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

GB/T 13448-2019

Replacing GB/T 13448-2006

Test methods for prepainted steel sheet and strip

彩色涂层钢板及钢带试验方法

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1 Scope

GB/T 13448-2019 is the Chinese national standard on test methods for prepainted steel sheet and strip, 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 25 March 2019 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 February 2020. Classification: ICS 77.060, CCS H25. 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 Standard specifies terms and definitions of prepainted steel sheets and steel strips, as well as related test methods, test reports, etc. This Standard is applicable to the determination and evaluation of the coating properties of prepainted steel sheets and strips (hereinafter referred to as prepainted sheets).

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 1410 Methods of test for volume resistivity and surface resistivity of solid electrical insulating materials

GB/T 1766 Paints and varnishes - Rating schemes of degradation of coats

GB/T 1839 Test method for gravimetric determination of the mass per unit area of galvanized coatings on steel products

GB/T 10125 Corrosion tests in artificial atmospheres - Salt spray tests

GB/T 12754 Prepainted steel sheet

GB/T 30693 Measurement of water-contact angle of plastic films

3 Terms and definitions

For the purpose of this document, the terms and definitions defined in GB/T 12754 and the following apply.

3.1 specular gloss Relative luminous reflectance factor of the sample in the direction of specular reflection.

3.2 relative luminous reflectance factor Under the same geometric conditions, the ratio of the luminous flux value reflected by the sample to the luminous flux value reflected by the standard surface.

3.3 tristimulus values In a three-color system, the amount of three original stimuli required

to achieve color matching with the light to be measured.

3.4 chromaticity coordinate Ratio of any tristimulus value to the sum of the tristimulus values.

3.5 T-bend Carry out the 180° reverse bending test with the radius of curvature of n ($n = 0, 1, 2, \dots$) times the tested sample's thickness in turn. The minimum n value at which the coating does not peel off or crack is the T-bend value.

4.1 General

4.1.1 This method is applicable to the determination of the coating thickness of prepainted sheets.

4.1.2 The following methods can be used to determine the coating thickness of prepainted sheets.

4.2 Principle

4.2.1 Magnetic thickness gauge method Using the principle of electromagnetic field magnetoresistance, the coating thickness is measured by the amount of magnetic flux flowing into the prepainted steel substrate.

4.2.2 Micrometer method The coating thickness is determined by measuring the difference in thickness of the prepainted sheet before and after removal of coating.

4.4 Sample preparation and test environment

4.4.1 The sample size is not less than 75 mm x 150 mm. The surface of the sample shall be flat, no oil, no damage, and no burrs on the edges.

4.4.2 The test is carried out in a laboratory environment. In case of dispute, the sample to be tested shall be placed in an environment with a temperature of $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and a relative humidity of $50\% \pm 5\%$ for at least 24 h before test.

4.5.2 Micrometer method

4.5.2.1 SELECT 3 different parts in the area not less than 10 mm from the edge of the sample to mark. USE a micrometer to measure the thickness of the marks and record. Be careful not to make the coating have visible deformations during operation, otherwise it will affect the measurement results.

4.6 Expression of results

4.6.1 Magnetic thickness gauge method The arithmetic mean of the coating thicknesses of the 5 different measurement positions is the coating thickness of the sample, expressed in micrometers (μm).