

TRICOM[®]-704

USC
TECHNOLOGIES
SURFACE ENGINEERING SOLUTIONS

LOW FRICTION WEAR COATING

1-844-679-3591

General Description

TriCom-704 is a Co-P alloy coating having the best combination of low friction and low wear within the Tricom family of coatings. This "green", fully dense electro-plated coating can be heat treated to reduce wear rate. TriCom-704 is a replacement for HVOF and its NLOS issues as well as hard chrome with its environmental and health concerns. Typical applications include helicopter rotor components, aerospace actuator housings, engine bleed air valves or any other unlubricated mating surfaces. The coating has been DOD and Aerospace qualified and approved.

Process

The TriCom coating is applied using an electroplating process similar to chrome but has a deposition rate 4X faster resulting in 1/5 the energy consumption and reducing CO2 emissions by the same. The part to be coated is held in a rack and immersed in an aqueous bath with electric current applied at the contact points. The process is capable of coating net form shapes including external and internal diameters/surfaces. As with other electroplating processes TriCom tends to lightly build up on sharp edges and fade in deep corners. Embrittlement relief may be required for substrates exceeding 40 HRC.

Characteristics

- Low frictional properties and low wear
- Non-Line-of-Sight process applicable to internal diameters as small as 0.200"
- Build-up/Repair coating suitable for grindings
- Corrosion resistance better than chrome
- Bonds to ferrous and non-ferrous metals
- Heat treat for greater hardness to 1000 HVN

PROPERTIES	TriCom-704 Class 1	TriCom-704 Class 2	Hard Chrome	Electroless Ni (high P)
THICKNESS (inch)	0.0003" - 0.030"	0.0003" - 0.030"	0.0001" - 0.020"	0.0001" - 0.002"
HARDNESS (HVN)	650-700	850-1100	900-1000	500-550
CORROSION PROTECTION (ASTM B117)	1,000 hours	-	72 hours	1,000 hours
RECIPROCATING WEAR (mm ³ /Nm)	0.67 x 10 ⁻⁵	0.43 x 10 ⁻⁵	0.4 x 10 ⁻⁵	44 x 10 ⁻⁵
TABER ABRASION WEAR	11.5	-	1.8	22.5
ELONGATION	>3.5%	-	0.1%	3.0-6%
TEMPERATURE RANGE	<315°C	<315°C	<425°C	<315°C
ROTATING BEAM FATIGUE LIFE	No Debit 6x	Debit 0.4-0.6x	Debit 0.4-0.6x	Debit 0.3x

Applications

- Aerospace
- Agriculture
- Oil & Gas
- Mining
- Marine
- Military
- On/Off Highway

