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

GB/T 13790-2025

Replacing GB/T 13790-2008

**Cold rolled low carbon steel sheet and strip for vitreous
enamelling**

搪瓷用冷轧低碳钢板及钢带

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Table of Contents

Foreword...	3
1 Scope...	5
2 Normative References...	5
3 Terms and Definitions...	6
4 Classification and Designation Representation Method...	7
5 Ordering Content...	8
6 Manufacturing Process...	9
7 Technical Requirements...	9
8 Test Methods...	13
9 Inspection Rules...	14
16 Bibliography...	26

Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for Standardization - Part

1. Rules for the Structure and Drafting of Standardizing Documents. This document serves as a replacement for GB/T 13790-2008 Cold Rolled Low Carbon Steel Sheets and Strips for Vitreous Enamelling and GB/T 29515-2013 Cold Rolled Steel Sheet for Enamelling - Fish-scaling Sensitivity Test - Hydrogen Permeation Method. In comparison with GB/T 13790-2008, apart from structural adjustments and editorial modifications, the main technical changes are as follows:

- a) The thickness range is modified (see Chapter 1; Chapter 1 of Version 2008);
- b) Terms and definitions are added (see Chapter 3);
- c) Drawing grades 04, 06 and 07 are added (see Table 1);
- d) Ultra-high-grade surface FD is added (see Table 2);
- e) Classification and codes based on edge state are added (see Table 4);
- f) Enamel processing type ED is added to the designation representation method (see 4.2);
- g) Six designations - DC04EK, DC06EK, DC07EK, DC03ED, DC04ED and DC06ED, as well as their corresponding technical requirements are added (see Table 5, Table 6 and Table 7);

- h) The C, Mn, Al, and Ti provisions for some designations are modified (see Table 5; Table 4 of Version 2008);
- i) The provisions for the mechanical properties of DC01EK, DC03EK and DC05EK are modified (see Table 6; Table 5 of Version 2008);
- j) The provisions for a 6-month guarantee period for mechanical properties are added (see 7.2);
- k) The provisions for tensile strain marks are modified (see Table 7; Table 6 of Version 2008);
- l) A hydrogen permeation test is added (see 7.4.1);

1 Scope

GB/T 13790-2025 is the Chinese national standard on cold rolled low carbon steel sheet and strip for vitreous enamelling, 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 1 August 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 February 2026. Classification: ICS 77.140.50, CCS H46. 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 representation method, ordering content, manufacturing process, technical requirements, test methods, inspection rules, packaging, marking and quality certificate for cold rolled low carbon steel sheet and strip for vitreous enameling. This document applies to cold rolled low carbon steel sheet and strip with a thickness of

0.30 mm ~

3.50 mm and a width of not less than 600 mm used in the daily-use or industrial vitreous enameling industry (hereinafter referred to as the "sheet and strip").

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 222 Permissible Tolerances for Chemical Composition of Steel Products

GB/T 223.9 Iron, Steel and Alloy - Determination of Aluminum Content - Chrome Azurol S Photometric Method

GB/T 223.17 Methods for Chemical Analysis of Iron, Steel and Alloy - The Diantipyrylmethane Photometric Method for the Determination of Titanium Content

GB/T 223.40 Iron, Steel and Alloy - Determination of Niobium Content by the Sulphochlorophenol S Spectrophotometric Method

GB/T 223.59 Iron, Steel and Alloy - Determination of Phosphorus Content - Bismuth Phosphomolybdate Blue Spectrophotometric Method and Antimony Phosphomolybdate Blue Spectrophotometric Method

GB/T 223.63 Iron, Steel and Alloy - Determination of Manganese Content - Sodium (potassium) Periodate Spectrophotometric Method

GB/T 223.64 Iron, Steel and Alloy - Determination of Manganese Content - Flame Atomic Absorption Spectrometric Method

GB/T 223.85 Steel and Iron - Determination of Sulfur Content - Infrared Absorption Method after Combustion in an Induction Furnace

GB/T 228.1-2021 Metallic Materials - Tensile Testing - Part

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 hydrogen permeation test A test method that evaluates the fish scaling resistance of steel sheet for vitreous enameling by generating atomic hydrogen on one side of the cold rolled steel sheet, allowing it to permeate through the steel sheet to the other side and precipitate as hydrogen gas, and through the time required for the hydrogen gas to stabilize.

4.1 Classification

4.1.1 The classification and codes of steel sheet and strip by drawing grades are as specified in Table 1. Table 1 -- Classification and Codes by Drawing Grades Drawing Grades Codes For general purposes

01 For drawing

03 For deep drawing

04 For extra deep drawing

05 For super deep drawing

06 For ultra deep drawing 07

4.1.2 The classification and codes of steel sheet and strip by surface quality level are as specified in Table 2. Table 2 -- Classification and Codes by Surface Quality Surface Quality Level Codes Relatively advanced surface FB Advanced surface FC Super advanced surface FD

4.1.3 The classification and codes of steel sheet and strip by surface texture are as specified in Table 3.

4.1.4 The classification and codes of steel sheet and strip by edge state are as specified in Table 4.

4.2 Designation Representation Method The designation of steel sheet and strip consists of four parts. the first part is the letter "D", representing cold-formed steel sheet and strip; the second part is the letter "C", representing that the rolling condition is cold-rolled; the third part is a two-digit serial number, representing the drawing grade code, i.e., 01, 03, 04, 05, 06, 07; the fourth part is the enamel processing type code, with the letters "EK" indicating suitability for conventional enameling processes, and the letters "ED" indicating suitability for direct one-time enameling processes and enameling processes with special requirements for anti-dent properties, as well as conventional enameling processes.

EXAMPLE 1.DC01EK DC

---"D" represents cold-formed steel sheet and strip, and "C" represents that the rolling condition is cold-rolled; 01

---represents drawing grade code 01; EK

---indicates suitability for conventional enameling processes. EXAMPLE 2.DC04ED DC

---"D" represents cold-formed steel sheet and strip, and "C" represents that the rolling condition is cold-rolled; 04

5 Ordering Content

5.1 Contracts or orders placed in accordance with this document shall include at least the following contents.

- a) Serial number of this document;
- b) Product name (steel sheet or strip);
- d) Specifications and dimensions, unevenness accuracy;
- f) Surface quality level;
- g) Surface texture;
- h) Packaging mode;