

AEROSPACE MATERIAL SPECIFICATION



AMS 6275G

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Superseding AMS 6275F

Steel Bars, Forgings, and Tubing
0.40Cr - 0.45Ni - 0.12Mo - 0.002B (0.15 - 0.20C) (SAE 94B17)

UNS G94171

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1. SCOPE:

1.1 Form:

This specification covers an aircraft-quality, low-alloy steel in the form of bars, forgings, mechanical tubing, and forging stock.

1.2 Application:

Primarily for carburized parts requiring a moderately-high minimum core hardness and for which a wide hardness range in sections 0.500 in. (12.50 mm) and under in nominal thickness is acceptable. The core may or may not be machinable after hardening.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications and Aerospace Standards shall apply. The applicable issue of other document shall be as specified in AMS 2350.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

2.1.1 Aerospace Material Specifications:

AMS 2251 Tolerances, Low-Alloy Steel Bars
MAM 2251 Tolerances, Metric, Low-Alloy Steel Bars
AMS 2253 Tolerances, Carbon and Alloy Steel Tubing
MAM 2253 Tolerances, Metric, Carbon and Alloy Steel Tubing
AMS 2259 Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steels
AMS 2301 Aircraft Quality Steel Cleanliness, Magnetic Particle Inspection Procedure
AMS 2350 Standards and Test Methods
AMS 2370 Quality Assurance Sampling of Carbon and Low-Alloy Steels, Wrought Products Except Forgings and Forging Stock
AMS 2372 Quality Assurance Sampling of Carbon and Low-Alloy Steels, Forgings and Forging Stock
AMS 2375 Control of Forgings Requiring First Article Approval
AMS 2806 Identification, Bars, Wire, Mechanical Tubing, and Extrusions, Carbon and Alloy Steels and Heat and Corrosion Resistant Steels and Alloys
AMS 2808 Identification, Forgings

2.1.2 Aerospace Standards:

AS 1182 Standard Machining Allowance, Aircraft Quality and Premium Quality Steel Products

2.2 ASTM Publications:

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

ASTM A255	End-Quench Test for Hardenability of Steel
ASTM A370	Mechanical Testing of Steel Products
ASTM E112	Determining Average Grain Size
ASTM E350	Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron
ASTM E381	Macroetch Testing, Inspection, and Rating Steel Products, Comprising Bars, Billets, Blooms, and Forgings

2.3 U.S. Government Publications:

Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Standards:

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

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the percentages by weight, determined by wet chemical methods in accordance with ASTM E350 or by spectrochemical or other analytical methods approved by purchaser:

	min	max
Carbon	0.15	0.20
Manganese	0.75	1.00
Silicon	0.15	0.35
Phosphorus	--	0.025
Sulfur	--	0.025
Chromium	0.30	0.50
Nickel	0.30	0.60
Molybdenum	0.08	0.15
Boron	0.0005	0.003
Copper	--	0.35

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