



AEROSPACE MATERIAL SPECIFICATION

AMS2487™**REV. C**

Issued 1993-04
Reaffirmed 2022-01
Revised 2025-11

Superseding AMS2487B

Anodic Treatment of Titanium and Titanium Alloys,
Solution pH 12.4 Maximum

RATIONALE

AMS2487C results from a Five-Year Review and update of this specification with changes made to Ordering Information, Purpose (see 1.1), Classification (see 1.3), Authority (see 1.5), Fixture/Electrical Contact Points (see 3.3.3), Procedure (see 3.4), Thickness (see 3.5.1), Color (see 3.5.2), Voltage Breakdown Resistance (see 3.5.3), Galvanic Corrosion Resistance (see 3.5.4), Abrasion Resistance (see 3.5.5), Wear Resistance of Lubricated Surfaces (see 3.5.6), Foil Test (see 3.5.7), Electrical Resistance (see 3.5.8), Quality (see 3.6), Acceptance Tests (see 4.2.1), Periodic Tests (see 4.2.2), Sampling and Testing (see 4.3, 4.3.1, Table 1, Table 2), control factors (see 4.4.3), and Notes (see 8.4 through 8.8).

NOTICE

ORDERING INFORMATION: The following information shall be provided to the processor by the purchaser.

1. Purchase order shall specify not less than the following:

- AMS2487C
- Type I or Type II
- Basis metal to be anodized
- All material types used in the part/assembly being coated (see 8.4)
- Special features, geometry, or processing present on parts that require special attention by the processor
- Quantity of pieces to be anodized
- Part or assembly number of parts to be coated
- Optional: fixture/electrical contact locations, when not specified (see 3.3.3)

2. Parts manufacturing operations such as heat treating, forming, joining, and media finishing can affect the condition of the substrate for anodizing or, if performed after anodizing, could adversely affect the coated part. The sequencing of these types of operations should be specified by the cognizant engineering organization or the purchaser and is not controlled by this specification.

3. The parts manufacturer shall ensure that surfaces of metal parts supplied to the processor are free from blemishes, pits, tool marks, and other irregularities that will affect the quality of the finished parts (see 3.6).

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SAE WEB ADDRESS:

Full document details: SAE AMS2487C

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<https://www.sae.org/standards/content/AMS2487C/>

Documents

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1. SCOPE

1.1 Purpose

This specification describes the engineering requirements for producing a non-powdery anodic coating on titanium and titanium alloys and the properties of such coatings.

1.2 Application

This process has been used typically to increase resistance to galvanic and high-temperature corrosion and voltage breakdown and to form a receptive base for the application of lubricants and paints on titanium and titanium alloys, but usage is not limited to such applications.

1.3 Classification

Coatings are classified by end product applications as follows:

Type I - This process has been used typically to increase resistance to galvanic and high-temperature corrosion and voltage breakdown resistance.

Type II - This process has been used to form a receptive base for the application of lubricants and paints on titanium and titanium alloys.

1.3.1 Usage is not limited to these applications.

1.3.2 If not specified, Type I shall be furnished.

1.4 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards that may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

1.5 Authority

The cognizant engineering organization (CEO) may impose requirements or approve allowances that supersede the requirements in this AMS.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (U.S. and Canada only) or +1 724-776-4970 (outside U.S. and Canada), www.sae.org.

AMS3084 Lubricant, Solid Film, Minimal Outgassing

AMS4001 Aluminum Sheet and Plate, 0.12Cu (1100-0), Annealed

AMS4911 Titanium Alloy, Sheet, Strip, and Plate, 6Al - 4V, Annealed

AMS4928 Titanium Alloy Bars, Wire, Forgings, Rings, and Drawn Shapes, 6Al - 4V, Annealed

- ARP4992 Periodic Test for Processing Solutions
- AS5272 Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting, Procurement Specification
- AS7766 Terms Used in Aerospace Metals Specifications

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

- ASTM B117 Operating Salt Spray (Fog) Apparatus
- ASTM B1023 Standard Test Method for Abrasion Resistance of Hard Anodic Coatings by a Taber-Type Abraser
- ASTM D257 DC Resistance or Conductance of Insulating Materials
- ASTM D2714 Calibration and Operation of the Falex Block-on-Ring Friction and Wear Testing Machine
- ASTM D4060 Abrasion Resistance of Organic Coatings by the Taber Abraser

2.3 U.S. Government Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

- MIL-PRF-46010 Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting
- MIL-PRF-81329 Lubricant, Solid Film, Extreme Environment

2.4 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Solutions

- 3.1.1 Electrolyte shall be any suitable solution with a pH not higher than 12.4 or as agreed upon by the CEO and processor.

3.2 Equipment

3.2.1 Tanks and Cathodes

Processing tanks shall be fabricated from a material that is suitable for containment of the electrolyte being used. Cathode materials shall be insoluble in the electrolyte.

3.2.2 Fixturing

Racks, wires, hooks, and clamps, in contact with the parts or the electrolyte, which are used to suspend parts in the electrolyte shall be made of titanium or titanium alloys.

3.3 Preparation

- 3.3.1 Cleaned parts shall be free of water break. The use of halogenated solvents is prohibited.
- 3.3.2 Anodic cleaning of titanium parts is prohibited.