

AEROSPACE MATERIAL SPECIFICATION



AMS 6379B

Issued JUL 1961
Revised MAY 1973
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Cancelled JUN 2001
Superseding AMS 6379A

Steel Bars
0.95Cr - 0.20Mo - 0.05Te (0.40 - 0.53C) SAE 4140 Modified
Die Drawn and Tempered, 165,000 psi (1138 MPa) Yield Strength

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1. SCOPE:**1.1 Form:**

This specification covers a low-alloy steel in the form of round bars up to 2.00 in. (50.8 mm), incl, in diameter.

1.2 Application:

Primarily for parts such as shafts, axles, pins, fasteners, gears, and screw machine parts which are normally used at hardness of 37 - 43 HRC.

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) and Aerospace Standards (AS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications:

Available from Society of Automotive Engineers, Inc., Two Pennsylvania Plaza, New York, New York, 10001.

2.1.1 Aerospace Material Specifications:

AMS 2251 Tolerances, Alloy Steel Bars
AMS 2259 Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steels
AMS 2350 Standards and Test Methods
AMS 2370 Quality Assurance Sampling of Carbon and Low-Alloy Steels, Wrought Products Except Forgings

2.1.2 Aerospace Standards:

AS1182 Standard Machining Allowance, Aircraft Quality and Premium Quality Steel Products

2.2 ASTM Publications:

Available from Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM A370 Mechanical Testing of Steel Products
ASTM E112 Estimating Average Grain Size of Metals
ASTM E350 Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron
ASTM E381 Rating Macroetched Steel

2.3 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

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E350, by spectrographic methods in accordance with Federal Test Method Standard 151, Method 112, or by other approved methods.

	min	max
Carbon	0.40	0.53
Manganese	0.75	1.00
Silicon	0.20	0.35
Phosphorus	--	0.040
Sulfur	--	0.040
Chromium	0.80	1.10
Molybdenum	0.15	0.25
Tellurium	0.035	0.060
Nickel	--	0.25
Copper	--	0.35

3.1.1 Check Analysis: Composition variations shall meet the requirements of AMS 2259, paragraph titled "Low Alloy Steels".

3.2 Condition:

Bars shall be elevated temperature die-drawn, straightened, and tempered.

3.2.1 Temperatures for die drawing shall be selected significantly above room temperature but below the transformation range to produce a uniform structure of deformed pearlite and ferrite providing good machinability.