



AEROSPACE MATERIAL SPECIFICATION

AMS5889™**REV. D**

Issued 1990-01
Reaffirmed 2015-12
Revised 2022-04

Superseding AMS5889C

Nickel Alloy, Corrosion and Heat Resistant, Sheet and Strip
54Ni - 22Cr - 12.5Co - 9.0Mo - 1.2Al
Consumable Electrode or Vacuum Induction Melted
Annealed
(Composition similar to UNS N06617)

RATIONALE

AMS5889D is the result of a Five-Year Review and update of the specification. The revision prohibits unauthorized exceptions (3.8, 4.4.1, 5.1.1, 8.4), updates composition reporting (3.1.1), updates condition (3.3.1), adds pyrometry requirements (3.4), adds continuous furnace information (3.4.1), provides strain rate for tensile testing (3.5.1.1), adds country of origin (4.4), and permits prior revisions (8.5).

1. SCOPE

1.1 Form

This specification covers a corrosion and heat resistant nickel alloy in the form of sheet and strip.

1.2 Application

These products have been used typically for parts requiring a combination of high strength and resistance to oxidation, corrosion, and fatigue up to 2200 °F (1204 °C) and where such parts may require welding during fabrication, but usage is not limited to such applications.

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.

AMS2262 Tolerances, Nickel, Nickel Alloy, and Cobalt Alloy Sheet, Strip, and Plate

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

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SAE WEB ADDRESS:

Full document details: SAE AMS5889D

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS5889D/>

Documents

Document Sharing Hub

AMS2371	Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steels and Alloys, Wrought Products and Forging Stock
AMS2750	Pyrometry
AMS2807	Identification, Carbon and Low-Alloy Steels, Corrosion and Heat-Resistant Steels and Alloys, Sheet, Strip, Plate, and Aircraft Tubing
AS4194	Sheet and Strip Surface Finish Nomenclature
AS7766	Terms Used in Aerospace Metals Specifications

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 A480/A480M	General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet and Strip
ASTM E8/E8M	Tension Testing of Metallic Materials
ASTM E112	Determining Average Grain Size
ASTM E290	Bend Testing of Material for Ductility
ASTM E354	Chemical Analysis of High-Temperature, Electrical, Magnetic, and Other Similar Iron, Nickel, and Cobalt Alloys

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	--	0.50
Silicon	--	0.50
Phosphorus	--	0.015
Sulfur	--	0.015
Chromium	20.0	24.0
Cobalt	10.0	15.0
Molybdenum	8.0	10.0
Aluminum	0.8	1.5
Titanium	--	0.6
Boron	--	0.006
Iron	--	3.0
Copper	--	0.5
Nickel	remainder	