

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 5345

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Revised

CENTRIFUGAL STEEL CASTINGS

Chromium Molybdenum
.38-.43 Carbon

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

2. USE: Primarily for cylinder barrel and sleeve castings.

3. COMPOSITION:

		Individual Casting Check Analysis Over or Under
Carbon	0.38-0.43	0.02
Manganese	0.70-1.00	0.03
Phosphorus	0.04 max	0.005
Sulphur	0.04 max	0.005
Silicon	0.20-0.50	0.02
Chromium	0.80-1.10	0.05
Molybdenum	0.15-0.25	0.03

4. GRAIN SIZE: 5 or finer, ASTM E19-39T, method a, unless otherwise ordered. A heat of steel predominately 5 or finer with grains as large as 3 is permissible. The requirement as to grain size may be waived if mutually agreed between purchaser and vendor.

5. HARDENABILITY: Specimens with section 3/8 inch and 1 inch in thickness and not greater than 2 square inches in area cut from the cast part, shall be ground and copper plated, placed in a furnace which is at 1550°F and allowed to heat to 1550°F, held 25 minutes and quenched in commercial paraffin oil (100 S.U.V. at 100°F) at room temperature. The surface hardness of the specimens shall be between 47-54 Rockwell "C".

When mutually agreed between vendor and purchaser, the Jominy end quench hardenability test may be used as an alternate and shall be J-50 = 4 to 16 (Sixteenths).

6. CONDITION: Unless otherwise specified castings shall be supplied in the normalized and tempered condition, with a hardness of Brinell 235 maximum.

7. QUALITY: (a) Castings must be free from shrinkage imperfections, cracks, blowholes, porosity and other internal defects. The castings shall be smooth and well cleaned and must not disclose defects during heat treatment and machining.

(b) Visual examination of deep acid etched sections in the as furnished condition shall show no evidence of abnormal segregation, pipes, cracks, porosity or abnormal change in structure from the surface to the center.

(c) Unless otherwise stated, finished parts are subject to magnetic inspection.

8. TOLERANCES: Permissible variations in dimensions shall be as mutually agreed upon between purchaser and manufacturer or as specified on drawing.
9. REPORTS: The manufacturer shall furnish three copies of a notarized report of chemical analysis and grain size on each heat in each shipment. This report shall include the purchase order number, heat number, material specification number, part number and quantity in each heat.
10. IDENTIFICATION: (a) Vendor's trademark or symbol, heat number, or serial number, this specification number, and the part number shall be clearly stamped on each casting at the location shown on drawing. The letters and figures used for stamping shall be 0.10-0.25 inch in height and the impressions shall not be deeper than 0.020 inch. Painted markings may be substituted if mutually agreed upon by purchaser and manufacturer.
- (b) Material that can not be identified at destination is subject to rejection.
11. REJECTIONS: Material not conforming to this specification, or modifications specified on the drawing or the purchase order, is subject to rejection. If samples for verification are desired by the vendor, they must be claimed within three weeks. Rejected material or parts will be held a reasonable time, at vendor's risk, awaiting shipping instructions for the return of same for credit or replacement, as specified. Vendor shall pay all transportation charges.