



AEROSPACE MATERIAL SPECIFICATION

AMS5587™**REV. G**

Issued 1965-02
Reaffirmed 2006-04
Revised 2021-11

Superseding AMS5587F

Nickel Alloy, Corrosion and Heat Resistant, Seamless Tubing
47.5Ni - 22Cr - 1.5Co - 9.0Mo - 0.60W - 18.5Fe
Solution Heat Treated
(Composition similar to UNS N06002)

RATIONALE

AMS5587G is the result of a Five-Year Review and update of the specification. The revision prohibits unauthorized exceptions (3.7, 4.4.1, 5.2.1, 8.5), revises condition and fabrication (3.2, 3.3), updates tensile tests (3.4.1, 8.6), standardizes hydrostatic test requirements (3.4.4), updates quality (3.5, 4.2.1.1, 4.4), adds country of origin (4.4), clarifies identification (5.2), adds definitions (8.2.1), and allows prior revisions (8.4).

1. SCOPE

1.1 Form

This specification covers a corrosion and heat resistant nickel alloy in the form of seamless tubing.

1.2 Application

This tubing has been used typically for fluid lines operating in service under appreciable stresses at elevated temperatures, but usage is not limited to such applications. This alloy has good strength up to 1800 °F (982 °C) and oxidation resistance up to 2200 °F (1204 °C).

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 +1 724-776-4970 (outside USA), www.sae.org.

AMS2263 Tolerances, Nickel, Nickel Alloy, and Cobalt Alloy Tubing

AMS2269 Chemical Check Analysis Limits, Nickel, Nickel Alloys, and Cobalt Alloys

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For more information on this standard, visit
<https://www.sae.org/standards/content/AMS5587G/>

Documents
Document Sharing Hub

AMS2371	Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steels and Alloys, Wrought Products and Forging Stock
AMS2632	Inspection, Ultrasonic, of Thin Materials, 0.50 Inch (12.7 mm) and Under in Cross-Sectional Thickness
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 B829	General Requirements for Nickel and Nickel Alloys Seamless Pipe and Tube
ASTM E8/E8M	Tension Testing of Metallic Materials
ASTM E112	Determining Average Grain Size
ASTM E354	Chemical Analysis of High-Temperature, Electrical, Magnetic, and Other Similar Iron, Nickel, and Cobalt Alloys
ASTM E426	Electromagnetic (Eddy-Current) Examination of Seamless and Welded Tubular Products, Austenitic Stainless Steel and Similar Alloys
ASTM E1417E1417M	Liquid Penetrant Testing

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined in accordance with ASTM E354 or by other analytical methods acceptable to purchaser.

Table 1 - Composition

Element	Min	Max
Carbon	0.05	0.15
Manganese	--	1.00
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	20.50	23.00
Cobalt	0.50	2.50
Molybdenum	8.00	10.00
Tungsten	0.20	1.00
Iron	17.00	20.00
Boron	--	0.010
Copper	--	0.30
Nickel	remainder	

3.1.1 Check Analysis

Composition variations shall meet the applicable requirements of AMS2269.