AERONAUTICAL MATERIAL SPECIFICATION

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

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

2. COMPOSITION:

Magnesium	0.80 - 1.20
Silicon	0.40 - 0.80
Copper	0.15 - 0.40
Chromium	0.15 - 0.35
Iron	0.70 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

3. CONDITION: (a) Solution and precipitation heat treated conforming to the following minimum physical properties:

Diameter	Wall Thickness	Tensile Strength	Yield Strength (0.2% Offset) or at Extension Indicated		
				Extension Under Load	
Inches	Inch	psi	psi	inch in 2 in.	Elongation % in 2 in.
1/4 to 8, incl.	0.025 - 0.049	42,000	35,000	0.0110	8
	0.050 - 0.500	42,000	35,000	0.0110	10

Note: The tubing shall have 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.

(b) The tubing shall be capable of being flattened sidewise under a gradually applied load, without cracking, to an outside dimension eight times the wall thickness.

(c) When specified, the manufacturer shall apply an air pressure of 250 psi to the inside of each tube 1-1/2 inches or less in diameter, for a period of not less than 5 seconds, while the tube is immersed in water or other suitable liquid. The pressure test may be applied to the tube after reduction to size but before the final heat treatment. Any tube which leaks, as indicated by the formation of air bubbles in the liquid, shall be rejected.

4. QUALITY: (a) Tubing shall be uniform in quality and condition, sound and free from foreign material and from internal and external defects detrimental to fabrication or to the performance of parts in service. Material revealing defects during fabrication shall be subject to rejection.