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

GB/T 13304.2-2008

**Steels classification -- Part 2: Classification of according to
main quality classes and main property or application
characteristics**

(English Translation)

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Foreword

GB/T 13304 "Steels Classification" is divided into two parts.

- Part 1. Classification according to chemical composition;
- Part 2. Classification of according to main quality classes and main property or application characteristics.

This Part is the Part 2 of GB/T 13304 "Steels Classification".

This Part modifies and adopts ISO 4948-2:1981 "Steels - Classification - Part 2.

Classification of unalloyed and alloy steels according to main quality classes and main property or application characteristics".

This Part is redrafted according to ISO 4948-2:1981. For convenience of comparison, Appendix B (informative) in this Part gives the comparison list of the provisions of this standard and ISO 4948-2:1981.

This Part replaces the Part 2 of GB/T 13304-1991 "Steels Classification".

The main differences between this Part and Part 2 of GB/T 13304-1991 are as follows.

- The standards in "normative references" are listed as Appendix A (Chapter 2 of edition 1991 is changed to Appendix A in this edition);
- Add "terms and definitions" (see Chapter 3);

-- The steel classification is compiled according to "brief", "definition" and "example" (chapters 3, 4 and 5 in edition 1991 are changed to chapters 4, 5 and

6 in this edition);

- Update and supplement the normative references (see Chapter 2);
- Update, delete, and supplement the steel classification examples (see Table 1, Table 2 and Table 3);
- Delete same steel classification example; change it to be reference to Table 1, Table 2 and Table 3 (3.1.1.2, 3.1.2.2, 3.1.3.2, 4.1.1.2, 4.1.2.2, 4.1.3.2 and

5.1.2.2 in edition 1991);

- Adjust the "sulphur or phosphorus content maximum" in definitions of "common-quality non-alloy steel" and "common-quality low-alloy steel" from 0.045% to 0.040% (3.1.1.1c) and 4.1.1.1c) in edition 1991; 4.1.1.2c) and 5.1.1.2c) in this edition);

Steels Classification - Part 2. Classification of according to
Main Quality Classes and Main Property or Application
Characteristics

1 Scope

This Part specifies fundamental principles and requirements of classification for non-alloy steel, low-alloy steel and alloy steel according to main quality class and main property or application characteristics.

This Part is applicable to classification of non-alloy steel, low-alloy steel and alloy steel according to main quality class and main property or application characteristics.

2 Normative References

Provisions of the following documents constitute the provisions of this Part of GB/T

13304 through reference. For dated reference, the subsequent amendments

(excluding corrections) or revisions of these publications do not apply. However, the parties who enter into agreement according to these specifications are encouraged to research whether the latest editions of these documents are applicable. For undated references, the latest editions of the normative documents are applicable to this Part. See Appendix A.

3 Terms and Definitions

For the purpose of this Part, the following terms and definitions apply.

4 General Classification Of Non-alloy Steels

The general classification of non-alloy steels is as follows.

- A) Classification according to main quality class of steel (see 4.1);
- B) Classification according to main property or application characteristics of steel (see 4.2).

4.1 Classification according to main quality class

Non-alloy steels are classified according to the main quality class as follows.

4.2.1 The main property or application characteristic stated in this Part refer to the

characteristics considered in priority under some conditions like in formulation system or steel classification.

4.2.2 The classification of non-alloy steels listed in Table 1 according to main property

or application characteristic is as follows.

- A) Non-alloy steel with principal characteristic of required strength (or hardness) maximum, e.g., sheet steel for cold forming;
- B) Non-alloy steel with principal characteristic of required strength minimum, e.g. structural steels for ship, pressure vessel and tube/pipe;
- C) Non-alloy steel with major characteristic of required carbon content (except steels specified in item d and e below), e.g. wire rod and quenched and

tempered steels;

D) Unalloyed free cutting steel with sulfur content minimum and smelting assay value not less than 0.070% and (or) added with elements like Pb, Bi, Te, Se, Sn, Ca or P;

E) Non-alloy tool steel;

F) Non-alloy steel with specially required magnetic property or electric property, e.g. electromagnetic pure iron;

G) Other non-alloy steels, e.g. pure iron for raw material.

5 General Classification of Low-alloy Steel

The general classification of low-alloy steel is as follows.

A) Classification according to main quality class of steel (see 5.1);

B) Classification according to main property or application characteristics of steel (see 5.2).

5.1 Classification according to main quality class

The main quality class of low-alloy steel is divided into.

A) Common-quality low-alloy steel;

B) Good-quality low-alloy steel;

C) Special-quality low-alloy steel.

(see 6.2).

6.1 Classification according to main quality class

The main quality class of alloy-steel is divided into.

A) Good-quality alloy-steel (see 6.1.1);

B) Special-quality alloy-steel (see 6.1.2).

6.1.1.1 Brief

Good-quality alloy-steel refers to the steel that the quality and property (like grain fineness number or formability) shall be specially controlled in the manufacturing process. But the production control of such steel is not stricter than the one for