

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 4161

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

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Revised

ALUMINUM ALLOY EXTRUSIONS 1Mg - 0.6Si - 0.25Cu - 0.25Cr (6061-T4)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. FORM: Bars, rods, and shapes.
3. APPLICATION: Primarily for parts requiring moderate strength, especially where such parts and assemblies require brazing or welding during fabrication.
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: Solution heat treated.
 - 5.1 Unless otherwise specified, extrusions shall be supplied with the as-extruded surface finish; light polishing to remove minor surface imperfections is permissible provided such imperfections can be removed within the dimensional tolerances.
6. TECHNICAL REQUIREMENTS:
 - 6.1 Tensile Properties:

Tensile Strength, psi	26,000 min
Yield Strength at 0.2% Offset or at 0.0072 in. in 2 in. Extension Under Load (E = 9,900,000), psi	16,000 min
Elongation, % in 2 in. or 4D	16 min

 - 6.1.1 For material of such thickness that a standard specimen cannot be taken, or for material thinner than 0.062 in., the test for elongation is not required.
 - 6.1.2 When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.
 - 6.2 Hardness: Material should have hardness not lower than Brinell 55 using 500 kg load and 10 mm ball or 1000 kg load and 9/16 in. ball, or not lower than Brinell 60 using 1000 kg load and 10 mm ball, but shall not be rejected on the basis of hardness if the tensile property requirements are met.