Designation: A 757/A757M – 00

Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing and Other Applications, for Low-Temperature Service[1]

This standard is issued under the fixed designation A 757/A757M; 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 carbon and alloy steel castings for pressure-containing and other applications intended primarily for petroleum and gas pipelines in areas subject to low-ambient temperatures. Castings shall be heat treated by normalizing and tempering or liquid quenching and tempering. All classes are weldable under proper conditions. Hardenability of some grades may limit usable section size.

1.2 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 must be used independently of the other. Combining values from the two systems may result in nonconformance with the specification. Inch-pound units are applicable for material ordered to Specification A 757 and SI units for material ordered to Specification A 757M.

2. Referenced Documents

2.1 *ASTM Standards:*

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products[2]

A 488/A488M Practice for Steel Castings, Welding, Qualifications of Procedures and Personnel[3]

A 703/A703M Specification for Steel Castings, General Requirements, for Pressure-Containing Parts[3]

A 919 Terminology Relating to Heat Treatment of Metals[3]

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications[4]

E 30 Test Methods for Chemical Analysis of Steel, Cast Iron, Open-Hearth Iron, and Wrought Iron[5]

E 38 Methods for Chemical Analysis of Nickel-Chromium and Nickel-Chromium-Iron Alloys[5]

E 94 Guide for Radiographic Testing[6]

E 125 Reference Photographs for Magnetic Particle Indications on Ferrous Castings[6]

E 142 Method for Controlling Quality of Radiographic Testing[6]

E 165 Test Method for Liquid Penetrant Examination[6]

E 186 Reference Radiographs for Heavy-Walled (2 to 4 1/2 -in. (51 to 114-mm)) Steel Castings[6]

E 208 Test Method for Conducting Drop-Weight Test to Determine Nil-Ductility Transition Temperature of Ferritic Steels[7]

E 280 Reference Radiographs for Heavy-Walled (4 1/2 to 12-in. (114 to 305-mm)) Steel Castings[6]

E 350 Test Methods for Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron[5]

E 353 Test Methods for Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys[5]

E 390 Reference Radiographs for Steel Fusion Welds[6]

E 446 Reference Radiographs for Steel Castings up to 2 in. (51 mm) in Thickness[6]

E 709 Guide for Magnetic Particle Examination[6]

2.2 *American Society of Mechanical Engineers:*

ASME Boiler and Pressure Vessel Code[8]

2.3 *Manufacturers Standardization Society of the Valve and Fittings Industry Standards:*

MSS SP-53 Quality Standard for Steel Castings for Valves, Flanges and Fittings, and Other Piping Components (Dry Powder Magnetic Particle Inspection Method)[9]

MSS SP-54 Quality Standard for Steel Casting for Valves, Flanges and Fittings, and Other Piping Components (Radiographic Inspection Method)[9]

MSS SP-55 Quality Standard for Steel Castings for Valves, Flanges and Fittings, and Other Piping Components (Visual Method)[9]

[1] This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A01.18 on Castings.

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[2] *Annual Book of ASTM Standards*, Vol 01.03.

[3] *Annual Book of ASTM Standards*, Vol 01.02.

[4] *Annual Book of ASTM Standards*, Vol 14.02.

[5] *Annual Book of ASTM Standards*, Vol 03.05.

[6] *Annual Book of ASTM Standards*, Vol 03.03.

[7] *Annual Book of ASTM Standards*, Vol 03.01.

[8] Available from the American Society of Mechanical Engineers, 345 E. 47th St., New York, NY 10017.

[9] Available from the Manufacturers' Standardization Society of the Valve and Fittings Industry, 127 Park St., North East Vienna, VA 22180.

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