AEROSPACE MATERIAL SPECIFICATION

AMS5506™	REV. H

Issued 1952-11
Reaffirmed 2012-04
Revised 2024-01

Superseding AMS5506G

Steel, Corrosion- and Heat-Resistant, Sheet, Strip, and Plate
13Cr (0.30 - 0.40C) (420)
Annealed
(Composition similar to UNS S42000)

RATIONALE

AMS5506H is the result of a Five-Year Review and update of the standard. The revision updates composition reporting (see 3.1.2), adds continuous heat treatment options (see 3.2.4), updates tensile testing requirements due to testing limits (see 3.3.1), updates hardness testing, due to testing limits (see 3.3.3), adds pyrometry requirements (see 3.3.3), clarifies hardness conversions (see 8.2), and prohibits unauthorized exceptions (see 3.6, 4.4.1, and 8.5).

1. SCOPE

1.1 Form

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

1.2 Application

These products have been used typically for parts, such as snap rings and flat springs, requiring corrosion and oxidation resistance up to 800 °F (427 °C), 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.

AMS2242	Tolerances, Corrosion and Heat Resistant Steel, Iron Alloy, Titanium and Titanium Alloy Sheet, Strip, and Plate
AMS2248	Chemical Check Analysis Limits, Corrosion- and Heat-Resistant Steels and Alloys, Maraging and Other Highly Alloyed Steels, and Iron Alloys

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For more information on this standard, visit
https://www.sae.org/standards/content/AMS5506H

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 A370 Mechanical Testing of Steel Products

ASTM A480/A480M Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip

ASTM A751 Chemical Analysis of Steel Products

ASTM E140 Hardness Conversion Tables for Metals Relationship Among Brinell Hardness, Vickers Hardness, Rockwell Hardness, Superficial Hardness, Knoop Hardness, Scleroscope Hardness, and Leeb Hardness

ASTM E290 Bend Testing of Material for Ductility

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

Composition shall conform to the percentages by weight shown in Table 1, in accordance with ASTM A751, or by other analytical methods acceptable to the purchaser.

Table 1 - Composition

Element	Min	Max
Carbon	0.30	0.40
Manganese	--	1.00
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	12.00	14.00
Nickel	--	0.50
Molybdenum	--	0.50
Aluminum	--	0.15
Copper	--	0.50
Tin	--	0.05

3.1.1 Check Analysis

Composition variations shall meet the applicable requirements of AMS2248.