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AEROSPACE MATERIAL SPECIFICATION

AMS 6436B

Issued 3-1-55
Revised 10-1-88

Superseding AMS 6436A

STEEL SHEET, STRIP, AND PLATE, LOW-ALLOY, HEAT RESISTANT
0.65Si - 1.25Cr - 0.50Mo - 0.85V (0.25 - 0.30C)
Annealed

UNS K22770

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 19 April 1988. It is recommended, therefore, that this specification not be specified for new designs.

This cover sheet should be attached to the "A" revision of the subject specification.

"NONCURRENT" refers to those materials which have previously been widely used and which may be required on some existing designs in the future. The Aerospace Materials Division, however, does not recommend these as standard materials for future use in new designs. Each of these "NONCURRENT" specifications is available from SAE upon request.

REAFFIRMED

APR 94

This specification is under the jurisdiction of AMS Committee "E".

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AEROSPACE MATERIAL SPECIFICATION

AMS 6436A

Superseding AMS 6436

Issued 3-1-55
Revised 5-1-69

STEEL SHEET, STRIP, AND PLATE, LOW ALLOY HEAT RESISTANT
0.65Si - 1.25Cr - 0.50Mo - 0.85V (0.20 - 0.25C)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. APPLICATION: Primarily for parts requiring moderate tensile properties up to 1050 F (566 C) where welding may be required.

3. COMPOSITION:

		min	max
Ø	Carbon	0.20	0.25
	Manganese	0.60	0.90
	Silicon	0.55	0.75
	Phosphorus	--	0.025
	Sulfur	--	0.025
	Chromium	1.00	1.50
	Molybdenum	0.40	0.60
	Vanadium	0.75	0.95
	Nickel	--	0.25
	Copper	--	0.35

- 3.1 Check Analysis: Composition variations shall meet the requirements of the latest issue of AMS 2259, paragraph titled "Low Alloy Steels."
4. CONDITION: Unless otherwise ordered, the product shall be supplied cold finished and clean annealed or hot rolled, annealed, and descaled having hardness not higher than Rockwell B 98 or equivalent.
5. TECHNICAL REQUIREMENTS: When ASTM methods are specified for determining conformance to the following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.
 - 5.1 Grain Size: Predominantly 5 or finer with occasional grains as large as 3 permissible, ASTM E112, McQuaid-Ehn test.
 - 5.2 Decarburization:
 - 5.2.1 Material Under 0.045 In. in Thickness: The method of test and the allowance shall be as agreed upon by purchaser and vendor.
 - 5.2.2 Material 0.045 In. and Over in Thickness:
 - 5.2.2.1 Specimens: Shall be the full thickness of the material except that specimens from plate over 0.249 in. thick shall be slices approximately 0.250 in. thick cut parallel to and preserving one original surface of the plate. Recommended specimen size is 1 x 4 inches.

5.2.2.2 Procedure: Specimens from material 0.045 to 0.375 in., excl, in thickness shall be hardened by austenitizing and quenching; preferably they shall not be tempered but, if tempered, the tempering temperature shall be not higher than 300 F (149 C). During heat treatment, specimens shall be protected by suitable atmosphere or medium or by suitable plating to prevent carburization or further decarburization. Protective plating, if used, shall then be removed from specimens of material 0.045 to 0.250 in., excl, in thickness and a portion of the specimen shall be step ground to a depth of 0.050 in. or half thickness, whichever is less. Specimens from material 0.250 in. to 0.375 in., excl, in thickness shall be ground to remove 0.020 in. from the original surface of the plate and a portion of the specimen shall be further ground to a depth of at least 1/3 of the original thickness of the specimen. At least three Rockwell hardness readings shall be taken on each prepared step and each group of readings averaged.

5.2.2.3 Allowance:

5.2.2.3.1 Material 0.045 to 0.250 In., Excl, Thick: Unless otherwise specified, the product shall be free from complete decarburization. It shall also be free from partial decarburization to the extent that the difference in hardness between the surface and the nondecarburized depth below the surface shall be not greater than 2 points on the Rockwell A scale.

5.2.2.3.2 Material 0.250 to 0.375 In., Excl, Thick: The difference in hardness between the two prepared steps shall be not greater than 3 points on the Rockwell A scale.

5.2.2.3.3 Material 0.375 In. and Over Thick: The total decarburization as determined microscopically on the plate as supplied shall be not greater than the following:

Nominal Thickness Inches	Depth of Decarburization Inch
0.375 to 0.500, incl	0.015
0.500 to 1.000, incl	0.025
1.000 to 2.000, incl	0.035

5.3 Bending: Material shall withstand, without cracking, bending at room temperature through the angle indicated below around a diameter equal to the nominal thickness of the material, with axis of bend parallel to the direction of rolling.

Nominal Thickness Inch	Angle Deg, min
Up to 0.249, incl	180
Over 0.249 to 0.749, incl	90

6. QUALITY: Steel shall be aircraft quality and shall conform to the latest issue of AMS 2301. The product shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

7. TOLERANCES: Unless otherwise specified, tolerances shall conform to all applicable requirements of the latest issue of AMS 2252; for strip, tolerances for cold finished shall apply.

8. REPORTS:

8.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report of the results of tests for chemical composition, grain size, and AMS 2301 frequency-severity rating for each heat in the shipment. This report shall include the purchase order number, heat number, material specification number and its revision letter, nominal thickness, size, and quantity from each heat.