
Paints and varnishes — Cross-cut test

Peintures et vernis — Essai de quadrillage



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Published in Switzerland

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Apparatus	2
3.1 General.....	2
3.2 Cutting tool.....	2
3.3 Guiding and spacing edges.....	5
3.4 Viewing lens.....	5
4 Sampling	7
5 Test panels	7
5.1 Substrate.....	7
5.2 Preparation and coating.....	7
5.3 Drying.....	7
5.4 Thickness of coating.....	7
6 Procedure	7
6.1 General.....	7
6.2 Cutting the coating using the manual procedure.....	8
6.3 Cutting the coating using a motor-driven tool.....	9
7 Evaluation and expression of results	9
8 Designation of the test result	9
9 Precision	10
9.1 Repeatability limit, r	10
9.2 Reproducibility limit, R	10
10 Test report	10
Annex A (informative) Examples of suitable procedures for removing loose paint	12
Bibliography	14

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 2409 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

This fourth edition cancels and replaces the third edition (ISO 2409:2007), which has been technically revised. The main changes are as follows:

- a) the description of suitable methods for removal of loose paint have been transferred to an informative annex as examples and, for the method using adhesive tape, the adhesive strength of the tape is no longer specified;
- b) the single-blade cutting tool originally used in the first edition (1972) of this International Standard has been re-introduced;
- c) a cutting tool used with automatic cross-cut apparatus has also been specified;
- d) the pictorial standard for classification 2 has been replaced by one originally used in the first edition (1972) and the second edition (1992) of this International Standard;
- e) plastics have been added as an example of a hard substrate in [6.1.4](#);
- f) a designation code has been introduced to indicate the test result;
- g) the supplementary test conditions previously in [Clause 7](#) have been integrated in the test report;
- h) a note has been added to Subclause [3.2.1](#) that the apparatus (manual or motor-driven) and the type of cutting tool used have an influence on the test result.

Paints and varnishes — Cross-cut test

1 Scope

This International Standard specifies a test method for assessing the resistance of paint coatings 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 to be regarded, however, as a means of measuring adhesion.

Where a measurement of adhesion is required, the method described in ISO 4624[1] may be used.

NOTE 1 Although the test is primarily intended for use in the laboratory, the test is also suitable for field testing.

The method described may 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 6](#)).

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

NOTE 2 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]).

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.

ISO 1513, *Paints and varnishes — Examination and preparation of test samples*

ISO 1514, *Paints and varnishes — Standard panels for testing*

ISO 2808, *Paints and varnishes — Determination of film thickness*

ISO 13076, *Paints and varnishes — Lighting and procedure for visual assessments of coatings*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*