

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS5363 A

Issued 12-1-47

Revised 12-1-50

STEEL CASTINGS, SAND, CORROSION AND HEAT RESISTANT 18Cr - 10.5Ni - (Cb+Ta)

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

2. APPLICATION: Parts and assemblies requiring both corrosion and heat resistance, and especially when such parts and assemblies are welded during fabrication. Parts and assemblies requiring oxidation resistance up to approximately 1500 F, but useful at that temperature only when stresses are low.

3. COMPOSITION:

Carbon	0.10 max
Manganese	2.00 max
Silicon	1.50 max
Phosphorus	0.04 max
Sulfur	0.04 max
Chromium	17.00 - 20.00
Nickel	9.00 - 12.00
Columbium + Tantalum	10xC - 1.35
Molybdenum	0.50 max
Copper	0.50 max

4. CONDITION: Solution heat treated, unless otherwise specified.

5. TECHNICAL REQUIREMENTS:

5.1 Solution Heat Treatment: Castings shall be solution heat treated by heating to 2000 F $\pm$ 50, holding at that temperature for not less than 30 minutes and cooling in air.

5.2 Hardness: Castings shall have hardness not higher than Brinell 180 or equivalent.

5.3 Embrittlement: Material shall be capable of meeting the following test:

5.3.1 Test specimens, after being heated at 1200 F for 2 hr and air cooled, shall withstand immersion for 48 hr in a boiling aqueous solution containing 100 g of CuSO₄·5H₂O and 100 ml of H₂SO₄ (sp gr 1.84) per liter of solution under a reflux condenser, without evidence of intercrystalline surface attack

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.