Determination of slip resistance of pedestrian surfaces - Methods of evaluation

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16165:2021 sisaldab Euroopa standardi EN 16165:2021 ingliskeelset teksti.	This Estonian standard EVS-EN 16165:2021 consists of the English text of the European standard EN 16165:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 27.10.2021.	Date of Availability of the European standard is 27.10.2021.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 17.040.20, 91.060.30, 93.080.10

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16165

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English Version

Determination of slip resistance of pedestrian surfaces - Methods of evaluation

Détermination de la résistance à la glissance des surfaces piétonnières - Méthodes d'évaluation

Bestimmung der Rutschhemmung von Fußböden - Ermittlungsverfahren

This European Standard was approved by CEN on 25 July 2021.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 16165:2021) has been prepared by Technical Committee CEN/TC 339 “Slip resistance of pedestrian surfaces - Methods of evaluation”, 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of an identical text or by endorsement, at the latest by April 2022, and conflicting national standards shall be withdrawn at the latest by April 2022.

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 CEN/TS 16165:2016.

The main changes compared to the previous edition are as follows:

a) description of test surface used in the barefoot ramp test and the shod ramp test changed;

b) calibration procedure of the test device used in the barefoot ramp test changed;

c) angles of slip for the three standard surfaces used in the barefoot ramp test changed;

d) procedure for verification and correction in the barefoot ramp test changed;

e) description of the test procedure used in the barefoot ramp test changed;

f) description of test footwear used in the shod ramp test changed;

g) angles of slip for the three standard surfaces used in the shod ramp test changed;

h) information when slider pads and slider assemblies shall be re-prepared or discarded added to the pendulum test;

i) description of the verification procedure used in the pendulum test and the tribometer test changed;

j) Reference surfaces for pendulum test and tribometer tests were removed;

k) procedure for the preparation of sliders used in the tribometer test changed.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

Introduction

This document describes four test methods commonly used in Europe for the determination of the slip resistance of floorings.

The method in Annex A describes the test method based on the ramp using water as the test liquid and with the operator barefoot. This method cannot be used *in situ*. It is referred to as the “Barefoot ramp method”.

The method in Annex B describes the test method based on the ramp using oil as the test liquid and with the operator wearing specified shoes. This method cannot be used *in situ*. It is referred to as the “Shod ramp test”.

NOTE Oil is used as the test liquid to make the test more sensitive.

The method in Annex C describes the test method based on the pendulum in dry and wet conditions using specified rubber sliders. This method can be used *in situ*. It is referred to as the “Pendulum test”.

The method in Annex D describes the test method based on the tribometer in dry and wet conditions using specified rubber sliders. This method can be used *in situ*. It is referred to as the “Tribometer test”.

The purpose of this document is to harmonize the procedures used when using any of the above test methods. It is not intended to promote any particular test method to Product Group Technical Committees or to limit their choice.

The test methods given in this document cannot be compared with each other. The results can only be compared with results that are obtained with the same test method.

1 Scope

This document specifies test methods for determining the slip resistance of surfaces used by pedestrians.

NOTE It is also possible to use this document for measurements where persons might walk on trafficked areas.

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.

EN ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868)*

ISO 48-2, *Rubber, vulcanized or thermoplastic — Determination of hardness — Part 2: Hardness between 10 IRHD and 100 IRHD*

ISO 48-4, *Rubber, vulcanized or thermoplastic — Determination of hardness — Part 4: Indentation hardness by durometer method (Shore hardness)*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 5725-5, *Accuracy (trueness and precision) of measurement methods and results — Part 5: Alternative methods for the determination of the precision of a standard measurement method*

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

— IEC Electropedia: available at https://www.electropedia.org/

3.1 General terms

3.1.1
pedestrian surface
surface which is designed for people to walk upon

3.1.2
test liquid
standardized liquid applied on the surface for the purpose of the test

3.1.3
friction
resistance to relative motion between two bodies in contact, e.g. the test slider or the footwear sole and the pedestrian surface

Note 1 to entry: The frictional force is the force acting tangentially in the contact area.