



Performance Coatings since 1940

TriCom Cobalt Coating:

TriCom is a high temperature oxidation resistant electro-composite coating. It consists of a cobalt metal matrix primary phase combined with a chromium carbide Cr_3C_2 particulate secondary phase uniformly dispersed within it. The process



Eseal faces plated with 0.002 thick TriCom

involves electroplating cobalt in the presence of Cr_3C_2 particulates under conditions allowing the hard particulate to co-deposit with the cobalt. The result is a high temperature electroplated composite material. Engineering thickness can be achieved for both original equipment manufacturing (OEM) and overhaul and repair (O&R) applications.

TriCom is a viable alternative to Hard Chromium Plating due to its excellent wear resistance. Superior sliding wear characteristics are achieved from the chromium carbide dispersed within the cobalt matrix. Mating materials “ride” on the hard particles which have superior wear resistance compared to metals. In addition, TriCom offers superior oxidation resistance compared to chromium. Chromium begins to soften and lose its oxidation resistance around 400° to 425°C eliminating it as a wear coating when exposed to conditions over this threshold. TriCom exhibits excellent oxidation resistance at sustained temperatures of 650°C (with limited exposures up to 800°C) while retaining its excellent wear resistance.

TriCom can also replace HVOF coatings. TriCom is widely used as an anti-fretting, oxidation resistant wear coating on delicate thin walled static seals used in gas turbine engines. Unlike HVOF coatings, TriCom will not distort thin wall sections during the coating process and offers similar wear characteristics.

Features & Benefits:

1. Superior wear & oxidation characteristics up to 1475°F (800°C), 1200°F capable for long term exposure. Excellent electroplated bond strength and coating toughness makes it ideal for thin flexible parts, such as seals.
2. Environmentally friendly containing neither hexavalent chrome nor nickel.
3. Mating surfaces need not be coated, unlike T800
4. Unlike plasma sprayed coatings, TriCom will not distort the part during the coating process and often no finishing required.
5. Non line of sight (NLOS) process, capable of plating small ID bores

Design Recommendations:

[See Design Recommendation page](#)

Typical Applications:

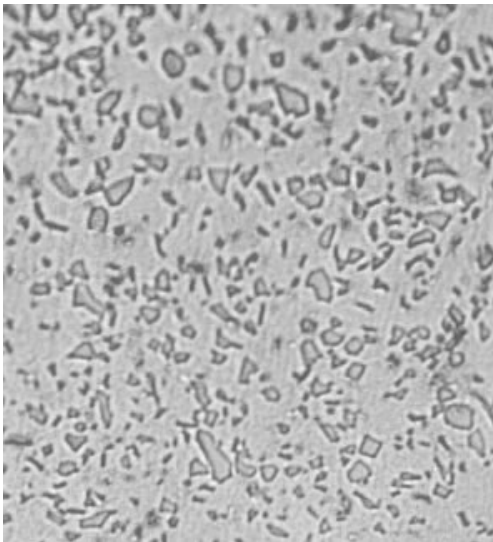
Aircraft seals, ducting, etc.



Performance Coatings since 1940

Properties:

- Hardness : 300-400 HVN
- Carbide Volume Fraction – 12-25% volume
- As plated surface finish – Ra = 32u inch (0.8um) (Can be polished to better finishes)
- Thickness for near net shape – 0.001 – 0.0015 inches



Cross sectional view of TriCom, COCr₃C₂

For more information contact us:

US Chrome Corporation (Corporate Office)

Phone: 1-800-637-9019

Fax: 203-386-0067

Email: uscsales@rochester.rr.com