INTERNATIONAL STANDARD

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Third edition
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Paints and varnishes — Determination of resistance to liquids —

Part 1: Immersion in liquids other than water

Peintures et vernis — Détermination de la résistance aux liquides —
Partie 1: Immersion dans des liquides autres que l'eau

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 2812-1:2007), of which it constitutes a minor revision. The changes compared to the previous edition are as follows: the CAS numbers have been added to the reagents listed in Annex A and a terms and definitions clause has been added.

A list of all parts in the ISO 2812 series can be found on the ISO website.

Paints and varnishes — Determination of resistance to liquids —

Part 1: Immersion in liquids other than water

1 Scope

This document specifies general methods for determining the resistance of an individual-layer or multi-layer system of coating materials to the effects of liquids, other than water, or paste-like products (included implicitly in test liquids mentioned in the text).

These methods enable the testers to determine the effects of the test liquid on the coating and, if necessary, to assess the damage to the substrate.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3270, *Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 4618, *Paints and varnishes — Terms and definitions*

ISO 4628-1, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 1: General introduction and designation system*

ISO 4628-2, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 2: Assessment of degree of blistering*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Principle

A coated test panel is exposed to a test liquid by immersion in the test liquid. The effects of the exposures are assessed in accordance with agreed criteria.

5 Apparatus

The usual laboratory apparatus and, in particular, the following.

5.1 Vessel, made of inert material, capable of holding the test liquid and test panels.

5.2 Heating cabinet, with artificial ventilation, for carrying out the test at higher temperatures (up to 40 °C to within ± 3 °C).

WARNING — To protect against explosion or fire, products containing volatile flammable liquids should be handled with care.

6 Test liquids

One or more test liquids, as agreed between interested parties, shall be used. Examples of test liquids are given in Annex A.

7 Sampling

Take a representative sample of the coating material to be tested, in accordance with ISO 15528.

Pretest each sample in accordance with ISO 1513 and prepare it for further testing.

8 Test pieces

8.1 Shape and material

8.1.1 Panels

Unless otherwise agreed, use test panels conforming to the requirements of ISO 1514, with dimensions of approximately 150 mm × 100 mm and a thickness of 0,7 mm to 1,0 mm.

8.1.2 Rods

The rod shall be made of steel. One end of a rod shall be rounded, with a radius approximately equal to the radius of the rod.

NOTE 1 Rods with a length of 150 mm and a diameter of 15 mm are suitable.

NOTE 2 Rods are used to eliminate edge effects.

8.2 Preparation and coating

8.2.1 Test panels

Prepare each test panel as described in ISO 1514 and then coat it by the specified application method with the product or system under test. Dry (or stove) and age (if applicable) each coated test panel for the specified time under specified conditions.