

SLOVENSKI STANDARD SIST EN ISO 1133-2:2012

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Nadomešča:

SIST EN ISO 1133:2005

SIST EN ISO 1133:2005/AC:2006

Polimerni materiali - Ugotavljanje masnega (MFR) in prostorninskega pretoka taline (MVR) plastomerov - 2. del: Metoda za materiale, občutljive na predhodni potek čas-temperatura in/ali na vlago (ISO 1133-2:2011)

Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 2: Method for materials sensitive to time-temperature history and/or moisture (ISO 1133-2:2011)

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Kunststoffe - Bestimmung der Schmelze-Massefließrate (MFR) und der Schmelze-Volumenfließrate (MVR) von Thermoplasten - Teil 2: Verfahren für Materialien, die empfindlich gegen eine zeit- bzw temperaturabhängige Vorgeschichte und/oder Feuchte sind (ISO 1133-2:2011)

Plastiques - Détermination de l'indice de fluidité à chaud des thermoplastiques, en masse (MFR) et en volume (MVR) - Partie 2: Méthode pour les matériaux sensibles à l'historique temps-température et/ou à l'humidité (ISO 1133-2:2011)

Ta slovenski standard je istoveten z: EN ISO 1133-2:2011

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83.080.20 Plastomeri Thermoplastic materials

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English Version

Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 2: Method for materials sensitive to time-temperature history and/or moisture (ISO 1133-2:2011)

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Foreword

This document (EN ISO 1133-2:2011) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 "Plastics" the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by June 2012, and conflicting national standards shall be withdrawn at the latest by June 2012.

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

This document supersedes EN ISO 1133:2005.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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**Plastics — Determination of the melt
mass-flow rate (MFR) and melt volume-
flow rate (MVR) of thermoplastics —**

Part 2:

**Method for materials sensitive to time-
temperature history and/or moisture**

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*Plastiques — Détermination de l'indice de fluidité à chaud des
thermoplastiques, en masse (MFR) et en volume (MVR) —*

*Partie 2: Méthode pour les matériaux sensibles à l'historique temps-
température et/ou à l'humidité*

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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 1133-2 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties*.

ISO 1133 consists of the following parts, under the general title *Plastics — Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics*:

- Part 1: Standard method
- Part 2: Method for materials sensitive to time-temperature history and/or moisture

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Introduction

This part of ISO 1133 provides a method that is appropriate to those materials that exhibit a high rheological sensitivity to the time-temperature history experienced by the sample during the test and/or moisture. For such materials, ISO 1133-1, which has less-tightly specified testing conditions than this part of ISO 1133, is considered to be unsuitable for obtaining data of an acceptable level of precision (i.e. at least equivalent to that obtained by ISO 1133-1 for stable materials). This part of ISO 1133 is considered to be particularly relevant for moisture sensitive materials.

The primary difference between this part of ISO 1133 and ISO 1133-1 is that this part of ISO 1133 specifies tighter tolerances on the temperature, time line, sample amount and pre-treatment, resulting in more reproducible and accurate measurements.

The accuracy of MVR determination of thermoplastic materials whose rheological behaviour is affected by phenomena such as hydrolysis and condensation is often significantly influenced by:

- moisture content and sample conditioning;
- sample handling;
- a small difference in temperature, i.e. the temperature variation in the cylinder with position and/or time;
- the total time that the material is exposed to the test temperature;
- the sample volume;
- sample form (shape and size — pellets, powder, flake, etc.);
- cleaning of the apparatus.

In order to obtain accurate repeatable and reproducible results, not only does the equipment need to meet the requirements specified in this part of ISO 1133, but also the material handling and test procedure need to be followed precisely and consistently, particularly with respect to those details mentioned above to which the results are sensitive. Minor deviations from the equipment requirements, procedure and/or sample handling can result in considerable loss of repeatability, reproducibility and accuracy of the measurement.

In general, the test conditions for determination of MVR and MFR values are specified in the material standard and shall be referred to prior to conducting tests. Test conditions for the determination of MVR and MFR of materials whose rheological behaviour is affected by hydrolysis, condensation or cross-linking during the measurement are in many cases not yet mentioned in the materials standards. Standards for these materials are likely to be revised or developed in the future. Where no relevant material standard exists or where no test conditions are specified, then the drying and test conditions should be agreed between the interested parties.

NOTE At the time of publication, there is no evidence to suggest that the use of this part of ISO 1133 for stable materials results in better precision in comparison with the use of ISO 1133-1.