

AEROSPACE MATERIAL SPECIFICATION



AMS 6432C

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Cancelled	SEP 2005
Superseding	AMS 6432B

Steel Bars, Forgings, and Tubing
1.05Cr - 0.55Ni - 1.0Mo - 0.12V (0.43 - 0.49C)

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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 ultra-high strength structural applications requiring a through-hardening, weldable material for use at temperatures up to 600°F (316°C).

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 Materials Specifications:

AMS 2251	Tolerances, Alloy Steel Bars
AMS 2253	Tolerances, Carbon and Alloy Steel Tubing
AMS 2259	Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steel
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
AMS 2372	Quality Assurance Sampling of Carbon and Low-Alloy Steels, Forgings and Forging Stock
AMS 2375	Approval and Control of Critical Forgings
AMS 2808	Identification, Forgings

2.1.2 Aerospace Standards:

AS 1182	Standard Machining Allowance, Aircraft Quality and Premium Quality Steel Products
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2.2 ASTM Publications:

Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 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 Publication and Form Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania 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 No. 151, Method 112, or by other approved analytical methods:

	min	max
Carbon	0.43	- 0.49
Manganese	0.60	- 0.90
Silicon	0.15	- 0.30
Phosphorus	--	0.025
Sulfur	--	0.025
Chromium	0.90	- 1.20
Nickel	0.40	- 0.70
Molybdenum	0.90	- 1.10
Vanadium	0.08	- 0.15
Copper	--	0.35

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