

## Anodizing nomenclature and designations

There is a common industry terminology for anodizing in commercial applications which grew out of Alcoa's trademarked Alumilite designations. There is also a military specification that covers anodizing that is commonly used – MIL-A-8625.

### Mechanical Finishes (we offer those in blue)

- |  |                                 |
|--|---------------------------------|
| A1 - Preliminary grinding and polishing prior to anodizing | G1 - Very fine sand blast       |
| A2 - Buff directly on as-fabricated (mill finish) surface  | G2 - Fine blast G3 Medium blast |
| B - Polish finish (round tube only)                        | G4 - Coarse blast               |
| C1 - Polish finish, No. 180-220 emery                      | H1 - Fine shot blast            |
| C2 - Satin finish, hand rubbed with steel wool             | H2 - Medium shot blast          |
| C3 - Satin finish, compound or brushed backed sander       | H3 - Coarse shot blast          |
| D - Polish finish, No. 140-180 emery                       | K - Wire brush finish           |
| E - Polish finish, No. 120-140 emery                       | M - Burnished finish            |
|  | N - Sand burnished finish       |

### Chemical Finishes to prepare the surface before the anodic coating is applied (we offer those in blue)

- R1 - Caustic etch
- R2 - Caustic etch for diffuse reflectors
- R3 - Sulfuric-chromic acid etch
- R4 - Bright dip (nitric-hydrofluoric)
- R5 - Bright dip (nitric-phosphoric)

### Anodizing Coating Thickness and Comparative Designations (Alcoa Alumilite System)

| Film Thickness | Alcoa Designation                           | Aluminum Association Designations | Descriptions                   | Type of Finish  |
|----------------|---|-----------------------------------|--------------------------------|---|
| 0.0001         | Alumilite 200 .00015 minimum film thickness | A21                               | Clear (natural) coating        | Protective and decorative (coating less than 0.4 mils thick)<br>(Thickness to be specified by customer) |
| 0.0002         | Alumilite 201 .0002 minimum film thickness  | A22                               | Coating with integral color    |   |
| 0.0003         | Alumilite 202 .0003 minimum film thickness  | A23                               | Coating with impregnated color |   |
|                | Alumilite 203 .00036 minimum film thickness | A2X                               | Other                          |   |
| 0.0004         | Alumilite 204 .0004 minimum film thickness  | A31                               | Other                          | Architectural Class II (0.4 to 0.7 mil coating)   |
| 0.0005         |   | A32                               |                                |   |
| 0.0006         |   | A33                               |                                |   |
| 0.0007         | Alumilite 214 .0007 minimum film thickness  | A3X                               |                                | Architectural Class I (0.7 mil and greater anodic coating)  |
| up             |   | A41<br>A42<br>A43<br>A4X          | Other                          |   |

Now the military designation from MIL-A-8625 – the entire specification is public domain and is included as an attachment in this section. Please check latest revisions.

### 1.1 Scope.

This specification covers the requirements for six types and two classes of electrolytically formed anodic coatings on aluminum and aluminum alloys for non-architectural applications (see 6.1).

### 1.2 Classification.

Anodic coating Types and Classes covered by this specification are as specified herein (see 6.2 and 6.21):

#### 1.2.1 Types

- Type I - Chromic acid anodizing, conventional coatings produced from chromic acid bath, (see 3.4.1)
- Type IB - Chromic acid anodizing, low voltage process, 22 +/- 2V, (see 3.4.1)
- Type IC - Non-chromic acid anodizing, for use as a non-chromate alternative for Type I and IB coatings (see 3.4.1 and 6.1.2)
- Type II - Sulfuric acid anodizing, conventional coatings produced from sulfuric acid bath, (see 3.4.2)
- Type IIB - Thin sulfuric acid anodizing, for use as a non-chromate alternative for Type I and IB coatings (see 3.4.2 and 6.1.2)
- Type III - Hard Anodic Coatings (see 3.4.3)

#### 1.2.2 Classes.

- Class 1 - Non-dyed (see 3.5.)
- Class 2 - Dyed (see 3.6.)