



AEROSPACE MATERIAL SPECIFICATION

AMS5572™**REV. H**

Issued 1949-11
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Reaffirmed 2019-07

Superseding AMS5572G

Steel, Corrosion and Heat-Resistant, Seamless Tubing
25Cr - 20Ni (SAE 30310S)
Solution Heat Treated
(Composition similar to UNS S31008)

RATIONALE

AMS5572H has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE:

1.1 Form:

This specification covers a corrosion and heat-resistant steel in the form of seamless tubing.

1.2 Application:

This tubing has been used typically for parts requiring both corrosion and heat resistance and especially when such parts are welded during fabrication, but usage is not limited to such applications. This steel provides oxidation resistance up to 2000 °F (1093 °C) but useful at that temperature only when stresses are low.

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, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or www.sae.org.

AMS 2243	Tolerances, Corrosion and Heat-Resistant Steel Tubing
MAM 2243	Tolerances, Metric, Corrosion and Heat-Resistant Steel Tubing
AMS 2248	Chemical Check Analysis Limits, Corrosion and Heat-Resistant Steels and Alloys, Maraging and Other Highly-Alloyed Steels, and Iron Alloys

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Documents
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2.1 (Continued):

AMS 2371	Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steels and Alloys, Wrought Products and Forging Stock
AMS 2634	Ultrasonic Inspection, Thin Wall Metal Tubing
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 or www.astm.org.

ASTM A 370	Mechanical Testing of Steel Products
ASTM E 353	Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys
ASTM E 426	Electromagnetic (Eddy-Current) Testing of Seamless and Welded Tubular Products, Austenitic Stainless Steel and Similar Alloys
ASTM E 1417	Liquid Penetrant Examination

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	--	1.50
Phosphorus	--	0.045
Sulfur	--	0.030
Chromium	24.00	26.00
Nickel	19.00	22.00
Molybdenum	--	0.75
Copper	--	0.75

3.1.1 Check Analysis: Composition variations shall meet the applicable requirements of AMS 2248.

3.2 Condition:

Solution heat treated and, unless solution heat treatment is performed in an atmosphere yielding a bright finish, pickled as required or passivated, and free from continuous carbide network.

3.3 Fabrication:

Tubing shall be produced by a seamless process. Finishing operations for removal of surface blemishes shall be performed prior to final solution heat treatment. A light polish to improve surface appearance may be employed after solution heat treatment, and, if performed, the product shall be subsequently passivated.

3.4 Properties:

Tubing shall conform to the following requirements:

3.4.1 Tensile Properties: Shall be as shown in Table 2, determined in accordance with ASTM A 370.

TABLE 2A - Tensile Properties, Inch/Pound Units

Nominal OD Inches	Tensile Strength ksi, max	Elongation in 2 Inches %, min Strip	Elongation in 2 Inches %, min Full Tube
Up to 0.312, incl	105	35	40
Over 0.312	100	35	40

TABLE 2B - Tensile Properties, SI Units

Nominal OD Millimeters	Tensile Strength MPa, max	Elongation in 50.8 mm %, min Strip	Elongation in 50.8 mm %, min Full Tube
Up to 7.92, incl	724	35	40
Over 7.92	689	35	40

3.4.2 Flarability: Specimens as in 4.3.1 shall withstand flaring, without formation of cracks or other visible defects, by being forced axially at room temperature with steady pressure over a hardened and polished tapered steel pin having a 74-degree included angle to produce a flare having a permanent expanded OD not less than shown in Table 3.

TABLE 3A - Minimum Flarability, Inch/Pound Units

Nominal OD Inches	Expanded OD Inches	Nominal OD Inches	Expanded OD Inches
0.500	0.656	1.250	1.500
0.625	0.781	1.500	1.721
0.750	0.937	1.750	2.106
1.000	1.187	2.000	2.356