



Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures¹

This standard is issued under the fixed designation A395/A395M; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers ductile iron castings for pressure-retaining parts for use at elevated temperatures. Castings of all grades are suitable for use up to 450°F. For temperatures above 450°F and up to 650°F, only Grade 60–40–18 castings are suitable (**Note 1**).

1.2 Valves, flanges, pipe fittings, pumps, and other piping components are generally manufactured in advance and supplied from stock by the manufacturer, jobber, or dealer.

1.3 For supplemental casting requirements, Specification **A834** may be utilized.

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

NOTE 1—For service other than as specified in this section, reference should be made to Specification **A536** for Ductile Iron Castings.²

2. Referenced Documents

2.1 ASTM Standards:²

A247 Test Method for Evaluating the Microstructure of Graphite in Iron Castings

A370 Test Methods and Definitions for Mechanical Testing of Steel Products

A536 Specification for Ductile Iron Castings

A732/A732M Specification for Castings, Investment, Carbon and Low Alloy Steel for General Application, and Cobalt Alloy for High Strength at Elevated Temperatures

¹ This specification is under the jurisdiction of ASTM Committee **A04** on Iron Castings and is the direct responsibility of Subcommittee **A04.02** on Malleable and Ductile Iron Castings.

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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.

A834 Specification for Common Requirements for Iron Castings for General Industrial Use

E8 Test Methods for Tension Testing of Metallic Materials

E10 Test Method for Brinell Hardness of Metallic Materials

E186 Reference Radiographs for Heavy-Walled (2 to 4½-in. (50.8 to 114-mm)) Steel Castings

E280 Reference Radiographs for Heavy-Walled (4½ to 12-in. (114 to 305-mm)) Steel Castings

E446 Reference Radiographs for Steel Castings Up to 2 in. (50.8 mm) in Thickness

E689 Reference Radiographs for Ductile Iron Castings

E1806 Practice for Sampling Steel and Iron for Determination of Chemical Composition

F1476 Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications

F1548 Specification for Performance of Fittings for Use with Gasketed Mechanical Couplings Used in Piping Applications

2.2 *Manufacturer's Standardization Society of the Valve and Fittings Industry Standard*:³

SP 25 Standard Marking Systems for Valves, Flanges, Pipe Fittings, and Unions

3. Classification

3.1 Castings ordered to this specification are classified by grades based on mechanical property requirements, as listed in **Table 1**. See note following **Table 1**.

4. Ordering Information

4.1 Orders for material under this specification shall include the following applicable information:

4.1.1 Drawing, catalog number, or part identifications,

4.1.1.1 For grade 65-45-15, drawing indicating critical area(s) of casting (see **7.2.2** and **7.3.2**).

4.1.2 Quantity (weight or number of pieces),

4.1.3 ASTM designation and year of issue,

4.1.4 Grade (See **Table 1**), if a Grade is not specified, the manufacturer shall supply grade 60-40-18.

³ Available from Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), 127 Park St., NE, Vienna, VA 22180-4602, <http://www.mss-hq.org>.