



AEROSPACE MATERIAL SPECIFICATION

AMS5518

REV. M

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Superseding AMS5518L

Steel, Corrosion Resistant, Sheet and Strip
18Cr - 8Ni
Cold Rolled, 150 ksi (1034 MPa) Tensile Strength
(Composition similar to UNS S30100)

RATIONALE

AMS5518M revises Scope (1.1.1), Properties (3.3.1.1), Reports (4.4), and is 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 sheet and strip.

1.1.1 This specification covers products 0.005 inch (0.13 mm) and over in nominal thickness (See 8.6).

1.2 Application

These products have been used typically for parts requiring strength and moderate forming or bending, 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

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- 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

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 Knoop and Vickers 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	--	0.15
Manganese	--	2.00
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	16.00	18.00
Nickel	6.00	8.00
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, descaled unless solution heat treatment is performed in an atmosphere yielding a bright finish, and cold rolled (See 8.2).

3.3 Properties

The product shall conform to the following requirements, determined in accordance with ASTM A 370: