SLOVENSKI STANDARD
SIST EN ISO 1463:1999

01-oktober-1999

Kovinske in oksidne prevleke - Merjenje debeline prevleke - Mikroskopska metoda (ISO 1463:1982)

Metallic and oxide coatings - Measurement of coating thickness - Microscopical method (ISO 1463:1982)

Metall- und Oxidschichten - Schichtdickenmessung - Mikroskopische Methode (ISO 1463:1982)

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Revetements métalliques et couches d'oxyde - Mesurage de l'épaisseur - Méthode par coupe micrographique (ISO 1463:1982)

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Ta slovenski standard je istoveten z: **EN ISO 1463:1994**

ICS:

17.040.20	Lastnosti površin	Properties of surfaces
25.220.20	Površinska obdelava	Surface treatment
25.220.40	Kovinske prevleke	Metallic coatings

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2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD **EN ISO 1463**

NORME EUROPÉENNE

EUROPÄISCHE NORM October 1994

ICS 25.220.30; 25.220.40

Descriptors: metal coatings, porcelain enamels, vitreous enamels, oxide coatings, dimensional measurements, thickness, metallography, microscopic analysis

English version

Metallic and oxide coatings - Measurement of coating thickness - Microscopical method (ISO 1463:1982)

iTeh STANDARD PREVIEW

Revêtements métalliques et couches d'oxyde - Mesurage de l'épaisseur - Méthode par coupe micrographique (ISO 1463:1982)

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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.

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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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Foreword

This European Standard was taken over by the Technical Committee CEN/TC 262 "Protection of metallic materials against corrosion" from the work of ISO/TC 107 "Metallic and other inorganic coatings" of the International Standards Organization (ISO).

CEN/TC 262 had decided to submit the final draft for Formal Vote. The result was positive.

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 April 1995, and conflicting national standards shall be withdrawn at the latest by April 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.

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Endorsement notice

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The text of the International Standard ISO 1463:1982 has been 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).

Publication	Year	Title	EN/HD	Year
ISO 2064		Metallic and other non-organic coatings - Definitions and conventions concerning the measurement of thickness	EN ISO 2064	

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International Standard 1463

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

Metallic and oxide coatings — Measurement of coating thickness — Microscopical method

Revêtements métalliques et couches d'oxyde — Mesurage de l'épaisseur — Méthode par coupe micrographique

Second edition — 1982-07-01

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UDC 621.793/.795 : 531.717 : 53.087.22 **Ref. No. ISO 1463-1982 (E)**

Descriptors : metal coatings, porcelain enamels, vitreous enamels, oxide coatings, dimensional measurement, thickness, metallography, microscopic analysis.

Price based on 5 pages

SIST EN ISO 1463:1999

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.

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International Standard ISO 1463 was developed by Technical Committee ISO/TC 107, *Metallic and other non-organic coatings*, and was circulated to the member bodies in November 1980.

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It has been approved by the member bodies of the following countries :

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Australia	Italy	Spain
Bulgaria	Japan	Sweden
Czechoslovakia	Netherlands	Switzerland
Egypt, Arab Rep. of	New Zealand	United Kingdom
France	Poland	USA
Germany, F. R.	Portugal	USSR
Hungary	Romania	Venezuela
India	South Africa, Rep. of	

No member body expressed disapproval of the document.

This second edition cancels and replaces the first edition (i.e. ISO 1463-1973).

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Printed in Switzerland

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Metallic and oxide coatings — Measurement of coating thickness — Microscopical method

1 Scope and field of application

This International Standard specifies a method for the measurement of the local thickness of metallic coatings, oxide layers, and porcelain or vitreous enamel coatings, by the microscopical examination of cross-sections using an optical microscope.

Under good conditions, when using an optical microscope, the method is capable of giving an absolute measuring accuracy of 0,8 µm; this will determine the suitability of the method for measuring the thickness of thin coatings.

2 Reference

ISO 2064, *Metallic and other non-organic coatings — Definitions and conventions concerning the measurement of thickness.*

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3 Definition

local thickness : The mean of the thickness measurements, of which a specified number is made within a reference area. (See ISO 2064.)

4 Principle

Cutting out a portion of the test specimen, mounting it, and preparing the mounted cross-section by suitable techniques of grinding, polishing, and etching. Measurement of the thickness of the coating cross-section by means of a calibrated scale.

NOTE — These techniques will be familiar to experienced metallographers, but some guidance is given in clause 5 and in annex A for less experienced operators.

5 Factors relating to the measuring accuracy

5.1 Surface roughness

If the coating or its substrate has a rough surface, one or both of the interfaces bounding the coating cross-section may be too irregular to permit accurate measurement. (See annex A, clause A.4.)

5.2 Taper of cross-section

If the plane of the cross-section is not perpendicular to the plane of the coating, the measured thickness will be greater than the true thickness. For example, an inclination of 10° to the perpendicular will contribute a 1,5 % error.

5.3 Deformation of coating

Detrimental deformation of the coating can be caused by excessive temperature or pressure during mounting and preparation of cross-sections of soft coatings or coatings melting at low temperatures, and also by excessive abrasion of brittle materials during preparation of cross-sections.

5.4 Rounding of edge of coating

If the edge of the coating cross-section is rounded, i.e. if the coating cross-section is not completely flat up to its edges, the true thickness cannot be observed microscopically. Edge rounding can be caused by improper mounting, grinding, polishing or etching. It is usually minimized by overplating the test specimen before mounting. (See annex A, clause A.1.)

5.5 Overplating

Overplating of the test specimen serves to protect the coating edges during preparation of cross-sections and thus to prevent an erroneous measurement. Removal of coating material during surface preparation for overplating can cause a low thickness measurement.

5.6 Etching

Optimum etching will produce a clearly defined and narrow dark line at the interface of two metals. Excessive etching produces a poorly defined or wide line which may result in an erroneous measurement.

5.7 Smearing

Improper polishing may leave one metal smeared over the other metal so as to obscure the true boundary between the two metals. The apparent boundary may be poorly defined or very irregular instead of straight and well defined. To verify the absence of smearing, the coating thickness should be measured and the polishing, etching, and thickness measurement repeated. A significant change in apparent thickness indicates that smearing was probably present during one of the measurements.