

AEROSPACE MATERIAL SPECIFICATION



AMS 4936E

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Revised	JAN 1990
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Superseding	AMS 4936D

Titanium Alloy Extrusions and Flash Welded Rings

6Al - 6V - 2Sn

Beta Extruded Plus Annealed, Heat Treatable

(Composition similar to UNS R56620)

CANCELLATION NOTICE

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1. SCOPE:

1.1 Form:

This specification covers a titanium alloy in the form of extruded bars, tubes, and shapes, and of flash welded rings and stock for flash welded rings.

1.2 Application:

Primarily for parts that require machining or flash butt welding, or both, in the annealed condition and require high strength-to-weight ratio up to 750°F (399°C) after solution and precipitation heat treatment. Certain processing procedures and service conditions may cause these products to become subject to stress-corrosion cracking; ARP982 recommends practices to minimize such conditions.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

2.1.1 Aerospace Material Specifications:

AMS 2245	Tolerances, Titanium and Titanium Alloy Extruded Bars, Rods, and Shapes
MAM 2245	Tolerances, Metric, Titanium and Titanium Alloy Extruded Bars, Rods, and Shapes
AMS 2249	Chemical Check Analysis Limits, Titanium and Titanium Alloys
AMS 2809	Identification, Titanium and Titanium Alloy Wrought Products
AMS 7498	Rings, Flash Welded, Titanium and Titanium Alloys

2.1.2 Aerospace Recommended Practices:

ARP982	Minimizing Stress-Corrosion Cracking in Wrought Titanium Alloy Products
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2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM E 8	Tension Testing of Metallic Materials
ASTM E 8M	Tension Testing of Metallic Materials (Metric)
ASTM E 120	Chemical Analysis of Titanium and Titanium Alloys

2.3 U.S. Government Publications:

Available from Naval Publications and Forms Center, Attn: NPODS, 5801 Tabor Avenue, Philadelphia, PA 19120-5099.

2.3.1 Military Specifications:

MIL-H-81200 Heat Treatment of Titanium and Titanium Alloys

2.3.2 Military Standards:

MIL-STD-163 Steel Mill Products, Preparation for Shipment and Storage

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E 120, by spectrochemical methods, or by other analytical methods acceptable to purchaser:

	min	max
Aluminum	5.00	6.00
Vanadium	5.00	6.00
Tin	1.50	2.50
Iron	0.35	1.00
Copper	0.35	1.00
Oxygen	--	0.20
Carbon	--	0.05
Nitrogen	--	0.04 (400 ppm)
Hydrogen	--	0.015 (150 ppm)
Yttrium (3.1.1)	--	0.005 (50 ppm)
Residual Elements, each (3.1.1)	--	0.10
Residual Elements, total (3.1.1)	--	0.40
Titanium	remainder	

3.1.1 Determination not required for routine acceptance.

3.1.2 Check Analysis: Composition variations shall meet the applicable requirements of AMS 2249. No variation over maximum will be permitted for yttrium.

3.2 Condition:

The product shall be supplied in the following conditions: