AEROSPACE MATERIAL SPECIFICATION

AMS5552™	REV. H

Issued	1960-06
Reaffirmed	2000-09
Revised	2006-03
Cancelled	2011-04
Stabilized	2018-07

Superseding AMS5552G

Alloy, Corrosion and Heat-Resistant, Sheet, Strip, and Plate
46Fe – 20.5Cr – 32Ni – 1.1Ti
Annealed
(Composition similar to UNS N08801)

RATIONALE

AMS5552H stabilizes this document because while ongoing usage for this commodity has been identified, it represents mature technology that is not expected to change and thus no further revisions are anticipated.

STABILIZED NOTICE

AMS5552H has been declared "STABILIZED" by SAE AMS F Corrosion and Heat Resistant Alloys Committee. This document will no longer be updated and may no longer represent standard industry practice. This document was stabilized because while it is no longer state of the art and no further revisions are anticipated there are identified users of this commodity. Previously this document was cancelled. The last technical update of this document occurred in March, 2006. Users of this document should refer to the cognizant engineering organization for disposition of any issues with reports/certifications to this specification; including exceptions listed on the certification.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
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1. SCOPE:

1.1 Form:

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

1.2 Application:

These products have been used typically for low-stressed parts requiring corrosion and oxidation resistance up to 1800 °F (982 °C), but useful at the higher temperatures only when stresses are low, 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 724-776-4970 (outside USA), www.sae.org.

AMS 2262	Tolerances, Nickel, Nickel Alloy, and Cobalt Alloy Sheet, Strip and Plate
AMS 2269	Chemical Check Analysis Limits, Wrought Nickel Alloys and Cobalt 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
AS4194	Sheet and Strip Surface Finish Nomenclature

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 480/A 480M	Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
ASTM E 8	Tension Testing of Metallic Materials
ASTM E 8M	Tension Testing of Metallic Materials (Metric)
ASTM E 112	Determining Average Grain Size
ASTM E 290	Semi-Guided Bend Test for Ductility of Metallic Materials
ASTM E 354	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 by wet chemical methods in accordance with ASTM E 354, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

TABLE 1 - Composition

Element	min	max
Carbon	--	0.10
Manganese	--	1.50
Silicon	--	1.00
Sulfur	--	0.015
Chromium	19.00	22.0
Nickel	30.0	34.0
Titanium	0.75	1.5
Cobalt (3.1.1)	--	1.0
Copper	--	0.5
Iron	remainder	

3.1.1 Determination not required for routine acceptance.

3.1.2 Check Analysis: Composition variations shall meet the applicable requirements of AMS 2269.

3.2 Condition:

The product shall be supplied in the following condition:

3.2.1 Sheet and Strip: Cold rolled, annealed, and, unless annealing is performed in an atmosphere yielding a bright finish, descaled having a surface appearance in accordance with ASTM A480/A 480M and AS4194 comparable to 3.2.1.1 or 3.2.1.2 as applicable.

3.2.1.1 Sheet: No. 2D finish.

3.2.1.2 Strip: No. 1 strip finish.

3.2.2 Plate: Hot rolled and annealed; plate shall be descaled, when so ordered.

3.3 Properties:

The product shall conform to the following requirements:

3.3.1 Tensile Properties: Shall be as shown in Table 2, determined in accordance with ASTM E 8 or ASTM E 8M on product 0.010 to 2.000 inches (0.25 to 50.80 mm) in nominal thickness.

TABLE 2 - Tensile Properties

Property	Value
Tensile Strength	80.0 to 105 ksi (552 to 724 MPa)
Yield Strength at 0.2% Offset, min	30.0 ksi (207 MPa)
Elongation in 2 Inches (50.8 mm) or 4D, min	30%

3.3.2 Bending: Sheet and strip shall withstand, without cracking, bending in accordance with ASTM E 290 through an angle of 180 degrees around a diameter equal to the bend factor shown in Table 3 times the nominal thickness of the product with axis of bend parallel to the direction of rolling.

TABLE 3 - Bending Parameters

Nominal Thickness Inch	Nominal Thickness Millimeters	Bend Factor
0.010 to 0.050, incl	0.25 to 1.27, incl	1
Over 0.050 to 0.1874, incl	Over 1.27 to 4.760, incl	2