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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings¹

This standard is issued under the fixed designation A 126; 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 reappraisal. A superscript epsilon (ε) indicates an editorial change since the last revision or reappraisal.

This standard has been approved for use by agencies of the Department of Defense.

^{ε1} NOTE—Note 1 was added editorially in September 1998.

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:

- A 48 Specification for Gray Iron Castings²
- A 438 Test Method for Transverse Testing of Gray Cast Iron²
- A 644 Terminology Relating to Iron Castings²
- E 8 Test Methods for Tension Testing of Metallic Materials³

3. Terminology

3.1 Definitions of many terms common to gray iron castings are found in Terminology A 644.

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,

¹ This specification is under the jurisdiction of ASTM Committee A-4 on Iron Castings and is the direct responsibility of Subcommittee A04.01 on Gray Iron Castings.

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² Annual Book of ASTM Standards, Vol 01.02.

³ Annual Book of ASTM Standards, Vol 03.01.

TABLE 1 Tensile Requirements

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

- 5.1.3 Quantity,
- 5.1.4 Transverse test, if required (see Section 8), and
- 5.1.5 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. Transverse Test

9.1 When specified by the purchaser, one transverse test shall be performed on each lot and shall conform to the requirement specified in Table 2.

9.2 The test shall be performed with the bar resting on supports separated by 12 in. (305 mm) and the load applied midway between the supports. The load shall be applied at a rate that will produce 0.10 in. (2.5 mm) central deflection in 20 to 40 s.

9.3 In case the transverse test specimen varies from the specified diameter of 1.20 in. (30.5 mm), a correction factor conforming to the requirements for Test Bar B in Table 1 of Test Method A 438 shall apply.