AEROSPACE MATERIAL SPECIFICATION

AMS5913	REV. B

Issued 1992-01
Revised 2009-04
Reaffirmed 2014-06

Superseding AMS5913A

Steel, Corrosion-Resistant, Sheet and Strip
19Cr - 9.2Ni (SAE 30304)
Cold Rolled, Full Hard, 185 ksi (1276 MPa) Tensile Strength
(Composition similar to UNS S30400)

RATIONALE

This document has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE

1.1 Form

This specification covers a corrosion-resistant steel in the form of sheet and strip.

1.2 Application

These products have been used typically for applications requiring moderate drawing and forming, but usage is not limited to such applications.

1.2.1 Mechanical properties specified herein are obtained by cold working (strain hardening) and not by heat treatment. Therefore, the cold-worked product should not be heated to a temperature which adversely affects the mechanical properties or corrosion-resistance before, during, or after fabrication.

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 724-776-4970 (outside USA), www.sae.org.

AMS2242 Tolerances, Corrosion and Heat-Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Sheet, Strip, and Plate

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

AMS2807 Identification, Carbon and Low-Alloy Steels, Corrosion and Heat-Resistant Steels and Alloys, Sheet, Strip, Plate, and Aircraft Tubing

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://www.sae.org/technical/standards/AMS5913B

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 A 370 Mechanical Testing of Steel Products
ASTM E 290 Bend Testing of Material for Ductility
ASTM E 353 Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys
ASTM E 384 Microindentation Hardness of Materials

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	--	0.08
Manganese	--	2.00
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	18.00	20.00
Nickel	8.00	10.50
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, descaled unless solution heat treatment is performed in an atmosphere yielding a bright finish, and cold rolled.

3.3 Properties

The product shall conform to the following requirements; tensile and hardness properties shall be determined in accordance with ASTM A 370:

3.3.1 Tensile Properties

Shall be as shown in Table 2 for product over 0.005 inch (0.13 mm) in nominal thickness.

TABLE 2A - MINIMUM TENSILE PROPERTIES, INCH/POUND UNITS

Property	Value
Tensile Strength	185 ksi
Yield Strength at 0.2% Offset	140 ksi
Elongation in 2 Inches or 4D	
Nominal Thickness	
Over 0.005 to 0.015 inch, incl	3%
Over 0.015 inch	5%

TABLE 2B - MINIMUM TENSILE PROPERTIES, SI UNITS

Property	Value
Tensile Strength	1276 MPa
Yield Strength at 0.2% Offset	965 MPa
Elongation in 50.8 mm or 4D	
Nominal Thickness	
Over 0.13 to 0.38 mm, incl	3%
Over 0.38 mm	5%

3.3.2 Hardness

Shall be not lower than 41 HRC, or equivalent (See 8.2). Product shall not be rejected on the basis of hardness if the tensile properties of 3.3.1 are acceptable, determined on specimens taken from the same sample as that with nonconforming hardness, or from another sample with similar nonconforming hardness.

3.3.2.1 Microhardness testing in accordance with ASTM E 384 may be used for thin gages where superficial hardness testing is impractical.

3.3.3 Bending

Product 0.050 inch (1.27 mm) and under in nominal thickness shall be tested in accordance with ASTM E 290 using specimens prepared nominally 0.75 inch (19.0 mm) in width, with the axis of bend parallel to the direction of rolling, and shall withstand, without cracking, when bending at room temperature through the angle indicated in Table 3 around a diameter equal to the bend factor times the nominal thickness of the product. In case of dispute, the results of tests using the guided bend test of ASTM E 290 shall govern.

TABLE 3 - BENDING

Nominal Thickness Inch	Angle degrees, min	Bend Factor
Up to 0.050 inch (1.27 mm), incl	180	4

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 AMS2242.

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

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, hardness, and bending 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, AMS5913B, size, and quantity.

4.5 Resampling and Retesting

Shall be in accordance with AMS2371.

5. PREPARATION FOR DELIVERY

5.1 Identification

Shall be in accordance with AMS2807.

5.2 Packaging

The product shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the product to ensure carrier acceptance and safe delivery.

6. ACKNOWLEDGMENT

A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

7. REJECTIONS

Product not conforming to this specification, or to modifications authorized by purchaser, will be subject to rejection.