

# AERONAUTICAL MATERIAL SPECIFICATIONS

## AMS 7707

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

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Revised

IRON, COMMERCIALY PURE  
Hot Rolled, Unannealed

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. FORM: Bar, sheet, strip, and plate.
3. APPLICATION: Primarily for application on direct current devices, such as controls, relay and regulator parts, magnetic cores, motor and generator parts, requiring high electrical conductivity, high magnetic saturation and permeability, and low magnetic retentivity, and where fair formability is required.
4. COMPOSITION:

|  |           |
|--|-----------|
| Carbon + Manganese + Silicon + Phosphorus + Sulfur | 0.10 max  |
| Phosphorus   | 0.010 max |
| Sulfur   | 0.030 max |
| Copper   | 0.15 max  |
| Iron   | remainder |
5. CONDITION: Hot rolled, unless otherwise specified.
6. TECHNICAL REQUIREMENTS:
  - 6.1 Tensile Properties:

|  |            |
|--|------------|
| Tensile Strength, psi  | 65,000 max |
| Yield Strength at 0.2% Offset or at 0.0077 in. in 2 in. Extension Under Load (E = 30,000,000), psi | 55,000 max |
| Elongation, % in 2 in. or 4D   | 25 min     |
  - 6.2 Hardness: Shall be as follows or equivalent:
    - 6.2.1 Sheet:

| Nominal Thickness<br>Inch | Hardness, Rockwell B.<br>max |
|---------------------------|------------------------------|
| Under 0.0625              | 80                           |
| 0.0625 and over           | 75                           |
    - 6.2.2 Bars: Not higher than Rockwell B 80.
  - 6.3 Magnetic Properties: Shall be as agreed upon by purchaser and vendor, after a suitable annealing treatment.
  - 6.4 Bending and Forming Requirements: Shall be as agreed upon by purchaser and vendor.
7. QUALITY: Material shall be uniform in quality and condition, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

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