



SLOVENSKI STANDARD
SIST EN ISO 13473-1:2019

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Nadomešča:

SIST EN ISO 13473-1:2004

Karakterizacija teksture vozišča z uporabo profilov površine - 1. del: Ugotavljanje povprečne globine profila (ISO 13473-1:2019, popravljena verzija 2021-06)

Characterization of pavement texture by use of surface profiles - Part 1: Determination of mean profile depth (ISO 13473-1:2019, Corrected version 2021-06)

Charakterisierung der Textur von Deckschichten unter Verwendung von Oberflächenprofilen - Teil 1: Bestimmung der mittleren Profiltiefe (ISO 13473-1:2019, korrigierte Fassung 2021-06)

Caractérisation de la texture d'un revêtement de chaussée à partir de relevés de profils de la surface - Partie 1: Détermination de la profondeur moyenne du profil (ISO 13473-1:2019, Version corrigée 2021-06)

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Ta slovenski standard je istoveten z: EN ISO 13473-1:2019

ICS:

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93.080.20	Materiali za gradnjo cest	Road construction materials

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en

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Characterization of pavement texture by use of surface profiles - Part 1: Determination of mean profile depth (ISO 13473-1:2019, Corrected version 2021-06)

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Charakterisierung der Textur von Fahrbahnbelägen unter Verwendung von Oberflächenprofilen - Teil 1: Bestimmung der mittleren Profiltiefe (ISO 13473-1:2019, korrigierte Fassung 2021-06)

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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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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN ISO 13473-1:2019) has been prepared by Technical Committee ISO/TC 43 "Acoustics" in collaboration with Technical Committee CEN/TC 227 "Road materials" 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 September 2019, and conflicting national standards shall be withdrawn at the latest by September 2019.

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.

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INTERNATIONAL STANDARD

ISO 13473-1

Second edition
2019-02

Corrected version
2021-06

Characterization of pavement texture by use of surface profiles —

Part 1: Determination of mean profile depth

*Caractérisation de la texture d'un revêtement de chaussée à partir de
relevés de profils de la surface —*

Partie 1: Détermination de la profondeur moyenne du profil

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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 43, *Acoustics*, Subcommittee SC 1, *Noise*.

This second edition cancels and replaces the first edition (ISO 13473-1:1997), which has been technically revised. The main changes compared to the previous edition are as follows:

- Some alternative calculation options such as the slope suppression for continuous data have been removed.

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- A more precise definition of high-pass and low-pass filtering has been provided.

- Removal of spikes has been introduced in the profile.

- The MPD now refers only to the overall value obtained after averaging all *MSDs* where *MSD* means Mean Segment Depth (earlier, MPD was used as the term both for the mean segment depth and for mean profile depth, which might have been confusing).

A list of all parts in the ISO 13473 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.

This corrected version of ISO 13473-1:2019 incorporates the following corrections:

- The segment length was corrected to 100 mm throughout the document;

- in [7.3](#), at the end of the fourth paragraph, the following sentence was added: "If there are more invalid samples than 5 mm in the beginning or the end of a sampled profile the effected MSD value(s) should be discarded." and in the last paragraph, "Profiles" was replaced by "Segments" and "readings" replaced by "samples";

- in [7.6](#), the third paragraph was replaced by the following one: "If there are no data available before and after the section to be computed, one should extend the signal by mirroring the first and the last segments before filtering.";

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- in [7.10](#), the first list element was rephrased;
- in [Clause 10](#), the following text was deleted: "whether or not spike removal procedure was applied;", "type and order of filters used;" and "and type of interpolation used";
- in [D.3.7](#), replace "[7.10](#)" by "[7.9](#)";
- in [E.1](#), fifth paragraph, a third sentence was added as follows: "The spikes are first identified in forward and reverse direction before replacing them with the interpolated value.".
- [Figure E.3](#) was corrected.

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Introduction

Road surface texture determines factors such as noise emission from the tyre/pavement interface, acoustic comfort inside vehicles, friction between the tyre and road, rolling resistance and tyre wear. The main concept and the basic terms are illustrated for information in [Annex A](#). Valid methods for measuring surface texture are therefore highly desirable.

The so-called “sand patch” method, or the more general “volumetric patch” method (see [Clause 3](#)), has been used worldwide for many years to give a single and very simple measurement describing surface texture. It relies on a given volume of sand or glass beads which is spread out on a surface. The material is distributed to form a circular patch, the diameter of which is measured. By dividing the volume of material spread out by the area covered, a value is obtained which represents the average depth of the sand or glass bead layer, known as “mean texture depth” (MTD). The method was originally standardized in ISO 10844:1994¹⁾, Annex A^[5] in order to put limits concerning surface texture for a reference surface used for vehicle noise testing but was later adopted by CEN as EN 13036-1^[13].

The volumetric patch method is operator-dependent and can be used only on surfaces which are partly or fully closed to traffic. Therefore, it is not practical for use in network surveys of roads, for example. Along with developments in contactless surface profiling techniques, it has become possible to replace the volumetric patch measurements with those derived from profile recordings, which are possible to make by mobile equipment in flowing traffic. However, several very different techniques have been used to calculate a “predicted mean texture depth”, many of them quite successfully. The values they give are not always comparable, although individually they generally offer good correlation coefficients with texture depth measured with the volumetric patch method.

It is, therefore, important to have a standardized method for measuring and evaluating the texture depth by a more modern, safe and economical technique than the traditional volumetric patch method, resulting in values which are directly compatible both with the patch-measured values and between different equipment.

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1) Withdrawn and replaced by ISO 10844:2014.

