AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4082 B

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ALUMINUM ALLOY TUBING
Magnesium Silicon Copper (61S-T)

1. ACKNOWLEDGMENT: A vendor must mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. COMPOSITION:

Magnesium	0.8 - 1.2
Silicon	0.4 - 0.8
Copper	0.15- 0.40
Iron	0.70 max
Chromium	0.35 max
Manganese	0.15 max
Titanium	0.15 max
Zinc	0.10 max
Other elements, each	0.05 max
Other elements, total	0.15 max
Aluminum	remainder

3. CONDITION: Heat treated (quenched and aged) conforming to the following minimum physical properties:

Diameter	Wall Thickness	Tensile Strength	Yield Strength at 0.2% Set or at Extension Indicated		Elongation
				Extension Under Load	
inches	inches	lb per sq in.	lb per sq in.	inch in 2"	% in 2 in.
1/4 to 8, incl.	0.025 - 0.049	42,000	35,000	0.0108	8
	0.050 - 0.500	42,000	35,000	0.0108	10

Note: The material shall have a minimum hardness of Rockwell B50, or the equivalent, but shall not be rejected on the basis of hardness if it conforms to the minimum tensile requirements.

4. QUALITY: The material shall be seamless, uniform in quality and temper, commercially straight, clean, smooth, and free from seams, laminations, blisters, and other injurious defects within the limits of best commercial manufacturing methods. Material revealing defects during fabrication is subject to rejection.

5. TOLERANCES: (a) Diameter - The outside diameter of the tubing at any section shall not vary from the nominal diameter by more than the following tolerances; all dimensions are in inches:

Nominal Outside Diameter	Tolerance, plus or minus	
	Mean Diameter Measurement	Individual Diameter Measurement
3/8 to 1/2, incl.	0.003	0.006
Over 1/2 to 1 "	0.004	0.008
Over 1 to 2 "	0.005	0.010
Over 2 to 3 "	0.006	0.012
Over 3 to 5 "	0.008	0.016
Over 5 to 6 "	0.010	0.020
Over 6 to 8 "	0.015	0.030
Over 9 to 10 "	0.020	0.040
Over 10 to 12 "	0.025	0.050