



AEROSPACE MATERIAL SPECIFICATION

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

AMS 4172

Issued 11-1-69
Revised

ALUMINUM ALLOY EXTRUSIONS

1.0Mg - 0.60Si - 0.30Cu - 0.20Cr (6061-T4511)
Stress Relief Stretched and Straightened

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars, rods, tubing, and shapes.
3. **APPLICATION:** Primarily for parts requiring moderate strength, especially where such parts and assemblies require brazing or welding during fabrication and where distortion during machining must be minimized.
4. **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	

5. **CONDITION:** Solution heat treated and stress-relieved by stretching.
 - 5.1 Unless otherwise specified, extrusions shall be supplied with an as-extruded surface finish; light polishing to remove minor surface imperfections is permissible provided such imperfections can be removed within the dimensional tolerances.
 - 5.2 Material shall be stretched in the solution heat treated condition to produce a nominal permanent set of 1-1/2% but not less than 1% or more than 3%.
 - 5.3 Material, after stretching, may receive minor straightening of an amount necessary to meet the requirements of Section 8.
6. **TECHNICAL REQUIREMENTS:** The product shall conform to the following requirements; tensile properties shall be determined in accordance with the latest issue of AMS 2355.
 - 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 When a dispute occurs between purchaser and vendor over the yield strength values, yield strength determined by the offset method shall apply.