AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4870

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ALUMINUM BRONZE CASTINGS
As Cast

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

2. TYPE: Centrifugally, sand, or chilled cast.

3. COMPOSITION:

Copper	83.5 min
Aluminum	10.5 - 11.5
Iron	3.0 - 4.0
Manganese	0.5 max
Nickel	0.5 max
Total Names Elements	99.7 min

4. CONDITION: As cast.

5. PHYSICAL PROPERTIES: (a) Tensile test bars shall be cast with each melt of castings immediately before the metal for the castings is taken. The test bars shall be poured at the temperature of pouring the castings.

(b) Unless otherwise specified or noted on the drawing, the test bars and/or test specimens cut from the castings (when size permits) shall conform to the following physical requirements:

*Tensile Strength, lb per sq in.	90,000 min
Yield Strength (Offset 0.2%), lb per sq in.	36,000 min
Equivalent Extension Under Load, inch in 2 in.	0.0088
Elongation, % in 4D.	6 min
Brinell Hardness (1000 kg load, 10 mm ball)	179 - 235

*When test specimens are cut from a casting section which is over 1 inch in thickness, the tensile strength requirement may be reduced to 72,000 lb per sq in.

(c) The castings shall have a hardness of Brinell 179 - 235, (1000 kg load, 10 mm ball), or the equivalent.

6. QUALITY: (a) Castings must be homogeneous and free from shrinkage defects, cracks, blowholes, porosity, hard spots, foreign matter and other injurious defects, and must not reveal defects during machining. The castings shall be smooth and well cleaned.

(b) Castings when broken for fracture test must show a uniform composition and color, and be substantially free from oxides and other defects, particularly in locations subject to stresses in service.

(c) Castings shall be ductile enough to show a definite amount of bending before rupture when being broken for the fracture test.