AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 5334

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STEEL CASTING, PRECISION INVESTMENT
0.5Cr - 0.55Ni - 0.2Mo

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

2. APPLICATION: Small parts of intricate design which may be heat treated or welded.

3. COMPOSITION: Castings shall conform to the following:

Carbon	0.25 - 0.33
Manganese	0.60 - 0.95
Silicon	0.20 - 0.60
Phosphorus	0.04 max
Sulfur	0.04 max
Chromium	0.35 - 0.65
Nickel	0.35 - 0.75
Molybdenum	0.15 - 0.30

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 master heats but shall not be remelted directly, without refining, for pouring castings.

5. CONDITION: Normalized, unless otherwise specified on the drawing.

6. TECHNICAL REQUIREMENTS:

6.1 Normalizing: Castings shall be normalized by heating to 1700-1750 F, holding at that temperature for not less than 1 hr followed by air cooling.

6.2 Heat Treatment: Castings normalized as in 6.1 shall be capable of developing hardness not lower than Rockwell C 32 when properly heated to 1550 F ± 10, held for 30 minutes, quenched in oil and tempered at not lower than 800 F.

6.3 Decarburization: Castings shall not be decarburized more than 0.002 inch.

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.

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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