AEROSPACE MATERIAL SPECIFICATION

AMS5637™ **REV. J**

Issued 1949-03
Reaffirmed 2006-04
Revised 2018-07

Superseding AMS5637H

Steel, Corrosion Resistant, Bars and Wire
18Cr - 9.0Ni (302)
Solution Heat Treated, Cold Drawn and Stress Relieved
125 ksi (862 MPa) Tensile Strength
(Composition similar to S30200)

RATIONALE

AMS5637J revises chemical analysis standards (3.1), Condition (3.2.1.1), Properties (3.3.1.1), Introduces a new requirement related to exceptions (3.6), revises Reports (4.4) and Identification (5.2.1), and results from a Five-Year Review and update of this specification.

1. SCOPE

1.1 Form

This specification covers a corrosion resistant steel in the form of bars and wire 0.75 inch (19 mm) and under in nominal diameter or distance between parallel sides (see 8.4).

1.2 Application

These products have been used typically for small parts, such as bolts, screws, and clevis pins, requiring corrosion resistance up to 700 °F (371 °C) and which may be fabricated by heading or by machining from bars or wire and roll threading, but usage is not limited to such applications.

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 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2241 Tolerances, Corrosion and Heat-Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Bars and Wire

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

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

SAE values your input. To provide feedback on this Technical Report, please visit
http://standards.sae.org/AMS5637J

AMS2371 Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steels and Alloys, Wrought Products and Forging Stock

AMS2806 Identification, Bars, Wire, Mechanical Tubing, and Extrusions, Carbon and Alloy Steels and Corrosion and Heat-Resistant Steels and Alloys

ARP1917 Clarification of 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 A751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products

ASTM E8/E8M Tension Testing of Metallic Materials

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined in accordance with ASTM A751, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

Table 1 - Composition

Element	Min	Max
Carbon	--	0.15
Manganese	--	2.00
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	17.00	19.00
Nickel	8.00	10.00
Molybdenum	--	0.75
Copper	--	0.75

3.2 Check Analysis

Composition variations shall meet the applicable requirements of AMS2248.

3.3 Condition

Solution heat treated, cold drawn, heated to 700 °F ± 25 °F (371 °C ± 14 °C), and descaled.

3.3.1 Bars shall not be cut from plate (also see 4.4.1).

3.4 Properties

Product 0.75 inch (19 mm) and under in nominal diameter or least distance between parallel sides shall conform to the following requirements:

3.4.1 Tensile Properties

Shall be as shown in Table 2, determined in accordance with ASTM E8/E8M. Determination of yield strength is not required for wire under 0.125 inch (3.18 mm) diameter.