



AEROSPACE STANDARD	AS7477™	REV. J
	Issued 1990-12 Reaffirmed 2004-07 Revised 2023-08	
Bolts and Screws, Steel, UNS S66286 Tensile Strength 130 ksi, Procurement Specification		FSC 5306
Superseding AS7477H		

RATIONALE

Limited scope ballot. Correct section references in 3.5. Delete repeated sentence in 3.3.1.

1. SCOPE

This document covers bolts and screws made from a corrosion and heat resistant, precipitation hardenable, iron base alloy of the type identified under the Unified Numbering System as UNS S66286.

1.1 Type

The following specification designations and their properties are covered:

AS7477: 130 ksi minimum ultimate tensile strength at room temperature
70 ksi stress-rupture strength at 1200 °F

AS7477-1: Inactive for design

AS7477-2: 130 ksi minimum ultimate tensile strength at room temperature
78 ksi minimum ultimate shear strength at room temperature

1.1.1 Classification

130 ksi minimum tensile strength at room temperature.

1200 °F maximum test temperature of parts.

1.2 Application

Primarily for aerospace propulsion system applications where a good combination of fatigue resistance, tensile strength, shear strength, and resistance to relaxation at elevated temperatures is required.

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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 document 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. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1.1 SAE Publications

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

AMS2700	Passivation of Corrosion Resistant Steels
AMS2759/3	Heat Treatment, Precipitation-Hardening Corrosion-Resistant, Maraging, and Secondary Hardening Steel Parts
AMS5731	Steel, Corrosion and Heat-Resistant, Bars, Wire, Forgings, Tubing, and Rings, 15Cr - 25.5Ni - 1.2Mo - 2.1Ti - 0.006B - 0.30V, Consumable Electrode Melted, 1800 °F (982 °C) Solution Heat Treated
AS1132	Bolts, Screws, and Nuts - External Wrenching, UNJ Thread, Inch - Design Standard
AS3062	Bolts, Screws, and Studs, Screw Thread Requirements
AS3063	Bolts, Screws, and Studs, Geometric Control Requirements
AS6416	Bolts, Screws, Studs, and Nuts, Definitions for Design, Testing and Procurement
AS8879	Screw Threads - UNJ Profile, Inch, Controlled Radius Root with Increased Minor Diameter

2.1.2 AIA/NAS Publications

Available from Aerospace Industries Association, 1000 Wilson Boulevard, Suite 1700, Arlington, VA 22209-3928, Tel: 703-358-1000, www.aia-aerospace.org.

NASM1312-6	Fastener Test Methods, Method 6, Hardness
NASM1312-8	Fastener Test Methods, Method 8, Tensile Strength
NASM1312-10	Fastener Test Methods, Method 10, Stress-Rupture
NASM1312-13	Fastener Test Methods, Method 13, Double Shear Test

2.1.3 ASME Publications

Available from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), www.asme.org.

ASME B46.1 Surface Texture (Surface Roughness, Waviness, and Lay)

2.1.4 ASTM International 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 A380 Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems

ASTM A967 Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts

ASTM D3951 Commercial Packaging

ASTM E8/E8M Tension Testing of Metallic Materials

ASTM E112 Determining Average Grain Size

ASTM E139 Conducting Creep-Rupture, and Stress-Rupture Tests of Metallic Materials

ASTM E140 Standard Hardness Tables for Metals

ASTM E1417/E1417M Liquid Penetrant Examination

2.2 Definitions

Refer to AS6416.

2.3 Unit Symbols and Abbreviations

°C Degree Celsius

°F Degree Fahrenheit

% Percent (1% = 1/100)

lbf Pound-force

ksi Kips (1000 pounds) per square inch

sp gr Specific gravity

HRC Hardness, Rockwell C scale

3. TECHNICAL REQUIREMENTS

3.1 Material

Shall be AMS5731 steel heading stock.