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AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS
4860

MANGANESE BRONZE Castings

1. **ACKNOWLEDGMENT:** A vendor must mention this specification number and its last revision in all quotations and when acknowledging purchase orders.
2. **COMPOSITION:**

Copper	55.0 - 60.0
Zinc	38.0 - 42.0
Lead	0.2 max
Aluminum	1.5 max
Manganese	3.5 max
Iron	0.4 - 2.0
Tin	1.5 max
Total Other Elements	0.2 max
3. **TEST BARS:** (a) One test bar shall be supplied with each melt of castings, unless otherwise specified. This test bar shall be made under the same temperature and casting conditions and from the same melt as the parts it represents. It shall be of such a size that a standard half-inch diameter tensile specimen may be machined from it. A melt shall mean a furnace charge of metal as melted for pouring castings.

(b) This test bar shall conform to the following minimum physical properties:

Tensile Strength, lb per sq in.	65,000
Elongation, % in 2 in.	25
4. **QUALITY:** (a) Castings must be homogeneous and free from shrinkage cracks, blow-holes, 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 or 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 broken for the fracture test.
5. **REPORTS:** The manufacturer shall supply three copies of a report of the chemical composition of the castings on each lot on each shipment. This report shall include the purchase order number, material specification number, part numbers and quantity of each part.
6. **IDENTIFICATION:** Unless otherwise specified, each casting shall bear the casting vendor's trade mark cast on an unmachined surface in raised characters. This does not apply to castings which are supplied machined all over.