



# SLOVENSKI STANDARD

## SIST EN 1814:1999

01-marec-1999

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**Tekstilne talne obloge - Ugotavljanje odpornosti rezanih robov proti poškodbam z uporabo modificiranega Vettermannovega bobnastega preskusa**

Textile floor coverings - Determination of resistance to damage at cut edges using the modified Vettermann drum test

Textile Bodenbeläge - Bestimmung der Schnittkantenfestigkeit durch modifizierte Trommelprüfung nach Vettermann

Revetements de sol textiles - Détermination de la résistance des joints par l'essai au tambour Vettermann modifié

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**Ta slovenski standard je istoveten z: EN 1814:1997**

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**ICS:**

59.080.60      Tekstilne talne obloge      Textile floor coverings

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 1814

November 1997

ICS 59.080.60

Descriptors: textiles, floor coverings, textile floor coverings, floor slabs, tests, determination, wear resistance, deterioration, appearance, test equipment

English version

Textile floor coverings - Determination of resistance to damage  
at cut edges using the modified Vettermann drum test

Revêtements de sol textiles - Détermination de la  
résistance des joints par l'essai au tambour Vettermann  
modifié

Textile Bodenbeläge - Bestimmung der  
Schnittkantenfestigkeit durch modifizierte Trommelprüfung  
nach Vettermann

This European Standard was approved by CEN on 25 October 1997.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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 Central Secretariat has the same status as the official versions.

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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 "Résilients 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 May 1998, and conflicting national standards shall be withdrawn at the latest by May 1998.

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

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## 1 Scope

This European Standard specifies a method to determine the susceptibility of textile floor coverings to mechanical damage at cut edges.

It is applicable to all textile floor coverings both as sheet materials and as tiles.

## 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 1471	Textile floor coverings - Assessment of changes in appearance
EN 20139	Textiles - Standard atmosphere for conditioning and testing
ISO 1957	Machine made textile floor coverings : sampling and cutting specimens for physical tests
ISO/TR 10361:1990	Textile floor coverings - Production of changes in appearance by means of a Vettermann drum and hexapod tumbler testers

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## 3 Definitions

For the purposes of this European Standard the following definitions apply.

- 3.1 delamination:** The separation of the use-surface and/or foundation/primary substrate of a textile floor covering from the secondary substrate or foambacking.
- 3.2 fraying :** The loss of pile or substrate material of a textile floor covering from a cut edge.
- 3.3 tufting out :** The loss of tufts from the use-surface of a textile floor covering.
- 3.4 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.
- 3.5 laddering/shooting :** The loss of consecutive loops of the same column from the use-surface of a textile floor covering.

## 4 Principle

A metal ball with six rubber studs rolls freely inside a rotating drum which is lined with the textile floor covering specimens.

On sheet materials a cut is made along the length of the specimens at an acute angle such that the cut edges are stressed in the test.

Tiles are put together so that the original edges of the tiles form the joint which is stressed in the test.

After the test the appearance of the fatigued cut edges is assessed.

## 5 Apparatus

**5.1 Drum tester**, conforming to 5.1.1 of ISO/TR 10361:1990, including a vacuum cleaner with an air change rate at the nozzle of 25 l/s to 40 l/s

**5.2 Metal ball**, fitted with six cylindrical rubber studs equally spaced from each other on the surface of the ball.

The mass of the ball without rubber studs shall be  $7000 \text{ g} \pm 100 \text{ g}$  and the diameter of the ball shall be  $120 \text{ mm} \pm 0,2 \text{ mm}$ .

**5.3 Rubber studs**, conforming to ISO/TR 10361, which shall be replaced before each test.

**5.4 External vacuum cleaner**, upright type with rotating brush.

## 6 Sampling and preparation of specimens

Sampling shall be carried out in accordance with ISO 1957.

### 6.1 Sampling

#### 6.1.1 Sheet materials

Prepare four specimens approximately 570 mm long (in the direction of manufacture) and approximately 265 mm wide. The longitudinal edge of the specimens shall be parallel to the direction of manufacture.

#### 6.1.2 Tiles

Take at least four tiles of dimensions 500 mm x 500 mm or of lesser dimensions.

Before cutting mark the corners of the tiles and the direction of manufacture on the back of the specimen as shown in figure 3.

From the tiles cut a total of eight specimens of width approximately 132 mm as shown in figure 3.

## 6.2 Preparation of specimens

### 6.2.1 Sheet materials

Make a cut in the centre of the specimens making an acute angle with the direction of manufacture - see figure 4. The cut shall cross at least one pile row. The cut shall be made with a sharp cutting tool (carpet knife or a press cutter) cutting from the pile side through pile and backing.

Connect the two sides of the cut specimens on the back with a single sided adhesive tape of at least 50 mm width. Apply the adhesive tape firmly. Ensure that the two edges are as close as possible.

Attach double-sided adhesive tape along the entire specimen length and positioned over the one sided tape.

Cover both ends of the specimens with a 50 mm wide single sided adhesive tape to prevent fraying during the test.

### 6.2.2 Tiles

Prepare four specimens of each floorcovering as shown in figure 3, two to test the edges in the direction of manufacture (pieces A and B) and two in the transverse direction (pieces C and D).

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Make up four composite test specimens with the original cut edge in the centre.

Position the edges in the centre of the specimen as close to each other as possible and fix in position by the single sided adhesive tape.

Attach double-sided adhesive tape along the entire specimen length and position over the single sided tape.

## 7 Atmosphere for conditioning and testing

Condition the specimens (face up) in the standard atmosphere for textiles as defined in EN 20139 for at least 24 h. Conduct the test in this atmosphere.

## 8 Procedure

Remove the protective layer from the double sided adhesive tape on the back of the specimen. Fix the four specimens on the inside of the drum with the use surface towards the centre of the drum.

In placing the specimens ensure that the sides lie within the retaining segments. Insert the specimens between the retaining segments and clamp firmly.

Place the ball (5.2) in the drum.

Set the revolution counter to 11 000 cycles and switch the machine on.

Operate the vacuum continuously throughout the test.

After the test clean the specimens with the external vacuum cleaner making four passes in each direction along the length of the specimen, the last pass being in the direction of pile lay.

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## 9 Assessment

Place the specimen on the rotating observation table as defined in EN 1471 and use the observation conditions specified in the standard. Check for degradation of the cut edges by the fatiguing action in the test. Note the type of damage as defined in clause 3, in particular if the fibres or the yarns are pulled out on to the surface and if so from which part of the floor covering.

Check by close inspection :

- number of tufts removed from one or several rows of pile (cut pile products) ;
- number of yarns pulled out with a length greater than one loop (loop pile products) ;
- if there has been delamination and if so the length and width of the delaminated area.

## 10 Test report

The test report shall state :

- a) reference to this standard, i.e. EN 1814 ;
- b) identification of the product tested including the type, origin, manufacturer's reference number ;
- c) sampling details ;
- d) the result of the test as in clause 9 ;
- e) details of any deviations from this standard procedure which might have an influence on the results.

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Dimensions in millimetres

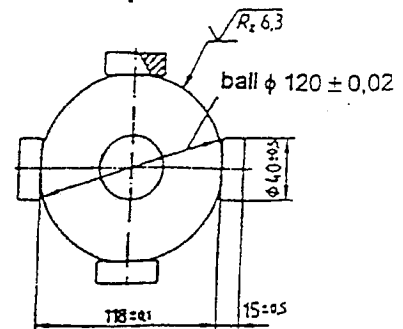
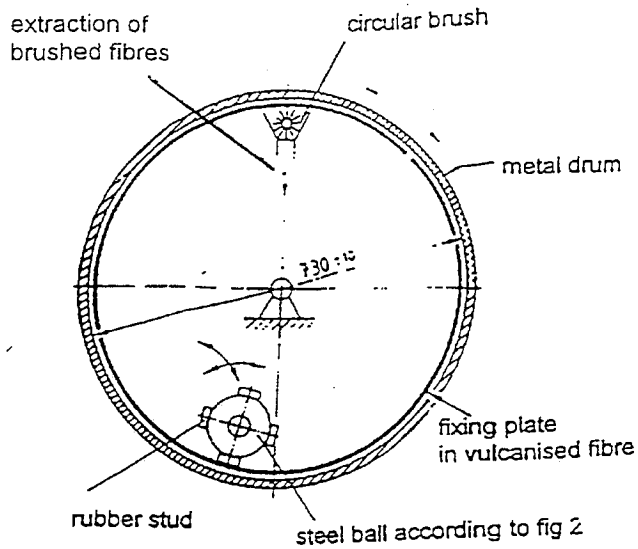


Figure 1 : Vetterman drum

Figure 2 : Ball

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