



Standard Specification for Castings, Iron-Nickel-Chromium and Nickel Alloys, Specially Controlled for Pressure Retaining Parts for Corrosive Service¹

This standard is issued under the fixed designation A990/A990M; 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 iron-nickel-chromium and nickel alloy castings specially processed with restricted melt practices, weldability testing, and nondestructive examination (NDE) requirements.

1.2 A number of grades of iron-nickel-chromium and nickel alloy castings are included in this specification. Since these grades possess varying degrees of suitability for service in corrosive environments, it is the responsibility of the purchaser to determine which grade shall be furnished. Selection will depend on design and service conditions, mechanical properties, and corrosion-resistant characteristics.

1.3 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.

1.3.1 This specification is expressed in both inch-pound units and in SI units; however, unless the purchase order or contract specifies the applicable M specification designation (SI units), the inch-pound units shall apply. Within the text, the SI units are shown in brackets or parentheses.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

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

Current edition approved Oct. 1, 2014. Published November 2014. Originally approved in 1998. Last previous edition approved in 2014 as A990/A990M – 14. DOI: 10.1520/A0990_A0990M-14A.

2. Referenced Documents

2.1 ASTM Standards:²

- A351/A351M Specification for Castings, Austenitic, for Pressure-Containing Parts
- A488/A488M Practice for Steel Castings, Welding, Qualifications of Procedures and Personnel
- A494/A494M Specification for Castings, Nickel and Nickel Alloy
- A703/A703M Specification for Steel Castings, General Requirements, for Pressure-Containing Parts
- A743/A743M Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application
- A744/A744M Specification for Castings, Iron-Chromium-Nickel, Corrosion Resistant, for Severe Service
- A802/A802M Practice for Steel Castings, Surface Acceptance Standards, Visual Examination
- A903/A903M Specification for Steel Castings, Surface Acceptance Standards, Magnetic Particle and Liquid Penetrant Inspection
- A985/A985M Specification for Steel Investment Castings General Requirements, for Pressure-Containing Parts
- E94 Guide for Radiographic Examination
- E165 Practice for Liquid Penetrant Examination for General Industry
- E186 Reference Radiographs for Heavy-Walled (2 to 4½-in. (50.8 to 114-mm)) Steel Castings
- E272 Reference Radiographs for High-Strength Copper-Base and Nickel-Copper Alloy Castings
- E280 Reference Radiographs for Heavy-Walled (4½ to 12-in. (114 to 305-mm)) Steel Castings

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.