependent)	248°F–392°F (120°C–200°C) (substrate dependent)