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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 43653-2024

**General technical specifications for delivery and acceptance of
iron castings**

铸铁件交货验收通用技术规范

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Foreword

This document was issued on 15 March 2024 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 October 2024.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies.

The document runs to 16 pages in translation. The identification, the dates, the table of contents and the clauses reproduced on this page are taken from the standard itself.

General technical specifications for delivery and acceptance of iron castings

1 Scope

GB/T 43653-2024 is the Chinese general technical specification for the delivery and acceptance of iron castings, and it is the document that governs the commercial relationship between a foundry and its customer rather than the metallurgy of any one grade. That relationship is where most casting disputes actually arise: what the order had to state, what may be agreed and what is fixed, whose drawing governs, when a sample

casting has to be certified before series production, what constitutes a defect and what may be repaired. The standard covers the ordering information, the casting processability analysis, the sample certification, the manufacture, the technical requirements including chemical composition and mechanical properties, dimensional and surface requirements and internal soundness, the test methods, the inspection rules, and the identification, protection and quality certificates. It applies to iron castings produced by any process. It takes effect on 1 October 2024.

This document specifies the ordering information, casting processability analysis, sample certification, manufacturing, technical requirements, test methods, inspection rules and identification, protection and quality certificates of iron castings.

This document is applicable to the manufacture, delivery and acceptance of iron castings produced by various processes (hereinafter referred to as castings).

2 Normative references

The following documents contain requirements which, through reference in this text, constitute provisions of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 223.3 Methods for chemical analysis of iron, steel and alloy - The diantipyryl methane phosphomolybdate gravimetric method for the determination of phosphorus content

GB/T 223.4 Alloyed steel - Determination of manganese content - Potentiometric or visual titration method

GB/T 223.60 Methods for chemical analysis of iron, steel and alloy - The perchloric acid dehydration gravimetric method for the determination of silicon content

GB/T 228.1 Metallic materials - Tensile testing - Part 1: Method of test at room temperature

GB/T 229 Metallic materials - Charpy pendulum impact test method

GB/T 230.1 Metallic materials - Rockwell hardness test - Part 1: Test method

GB/T 231.1-2018 Metallic materials - Brinell hardness test - Part 1: Test method

GB/T 232 Metallic materials - Bend test

GB/T 4341.1 Metallic materials - Shore hardness test - Part 1: Test method

GB/T 5611 Foundry terminology

GB/T 5677 Castings - Radiographic testing

GB/T 5678 Sampling methods of spectrochemical analysis for cast alloys

GB/T 6060.1 Surface roughness comparison specimen - Part 1: Casting surface

GB/T 6414 Castings - Dimensional tolerances and geometrical tolerances and machining allowances

GB/T 7216 Metallographic test for grey cast iron

GB/T 8170 Rules of rounding off for numerical values & expression and judgment of limiting values

GB/T 9441 Metallographic test method for spheroidal graphite cast iron

GB/T 9443 Steel and iron castings - Liquid penetrant inspection

GB/T 9444 Steel and iron castings - Magnetic particle inspection

GB/T 11351 Mass tolerances of casting

GB/T 13298 Inspection methods of microstructure for metals

GB/T 14203 General rules for spark discharge atomic emission spectrometry

GB/T 15056 Casting surface roughness - Appraising method

GB/T 15248 The test method for axial loading constant-amplitude low-cycle fatigue of metallic materials

GB/T 17394.1 Metallic materials - Leeb hardness test - Part 1: Test method

GB/T 20066 Steel and iron - Sampling and preparation of samples for the determination of chemical composition

GB/T 20123 Steel and iron - Determination of total carbon and sulfur content - Infrared absorption method after combustion in an induction furnace (routine method)

GB/T 20967 Non-destructive testing - Visual testing - General principles

GB/T 24234 Cast iron - Determination of multi-element contents - Spark discharge atomic emission spectrometric method (Routine method)

GB/T 25746 Metallographic test for malleable cast iron

GB/T 26656 Metallographic test for compacted (vermicular) graphite cast irons

GB/T 34904 Spheroidal graphite iron castings - Ultrasonic testing

GB/T 36589 Casting - Industrial computed tomography (CT) testing

GB/T 38440 Test method for penetration strength of cast iron

GB/T 38441 Pig iron and cast - Determination of chromium, copper, magnesium, manganese, molybdenum, nickel, phosphorus, tin, titanium, vanadium and silicon content - Inductively coupled plasma atomic emission spectrometric method

GB/T 39638 X-ray digital radiographic testing for casting

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 5611 and the following apply.

3.1

cast sample

a sample representing the properties of a casting material

Note: The sample includes single cast test block, side-by-side test block, attached cast test block and body sample.

3.2

manufacturing process plan

detailed planning of the casting production process

Note: It includes detailed production process operating steps and requirements list.

4 Ordering information

4.1 Required information

The purchaser shall provide the following information in the order contract, including but not limited to:

- a) Order quantity and delivery plan;
- b) Material standard number and material designation;
- c) Relevant drawings and technical specifications;
- d) The conditions of molds, tools and moulds;
- e) The requirements for internal and external state of castings, the scope and frequency of non-destructive testing;
- f) Method, location and content of casting identification;
- g) Protection, packaging, loading, transport and place of delivery;
- h) The delivery state of castings, such as machining, as-cast, heat treatment or surface treatment;
- i) The weight and settlement weight of castings;
- j) The type of inspection documents to be submitted upon delivery.

4.2 Optional information