



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

GB/T 37362.1-2019

**Paints and varnishes -- Drying tests -- Part 1: Determination of
through-dry state and through-dry time**

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Foreword

GB/T 37362 "Paints and varnishes - Drying tests" consists of 6 parts:

- Part 1: Determination of through-dry state and through-dry time;
- Part 2: Resistance to chip test;
- Part 3: Paint surface drying test - Small glass ball method;
- Part 4: Determination method using recorder;
- Part 5: Improved Bando-Wolf test method;
- Part 6: No print test.

This Part is Part 1 of GB/T 37362.

This Part was drafted in accordance with the rules given in GB/T 1.1-2009.

This Part uses redrafting method to modify and adopt ISO 9117-1:2009 "Paints and varnishes -- Drying tests -- Part 1: Determination of through-dry state and through-dry time".

Compared with ISO 9117-1:2009, there are technical differences in this Part.

The terms involved in these differences have been marked by a vertical single line () at the margin of the outer margin. A list of the corresponding technical

differences and their causes is given in Annex A.

This Part made the following editorial modifications:

- added informative Annex A.

This Part was proposed by China Petroleum and Chemical Industry Federation.

This Part shall be under the jurisdiction of National Technical Committee on Paints and Pigments of Standardization Administration of China (SAC/TC 5).

The drafting organizations of this Part: Jiangsu Lanling Polymer Material Co., Ltd., Changzhou Guanghui New Materials Research Institute Co., Ltd., Anhui Linghu Paint Co., Ltd., CNOOC Changzhou Coating Chemical Research Institute Co., Ltd., AVIC Baimu New Material Technology Engineering Co., Ltd., Dongguan Enfeng Building Materials Technology Co., Ltd., Zhongche Tangshan Locomotive & Rolling Co., Ltd., Standard Geda Precision Instrument (Guangzhou) Co., Ltd., Yellow River Delta Jingbo Chemical Research Institute Co., Ltd., Shenzhen Guangtian Environmental Protection Coating Co., Ltd., Hebei Chenyang Industry and Trade Group Co., Ltd., Zhonghua Paint (Xinfeng) Co., Ltd., Foshan Shunde Badfu Industrial Co., Ltd., Chongqing Three Gorges

Paints and varnishes - Drying tests - Part 1:

Determination of through-dry state

and through-dry time

1 Scope

This Part of GB/T 37362 specifies the test methods for determining whether single coating, composite coating system of paints, varnishes or related products reach the through-dry state and through-dry time required after the specified drying time under standard conditions.

This Part is applicable to the determinations of through-dry state and through-dry time required for single coating, composite coating system of paints, varnishes or related 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 3186, Paints varnishes and raw materials for paints and varnishes - Sampling (GB/T 3186-2006, ISO 15528:2000, IDT)

GB/T 6031, Rubber, vulcanized or thermoplastic - Determination of hardness (hardness between 10 IRHD and 100 IRHD) (GB/T 6031-2017, ISO 48:2010, IDT)

GB/T 9271, Paints and varnishes standard panels for testing (GB/T 9271-2008, ISO 1514:2004, MOD)

GB/T 9278, Temperatures and humidities for conditioning and testing of paint specimens (GB/T 9278-2008, ISO 3270:1984, IDT)

GB/T 13452.2, Paints and varnishes - Determination of film thickness (GB/T 13452.2-2008, ISO 2808:2007, IDT)

GB/T 20777, Paints and varnishes - Examination and preparation of samples for testing (GB/T 20777-2006, ISO 1513:1992, IDT)

6 - rubber disc.

Figure 2 -- Detailed diagram of the assembly of the column head

5.2 Rubber disc: diameter is (22 +/- 1) mm, thickness is (5 +/- 0.5) mm and hardness is (50 +/- 5) IRHD scale (see GB/T 6031).

NOTE: It is recommended to use the rubber disc specified in GB/T 9273.

5.3 Wire mesh: it is woven from monofilament polyamide; the smallest size is 100mm x 100mm. the diameter of the monofilament is (0.12+/-0.01) mm and the pore diameter is about 0.2 mm.

6 Sampling

According to the provisions of GB/T 3186, take a representative sample of the test product (or each product in a multi-coat system).

According to the provisions of GB/T 20777, check and prepare the test sample.

7.1 Substrate

Select 3 test panels of the type specified in GB/T 9271 as the substrate (6 pieces are required if the through-dry state and the through-dry time are simultaneously measured). And make sure that the selected substrate is as consistent as possible with the actual application.

7.2 Processing and painting

Process the substrate according to the provisions of GB/T 9271. Apply the sample or system to be tested in the prescribed manner to obtain the specified dry film thickness.

The coating method and dry film thickness shall be specified by the product manufacturer or agreed by the relevant parties and noted in the test report [see Some coatings, even if they have reached a functionally acceptable dry or cured state, are not completely unaffected by the test (e.g., the wire mesh is imprinted on the surface of the coating). In this case, it shall take the required drying time that the test operation does not cause the coating to be damaged so that the coating does not perform its final functional state.

For some coatings, such as those used to protect the substrate, not for aesthetic reasons, the impression of the surface does not cause the functional failure of the coating. For dark coatings, the rotation of the wire mesh shall cause the surface to be polished, leaving traces that may not compromise the final function of the coating. In this case, all observed phenomena shall be recorded in the test report.

Avoid confusing two forms of destruction. Cohesive failure in the coating is a