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Superseding AMS5637G	

Steel, Corrosion Resistant, Bars and Wire
18Cr - 9.0Ni (SAE 30302)
Solution Heat Treated, Cold Drawn and Stress Relieved
125 ksi (862 MPa) Tensile Strength
(Composition similar to S30200)

RATIONALE

AMS5637H revises the title to clarify product condition, removes the requirement for determining yield strength for wire under 0.125 inch (3.18mm) diameter (3.3.1) 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.

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.

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<http://www.sae.org/technical/standards/AMS5637H>**

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 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
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

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 E 8/E 8M	Tension Testing of Metallic Materials
ASTM E 353	Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E 353, 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

3.1.1 Check Analysis

Composition variations shall meet the applicable requirements of AMS2248.

3.2 Condition

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

3.3 Properties

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

3.3.1 Tensile Properties

Shall be as shown in Table 2, determined in accordance with ASTM E 8/E 8M. Determination of yield strength is not required for wire under 0.125 inch (3.18 mm) diameter.

TABLE 2 - MINIMUM TENSILE STRENGTH

Property	Value
Tensile Strength	125 ksi (862 MPa)
Yield Strength at 0.2% Offset	100 ksi (689 MPa)
Elongation in 4D	17%
Reduction of Area	45%

3.4 Quality

The product, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the product.

3.5 Tolerances

Shall conform to all applicable requirements of AMS2241.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to specified requirements.

4.2 Classification of Tests

Tests for all technical requirements are acceptance tests and shall be performed on each heat or lot as applicable.

4.3 Sampling and Testing

Shall be in accordance with AMS2371.

4.4 Reports

The vendor of the product shall furnish with each shipment a report showing the results of tests for composition of each heat and for tensile properties of each lot, and stating that the product conforms to the other technical requirements. This report shall include the purchase order number, heat and lot numbers, AMS5637H, size, and quantity.

4.5 Resampling and Retesting

Shall be in accordance with AMS2371.