

ICS 77.140.80



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

GB/T 14408-2024

**Low alloy steel castings for general engineering and structural
purposes**

一般工程与结构用低合金钢铸件

(English Translation)

Issued on: April 25, 2024

Implemented on: April 25, 2024

Issued by: State Administration for Market Regulation

Table of Contents

Foreword...	3
1 Scope...	5
2 Normative References...	5
3 Terms and Definitions...	6
4 General Conditions of Delivery...	7
5 Manufacturing Process...	7
6 Technical Requirements...	7
7 Test Methods...	10
8 Inspection Rules...	12
9 Marking and Quality Certificate...	15
10 Casting Protection, Packaging, Transportation and Storage...	16

Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives

for Standardization - Part 1.Rules for the Structure and Drafting of Standardizing Documents.

This document serves as a replacement for GB/T 14408-2014 Low Alloy Steel Castings for General Engineering and Structural Purposes. In comparison with GB/T 14408-2014, apart from structural adjustments and editorial modifications, the main technical changes are as follows.

- a) The definitions of carbon equivalent and major defect are added (see 3.1 and 3.2);
- b) The general conditions of delivery are added (see Chapter 4);
- c) The manufacturing process is added (see Chapter 5);
- d) The chemical composition of the material is modified (see Table 1; Table 1 of Version 2014);
- e) The requirements for surface quality are modified (see 6.3; 4.8 of Version 2014);
- f) The shapes, dimensions and specimen cutting positions of single cast test blocks are

modified (see 7.2.1.2; 5.2.1.2 of Version 2014);

g) The composition of the inspection batch is modified (see 8.1; 6.3 of Version 2014);

h) The content of the quality certificate is modified (see 9.2; 7.1.2 of Version 2014);

i) Additional requirements are deleted (see Chapter 8 of Version 2014).

This document modifies and adopts ISO 9477.2023 High Strength Cast Steels for General Engineering and Structural Purposes.

In comparison with ISO 9477.2023, there are many structural adjustments. A table of the comparison of structural No. changes between the two documents is shown in Appendix A.

In comparison with ISO 9477.2023, there are many technical differences. The terms involved

are marked with a vertical single line () in the outer margin of the page. A table of these technical differences and their causes are provided in Appendix B.

This document makes the following editorial modifications.

---The title of the Standard is modified into Low Alloy Steel Castings for General Engineering and Structural Purposes;

---The designations in Table 1 of ISO 9477.2023 are modified and added, and replaced by the corresponding Chinese designations.

Please note that certain content of this document may involve patents. The institution issuing

this document does not undertake the responsibility of identifying these patents.

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

The drafting organizations of this document. KOCEL Steel Foundry Co., Ltd.; Anhui Yingliu Group Huoshan Casting Co., Ltd.; Harbin Jiuzhou Group Co., Ltd.; Zhejiang Tederic Heavy Machinery Co., Ltd.; Hunan Zijing New Material Technology Co., Ltd.; Sanming Yijun Machinery Casting Co., Ltd.; Sanming Special Steel Co., Ltd.; Shandong Tianli Machinery Casting Co., Ltd.; Zhejiang Haoyue Automation Technology Co., Ltd.; Shandong Zhengyang Machinery Co., Ltd.; Jiangxi Zhangshu Fuling Internal Combustion Engine Parts Co., Ltd.; Xinxiang Great Wall Cast Steel Co., Ltd.; Taizhou FIRSTCNC Precision Machinery Co., Ltd.;

Anhui Kuayu Steel Structure Frame Engineering Co., Ltd.; Jiangsu Junchang Technology Co., Ltd.; Zhangshu Xinglong High Tech Materials Co., Ltd.; Akto County Yongxing Construction Co., Ltd.; Guangdong Shao Casting Group Co., Ltd. (Shaoguan Casting and Forging Plant); Erzong (Deyang) Heavy Equipment Co., Ltd.; CITIC Heavy Industries Machinery Co., Ltd.; Ludong University; Shenyang Foundry Research Institute Co., Ltd. of China Academy of Machinery Science and Technology Group Co., Ltd.

1 Scope

This document specifies the manufacturing, technical requirements, test methods, inspection

rules, marking and quality certificate of low alloy steel castings for general engineering and structural purposes, as well as casting protection, packaging, transportation and storage, etc.

This document is applicable to the production, inspection and delivery acceptance of low alloy

steel castings for general engineering and structural purposes.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only

versions with a specified date are applicable to this document. In terms of references without a

specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 222 Permissible Tolerances for Chemical Composition of Steel Products

3 Terms and Definitions

The terms and definitions defined in GB/T 5611, and the following are applicable to this document.

A defect with an excavation depth exceeding 25 mm or 40% of the wall thickness (whichever

is smaller) or an excavation repair area greater than 64 cm².

4 General Conditions of Delivery

The supplementary requirements for delivered products shall be determined in the order contract, and the specific requirements shall comply with the provisions of Appendix C in GB/T

40805-2021.

5 Manufacturing Process

Unless the demand-side has special requirements, the heat treatment process shall be determined by the supply-side.

6 Technical Requirements

The deformation caused by the castings can be eliminated through the method of correction.

After correction, stress relief treatment shall be performed.

7 Test Methods

When there are insufficient spare test blocks, sampling from the casting body is allowed.

The sampling position and property indicators shall be agreed upon by the demand-side and the

supply-side.

The impact test shall be carried out in accordance with the provisions of GB/T 229.

Casting correction shall adopt a pressure forming method.

8 Inspection Rules

When the initial test result is disqualified, unless otherwise specified, the supply-side shall comply with the following provisions.

When the properties in the initial inspection are disqualified, the castings and test blocks may

be re-subjected to the heat treatment, then, the mechanical test can be performed. Without the

consent of the demand-side, the castings and test blocks shall not be re-heated more than