AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4630B

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ϕ ALUMINUM BRONZE BARS

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

2. FORM: Rods, bars and forgings.

3. APPLICATION: Primarily for strength and wear resistance at medium temperatures.

4. COMPOSITION:

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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	99.8 min

5. CONDITION: (a) Rods and bars shall be supplied hot rolled, drawn or extruded, but may be cold finished, conforming to the following minimum physical properties:

Nominal Diameter or Thickness, Inches	Tensile Strength, psi	Yield Strength at 0.2% Offset or at Extension Indicated, psi	Extension Under Load, inch in 2 in.	Elongation, % in 4D
0.5 and under	80,000	40,000	0.0090	15
Over 0.5 to 1.0 incl	75,000	37,000	0.0086	15
ϕ Over 1.0 to 3.0 incl	72,000	33,000	0.0084	15

(b) All material, including forgings, shall have hardness not lower than Brinell 130, using 1000 kg load, on the surface, except on rounds, where a ϕ flat, as necessary for Brinell accuracy, shall be made, or not lower than Rockwell B 80, when taken on the 1/2 radius section.

(c) Rods and bars.- Test specimens of full cross section having a 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, ϕ 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.

(d) Forgings.- Test specimens from forgings may be any convenient size or shape, or an entire forging may be used. Testing procedure for forgings ϕ shall be the same as in paragraph (c) above.

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