

**Metallic and other inorganic coatings -
Definitions and conventions concerning the
measurement of thickness**

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thickness

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 2064:2000 sisaldab Euroopa standardi EN ISO 2064:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 12.09.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 2064:2000 consists of the English text of the European standard EN ISO 2064:2000.</p> <p>This document is endorsed on 12.09.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This standard defines terms concerning the determination of the thickness of metallic or other inorganic coatings on any substrate.</p>	<p>Scope: This standard defines terms concerning the determination of the thickness of metallic or other inorganic coatings on any substrate.</p>
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ICS 25.220.40

Võtmesõnad: katted, metallkatted, mõõtmine, määratlused, paksus

English version

Metallic and other inorganic coatings

Definitions and conventions concerning the measurement of thickness
(ISO 2064 : 1996)

Revêtements métalliques et autres
revêtements inorganiques – Défini-
tions et principes concernant le
mesurage de l'épaisseur
(ISO 2064 : 1996)

Metallische und andere anorganische
Schichten – Definitionen und Fest-
legungen, die die Messung der
Schichtdicke betreffen
(ISO 2064 : 1996)

This European Standard was approved by CEN on 2000-01-24.

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 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, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

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

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

Foreword

International Standard

ISO 2064 : 1996 Metallic and other inorganic coatings – Definitions and conventions concerning the measurement of thickness,

which was prepared by ISO/TC 107 'Metallic and other inorganic coatings' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 262 'Metallic and other inorganic coatings', the Secretariat of which is held by BSI, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by September 2000 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 2064 : 1996 was approved by CEN as a European Standard without any modification.

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

Introduction

An important requirement of most coating specifications is that the coating have a thickness not less than a given value (and in a few cases not greater than a given value). The method to be used for measuring the thickness of a particular coating is laid down in the coating specification.

The main purpose of this International Standard is to define exactly what is meant by the term "minimum thickness" when used in specifications for metallic and related coatings. In this context, the minimum thickness is defined as a local thickness over a small area.

With some methods, for example the microscopical method, ISO 1463, it is possible to detect appreciable variations in thickness across extremely small areas (for example pits or cracks) which might be considered as places where the specified minimum thickness has not been achieved. However, with other test methods (for example the coulometric method, ISO 2177:1985, *Metallic coatings — Measurement of coating thickness — Coulometric method by anodic dissolution*, or various non-destructive methods), such minute local variations in thickness cannot be detected. Therefore, the only practicable definition of minimum thickness is one that allows comparable results to be obtained by any of the approved test methods. Hence the minimum thickness should be a local thickness over an area that is as small as practicable, but not too small to accommodate any of the specified test methods. These areas are termed "reference areas" and are often large enough to accommodate a number of separate measurements by the chosen method. In order to obtain consistent results, especially with non-destructive tests, the mean of the measurements of such tests on the reference area should be taken as the local thickness.

In practice, it is usually permissible to test the coating at any place on the significant surface in order to find the minimum thickness on an article. Articles are usually tested at areas where the coating may be expected to be thinnest and so the definition of minimum thickness is the lowest value of local thickness (as defined in clause 3) found by the chosen method.

In the case of some coatings, such as hot-dipped and sprayed metal coatings, the coating specifications may call for compliance with a minimum local or an average thickness, or both. These may differ from the parameters defined in this International Standard and the relevant product specifications should be consulted.

1 Scope

This International Standard defines terms concerning the measurement of the thickness of metallic and other inorganic coatings on any substrate. In addition, it specifies some general rules to be followed in the measurement of minimum thicknesses of coatings.

2 Normative references

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1463:1982, *Metallic and oxide coating — Measurement of coating thickness — Microscopical method.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 significant surface: The part of the article covered or to be covered by the coating and for which the coating is essential for serviceability and/or appearance and where the coating must meet all of the specified requirements.

3.2 measuring area: The area of the significant surface over which a single measurement is made.

"Measuring area" for the following methods is defined as

- a) for analytical methods, the area over which the coating is removed;
- b) for the anodic dissolution method, the area enclosed by the sealing ring of the cell;
- c) for the microscopical method, the field of view at a specified magnification (see ISO 1463);
- d) for non-destructive methods, the probe area or the area influencing the reading (see also the Introduction).

3.3 reference area: The area within which a specified number of single measurements is required to be made.

3.4 local thickness: The mean of the thickness measurements, of which a specified number is made within a reference area (see also the Introduction).

3.5 minimum local thickness: The lowest value of the local thicknesses found on the significant surface of a single article (see also the Introduction).

3.6 maximum local thickness: The highest value of the local thicknesses found on the significant surface of a single article.

3.7 average thickness: Either the value obtained by analytical methods (see 5.1) or the mean of a specified number of local thickness measurements that are evenly distributed over the significant surface (see 5.2 and also the Introduction).

NOTE — In the case of components coated in bulk, the product specification may require determination of the value of the average thickness of a bath. In such cases the standard deviation must be known to be able to estimate the proportion of the batch that is below the thickness in question.