SLOVENSKI STANDARD
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Tekstilne talne obloge - Ocenitev spememb videza

Textile floor coverings - Assessment of changes in appearance

Textile Bodenbeläge - Beurteilung der Aussehensveränderung

Revetements de sol textiles - Evaluation des changements d'aspect

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English version

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This European Standard was approved by CEN on 1996-11-25. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 134 "Resilient and textile floor coverings", 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of an identical text or by endorsement, at the latest by June 1997, and conflicting national standards shall be withdrawn at the latest by June 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard describes procedures for assessing the changes in appearance of textile floor coverings caused by any testing device. This standard reflects the existing state of the art.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 20105:A02	Textiles - Tests for colour fastness - Part A02 : Grey scale for assessing chan in colour (ISO 105-A02:1993)
ISO 2424	Textile floor coverings - Vocabulary

3 Definitions

For the purpose of this European Standard, the following definitions are based on those in ISO 2424 :

3.1 overall change in surface appearance

The assessed overall change of appearance is the difference between a fatigued and an unfatigued specimen. The degree of change is expressed by a single overall grade. Changes in structure, thickness, colour and/or pattern of a textile floor covering may contribute to overall change in appearance. It is not always possible to distinguish clearly between the factors since each may have an interaction with others.

3.1.1 change in structure/textural change

Visible change in configuration of loops and tufts and/or fibres at the use-surface of a textile floor covering.

3.1.1.1 loss of tuft definition

The bursting, opening and untwisting of the pile yarn and/or decrimping of the fibres in the use-surface of a textile floor covering. This can cause a decrease of the pile definition.

3.1.1.2 crushing/flattening

Loss of thickness of a textile floor covering under the action of a static or dynamic load.

3.1.1.3 felting/matting

Loss of pile definition of a textile floor covering due to entanglement and compression of pile fibres.

3.1.2 Surface roughening

3.1.2.1 hairiness/filamentation

The protrusion of fibres above the normal level of the use-surface of a textile floor covering and not removable by brushing or suction.

3.1.2.2 cob webbing

An extreme form of hairiness/filamentation in which the fibres are entangled to form an interlaced web attached to the use-surface.

3.1.2.3 pilling

An extreme form of hairiness/filamentation in which the fibres are entangled to form small aggregates, attached to the use-surface, which may or may not include fibres from other sources.

3.1.2.4 sprouting

The release and appearance during use of extra-long tuft legs which were accidentally trapped within the pile of a textile floor covering during manufacture.

3.1.3 change of pattern definition

Change in the colour appearance of patterned textile floor coverings due to mechanical action. A change of pattern definition may be caused by a change in the clarity of the contour lines.

3.1.4 change in colour

The change or apparent change in colour, assessed by a large grey scale, may result from one or more of the following :

- change in orientation of the pile (shading) ;
- whitening/chalking ;
- fading ;
- glossing ;

- colour bleeding ;

- staining ;

- soiling.

4 Principle

The overall change in appearance of a fatigued specimen is assessed by visual comparison with reference scales. The dominant factors (structure roughening, pattern, colour) are reported when appropriate.

5 Apparatus

5.1 Illumination device, comprising sufficient fluorescent tubes [1)] of correlated colour temperature 5200 K ± 300 K mounted at a height above the viewing table to give an intensity of light across the viewing platform of 1500 lx ± 200 lx and in such a way as to illuminate the specimens vertically from above and allow uninterrupted viewing of the table (minimum height 1600 mm above table). The surroundings shall be neutral and darkened.

The intensity of the light shall be checked by the use of a luxometer. The lifetime of the tubes, as given by the manufacturer, shall not be exceeded.

5.2 Rotary viewing table, enabling the specimens to be viewed from all directions under the standard illumination. The diameter of the viewing table is at least 1000 mm to enable the test specimens and references to be laid side-by-side. The colour shall be matt dark neutral grey. The table shall be constructed in a way that its surface is as close as possible to the floor to achieve a 45° angle to the eyes of the assessors.

5.3 Large grey scale, for assessing change in colour, comprising five pairs of grey reference shade (200 mm x 150 mm) each representing a contrast corresponding to grade 5, 4, 3, 2 or 1 (see EN 20105-A02). Scales including intermediate half-grades may also be used. The use of small (35 mm x 28 mm) grey scales may lead to incorrect assessment and these may not therefore be used.

5.4 Reference scales, for the assessment of the appearance change of textile floorcoverings comprising 11 sets of five pairs showing reference levels of overall change in appearance from grade 5 (no change) to grade 1 (extreme change), each pair including 2 zones. :

- an "original" zone ;

- a "fatigued" zone representing the defined grade of change in appearance.

The description and sources of the eleven reference scales produced from different types of textile floor coverings are given in Annex A.

[1)] Fluorescent tubes such as PHILIPS TLD 95, are suitable.

6 Selection and preparation of specimens

Select for fatiguing and assessment specimens which are representative of the carpet sample and also a corresponding area of at least 200 mm x 200 mm for the unfatigued sample. Mark the specimens with a reference direction (which may be the direction of production, if known) in order to be able to align them in the same direction for the assessment.

7 Assessment procedure

7.1 General

The assessments shall be made independently by at least three experienced assessors.

NOTE : The assessor should acquire experience in assessing and should undertake comparative assessments with other laboratories at regular intervals (e.g. twice a year).

Switch on the illumination device (5.1) at least 1 h before the assessment session to allow the fluorescent tubes to reach their full operating output.

The assessors shall sit around the rotating table (5.2) at a distance of approximatively 0,5 m to the periphery, so that they view the specimens from a distance of approximately 1,5 m to 1,8 m and at an angle of approximately 45°.

Select an appropriate reference scale (see Annex A).

Arrange the fatigued and the unfatigued specimens side-by-side, with the reference directions aligned, on the rotating table positioned centrally under the illumination device. Lay the scale selected side-by-side with the specimens.

If specimens of one article are treated in steps of increasing intensity (e.g. castor chair test) they have to be assessed together.

7.2 Overall change procedure

Each assessor shall assess the contrast between the fatigued and unfatigued specimens by comparing against the grades of the reference scale.
The contrast shall be assessed from all directions whilst slowly rotating the table.

When turning the table the appearance of the specimens may be variable. In that case an average of the worst and the best impression shall be made by each assessor.

When assessing the specimens the individual appearance change factors mentioned in clause 3 shall be considered, the final grade being the overall average of all the factors viewed in all directions. Half grades may be awarded.

One or more of the dominant factors may have an overriding influence in the final grade, if so each assessor shall record the factor(s) for information.

For each specimen, note the individual grade selected from the appropriate reference scale (5.4).

7.3 Change of colour procedure

Each assessor shall assess the colour change in the worst direction with the large grey scale. For each specimen note the individual grade selected on the large grey scale (5.3).

8 Calculation and expression of results

8.1 Overall change of appearance

8.1.1 Determination of corrected overall change of appearance grade (if necessary)

Each assessor shall make an addition of one half grade in the case of all assessments of overall appearance change in cases where the colour change has been assessed as grade 2 or less.

NOTE : An overall assessment is sometimes influenced by severe colour contrast which appear on test specimens as a sharp contrast over a very small distance. In practice however any colour change due to flattening is normally not so pronounced being obscured by soiling and taking place more gradually and over larger distances. A correction of the assessment is necessary therefore to give a better relationship to real usage.

8.1.2 Action in case of large differences in assessed grades

If the difference between the individual test results (7.2) (after colour correction) within an assessor team is one grade or more, the number of assessors shall be extended to five assessors and the assessments carried out by the two additional assessors.

8.1.3 Calculation of the overall appearance change grade

Calculate the median of all the corrected overall appearance change grades.

8.2 Change of colour

8.2.1 Action in case of large differences in assessed grades

If the difference between the individual test results (7.3) within an assessor team is one grade or more the number of assessor has to be extended to five assessors.

8.2.2 Calculation of the colour change grade

Calculate the median of all the colour change grades.