AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4872

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Revised

ALUMINUM BRONZE CASTINGS

Sand
As Cast

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

2. COMPOSITION:

Copper	83.5 min
Aluminum	10.5 - 12.0
Iron	3.0 - 4.25
Manganese	0.5 max
Nickel	0.5 max
Total Named Elements	99.7 min

3. TEST BARS: (a) Unless otherwise specified, tensile test bars shall be cast to represent each melt of castings. Test bars are to be supplied with the castings when requested.

(b) A melt shall be the metal withdrawn from a batch furnace charge of 2000 pounds or less as melted for pouring castings.

4. PHYSICAL PROPERTIES: (a) Unless otherwise specified, the test bars and test specimens cut from the castings, when size permits, shall conform to the following minimum physical properties, except as in paragraph (b) below:

Tensile Strength, psi	80,000
Yield Strength (0.2% Offset), psi	36,000
Equivalent Extension Under Load, inch in 2 in.	0.0088
Elongation, % in 4D	6

(b) Test specimens cut from casting sections over 1 inch in thickness shall conform to the following minimum physical properties:

Tensile Strength, psi	72,000
Yield Strength (0.2% Offset), psi	28,000
Equivalent Extension Under Load, inch in 2 in.	0.0077
Elongation, % in 4D	5

(c) The hardness of the castings shall be **Brinell 179-235, using 3000 kg load and 10 mm ball or the equivalent.**

5. QUALITY: (a) Castings shall be of uniform quality and condition, and free from defects detrimental to fabrication or to performance of the parts. If injurious defects are revealed during fabrication, castings shall be subject to rejection. Castings shall have smooth surfaces and shall be well cleaned.

(b) Castings when broken shall show a uniform composition and color and be substantially free from oxides and other defects. Castings shall be ductile enough to show a definite amount of bending before rupture. The fracture shall be fine-grained.