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Fifth edition
2019-07

**Paints and varnishes — Determination
of film thickness**

Peintures et vernis — Détermination de l'épaisseur du feuil



Reference number
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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 35, *Paints and varnishes*, SC 9, *General test methods for paints and varnishes*.

This fifth edition cancels and replaces the fourth edition (ISO 2808:2007), which has been technically revised. The main changes compared to the previous edition are as follows:

- the terms and definitions have been updated to ISO 4618 and ISO/IEC Guide 99;
- the principle has been revised;
- white-light interferometer has been added as method 6C;
- the terahertz method has been added as method 11;
- the existing methods have been adapted to the current state of metrology;
- the characterisation of the methods and procedures in [Annex A](#) have been revised;
- information in [Annex A](#) on the precision of the individual methods has been adapted to current standards;
- the references to test standards and constructions standards in [Annex A](#) have been updated;
- former Clause 7 on measurement of the film thickness on rough surfaces has been moved to [Annex B](#);
- [Annex C](#), on factors which influence measuring accuracy when measurements are performed on wood 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.

Introduction

This document consistently enumerates the individual coatings applied in a multi-layer system by referring to the first coating applied on the substrate as coating 1. Some other standards referring to individual test methods enumerate in reverse order.

Paints and varnishes — Determination of film thickness

1 Scope

This document describes methods for measuring the thickness of coatings applied to a substrate. Methods for determining wet-film thickness, dry-film thickness and the film thickness of uncured powder layers are described.

For each method described, this document provides an overview of the field of application, existing standards and the precision.

Information on measuring film thickness on rough surfaces is given in [Annex B](#).

Information on measuring film thickness on wooden substrates is given in [Annex C](#).

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 3611, *Geometrical product specifications (GPS) — Dimensional measuring equipment: Micrometers for external measurements — Design and metrological characteristics*

ISO 4618, *Paints and varnishes — Terms and definitions*

ISO 8503-1, *Preparation of steel substrates before application of paints and related products — Surface roughness characteristics of blast-cleaned steel substrates — Part 1: Specifications and definitions for ISO surface profile comparators for the assessment of abrasive blast-cleaned surfaces*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

3.1

film thickness

distance between the surface of the film and the surface of the substrate

3.2

wet-film thickness

thickness of a freshly applied wet coating material, measured immediately after application

3.3

dry-film thickness

thickness of a coating remaining on the surface when the coating has hardened

3.4

thickness of uncured powder layer

thickness of a freshly applied coating material in powder form, measured immediately after application and before stoving