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

GB/T 13893.1-2026

Replacing GB/T 13893-2008

**Paints and varnishes - Determination of resistance to humidity -
Part 1: Condensation (single-sided exposure)**

色漆和清漆 耐湿性的测定 第1部分：冷凝（单侧曝露）

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1 of GB/T 13893, "Determination of moisture resistance of paints and varnishes". GB/T 13893 has been published with the following...

part.

---Part 1: Condensation (One-sided exposure);

---Part 2: Condensation (exposure in a test chamber with a heated water bath).

Compared to 2008, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added terms and definitions (see Chapter 3);
- b) Increased limitations (see Chapter 4);
- c) Information that needed to be added has been deleted (see Chapter 4 of the 2008 edition);
- d) The instrumentation was modified (see Chapter 6, Chapter 5 of the 2008 edition);
- e) Sampling was removed (see Chapter 6 of the 2008 edition);
- f) The test board was modified (see Chapter 7, Chapter 7 of the 2008 edition);
- g) The precision has been changed (see Chapter 10, Chapter 10 of the 2008 edition);

h) The test report was amended (see Chapter 11, Chapter 11 of the 2008 edition).

This document is equivalent to ISO 6270-1:2017 "Determination of moisture resistance of paints and varnishes - Part 1: Condensation (one-sided exposure)".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Coatings and Pigments (SAC/TC5).

Introduction

This document specifies the test conditions and procedures used for the pretreatment of pre-prepared test panels, which are used to evaluate the performance of the test panels exposed to constant temperature and humidity.

Defects may occur in humid environments such as condensation environments or alternating condensation environments.

This experiment aims to clarify the performance characteristics of the test panels in a humid environment and to accurately identify defects in the corrosion protection system of the test panels.

Data from coating tests conducted in such environments may not necessarily be valuable for predicting service life.

After the conditions have been met, in accordance with agreed documents such as the relevant parts of ISO 4628, or according to procedures agreed upon by the relevant parties, the conditions shall be determined accordingly.

The test panel was evaluated.

GB/T 13893, "Determination of moisture resistance of paints and varnishes", provides test methods for determining the moisture resistance of coatings in specific environments.

The law is proposed to consist of three parts.

---Part 1: Condensation (Single-sided Exposure). The purpose is to standardize the procedures to be followed when testing coatings exposed to constant condensation conditions.

General conditions and procedures should guide the selection and implementation of relevant exposure test methods.

---Part 2: Condensation (Exposure in a test chamber with a heated water bath). The purpose is to standardize the coating exposure to condensate-static gas.

General conditions and procedures to be followed when conducting tests under climatic conditions or condensation-alternating climate conditions, providing guidance for relevant exposure test methods.

The selection and implementation of laws.

---Part 3: Condensation (Exposure in a test chamber with heating and a bubbling water bath). The purpose is to standardize the exposure of the coating to a heated, bubbling water bath.

General conditions and procedures to be followed when conducting tests in hot and bubbling water bath test chambers, and guidance for the selection of relevant exposure test methods.

and implementation.

Determination of the moisture resistance of paints and varnishes

1 Scope

This document describes how to determine the resistance of coatings, coating systems, and related products to condensation environments according to coating or product specifications.

method.

This test method is applicable to coating substrates including porous substrates such as wood, gypsum, and wallpaper, as well as non-porous substrates such as metal.

Used to evaluate the expected performance of coatings under harsh conditions where continuous condensation occurs on the surface.

This test method can reveal phenomena of coating damage (including blistering, contamination, softening, wrinkling, and embrittlement) and substrate damage.

Note: This does not include the shape and preparation of the test plates, the testing time, or the evaluation of the results.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

Note: GB/T 9278-2008 Temperature and humidity for conditioning and testing of coating specimens

(ISO 3270:1984, IDT) ISO 4618 Paints and varnishes - Vocabulary Note. GB/T 5206-2015 Paints and varnishes - Terms and definitions (ISO 4618:2014, IDT)

3 Terms and Definitions

The terms and definitions defined in ISO 4618 apply to this document.

4 Limitations

Temperature and humidity are important parameters affecting test results. Deviations from specified requirements may lead to incomparable results. However, with the consent of relevant parties...

It is agreed that other parameters may be used, and this should be stated in the report.

The painted test panels were exposed to a continuous condensation environment and then evaluated according to pre-agreed standards. These evaluation standards typically have a primary...

Observational nature.

6.1 Instrument Structure

6.1.1

The instrument shall be made of chemically inert material and include an electrically heated water bath. In the instrument's construction, its cover plate shall be made of a blank plate (see...).