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**NATIONAL STANDARD OF THE
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Replacing GB/T 1299-2014

Tool and mould steels

工模具钢

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1 Scope

GB/T 1299-2025 is the Chinese national standard on tool and mould steels, in the field of metallurgy. The /T suffix marks it as a recommended standard: it is not compulsory by itself,

but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 October 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2026. Classification: ICS 77.140.35, CCS H40. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the classification and designation of tool and mould steels, ordering details, manufacturing process, technical requirements, test methods, inspection rules, packaging, marks, and quality certificate. This document applies to tool and mould steel hot-rolled, forged, cold-drawn, bright, and machined steel bars and hot-rolled wire rods (hereinafter collectively referred to as steel bars), as well as single-rolled cold-rolled steel plates with a nominal thickness of no more than 4 mm and single-rolled hot-rolled steel plates with a nominal thickness of no more than 10 mm (hereinafter referred to as steel plates). The chemical composition also applies to steel ingots, billets, and their products. NOTE. In this document, steel bars and steel plates are collectively referred to as steel products.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 222, Steels and alloys - Allowable deviations of product analyzed chemical composition

GB/T 223 (all parts), Iron, steel and alloy

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

GB/T 225, Steel -- Hardenability test by end quenching (Jominy test)

GB/T 226, Test Method for Macrostructure and Defect of Steel by Etching

GB/T 230.1, Metallic materials -- Rockwell hardness test -- Part

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 20566 as well as the followings apply.

3.1 tool and mould steels Steel used to manufacture tools and molds. Raw materials (steel, non-ferrous metals, and plastics, etc.) are processed into parts or products for specific

applications through cutting, forming, or other processes, and have high hardness, wear resistance, and sufficient toughness and strength.

3.2 unalloyed steels for tools and moulds carbon steels for tools and moulds Tool and mould steels of which the carbon content is typically between 0.40%~1.50%, and it also contains a certain amount of silicon, manganese, and other trace elements. NOTE. Also known as carbon steels for tools and moulds.

3.3 steels for measuring tools and cutting tools A general term for steel used in the manufacture of measuring tools (calipers, gauge blocks, plug gauges, micrometers, etc.) and general cutting tools (lathe tools, milling cutters, planer tools, drill bits, taps, dies, etc.). They possess high hardness, wear resistance, dimensional stability and a certain degree of toughness.

3.4 shock-resisting tool steels A general term for steels used in the manufacture of tools and dies that withstand high impact loads, frequent vibrations, and dynamic stresses. They possess high hardness, excellent impact toughness, and fatigue resistance.

3.5 steel for cold-rolled forging steel rolls A general term for steel produced through forging processes and specifically used for manufacturing rolls for cold-rolled sheets and strips. They possess high surface hardness and a certain hardening depth, excellent wear resistance, fatigue resistance, and core strength and toughness.

3.6 cold-work mould steels A general term for steel used in manufacturing workpieces that are formed by stamping, stretching, cold heading, extrusion, embossing, roll forming, etc. in a cold state ($\leq 200^{\circ}\text{C}$). They possess high hardness, high wear resistance, resistance to plastic deformation and moderate toughness.

3.7 hot-work mould steels A general term for steel used in the manufacture of metal workpieces for hot forming processes such as forging, die casting, extrusion, and shearing in high-temperature ($> 200^{\circ}\text{C}$) environments. They possess high thermal strength, resistance to thermal fatigue, resistance to heat wear, high hardenability, and excellent resistance to tempering softening.

3.8 plastic mould steels A general term for steels specifically used in the manufacture of plastic molding dies (such as injection molds, blow molds, extrusion molds, etc.). They possess certain strength, hardness, wear resistance, corrosion resistance, and heat resistance, as well as good processing properties.

4 Classification and codes

4.1 Steel products are classified into the following two categories according to its chemical composition and use.

a) Unalloyed steels for tools and moulds. 1) unalloyed steels for moulds (designations beginning with "SM"); 2) unalloyed steels for tools (designations beginning with "T"). NOTE.

Unalloyed steels for tools are the same as original carbon tool steels.

b) Alloyed steels for tools and moulds. 1) steels for measuring tools and cutting tools; 2) shock-resisting tool steels; 3) steels for cold-rolled forging steel rolls; 4) cold-work mould steels; 5) hot-work mould steels; 6) plastic mould steels.

4.2 Steel products are classified into the following two categories according to the processing method.

a) Steel for pressure processing (UP). 1) Hot pressure processing (UHP); 2) Cold pressure processing (UCP).

b) Steel for cutting and machining (UC).

4.3 Steel bars are classified into the following six categories according to their manufacturing methods and cross-sectional shapes.

a) Hot-rolled steel bars (round, square, flat);

b) Forged steel bars (round, square, flat);

c) Cold-drawn steel bars (round, square);

d) Bright silver steel bars (round);

e) Machined steel bars (round, square, flat);

f) Hot-rolled wire rod (round).

5 Ordering contents

Contracts or orders placed in accordance with this document shall include the following.

a) Reference to this document;

b) Product name;

c) Steel designation;

d) Weight (or quantity);

e) Processing method (see 4.2);

f) Manufacturing process and cross-sectional shape (see 4.3);

g) Smelting method (see 6.1);

h) Delivery condition (see 6.2);

i) Dimensions and tolerance groups;

j) Standard and multiple lengths (specified if required);

k) Items or specifications to be negotiated by both parties and specified in the contract (if