

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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STEEL CASTINGS, PRECISION INVESTMENT, CORROSION AND HEAT RESISTANT
17Cr - 13Ni - 2Mo

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 small parts, such as stator vanes and nozzle diaphragm vanes for use at temperatures up to 1600 F. At high temperatures, strength of this steel is slightly higher than, and oxidation resistance is similar to, that of the 18-8 types.
3. COMPOSITION: Castings shall conform to the following:

Carbon	0.15 max
Manganese	2.00 max
Silicon	0.75 max
Phosphorus	0.04 max
Sulfur	0.03 max
Chromium	16.00 - 18.00
Nickel	12.00 - 14.00
Molybdenum	1.50 - 2.25
Copper	0.50 max
4. 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, except when produced in the form of shot. A master heat in the form of shot shall be the uniformly blended product of one or more furnace charges, with total weight not exceeding 7000 lb. Gates, sprues, risers and rejected castings shall only be used in preparation of a master heat; they shall not be remelted directly, without refining, for pouring of castings.
5. CONDITION: As cast, unless otherwise specified.
6. QUALITY:
 - 6.1 Castings shall be uniform in quality and condition, sound, and free from foreign materials and from internal and external defects 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 defects.
 - 6.3 Unless otherwise specified, castings shall be produced under radiographic control.
 - 6.4 Inspection standards and procedures shall be as agreed upon by purchaser and vendor.

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