



PVD Ceramic Coatings using Cathodic Arc Deposition

Surface Engineering Technologies LLC applies metal and ceramic physical vapor deposition (PVD) coatings to tools and parts using a proprietary, low temperature cathodic arc process. Most metals can be used to apply coatings from .2 to 15 microns thick, and with the introduction of nitrogen and carbon containing gases we can produce the following ceramic nitrides and carbo-nitrides.

Coating	Hardness (Hv)	Cof. of Friction	Max Service Temp	Color
TiN	2300	.4	600°C	Gold Yellow
ZrN	2400	.4	600°C	Pale Gold
CrN	2100	.5	700°C	Silver Grey
TiCN	3000	.3	400°C	Blue Grey
CrCN	2300	.2	600°C	Black
TiCrN	2200	.5	700°C	Dark Grey
AlTiN	2900	.5	800°C	Purple
AlCrN	2800	.5	1100°C	Black

Coatings can be applied at temperatures below 150°C and preserves the integrity of the parts dimensions without heat related warping. The process also preserves the heat treatment of aluminum and steels. Substrate materials which can be processed include brass, bronze, titanium, aluminums, steels, high temperature plastics, glass, ceramics and carbides.

Each of these coatings serves a specific need and application, determined by cost, frictional need, operating temp, action of the wearing motion, and maximum required tool life. We can even stack our Molybdenum Disulphide and Metal Ion Implantation processes with these coatings to get incredibly high performing and durable surfaces.

Special Coatings and Pure Metal Coatings can be processed on request.

