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Hot-rolled steel plates, sheets and strips for tools

工具用热轧钢板和钢带

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Hot-rolled steel plates, sheets and strips for tools

1 Scope

This document stipulates the classification and code, order content, size, shape, weight, technical requirements, test methods, inspection rules, packaging, marking and quality certificate of hot-rolled steel plates, sheets and strips for tools.

This document applies to hot-rolled steel plates, sheets and strips for tools with a nominal thickness not greater than 25 mm (hereinafter referred to as steel plates, sheets and strips).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document.

GB/T 222, Permissible tolerances for chemical composition of steel products

GB/T 223.5, Steel and iron - Determination of acid-soluble silicon and total silicon content - Reduced molybdosilicate spectrophotometric method

GB/T 223.11, Iron, steel and alloy - Determination of chromium content - Visual titration or potentiometric titration method

GB/T 223.14, Methods for chemical analysis of iron, steel and alloy - The N-benzoyl-N-phenylhydroxylamine extraction photometric method for the determination of vanadium content

GB/T 223.19, Methods for chemical analysis of iron, steel and alloy - The neocuproine-chloroform extraction photometric method for the determination of copper content

GB/T 223.23, Iron, steel and alloy - Determination of nickel content - The dimethylglyoxime spectrophotometric method

GB/T 223.26, Iron, steel and alloy - Determination of molybdenum content - The thiocyanate spectrophotometric method

GB/T 223.62, 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, Iron, steel and alloy - Determination of manganese content - Sodium (potassium) periodate spectrophotometric method

GB/T 223.68, 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, Iron, steel and alloy - Determination of carbon contents - Gas-volumetric method after combustion in the pipe furnace

GB/T 224, Determination of depth of decarburization of steels

GB/T 230.1, Metallic materials - Rockwell hardness test - Part 1: Test method

GB/T 231.1, Metallic materials - Brinell hardness test - Part 1: Test method

GB/T 247, General rule of package, mark and certification for steel plates (sheets) and strips

GB/T 709-2019, Dimension, shape, weight and tolerance for hot-rolled steel strip, plate and sheet

GB/T 1299-2014, Tool and mould steels

GB/T 4336, Carbon and low-alloy steel - Determination of multi-element contents - Spark discharge atomic emission spectrometric method (routine method)

GB/T 8170, Rules of rounding off for numerical values & expression and judgment of limiting values

GB/T 10561-2023, Steel - Determination of content of nonmetallic inclusions - Micrographic method using standards diagrams

GB/T 13298, Inspection methods of microstructure for metals

GB/T 13302, Steel - Determination of area content of graphite-micrographic method using diagrams

GB/T 17505, Steel and steel products - General technical delivery requirements

GB/T 20066, Steel and iron - Sampling and preparation of samples for the determination of chemical composition

GB/T 20123, Steel and iron - Determination of total carbon and sulfur content Infrared absorption method after combustion in an induction furnace (routine method)

GB/T 20125, Low-alloy steel. Determination of multi-element contents. Inductively coupled plasma atomic emission spectrometric method

3 Terms and definitions

No terms and definitions need to be defined in this document.

4 Classification and code

4.1 Steel plates, sheets and strips, by edge state, are classified into:

- a) cut edge, EC;
- b) mill edge, EM.

4.2 Continuous-rolled steel plates, sheets and strips, by thickness accuracy, are classified into:

- a) ordinary thickness accuracy, PT.A;
- b) higher thickness accuracy, PT.B.

4.3 Steel plates, sheets and strips, by surface treatment method, is classified into:

- a) rolled surface, SR;
- b) acid-pickled surface, SA.

5 Order content

5.1 The order contract or order form includes the following:

- a) a reference to this document;
- b) product name (steel plate or steel strip);
- c) designation;
- d) specifications and size, shape and accuracy;
- e) delivery state;
- f) edge state;
- g) surface treatment method;
- h) weight;
- i) special requirements.

5.2 When it is not specified in the order contract or order form, the following provisions shall apply:

- a) Where the surface treatment method is not indicated, the product shall be supplied with rolled surface;
- b) Single-rolled steel plates delivered with rolled surfaces shall be supplied in the state of Class A thickness tolerance and cut edge as specified in GB/T 709-2019; continuous-rolled steel plates, sheets and strips shall be supplied in the state of ordinary thickness accuracy and mill edge;
- c) For steel plates, sheets and strips delivered with acid-pickled surfaces, if the thickness accuracy and edge state are not specified, they shall be supplied in the state of higher thickness accuracy and cut edge.

6 Size, shape and weight

6.1 The size, shape and allowable deviation of steel plates, sheets and strips with a nominal width of not less than 600 mm shall comply with the following requirements:

- a) The thickness allowable deviation of single-rolled steel plates shall comply with the requirements in Table 2 of GB/T 709-2019, and the thickness allowable deviation of continuous-rolled steel plates, sheets and strips shall comply with the requirements in Table 4 of GB/T 709-2019;
- b) The unevenness of single-rolled steel plates shall comply with the requirements in Table 10 of GB/T 709-2019, and the unevenness of continuous-rolled steel plates shall comply with the requirements corresponding to “the specified minimum yield strength R_e is greater than 300 MPa” in Table 11 of GB/T 709-2019;
- c) The allowable deviations in other sizes and shapes of steel plates, sheets and strips shall comply with the provisions of GB/T 709-2019.

6.2 The size, shape and allowable deviation of steel strips with a nominal width less than 600 mm shall comply with the provisions of Appendix A. Special requirements from the buyer, if any, shall be determined through negotiation between the supplier and the buyer and stated in the contract.

6.3 Steel plates, sheets and strips are delivered according to actual weight.

7 Technical requirements

7.1 Designation and chemical composition

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