

Qingdao Casting Quality Industrial Co., Ltd.

## International Standard

**Professional Supplier of Casting Parts**

Our manufacture processes:

Sand Casting, Resin Sand Casting  
Investment Casting, Lost Wax Casting or Precision Casting  
Lost foam casting  
Die casting.  
CNC Machining.

The material included: cast gray iron, ductile iron, carbon steel, stainless steel, malleable iron, brass alloy and aluminum alloy.

We serve and supply parts, components and products to wide varieties of industries as follow:

1. Valve fittings( valve body, wheel, disc, bonnet and others)
2. Pump Parts ( Body, impeller and others )
3. Fastener ( Bolt, nut, stud and gasket)
4. Automobile/ Motorcycle ( drum, ...)
5. Pipe Fittings( malleable iron fittings, threaded stainless steel fittings, ductile iron fittings and others)
6. Steel anchor products.
7. Food Processing.
8. Computer & communication Hardware.
9. Sporting Equipment.

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# Standard Specification for Castings, Austenitic, Austenitic-Ferritic (Duplex), for Pressure-Containing Parts<sup>1</sup>

This standard is issued under the fixed designation A 351/A 351M; 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 Department of Defense.*

## 1. Scope\*

1.1 This specification<sup>2</sup> covers austenitic and austenitic-ferritic (duplex) steel castings for valves, flanges, fittings, and other pressure-containing parts (Note 1).

NOTE 1—Carbon steel castings for pressure-containing parts are covered by Specification A 216/A 216M, and low-alloy steel castings by Specification A 217/A 217M.

1.2 A number of grades of austenitic and austenitic-ferritic steel castings are included in this specification. Since these grades possess varying degrees of suitability for service at high temperatures or 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 high-temperature or corrosion-resistant characteristics, or both.

1.2.1 Because of thermal instability, Grades CE20N, CF3A, CF3MA, and CF8A are not recommended for service at temperatures above 800°F [425°C].

1.2.2 Because of embrittlement phases, Grade CD4MCu is not recommended for service at temperatures above 600°F [316°C].

1.3 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.

## 2. Referenced Documents

### 2.1 ASTM Standards:

<sup>1</sup> 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.

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<sup>2</sup> For ASME Boiler and Pressure Vessel Code applications, see related Specification SA-351/SA-351M in Section II of that code.

A 216/A 216M Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service<sup>3</sup>

A 217/A 217M Specification for Steel Castings, Martensitic Stainless and Alloy, for Pressure-Containing Parts, Suitable for High-Temperature Service<sup>3</sup>

A 488/A 488M Practice for Steel Castings, Welding, Qualification of Procedures and Personnel<sup>3</sup>

A 703/A 703M Specification for Steel Castings, General Requirements, for Pressure-Containing Parts<sup>3</sup>

E 165 Test Method for Liquid Penetrant Examination<sup>4</sup>

E 709 Guide for Magnetic Particle Examination<sup>4</sup>

2.2 *Manufacturers Standardization Society of the Valve and Fittings Industry Standard:*

SP-55 Quality Standard for Steel Castings for Valves, Flanges, and Fittings and Other Components (Visual Method)<sup>5</sup>

## 3. General Conditions for Delivery

3.1 Material furnished to this specification shall conform to the requirements of Specification A 703/A 703M, including any supplementary requirements that are indicated in the purchase order. Failure to comply with the general requirements of Specification A 703/A 703M constitutes nonconformance with this specification. In case of conflict between the requirements of this specification and Specification A 703/A 703M, this specification shall prevail.

3.2 The post weld heat treatment requirements of Supplementary Requirement S11 may be specified when austenitic castings other than HK, HT, or CT15C are to be subjected to severe corrosive service.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 01.02.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 03.03.

<sup>5</sup> Available from Manufacturers' Standardization Society of the Valve and Fittings Industry, 1815 N. Fort Myer Drive, Arlington, VA 22209.

\*A Summary of Changes section appears at the end of this standard.