AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
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AMS 4862

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Revised

MANGANESE BRONZE CASTINGS
High Strength

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

2. COMPOSITION:

Copper	63.0 - 68.0
Aluminum	3.0 - 6.0
Manganese	2.5 - 5.0
Iron	2.0 - 4.0
Tin	.50 max
Lead	.20 max
Zinc	19.5 - 23.5
Total Named Elements	99.75 min.

3. CONDITION: As cast.

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 and/or test specimens cut from castings (when size permits) shall conform to the following minimum physical requirements:

Tensile Strength, lb. per sq. in.	115,000
Elongation, per cent in 2 in.	12

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.

6. PRECAUTIONS: (a) Castings shall not be repaired by plugging, welding, or other methods, without written permission.

(b) Castings shall be of sufficient size to allow for finishing to blueprint requirements, but excessive size or weight will not be permitted. Excess metal to allow for chucking during machining must not be used.

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