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

GB/T 3278-2023

Hot-rolled steel plates, sheets and strips for tools

工具用热轧钢板和钢带

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Foreword

This document was issued on 7 September 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 April 2024.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 3278-2023 covers hot-rolled steel plate, sheet and strip supplied for making tools - how the product is classified and coded, what an order has to state, the size, shape and weight, the technical requirements beginning with designation and chemical composition, the test methods, the inspection rules, and the packaging, marking and quality certificate. Classification starts with edge state, cut edge or mill edge, and the order content clause lists what the contract has to carry: a reference to this document, the product name, and the further particulars a mill needs before it rolls anything. Dimensions, shape and permitted deviations are set out for material of nominal width from 600 mm upward, with the thickness deviation of single-rolled plate handled in its own right. Ordering tool material by grade alone is where the trouble starts, because plate that meets the composition but not the thickness or shape tolerance has to be machined back to size before it can be hardened, and metal removed at that stage is paid for twice, once as steel and once as machining. Written for steel mills, tool and die makers, stockholders and the inspectors who release

incoming material.

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;