TECHNICAL SULFURIC ACID ANODIZING

Characteristics

- Anodic coatings provide good chemical behavior against aggressive environment between pH 5 to 9.
- Anodic oxidation provides a mean to preserve decorative manufacturing (honing, polishing and etching).
- The anodic layer grows around the aluminum part and is structural bounded with the substrate.
  1/3 of the coating thickness grows on the part (buildup).
  2/3 of the coating thickness establishes beneath the original surface (penetration).
  These values have to be seen as indications.
  The exact values depend on aluminum alloy, process parameters etc.
- Coating can be applied without having influence on geometrical measurements.
  For this the part of the coating that comes above the nominal borders is etched before the anodic layer is applied.
- As long as the pores in the anodic coating are not sealed they can be impregnated (integrated coatings).
- Gaining higher hardness and abrasion resistance.
  Coating thickness of 20 µm give a hardness of 250–350 MVH (Micro Vickers Hardness).
- Coating has good electro isolating properties.
- Normal coating thickness 15–25 µm.
- Best used alloys; AlMgSi1 or AlMgSi0,5 (6082 and 6063).
- Dimensions tolerated not smaller than 20 µm can be treated without any change in measurements. Process tolerance within ±3 µm.
  Critical dimensions within 20 µm can best be masked.
- Use of ALCA plus aluminum (ALCOA);
  Dimension stable anodizing is technical possible but will not yield to esthetical acceptable results.
- Disadvantages;
  1. Alloying elements causes rough surface.
  2. Color will not be uniform.

Specification

- Mil-A-8625 Type II; Class 1 or 2

  Class 1 non-dyed coating

  Class 2 dyed coating
  the color of the coating shall be specified on drawing or purchase order

  Without further specification sulfuric acid coatings will be sealed

- AMS–2071
- AMS–2072

- BS 1615

Approvals

- DASA
- Fokker