



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

This standard is issued under the fixed designation A 395/A 395M; 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 (€) indicates an editorial change since the last revision or reapproval.

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

€¹ NOTE—Figures 4 and 5 were editorially corrected in March 2004.

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 A 834 may be utilized.

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

NOTE 1—For service other than as specified in this section, reference should be made to Specification A 536 for Ductile Iron Castings.²

2. Referenced Documents

2.1 ASTM Standards:

A 247 Test Method for Evaluating the Microstructure of Graphite in Iron Castings²

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products²

A 536 Specification for Ductile Iron Castings²

A 732/A732M Specification for Castings, Investment, Carbon and Low Alloy Steel for General Application, and Cobalt Alloy for High Strength at Elevated Temperatures²

A 834 Specification for Common Requirements for Iron Castings for General Industrial Use²

E 8 Test Methods for Tension Testing of Metallic Materials³
E 10 Test Method for Brinell Hardness of Metallic Materials³

E 186 Reference Radiographs for Heavy-Walled (2 to 4½ in. (51 to 114-mm)) Steel Castings⁴

E 280 Reference Radiographs for Heavy-Walled (4½ to 12-in. (114 to 305-mm)) Steel Castings⁴

E 446 Reference Radiographs for Steel Castings up to 2 in. (51 mm) in Thickness⁴

E 689 Reference Radiographs for Ductile Iron Castings⁴

E 1806 Practice for Sampling Steel and Iron for Determination of Chemical Composition⁵

F 1476 Specification for Performance of Gasketed Mechanical Couplings for Piping Applications⁶

F 1548 Specification for the Performance of Fittings for Use with Gasketed Mechanical Couplings used in Piping Applications⁶

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

SP 25 Standard Marking Systems for Valves, Flanges, Pipe Fittings, and Unions⁷

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).

¹ This specification is under the jurisdiction of ASTM Committee A-4 on Iron Castings and is the direct responsibility of Subcommittee A04.02 on Malleable and Ductile Iron Castings.

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² *Annual Book of ASTM Standards*, Vol 01.02.

³ *Annual Book of ASTM Standards*, Vol 03.01.

⁴ *Annual Book of ASTM Standards*, Vol 03.03.

⁵ *Annual Book of ASTM Standards*, Vol 03.06.

⁶ *Annual Book of ASTM Standards*, Vol 01.07.

⁷ Available from the Manufacturers' Standardization Society of the Valves and Fittings Industry, 1815 N. Fort Myer Drive, Arlington, VA 22209.