Al-Coat™
Advanced Surface Treatment for All Aluminums

Aluminum alloy materials are commonly more difficult, if not impossible to electroplate than ferrous materials. This is basically true because:
- Aluminum has a high affinity for oxygen.
- Most metals used in electroplating are cathodic to aluminum; therefore, voids in the coating lead to localized galvanic corrosion.
- The thermal expansion of aluminum materials differ markedly from that of most metals used in electroplating, thus, causing peeling, flaking, chipping, and non-adherence of the plating. Consequently, engineers, and metallurgists, are taught, or directed that one shall enhance all aluminum alloys using a “conversion” type process, known as anodize, and/or hardcoat anodize.

Electrolizing, Providence offers a Precision, Rc 72 surface technology for Aluminum.

Al-Coat™, a unique Rc 72 surface coating for aluminum, provides industry with an advanced alternative technology to hardcoat anodize. The Al-Coat™ technology offers inherent properties providing both functional and physical advantages not available in traditional treatments for aluminum. Allow yourself to become more familiar with Al-Coat™ and learn how the technology can work for you.
Al-Coat™ is a dense, non-magnetic, high-chromium-alloy composition coating developed for use on aluminum. Al-Coat™ offers an extremely hard, Rc 72 surface providing an unusual combination of bearing-type properties, low frictional coefficients, longer wearlife and excellent corrosion protection.

Al-Coat™ is a non-reflective, matte, satin-gray in color. The coating is always smooth, continuous in appearance and thickness and free from blisters, pits, nodules, porosity and edge build-up.

Al-Coat™ was developed to offer the engineer a highly tested, highly reliable, highly functional surface coating for aluminum rather than the traditional hardcoat anodize.

Al-Coat™ features:
- Rc 72 hard, scratch resistant, durable surface
- Adherent coating with no chipping or peeling
- Lower surface frictional coefficients and improved release
- Deterrent to galvanic and oxidation corrosion
- Conductive coating, eliminating electro-static build-up
- Excellent heat transfer properties
- Smooth, consistent, clean surface resistant to staining and discoloration
- Surface sealant type coating for vacuum environments
- Appealing, long-lasting surface

Al-Coat™ is a surface coating and not an impregnation process. Thickness ranges are 0.001” per surface or less.

All surfaces requiring Al-Coat™ should be clearly indicated on each part drawing. All surfaces that need not be coated should be clearly marked. Masking is not an extra cost.

Al-Coat™ is not an “all-over”, or “coat the entire part” type technology. Thus, this requirement must be avoided. We welcome you to contact an applications engineer to discuss your needs.

Al-Coat™ is a coating which deposits a dense, high-chromium composite alloy directly onto the surface of the treated aluminum. There is no intermediate layering. Al-Coat™ is not a “conversion-type” application like hardcoating. The technology is a low temperature deposition and will not impregnate or adversely affect the part being treated. The coating is designed to be applied to specific surfaces. If needed the coating can be removed without part damage.

Surfaces should be finished prior to coating. For best results, surfaces should be a 32 RMS or better. It is important that any and all surfaces must be free of any other plateings, treatments or other materials.

Proven Application Uses:
- Machined parts for Computer Chip equipment
- Sizing dies and molds
- Heat sealing
- Medical/diagnostic equipment and devices
- Automation equipment plates, rails, and slides
- Aircraft housings and shafts
- General machined parts

Al-Coat™ meets specification QQ-C-320 and is USDA compliant. The technology has been tested to specific medical sterilization protocols.

Electrolizing invites any and all questions you may have regarding this unique application of our Rc 70/72 hard surface coating directly onto aluminum. Allow us to discuss the specifics surrounding your particular engineering concern. A single presentation cannot address all applications where the Al-Coat™ technology can be beneficial. The next decision must be made by you, so please . . . Call, write, fax or e-mail.