Designation: ~~A126 – 04 (Reapproved 2014)~~ A126 – 04 (Reapproved 2019)

Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings[1]

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 U.S. Department of Defense.

1. Scope

1.1 This specification covers three classes of gray iron for castings intended for use as valve ~~pressure retaining~~ pressure-retaining parts, pipe fittings, and flanges.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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.

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

A48/A48M Specification for Gray Iron Castings

A644 Terminology Relating to Iron Castings

~~E8~~E8/E8M Test Methods for Tension Testing of Metallic Materials ~~[Metric] E0008_E0008M~~

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

5.1.4 Certification, if required (see Section 16~~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.

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[1] This specification is under the jurisdiction of ASTM Committee A04 on Iron Castings and is the direct responsibility of Subcommittee A04.01 on Grey 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)

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 1⅛ ~~in. (28.6 mm)~~ -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~~Figs. 1 and 2 ~~and Fig. 2~~is intended simply to illustrate a method of designation. In the particular method shown [12] refers to December 8, B1 is the cupola number, and the numeral 1 which follows shows the hour cast (1 p.m.).

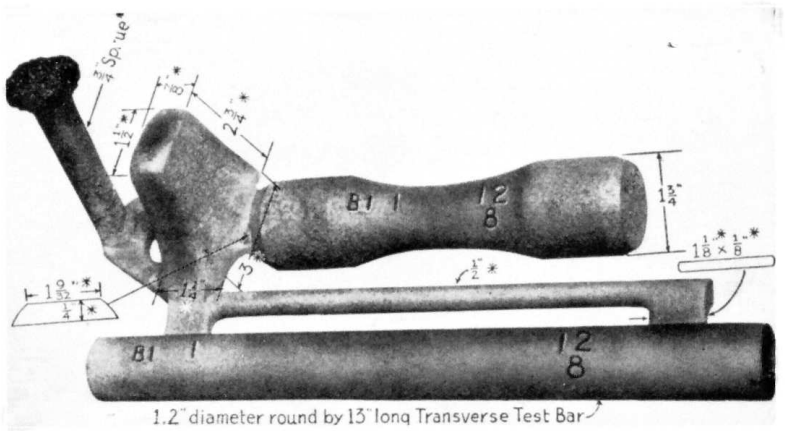
9.2 Test bars that are intended to represent castings which are cooled in the mold to less than ~~900°F (480°C)~~900 °F (480 °C) before shakeout, shall be cooled in their molds to a temperature less than ~~900°F,~~900 °F, and then may be cooled in still air to room temperature.

9.3 Test bars that are intended to represent castings which are hotter than ~~900°F~~900 °F when shaken out of their molds, shall be cooled as described in ~~9.2~~9.2 or (by agreement between the manufacturer and the purchaser) may be shaken out of their molds at approximately the same temperature as the castings they represent.

10. Tension Test Apparatus

10.1 ~~Ball and socket~~ Ball-and-socket specimen holders or spherical-seated bearings or other device which will ensure that the specimen, when under load, will be as nearly as possible in pure axial tension without transverse stress shall be used in making the tension test.

NOTE 3—Suitable socket specimens holders and spherical-seated bearing device are shown in Fig. 4 and described in 5.2.3 of Test Methods ~~E8~~E8/E8M.



Metric Equivalents

in.	⅛	¼	½	¾	⅞	1⅛	1.2	1 9⁄32	1½	1¾	2¾	13
mm	3.2	6.4	12.7	19.0	22.2	28.6	30.5	32.5	38.1	44.4	69.8	1330

NOTE 1—These dimensions are suggested as satisfactory for average conditions, but may be varied to best suit individual pouring.

FIG. 1 Mold of Tension and Transverse Test Specimens