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GB/T 9286-2021 / ISO 2409:2020

Replacing GB/T 9286-1998

Paints and varnishes - Cross-cut test

色漆和清漆 划格试验

(ISO 2409:2020, IDT)

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Standardization Administration of the PRC.

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Foreword

This document is drafted in accordance with GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document replaces GB/T 9286-1998 "Paints and varnishes - Cross cut test for films". Compared with GB/T 9286-1998, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- Replace "steel" with "metal" and "plastic" with "plaster" (see Clause 1; 1.3 of the 1998 edition);
- Change the "Normative references" (see Clause 2; Clause 2 of the 1998 edition);
- Delete "Information to be supplemented" (see Clause 3 of the 1998 edition);
- Add "Terms and definitions" (see Clause 3);
- Add "Principle" (see Clause 4);
- Add "General" (see 5.1);
- Add "General requirements" for cutting tool (see 5.2.1); change the requirements for "Single-blade cutting tools" (see 5.2.2; 4.1 of the 1998 edition), the requirements for "Multi-blade cutting tools" (see 5.2.3; 4.1 of the 1998 edition), and the requirements for "Guiding and spacing edges" (see 5.3; 4.2 of the 1998 edition);
- Delete "soft brush" (see 4.3 of the 1998 edition) and "transparent pressure-sensitive adhesive tape" (see 4.4 of the 1998 edition);
- Change "Examples of single-blade cutting tools" (see Figure 1; Figure 1 of the 1998 edition), "Examples of multi-blade cutting tools" (see Figure 2; Figure 1 of the 1998 edition), and "Examples of guiding and spacing edges" (see Figure 4; Figure 2 of the 1998 edition); add "Motor-driven apparatus" (see Figure 3);
- Change "Sampling" (see Clause 6; Clause 5 of the 1998 edition);
- Delete "Treatment and painting of test panels" (see 6.2 of the 1998 edition) and "Drying of samples" (see 6.3 of the 1998 edition);
- Add examples of hard substrates and soft substrates (see 8.1.4) and the requirements for the number of routine tests (see 8.1.5); change the requirements of "Cutting the coating using the manual procedure" (see 8.2;

7.2 of the 1998 edition); change the requirements of "Cutting the coating using a motor-driven tool" (see 8.3; 7.3 of the 1998 edition);

- Change the graphical description for classification of test results (see Table 1; Table 1 of the 1998 edition);

- Add "Designation of the test result" (see Clause 10);

- Add "Precision" (see Clause 11);

- Change the content of "Test report" (see Clause 12; Clause 9 of the 1998 edition);

- Change the informative annex (see Annex A; Annex A of the 1998 edition).

This document, using translation method, is identical to ISO 2409:2020 "Paints and varnishes - Cross-cut test".

China's documents which have a consistent correspondence with the international documents normatively referenced in this document are as follows:

GB/T 3186-2006 Paints, varnishes and raw materials for paints and varnishes - Sampling (ISO 15528:2000, IDT);

GB/T 5206-2015 Paints and varnishes - Terms and definitions (ISO 4618:2014, IDT);

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

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

GB/T 37356-2019 Paints and varnishes - Lighting and procedure for visual assessments of coatings (ISO 13076:2012, IDT).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The issuing authority of this document shall not be held responsible for identifying any or all such patent rights.

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

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

Drafting organizations of this document: CNOOC Changzhou Paint and Coatings Industry Research Institute Co., Ltd.; Biuged Laboratory Instruments

Paints and varnishes - Cross-cut test

1 Scope

This document specifies a test method for assessing the resistance of paint coatings and varnishes (including wood stains) to separation from substrates when a right-angle lattice pattern is cut into the coating, penetrating through to the substrate. The property determined by this empirical test procedure depends, among other factors, on the adhesion of the coating to either the preceding coat or the substrate. This procedure is not, however, a means of measuring adhesion.

Note 1: Where a measurement of adhesion is required, see the method described in ISO 4624.

Note 2: Although the test is primarily intended for use in the laboratory, the test is also suitable for field testing.

The method described can be used either as a pass/fail test or, where circumstances are appropriate, as a six-step classification test. When applied to a multi-coat system, assessment of the resistance to separation of individual layers of the coating from each other can be made.

The test can be carried out on finished objects and/or on specially prepared test specimens.

Although the method is applicable to paint on hard (e.g. metal) and soft (e.g. wood and plaster) substrates, these different substrates need a different test procedure (see Clause 8).

The method is not suitable for coatings of total thickness greater than 250 µm or for textured coatings.

Note: The method, when applied to coatings designed to give a rough patterned surface, will give results which will show too much variation (see also ISO 16276-2).

2 Normative references

The contents of the following documents, through normative references in this text, constitute indispensable provisions of this document. Among them, for dated references, only the edition corresponding to that date applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

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