



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

GB/T 13893.2-2019

**Paints and varnishes -- Determination of resistance to humidity
-- Part 2: Condensation (in-cabinet exposure with heated water
reservoir)**

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Foreword

GB/T 13893 "Determination of moisture resistance of paints and varnishes" is divided into the following sections.

--- Part 1. Condensation (one-sided exposure);

--- Part 2. Condensation (exposure in a test chamber with a heated water tank);

--- Part 3. Condensation (exposure in a test chamber with a heated, bubbling tank).

This part is the second part of GB/T 13893.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the translation method equivalent to ISO 6270-2:2017 "Determination of moisture resistance of paints and varnishes - Part 2. Condensation (in Exposure inside the test chamber with a heated sink).

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

---GB/T 9278-2008 Temperature and humidity of paint sample conditioning and testing (ISO 3270. 1984, IDT);

---GB/T 5206-2015 Terms and definitions for paints and varnishes (ISO 4618:2014, IDT).

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

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

This section drafted by. Changzhou Guanghui Chemical Co., Ltd., Guangzhou Synthetic Materials Research Institute Co., Ltd., Shanghai Coatings Research Institute Limited

Company, Zhejiang Yutong New Materials Co., Ltd., AVIC Baimu New Material Technology Engineering Co., Ltd., CNOOC Changzhou Coating Chemical Research

Research Institute Co., Ltd., CZ Tangshan Locomotive & Rolling Stock Co., Ltd., Dongguan Enfeng Building Materials Technology Co., Ltd., Shenzhen Guangtian Environmental Protection Coating Co., Ltd.

Company, Bingda Precision Instrument (Guangzhou) Co., Ltd., Hebei Chenyang Industry and Trade Group Co., Ltd., Zhonghua Paint (Shenzhen) Co., Ltd., USA

Pannuo Experimental Equipment Co., Ltd. Shanghai Representative Office, Baden Fu Industrial Co., Ltd., Shunde District, Foshan City, Shanghai Pushen Chemical Machinery Co., Ltd., Zhejiang

Mingquan Industrial Coating Co., Ltd., Zhejiang Fei Whale New Material Technology Co., Ltd., Zhuzhou Jiuhua New Material Coating Industry Co., Ltd., East

Lai Coating Technology (Shanghai) Co., Ltd., Shaanxi Baotashan Paint Co., Ltd.

1 Scope

This part of GB/T 13893 specifies the application of coated coatings in a constant condensate environment or in alternating condensate environments.

General conditions and procedures for the sample to ensure that test results between different laboratories can be reproduced.

Note. The shape and preparation of the sample, the test time and the evaluation of the results are not included.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 3270 paint and varnish and its raw material condition adjustment and test temperature and humidity (Paintsandvarnishesandtheirraw

materials-Temperaturesandhumiditiesforconditioningandtesting)

ISO 4618 Paint and varnish terms and definitions

(Paintsandvarnishes-Termsanddefinitions)

3 Terms and definitions

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

The ISO and IEC maintain a terminology database for standardization, which can be found at the following address.

4 logo

The condensate test environment has the following identifications.

Test environment.

---CH Condensation environment under constant humidity;

---AHT condensation environment when air temperature and humidity alternately change;

--- Condensation environment when AT air temperature changes alternately.

5 Limitations

Temperature and humidity are important parameters that affect the test results. Deviation from regulatory requirements may result in incomparable results. However, related

It was agreed that other parameters could be used and should be stated in the report.

6 Principle

Expose the coated sample to the condensing environment in the test chamber and then evaluate it according to the standards agreed by the relevant parties. These evaluation standards usually carry

Subjective.

7 test environment

Due to the radiation effect of the tank wall or the cooling effect of the sample, the condensed water test environment will cause the moisture in the air to condense on the surface of the sample.

Therefore, the temperature of the sample is lower than the temperature of the high humidity air in the environmental chamber.

This section specifies that the air temperature in the environmental chamber is $(40 \pm 3) ^\circ\text{C}$ during the condensation process.

The condensate test environment can be a constant humidity condensing environment (CH) or an alternating condensing environment (AHT, AT).

If the change in ambient temperature and humidity has an important effect on the sample, in addition to the influence of condensed water on the sample, alternate condensing should be selected.

surroundings.

The amount of condensed water formed on the surface of the coating may significantly affect the effect of water on the coating. The amount of condensed water is affected by the temperature or sample of the equipment installation environment.

The effect of cooling.

The condensed droplets flowing down from the sample may, in addition to the condensed water, sometimes contain solids and liquids in which the coating is dissolved or mixed in the condensed water.

Body composition.

Reproducible results can only be expected if the test procedure and test conditions remain the same during a series of tests.

If alternating environmental conditions are used, the usual cycle time is 24h. AT test can also use a shorter cycle week

Period (12h or 16h), two of which are shortened accordingly.