



**SLOVENSKI STANDARD**  
**SIST EN ISO 3233-2:2019**

**01-november-2019**

**Nadomešča:**

**SIST EN ISO 3233-2:2014**

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**Barve in laki - Določevanje prostorninskega deleža nehlapnih snovi - 2. del:  
Metoda določevanja nehlapnih snovi v skladu z ISO 3251 in določevanje gostote  
suhe plasti filma na premazani preskusni plošči po Arhimedovem načelu (ISO 3233  
-2:2019)**

Paints and varnishes - Determination of the percentage volume of non-volatile matter -  
Part 2: Method using the determination of non-volatile-matter content in accordance with  
ISO 3251 and determination of dry film density on coated test panels by the Archimedes  
principle (ISO 3233-2:2019)

Beschichtungsstoffe - Bestimmung des Volumens nichtflüchtiger Anteile - Teil 2:  
Verfahren mit Bestimmung des Gehaltes an nichtflüchtigen Anteilen nach ISO 3251 und  
Bestimmung der Trockenfilmdichte beschichteter Probenplatten nach dem Archimedes-  
Prinzip (ISO 3233-2:2019)

Peintures et vernis - Détermination du pourcentage en volume de matière non volatile -  
Partie 2: Méthode utilisant la teneur en matière non volatile déterminée conformément à  
l'ISO 3251 et la masse volumique du feuil sec déterminée par le principe d'Archimède  
sur des panneaux d'essai revêtus (ISO 3233-2:2019)

**Ta slovenski standard je istoveten z: EN ISO 3233-2:2019**

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**ICS:**

87.040

Barve in laki

Paints and varnishes

**SIST EN ISO 3233-2:2019**

**en,fr,de**

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EUROPEAN STANDARD

EN ISO 3233-2

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**Paints and varnishes - Determination of the percentage volume of non-volatile matter - Part 2: Method using the determination of non-volatile-matter content in accordance with ISO 3251 and determination of dry film density on coated test panels by the Archimedes principle (ISO 3233-2:2019)**

Peintures et vernis - Détermination du pourcentage en volume de matière non volatile - Partie 2: Méthode utilisant la teneur en matière non volatile déterminée conformément à l'ISO 3251 et la masse volumique du feuil sec déterminée par le principe d'Archimède sur des panneaux d'essai revêtus (ISO 3233-2:2019)

Beschichtungsstoffe - Bestimmung des Volumens nichtflüchtiger Anteile - Teil 2: Verfahren mit Bestimmung des Gehaltes an nichtflüchtigen Anteilen nach ISO 3251 und Bestimmung der Trockenfilmdichte beschichteter Probenplatten nach dem Archimedes-Prinzip (ISO 3233-2:2019)

This European Standard was approved by CEN on 28 July 2019.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN ISO 3233-2:2019) has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with Technical Committee CEN/TC 139 "Paints and varnishes" the secretariat of which is held by DIN.

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 2020, and conflicting national standards shall be withdrawn at the latest by April 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 3233-2:2014.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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The text of ISO 3233-2:2019 has been approved by CEN as EN ISO 3233-2:2019 without any modification.

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**Paints and varnishes — Determination  
of the percentage volume of non-  
volatile matter —**

Part 2:

**Method using the determination  
of non-volatile-matter content  
in accordance with ISO 3251 and  
determination of dry film density on  
coated test panels by the Archimedes'****principle**

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*Peintures et vernis — Détermination du pourcentage en volume de  
matière non volatile —*

*Partie 2: Méthode utilisant la teneur en matière non volatile  
déterminée conformément à l'ISO 3251 et la masse volumique du  
feuil sec déterminée par le principe d'Archimède sur des panneaux  
d'essai revêtus*

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## ISO 3233-2:2019(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](http://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](http://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](http://www.iso.org/iso/foreword.html).

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

This second edition cancels and replaces the first edition (ISO 3233-2:2014), which has been technically revised. The main changes compared to the previous edition are as follows:

- the definitions and sources in [Clause 3](#) have been updated;
- a minimum mass of 25 mg of the coating on the plate has been added in [7.2.2](#), because measurements and simulation calculations demonstrate the need for a minimum mass for the coated panel.

A list of all parts in the ISO 3233 series can be found on the ISO website.

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](http://www.iso.org/members.html).

# Paints and varnishes — Determination of the percentage volume of non-volatile matter —

Part 2:

## Method using the determination of non-volatile-matter content in accordance with ISO 3251 and determination of dry film density on coated test panels by the Archimedes' principle

### 1 Scope

This document specifies a method for determining the non-volatile matter by volume ( $NV_V$ ) of coating materials by determining the practical dry-film density. This method determines the volume percentage of non-volatile matter in paints, varnishes and related products by measuring the density of a dry coating for any specified temperature range and period of drying or curing. The non-volatile matter content is determined in accordance with ISO 3251.

Using the non-volatile matter by volume results obtained in accordance with this document, it is possible to calculate the practical spreading rate of coating materials.

This method specifies an additional shape of plate to those described in ISO 3233-1 and is suitable for all products which can be applied by dipping.

This document is not applicable to coating materials which exceed the Critical Pigment Volume Concentration (CPVC).

[Annex A](#) gives an overview of the existing methods for the determination of non-volatile matter content and of non-volatile matter volume.

### 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 1513, *Paints and varnishes — Examination and preparation of test samples*

ISO 2808, *Paints and varnishes — Determination of film thickness*

ISO 2811 (all parts), *Paints and varnishes — Determination of density*

ISO 3251, *Paints, varnishes and plastics — Determination of non-volatile-matter content*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions 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>