

Translated English of Chinese Standard: GB/T13818-2024
www.ChineseStandard.net → Buy True-PDF → Auto-delivery.
Sales@ChineseStandard.net

GB

NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 77.120.60

CCS J 31

GB/T 13818-2024

Replacing GB/T 13818-2009

Diecasting zinc alloys

压铸锌合金

Issued on: April 25, 2024

Implemented on: April 25, 2024

**Issued by: State Administration for Market Regulation;
Standardization Administration of the People's Republic of China.**

Table of Contents

| | |
|--|----|
| Foreword..... | 3 |
| 1 Scope | 5 |
| 2 Normative references | 5 |
| 3 Terms and definitions | 6 |
| 4 Alloy designations and codes | 6 |
| 5 Technical requirements..... | 7 |
| 6 Test methods | 8 |
| 7 Inspection rules | 8 |
| 8 Marking, quality certificate, packaging, transportation and storage..... | 9 |
| Annex A (informative) Comparison of diecasting zinc alloy codes..... | 11 |

Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document replaces GB/T 13818-2009 "Die casting zinc alloys". Compared with GB/T 13818-2009, in addition to structural adjustments and editorial changes, the main technical changes in this document are as follows:

- a) Change the limit requirements for some impurity elements in the chemical composition of diecasting zinc alloys (see 5.1 of this Edition; 4.1 of Edition 2009);
- b) Add diecasting zinc alloy designations YZZnAl4C, YZZnAl3Cu5 and chemical composition (see 5.1 of this Edition);
- c) Add surface quality requirements for diecasting zinc alloys (see 5.2 of this Edition);
- d) Change the test method for chemical composition of diecasting zinc alloy (see 6.1 of this Edition; Chapter 5 of Edition 2009);
- e) Add inspection rules for diecasting zinc alloys (see Chapter 7 of this Edition; Chapter 5 of Edition 2009);
- f) Change the marking, quality certification, packaging, transportation and storage requirements for diecasting zinc alloys (see Chapter 8 of this Edition; Chapter 6 of Edition 2009).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The issuing authority shall not be held responsible for identifying any or all such patent rights.

This document was proposed by and shall be under the jurisdiction of National Technical Committee on Casting of Standardization Administration of China (SAC/TC 54).

The drafting organizations of this document: Guizhou Metallurgical and Chemical Industry Research Institute, Suzhou Xiangguan Alloy Research Institute Co., Ltd., Wuhu Longxing Alloy Co., Ltd., Dongguan Shijie Huafeng Metal Co., Ltd., Changsha Dicastal Technology Co., Ltd., Anhui Tongguan Nonferrous Metals (Chizhou) Co., Ltd., ACODI Fuller Precision Technology (Taicang) Co., Ltd., Foshan Vocational and Technical College, Zhejiang Bairun Kitchenware Co., Ltd., Dongfeng (Shiyan) Nonferrous Casting Co., Ltd., China Machinery Engineering Institute Group Shenyang Foundry Research Institute Co., Ltd., Shanghai Jiaotong University, Beijing Institute of Graphic Communication, Chongqing Electronic Engineering Vocational College,

Diecasting zinc alloys

1 Scope

This document specifies the designations and codes, technical requirements, test methods, inspection rules and markings, quality certificates, packaging, transportation and storage of diecasting zinc alloys.

This document applies to the production and inspection of diecasting zinc alloys.

2 Normative references

The following referenced documents are indispensable for the application 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 8738-2014, *Zinc alloy ingots for casting*

GB/T 12689.1, *The methods for chemical analysis of zinc and zinc alloys -- Part 1: -- The determination of aluminum content -- The chrome azurol S-polyethylene glycol octyl phenylether-cetylpyridine bromine spectrophotometric method and chrome azurol S spectrophotometric method*

GB/T 12689.3, *The methods for chemical analysis of zinc and zinc alloys -- Part 3: -- The determination of cadmium content -- The flame atomic absorption spectrometric method*

GB/T 12689.4, *The methods for chemical analysis of zinc and zinc alloys -- Part 4: -- The determination of copper content -- The lead diethyldithio-carbamate spectrophotometric method and the flame atomic absorption spectrometric method and the electrolytic method*

GB/T 12689.5, *The methods for chemical analysis of zinc alloys -- Part 5: -- The determination of iron content -- The sulfosalicylic acid spectrometric method and the flame atomic absorption spectrometric method*

GB/T 12689.6, *The methods for chemical analysis of zinc and zinc alloys -- Part 6: -- The determination of lead content -- The oscillopolarographic method*

GB/T 12689.7, *Methods for chemical analysis of zinc and zinc alloys -- Part 7: Determination of magnesium content -- Flame atomic absorption spectrometric method*

GB/T 12689.8, *The methods for chemical analysis of zinc and zinc alloys -- Part 8: -- The determination of silicon content -- The molybdenum blue spectrophotometric method*

GB/T 12689.10, *The methods for chemical analysis of zinc and zinc alloys -- Part 10: -- The determination of tin content -- The phenylfluorone-cetyltrimethylammonium bromide spectrophotometric method*

GB/T 12689.12, *The methods for chemical analysis of zinc and zinc alloys -- Part 12: -- The determination of lead, cadmium, iron, copper, tin, aluminium, arsenic, stibium, magnesium lanthanum and cerium contents -- The inductively coupled plasma-optical emission spectrometric method*

GB/T 26042, *Methods for analysis of zinc and zinc alloys -- The optical emission spectrometry*

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4 Alloy designations and codes

4.1 Expression methods for designations

A diecasting zinc alloy designation is composed of the chemical symbols of zinc and the main alloying elements. The main alloying elements are followed by a number representing their nominal mass fraction (the nominal mass fraction is the rounded integer value of the average mass fraction of the element).

The letters "Y" or "Z" (the first letters of the Chinese pinyin for the words "Ya" and "Zhu") in front of the alloy designation indicate that it is used for diecasting zinc alloy. The last letter is used to distinguish different alloys with the same nominal mass fraction of the main alloying element but slightly different contents of other elements (see Table 1 for specific differences).

4.2 Expression methods for codes

In the alloy code, "YX" ("Y" and "X" are the first letters of the Chinese pinyin for "Ya" and "Xin" respectively) indicates diecasting zinc alloy. "YX" is followed by three Arabic numerals and one letter. The first and second digits indicate the nominal mass fraction of aluminum in the alloy. The third digit indicates the nominal mass fraction of copper in the alloy. The last letter "A, B, C" is used to distinguish alloys with the same nominal mass fraction of aluminum and slightly different other elements.

The code representation method of diecasting zinc alloy is as follows:

- b) Production batch;
- c) Net weight of bundle.

8.2 Quality certificate

Each batch of diecasting zinc alloy shall be accompanied by a quality certificate, which shall at least include:

- a) Supplier name and trademark;
- b) Product name and designation (or code);
- c) Batch number;
- d) Net weight and number of pieces (bundles);
- e) Analytical test results and inspection department stamp;
- f) Reference to this document;
- g) Production date.

8.3 Packaging

Diecasting zinc alloys shall be bundled together. Each designation shall be bundled separately. The packaging shall be firm to ensure that it will not fall apart during transportation.

8.4 Transportation

8.4.1 After the diecasting zinc alloy is packaged into bundles, it is not allowed to hook or collide with the packaging belt during forklift or lifting.

8.4.2 Diecasting zinc alloys shall be shipped by transportation vehicles without corrosive substances. During transportation, they shall meet the stacking requirements. They shall be protected from rain, moisture, dropping and severe collision.

8.5 Storage

8.5.1 Diecasting zinc alloys shall be classified and stacked by designation. They shall be stacked neatly and stored in a dry, ventilated warehouse without corrosive substances. They shall not be stored together with acids, alkalis or other corrosive chemicals.

8.5.2 The gray or grayish white substance generated on the surface of diecasting zinc alloy due to natural oxidation during storage shall not be used as a basis for scrapping.

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 3 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

3. <https://www.google.com/search?tbm=bks&q=ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Google Books -- Select your currency.
- Processed by Google (delivery, tax invoice etc.). Delivered in 9 seconds by Google.
- Tips: Download an unprotected **True-PDF** (text-editable) from Google-Books:
 1. <https://play.google.com/books> → 2. Sign in → Google account
 3. Find the **BOOK** you bought → 4. Click "3-dots" → Export
 5. Save as "*.pdf" (Save True-PDF to your local computer for offline reading/printing)

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

Accountable person and shareholder: Wayne Zheng

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----