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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 5517K

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Superseding AMS 5517J

Steel, Corrosion Resistant, Sheet and Strip
18Cr - 8Ni (SAE 30301)
Cold Rolled, 125 ksi (862 MPa) Tensile Strength

UNS S30100

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 parts requiring moderate drawing or 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 form 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 canceled and no superseding document has been specified, the last published issue of that document shall apply.

QUESTIONS REGARDING THIS DOCUMENT: (724) 772-7161 FAX: (724) 776-0243
TO PLACE A DOCUMENT ORDER: (724) 776-4970 FAX: (724) 776-0790
SAE WEB ADDRESS: http://www.sae.org

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2242	Tolerances, Corrosion and Heat Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Sheet, Strip, and Plate
MAM 2242	Tolerances, Metric, Corrosion and Heat Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Sheet, Strip, and Plate
AMS 2248	Chemical Check Analysis Limits, Corrosion and Heat Resistant Steels and Alloys, Maraging and Other Highly-Alloyed Steels, and Iron Alloys
AMS 2371	Quality Assurance Sampling and Testing, Corrosion and Heat Resistant Steels and Alloys, Wrought Products and Forging Stock
AMS 2807	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, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM A 370	Mechanical Testing of Steel Products
ASTM A 480/480M	General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
ASTM E 353	Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys
ASTM E 384	Microhardness 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 AMS 2248.

3.2 Conditions:

Solution heat treated and, unless solution treatment is performed in an atmosphere yielding a bright finish, descaled and cold rolled in accordance with ASTM A 480/A 480M finish TR to produce mechanical properties in accordance with 3.3 having a surface appearance comparable to 3.2.1 and 3.2.2, as applicable (See 8.2).

3.2.1 Sheet: No. 2D finish, except No. 2B finish may be supplied if acceptable to purchaser (See 8.4.1).

3.2.2 Strip: No. 1 strip finish.

3.3 Properties:

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

3.3.1 Tensile Properties: Product, 0.005 inch (0.13 mm) and over in nominal thickness shall have the properties shown in Table 2.

TABLE 2 - Minimum Tensile Properties

Property	Value
Tensile Strength	125 ksi (862 MPa)
Yield Strength at 0.2% Offset	75.0 ksi (517 MPa)
Elongation in 2 Inches (50.8 mm) or 4D	25%

3.3.2 Hardness: Shall be not lower than 25 HRC or 252 HB, or equivalent (See 8.3). Product shall not be rejected on the basis of hardness if tensile properties of 3.3.1 are acceptable, determined on specimen 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 those gages where superficial hardness testing is impractical.

3.3.3 Bending: Product shall withstand, without cracking, bending through the angle indicated in Table 3 around a diameter equal to the bend factor times the nominal thickness of the product with axis of bend parallel to the direction of rolling. Only one type of test will be required in routine inspection; in case of dispute, results of tests using the V-block procedure shall govern.

TABLE 3 - Bending Parameters

Nominal Thickness Inch	Nominal Thickness Millimeters	Type of Bend	Angle deg, min	Bend Factor
Up to 0.050, excl	Up to 1.27, excl	Free Bend	180	1
Up to 0.050, excl	Up to 1.27, excl	V-Block	135	2
0.050 and over	1.27 and over	Free Bend	90	2
0.050 and over	1.27 and over	V-Block	135	3

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 AMS 2242 or MAM 2242.

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.