SLOVENSKI STANDARD
SIST EN ISO 16773-4:2009

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Barve in laki - Elektrokemijska impedanļ na spektroskopija (EIS) vzorcev z visoko impedanco - 4. del: Primeri spektrov vzorcev, zaģļ itenih s polimeri (ISO 16773-4:2009)

Paints and varnishes - Electrochemical impedance spectroscopy (EIS) on high-impedance coated specimens - Part 4: Examples of spectra of polymer-coated specimens (ISO 16773-4:2009)

Beschichtungsstoffe - Elektrochemische Impedanzspektroskopie (EIS) von beschichteten Proben mit hoher Impedanz - Teil 4: Beispiele für Spektren von polymerbeschichteten Proben (ISO 16773-4:2009)

Peintures et vernis - Spectroscopie d'impédance électrochimique (SIE) sur des éprouvettes revêtues de haute impédance - Partie 4: Exemples de spectres d'éprouvettes revêtues de polymères (ISO 16773-4:2009)

Ta slovenski standard je istoveten z: **EN ISO 16773-4:2009**

ICS:

87.040	Barve in laki	Paints and varnishes

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Contents

Page

Foreword

This document (EN ISO 16773-4:2009) 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of an identical text or by endorsement, at the latest by November 2009, and conflicting national standards shall be withdrawn at the latest by November 2009.

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INTERNATIONAL STANDARD

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Paints and varnishes — Electrochemical impedance spectroscopy (EIS) on high-impedance coated specimens —

Part 4: Examples of spectra of polymer-coated specimens

Peintures et vernis — Spectroscopie d'impédance électrochimique (SIE) sur des éprouvettes revêtues de haute impédance —

Partie 4: Exemples de spectres d'éprouvettes revêtues de polymères

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Contents

Page

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.

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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.

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ISO 16773-4 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

ISO 16773 consists of the following parts, under the general title *Paints and varnishes — Electrochemical impedance spectroscopy (EIS) on high-impedance coated specimens*:

— *Part 1: Terms and definitions*

— *Part 2: Collection of data*

— *Part 3: Processing and analysis of data from dummy cells*

— *Part 4: Examples of spectra of polymer-coated specimens*

Paints and varnishes — Electrochemical impedance spectroscopy (EIS) on high-impedance coated specimens —

Part 4: Examples of spectra of polymer-coated specimens

1 Scope

This part of ISO 16773 gives some typical examples of impedance spectra of high-impedance coated metal samples. Some guidance on interpretation of such spectra is also given.

2 Theoretical background

2.1 Basic considerations

A basic introduction to electrochemical impedance spectroscopy, especially in connection with corrosion, is given in ASTM G 106.

It is not intended to limit the interpretation of EIS measurements to the models given below. Other interpretations may be valid. The choice of the proper model requires other experimental and theoretical considerations to be taken into account.

2.2 Examples of models

2.2.1 Purely capacitive coating

A metal covered with an undamaged coating generally has a very high impedance. The equivalent circuit for such a situation is shown in Figure 1.

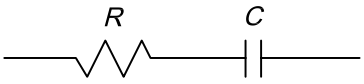

Figure 1 — Equivalent circuit for a purely capacitive coating

The model includes a resistor representing the resistance R of the solution and, connected in series with it, a capacitor representing the capacitance C of the coating.

In practice, the resistance of a perfect coating can often not be seen in the given frequency range. Any deviation from the graph given in the Bode plot in Figure 2 indicates either a modified model or the input limits of the impedance device (see Annex A of ISO 16773-2:2007).