



AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
485 LEXINGTON AVENUE, NEW YORK, N.Y. 10017

AMS 4119D

Superseding AMS 4119C

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ALUMINUM ALLOY BARS, ROLLED OR COLD FINISHED

4.4Cu - 1.5Mg - 0.60Mn (2024-T351)

Stress-Relief Stretched

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars and rods.
3. **APPLICATION:** Primarily for machined parts subject to excessive warpage during machining due to residual stresses, and for parts requiring good strength and whose fabrication does not involve welding. Certain design and processing procedures may cause this material to be susceptible to stress corrosion cracking; ARP 823 recommends practices to minimize such conditions.

4. **COMPOSITION:**

	min	max
Copper	3.8	4.9
Magnesium	1.2	1.8
Manganese	0.30	0.9
Iron	--	0.50
Silicon	--	0.50
Zinc	--	0.25
Chromium	--	0.10
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

5. **CONDITION:** Rolled or cold finished, as ordered, and solution heat treated and stress-relieved by stretching.
 - 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% nor 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:

Nominal Diameter or Least Thickness Inches	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,500,000)		Elongation % in 2 in. or 4D, min
		psi, min	Extension Under Load in. in 2 in.	
0.500 to 4.000, incl	62,000	45,000	0.0126	10
Over 4.000 to 6.500, incl	62,000	40,000	0.0116	10