

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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ALUMINUM BRONZE

90Cu - 8.5Al

Hard

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. FORM: Rods and bars.
3. APPLICATION: Primarily for parts requiring strength and corrosion resistance at elevated temperatures.
4. COMPOSITION:

Copper	87.0 min
Aluminum	7.0 - 10.0
Iron	1.5 max
Other Additions including Nickel, Tin, and Manganese	2.0 max
Total Named Elements	99.5 min

5. CONDITION: Hot rolled or drawn, or extruded, but may subsequently be cold finished, hard temper.
6. TECHNICAL REQUIREMENTS:

6.1 Tensile Properties:

Nominal Diameter or Distance between parallel sides, Inches	Tensile Strength, psi, min	Elongation, % in 4D, min
0.5 and under	80,000	5
Over 0.5 to 1.0, incl	75,000	5
Over 1.0 to 2.0, incl	72,000	5

- 6.1.1 Tensile test specimens from rods and bars over 1.5 in. in diameter or distance between parallel sides shall have their axes located approximately midway between center and surface.
- 6.2 Hardness: Material shall have hardness not lower than Brinell 165, using 1000 kg load, on the surface, except on rounds where a flat, as necessary for Brinell accuracy, may be made, or not lower than Rockwell B 91 when taken half-way between center and surface of the cross section.
- 6.3 Mercurous Nitrate Test: Test specimens of full cross section having length of either 6 in. or twice the diameter or minimum distance between parallel sides, whichever is greater, 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.

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