AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 4110A
Superseding AMS 4110
Issued 2-15-65
Revised 9-30-66

ALUMINUM ALLOY BARS, ROLLED OR COLD FINISHED
4.0Cu - 0.70Mn - 0.50Mg (2017-T451)
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	3.5	4.5
Manganese	0.40	1.0
Magnesium	0.20	0.8
Iron	--	1.0
Silicon	--	0.8
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, solution heat treated, and stress-relieved by Ø 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 Ø properties shall be determined in accordance with the latest issue of AMS 2355.

6.1 Tensile Properties: Except as specified in 6.1.2, the following requirements apply to bars 0.500 in. and over in least distance between parallel sides and to rods 0.500 in. and over in diameter:

Tensile Strength, psi	55,000 min
Yield Strength at 0.2% Offset or at 0.0102 in. in 2 in. Extension Under Load (E = 10,400,000), psi	32,000 min
Elongation, % in 2 in. or 4D	12 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.