SLOVENSKI STANDARD
oSIST prEN 1269:2019

01-februar-2019

Tekstilne talne obloge - Ocenitev impregnacij iglanih talnih oblog s preskusom zamazanja

Textile floor coverings - Assessment of impregnations in needled floor coverings by means of a soiling test

Textile Bodenbeläge - Beurteilung von Ausrüstungsmitteln in Nadelvliesbelägen durch die Anschmutzneigung

Revêtements de sol textiles - Évaluation des imprégnations des revêtements de sol aiguilletés au moyen d'un essai d'encrassement

Ta slovenski standard je istoveten z: **prEN 1269**

ICS:

97.150	Talne obloge	Floor coverings

oSIST prEN 1269:2019 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 1269

January 2019

ICS 97.150

English Version

Floor coverings - Assessment of impregnations in needled floor coverings by means of a soiling test

Revêtements de sol textiles - Évaluation des imprégnations des revêtements de sol aiguilletés au moyen d'un essai d'encrassement

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

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

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European foreword

This document (prEN 1269:2019) has been prepared by Technical Committee CEN/TC 134 “Resilient, textile and laminate floor coverings”, the secretariat of which is held by NBN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1269:2015.

In comparison with the previous edition, the following technical modifications have been made:

- Addition to Clause 5.3.1 (previously 4.3.1).

1 Scope

This document specifies two methods for the evaluation of impregnations or other treatments in needled floor coverings by means of a soiling test.

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 139, *Textiles—Standard atmospheres for conditioning and testing*

EN ISO 9405:2017, *Textile floor coverings—Assessment of changes in appearance*

ISO 105-A02, *Textiles—Tests for colour fastness—Part A02: Grey scale for assessing change in colour*

ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 4918, *Resilient, textile and laminate floor coverings—Castor chair test*

ISO 1957, *Machine-made textile floor coverings — Selection and cutting of specimens for physical tests*

3 Terms and definitions

No terms and definitions are listed in this document

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

4 Principle

In both tests a fixed quantity of standard artificial soil is scattered over the surface of the specimens which is also subjected to the rolling action of castors or of tetrapod feet for a specified time. After vacuum cleaning, the degree of colour change is assessed by comparing the contrast between treated and untreated test specimens with the contrast of the grey scale.

Depending on the type of apparatus available, either method A or method B can be used.

5 Apparatus

5.1 Method A

5.1.1 Castor chair apparatus

As described in ISO 4918, with a total load of 60 daN.

5.1.2 Soil distributor

The soil distributor uses two sieves, one inside and resting on the other to distribute the soil evenly on the part of the circular specimen that is subjected to the wear action of the castors. The whole distributor is placed vertically above the specimen with the sieves in the horizontal position.

The soil is placed in the inner sieve which is vibrated relative to the larger outer sieve thereby achieving even distribution of the soil on the specimen below the two sieves.

The mesh size of both sieves is 0,5 mm (module 31 of ISO 565). The base of each sieve (each of which has walls) is in the shape of a regular trapezium in order to correspond to a sector of the treated area of the test specimen.

The outer (lower) sieve has following base dimensions:

— distance between the parallel sides: 220 mm;

— length of the parallel sides: 100 mm, 45 mm.

Its underside is 40 mm above the specimen.

The dimensions of the inner (upper) sieve are not specified but must be smaller than the base sieve to permit movement relative to the lower sieve.

5.2 Method B

5.2.1 Drum

A rigid cylindrical drum with bottom and lid shall be used. The inner diameter is (205 ± 5) mm and the inner height of the drum is (200 ± 10) mm.

The drum is made of polyvinylchloride (PVC), with a thickness of at least 6 mm. The bottom and lid are attached to the wall by appropriate means. The lid of the drum is preferably made of transparent material (e.g. Polymethylmethacrylate).

5.2.2 Tetrapod

A tumbler consisting of a central metal sphere with four outer feet arranged in the shape of a regular tetrahedron. Each foot is covered with a spherical polyurethane cap. In operation the tetrapod tumbles inside the rotating drum so that the feet impact on the test specimen lining the drum.

Tetrapod specifications:

— total mass: (1 000 ± 25) g;

— angle between any two legs: 109,5 °;

— length of the foot: (62 ± 2) mm;

— diameter of the foot: (47 ± 2) mm;

— length of the metal leg: 32 mm;

— diameter of the metal leg: 25 mm;

— socket depth of the foot: 20 mm;

— free standing height tetrapod: (124 ± 2) mm;

— material of the feet: polyurethane elastomer;

— hardness of the foot top: (75 ± 5) shore.

5.2.3 Driving system

The drum lies loose on rollers mounted on a support and drive shaft. The drum is prevented from moving in its axial direction by smooth running wheels fixed between the shafts or by a suitable profile on the rollers. It is important that the axis of the drum rotation is horizontal, which should be checked by placing a spirit level along the upper surface of the drum when in position. The rotational frequency of the drum shall be (50 ± 2) cycles per minute.

A counter is incorporated in the system, so that the number of rotations of the drum can be recorded. The counter may be pre-set to stop the apparatus after a given number of revolutions.

NOTE Longer driving rollers can be used to rotate a number of drums at the same time provided that all the requirements of this document are met.

5.3 Equipment common to both methods

5.3.1 Standard soil

The CEN standard soil shall have the following composition (% by mass):

— Quartz silica: 89,20 %;

— Kaolin: 8,40 %;

— Orange ferrous oxide 960: 0,18 %;

— Black ferrous oxide 318: 0,41 %;

— Paraffin oil: 1,80 %;

The CEN standard soil shall have following colourimetric characteristics:

— L: (46,5 ± 3,0);

— a: (4,2 ± 0,5);

— b: (11,5 ± 2,0).

The proportions of the material of this CEN standard soil can be adjusted to match the required colourimetric characteristics (L, a, b).

Since the colourimetric characteristics of the CEN standard soil change with time and exposure to light, the soil shall be kept in the dark and its colourimetric characteristics (L, a, b) shall be checked every 6 months against the specified tolerances.

The AATCC standard soil shall have the following composition (% by mass):

— peat moss (dark): 38,00 %;

— Portland cement: 17,00 %;

— Kaolin clay: 17,00 %;

— Silica (200 mesh): 17,00 %;

— Carbon (lamp or furnace) black: 1,75 %;

— Red iron oxide): 0,50 %;

— Mineral oil (synthetic grade): 8,75 %.

Since the colourimetric characteristics of the AATCC standard soil change with time and exposure to light, the soil shall be kept in the dark and in sealed containers.

NOTE The above defined standard soil is referenced as 'AATCC standard soil' by Texthle Innovators Corporation, P0. Box 8, 101 Forest Street, Windsor, North Carolina USA, e-mail: tic@albemarlenet.com. This information is given for the convenience of users of this document and does not constitute an endorsement by CEN of this product.

5.3.2 Vacuum cleaner

A household type apparatus shall be used, equipped with a smooth, approximately 2 500 mm^2 section nozzle having the following characteristics:

— partial vacuum = (1 900 ± 190) mm water column;

— air flow rate = (30 ± 3) dm^3/s.

5.3.3 A set of large dimension grey scales, including half degrees

A set of large dimension grey scales including half degrees, in accordance with ISO 105-A02.

5.3.4 Observation device

An observation device as defined in EN ISO 9405.

6 Sampling and preparation of the specimens

6.1 Sampling and selection of the specimens

Take a representative sample of four different coloured samples from the commercial range of the floor covering in accordance with the methods given in ISO 1957.

6.2 Preparation of the specimen

6.2.1 Method A

From each sample to be examined, cut two test specimens in the shape of a quadrant having a radius of 350 mm. The edges of the quadrant are cut parallel with and at right angles to the direction of manufacture. One of the two specimens is kept as a reference specimen for the evaluation. Mark the two specimens with an arrow on the back (e.g. the direction of production) to permit alignment in the same direction for assessment.

The quadrants are fixed onto the support (dimensionally stable flat plastic disk) using two strips of double-sided adhesive tape laid overlapping the joints.

In the case of self-adhesive tiles, place them on the support without any additional adhesive.

6.2.2 Method B

From each sample to be examined, cut two test specimens of (640 × 190) mm. The length is taken in the direction of production. One of the two specimens is kept as a reference specimen for assessment, the other one is used for the soiling test in the tetrapod-drum. Cover the long sides of this specimen with a 20 mm wide tape.

7 Conditioning

Condition the test specimens in the standard atmosphere specified in EN ISO 139 for at least 24 h.

8 Procedure

8.1 Method A

a) Clean the specimens using the vacuum cleaner (5.3.2) before placing them onto the castor chair apparatus. Place the soil distributor above the specimen.

b) Weigh out 10 g of standard soil (5.3.1); rotate the support plate of the apparatus without lowering the castor device. Carefully put the standard soil into the inner sieve by means of a spatula so that it is evenly distributed over the whole surface of the sieve.

c) Vibrate the sieve to spread the soil evenly over the whole surface of the specimen.

d) Lower the castor apparatus with a total loading of 60 daN until it rests on the support, and then rotate the plate 100 cycles without reversal to spread the soil and make it penetrate.

e) Raise the castors and remove the specimen support from the apparatus.

f) Clean the specimen with the vacuum cleaner (5.3.2) using a forwards and backwards motion for five seconds in each direction. Repeat this 10 times. Examine the treated specimen, and if the soil is not distributed evenly on the specimen, repeat the test with a new specimen.