Paints and varnishes - Guidelines for the determination of anticorrosive properties of organic coatings by accelerated cyclic electrochemical technique (ISO 17463:2014)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 17463:2014 sisaldab Euroopa standardi EN ISO 17463:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 17463:2014 consists of the English text of the European standard EN ISO 17463:2014.
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 06.08.2014.	Date of Availability of the European standard is 06.08.2014.
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.

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English Version

Paints and varnishes - Guidelines for the determination of anticorrosive properties of organic coatings by accelerated cyclic electrochemical technique (ISO 17463:2014)

Peintures et vernis - Lignes directrices pour la détermination des propriétés anticorrosives de revêtements organiques par une technique électrochimique cyclique accélérée (ISO 17463:2014)

Beschichtungsstoffe - Richtlinie zur Bestimmung der antikorrosiven Eigenschaften organischer Beschichtungen durch beschleunigte zyklische elektrochemische Verfahren (ISO 17463:2014)

This European Standard was approved by CEN on 11 July 2014.

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

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Foreword

This document (EN ISO 17463:2014) 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of an identical text or by endorsement, at the latest by February 2015, and conflicting national standards shall be withdrawn at the latest by February 2015.

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.

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Endorsement notice

The text of ISO 17463:2014 has been approved by CEN as EN ISO 17463:2014 without any modification.

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Introduction

This International Standard describes the determination of the anticorrosive properties of organic coatings by means of the accelerated cyclic electrochemical technique (ACET). The method is based on the so called AC/DC/AC procedure. This technique allows comparing the protective and anticorrosive properties of different coating systems on metal in short times and in a qualitative and quantitative way. ACET consists of the application of cycles of EIS (electrochemical impedance spectroscopy) measurements, cathodic polarizations and potential relaxation. Degradation of the coating system is accelerated by the cathodic polarization. EIS and potential relaxation monitor the change of the coating system induced by the cathodic polarization. The technique evaluates the permeability of the coating and properties which can be attributed to adhesion to the substrate.

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1 Scope

This International Standard gives guidelines on how to perform accelerated cyclic electrochemical technique (ACET) with organic protective coatings on metals.

This International Standard specifies:

— the instrumental assembly;

— the execution of an ACET test and the considerations relative to the samples and electrochemical cell, test parameters and procedure.

This International Standard also provides guidelines for the presentation of experimental results and other type of information obtained.

Some typical examples are shown in an informative annex.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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 16773-1, *Electrochemical impedance spectroscopy (EIS) on coated and uncoated metallic specimens — Part 1: Terms and definitions*

ISO 16773-2:—[1)], *Electrochemical impedance spectroscopy (EIS) on coated and uncoated metallic specimens — Part 2: Collection of data*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16773-1 and the following apply.

3.1
cathodic polarization
application of a potential U_{pol} more negative than the open-circuit potential U_{ocp} for a fixed period of polarization time t_{pol}

Note 1 to entry: This value is defined by the operator.

1) To be published. Revision of ISO 16773-2:2007.