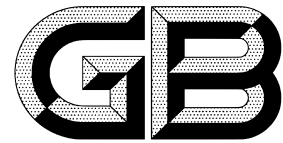


ICS 77.140.80

CCS J 31



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

GB/T 11352-2009

Replacing GB/T 11352-1989

Carbon Steel Castings for General Engineering Purpose

一般工程用铸造碳钢件

Issued on: March 5, 2009

Implemented on: September 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection, and
Quarantine of the People's Republic of China;
Standardization Administration of the People's Republic of China..**

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Foreword

This Standard modifies and adopts international standards ISO 3755:1991 "Cast Carbon Steels for General Engineering Purposes" and ISO 4900:2003 "Steel Castings - General Technical Delivery Requirements".

This Standard integrates, modifies and adopts ISO 3755:1991 and ISO 4900:2003. The differences of main technical contents are as follows:

— Significant revision has been made to the structure, such as: Chapter 7 of ISO 3755:1991 has been revised; Table 1 permissible variation in chemical composition and Table 2 alternate material list in ISO 4900:2003 have been deleted.

Annex B of ISO 4900:2003 have been revised.

Comparison table between this Standard's clauses and international standard's clauses are given in Annex C for the convenient comparison.

This Standard shall replace GB/T 11352-1989 "Carbon Steel Castings for General Engineering Purpose". Compared with GB/T 11352-1989, the following main technical contents are revised in this Standard:

- Add the spectral analysis method for chemical composition analysis;
- S and P controlling quantities of each designation are reduced;
- Test blocks for mechanical property of attached castings and single-cast test block are listed for adoption.

Annex A, B and C in this Standard are informative.

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under jurisdiction of the National Technical Committee of Standardization for Foundry Responsible drafting organization of this Standard: Shaoguan Foundry and Forging Group.

Participating drafting organization of this Standard: Shanghai Zhongxing Jiqi Chang Co., Ltd. AND Shenyang Research Institute of Foundry.

Chief drafting staffs of this Standard: Liu Qiping, Yu Zhengjiang, Yu Bo, Sun Shuqing and Ye Jianjun.

The previous edition replaced by this Standard is:

1 Scope

This Standard specifies the designation, technical requirements, test methods, inspection rules, marking, packaging, storage and transport of carbon steel castings for general engineering purpose.

This Standard is applicable to carbon steel castings for general engineering purpose.

2 Normative references

The following normative documents contain the provisions which, through reference in this text, constitute the provisions of this Standard. For dated reference, the subsequent amendments (excluding the corrigendum) or revisions of these publications do not apply to this Standard. However, parties who enter into an agreement based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. For undated references, the latest edition of the normative document referred to applies.

3 Designation

Designation of the carbon steel castings for general engineering purpose (hereafter abbreviated as castings) specified in GB/T 5613 comprises: ZG 200-400, ZG 230-450, ZG 270-500, ZG 310-570 and ZG 340-640.

4 Technical requirements

4.1 Manufacturing

Unless otherwise stated, the Supplier shall determine steel-making method and casting technology.

4.2 Chemical compositions

4.3 Mechanical property

Mechanical property shall be in accordance with the provisions of Table 2. If the purchaser has no requirement toward the shrinkage factor of cross-sectional area and impact ductility, the Supplier can choose one of them.

Note 1: Property of each designation listed in the Table adapt to castings less than 100 mm in thickness. When casting thickness exceeds 100 mm, $R_{ch}(R_{p0.2})$ yield strength specified in the Table is only for design. Note 2: In the Table, gap of the sample of impact absorption (A_{ku}) is 2mm.

4.4 Heat treatment

4.4.1 Unless otherwise stated, the Supplier shall determine heat treatment technology by itself.

4.4.2 Heat treatment for castings shall be carried out according to GB/T 16923 and GB/T 16924.

4.5 Surface quality

Roughness of cast surface shall be in accordance with requirements of drawing or order agreement.

Surface blemish harmful to regular service of casting shall not exist.

4.6 Geometric shape, dimension, dimensional tolerance, machining allowance

Geometric shape, dimension, dimensional tolerance, machining allowance of casting shall be in accordance with provisions of drawing or order agreement, or comply with those specified in GB/T 6414 if there is no drawing or order agreement.

4.7 Repair welding

The Supplier can carry out repair welding for casting defect but the repair welding shall not affect the mechanical property hereof.

4.8 Straightening

Distortion of casting can be removed through straightening.

5 Test methods

5.1 Analyses of chemical composition

5.2 Mechanical test

5.2.1 Test block

5.2.1.1 Block for mechanical property test shall be separately casted or be attached to castings during the casting process. Provided that test blocks are attached to castings, the position, method and mechanical property of attached castings shall be determined according to the negotiation between supplier and purchaser. Unless otherwise stated, types of test block shall be selected by the supplier.

5.2.1.2 Shape and dimension of separately-cast test block, as well as sampling location shall be in accordance with the requirements of Figure 1.

5.2.1.3 Shape, dimension and sampling location of attached test block shall be determined by supplier and purchaser through negotiation.

5.2.1.4 Unless otherwise stated, it is required to carry out the same method of heat treatment to both separately-cast test block and the casting it represents, and make relevant recordings.

5.2.1.5 Before heat treatment for castings, if purchaser or its representative requires to join