

**Paints and varnishes - Determination of film hardness
by pencil test (ISO 15184:2012)**

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NATIONAL FOREWORD

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ICS 87.040

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English Version

Paints and varnishes - Determination of film hardness by pencil
test (ISO 15184:2012)

Peintures et vernis - Détermination de la dureté du feuillet par
l'essai de dureté crayon (ISO 15184:2012)

Beschichtungsstoffe - Bestimmung der Härte von
Beschichtungen durch Eindruckversuch mit Bleistiften (ISO
15184:2012)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN ISO 15184:2012) has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with Technical Committee CEN/TC 139 "Paints and varnishes" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

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Endorsement notice

The text of ISO 15184:2012 has been approved by CEN as a EN ISO 15184:2012 without any modification.

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Paints and varnishes — Determination of film hardness by pencil test

IMPORTANT — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

1 Scope

This International Standard specifies a method for determining the film hardness by pushing pencils of known hardness over the film.

The test can be performed on a single coating of a paint, varnish or related product, or on the upper layer of a multi-coat system.

This rapid test has not been found to be useful in comparing the pencil hardness of different coatings. It is more useful in providing relative ratings for a series of coated panels exhibiting significant differences in pencil hardness.

The method is applicable only to smooth surfaces.

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

pencil hardness

resistance of the surface of a paint film to marking, or the formation of some other defect, as a result of the action of a pencil, with a lead of specified dimensions, shape and hardness, which is pushed across the surface

4 Principle

A pencil lead with a defined geometry is pushed over the paint surface at an angle of 45°, exerting a force of 7,5 N on the surface. The hardness of the pencil lead is increased in steps until the surface of the coating is marked by visible defects. The test result is the highest hardness at which no marking occurs.