

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 4117A

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

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ALUMINUM ALLOY BARS, ROLLED 1Mg - 0.6Si - 0.3Cu - 0.25Cr (6061-T6)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. FORM: Bars, rods, and wire.
3. APPLICATION: Primarily for parts where strength is required and limited formability is acceptable.
4. COMPOSITION:

Magnesium	0.8 - 1.2
Silicon	0.40 - 0.8
Copper	0.15 - 0.40
Chromium	0.15 - 0.35
Iron	0.7 max
Zinc	0.25 max
Manganese	0.15 max
Titanium	0.15 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

5. CONDITION: Drawn, rolled, or cold finished, as ordered, and solution and precipitation heat treated.
6. TECHNICAL REQUIREMENTS:
 - 6.1 Tensile Properties:

Tensile Strength, psi	42,000 min
Yield Strength at 0.2% Offset or at 0.0110 in.	
in 2 in. Extension Under Load (E = 9,900,000), psi	35,000 min
Elongation, % in 4D	10 min

- 6.1.1 When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.
- 6.1.2 Tensile properties shall be as agreed upon by purchaser and vendor on material under 0.125 in., on rounds over 8.0 in. in diameter, and on rectangles and squares with an area over 50 square inches.
- 6.2 Hardness: Not lower than Brinell 80 using 500 kg load and 10 mm ball or 1000 kg load and 9/16 in. ball, or not lower than Brinell 85 using 1000 kg load and 10 mm ball, but the product shall not be rejected on the basis of hardness if the requirements for tensile properties are met.

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