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Superseding AMS5600D	

Steel, Corrosion-Resistant, Sheet  
Laminated, Edge Bonded

(Composition similar to UNS S30200)

**RATIONALE**

AMS5600E has been reaffirmed to comply with the SAE five-year review policy.

**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 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 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](http://www.sae.org).

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 International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, [www.astm.org](http://www.astm.org).

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

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### 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 Inch plus	Tolerance 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 Millimeter	
	plus	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 the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to specified requirements.

##### 4.2 Classification of Tests

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 the results of tests for composition of each heat and that the product conforms to the other technical requirements. This report shall include the purchase order number, heat and lot numbers, AMS 5600E, 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 5600E.

5.1.2 Packages of shim stock or parts shall be marked with not less than AMS 5600E, 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.

#### 6. ACKNOWLEDGMENT

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