

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
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Revised

ALLOY IRON CASTINGS, SAND, CORROSION RESISTANT  
15Ni - 6Cu - 2Cr

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

2. APPLICATION: Parts requiring moderate corrosion and heat resistance at operating temperatures up to 800 F.

3. COMPOSITION:

Carbon	2.70 - 3.00
Manganese	1.00 - 1.50
Silicon	1.50 - 1.50
Phosphorus	0.30 max
Sulfur	0.12 max
Chromium	1.80 - 2.40
Nickel	14.00 - 16.00
Copper	6.00 - 7.00

4. CONDITION: Annealed, unless otherwise specified.

5. TECHNICAL REQUIREMENTS:

5.1 Annealing: Castings, after cooling to room temperature, shall be annealed by heating uniformly to 1400 F  $\pm$  25, holding at that temperature for not less than 30 min and cooling uniformly in air.

5.2 Hardness: Brinell 130-175 or Rockwell B 75-85.

5.3 Microstructure: Austenite matrix with uniformly distributed graphite flakes.

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.

6.2 When castings are broken for fracture test, the fracture shall have a 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.

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

7. REPORTS:

Section 7 of the SAE Technical Board rules provides that: "All technical reports, including standards, approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any standard or recommended practice, and no commitment to form to or be guided by any technical report. In formulating and approving technical reports, SAE and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."