



AEROSPACE MATERIAL SPECIFICATION

AMS5500™**REV. H**

Issued 1968-05
Reaffirmed 2012-10
Revised 2025-10

Superseding AMS5500G

Steel, Corrosion-Resistant, Laminated, Sheet,
Surface Bonded (SAE 302)
(Composition similar to UNS S30200)

RATIONALE

AMS5500H is the result of a Five-Year Review and update of the specification. The revision updates the Title to include the common name (see 8.5) and updates composition reporting (see 3.1.1.1) and the exceptions requirements (see 8.4).

1. SCOPE

1.1 Form

This specification covers a corrosion-resistant steel in the form of laminated sheet.

1.2 Application

This sheet has been used typically for shims in which thickness is adjusted by removal of laminations as required, 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 (U.S. and Canada only) or +1 724-776-4970 (outside U.S. and Canada), www.sae.org.

AMS2248	Chemical Check Analysis Limits, Corrosion- and Heat-Resistant Steels and Alloys, Maraging and Other Highly Alloyed Steels, and Iron Alloys
AMS2371	Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steels and Alloys, Wrought Products and Forging Stock
AS7766	Terms Used in Aerospace Metals Specifications
SAE J405	Chemical Compositions of SAE Wrought Stainless Steels

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SAE WEB ADDRESS:

Full document details: SAE AMS5500H

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS5500H/>

Documents

Standard, visit Sharing Hub

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 A751 Chemical Analysis of Steel Products

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

3.1.1 Laminations

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

Table 1 - Composition

Element	Min	Max
Carbon	--	0.15
Manganese	--	2.00
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	17.00	19.00
Nickel	8.00	10.00
Molybdenum	--	0.75
Copper	--	0.75

3.1.1.1 The producer may test for any element not listed in Table 1 and include this analysis in the report of 4.4. Reporting of any element not listed in the composition table is not a basis for rejection, unless limits of acceptability are specified by the purchaser.

3.1.1.2 Check Analysis

Composition variations shall meet the applicable requirements of AMS2248.

3.1.2 Adhesive

Adhesion shall be of a composition that will meet the fabrication and quality requirements of this specification.

3.2 Fabrication

The corrosion-resistant steel comprising the laminations shall be in the annealed or 1/4 hard temper. The laminated shim stock shall consist completely of laminations each 0.002 inch $\pm$ 0.0002 inch (0.05 mm $\pm$ 0.005 mm) thick or 0.003 inch $\pm$ 0.0003 inch (0.08 mm $\pm$ 0.008 mm) thick or partly of such laminations combined with a single thicker lamination (see Table 2), as ordered, bonded together by an adhesive such that individual laminations may be peeled for adjustment of shim thickness. The thickness of each layer of adhesive shall not exceed 0.0003 inch (0.008 mm).

3.2.1 Sheet shall be of the thicknesses and combinations of laminations and solid base shown in Table 2.

Table 2 - Thicknesses and combinations of laminations and solid base

Nominal Thickness of Shim Stock Inches	Nominal Thickness of Shim Stock Millimeters	All Laminated 0.002 Inches (0.05 mm) Laminations	All Laminated 0.003 Inches (0.08 mm) Laminations	Half Solid, Half Laminated 0.002 Inches (0.05 mm) Laminations	Half Solid, Half Laminated 0.003 Inches (0.08 mm) Laminations	Three Quarters Solid, One Quarter Laminated 0.002 Inches (0.05 mm) Laminations	Three Quarters Solid, One Quarter Laminated 0.003 Inches (0.08 mm) Laminations
0.006	0.15	X					
0.008	0.20	X					
0.010	0.25	X					
0.012	0.31	X					
0.015	0.38	X	X				
0.016	0.41	X	X				
0.020	0.51	X	X				
0.021	0.53	X	X				
0.032	0.81	X	X				
0.033	0.84	X	X				
0.047	1.19	X	X				
0.048	1.22	X	X				
0.062	1.58	X	X	X	X		
0.063	1.60	X	X	X	X		
0.078	1.98	X	X	X	X		
0.080	2.03	X	X	X	X		
0.093	2.37	X	X	X	X		
0.094	2.39	X	X	X	X		
0.109	2.77	X	X	X	X		
0.121	3.07	X	X	X	X	X	X
0.125	3.18	X	X	X	X	X	X

3.3 Construction

3.3.1 General Requirements

Laminations, and solid stock when applicable, shall be bonded together throughout the whole surface area in a manner that will permit peeling of the laminations for adjustment of shim thickness without the aid of mechanical devices and without separation of the remaining laminations and solid part. Laminations shall be bonded together in such a manner that any shape can be cut from the material using suitable tools without separation. Laminations shall remain intact without separation during normal handling. Requirements shall be applicable to laminations not less than 8 hours after completion of bonding.

3.3.2 Surface Roughness

Flat surfaces of laminations, and solid stock when applicable, shall have a maximum roughness of 63 microinches Ra on original surfaces and on metallic surfaces after peeling.

3.3.3 Water Resistance

Sheet shall withstand total immersion in water at 120 °F ± 3 °F (49 °C ± 2 °C) for at least 3 hours without separation of laminations or any evidence of corrosion.