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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 5122G

Issued JAN 1940
Revised JUL 1990
Reaffirmed MAR 1999

Submitted for recognition as an American National Standard

Superseding AMS 5122F

Steel Strip
(0.90 - 1.04C) (SAE 1095)
Hard Temper

UNS G10950

1. SCOPE:

1.1 Form:

This specification covers a carbon steel in the form of strip.

1.2 Application:

Primarily for washers and other stamped parts requiring a smooth finish and only slight or no forming.

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 2232	Tolerances, Carbon Steel Sheet, Strip, and Plate
MAM 2232	Tolerances, Metric, Carbon Steel Sheet, Strip, and Plate
AMS 2259	Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steels
AMS 2370	Quality Assurance Sampling of Carbon and Low-Alloy Steels, Wrought Products Except Forgings and Forging Stock

QUESTIONS REGARDING THIS DOCUMENT: (724) 772-7154 FAX: (724) 776-0243
TO PLACE A DOCUMENT ORDER: (724) 776-4970 FAX: (724) 776-0790
SAE WEB ADDRESS: http://www.sae.org

2.2 ASTM Publications:

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

ASTM A 370 Mechanical Testing of Steel Products
ASTM E 112 Determining Average Grain Size
ASTM E 350 Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron

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:

Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E 350, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

TABLE 1

	min	max
Carbon	0.90	1.04
Manganese	0.30	0.50
Silicon	0.15	0.35
Phosphorus	--	0.040
Sulfur	--	0.050

3.1.1 Check Analysis: Composition variations shall meet the applicable requirements of AMS 2259.

3.2 Condition:

Cold finished, hard temper.

3.3 Properties:

Strip shall conform to the following requirements; hardness and bend testing shall be performed in accordance with ASTM A 370:

3.3.1 Grain Size: Predominantly 5 or finer with occasional grains as large as 3 permissible, determined by comparison of a polished and etched specimen with the chart in ASTM E 112.

3.3.2 Hardness: 47 - 52 HRC, or equivalent.

3.3.3 Decarburization:

3.3.3.1 Product Under 0.045 Inch (1.14 mm) in Nominal Thickness: The method of test and the allowance shall be as agreed upon by purchaser and vendor

3.3.3.2 Product 0.045 Inch (1.14 mm) and Over in Nominal Thickness:

3.3.3.2.1 Specimens: Shall be the full thickness of the strip. Recommended specimen size is 1 x 4 inches (25 x 102 mm).

3.3.3.2.2 Procedure: A portion of the specimen shall be ground to a depth of 0.050 inch (1.27 mm) or one-half thickness, whichever is less. At least three Rockwell hardness readings shall be taken on the original surface and on the ground portion and each group of readings averaged.

3.3.3.2.3 Allowance: Strip shall show no layer of complete decarburization, determined microscopically at a magnification not exceeding 100X. It shall also be free from partial decarburization to the extent that the difference in hardness between the original surface and the portion ground as in 3.3.3.2.2 shall be not greater than 2 units on the Rockwell “A” scale.

3.3.4 Bending: Strip or finished parts shall bend sufficiently to take a permanent deformation without cracking, with axis of bend parallel to the direction of rolling.

3.3.5 Finish: Strip shall have a bright finish as produced by cold rolling or polishing. A clean, blue finish as produced by heating at low temperature is acceptable.

3.4 Quality:

Strip, 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 strip.

3.5 Tolerances:

Shall conform to all applicable requirements of AMS 2232 or MAM 2232.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:

The vendor of strip 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 strip conforms to the requirements of this specification.

4.2 Classification of Tests:

Tests for all technical requirements are acceptance tests and shall be performed on each heat or lot as applicable.

4.3 Sampling and Testing:

Shall be in accordance with AMS 2370.

4.4 Reports:

The vendor of strip shall furnish with each shipment a report showing the results of tests for chemical composition of each heat and for hardness of each lot. This report shall include the purchase order number, lot number, AMS 5122G, size, and quantity.

4.5 Resampling and Retesting:

Shall be in accordance with AMS 2370.

5. PREPARATION FOR DELIVERY:

5.1 Identification:

Shall be as in 5.1.1 unless purchaser permits a method from 5.1.2.

5.1.1 Each strip shall be marked on one face, in the respective location indicated below, with AMS 5122G, lot number, manufacturer's identification, and nominal thickness. The characters shall be of such size as to be legible, shall be applied using a suitable marking fluid, and shall be removable in hot alkaline cleaning solution without rubbing. The markings shall have no deleterious effect on the strip or its performance and shall be sufficiently stable to withstand normal handling. The specification number, manufacturer's identification, and nominal thickness shall be continuously line marked; the lot number may be included in the line marking or may be marked at one location on each piece.

5.1.1.1 Flat Strip 6 Inches (152 mm) and Under in Nominal Width: Shall be marked in one or more lengthwise rows of characters recurring at intervals not greater than 3 feet (914 mm).