SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS5122	REV. J

Issued	1940-01
Revised	2003-10
Noncurrent	2008-07
Reaf. Nonc.	2013-04

Superseding AMS5122H

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

(Composition similar to UNS G10950)

RATIONALE

AMS5122J has been reaffirmed to comply with the SAE five-year review policy.

NONCURRENT NOTICE

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of July 2008. It is recommended, therefore, that this specification not be specified for new designs.

"NONCURRENT" refers to those specifications which have previously been widely used and which may be required for production or processing of existing designs in the future. The Aerospace Materials Division, however, does not recommend these specifications for future use in new designs. "NONCURRENT" specifications are available from SAE upon request.

Similar but not necessarily identical product is covered in the following specification. However, this listing is provided for information only and does not constitute authority to substitute this specification for the "NONCURRENT" specification.

ASTM A 684/A 684M Grade 1095 Full Hard Steel, Strip, High-Carbon, Cold-Rolled

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AMS5122J

1. SCOPE:

1.1 Form:

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

1.2 Application:

This material has been used typically for washers and other stamped parts requiring a smooth finish and only slight or no forming, 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 supplied 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, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or www.sae.org.

AMS 2232	Tolerances, 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 Steel Wrought Products and Forging Stock
AMS 2807	Identification, Carbon and Low-Alloy Steels, Corrosion and Heat-Resistant Steels and Alloys, Sheet, Strip, Plate, and Aircraft Tubing

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or www.astm.org.

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

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the following percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E 350, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

TABLE 1 - Composition

Element	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 Average Grain Size: Shall be ASTM No. 5 or finer, determined by comparison of a polished and etched specimen with the chart in ASTM E 112 (See 8.2).

3.3.2 Hardness: Shall be 47 to 52 HRC, or equivalent (See 8.3).

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 points 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.

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 the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the strip conforms to specified requirements.

4.2 Classification of Tests:

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