AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS6355D

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STEEL SHEET AND STRIP
0.55Ni - 0.5Cr - 0.2Mo (0.27-0.33C) (SAE 8630)

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

2. FORM: Sheet, strip, and plate.

3. APPLICATION: General use where welding and moderate physical properties are required. Sheet and strip are extensively used where minimum tensile strength of 160,000 psi is required in sections up to 0.125 in. thick and proportionately lower strength is required in heavier thicknesses.

4. COMPOSITION:

		Check Analysis Under Min	Check Analysis Over Max
Carbon	0.27 - 0.33	0.02	0.00
Manganese	0.70 - 0.90	0.03	0.03
Silicon	0.20 - 0.35	0.02	0.02
Phosphorus	0.040 max	--	0.005
Sulphur	0.040 max	--	0.005
Chromium	0.40 - 0.60	0.03	0.03
Nickel	0.40 - 0.70	0.03	0.03
Molybdenum	0.15 - 0.25	0.02	0.02

5. CONDITION: Cold finished and clean annealed, or hot rolled, annealed if necessary, and pickled, having tensile strength not higher than 85,000 psi.

6. TECHNICAL REQUIREMENTS:

6.1 Hardenability: Material 0.249 in. and under in nominal thickness, when quenched in oil from 1525 F ± 10 and tempered at not lower than 900 F for 30 minutes at heat, shall develop tensile strength not lower than 125,000 psi or hardness not lower than Rockwell C26 or equivalent.

6.2 Grain Size: Five or finer as determined on the rerolling slab, ASTM E19-46, 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 complete decarburization as determined microscopically and from partial 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.

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.

6.4 Bendings: (Cont'd.)

Nominal Thickness, Inch	Angle, Degrees, Min
0.249 and under	180
Over 0.249 to 0.749, incl	90

7. QUALITY: Product shall be suitable for use in aircraft. It shall be uniform in quality and condition, clean, sound, smooth, 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 the methods in 10.2.

10.1 Each plate, sheet, and strip shall be marked, in the respective location indicated below, with AMS 6355D, 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 Inches 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.

10.1.2 Flat Strip 6 Inches and Under in Width: Shall be marked near one end.

10.1.3 Coiled Sheet and Coiled Strip: Shall be marked near the outside end of the coil.