

# AEROSPACE MATERIAL SPECIFICATION



AMS 5600D

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Reaffirmed SEP 2000

Superseding AMS 5600C

Steel, Corrosion Resistant, Sheet  
Laminated, Edge Bonded

UNS S30200

## 1. SCOPE:

### 1.1 Form:

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

### 1.2 Application:

This sheet has been used primarily for shims of special shapes in which the thickness is adjusted by removal of laminations as required, but usage is not limited to such applications.

## 2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

### 2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2248 Chemical Check Analysis Limits, Wrought Corrosion and Heat Resistant Steels and Alloys, Maraging and Other Highly-Alloyed Steels, and Iron Alloys

AMS 2371 Quality Assurance Sampling and Testing, Corrosion and Heat Resistant Steels and Alloys, Wrought Products and Forging Stock

### 2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM E 353 Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys

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## 2.3 U.S. Government Publications:

Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-STD-163 Steel Mill Products, Preparation for Shipment and Storage

## 3. TECHNICAL REQUIREMENTS:

## 3.1 Composition:

- 3.1.1 Steel Sheet: Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E 353, by spectrochemical methods, or by other analytical methods acceptable to 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 Check Analysis: Composition variations shall meet the requirements of AMS 2248.

- 3.1.2 Adhesive: Shall be of a composition meeting the fabrication (3.2) and quality (3.3) requirements.

## 3.2 Fabrication:

Shim stock shall be fabricated from corrosion-resistant steel laminations in a temper suitable for shearing. Stock shall consist completely of laminations 0.002 inch  $\pm$  0.0002 (0.05 mm  $\pm$  0.005) thick or 0.003 inch  $\pm$  0.0003 (0.08 mm  $\pm$  0.008) thick, or partly of such laminations in combination with a single thicker lamination, as ordered, precut to the desired shape, stacked to the desired thickness, and bonded on the outside edge with adhesive.

- 3.2.1 Laminations shall be bonded together in such a manner that normal handling shall not cause separation of the laminated shim stock. The layers shall readily peel to provide the required thickness of laminations.

## 3.3 Quality:

The product, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the product.

## 3.4 Tolerances:

Shall be as specified in Table 2.

TABLE 2A - Tolerances, Inch/Pound Units

Nominal Total Thickness Inches	Tolerance	Tolerance
	Inch plus	Inch minus
Up to 0.010, incl	0.0005	0.0005
Over 0.010 to 0.021, incl	0.001	0.001
Over 0.021 to 0.047, incl	0.002	0.001
Over 0.047 to 0.078, incl	0.003	0.001
Over 0.078	0.005	0.002

TABLE 2B - Tolerances, SI Units

Nominal Total Thickness Millimeters	Tolerance	Tolerance
	Millimeter plus	Millimeter minus
Up to 0.25, incl	0.013	0.013
Over 0.25 to 0.53, incl	0.025	0.025
Over 0.53 to 1.19, incl	0.05	0.025
Over 1.19 to 1.98, incl	0.08	0.025
Over 1.98	0.13	0.05

## 4. QUALITY ASSURANCE PROVISIONS:

## 4.1 Responsibility for Inspection :

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the requirements of this specification.

#### 4.2 Classification of Tests:

Tests for all technical requirements are acceptance tests and shall be performed to represent each lot.

#### 4.3 Sampling and Testing:

Shall be in accordance with AMS 2371; a lot shall be all laminated shim stock of the same thickness and shape from one heat of steel processed at the same time and presented for vendor's inspection at one time.

#### 4.4 Reports:

The vendor of the product shall furnish with each shipment a report stating that the product conforms to the technical requirements. This report shall include the purchase order number, heat and lot number, AMS 5600D, shim stock thickness, lamination thickness, size, and quantity.

#### 4.5 Resampling and Retesting:

Shall be in accordance with AMS 2371.

### 5. PREPARATION FOR DELIVERY:

#### 5.1 Identification:

5.1.1 Laminated shim stock shall be marked with not less than the nominal thickness, thickness of each lamination, percentage of total thickness which is laminated, and AMS 5600D.

5.1.2 Packages of shim stock or parts shall be marked with not less than AMS 5600D, part number, purchase order number, and quantity.

#### 5.2 Packaging:

5.2.1 The product shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the product to ensure carrier acceptance and safe delivery.

5.2.2 For direct U.S. Military procurement, packaging shall be in accordance with MIL-STD-163, Commercial Level, unless Level A is specified in the request for procurement.

### 6. ACKNOWLEDGMENT:

A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.