Paints and varnishes - Determination of electrical conductivity and resistance (ISO 15091:2012)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 15091:2012 sisaldab Euroopa standardi EN ISO 15091:2012 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 15091:2012 consists of the English text of the European standard EN ISO 15091:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.12.2012.	Date of Availability of the European standard is 01.12.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 87.040

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 15091

December 2012

ICS 87.040

English Version

Paints and varnishes - Determination of electrical conductivity and resistance (ISO 15091:2012)

Peintures et vernis - Détermination de la conductivité et de la résistance électriques (ISO 15091:2012)

Beschichtungsstoffe - Bestimmung der elektrischen Leitfähigkeit und des elektrischen Widerstandes (ISO 15091:2012)

This European Standard was approved by CEN on 17 November 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO 15091:2012: E

Foreword

This document (EN ISO 15091:2012) 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 June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

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.

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

Endorsement notice

The text of ISO 15091:2012 has been approved by CEN as a EN ISO 15091:2012 without any modification.

Contents

Page

Paints and varnishes — Determination of electrical conductivity and resistance

1 Scope

This International Standard specifies a method for determining the electrical conductivity and the electrical resistance of coating materials. The conductivity is usually measured for water-borne paints and varnishes, including electrodeposition coating materials, and the resistance is usually measured for solvent-borne paints and varnishes. If required, the resistivity of the coating material is calculated from either of these measurements. The method is applicable to products having a conductivity less than 5 µS/cm, corresponding to a resistivity greater than 200 kΩ·cm.

The conductivity of coating materials influences their processibility in the presence of an electric field. This is particularly important for electrodeposition paints and coating materials which are processed electrostatically.

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

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
electrical resistance
R
ratio of the potential difference along a conductor and the current through the conductor

NOTE Resistance is given by Ohm's law:

$$R = \frac{U}{I} \tag{1}$$

where

U is the potential difference;

I is the current.

The unit of electrical resistance is the ohm (Ω), given by:

$$1\ \text{ohm} = \frac{1\ \text{volt}}{1\ \text{ampere}}$$

The electrical resistance depends on the material of the conductor, its dimensions (length and cross-section) and its temperature.