

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4082D

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ALUMINUM ALLOY TUBING

1.0Mg - 0.6Si - 0.25Cu - 0.25Cr (61S-T6)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. APPLICATION: Primarily for parts and assemblies, such as brackets, conduits, and low pressure liquid lines, where high strength is required.

3. COMPOSITION:

Magnesium	0.8 - 1.2
Silicon	0.40 - 0.8
Copper	0.15 - 0.40
Chromium	0.15 - 0.35
Iron	0.7 max
Zinc	0.20 max
Manganese	0.15 max
Titanium	0.15 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

4. CONDITION: Solution and precipitation heat treated.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties:

Nominal OD Inch	Nominal Wall Thickness Inch	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 9,900,000)		Elongation Under Load in. in 2 in. % in 2 in., min
			psi, min	in. in 2 in.	
0.25 - 8, incl	Under 0.050	42,000	35,000	0.0111	8
0.25 - 8, incl	0.050 and over	42,000	35,000	0.0111	10

- 5.2 Hardness: Tubing should have hardness not lower than Rockwell B 50 or equivalent, but shall not be rejected on the basis of hardness if the tensile property requirements are met.

5.3 Flattening:

- 5.3.1 Tubing having nominal wall thickness less than 10% of the nominal outside diameter shall be capable of being flattened sideways under a gradually applied load, without cracking, to an outside dimension 8 times the nominal wall thickness, while under load.

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