

AEROSPACE MATERIAL SPECIFICATION

SAE

AMS 5310G

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Iron Castings, Pearlitic Malleable

(Composition similar to UNS F23330)

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Documents

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1. SCOPE:

1.1 Form:

This specification covers a pearlitic malleable iron in the form of castings.

1.2 Application:

Primarily for general usage at both ambient and elevated temperatures where wear resistance, medium strength, or both is required.

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 2635	Radiographic 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 A220	Pearlitic Malleable Iron Castings
ASTM A247	Evaluating the Microstructure of Graphite in Iron Castings
ASTM A370	Mechanical Testing of Steel Products
ASTM E351	Chemical Analysis of Cast Iron - All Types
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 Military Standards:

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

3. TECHNICAL REQUIREMENTS:

3.1 Condition:

Heat treated.

3.2 Casting:

Castings may be made by any combination of melting, casting, and heat treating processes that will develop the properties of 3.4. A melt shall be the metal poured from a single ladle of 10,000 lb (4500 kg) or less.

3.3 Tensile Specimens:

Not less than three tensile specimens shall be cast with each melt of metal for castings and, when requested, shall be supplied with the castings. In the case of continuous melting, at least three specimens shall be cast for each 8-hr period of casting; one specimen cast, respectively, during pouring of the first casting, approximately the middle casting, and the last casting poured during the 8-hr period. Specimens shall be of standard size as described in ASTM A220 and shall be cast to size in molds made with the regular foundry mix of sand without using chills.

3.4 Properties:

Castings and representative tensile specimens produced in accordance with 3.3 and heat treated with the castings they represent shall conform to the following requirements; hardness and tensile testing shall be performed in accordance with ASTM A370.

3.4.1 Separately-Cast Specimens:

3.4.1.1 Tensile Properties: Shall be as follows:

Tensile Strength, min	70,000 psi (485 Mpa)
Yield Strength at 0.2% Offset, min	48,000 psi (330 Mpa)
Elongation in 4D, min	5%