



**SLOVENSKI STANDARD**  
**SIST EN ISO 1519:1997**  
**01-december-1997**

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Paints and varnishes - Bend test (cylindrical mandrel) (ISO 1519:1973)

Lacke und Anstrichstoffe - Dornbiegeversuch (zylindrischer Dorn) (ISO 1519:1973)

Peintures et vernis - Essai de pliage sur mandrin cylindrique (ISO 1519:1973)

**Ta slovenski standard je istoveten z: EN ISO 1519:1995**

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**ICS:**

87.040

Barve in laki

Paints and varnishes

**SIST EN ISO 1519:1997**

**en**

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EUROPEAN STANDARD

EN ISO 1519

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1995

ICS 87.040

Descriptors: paints, varnishes, tests, bend tests

English version

**Paints and varnishes - Bend test (cylindrical  
mandrel) (ISO 1519:1973)**

Peintures et vernis - Essai de pliage sur  
mandrin cylindrique (ISO 1519:1973)

Lacke und Anstrichstoffe - Dornbiegeversuch  
(zylindrischer Dorn) (ISO 1519:1973)



-12- 1997

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Ref. No. EN ISO 1519:1995 E

## Foreword

This European Standard has been taken over by the Technical Committee CEN/TC 139 "Paints and varnishes" from the work of ISO/TC 35 "Paints and varnishes" of the International Organization for Standardization (ISO).

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of an identical text or by endorsement, at the latest by September 1995, and conflicting national standards shall be withdrawn at the latest by September 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

## Endorsement notice

The text of the International Standard ISO 1519:1973 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in annex ZA (normative)

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**Annex ZA (normative)****Normative references to international publications  
with their relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 1512	1991	Paints and varnishes - Sampling of products in liquid or paste form	EN 21512	1994
ISO 1513	1991	Paints and varnishes - Examination and preparation of samples for testing	EN ISO 1513	1994
ISO 1514	1984	Paints and varnishes - Standard panels for testing (Modified)	EN 605	1992

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**INTERNATIONAL STANDARD**



**1519**

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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**Paints and varnishes — Bend test (cylindrical mandrel)**

First edition — 1973-12-15

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UDC 667.61 : 620.177.3

Ref. No. ISO 1519-1973 (E)

Descriptors : paints, varnishes, tests, bend tests.

Price based on 5 pages

**FOREWORD**

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, International Standard ISO 1519 replaces ISO Recommendation R 1519-1970 drawn up by Technical Committee ISO/TC 35, *Paints and varnishes*.

SIST EN ISO 1519:1997

The Member Bodies of the following countries approved the Recommendation  
[http://www.iso.org/iso/catalogue\\_detail.asp?ref=3d1-784f-40c7-8406-a608817deab2/sist-en-iso-1519-1997](http://www.iso.org/iso/catalogue_detail.asp?ref=3d1-784f-40c7-8406-a608817deab2/sist-en-iso-1519-1997)

Australia	Iran	South Africa, Rep. of
Austria	Ireland	Spain
Denmark	Israel	Sweden
Egypt, Arab Rep. of	Italy	Switzerland
France	Netherlands	Turkey
Germany	Peru	United Kingdom
Greece	Poland	U.S.S.R.
India	Portugal	

No Member Body expressed disapproval of the Recommendation.



# Paints and varnishes – Bend test (cylindrical mandrel)

## 0 INTRODUCTION

This International Standard is one of a series dealing with the sampling and testing of paints, varnishes and related products. It should be read in conjunction with ISO 1512, ISO 1513, and ISO 1514.

This International Standard is one of three which specify empirical test procedures for assessing the resistance of coatings of paints, varnishes and related products to cracking and/or detachment from the substrate under different conditions of deformation. The other two of these documents are ISO 1520, *Paints and varnishes – Cupping test*, and ISO . . . .<sup>1)</sup> *Paints and varnishes – Rapid deformation test*.

The method of test specified requires to be completed, for any particular application, by the following supplementary information. This information should be derived from the national standard or other document for the product under test or, where appropriate, should be the subject of agreement between the interested parties.

- a) Nature, thickness and surface preparation of substrate.
- b) Apparatus to be used (i.e. Type 1 or Type 2).
- c) Method of application of test coating to substrate.
- d) Thickness, in micrometres, of the dry coating, including method of measurement, and whether it is a single coating or a multicoat system.
- e) Duration and conditions of drying of the coated panel before testing (or conditions of stoving and ageing, if applicable).
- f) Specified size of mandrel, if applicable, to be used in the test.
- g) Temperature at which the test is to be carried out.

## 1 SCOPE AND FIELD OF APPLICATION

1.1 This International Standard specifies an empirical test procedure for assessing the resistance of a coating of paint, varnish or related product to cracking and/or detachment

from a metal substrate when subjected to bending round a cylindrical mandrel under standard conditions.

1.2 For a multicoat system, each coat may be tested separately or the complete system may be tested.

1.3 The method specified may be carried out

*either* as a "go/no go" test, by carrying out the test with a single specified size of mandrel, to assess compliance with a particular requirement

*or* by repeating the procedure using successively smaller mandrels to determine the diameter of the first mandrel over which the coating cracks and/or becomes detached from the substrate.

1.4 Two types of apparatus are specified, Type 1 being appropriate for use on test panels of thickness up to 0,3 mm, and Type 2 for use on test panels of thickness up to 1,0 mm. Both types of apparatus have been found to give similar results with the same coating, but normally only one will be used for testing a given product.

## 2 REFERENCES

ISO 1512, *Paints and varnishes – Sampling*.

ISO 1513, *Paints and varnishes – Examination and preparation of samples for testing*.

ISO 1514, *Paints and varnishes – Standard panels for testing*.

ISO 2808, *Paints and varnishes – Determination of film thickness*.

## 3 APPARATUS

### 3.1 Bend test apparatus

#### 3.1.1 Material

In both types of apparatus specified below, the mandrels shall be made of a rigid and suitably corrosion-resistant material, for example stainless steel.

1) In preparation. (See ISO/TR 6272)