



Designation: A126 – 04

Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings¹

This standard is issued under the fixed designation A126; 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 three classes of gray iron for castings intended for use as valve pressure retaining parts, pipe fittings, and flanges.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

NOTE 1—The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

2. Referenced Documents

2.1 *ASTM Standards*:²

A48/A48M Specification for Gray Iron Castings

A644 Terminology Relating to Iron Castings

E8 Test Methods for Tension Testing of Metallic Materials

3. Terminology

3.1 Definitions of many terms common to gray iron castings are found in Terminology A644.

4. Classification

4.1 Castings produced to this specification are classified based upon the minimum tensile strength of the iron (see Table 1).

5. Ordering Information

5.1 Orders for material in this specification should include the following information:

5.1.1 ASTM designation and year date,

5.1.2 Class of iron required,

5.1.3 Quantity, and

¹ This specification is under the jurisdiction of ASTM Committee A04 on Iron Castings and is the direct responsibility of Subcommittee A04.01 on Gray and White Iron Castings.

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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.

TABLE 1 Tensile Requirements

| | Class A | Class B | Class C |
|----------------------------------|----------|----------|----------|
| Tensile strength, min, ksi (MPa) | 21 (145) | 31 (214) | 41 (283) |

5.1.4 Certification, if required (see Section 17).

6. Workmanship, Finish, and Appearance

6.1 The castings shall be made in a workmanlike manner and the surface shall be free of adhering sand, scale, cracks, and hot tears as determined by visual examination.

7. Chemical Requirements

7.1 A chemical analysis shall be performed on each lot and shall conform to the following requirements for phosphorus and sulfur:

| | |
|--------------------|------|
| Phosphorus, max, % | 0.75 |
| Sulfur, max, % | 0.15 |

7.2 The chemical analysis shall be performed on a sample obtained during the pouring of the lot.

8. Tensile Properties

8.1 One tension test shall be performed on each lot and shall conform to the mechanical properties specified in Table 1.

9. Cast Test Bars

9.1 Separately cast 1 $\frac{1}{8}$ in. (28.6 mm) diameter test bars shown in Fig. 1 shall be poured in sand molds from the same lot as the castings represented.

NOTE 2—The numbering on the test specimens shown in Fig. 1 and Fig. 2 is intended simply to illustrate a method of designation. In the particular method shown^{1,2} refers to December 8, B1 is the cupola number, and the numeral 1 which follows shows the hour cast (1 p.m.).

9.2 Test bars that are intended to represent castings which are cooled in the mold to less than 900°F (480°C) before shakeout, shall be cooled in their molds to a temperature less than 900°F, and then may be cooled in still air to room temperature.

9.3 Test bars that are intended to represent castings which are hotter than 900°F when shaken out of their molds, shall be