

AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 4532

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Revised

COPPER - BERYLLIUM ALLOY SHEET AND STRIP Solution Treated - Half Hard

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily for parts requiring high strength with good electrical conductivity or lack of magnetic susceptibility. This material has higher strength and lower ductility than AMS 4530.
3. **COMPOSITION:**

Beryllium	1.90 - 2.15
Nickel or Cobalt	0.20 min
Nickel + Cobalt + Iron	0.60 max
Copper + total named elements	99.50 min

4. **CONDITION:** Unless otherwise specified, material shall be supplied solution heat treated and cold rolled half-hard in a suitable condition for precipitation heat treatment.

5. **TECHNICAL REQUIREMENTS:** (a) Physical Properties As Received.-

Nominal Thickness Inch	Tensile Strength psi	Elongation % in 2 in., min	Hardness Rockwell
Under 0.010	85,000 - 105,000	3	--
0.010 - 0.020, incl	85,000 - 105,000	5	15T 87.5 - 91.5
Over 0.020 - 0.045, incl	85,000 - 105,000	5	30T 72 - 80
Over 0.045	85,000 - 105,000	5	B 84 - 97

- (b) Physical Properties After Precipitation Heat Treatment.- Material after precipitation heat treatment at 600 F ± 5 for 2 hours and cooling in air shall conform to the following requirements:

Nominal Thickness Inch	Tensile Strength psi, min	Yield Strength at 0.2% offset or at extension indicated		Hardness Rockwell
		psi, min	Extension Under Load Inch in 2 in.	
Under 0.010	180,000	130,000	0.0180	--
0.010 - 0.020, incl	180,000	130,000	0.0180	15N 80 min
Over 0.020 - 0.060, incl	180,000	130,000	0.0180	30N 59 min
Over 0.060	180,000	130,000	0.0180	C 39 min

6. **QUALITY:** Material shall be uniform in quality and condition, clean, sound, smooth and free from foreign materials and from internal and external defects detrimental to fabrication or to performance of parts. Microstructure shall reveal a minimum of beta phase constituent.

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