

Tribomet® Wear Control Coatings



Tribomet® coatings are electro-deposited composites that are applied by a patented process. The coatings are produced when particles, which are kept in suspension within an electroplating bath, settle onto the component and are fixed by the depositing metal (see Figure 1).

Tribomet wear-resistant coatings can operate at elevated temperatures and are produced from electroplated cobalt (in various amounts) and fine particles of chromium carbide (see Figure 2). The coating forms an adherent oxide that readily forms a glaze on sliding contact to prevent adhesive wear. The higher-carbide-composite Tribomet T104CS can be used in heat-treated form with increased hardness, corrosion resistance, and hammer wear resistance. Tribomet T104CS is also an excellent replacement for hard chrome and other galvanic coatings.

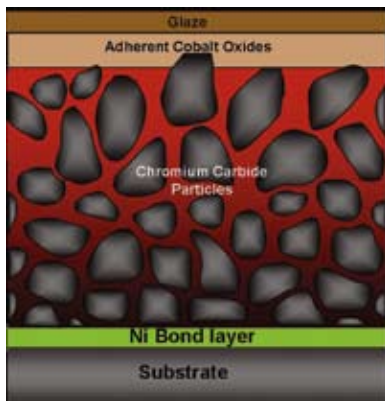


Figure 1. Schematic showing formation of Tribomet composite coating

Advantages

- Provides excellent resistance to fretting and abrasive wear
- Suited for coating non-line-of-sight faces and internal bores
- Excellent adhesion >30,000 psi
- Operating temperatures up to 900°C for Tribomet T104CS
- Pre-oxidation heat treatment will further improve wear resistance for applications operating below 300°C
- 100% dense coating
- Suitable for low- or high- volume manufacture for both OEM and repair
- No component distortion
- Can be coated to size or ground
- Applicable to most metallic substrates and for contact with titanium alloys
- Excellent replacement for hard chrome and other galvanic coatings

Applications

Typical applications include aviation, automotive, power generation, and general engineering.

Base Materials

Tribomet coatings can be applied to aluminum, steel, and cobalt- and nickel-based alloys. Components can be cast, forged, rolled, or extruded.

Coating to Size

Tribomet wear control coatings can be used as plated or ground to finished dimensions. Typical as-plated finish of 1-2µmRa; Ra can be further improved via grinding, lapping, vibro finishing, or honing.

Coating Characteristics

Tribomet T104C – Carbide content 12-28 wt%; nominal hardness 300 HV; maximum operating temperature 700°C; typical coating thickness 0.08 mm-0.130 mm after final machining

Tribomet T104CS – Carbide content 30-40 wt%; nominal hardness 450 HV; maximum operating temperature 900°C; typical coating thickness 0.08 mm-0.130 mm as plated

Tribomet T104CS heat treated – Carbide content 30-40 wt%; nominal hardness 700-800 HV; maximum operating temperature 900°C; typical coating thickness 0.08 mm-0.130 mm as plated



Figure 2. Tribomet T104CS coating microstructure