

TRU TUNCARB TS

PERFORMANCE RATINGS

Type	Particle Impact Velocity (ft/s)	Relative Adhesive Strength (1 is low)	Cohesive Strength	Oxide Content (%)	Relative Process Cost (1 is low)
Flame Powder	100	3	low	6	3
Flame Wire	600	4	medium	4	3
Wire Arc	800	6	high	0.5-3	1
Conventional Plasma	800	6	high	0.5-3	5
Detonation Gun	3000	8	very high	0.1	10
TRU TUNCARB TS	1200	8	very high	0.2	5
Vacuum Plasma	240-610	9	very high	ppm levels	10

The major attributes of the **TRU TUNCARB TS** coatings vs. other processes is the ability to apply coatings with high melting points to substrate metals without significantly heating (+/-300°F) the substrate. Thus, **TRU TUNCARB TS** coatings can be applied to fully heat-treated, completely machined parts without danger of changing the metallurgical properties or strength of the part and without risk of thermal distortion inherent in high-temp processes.

PROCESS COMPARISONS

	TRU TUNCARB TS	Detonation Gun (D-Gun)	Physical Vapor Deposition (PVD)	Chemical Vapor Deposition (CVD)
Pre-finish	Grit Blast	Grit Blast	Polish	Polish
Substrate Temps.	100 C (+/- 300 °F)	200 °C	400 °C	700 °C
Substrate Materials Limit	None	None	Aluminum, Brass, Nickel, 1018 Steel	Aluminum, Brass, Nickel, 1018 Steel
Process Limitations	Complex Shapes Difficult, Line of Sight Application Only (L-O-S)		Vacuum Batch Process with Size Limits, Limited Thickness	
Masking Capability	Yes	Yes	Yes (Difficult)	Yes (Very Difficult)
Initial Surface Finish	N/A	N/A	800 mic.in.Ra (320 mic.in.Ra preferred)	
Spot Coating	Routine	Routine	Very Difficult	Very Difficult
Thickness Limit	60 mils*	Several mils.	0.5 mils.	0.5 mils.
Stripping Capability	Possible	Possible	Possible	Possible
Post-Finish	Polish (where req'd.)	Polishing	Usually None	Usually None