

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS 5517 B

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STEEL SHEET AND STRIP, CORROSION RESISTANT
18Cr - 8Ni
(Cold Rolled - 125,000 psi)

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- 1. ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
- 2. APPLICATION:** This material is intended for applications requiring drawing or forming.
- 3. COMPOSITION:**

			Check Analysis	
			Under	Min or Over Max
Carbon	0.15	max	—	0.01
Manganese	2.00	max	—	0.04
Silicon	1.00	max	—	0.05
Phosphorus	0.040	max	—	0.005
Sulfur	0.030	max	—	0.005
Chromium	17.00	max	0.20	—
Nickel	7.00	max	0.10	—
Molybdenum	0.50	max	—	0.03
Copper	0.50	max	—	0.03

- 4. CONDITION:** Unless otherwise specified, the material shall be furnished in the following condition:
 - Sheet - Solution heat treated, pickled, and cold rolled (No. 2B Finish).
 - Strip - Cold rolled, solution heat treated, pickled, and rerolled (No. 2 Strip Finish).
- 5. TECHNICAL REQUIREMENTS:** (a) Physical Properties - Material shall have the following physical properties:

Tensile Strength, psi	125,000 - 150,000
Yield Strength (0.2% Offset or at 0.0098 inch in 2 in. Extension Under Load), psi	75,000 min
Elongation, % in 2 in.	25 min

For widths 9 inches and over, tensile test specimens shall be taken with the axis perpendicular to the direction of rolling. For widths less than 9 inches, tensile test specimens shall be taken with the axis parallel to the direction of rolling.

SAE Technical Board rules provides that: "All technical reports, including standards, approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against infringement of patents."

(b) Bending. - Material shall withstand, without cracking, bending at room temperature through the angle indicated below around a diameter equal to the bend factor times the thickness of the material, with axes of bends both perpendicular and parallel to the direction of rolling:

Thickness Inch	Angle, Degrees Min	Bend Factor
Under 0.050	180	1
0.050 and Over	90	2

6. **QUALITY:** The product 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. Material in which defects are revealed during fabrication will be subject to rejection.

7. **TOLERANCES:** Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2242 as applicable.

8. **REPORTS:** (a) Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a notarized report of the results of tests for the chemical composition of each heat in each shipment and the results of tests on each thickness from each heat to determine conformance to the physical property and bending requirements of this specification. This report shall include the purchase order number, heat number, material specification number, thickness, size, and quantity from each heat.

(b) Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a notarized 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 certification that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

9. **IDENTIFICATION:** (a) Unless otherwise specified, each sheet and strip shall be marked with AMS 5517B, manufacturer's identification, and nominal thickness in inches. The characters shall be not less than 3/8 in. in height, and shall be applied using a suitable marking fluid. Marking fluid used shall be capable of being removed in hot alkaline cleaning solution without rubbing. The characters shall be legible upon receipt of material by purchaser, and shall be sufficiently stable to withstand ordinary handling.

(1) Flat sheet, and flat strip over 6 in. in width, shall be marked in rows of recurring characters, with rows parallel to the direction of rolling and spaced approximately 3 in. apart with alternate rows staggered.

(2) Flat strip 6 in. and under in width shall be marked near each end.

(3) Coiled sheet and strip shall be marked near the outside end of the coil, and, if practicable, near the inside end also.