



SLOVENSKI STANDARD

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Textile floor coverings - Tiles - Determination of dimensional changes due to the effects of varied water and heat conditions and distortion out of plane

(standards.iteh.ai)

Textile Bodenbeläge - Fliesen - Bestimmung der Maßänderung infolge der Wirkungen wechselnder Feuchte- und Temperaturbedingungen und vertikale Flächenverformung

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Revetements de sol textiles - Dalles - Détermination de la variation des dimensions et de l'incurvation due aux effets de diverses conditions de mouillage et de chaleur

Ta slovenski standard je istoveten z: EN 986:2005

ICS:

59.080.60 Tekstilne talne obloge Textile floor coverings

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 986

December 2005

ICS 59.080.60

Supersedes EN 986:1995

English Version

Textile floor coverings - Tiles - Determination of dimensional changes due to the effects of varied water and heat conditions and distortion out of plane

Revêtements de sol textiles - Dalles - Détermination de la variation des dimensions et de l'incurvation due aux effets de diverses conditions de mouillage et de chaleur

Textile Bodenbeläge - Fliesen - Bestimmung der Maßänderung infolge der Wirkungen wechselnder Feuchte- und Temperaturbedingungen und vertikale Flächenverformung

This European Standard was approved by CEN on 26 October 2005.

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.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This European Standard (EN 986:2005) has been prepared by Technical Committee CEN/TC 134 “Resilient, textile and laminate 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 2006, and conflicting national standards shall be withdrawn at the latest by June 2006.

This European Standard supersedes EN 986:1995.

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

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EN 986:2005 (E)**1 Scope**

This European Standard specifies a method for the determination of dimensional changes and distortion out of plane likely to take place when textile floor coverings in tile form are exposed to various conditions of moisture and heat.

This European Standard is applicable to all textile floor coverings in tile form.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. 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 (ISO 139:2005)*

3 Principle**3.1 Dimensional stability**

Determination of changes in the flat dimensions of a specimen after treatment with various specified conditions of moisture and heat.

3.2 Distortion out of plane

Measurement of the vertical deformation shown by the specimen after treatment with various specified conditions of moisture and heat.

4 Apparatus**4.1 Dimensional stability**

4.1.1 Instrument capable of measuring a dimension to an accuracy of 0,05 mm, such as a slide gauge or measuring table or an opto-electronic system.

4.1.2 Loading plate of metal or glass of dimensions slightly smaller than the test specimen, or any other device capable of keeping the specimen flat during measurement of dimensional change.

4.2 Distortion out of plane

4.2.1 Instrument capable of measuring in the vertical dimension to an accuracy of 0,5 mm.

4.2.2 Support plate of dimensions slightly larger than the test specimen on which to place the specimen during measurement.

4.3 Drying oven with forced ventilation able to maintain a temperature of $60\text{ °C} \pm 2\text{ °C}$ containing removable shelves of smooth inert material with perforations to permit free circulation of air.

4.4 Container to hold water at $20\text{ °C} \pm 2\text{ °C}$, of dimensions at least 20 mm greater than the test specimen and deep enough to permit the specimen to be submerged.

5 Sampling and preparation of specimens

5.1 Tiles of dimensions ≤ 500 mm

Take at least three tiles as delivered by the manufacturer, marking to show the direction of manufacture.

5.2 Tiles of dimensions > 500 mm

From these tiles take at least three specimens and reduce the size to dimensions not greater than 500 mm x 500 mm.

6 Conditioning

Condition the test specimens in the standard atmosphere for testing textiles as defined in EN ISO 139 for at least 48 h or until constant mass.

7 Test procedure

7.1 Initial measurements

7.1.1 Distortion out of plane

Make all measurements on the conditioned specimen. Place each specimen with the use surface uppermost on the flat support (4.2.2).

7.1.2 Dimensional stability

For the determination of the dimensional stability, it is important to measure the backing, the measuring system will determine whether the tiles should be positioned face upwards or downwards.

Keeping the conditioned specimen flat with the loading plate (4.1.2), measure the distance between the sides parallel to the direction of manufacture then between the sides perpendicular to the direction of manufacture in at least two different places. Measure to the nearest 0,05 mm with the apparatus in 4.1.1.

7.2 Test procedure

The same test specimen should be treated consecutively by all of the following procedures.

7.2.1 Place the test specimen in the oven at $60\text{ °C} \pm 2\text{ °C}$ so that air can circulate freely around the specimen. After 2 h remove the specimen and perform the measurements in 7.1.2 at an interval of (5 ± 1) min from the time of removal from the oven.

7.2.2 Immerse the test specimen flat in the water at $20\text{ °C} \pm 2\text{ °C}$. After 2 h remove the specimen taking care not to distort it (e.g. as a result of its weight). The excess of water is removed by use of blotting paper, care has to be taken so as not to distort the sample. Perform the measurements in 7.1.2 at an interval of (5 ± 1) min from the time of removal from the water.

7.2.3 Place each test specimen in the oven with the use surface uppermost at $60\text{ °C} \pm 2\text{ °C}$ for 24 h then perform the measurements described in 7.1.2 at an interval of (5 ± 1) min from the time of removal from the oven.

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7.2.4 Re-condition the specimen in the standard atmosphere for testing textiles for 48 h or until constant mass.

7.2.5 After conditioning measure the distortion out of plane as follows:

- place each specimen with the use surface uppermost on the flat support (4.2.2). Measure the vertical distance between the support plate and the back of the tile, measure this distance in each direction and in the position where it is greatest with the apparatus in 4.2.1, or at various places along each edge (edge curl).

7.2.6 Then measure the dimensions of the specimen as indicated in 7.1.2.

8 Expression of results**8.1 Dimensional stability**

Calculate the dimensional change averaging (over the three specimens) for each direction and each stage of the procedure and express as a percentage by the following equation to the nearest 0,1 %:

- let l_0 , be the arithmetic mean of the initial measures;

and

- l_{mi} the arithmetic mean at each stage.

Calculate the dimensional change and express as a percentage of the mean by the following equation percentage:

$$\frac{(l_m - l_0) \times 100}{l_0}$$

l_0

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Indicate the result with a - if it is a shrinkage and a + if it is an increase.

Whenever possible the results may be expressed in the form of a graph.

8.2 Distortion out of plane

For each specimen and for each direction express the distortion out of plane by the distance measured in 7.2.5.

9 Test report

The test report shall include the following information:

- a) reference to this European Standard, i.e. EN 986;
- b) complete identification of the product tested including type, source and the manufacture reference numbers;
- c) previous history of the sample;
- d) values calculated in Clause 8;
- e) description of the final appearance of the test specimen including indications of the degree of buckling, saucering, doming, curling and other changes;