

NOTICE OF  
ADOPTION

ADOPTION NOTICE 1  
09 August 1993  
AS7461  
15 May 1992

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Society of Automotive Engineers, Inc.  
400 Commonwealth Drive  
Warrendale, PA 15096-0001

Title of Document: \* BOLTS AND SCREWS, TITANIUM ALLOY 6AL-4V,  
FATIGUE-RATED, PROCUREMENT SPECIFICATION FOR

Date of Specific Issue Adopted: 15 MAY 1992

Releasing Non-Government Standards Body: Society of Automotive  
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\* The title on the SAE document, "BOLTS AND SCREWS, TITANIUM ALLOY, 6Al-4V, Fatigue-Rated, Procurement Specification For", is incorrect. The correct title is printed above.

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FSC 5306

**Bolts and Screws, Titanium Alloy  
6Al - 4V  
Fatigue-Rated, Procurement Specification For**

FSC 5306

**1. SCOPE:**

**1.1 Type:**

This procurement specification covers aircraft-quality bolts and screws made of 6A1 - 4V titanium alloy and of 160 ksi tensile strength at room temperature with a fatigue strength test rating.

**1.2 Application:**

Primarily for aerospace propulsion system applications where high strength, light weight, fatigue rated fasteners are required for use up to approximately 600 °F.

**1.3 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 which 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.

**2. REFERENCES:**

**2.1 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 documents shall be the issue in effect on the date of the purchase order.

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## SAE AS7461

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

2.1.1.1 Aerospace Material Specifications:

AMS 2645      Fluorescent Penetrant Inspection  
AMS 2750      Pyrometry  
AMS 4967      Titanium Alloy Bars and Forgings, 6A1-4V, Annealed, Heat Treatable

2.1.1.2 Aerospace Standards:

AS1132      Design Parameters for Bolts and Screws, External Wrenching, Unified Thread  
Inch Series  
AS1814      Terminology for Titanium Microstructure  
AS3062      Bolts, Screws, and Studs, Screw Thread Requirements  
AS3063      Bolts, Screws, and Studs, Geometric Control Requirements

2.1.2 U.S. Government Publications: Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.1.2.1 Military Specification:

MIL-S-8879      Screw Threads, Controlled Radius Root With Increased Minor Diameter; General  
Specification For

2.1.2.2 Military Standards:

MIL-STD-1312      Fastener, Test Methods  
MIL-STD-2073-1      DoD Materiel, Procedures for Development and Application of Packaging  
Requirements

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

ASTM E 8      Tension Testing of Metallic Materials  
ASTM B 600      Descaling and Cleaning Titanium and Titanium Alloy Surfaces

2.1.4 ANSI Publication: Available from American National Standards Institute, Inc., 11 West 42nd Street, 13th Floor, New York, NY 10036.

2.2 Definitions:

**PRODUCTION INSPECTION LOT:** Shall be all finished parts of the same part number, made from a single heat of alloy, heat treated at the same time to the same specified condition, produced as one continuous run, and submitted for vendor's inspection at the same time.

Refer to AS1814 for titanium microstructure terms and definitions.