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Paints and varnishes — Determination of film thickness

Peintures et vernis — Détermination de l'épaisseur du feuil

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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.

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.

ISO 2808 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

This fourth edition cancels and replaces the third edition (ISO 2808:1997), which has been technically revised. The main changes are as follows:

a) The structure of the standard has been changed into four main clauses:

   1) determination of wet-film thickness;

   2) determination of dry-film thickness;

   3) determination of the thickness of uncured powder layers; and

   4) measurement of film thickness on rough surfaces.

b) Methods using photothermal, radiological and acoustic techniques have been added.

c) The split-beam method has been deleted as such instruments are no longer manufactured.

Introduction

Measurement of film thickness depends on the following steps:

a) calibration of the measurement instrument, typically performed by the manufacturer or by any qualified laboratory;

b) verification of the instrument (an accuracy check performed by the user at regular intervals, typically before each series of measurements);

c) subsequent adjustment, if necessary, of the instrument so that the thickness readings it gives match those of a specimen of known thickness. For a dry-film thickness gauge this would mean zeroing it on the uncoated surface, using devices of known thickness such as shims, or using a coated specimen of known film thickness;

d) measurement.

Paints and varnishes — Determination of film thickness

1 Scope

This International Standard describes a number of methods that are applicable to the measurement of 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. Reference is made to individual standards where these exist. Otherwise the method is described in detail.

An overview on the methods is given in Annex A, in which the field of application, existing standards and the precision are specified for the individual methods.

This International Standard also defines terms concerning the determination of film thickness.

2 Normative references

The following referenced documents are indispensable for the application 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 463, *Geometrical Product Specifications (GPS) — Dimensional measuring equipment — Design and metrological characteristics of mechanical dial gauges*

ISO 3611, *Micrometer callipers for external measurement*

ISO 4618:2006, *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.

3.1
substrate
surface to which a coating material is applied or is to be applied

[ISO 4618:2006]

3.2
coating
continuous layer formed from a single or multiple application of a coating material to a substrate

[ISO 4618:2006]