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Standard Specification for Common Requirements for Iron Castings for General Industrial Use¹

This standard is issued under the fixed designation A834; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers a group of requirements that are mandatory requirements when used in conjunction with the following iron casting specifications issued by ASTM:

ASTM Specification²
A47/A47M
A48/A48M
A197/A197M
A220/A220M
A278/A278M
A319
A395/A395M
A436
A439
A518/A518M
A532/A532M
A536
A571/A571M
A823
A842
A874/A874M
A897/A897M

1.2 This specification also covers a group of supplementary requirements which may be applied to the above specifications as indicated herein. These are provided for use when additional testing or inspection is desired and apply only when specified individually by the purchaser in the order.

1.3 The requirements of the individual material specification, and this general specification shall prevail in the sequence named.

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

¹ This specification is under the jurisdiction of ASTM Committee A04 on Iron Castings and is the direct responsibility of Subcommittee A04.01 on Grey and White Iron Castings.

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2. Referenced Documents

2.1 *ASTM Standards:*²

- A47/A47M [Specification for Ferritic Malleable Iron Castings](#)
- A48/A48M [Specification for Gray Iron Castings](#)
- A197/A197M [Specification for Cupola Malleable Iron](#)
- A220/A220M [Specification for Pearlitic Malleable Iron](#)
- A247 [Test Method for Evaluating the Microstructure of Graphite in Iron Castings](#)
- A278/A278M [Specification for Gray Iron Castings for Pressure-Containing Parts for Temperatures Up to 650F \(350C\)](#)
- A319 [Specification for Gray Iron Castings for Elevated Temperatures for Non-Pressure Containing Parts](#)
- A395/A395M [Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures](#)
- A436 [Specification for Austenitic Gray Iron Castings](#)
- A439 [Specification for Austenitic Ductile Iron Castings](#)
- A518/A518M [Specification for Corrosion-Resistant High-Silicon Iron Castings](#)
- A532/A532M [Specification for Abrasion-Resistant Cast Irons](#)
- A536 [Specification for Ductile Iron Castings](#)
- A571/A571M [Specification for Austenitic Ductile Iron Castings for Pressure-Containing Parts Suitable for Low-Temperature Service](#)
- A644 [Terminology Relating to Iron Castings](#)
- A802/A802M [Practice for Steel Castings, Surface Acceptance Standards, Visual Examination](#)
- A823 [Specification for Statically Cast Permanent Mold Gray Iron Castings](#)
- A842 [Specification for Compacted Graphite Iron Castings](#)
- A874/A874M [Specification for Ferritic Ductile Iron Castings Suitable for Low-Temperature Service](#)
- A897/A897M [Specification for Austempered Ductile Iron Castings](#)
- A919 [Terminology Relating to Heat Treatment of Metals](#)
- E8 [Test Methods for Tension Testing of Metallic Materials](#)
- E10 [Test Method for Brinell Hardness of Metallic Materials](#)
- E29 [Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications](#)
- E30 [Test Methods for Chemical Analysis of Steel, Cast Iron, Open-Hearth Iron, and Wrought Iron](#)
- E59 [Practice for Sampling Steel and Iron for Determination of Chemical Composition](#)
- E94 [Guide for Radiographic Examination](#)
- E165 [Practice for Liquid Penetrant Examination for General Industry](#)
- E351 [Test Methods for Chemical Analysis of Cast Iron All Types](#)
- E689 [Reference Radiographs for Ductile Iron Castings](#)
- E709 [Guide for Magnetic Particle Testing](#)
- E802 [Reference Radiographs for Gray Iron Castings Up to 412 in. \(114 mm\) in Thickness](#)

2.2 *Military Standard:*

MIL-STD-129 [Marking for Shipment and Storage](#)³

2.3 *Federal Standard:*

Fed. Std. No. 123 [Marking for Shipment \(Civil Agencies\)](#)³

3. Terminology

3.1 *Definitions:*

3.1.1 Definitions for many terms common to iron castings and their heat treatment are found in Terminology A919 and Terminology A644. A classification of graphite structure is found in Test Method A247.

4. Ordering Information

4.1 The purchase order for castings ordered under this specification shall stipulate the applicable material specification(s), grade of iron, and any options or additions to the basic requirements, including the supplementary requirements included in this specification.

5. Tensile Requirements

5.1 The individual product specifications vary as to whether tension tests are required. For this reason, and to determine specific test requirements, the individual product specification shall be reviewed. When required, tension tests shall be determined in accordance with Test Methods E8.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ ~~Withdrawn~~

³ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.