AEROSPACE
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 5503

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Revised

STEEL SHEET, STRIP, AND PLATE, CORROSION RESISTANT 17Cr (SAE 51430)

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

2. APPLICATION: Primarily for parts and assemblies requiring oxidation resistance up to 1500 F (815 C) but useful at the higher temperatures only when stresses are low.

3. COMPOSITION:

Carbon	0.12 max
Manganese	1.00 max
Silicon	1.00 max
Phosphorus	0.040 max
Sulfur	0.030 max
Chromium	16.00 - 18.00
Nickel	0.50 max
Molybdenum	0.50 max
Copper	0.50 max

3.1 Check Analysis: Composition variations shall meet the requirements of the latest issue of AMS 2248.

4. CONDITION: Unless otherwise specified, material shall be supplied in the following condition:

4.1 Sheet: Cold rolled, annealed, and descaled (No. 2D Finish).

4.2 Strip: Cold rolled, annealed, descaled, and rerolled (No. 2 Strip Finish).

4.3 Plate: Hot rolled, annealed, and descaled.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties:

Tensile Strength, psi	65,000 min
Yield Strength at 0.2% Offset or at 0.0064 in. in 2 in. Extension Under Load (E = 29,000,000), psi	35,000 min
Elongation, % in 2 in.	
Nominal thickness, Inches	
Up to 0.050, excl	20 min
0.050 and over	22 min

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

5.2 Hardness: Shall be not higher than the following or equivalent:

Nominal Thickness, Inches	Hardness, Rockwell B
Up to 0.090, incl	86
Over 0.090	90

5.3 Bending: Material 0.150 in. and under in thickness shall withstand, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the nominal thickness of the material with axis of bend parallel to the direction of rolling. Material over 0.150 in. in thickness shall have bend requirements as agreed upon by purchaser and vendor.

6. QUALITY: Material 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 2242.

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 of each heat in the shipment and the results of tests on each thickness from each heat to determine conformance to the technical requirements of this specification. This report shall include the purchase order number, heat number, material specification number, thickness, size, and quantity from each heat.

8.2 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.

9. IDENTIFICATION: Unless otherwise specified, each sheet, strip, and plate shall be marked, in the respective location indicated below, with AMS 5503, heat number, 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 markings shall have no deleterious effect on the material or its performance. The characters shall be sufficiently stable to withstand ordinary handling.