AERONAUTICAL
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 5352A

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STEEL CASTINGS, INVESTMENT, CORROSION RESISTANT 17Cr - 0.5Mo (0.95 - 1.2C)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for parts requiring resistance to both corrosion and wear, with hardness as high as Rockwell C 58.

3. COMPOSITION: Castings shall conform to the following:

Carbon	0.95 - 1.2
Manganese	1.0 max
Silicon	1.0 max
Phosphorus	0.04 max
Sulfur	0.03 max
Chromium	16.0 - 18.0
Nickel	0.75 max
Molybdenum	0.35 - 0.75

Ø 4. CONDITION: Annealed, unless otherwise specified.

5. TECHNICAL REQUIREMENTS:

5.1 Casting: Castings shall be poured either from remelted master heat metal or directly from a master heat. A master heat is previously refined metal of a single furnace charge. Gates, sprues, risers, and rejected castings shall not be remelted directly, without refining, for pouring of castings; they may be used in preparation of master heats. When permitted by purchaser, metal in the form of shot from more than one master heat may be uniformly blended together to form a master heat lot; the total weight of metal in a master heat lot shall not exceed 7000 pounds.

5.2 Hardness: Shall be not higher than Rockwell C 30 or equivalent.

5.3 Hardenability: Castings shall be capable of developing hardness not lower than Rockwell C 58 when properly heated to 1875 F ± 10, held at heat for 30 min., and cooled in still air. Specimens cut from castings may be used to determine conformance to this requirement.

5.4 Decarburization: Castings shall not be decarburized more than 0.005 inch.

5.4.1 Unless otherwise agreed upon by purchaser and vendor, decarburization shall be measured by Rockwell Superficial 30-N scale hardness method, or equivalent hardness testing method, on a hardened casting section or equivalent hardened sample. Depth of decarburization is defined as the distance measured from the nearest original surface to the point at which no increase in hardness is found.

6. QUALITY:

6.1 Castings shall be uniform in quality and condition, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts. Castings shall have smooth surfaces and shall be well cleaned. Unless otherwise specified, metallic shot or grit shall not be used for final cleaning.

6.2 When castings are broken for fracture test, the fracture shall have uniform color and be substantially free from oxides and other imperfections.

6.3 Ø Radiographic and other quality standards shall be as agreed upon by purchaser and vendor.

6.4 Ø Unless otherwise specified, castings shall be produced under radiographic control. This shall consist of radiographic examination of castings until proper foundry technique, which will produce castings free from harmful internal imperfections, is established for each part number, and of production castings as necessary to ensure maintenance of satisfactory quality.

6.5 Castings shall not be repaired by plugging, welding, or other methods, without written permission from purchaser.

7. REPORTS:

7.1 Unless otherwise specified, the vendor of castings shall furnish with each shipment three copies of a report of the results of tests for chemical composition and hardenability of at least one casting from each master heat or master heat lot represented. This report shall include the purchase order number, master heat or master heat lot number (and code symbol if used), material specification number, part number, and quantity from each heat.

7.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of castings, part number, and quantity. When castings for making parts are produced or purchased by the parts vendor, that vendor shall inspect castings from each master heat or master heat lot represented, and shall include in the report a statement that the castings conform, or shall include copies of laboratory reports showing the results of tests to determine conformance.

8. IDENTIFICATION: Unless otherwise specified, each casting shall be identified as to part number and master heat or master heat lot number or code symbol. Methods of applying identifying characters shall be as agreed upon by purchaser and vendor. Marking materials shall have no deleterious effects on the castings or their performance.

9. APPROVAL:

9.1 To assure uniformity of quality, sample castings from new or reworked master patterns shall be approved by purchaser, unless such approval be waived.