



# AEROSPACE MATERIAL SPECIFICATION

## AMS 7734

**Society of Automotive Engineers, Inc.**  
TWO PENNSYLVANIA PLAZA, NEW YORK, N. Y. 10001

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Revised

### IRON-NICKEL ALLOY WIRE, COPPER CLAD 56Fe - 41Ni For Electronic Applications

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **FORM:** Round wire clad with copper.
3. **APPLICATION:** Primarily for weldable leads, terminals, and interconnections for electronic parts and assemblies where magnetic properties are essential and where glass to metal seals are required.
4. **COMPOSITION:**

4.1 **Basis Wire (Core):**

	min	max
Carbon	--	0.15
Manganese	0.75 -	1.25
Silicon	--	0.30
Phosphorus	--	0.02
Sulfur	--	0.02
Iron	55.00 -	58.00
Nickel	41.00 -	43.00

- 4.1.1 **Check Analysis:** Composition variations shall meet the requirements of the latest issue of AMS 2269.
- 4.2 **Cladding (Sheath):** Shall be electrolytic copper (99.90% min copper) conforming to ASTM B5.
5. **CONDITION:** Annealed.
6. **TECHNICAL REQUIREMENTS:**
  - 6.1 **Cladding (Sheath) Thickness:** The weight of the completed core-and-sheath cross-section shall be 18 - 26% copper by weight. At any cross-section, the maximum thickness of the sheath shall not exceed twice the minimum thickness of the sheath.
  - 6.2 **Tensile Strength:** Shall be not greater than 85,000 psi, determined in accordance with the issue of ASTM E8 listed in the latest issue of AMS 2350.
  - 6.3 **Bending:** Finished wire shall be capable of withstanding bending at room temperature through an angle of 180 deg around a diameter equal to the nominal diameter of the wire without indication of cracking or of separation of the cladding (sheath) from the basis wire when examined under a magnification of 10X.
7. **QUALITY:** Material shall be uniform in quality, condition, temper, and cross section. Surfaces shall be free from scale, corrosion, cracks, seams, scratches, slivers, dirt, grease, oil, streaks, stains, pit marks, burns, dents, blisters, laps, grooves, inclusions, and other imperfections detrimental to fabrication or to performance of parts; magnification up to 30X may be used to determine compliance.

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