



## **Standard Specification for Castings, Iron-Chromium-Nickel, Corrosion Resistant, for Severe Service<sup>1</sup>**

This standard is issued under the fixed designation A 744/A744M; 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 covers iron-chromium-nickel alloy, stainless steel castings intended for particularly severe corrosive applications.

1.2 This specification requires postweld heat-treatment of all weld repairs affecting surfaces intended to be wetted by the corrosive medium. For applications for which postweld heat-treatment is not considered mandatory for retention of acceptable corrosion resistance, refer to Specification A 743/A 743M.

NOTE 1—For general corrosion-resistant alloy castings, reference should be made to Specification A 743/A 743M. For general heat-resistant alloy castings, reference should be made to Specification A 297/A 297M. For nickel-base alloy castings, refer to Specification A 494/A 494M.

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. Inch-pound units are applicable for material ordered to Specification A 744 and SI units for material ordered to Specification A 744M.

### **2. Referenced Documents**

#### **2.1 ASTM Standards:**

A 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels<sup>2</sup>

A 297/A297M Specification for Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application<sup>3</sup>

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products<sup>2</sup>

A 494/A494M Specification for Castings, Nickel and Nickel Alloy<sup>3</sup>

A 732/A732M Specification for Castings, Investment, Carbon and Low-Alloy Steel for General Application and

Cobalt Alloy for High Strength at Elevated Temperatures<sup>3</sup>  
A 743/A743M Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application<sup>3</sup>

A 781/A781M Specification for Castings, Steel and Alloy, Common Requirements, for General Industrial Use<sup>3</sup>

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance With Specifications<sup>4</sup>

#### **2.2 American Welding Society Standards:**

AWS A5.11 Specification for Nickel and Nickel Alloy Covered Welding Electrodes<sup>5</sup>

AWS A5.14 Specification for Nickel and Nickel Alloy Bare Welding Rods and Electrodes<sup>5</sup>

### **3. Terminology**

#### **3.1 Definitions of Terms Specific to This Standard:**

3.1.1 *wetted surface, n*—one that contacts a corrosive environment.

### **4. General Conditions for Delivery**

4.1 Material furnished to this specification shall conform to the requirements of Specification A 781/A 781M, including any supplementary requirements that are indicated on the purchase order. Failure to comply with the general requirements of Specification A 781/A 781M constitutes nonconformance with this specification. In case of conflict between the requirements of this specification and Specification A 781/A 781M, this specification shall prevail.

### **5. Ordering Information**

5.1 Orders for material to this specification should include the following, as required, to describe the material adequately:

5.1.1 Description of the casting by pattern number or drawing (dimensional tolerances shall be included on the casting drawing),

5.1.2 Grade,

5.1.3 Heat treatment,

5.1.4 Options in the specification, and

5.1.5 Supplementary requirements desired, including the

<sup>1</sup> 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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<sup>2</sup> Annual Book of ASTM Standards, Vol 01.03.

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

<sup>4</sup> Annual Book of ASTM Standards, Vol 14.02.

<sup>5</sup> Available from American Welding Society, P.O. Box 351040, 550 N.W. LeJeune Rd., Miami, FL 33135.