

UNS S30200

STEEL SHEET, CORROSION RESISTANT
Laminated, Edge Bonded

1. SCOPE:

1.1 Form: This specification covers a corrosion-resistant steel in the form of laminated, edge-bonded sheet.

1.2 Application: Primarily for shims of special shapes in which the thickness is adjusted by removal of laminations as required.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2248 - Chemical Check Analysis Limits, Wrought Heat and Corrosion Resistant Steels and Alloys

AMS 2350 - Standards and Test Methods

AMS 2371 - Quality Assurance Sampling of Corrosion and Heat Resistant Steels and Alloys, Wrought Products Except Forgings and Forging Stock

2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM E353 - Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys

2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Federal Standards:

Federal Test Method Standard No. 151 - Metals; Test Methods

2.3.2 Military Standards:

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

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3. TECHNICAL REQUIREMENTS:3.1 Composition:

- 3.1.1 Steel Sheet: Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E353, by spectrographic methods in accordance with Federal Test Method Standard No. 151, Method 112, or by other analytical methods approved by purchaser:

	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 of this specification.

- 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 in. $\pm$ 0.0002 (0.05 mm $\pm$ 0.005) thick or 0.003 in. $\pm$ 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 be capable of being readily peeled 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 internal and external imperfections detrimental to usage of the product.

- 3.4 Tolerances: Shall be as specified in Table I, unless otherwise specified by purchaser.

TABLE I

Nominal Total Thickness Inches	Tolerance, Inch	
	plus	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 I (SI)

Nominal Total Thickness Millimetres	Tolerance, Millimetre	
	plus	minus
Up to 0.25, incl	0.013	0.013
Over 0.25 to 0.55, incl	0.03	0.03
Over 0.55 to 1.20, incl	0.05	0.03
Over 1.20 to 2.00, incl	0.08	0.03
Over 2.00	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. Results of such tests shall be reported to the purchaser as required by 4.4. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms the requirements of this specification.
- 4.2 Classification of Tests: Tests to determine conformance to all technical requirements of this specification are classified as acceptance tests and shall be performed to represent each lot.
- 4.3 Sampling: Shall be in accordance with AMS 2371; a lot shall be all laminated shim stock of the same thickness and shape processed at the same time and presented for vendor's inspection at one time.
- 4.4 Reports:
- 4.4.1 The vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the technical requirements of this specification. This report shall include the purchase order number, AMS 5600B, shim stock thickness, lamination thickness, size, and quantity.
- 4.4.2 The vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, AMS 5600B, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.
- 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 the nominal thickness, thickness of each lamination, percentage of total thickness which is laminated, and AMS 5600B.
- 5.1.2 Packages of shim stock or parts shall be marked with AMS 5600B, part number, purchase order number, and quantity.