INCREMENTAL CHANGE Release Notification Date: 06/14/2022

SPM 70-45-05 SULFURIC ACID ANODIZING

DISCLAIMER

The Incremental Changes published by GE Aviation are considered Instructions for Continued Airworthiness. These Incremental Changes, along with the current Manual revision and published Temporary Revisions, constitute the latest Instructions for Continued Airworthiness.

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HIGHLIGHTS

HIGHLIGHT REFERENCE	DESCRIPTION OF CHANGE
tk70-45-05-330-801	Technical Change: Added special procedure for the sulfuric acid anodizing.

TASK 70-45-05-330-801

1. General.
   - A. This method is used for sulfuric acid anodizing on aluminum and aluminum alloys. This process has been used typically to increase corrosion resistance and to provide surfaces that will promote adherence of paint and other organic finishes.
   - B. It is important to have good control practices for effective anodizing. To successfully anodize parts, attention must be paid to the proper preparation, masking, and electrical hookup of the part.

   NOTE: All fabrication-type operations, such as forming, shot peening, brazing, welding, perforating, machining, and heat treatment, should be completed before parts are anodized.

   NOTE: When the thickness or coating weight is not specified, the repair facility must demonstrate that the coating obtained is comparable to the coating produced in accordance with AMS 2471.

   - C. It is important to have good post anodizing de-masking and part cleaning procedures. All masking residues (wax, lacquer, tape, and tape adhesive residue) must be completely and thoroughly removed.
   - D. It is recommended as good shop practice that a procedure be developed and documented for each part. This procedure will ensure that all parts will be masked, anodized, and cleaned to the same procedure by the different operators in the shop.
2. Equipment.

Subtask 70-45-05-350-001

- A. Equipment requirements should be controlled per AMS 2471.
- B. The following equipment is required for the application of hexavalent chromium free sealing method;
  - (1) Use dedicated tanks made from PVC/PVDC/PP/INOX 316L stainless steel for the Socosurf TCS C03-124 bath and PVC/PVDC/PP for the Socosurf PACS C03-125 bath.
  - (2) The heating coil protectors must be made of Teflon or PVDF.

(3) Socosurf TCS C03-124 bath: Filtration is recommended (0.1 to 2 renewals/hour depending on the size of the tank. Pore size < 25 m).
(4) Socosurf PACS C03-125 bath: A bath cooling system is recommended when outside temperatures are high to keep the bath temperature below 30°C (86°F).
(5) The water rinse tank used after processing in sealing bath shall be made of steel lined with high density polyethylene or polypropylene.
(6) The hot water rinse tank shall be made of polypropylene lined steel and complete with a controllable electric heater capable of heating the bath at 60°C (140°F).

3. Materials.

Subtask 70-45-05-350-002

Table 1. Hexavalent Chromium Free Sealants

Solution	No	Operating Temperature	
Socosurf TCS (C03-124)	S1219	77-113 (°F)	25-45 (°C)
Socosurf PACS (C03-125)	S1220	59-86 (°F)	15-30 (°C)

4. Procedure.

Subtask 70-45-05-350-003

A. Apply degreasing, deoxidizing, and sulphuric acid anodizing steps to part in accordance with AMS 2471.
B. Alternative Procedure Available. Seal the part in accordance with AMS 2471.
B. Alternative procedure. Seal the part by using hexavalent-free chromium sealing method as
A. follows:

WARNING: REFER TO THE PRODUCT LABEL AND THE MANUFACTURER'S (MATERIAL) SAFETY DATA SHEET (SDS) FOR INSTRUCTIONS ON THE HAZARDS, STORAGE, SAFE HANDLING AND PROPER USE OF CONSUMABLE PRODUCTS.

WARNING: OPERATOR SHOULD WEAR FACE SHIELD, GLOVES, PROTECTIVE CLOTHING, AND PROTECTIVE SHOES.

(1) Gently agitate the Socosurf TCS and Socosure PACS sealing solution baths prior to immersing the part and as follows:
(a) Avoid creating bubbles and turbulence.
(b) Recirculation is recommended.
(2) Immerse the part in Socosurf TCS sealing solution (S1219) and maintain the parts at the specified temperature listed in Subtask 70-45-05-350-002 (paragraph 3., Materials), Table 1, for 10 to 40 mins.

NOTE: Rinse under running water is allowed prior to rinsing by immersion.

(3) Rinse the part by immersion in water for 3 mins with following conditions:
(a) pH: (25°C) 5.0-7.0
(b) Conductivity: 20 S/cm
(4) Immerse the part in Socosurf PACS sealing solution (S1220) and maintain the parts at the specified temperature listed in Subtask 70-45-05-350-002 (paragraph 3., Materials), Table 1, for 3 to 10 mins.
(5) Remove masking if previously applied.

NOTE: Rinse under running water is allowed prior to rinsing by immersion.

(6) Rinse the part by immersion in water for 3 mins with following conditions:
(a) pH (25°C) 5.0-7.0
(b) Conductivity: 20 S/cm
(7) Dry with clean and dry air.

5. Quality Assurance.

Subtask 70-45-05-350-004

A. Anodic coating shall be continuous, smooth, adherent, and uniform in appearance, and shall be free from powdery areas, loose films, discontinuities such as breaks or scratches (except at contact points), or other damage or imperfections detrimental to usage of the coating.
B. Quality Assurance Provisions shall be followed in accordance with AMS 2471.