

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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Revised

STEEL CASTINGS, PRECISION INVESTMENT, CORROSION RESISTANT 18Cr - 9Ni

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. APPLICATION: Primarily for small parts not subjected to temperatures exceeding 700 F during fabrication or in service.
3. COMPOSITION: Castings shall conform to the following:

Carbon	0.25	max
Manganese	2.0	max
Silicon	1.0	max
Phosphorus	0.04	max
Sulfur	0.03	max
Chromium	17.0 - 19.0	
Nickel	8.0 - 10.0	
Molybdenum	0.5	max
Copper	0.5	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. 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. 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. CONDITION: Solution heat treated free from continuous carbide network.
6. TECHNICAL REQUIREMENTS:
 - 6.1 Hardness: Castings shall have hardness not higher than Brinell 175 or equivalent.
7. QUALITY:
 - 7.1 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.
 - 7.2 When castings are broken for fracture test, the fracture shall have uniform color and be substantially free from oxides and other defects.
 - 7.3 Unless otherwise specified, castings shall be produced under radiographic control.

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