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**BS EN ISO 6272-1:2011**



BSI Standards Publication

# Paints and varnishes — Rapid-deformation (impact resistance) tests

Part 1: Falling-weight test, large-area indenter (ISO 6272-1:2011)

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This British Standard is the UK implementation of EN ISO 6272-1:2011. It supersedes BS EN ISO 6272-1:2004, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee STI/10, Test methods for paints.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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## EUROPÄISCHE NORM

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English Version

Paints and varnishes - Rapid-deformation (impact resistance)  
tests - Part 1: Falling-weight test, large-area indenter (ISO 6272-  
1:2011)

Peintures et vernis - Essais de déformation rapide  
(résistance au choc) - Partie 1: Essai de chute d'une masse  
avec pénétrateur de surface importante (ISO 6272-1:2011)

Beschichtungsstoffe - Prüfung der Widerstandsfähigkeit bei  
schlagartiger Verformung (Schlagfestigkeit) - Teil 1:  
Prüfung durch fallendes Gewichtsstück, große Prüffläche  
(ISO 6272-1:2011)

This European Standard was approved by CEN on 22 July 2011.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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## Foreword

This document (EN ISO 6272-1:2011) 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of an identical text or by endorsement, at the latest by February 2012, and conflicting national standards shall be withdrawn at the latest by February 2012.

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

This document supersedes EN ISO 6272-1:2004.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

### Endorsement notice

The text of ISO 6272-1:2011 has been approved by CEN as a EN ISO 6272-1:2011 without any modification.

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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.

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 6272-1 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 6272-1:2002), which has been technically revised. The main technical changes are as follows:

- a) in the description of the guide tube (see 4.1.3) and in Figure 1, the play permitted between the guide tube and the falling weight has been changed;
- b) a "principle" clause has been added;
- c) the test is no longer carried out at a specified relative humidity; instead, the relative humidity is simply recorded but the test has to be completed within a specified length of time after conditioning the test panels;
- d) the supplementary test conditions (formerly Annex A) have been incorporated in the test report.

ISO 6272 consists of the following parts, under the general title *Paints and varnishes — Rapid-deformation (impact resistance) tests*:

- *Part 1: Falling-weight test, large-area indenter*
- *Part 2: Falling-weight test, small-area indenter*

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# Paints and varnishes — Rapid-deformation (impact resistance) tests —

## Part 1: Falling-weight test, large-area indenter

### 1 Scope

This part of ISO 6272 describes a method for evaluating the resistance of a dry film of paint, varnish or related product to cracking or peeling from a substrate when it is subjected to a deformation caused by a falling weight, with a 20-mm-diameter spherical indenter, dropped under standard conditions.

**NOTE** The terms “impact” and “impact resistance” are used in the title and text of this part of ISO 6272, but an important characteristic of the apparatus used is that it should produce rapid deformation rather than a true impact.

The method described can be applied

- either as a pass/fail test, the test being carried out from one drop height and with a specified mass, so as to test compliance with a particular specification;
- or as a classification test, to determine, by gradually increasing the drop height and/or the mass, the minimum mass and/or drop height for which the coating cracks or peels from its substrate.

### 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 3270, *Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing*

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

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

### 3 Principle

The coating under test is applied to suitable, thin (normally metal) panels. After the coating has cured, a standard weight is dropped on to each panel from a height that will cause deformation of the coating and the substrate. The test can be carried out with the coated side of the panel facing upwards (i.e. towards the falling