



AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4129

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Revised

ALUMINUM ALLOY BARS, ROLLED OR COLD FINISHED 1.0Mg - 0.60Si - 0.30Cu - 0.20Cr (6061-T651) Stress-Relief Stretched

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars and rods.
3. **APPLICATION:** Primarily for parts where strength is required and limited formability is acceptable 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:** Rolled or cold finished, as ordered, and solution heat treated, stress-relieved by stretching, and precipitation heat treated.
 - 5.1 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%.
 - 5.2 Material shall receive no further straightening operations after stretching, unless specifically authorized.
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:** Except as specified in 6.1.1, the following requirements apply to all sizes 0.500 in. and over in diameter or least distance between parallel sides:

Tensile Strength, psi	42,000 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	10 min

- 6.1.1 Tensile property requirements shall be as agreed upon by purchaser and vendor for rounds over 8.000 in. in diameter and for squares, rectangles, hexagons, and octagons having a cross-sectional area over 50 sq inches.

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