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Metallic coatings — Measurement of coating thickness — Profilometric method

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

**Metallic coatings - Measurement of coating thickness -
Profilometric method (ISO 4518:2021)**

Revêtements métalliques - Mesurage de l'épaisseur de
revêtement - Méthode profilométrique (ISO
4518:2021)

Metallische Überzüge - Messen der Schichtdicke -
Profilometrisches Verfahren (ISO 4518:2021)

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EN ISO 4518:2021 (E)

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 4518:2021) has been prepared by Technical Committee ISO/TC 107 "Metallic and other inorganic coatings" in collaboration with Technical Committee CEN/TC 262 "Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys" the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by October 2021, and conflicting national standards shall be withdrawn at the latest by October 2021.

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INTERNATIONAL STANDARD

ISO 4518

Second edition
2021-04

Metallic coatings — Measurement of coating thickness — Profilometric method

*Revêtements métalliques — Mesurage de l'épaisseur de revêtement —
Méthode profilométrique*



Reference number
ISO 4518:2021(E)

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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Instrumentation — Operational parameters and measurement characteristics	1
5.1 Types of profile recording instruments.....	1
5.2 Stylus instruments.....	2
5.3 Inductive measuring probes or displacement sensors.....	2
5.4 Optical profilometers.....	3
6 Factors relating to accuracy	4
6.1 Profile record.....	4
6.2 Vertical magnification (only for instruments with chart recorders).....	4
6.3 Graphical measurements.....	4
6.4 Applied force (only for profilometers with stylus).....	4
6.5 Stylus diameter and surface roughness.....	4
6.6 Surface roughness.....	4
6.7 Vibrations.....	5
6.8 Surface curvature.....	5
6.9 Cleanliness.....	5
6.10 Temperature.....	5
6.11 Step configuration.....	5
6.12 Datum reference (only for profilometers with stylus).....	5
6.13 Calibration.....	5
7 Calibration	5
8 Measuring procedure	6
8.1 Preparation of step.....	6
8.2 Recording of profiles.....	7
8.3 Measurement of thickness.....	7
8.4 Measurement accuracy.....	7
9 Test report	7
Bibliography	8

ISO 4518:2021(E)

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 262, *Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 4518:1980), which has been technically revised. The main changes compared with the previous edition are as follows:

- optical profilometers such as confocal microscopes or interference microscopes have been added as alternatives to stylus instruments for the measurement of the step height;
- a description of more modern stylus profilometers has been added.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Metallic coatings — Measurement of coating thickness — Profilometric method

1 Scope

This document specifies a method for the measurement of metal coating thickness by first forming a step between the surface of the coating and the surface of its substrate and then measuring the step height using a profile recording instrument. It covers the instrumentation characteristics and the procedure appropriate to this specific application of profilometric methods.

The method is applicable to the measurement of thicknesses of metal coatings from 0,01 μm to 1 000 μm on flat surfaces and, if appropriate precautions are taken, on cylindrical surfaces. It is highly suitable for the measurement of minute thicknesses but, for thicknesses of less than 0,01 μm , surface flatness and surface smoothness are very critical and, accordingly, the method is not suitable for use down to the lowest level of measurement usual for electronic stylus instruments. The method is suitable for measuring coating thicknesses when preparing coating thickness reference standards.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 2177, *Metallic coatings — Measurement of coating thickness — Coulometric method by anodic dissolution*

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