



AEROSPACE MATERIAL SPECIFICATION

AMS 4113

Society of Automotive Engineers, Inc.
TWO PENNSYLVANIA PLAZA, NEW YORK, N. Y. 1000

Issued 11-1-68
Revised

ALUMINUM ALLOY STRUCTURAL SHAPES 1.0Mg - 0.60Si - 0.30Cu - 0.20Cr (6061-T6)

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily for structural parts requiring moderate strength, especially where such parts and assemblies require brazing or welding during fabrication. These shapes are limited to those commonly produced by rolling, such as angles, channels, tees, zees, I-beams, and H-beams.
3. **COMPOSITION:**

	min	max
Magnesium	0.8	1.2
Silicon	0.40	0.8
Copper	0.15	0.40
Chromium	0.04	0.35
Iron	--	0.7
Zinc	--	0.25
Manganese	--	0.15
Titanium	--	0.15
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

4. **CONDITION:** Rolled or extruded, and solution and precipitation heat treated.
 - 4.1 Rolled shapes shall be supplied with an as-rolled surface finish and extruded shapes with an as-extruded surface finish; light polishing to remove minor surface imperfections is permissible provided such imperfections can be removed within the specified dimensional tolerances.
5. **TECHNICAL REQUIREMENTS:** The product shall conform to the following requirements; tensile properties shall be determined in accordance with the latest issue of AMS 2355.
 - 5.1 **Tensile Properties:**

Tensile Strength, psi	38,000 min
Yield Strength at 0.2% Offset or at 0.0111 in.	
in 2 in. Extension Under Load (E = 9,900,000), psi	35,000 min
Elongation, % in 2 in. or 4D	
Nominal Thickness, Inches	
Up to 0.250, excl	8 min
0.250 and over	10 min

- 5.1.1 When a dispute occurs between purchaser and vendor over the yield strength values, yield strength determined by the offset method shall apply.
- 5.2 **Hardness:** Material should have 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 shall not be rejected on the basis of hardness if the tensile property requirements are met.

SAE Technical Board rules provide that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."