AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 6436

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Revised

STEEL SHEET AND STRIP, LOW ALLOY HEAT RESISTANT
1.25Cr - 0.65Si - 0.5Mo - 0.85V (0.20-0.25C)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. FORM: Sheet, strip, and plate.

3. APPLICATION: Primarily for parts requiring moderate tensile properties up to 1050 F where welding may be required.

4. COMPOSITION:

		Check Analysis Under Min	Check Analysis Over Max
Carbon	0.20 - 0.25	0.01	0.01
Manganese	0.60 - 0.90	0.03	0.03
Silicon	0.55 - 0.75	0.05	0.05
Phosphorus	0.040 max	--	0.005
Sulfur	0.040 max	--	0.005
Chromium	1.00 - 1.50	0.05	0.05
Nickel	0.50 max	--	0.03
Molybdenum	0.40 - 0.60	0.03	0.03
Vanadium	0.75 - 0.95	0.04	0.04
Copper	0.50 max	--	0.03

5. CONDITION: Cold finished and clean annealed, or hot rolled, annealed, descaled, and oiled, having hardness not higher than Rockwell B 98 or equivalent, unless otherwise specified.

6. TECHNICAL REQUIREMENTS:

6.1 Hardenability: Material 0.249 in. and under in nominal thickness and thicker material reduced to 0.249 in. in thickness, when heated to 1775 F ± 25, held at heat for not more than 1 hr, and cooled in still air, and tempered by reheating to 1200 F ± 10, holding at heat for 2 hr, and cooling, shall develop tensile strength not lower than 140,000 psi or hardness not lower than Rockwell C 30 or equivalent.

6.2 Grain Size: Five or finer as determined on the rerolling slab, ASTM E19, method a. A heat of steel predominantly five or finer with grains as large as three is permissible.

6.3 Decarburization: Material shall be free from decarburization to the extent that the increase in hardness from the surface to any point below the surface of an oil hardened specimen will not be more than two points on the Rockwell A scale for material 0.249 in. and under in thickness and will not be more than three points on material over 0.249 in. in thickness.

6.4 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 axes of bends both perpendicular and parallel to the direction of rolling.

Nominal Thickness Inch	Angle deg, min
0.249 and under	180
Over 0.249 to 0.749, incl	90

7. QUALITY: The product shall be suitable for use in aircraft. Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external defects detrimental to fabrication or to performance of parts.

8. TOLERANCES: Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2252 as applicable.

9. REPORTS:

9.1 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 and grain size of each heat in the shipment. This report shall include the purchase order number, heat number, material specification number, thickness, size, and quantity from each heat.

9.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

10. IDENTIFICATION: Shall be according to 10.1, unless purchaser permits a method from 10.2.

10.1 Each plate, sheet, and strip shall be marked, in the respective location indicated below, with AMS 6436, manufacturer's identification, and nominal thickness in inches. The characters shall be not less than 3/8 in. in height, shall be applied using a suitable marking fluid, and shall be capable of being removed in hot alkaline cleaning solution without rubbing. The characters shall be sufficiently stable to withstand ordinary handling.

10.1.1 Plate, Flat Sheet, and Flat Strip Over 6 in. in Width: Shall be marked in lengthwise rows of characters, recurring at intervals not greater than 2 ft, the rows being spaced not more than 3 in. apart and alternately staggered.