

AEROSPACE MATERIAL SPECIFICATION



AMS 5335F

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Superseding AMS 5335E	

Steel Castings, Sand
0.65Cr - 0.75Ni - 0.20Mo (0.25 - 0.33C) (SAE 8630 Modified)
Normalized and Tempered
(Composition similar to UNS J13050)

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1. SCOPE:

1.1 Form:

This specification covers a low-alloy steel in the form of sand castings.

1.2 Application:

Primarily for parts requiring higher strength than cast carbon steels and which may be heat treated or welded.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350	Standards and Test Methods
AMS 2360	Room Temperature Tensile Properties of Castings
AMS 2635	Radiographic Inspection
AMS 2640	Magnetic Particle Inspection
AMS 2645	Fluorescent Penetrant Inspection
AMS 2694	Repair Welding of Aerospace Castings
AMS 2804	Identification, Castings

2.2 ASTM Publications:

Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM A370	Mechanical Testing of Steel Products
ASTM E350	Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron
ASTM E446	Reference Radiographs for Steel Castings up to 2 In. (51 mm) in Thickness

2.3 U.S. Government Publications:

Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Federal Standards:

Federal Test Method Standard No. 151 - Metals; Test Methods

2.3.2 Military Standards:

MIL-STD-794 Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E350, by spectrographic methods in accordance with Federal Test Method Standard No. 151, Method 112, or by other analytical methods approved by purchaser:

	min	max
Carbon	0.25	0.33
Manganese	0.60	0.95
Silicon	0.50	0.90
Phosphorus	--	0.025
Sulfur	--	0.025
Chromium	0.40	0.90
Nickel	0.40	1.10
Molybdenum	0.15	0.25
Copper	--	0.35

3.2 Condition:

Normalized and tempered.

3.3 Castings:

A melt shall be the metal poured from a single furnace charge. A lot shall be all castings poured from a single melt, heat treated in the same furnace load, and presented for vendor's inspection at one time.

3.4 Test Specimens:

3.4.1 Chemical Analysis Specimens: Shall be of any convenient size, shape, and form for vendor's tests. When chemical analysis specimens are required by purchaser, specimens shall be cast to a size, shape, and form agreed upon by purchaser and vendor.

3.4.2 Tensile Specimens: Shall be attached to castings, if practicable, or shall be standard keel blocks conforming to ASTM A370, unless purchaser permits use of cast-to-size specimens. Specimens shall be cast with each melt of metal for castings and, when requested, shall be supplied with the castings. Keel blocks shall be cast in molds made of suitable core sand, shall be poured directly after pouring the castings, and shall be kept in the mold until black. Metal for the specimens shall be part of the melt which is used for the castings.