

ABOUT SURTRONICS

Surtronics, Inc. was established in 1965 and is now a second generation Woman Owned Business. We provide precious metal plating to the electronics industry and commercial plating and chemical metal finishing to all types of industrial customers. We are specialists in precision plating and anodizing with modern facilities operating under stringent quality control procedures and certified ISO 9001-2008. We are in the process of qualifying for NADCAP certification.

Since the number and diversity of the industries in North Carolina and the Southeast have increased rapidly, Surtronics has expanded in size and complexity. New plating equipment has been added to meet the needs of an increasing variety of customers throughout the United States. Our variety of capabilities and many years of experience, assure customers of strict adherence to specifications and intelligent solutions to complex plating problems.



BASE MATERIALS PLATED

Aluminum Alloys
Copper Alloys
Ferrous Alloys
Exotic Alloys
Zinc Die Castings

FINISHES SUPPLIED

Anodizing (Black, Clear, Colors, Hard Coat, & Chromic Acid Seal)
Type I, II, III & Two-Step (Architectural)
Bussbar (12' Bussbar line for Bright Tin)
Cadmium (Yellow & Clear)
Chromate Conversion
Chromium (Decorative)
Copper
Cupric Oxide
Electroless Nickel
Gold (24 Karat, Electro)
Nickel (Sulfamate & Sulfate)
Stainless Steel Passivation
Silver
Tin (Bright & Dull)
Tin Alloy (90/10 & 60/40)
Zinc (Yellow, Clear, & Black)
Value Added (Bead Blasting, Masking, Packaging, Polishing, Labeling, and Vibratory Plating)

SPECIFICATIONS

We meet all customer, military, automotive, and ASTM specifications.



Surtronics, Inc.

4001 Beryl Road

P O Box 33459 Raleigh, NC 27636

Phone: 919-834-8027 Fax: 919-828-9972

www.surtronics.com

Surtronics, Inc.

Electroplating & Anodizing



**PLATING AND
CHEMICAL METAL
FINISHING**

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Metal Finishing Treatments

What is Surface Finishing?

Surface finishing is the process of altering the surface on an object (polishing, buffing, electropolishing, chemical etching, plating, coating) for the purpose of enhancing its appearance or functional property.

The purpose of finishing can be for economic reasons, material conservation, to change the surface of the base material to provide certain desirable properties, or a combination thereof, such as:

- Corrosion Resistance
- Abrasion Resistance
- Wear Resistance
- Improved Lubricity
- Non-Toxicity
- Dimensional Alteration
- Light Reflectivity
- Insulation or Conductivity
- Improved Electrical Properties
- Solderability
- Temperature Resistance
- Magnetism/Non-Magnetism
- Impact Resistance
- Wire Bonding
- Rubber Bonding
- Light Absorption

Apart from its decorative uses on a wide range of consumer and industrial products, surface finishing provides essential functional applications.

Natural resources are conserved by the use of coating to preserve products, or when a rare, costly surface coating can provide its own desired physical properties on a more abundant and less costly base material.

Electroplating is an electrochemical process used to deposit a metallic coating on the base material of an object by immersing it in an electrically charged solution so that a suitable low voltage electric current flows through it, causing the metallic coating to be attracted to the object being plated. Some of the more common electroplated coatings and their functions include:

CADMIUM—a silver-white deposit used to minimize galvanic corrosion on parts or assemblies consisting of dissimilar metal such as brass and steel, and for its corrosion protection properties in certain harsh environments.

CHROMIUM—The bright, shiny, mirror-like finish so common on everything from automobiles and motorcycles to bicycles and toys, furniture, appliances large and small, plumbing fixtures, right down to the knobs on the TV set. This versatile finish provides corrosion protection and good wear life, as well as beauty.

COPPER—A reddish deposit used for plating through holes and circuit boards in the electronics industry, on steel wire used in making high-strength electric cable, and as a stop-off to prevent case hardening on selected areas of iron and steel surfaces. All pennies made since 1981 are copper plated zinc. Copper is also the first layer in “triple chrome” plating.

GOLD—A yellow deposit heavily relied upon in the electronics industry to provide long-term, dependable electrical contact, solderability, temperature resistance and corrosion protection in all kinds of devices including telephones, pagers, cellular phones, printed circuit boards, televisions, satellites, rockets, and so on. Gold is also a common deposit on jewelry, pens and optical products.

NICKEL—A silver-white deposit used generally on industrial products for corrosion protection, and in the chemical and food processing industries to prevent iron contamination.

SILVER—Used on tableware, and hollowware because of its resistance to foods, as well as in jewelry. Functional uses include preventing galling or seizing of metal surfaces under high loads, such as on bearings, threads on stainless steel bolts and on titanium compressor blades. It is also used in the electrical and electronics industries because of its outstanding conductivity.

TIN—A white, non-toxic, solderable, soft deposit useful for its resistance to corrosion and tarnish. Since tin is non-toxic, it is used as a coating on sheet steel for making “tin-cans” as well as on food handling equipment.

ZINC—A bluish-white deposit which serves as an inexpensive decorative and sacrificial protective coating against atmospheric corrosion of iron and steel parts. It is commonly used on nuts, bolts, wire goods, fasteners, stampings and sheet metal parts.

A non-electroplating coating or surface treatment of a base metal can also be used to obtain certain desired properties.

ANODIZING—An electrochemical process which converts an aluminum surface to a coating of aluminum oxide. This coating can be transparent, making it suitable for dyeing a wide variety of colors for decorative or utilitarian purposes; or dull gray, for protection of hardware, nuts, bolts, and aircraft parts.

COLORING ANODIZED ALUMINUM—Accomplished by immersing previously anodized aluminum in a desired color dye bath, then sealing by immersion in a hot water bath, which closes the microscopic pores in the colored coating. A wide variety of colors give this finish broad appeal as a decorative finish for giftware, novelties, automotive and appliance trim, nameplates and exterior architecture.

ELECTROLESS PLATING—The chemical deposition of a metal coating on a substrate by immersion in the appropriate plating solution. Electricity is not involved in this process: therefore, heavy and uniform deposits can easily be obtained which possess unique mechanical, chemical or magnetic properties. The process can be applied to properly treated non-metallic objects such as plastic and glass. Electroless Nickel provides better corrosion and chemical resistance, greater hardness, wear resistance and lubricity than electroplated nickel.

ELECTROPOLISHING—An electrochemical process—the reverse of plating. Instead of a coating or plating, electropolishing removes metal from the surface, leaving a very smooth, clean, bright finish. Electropolishing is most often performed on stainless steel, but can also be performed on aluminum and copper alloys. It provides a surface that is less porous, allowing for reliable sterilization in the medical and industries.

PASSIVATION—the use of an acid solution to render the surface of stainless steel in a “Passive” state that enhances its corrosion resistance.

