AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4871

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Revised

ALUMINUM BRONZE CASTINGS
Heat Treated

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

2. COMPOSITION:

Copper	83.5 min
Aluminum	10.5 - 11.5
Iron	3.0 - 4.0
Manganese	.1 - .5
Nickel	.5 max
Total Named Elements	99.7 min

3. CONDITION: Heat treated (quenched and tempered). The tempering temperature shall be not less than 1100°F.

4. 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 and in a mold made with the regular foundry mix of green sand without using chills or artificial means of cooling.

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

* Tensile strength, lb. per sq. in.	90,000 min
Yield Strength (0.2% set) lb. per sq. in.	45,000 min
Extension Under Load, inch in 2 in.	0.0100
Elongation, % in 2 in.	5 min
Brinell Hardness	200-229

* If the test piece is from a casting section which is over 1 inch, the tensile strength requirement may be reduced to 72,000.

(c) The heat treated castings shall have a hardness of Brinell 200-229.

5. QUALITY: (a) Castings must be homogeneous and free from shrinkage defects, cracks, blowholes, porosity, sand holes, hard spots, foreign matter and other injurious defects, and must not reveal defects when 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.