SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS5061	REV. G

Issued	1948-09
Revised	2004-03
Noncurrent	2009-02
Reaf. Nonc.	2013-04

Superseding AMS5061F

Steel, Low Carbon Bars, and Wire
0.08 - 0.20

(Composition similar to UNS K00802)

RATIONALE

AMS5061G 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 February 2009. 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 products are covered in the following specifications. However, this listing is provided for information only and does not constitute authority to substitute these specifications for the "NONCURRENT" specification.

ASTM A29 / A29M	Steel Bars, Carbon and Alloy, Hot-Wrought, General Requirements for
ASTM A510	Wire Rods and Coarse Round Wire, Carbon Steel, General Requirements for

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/AMS5061G

1. SCOPE:

1.1 Form:

This specification covers a low-carbon steel in the form of bars and wire 0.750 inch (19.05 mm) and under in nominal diameter or distance between parallel sides.

1.2 Application:

These products have been used typically for the manufacture of cold-headed threaded parts, 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, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or www.sae.org.

AMS 2231	Tolerances, Carbon Steel Bars
AMS 2259	Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steels
AMS 2370	Quality Assurance Sampling and Testing, Carbon and Low-Alloy Steel Wrought Products and Forging Stock
AMS 2806	Identification, Bars, Wire, Mechanical Tubing, and Extrusions, Carbon and Alloy Steels and Corrosion and Heat Resistant Steels and Alloys

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 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 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	0.08	0.20
Manganese	0.40	0.80
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 drawn.

3.3 Properties:

The product shall conform to the following requirements; tensile and hardness testing shall be performed in accordance with ASTM A 370:

3.3.1 Tensile Properties: Shall be as shown in Table 2.

TABLE 2 - Minimum Tensile Properties

Property	Value
Tensile Strength	70 ksi (483 MPa)
Elongation in 4D	10%

3.3.2 Hardness: Shall be 80 to 100 HRB, or equivalent (See 8.2). However, the product should not be rejected on the basis of hardness if the tensile properties of Table 2 are acceptable, determined on specimens taken from the same sample with nonconforming hardness or from another sample with similar nonconforming hardness.

3.4 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.

3.5 Tolerances:

Shall conform to all applicable requirements of AMS 2231.

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 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 the product shall furnish with each shipment a report showing the results of tests for composition of each heat and for tensile properties and hardness of each lot, and stating that the product conforms to the other technical requirements. This report shall include the purchase order number, heat and lot numbers, AMS 5061F, size, and quantity.

4.5 Resampling and Retesting:

Shall be in accordance with AMS 2370.

5. PREPARATION FOR DELIVERY:

5.1 Sizes:

Except when exact lengths or multiples of exact lengths are ordered, straight bars and wire will be acceptable in mill lengths of 6 to 20 feet (1.8 to 6.1 m) but not more than 10% of any shipment shall be supplied in lengths shorter than 10 feet (3 m).