
**Paints and varnishes — Determination
of scratch resistance —**

**Part 1:
Constant-loading method**

*Peintures et vernis — Détermination de la résistance à la rayure —
Partie 1: Méthode à charge constante*



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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.

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 of 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 www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 1518-1:2011), which has been technically revised. The main changes compared to the previous edition are as follows:

- [Clause 3](#), Terms and definitions, has been added;
- for the hard-metal tip, styli with tips of diameter 0,75 mm and 3,0 mm have been added;
- a description of the test panels has been added;
- scoring of the surface has been added to the evaluation;
- a requirement to examine the tip of the stylus for damage, contamination and smooth in appearance has been added;
- [Clauses 7](#) and [10](#) have been aligned to ISO 1518-2.

A list of all parts in the ISO 1518 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Paints and varnishes — Determination of scratch resistance —

Part 1: Constant-loading method

1 Scope

This document specifies a test method for determining under defined conditions the resistance of a single coating or a multi-coat system of paint, varnish or related product to penetration by scratching with a scratch stylus loaded with a specified load. Penetration of the stylus is to the substrate, except in the case of a multi-coat system, in which case the stylus can penetrate either to the substrate or to an intermediate coat.

The method specified can be carried out

- a) either as a “pass/fail” test, by testing with a single specified load applied to the stylus to assess conformity with a particular specification, or
- b) as an assessment test by applying increasing loads to the stylus to determine the minimum load at which the coating is penetrated.

NOTE Neither this document nor ISO 1518-2 specifies a method using a curved stylus, which is specified in ISO 12137. The choice between the three methods will depend on the particular practical problem.

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 4618, *Paints and varnishes — Terms and definitions*

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/>