



NSAI
Standards

Standard Recommendation
S.R. CEN/TS 16165:2012

Determination of slip resistance of pedestrian surfaces - Methods of evaluation

S.R. CEN/TS 16165:2012

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:

This document is based on:
CEN/TS 16165:2012

Published:
30 April, 2012

This document was published under the authority of the NSAI and comes into effect on:
30 April, 2012

ICS number:

17.040.20

93.080.10

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

ICS 17.040.20; 93.080.10

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 Technical Specification (CEN/TS) was approved by CEN on 4 March 2012 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of 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, Turkey and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Test methods.....	7
Annex A (normative) Barefoot Ramp Test.....	8
A.1 Principle.....	8
A.2 Test equipment	8
A.3 Verification	10
A.4 Test procedure	10
A.5 Evaluation.....	11
A.6 Precision.....	11
A.7 Test report	11
Annex B (normative) Shod Ramp Test.....	13
B.1 Principle.....	13
B.2 Test equipment	13
B.3 Calibration	15
B.4 Test procedure	16
B.5 Evaluation.....	17
B.6 Precision.....	18
B.7 Test report	18
Annex C (normative) Pendulum friction test.....	20
C.1 Principle.....	20
C.2 Apparatus	20
C.3 Preparation	26
C.4 Verification/validation	29
C.5 Conducting the test	30
C.6 Pendulum measurements on site, additional information	32
C.7 Precision.....	33
C.8 Test report	33
C.9 Pendulum scale dimensions	34
C.10 Calibration procedure for the pendulum friction tester.....	36
Annex D (normative) Tribometer test.....	45
D.1 Principle.....	45
D.2 Apparatus and test equipment	45
D.3 Test equipment	46
D.4 Verification and checking	47
D.5 Sampling and preparation of the test sample for laboratory tests.....	48
D.6 Preparation of the test surface for on-site tests.....	48
D.7 Preparation of the sliders	48
D.8 Procedure	49
D.9 Calculation and expression of results.....	49
D.10 Precision.....	49
D.11 Test report	50
Bibliography.....	51

Foreword

This document (CEN/TS 16165:2012) 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.

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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: 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, Turkey and the United Kingdom.

Introduction

This document describes the most commonly used test methods in Europe for the determination of the slip resistance of floorings in the most commonly encountered situations in which pedestrians walk.

The method in Annex A describes the test method based on the ramp with contaminant water and operator barefoot.

The method in Annex B describes the test method based on the ramp with contaminant oil and operator wearing specified shoes.

NOTE The contaminant oil is used only 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.

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.

The tests described in Annexes A and B are laboratory tests. The tests described in Annexes C and D are laboratory and in situ tests. It is recommended to use Annexes A to D in the situations described as follows:

The method in Annex A: Floorings in wet conditions where the pedestrian is barefoot.

The method in Annex B, C and D: Floorings in private and/or public and/or work areas in wet and/or dry conditions where the pedestrian is wearing shoes.

1 Scope

This Technical Specification specifies test methods for the determination of the slip resistance of surfaces in the most commonly encountered situations in which pedestrians walk.

This Technical Specification does not cover sports surfaces and road surfaces for vehicles (skid resistance).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 438-4, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (Usually called Laminates) — Part 4: Classification and specifications for Compact laminates of thickness 2 mm and greater*

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

EN ISO 4287, *Geometrical product specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters (ISO 4287)*

EN ISO 20345, *Personal protective equipment — Safety footwear (ISO 20345)*

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*

ISO 7619-1, *Rubber, vulcanized or thermoplastic — Determination of indentation hardness — Part 1: Durometer method (Shore hardness)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

pedestrian surface

surface which is designed for people to walk upon

3.2

acceptance angle

lowest angle of the inclined ramp at which the test person reaches the limit of safe walking when slipping occurs

3.3

contaminant

material on the surface of the surface which is not an inherent part of the surface and which can affect the frictional properties of that surface

3.4

surface

pedestrian surface excluding road surfaces and sports surfaces

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-