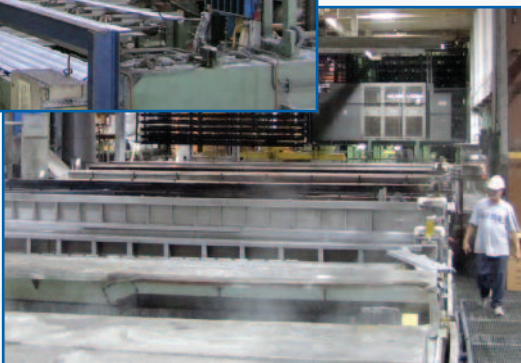


A Comprehensive, Industry-Leading Resource for Anodized Aluminum Architectural Finishes

For more than 20 years, Aluminum Shapes, LLC has been anodizing extruded aluminum with a focus on architectural finishes. With one of the largest and most sophisticated anodizing systems in the world, our fully automated line is designed to move up to 30,000 sq. ft. of aluminum extrusion per 8 hour shift through our tanks in lengths up to 28'-6" long.

The system precisely controls and monitors each processing tank to produce high quality Type II electrolytic two-step clear finishes in pewter, champagne, light, medium or dark bronze, and coal black. These finishes provide exceptional endurance and decorative qualities, meet AAMA, MIL-A-8625, and AAC specifications, and ensure color consistency from piece to piece and load to load.



Our Anodizing Capabilities

Aluminum Anodizing Ensures:

- A superior paint base (etched only)
- Some electric insulation properties
- Adhesion of organic coatings (i.e. zinc chromate, primers, paints, and lubes) when processed per requirement
- Minimal galvanic corrosion

Electrolytic Two-Step Coloring:

- Strengthens the aluminum surface
- Enhances surface characteristic properties of aluminum
- Does not fade from sun or rain
- Provides higher wear and electrical resistance
- Makes anodized aluminum ideal for exterior architectural applications

Anodizing (MIL-A-8625) Processes

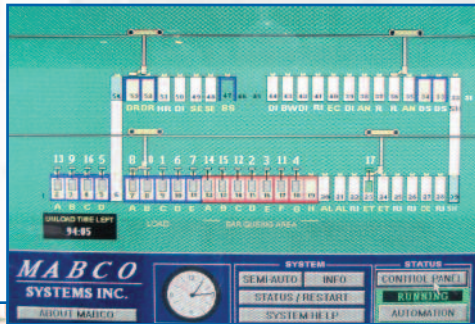
Type II (Sulfuric Acid)

- Ideal for applications where hardness and resistance to erosion is needed
- Delivers a thicker (0.1 to 1.0 mil) film that provides exceptional hardness, durability, and corrosion resistance
- Allows porous aluminum extrusions to effectively absorb color dyes while sealing helps prevent color loss

Our Equipment Capabilities

State-of-the-Art Anodizing System

Our Walgren Co., Grand Rapids, Michigan-designed system is fully automated and one of the most sophisticated systems of its kind in the world. Our computerized equipment, processes, and controls assure a high quality finish and excellent color consistency from part to part for lengths up to 28'-6" in length.



Integrated Anodizing System Hardware and Software Components

- Four fully automated, computer controlled 4,000 lb. hoists
- Custom and specialized software that allows random processing of loads including load entry, rectifier output, electrolytic coloring recipe and tank times
- Permanent load information record inclusive of customer name, part number, job number, extrusion length, square feet per load, current density desired, etch time, tilt or no tilt, color recipe, tank sequence, and time in tank
- Two anodizing tanks with 15,000 amp rectifiers and one electrolytic color tank
- One 8,000-Amp AC power supply for the electrolytic color tank (DC superimposed AC machine with independent half-wave modulation) that produces up to 1,100 sq. ft. per load of electrolytic colored work using a center cathode in the anodizing tank and a center electrode in the color tank
- Multiple pre-treat, rinse and finish tanks (33 ft. long x 8 ft. deep x varying widths) constructed of either ¼ inch mild-steel plate with ms bracing painted with acid resistant paint; 10 gauge stainless steel with stainless bracing; or 1-inch polypropylene with stainless bracing
- Two multiple-compressor, 100-ton chillers to cool the two anodizing tanks, color tank, etch tank, rectifiers, and color power supply
- Plate-and-frame 316 stainless steel heat exchangers for continuous pumping of acid from the back to the anodizing tank
- Two anodizing stations with scrubber systems
- An acid purification unit to continuously remove the dissolved aluminum from the anodizing tanks, recover sulfuric acid that would normally be decanted, and maintain the dissolved aluminum level in the anodizing tanks to assure uniform anodic film across the entire load
- 1,000,000 sq. ft. manufacturing facility in Delair, NJ that provides a variety of other extrusion, fabrication, casting, and related services

Typical Applications

Aluminum Shapes primary applications include but are not limited to:

Curtain walls

Architectural structures and categories of all types

Commercial and residential building products (i.e., window frames, doors, awnings, etc.)

Appliances

Furniture

Sporting goods

Motor vehicle components

Exterior frames, panels, and trims for commercial products of all types



A Fully Integrated Aluminum Services Resource

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