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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 77.140.20

H 40

GB/T 4172-2000

Replacing GB/T 4172-1984

**Atmospheric corrosion resisting steel
for welded structure**

焊接结构用耐候钢

Replaced by GB/T 4171-2008

Issued on: October 25, 2000

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Issued by: State Bureau of Quality and Technical Supervision

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Foreword

This Standard revises GB/T 4172-1984 *Atmospheric corrosion resisting steel for welded structure* according to the development and application of atmospheric corrosion resisting steel, with reference to relevant international and domestic standards.

This revision of this Standard has revised the following main technical contents:

- CHANGE the representation of the designation;
- ADJUST the chemical composition and properties of each designation;
- ADD some provisions and terms.

This Standard replaces GB/T 4172-1984 *Atmospheric corrosion resisting steel for welded structure* from the date of implementation.

Appendix A of this Standard is an indicative appendix.

This Standard was proposed by the National Metallurgical Industry Bureau.

This Standard shall be under the jurisdiction of the National Technical Committee for Standardization of Steel.

China Metallurgical Information and Standardization Institute and Wuhan Iron & Steel (Group) Co., Ltd. were responsible for drafting this Standard.

Main drafters of this Standard: Tang Yifan, Huang Ying, Yao Ping, Luan Yan, Deng Lianxian, and Liu Baoshi.

This Standard was first published in February 1984.

Atmospheric corrosion resisting steel for welded structure

1 Scope

This Standard specifies the definitions, sizes, appearance, technical requirements, test methods, acceptance rules, as well as packaging, marking, quality certificate, etc. of the atmospheric corrosion resisting steel for welded structure.

This Standard applies to the hot-rolled steel with atmospheric corrosion resistance for bridges, buildings and other structural members, including steel plates, steel strips and shaped steel, with a thickness of up to 100mm.

2 Normative references

The provisions contained in the following standards constitute provisions of this Standard by reference in this Standard. At the time of publication, the editions indicated were valid. All standards will be revised and parties using this Standard shall explore the possibility of using the latest editions of the following standards.

GB/T 222-1984 *Method of sampling steel for determination of chemical composition and permissible variations for product analysis*

GB/T 223.3-1988 *Methods for chemical analysis of iron, steel and alloy - The dantipyrylmethane phosphomolybdate gravimetric method for the determination of phosphorus content*

GB/T 223.5-1997 *Methods for chemical analysis of iron, steel and alloy - The reduced molybdosilicate spectrophotometric method for the determination of acid-soluble silicon content*

GB/T 223.8-1991 *Methods for chemical analysis of iron, steel and alloy - The sodium fluoride separation - EDTA volumetric method for the determination of aluminium content*

GB/T 223.9-1989 *Methods for chemical analysis of iron, steel and alloy - The chromazurol S photometric method for the determination of aluminium content*

GB/T 223.53-1987 *Methods for chemical analysis of iron, steel and alloy - The flame atomic absorption spectrophotometric method for the determination of copper content*

GB/T 223.58-1987 *Methods for chemical analysis of iron, steel and alloy - The sodium arsenite-sodium nitrite titrimetric method for the determination of manganese content*

GB/T 223.59-1987 *Methods for chemical analysis of iron, steel and alloy - The reduced molybdoantimonyl phosphoric acid photometric method for the determination of phosphorus content*

GB/T 223.60-1997 *Methods for chemical analysis of iron, steel and alloy - The perchloric acid dehydration gravimetric method for the determination of silicon content*

GB/T 223.61-1988 *Methods for chemical analysis of iron, steel and alloy - The ammonium phosphomolybdate volumetric method for the determination of phosphorus content*

GB/T 223.62-1988 *Methods for chemical analysis of iron, steel and alloy - The butyl acetate extraction photometric method for the determination of phosphorus content*

GB/T 223.63-1988 *Methods for chemical analysis of iron, steel and alloy - The sodium (potassium) periodate photometric method for the determination of manganese content*

GB/T 223.64-1988 *Methods for chemical analysis of iron, steel and alloy - The flame atomic absorption spectrometric method for the determination of manganese content*

GB/T 223.68-1997 *Methods for chemical analysis of iron, steel and alloy - The potassium iodate titration method after combustion in the pipe furnace for the determination of sulfur content*

GB/T 223.69-1997 *Methods for chemical analysis of iron, steel and alloy - The gas-volumetric method after combustion in the pipe furnace for the determination of carbon content*

GB/T 223.71-1997 *Methods for chemical analysis of iron, steel and alloy - The gravimetric method after combustion in the pipe furnace for the determination of carbon content*

GB/T 223.72-1991 *Methods for chemical analysis of iron, steel and alloy - The alumina chromatographic separation - Barium sulfate gravimetric method for the determination of sulphur content*

figures of the yield point, with the quality grade code (C, D and E) appended to the designation.

For example: Q355NHC, and Q460NHD

Q - The first letter of the Chinese phonetic alphabet of “yield” in the yield point;

NH - The first letters of the Chinese phonetic alphabets of “atmospheric corrosion” and “resisting”;

355, 460 - Figures of the yield point, in MPa.

5 Sizes, appearance and permissible deviations

5.1 The sizes, appearance and permissible variations of steel plates and steel strips shall comply with the relevant provisions of GB/T 709.

5.2 The sizes, appearance and permissible variations of shaped steel shall comply with the provisions of relevant standards.

6 Technical requirements

6.1 Designation and chemical composition

6.1.1 The designation and chemical composition of steel shall comply with the provisions of Table 1.

6.1.2 The lower limit of silicon content of Q235NH and Q295NH may be 0.10%. The lower limit of manganese content of Q355NH may reach 0.60%.

6.1.3 In order to improve the properties of steel, each designation may be added with one or more trace alloying elements: Ni≤0.65%, Nb: 0.015%~0.050%, V: 0.02%~0.15%, Ti: 0.02%~0.10%, Mo≤0.30%, Zr≤0.15%, and Al≥0.020%.

6.1.4 The permissible variations of the chemical compositions of finished steel and billet shall comply with the provisions of GB/T 222.

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