

## The Anodizing Process

Batch (or piece), sheet, and coil anodizing all consist of three processing stages:

### Pretreatment

The aluminum surface is first cleaned then chemically treated. Etching results in a satin matte appearance. Various degrees of etching can be specified (i.e. light, medium, heavy). Bright-dipping will enhance an already bright aluminum surface, and result in varying degrees of reflective finishes.

### Anodizing

Once the surface is prepared, the anodic film is built. Electrical current is passed through an electrolyte bath in which the aluminum has been immersed. The anodize film is built from the aluminum itself, not applied. It is a hard and porous film. The coating thickness may be tightly controlled, based on the end use product.

### Post Treatment

The porous anodic film can be colored in this stage. Organic dyes can be used to fill pores with color, or metal salts can be electrochemically deposited at the base of the pores to create a broad spectrum of colors. Many of the colors are fade-resistant. Sealing the anodic film normally consists of a hot water bath that basically swells the pores shut.

## Anodizing Basics

Anodizing is the successful development and control of a natural oxidation process that occurs when aluminum is exposed to the atmosphere. Electricity and chemicals are used jointly to produce a hard, transparent surface that is integral with base aluminum.

## Characteristics

- Hard, comparable to a sapphire
- Transparent, similar to glass
- Insulative and static-resistant
- Wide variety of colors and finishes
- Integral with aluminum surfaces, non-flaking

