



AEROSPACE STANDARD	AS7229™	REV. A
	Issued 1992-10 Reaffirmed 2018-11 Revised 2024-08 Superseding AMS7229	
Rivets, Steel, Corrosion and Heat Resistant 18Cr - 10.5Ni - 0.70(Cb+Ta) Solution Heat Treated Procurement Specification For FSC 5320		

RATIONALE

In 3.3, change “passivated” to “cleaned.” Revise hardness to allow testing per ASTM E92. General editorial updates.

1. SCOPE

1.1 Type

This procurement specification covers aircraft-quality solid rivets and tubular end rivets made from a corrosion-resistant steel of the type identified under the Unified Numbering System as UNS S34700.

1.2 Application

Primarily for joining corrosion-resistant steel parts requiring corrosion, heat, and oxidation resistance up to approximately 1300 °F but not requiring high shear strength.

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.

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Documents
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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.

AMS2248 Chemical Check Analysis Limits, Corrosion- and Heat-Resistant Steels and Alloys, Maraging and Other Highly Alloyed Steels, and Iron Alloys

AMS2750 Pyrometry

2.1.2 U.S. Government Publications

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

2.1.2.1 Military Standards

NASM1312-6 Fastener Test Methods, Method 6, Hardness

MIL-STD-2073-1 Procedures for Development and Application of Packaging Requirements

2.1.2.2 Air Force-Navy Aeronautical Standards

AN123151 through AN123300 Rivet, Solid, Universal Head, AMS7229

AN123451 through AN123600 Rivet, Solid, 100° Flush Head, AMS7229

2.1.3 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 A262 Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels

ASTM E92 Vickers Hardness Testing

ASTM E353 Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys

2.2 Definitions

DEFECTIVE: A unit of product that contains one or more defects.

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.

2.3 Unit Symbols

° degree, angular

HV10 hardness, Vickers, measured under a 10-kg load

% percent (1% = 1/100)

kg kilogram

°F degree Fahrenheit

3. TECHNICAL REQUIREMENTS

3.1 Material

The rivets shall be made from material conforming to the following:

3.1.1 Composition

Shall conform to the percentages by weight specified in Table 1, determined by wet chemical methods in accordance with ASTM E353, by spectrochemical methods, or by other analytical methods acceptable to the purchaser.

Table 1 - Material composition

Element	% by Weight Min	% by Weight Max
Carbon	--	0.08
Manganese	--	2.00
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	17.00	19.00
Nickel	9.00	12.00
Columbium + Tantalum	10XC	1.10
Molybdenum	--	0.75
Copper	--	0.75
Iron	remainder	

3.1.2 Check Analysis

Composition variations shall meet the applicable requirements of AMS2248.

3.1.3 Condition

Solution heat treated, cold drawn wire or bar.

3.2 Design

Unless otherwise specified on the part drawing, rivets furnished to this specification shall conform to the design, dimensions, and other requirements specified on AN123151 through AN123300 and AN123451 through AN123600 for solid rivets.

3.3 Fabrication

Cold headed, unless the purchaser permits forming heads by machining. Rivets, after forming, shall be solution heat treated free from continuous carbide network, descaled if necessary, and cleaned; solution heat treatment shall be performed in a furnace atmosphere that will not cause change in composition at the surface. Furnace surveys and calibration of temperature controllers and recorders shall be in accordance with AMS2750.

3.4 Runout of Head

The circular runout of the rivet head relative to its shank shall be within the full indicator movement (FIM) specified in Table 2, unless otherwise specified on the part drawing. The measurement shall be taken with the indicator stylus touching the periphery of the protruding head, or the conical surface near the top of the flush head, as the rivet is rotated with its shank as an axis.