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

GB/T 17616-2025

Replacing GB/T 17616-2013

Iron and steel coding system for irons, steels and alloys

钢铁及合金牌号统一数字代号体系

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document supersedes GB/T 17616-2013 "Unified Numerical Designation System for Steel and Alloy Grades" and is consistent with GB/T 17616-2013. Aside from structural adjustments and editorial changes, the main technical changes are as follows:

- a) A "Terms and Definitions" section has been added (see Chapter 3);
- b) Modified alloy structural steel, bearing steel, cast iron, cast steel and cast alloys, electrical steel and electromagnetic pure iron, ferroalloys and pig iron, corrosion resistant Alloys, high-temperature alloys and intermetallic compounds, precision alloys, low-alloy steels, miscellaneous materials, powder metallurgy materials Unified numerical coding rules for raw materials, rapid quenching metals and alloys, stainless steel, tool and die steel, non-alloy steel, and welding steel and alloys. (See Chapter 7, Chapter 6 in the.2013 edition);
- c) A unified numerical code coding rule for "steel and alloys for additive manufacturing" has been added (see 7.16);
- d) The section on "Compilation and Management" has been removed (see Chapter 7 of the.2013 edition). Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Iron and Steel Association. This document is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183). This document was drafted by: Metallurgical Industry Information and Standardization Research Institute, Fushun Special Steel Co., Ltd., and Jiangsu Yinhuai Precision Steel Pipe Co., Ltd. Company. Beijing Steel Research Institute Gaona Technology Co., Ltd. The main drafters of this document are. Yan Chengming, Dai Qiang, Gu Qiang, Wang Xinhe,

Chen Qingxin, Wang Lin, Hua Yangkang, Cao Lihong, Chen Huixia, and Duan Yuqi. The release history of this document and the document it replaces is as follows:

---First published in.1998 as GB/T 17616-1998, and revised for the first time in.2013;

---This is the second revision. Unified Numerical Designation System for Steel and Alloy Grades

1 Scope

GB/T 17616-2025 is the Chinese national standard on iron and steel coding system for irons, steels and alloys, in the field of metallurgy. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 29 August 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 March 2026.

Classification: ICS 77.080.01, CCS H40. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 221 Method for designating steel product grades

GB/T 4309 Classification and Designation Methods for Powder Metallurgy Materials

GB/T 5612 Method for designating cast iron grades

GB/T 5613 Method for designating cast steel grades

GB/T 7738 Method for designating ferroalloy product grades

GB/T 13304.1 Steel Classification Part

GB/T 14992 Grades and Chemical Compositions of High-Temperature Alloys and Intermetallic Compounds

GB/T 15007 Corrosion-resistant alloy grades

GB/T 15019 Classification and Grades of Rapidly Quenched Metals

GB/T 20566 Terminology for Steel and Alloys

GB/T 20878 Stainless Steel Grades and Chemical Composition

GB/T 37797 Precision Alloy Grades

3 Terms and Definitions

The terms and conditions defined in GB/T 7738, GB/T 13304.1, GB/T 14984.1, GB/T 15019, GB/T 20566, and GB/T 20878 are as follows: The definition applies to this document.

4 General Requirements

4.1 The classification and grade names of steels and alloys used in this document shall conform to GB/T 221, GB/T 4309, and GB/T 5612. GB/T 5613, GB/T 7738, GB/T 13304.1, GB/T 13304.2, GB/T 14984.1, GB/T 14992, GB/T 15007, The relevant provisions of GB/T 15019, GB/T 20878 and GB/T 37797.

4.2 The Uniform Numerical Code (ISC) consists of a fixed six-character symbol, with the first character on the left being a capital Latin letter as a prefix (generally, "I" is not used). (And the letter "O"), followed by five Arabic numerals, with no gaps between the letters and numbers.

4.3 Each unified numerical designation applies only to one type of steel and alloy. When a steel or alloy designation is discontinued, generally the original designation will be replaced. The corresponding unified numerical code is no longer assigned to another type of steel and alloy.

4.4 All steels and alloys listed in national and industry standards should be listed with both grade designation and unified numerical code for cross-reference. All methods are effective.

4.5 The element content mentioned in this document refers to the mass fraction of the element.

Note. The Unified Numerical Code for Steel and Alloys is not a standard itself, but merely a unified identifier for steel and alloys to avoid using multiple identification codes for the same material. A chaotic situation has arisen where different materials use the same code.

5.Code Structure The structure of the unified numerical code is shown in Figure 1. Figure

6 Classification and Grouping

6.1 The classification and grouping of iron and steel and their alloys are mainly based on their basic composition, properties, and uses, while also taking into account existing customary classification methods in my country. The actual quantity of various product brands should be taken into account.

6.2 The classification, grouping, and serial numbering of steel and alloys should fully consider the development of various types of steel and alloys and the emergence of new materials. Currently, some empty spaces are reserved for future use.

6.3 A list of classifications of steel and alloys and the unified numerical codes and representation methods for product grades in each classification is shown in Table 1. Table

1. List of Classifications and Unified Numerical Codes for Iron and Steel and Alloys
Classification of steel and alloys (English names) prefix letter Unified Digital Code (ISC)
Representation method Corrosion-resistant alloys, high-temperature alloys and
Intermetallic compound high-temperature materials
Corrosion-resistant alloys, superalloys and inter- Table

1. Classification and Unified Numerical Codes for Iron and Steel and Alloys (Continued)
Classification of steel and alloys (English names) prefix letter Unified Digital Code (ISC)
Representation method The prefix letters for corrosion-resistant alloys, high-temperature alloys, and intermetallic compound high-temperature materials are derived from "Heat-resistant". The prefix "b" for Precision Alloy is derived from the first letter of the first Chinese character in the pinyin of "Precision Alloy". The prefix "c" for steel and alloys used in additive manufacturing is derived from the first letter of the first Chinese character in "additive manufacturing" in Pinyin.

7 Encoding Rules

7.1 Alloy Structural Steel Alloy structural steel (see 7.10) and weldable alloy structural steel (see 7.15). The unified numerical designation method for alloy structural steel is shown in Table 2.

7.2 Bearing Steel Steel, stainless bearing steel, high-temperature stainless bearing steel, medium-carbon bearing steel, non-magnetic bearing steel, graphite bearing steel, etc. Bearing steel is represented by a unified numerical code. The methods are shown in Table 3.

7.3 Cast iron, cast steel and casting alloys Steel, stainless heat-resistant cast steel, cast permanent magnet steel and alloys, cast corrosion-resistant alloys, cast high-temperature alloys, cast intermetallic compound high-temperature materials, etc. The unified numerical designation method for cast iron, cast steel, and casting alloys is shown in Table 4.

7.4 Electrical steel and electromagnetic pure iron Electrical steel, non-magnetic steel, etc. The unified numerical designation method for electrical steel and electromagnetic pure iron is shown in Table 5.

7.5 Ferroalloys and pig iron Gold, ferrochrome and its alloys (including metallic chromium), ferrovanadium, ferrotitanium, ferroniobium and their alloys, rare earth ferroalloys, ferromolybdenum, ferrotungsten and their alloys, ferroboration, ferrophosphorus and their