



INDUSTRIAL HARDWARE

AND SPECIALTIES INCORPORATED

Decorative Copper-Nickel-Chromium

A program to improve and control the quality of a metal or plastic product should start at the desk of the designer. The metal finisher is restricted in what he can do by certain basic principles of mechanical finishing and of electroplating. The engineer should understand the limitations imposed by shape and size of components to facilitate quality finishing at an acceptable cost. The designer can exert as much influence on the quality attainable in finishing a part as can the electroplater himself. ASTM Standard B-507 can provide the designer with helpful information.

Significant Surfaces

A most important term used in specifying metal finishes is "significant surfaces". In most products the same standard of quality is not required over every square inch of surface. Instead, the quality specifications apply and compliance is expected only for the so-called "significant surfaces" defined by mutual agreement between the producer and purchaser as follows:

Significant surfaces are defined as those normally visible (directly or by reflection) which are essential to the appearance or serviceability of the article when assembled in normal position; or which can be the source of corrosion products that deface visible surfaces on the assembled article. When necessary, the significant surfaces shall be the subject of agreement between purchaser and manufacturer and shall be indicated on the drawings of the parts, or by the provision of suitably marked samples.

Design for Mechanical Finishing

Metal products which are to be coated with copper/nickel/chromium or nickel/chromium finishes are generally subjected to abrasive polishing with belts or wheels in preparation for the plating operations. This is done to aid in securing an attractive uniform, mirror-like or satin appearance on the finished part. Mechanical finishing is an expensive operation. To reduce costs and assist the metal finisher in improving the appearance and quality of the product the designer should consider certain rules applicable for parts requiring mechanical finishing.

- Avoid blind holes, recesses and joint crevices which can retain polishing compounds and metal debris.
- Avoid intricate surface patterns which will be blurred in polishing.
- Significant surfaces should be exterior, reachable by ordinary polishing wheels or belts.
- Avoid sharp edges and protrusions which cause excessive consumption of wheels or belts.

In small parts which are to be barrel processed the above rules apply plus a requirement that the parts must be sturdy enough to withstand the multiple impacts of barrel rotation. Small flat parts which tend to nest together should be provided with ridges or dimples to prevent