

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.

Tel: +86 532 82972967 Fax: +86 532 82972913



Standard Specification for Ductile Iron Castings¹

This standard is issued under the fixed designation A 536; 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.

^{ε1} NOTE—Keywords were added editorially in October 1999.

1. Scope

1.1 This specification covers castings made of ductile iron, also known as spheroidal or nodular iron, that is described as cast iron with the graphite substantially spheroidal in shape and essentially free of other forms of graphite, as defined in Definitions A 644.

1.2 The values stated in inch-pound units are to be regarded as the standard.

1.3 No precise quantitative relationship can be stated between the properties of the iron in various locations of the same casting or between the properties of castings and those of a test specimen cast from the same iron (see Appendix X1).

2. Referenced Documents

2.1 ASTM Standards:

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products²

A 644 Terminology Relating to Iron Castings³

A 732/A 732M Specification for Castings, Investment, Carbon and Low-Alloy Steel for General Application, and Cobalt Alloy for High Strength at Elevated Temperatures³

E 8 Test Methods for Tension Testing of Metallic Materials⁴

2.2 Military Standard:

MIL-STD-129 Marking for Shipment and Storage⁵

3. Ordering Information

3.1 Orders for material to this specification shall include the following information:

3.1.1 ASTM designation,

3.1.2 Grade of ductile iron required (see Table 1, and Sections 4 and 9),

3.1.3 Special properties, if required (see Section 7),

3.1.4 If a different number of samples are required (see Section 10),

3.1.5 Certification, if required (see Section 14), and

3.1.6 Special preparation for delivery, if required (see Section 15).

4. Tensile Requirements

4.1 The iron represented by the test specimens shall conform to the requirements as to tensile properties presented in Table 1 and Table 2. The irons listed in Table 1 cover those in general use while those listed in Table 2 are used for special applications (such as pipes, fittings, etc.).

4.2 The yield strength shall be determined at 0.2 % offset by the offset method (see Test Methods E 8). Other methods may be used by mutual consent of the manufacturer and purchaser.

5. Heat Treatment

5.1 The 60-40-18 grade will normally require a full ferritizing anneal. The 120-90-02 and the 100-70-03 grades generally require a quench and temper or a normalize and temper, or an isothermal heat treatment. The other two grades can be met either as-cast or by heat treatment. Ductile iron, that is heat treated by quenching to martensite and tempering, may have substantially lower fatigue strength than as cast material of the same hardness.

6. Test Coupons

6.1 The separately cast test coupons from which the tension test specimens are machined shall be cast to the size and shape shown in Fig. 1 or Fig. 2. A modified keel block cast from the mold shown in Fig. 3 may be substituted for the 1-in. Y-block or the 1-in. keel block. The test coupons shall be cast in open molds made of suitable core sand having a minimum wall thickness of 1½ in. (38-mm) for the ½-in. (12.5 mm) and 1-in. (25-mm) sizes and 3-in. (75-mm) for the 3-in. size. The coupons shall be left in the mold until they have cooled to a black color (approximately 900°F (482°C) or less). The size of coupon cast to represent the casting shall be at the option of the purchaser. In case no option is expressed, the manufacturer shall make the choice.

¹ This specification is under the jurisdiction of the ASTM Committee A-4 on Castings and is the direct responsibility of Subcommittee A04.02 on Malleable and Ductile Iron Castings.

Current edition approved June 15, 1984. Published December 1984. Originally published as A 536 – 65T. Last previous edition A 536 – 80.

² *Annual Book of ASTM Standards*, Vol 01.03.

³ *Annual Book of ASTM Standards*, Vol 01.02.

⁴ *Annual Book of ASTM Standards*, Vol 03.01.

⁵ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.