AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 4501

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Revised

COPPER SHEET, STRIP, AND PLATE
Oxygen-Free, Light Cold Rolled Temper

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

2. APPLICATION: Primarily for parts requiring high electrical or thermal conductivity.

3. COMPOSITION: Material shall be oxygen-free copper and shall contain not less than 99.90% copper, silver being counted as copper.

4. CONDITION: Cold rolled, light cold rolled (eighth hard) temper, unless otherwise specified.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties:

Tensile Strength, psi	32,000 - 40,000

5.2 Bending: Material up to 0.188 in., incl, in thickness shall be capable of withstanding, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the thickness of the material with axis of bend parallel to direction of rolling.

5.3 Electrical Resistivity: Shall be not greater than 0.15775 ohm-g per sq m at 20 C (68 F), determined in accordance with the issue of ASTM B193 specified in the latest issue of AMS 2350.

5.4 Embrittlement: Test specimens shall be heated to 800 - 875 C (1472 - 1607 F), in a furnace having a hydrogen atmosphere, held at heat for 20 min., and cooled in such a manner as to prevent oxygen absorption during cooling. Specimens from material 0.188 in. and less in nominal thickness, after heating as above, shall withstand not less than four 90 deg reverse bends without fracture. Specimen shall be clamped between jaws having edge radii equal to 2.5 times the nominal thickness of the specimen, bent through an angle of 90 deg over one edge of the jaws, and returned to its original position; this constitutes one bend. Specimen shall then be bent through an angle of 90 deg in the reverse direction and returned to its original position; this constitutes a second bend. Each successive bend shall be made in the opposite direction from the previous bend. Specimens from material over 0.188 in. in nominal thickness, after heating as above, shall be polished, etched if desired, and examined at 75 - 200X magnification; specimens shall not show gassing or open-grain structure characteristic of embrittlement.

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 2222 for non-refractory.

8. REPORTS:

8.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the chemical composition and technical requirements of this specification. This report shall include the purchase order number, material specification number, size, and quantity.