

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 6488H

Issued	1963-07
Noncurrent	2003-06
Cancelled	2008-01

Superseding AMS 6488G

Steel, Bars and Forgings
5.0Cr - 1.3Mo - 0.5V - (0.38 - 0.43C)
(Composition similar to UNS T20811)

RATIONALE

AMS 6488G has been designated cancelled based on the results of a survey of aerospace users and producers as the air melted version of this alloy is not being produced and a similar vacuum melted alloy is available as AMS 6487.

CANCELLATION NOTICE

This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of January 2008. By this action, this document will remain listed in the Numerical Section of the Index of Aerospace Material Specifications indicating that it has been "CANCELLED".

Cancelled specifications are available from SAE.

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

AMS 6487 Steel, Bars, and Forgings 5.0Cr -1.3Mo - 0.50V (0.38 - 0.43C) (H-11) Consumable
Electrode Vacuum Melted

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1. SCOPE:

1.1 Form:

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

1.2 Application:

These products have been used typically for parts requiring through hardening to a minimum hardness of 50 HRC in section thicknesses up to 12 inches (305 mm) with a combination of high strength, fatigue resistance, ductility, and thermal stability for operation in the range of -100 to +1000 °F (-73 to +538 °C), but usage is not limited to such applications.

1.2.1 Certain design and processing procedures may cause these products to become susceptible to stress-corrosion cracking after heat treatment; ARP1110 recommends practices to minimize such conditions.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

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

AMS 2251	Tolerances, Low-Alloy Steel Bars
MAM 2251	Tolerances, Metric, Low-Alloy Steel Bars
AMS 2259	Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steels
AMS 2300	Premium Aircraft-Quality Steel, Cleanliness, Magnetic Particle Inspection Procedure
MAM 2300	Premium Aircraft-Quality Steel, Cleanliness, Magnetic Particle Inspection Procedure, Metric (SI) Measurement
AMS 2310	Qualification Sampling of Steels, Transverse Tensile Properties
AMS 2370	Quality Assurance Sampling and Testing, Carbon and Low-Alloy Steel Wrought Products and Forging Stock
AMS 2372	Quality Assurance Sampling and Testing, Carbon and Low-Alloy Steel Forgings
AMS 2806	Identification, Bars, Wire, Mechanical Tubing, and Extrusions, Carbon and Alloy Steels and Corrosion and Heat Resistant Steels and Alloys
AMS 2808	Identification, Forgings
ARP1110	Minimizing Stress-Corrosion Cracking in Wrought Forms of Steels and Corrosion Resistant Steels and Alloys
AS1182	Standard Machining Allowance, Aircraft-Quality and Premium Aircraft-Quality Steel Bars and Mechanical Tubing

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM A 370 Mechanical Testing of Steel Products

ASTM A 604 Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets

ASTM E 112 Determining the 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 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	0.38	0.43
Manganese	0.20	0.40
Silicon	0.80	1.00
Phosphorus	--	0.015
Sulfur	--	0.015
Chromium	4.75	5.25
Molybdenum	1.20	1.40
Vanadium	0.40	0.60
Nickel	--	0.25
Copper	--	0.35

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

3.1.2 In event of questionable or conflicting results, wet chemical analysis shall govern.

3.2 Condition:

The product shall be supplied in the following condition; hardness and tensile strength shall be determined in accordance with ASTM A 370:

3.2.1 Bars:

3.2.1.1 Bars 0.500 inch (12.70 mm) and Under in Nominal Diameter or Distance Between Parallel Sides: Annealed or cold finished having tensile strength not higher than 135 ksi (931 MPa) or equivalent hardness (See 8.2).