



## TM 125 (Amorphous Cobalt Coating)

Techmetal 125 is a high technology coating that at last brings together the best properties of hard chrome and electroless nickel into one coating. This alloy of cobalt and phosphorous has an amorphous, glass-like structure that provides the enhanced functional characteristics of this coating.

Techmetal 125 coatings provide hardness, wear, corrosion resistance and lubricity. It can be plated to thicknesses of at least 0.250 inches.

### USER BENEFITS

**Amorphous, Glass-like Structure**  
**Increased Wear-Life of Parts**  
**Machinability**  
**Use for Salvage**

**Superior Corrosion Resistance**  
**Good Lubricity**  
**Easily Ground**  
**Use for Electroforming**

### PROPERTIES

Composition  
Coefficient of Friction  
Corrosion Resistance  
    -Neutral Salt Spray (ASTM B-117)  
Copper Accelerated Salt Spray  
    -CLASS (ASTM B-368)  
RCA Nitric Acid Test  
Thickness Controllability  
    (Edges and sharp corners will build up faster)  
Minimum Thickness  
Maximum Thickness  
Hardness  
    -As Deposited  
    -Baked 650 degrees F / 3 Hours  
    -Baked 750 degrees F / 1 Hour  
Melting Point  
Density  
Internal Stress  
Tensile Strength  
    -As Deposited  
    -Heat Treated  
Ductility  
    (Can be increased to 7% with some loss in hardness)  
Wear Rate

### TYPICAL VALUE

86% Cobalt; 14% Phosphorous (by weight)  
0.8  
  
1000+ hours at .001 thickness  
  
200+ hours at .0003 thickness  
10 Minutes without attack  
  
+/- 10%  
.0001 inch  
at least 0.250 inch  
  
Rockwell C 63/65  
Rockwell C 68  
Rockwell C 70  
1700 degrees F  
8 grams/cm<sup>3</sup> (.289 pounds/inch<sup>3</sup>)  
Neutral  
  
130 KPSI  
300 KPSI  
2% elongation  
  
Similar to Hard Chrome Deposits

### APPLICATIONS

This Techmetal coating is best suited for applications where both high hardness and high corrosion resistance are desired. It is especially suited for aluminum substrates where the melting point or temper of the alloy prohibits high temperature baking. This coating also works very well in salvage situations to build up worn or mis-machined components. In many cases, the cobalt phosphorus coating will hold up to corrosive materials where electroless nickel, sulfamate nickel, stainless steel, and most other materials fail.

