



# CHEM PROCESSING, INC.

*Platings & Coatings for Industry*

## Thin-Dense Chrome

Thin – Dense Hard Chrome is a special plating process that offers significant benefits to users of the coating. End users benefit as the Thin – Dense Process may not alter the part dimensions or the mechanical properties of the substrate to any appreciable extent. It also may eliminate secondary steps such as grinding and polishing. Thin - Dense chrome can be plated onto virtually any base metal.

Thin – Dense hard chrome is a proven technology that is applied under several trade names.

### Properties of Thin-Dense Chrome:

- Surface hardness of 72 Rockwell C equivalent
- Low energy surface greatly reduces galling, seizing, metal pick-up, sticking and erosion
- Deposit is void of micro-cracks which enhances corrosion resistance
- Friction and wear are reduced to to improved retention of lubricants
- Bond strength exceeds 125,000 psi and will pass a severe bend test
- Coating can be easily stripped with conventional methods for re-work
- 95% fatigue limit reduction over conventional hard chrome
- 93% reduction in deposit internal stress
- May eliminate build-up and nodulization on sharp corners and edges
- The micro-inch finish of the substrate is not measurably changed
- Significant reduction in fatigue induced to the substrate
- Hydrogen embrittlement is greatly reduced

### Deposit Thicknesses:

Range:0.000025 – 0.0005”	Typical:	0.0001 – 0.0002”
Typical Deposit Variance:	+/- 0.000025”	Up to 0.00025” thickness

### Process Notes:

- Most applications require vapor blasting, liquid honing or glass bead blasting prior to plating. Parts that require heat treating should be hardened before Thin-Dense plating; this process does not replace thermal heat treating.
- Masking is not needed for short runs or where the entire surface is plated, except to control the deposition. Stop-Off should be used, however, in critical unplated areas to avoid unnecessary cathodic etching, especially for highly machined or polished areas.

**Chem Processing Inc.** is committed to excellence in metal finishing. Chem Processing Inc. uses their engineering expertise and computerized process controls to **exceed their customer's expectations** when adherence to strict thickness specifications is essential.