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

AEROSPACE MATERIAL SPECIFICATION

AMS 4129

Issued 11-1-69
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.