

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS 4555A

Issued 9/1/41

Revised 12/1/47

BRASS TUBING Light Annealed

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **FORM:** Seamless tubing.
3. **APPLICATION:** Parts requiring a material of moderate strength and fair ductility.
4. **COMPOSITION:**

Copper	65.0 - 71.5
Lead	0.80 max
Tin	0.15 max
Iron	0.07 max
Zinc	remainder

5. **CONDITION:** Light annealed, but fully recrystallized; tubing shall be either bright annealed, or acid-cleaned after the final annealing operation.

6. **TECHNICAL REQUIREMENTS:** (a) Physical Properties.-

Tensile Strength, psi	45,000 min
Elongation, % in 2 in.	35 min

(b) Grain Size.- Unless otherwise specified, grain size of tubing shall be not larger than 0.035 mm, determined in accordance with ASTM E2-44T.

(c) Flaring.- Tubing shall be capable of being flared as follows without formation of cracks or other visible defects:

Specimens for flaring may be cut from any portion of the tube, or an entire tube may be used as a specimen. The end of the specimen to be flared shall be out square, with the cut end smooth and free from burrs, but not rounded. The specimen shall, at room temperature, be forced axially with steady pressure over a hardened and polished tapered steel pin, having a 60° included angle, until the end of the specimen has been enlarged to a permanent set not less than the percentages of outside diameter shown in the following table.

Nominal Outside Diameter Inches	Expansion of Outside Diameter Per Cent
0.750 and under	20
Over 0.750 - 4.00, incl	15

(d) Test specimens 6 inches in length shall be capable of withstanding, without cracking, immersion for 15 min in an aqueous solution containing 100 g of mercurous nitrate and 13 ml of nitric acid (sp gr 1.42) per liter of solution, using at least 10 ml of solution per sq in. of test specimen surface area.

Section 7C
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