



SLOVENSKI STANDARD
SIST EN 13329:2006+A1:2009
01-april-2009

Uklopna obloga za talne površine s površinsko slojem na osnovi aminoplastičnih termoplastičnih smol - Specifikacije, zahtevi i metode ispitivanja

Laminate floor coverings - Elements with a surface layer based on aminoplastic thermosetting resins - Specifications, requirements and test methods

Laminatböden - Elemente mit einer Deckschicht auf Basis aminoplastischer, wärmehärtbarer Harze - Spezifikationen, Anforderungen und Prüfverfahren

Revêtements de sol stratifiés - Éléments dont la surface est à base de résines aminoplastes thermodurcissables - Spécifications, exigences et méthodes d'essai

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ICS:

97.150 Netekstilne talne obloge Non-textile floor coverings

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EUROPEAN STANDARD

EN 13329:2006+A1

NORME EUROPÉENNE

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Laminate floor coverings - Elements with a surface layer based on aminoplastic thermosetting resins - Specifications, requirements and test methods

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This European Standard was approved by CEN on 3 April 2006 and includes Amendment 1 approved by CEN on 11 September 2008.

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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 CEN Management Centre has the same status as the official versions.

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Foreword

This European Standard (EN 13329:2006+A1:2008) 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of an identical text or by endorsement, at the latest by April 2009, and conflicting national standards shall be withdrawn at the latest by April 2009.

This document includes Amendment 1, approved by CEN on 2008-09-11.

This European Standard supersedes A1 EN 13329:2006 A1 .

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1 .

Compared to EN 13329:2000 the following changes have been made:

- a) Classification symbols changed.
- b) Provisions for the designation deleted.
- c) Requirements for abrasion resistance changed.
- d) Regarding the test method for abrasion resistance the hardness of the abrasive wheels and the loss in mass of the zinc plate for calibration of the abrasive paper have been changed and the dimensions of the test apparatus have been specified more precisely.
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- e) Annex H for calibration and maintenance of abrasion equipment added.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, 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 and United Kingdom.

EN 13329:2006+A1:2008 (E)**1 Scope**

This European Standard specifies characteristics, states requirements and gives test methods for laminate floor coverings (as defined in 3.1).

It includes a classification system, based on EN 685, giving practical requirements for areas of use and levels of use, to indicate where laminate floor coverings will give satisfactory service and to encourage the consumer to make an informed choice. It also specifies requirements for marking and packaging.

Laminate floor coverings are considered for domestic and commercial levels of use. This standard does not specify requirements relating to areas which are subjected to frequent wetting, such as bathrooms, laundry rooms or saunas, but it does apply to domestic kitchens.

2 Normative references

The following referenced documents are indispensable for the application 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 311, *Wood-based panels — Surface soundness — Test method*

EN 318, *Wood based panels — Determination of dimensional changes associated with changes in relative humidity*

EN 322, *Wood-based panels — Determination of moisture content*

EN 424, *Resilient floor coverings — Determination of the effect of simulated movement of a furniture leg*

EN 425, *Resilient and laminate floor coverings — Castor chair test*

EN 433, *Resilient floor coverings — Determination of residual indentation after static loading*

EN 438, (all parts) *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called Laminates)*

EN 685, *Resilient, textile and laminate floor coverings — Classification*

EN 12529:1998, *Castors and wheels — Castors for furniture — Castors for swivel chairs — Requirements*

EN 20105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour (ISO 105-A02:1993)*


EN ISO 105-B02, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test (ISO 105-B02:1994, including amendment 1:1998)*

EN ISO 6506 (all parts), *Metallic materials — Brinell hardness test*

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (Hardness between 10 IRHD and 100 IRHD)*

ISO 7267-2, *Rubber-covered rollers — Determination of apparent hardness — Part 2: Shore-type durometer method*

A1 ISO 24334, *Laminate floor coverings — Determination of locking strength for mechanically assembled panels*

ISO 24339, *Laminate and textile floor coverings — Determination of dimensional variations after exposure to humid and dry climate conditions* 

3 Terms and definitions

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

3.1

laminate floor covering

floor covering with a surface layer consisting of one or more thin sheets of a fibrous material (usually paper), impregnated with aminoplastic, thermosetting resins (usually melamine)

NOTE By the simultaneous action of heat and pressure, these sheets are either pressed as such (HPL, CPL, Compact), and in the case of HPL and CPL bonded on a substrate (usually wood-based panels), or in the case of DPL directly pressed on a substrate (usually wood-based panels). The product is usually finished with a backing (e.g. HPL, CPL, impregnated papers and veneers), primarily used as a balancing material.

3.1.1

surface layer

upper decorative layer intended to be the visible side when the floor is installed.

NOTE This layer consists of sheets impregnated with thermosetting resins, pressed by three different techniques.

High-pressure laminates (HPL), as defined in EN 438;

Continuous pressed laminates (CPL);

Directly pressed to the substrate (DPL).

3.1.2

substrate

core material of the laminate floor covering

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NOTE It is generally a particleboard, as defined in EN 309, or a Medium Density Fibreboard or High Density Fibreboard (MDF or HDF), as defined in EN 316.

3.1.3

backing

layer opposite to the surface layer

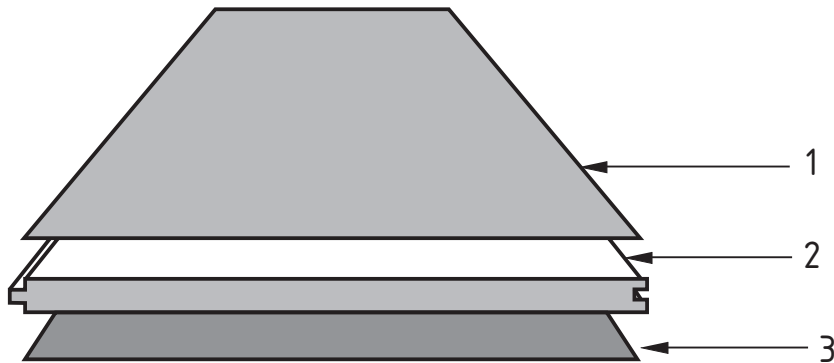
NOTE The backing is generally made of HPL, CPL, impregnated papers or veneers. It is primarily used to balance and stabilise the product.

3.2

laminate floor covering element

consisting of a surface layer, a substrate and a backing, shaped and machined on its sides to the appropriate dimensions

NOTE See Figure 1. The elements are usually tongued and grooved to facilitate assembly at installation.

**Key**

- 1 Surface layer
- 2 Substrate
- 3 Backing

Figure 1 — Construction of a laminate floor-covering element

4 Requirements

4.1 General requirements

All laminate floor coverings shall conform to the general requirements given in Table 1, when tested by the methods given therein.

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For special applications, such as decorative pattern effects, tighter tolerances may be required. The tolerances of the tongue and groove shall be such that when, for testing, the elements are assembled without glue, the maximum permissible opening and height difference values are not exceeded.

To determine the capability of laminate floor coverings to withstand ambient humidity variations, a laboratory test in controlled conditions shall be made.

Table 1 — General requirements

Characteristic	Requirement	Test method
Thickness of the element, t	$\Delta t_{\text{average}} \leq 0,50$ mm, relative to nominal value $t_{\text{max.}} - t_{\text{min.}} \leq 0,50$ mm	Annex A
Length of the surface layer, l	For the nominal values given, no measured value shall exceed: $l \leq 1500$ mm: $\Delta l \leq 0,5$ mm $l > 1500$ mm: $\Delta l \leq 0,3$ mm/m	Annex A
Width of the surface layer, w	$\Delta w_{\text{average}} \leq 0,10$ mm, relative to nominal value $w_{\text{max.}} - w_{\text{min.}} \leq 0,20$ mm	Annex A
Length and width of squared elements, $l = w$	$\Delta l_{\text{average}} \leq 0,10$ mm relative to nominal value $\Delta w_{\text{average}} \leq 0,10$ mm, relative to nominal value $l_{\text{max.}} - l_{\text{min.}} \leq 0,20$ mm $w_{\text{max.}} - w_{\text{min.}} \leq 0,20$ mm	Annex A
Squareness of the element, q	$q_{\text{max.}} \leq 0,20$ mm	Annex A
Straightness of the surface layer, s	$s_{\text{max.}} \leq 0,30$ mm/m	Annex A
Flatness of the element, f	Maximum single values: $f_{w, \text{concave}} \leq 0,15$ % $f_{l, \text{concave}} \leq 0,50$ % $f_{w, \text{convex}} \leq 0,20$ % $f_{l, \text{convex}} \leq 1,00$ %	Annex A
Openings between elements, o	$o_{\text{average}} \leq 0,15$ mm $o_{\text{max.}} \leq 0,20$ mm	Annex B
Height difference between elements, h	$h_{\text{average}} \leq 0,10$ mm $h_{\text{max.}} \leq 0,15$ mm	Annex B
Dimensional variations after changes in relative humidity, $\delta l, \delta w$	$\delta l_{\text{average}} \leq 0,9$ mm $\delta w_{\text{average}} \leq 0,9$ mm	Annex C
Light fastness	Blue wool scale, not worse than 6,	EN ISO 105-B02
	Grey scale, not worse than 4	EN 20105-A02
Static indentation	No visible change, i.e. $\leq 0,01$ mm indentation using a straight steel cylinder, $\varnothing = 11,30$ mm	EN 433
Surface soundness	$\geq 1,00$ N/mm ²	Annex D

NOTE For classification "very heavy commercial use, class 34" see Annex I. **A1**

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4.2 Classification requirements

All laminate floor coverings shall be classified as suitable for different levels of use according to the requirements specified in Table 2, when tested by the methods given therein. Classification shall conform to the scheme specified in EN 685.

Table 2 — Classification requirements and levels of use

Class:	Levels of use						Test method
	Domestic			Commercial			
	Moderate	General	Heavy	Moderate	General	Heavy	
	21	22	23	31	32	33	
Abrasion resistance	AC1	AC2	AC3		AC4	AC5	Annex E
Impact resistance	IC1				IC2	IC3	Annex F
Resistance to staining	4, (groups 1 and 2) 3, (group 3)	5, (groups 1 and 2) 4, (group 3)					EN 438
Resistance to cigarette burns	—	4					EN 438
Effect of a furniture leg	—	No damage shall be visible, when tested with foot type 0					EN 424
Effect of a castor chair	—	No change in appearance or damage, as defined in EN 425. Single-wheel castors, as defined in EN 12529:1998, 5.4.4.2 (Type W) shall be used.					EN 425
Thickness swelling	≤ 20,0 %			≤ 18,0 %			Annex G

4.3 Additional requirements

When any of the characteristics given in Table 3 are required for specific applications, the laminate floor coverings shall be tested by the methods given therein. The properties stated in Table 3 are considered important for some specific products or applications.

Table 3 — Additional requirements

Characteristic	Requirement	Test method
Humidity at dispatch from the manufacturer	The elements shall have a moisture content of 4 % to 10 %. Any single batch shall be homogeneous with $H_{\max.} - H_{\min.} \leq 3 \%$	EN 322
Appearance, surface defects	Minor surface defects as defined in EN 438 are permitted	EN 438

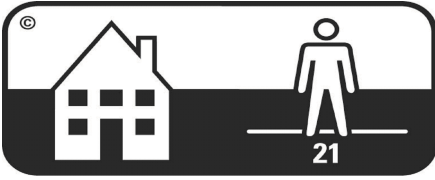





5 Marking and packaging

5.1 Marking

Laminate floor coverings which comply with the requirements of this standard shall have the following information clearly marked by the manufacturer, either on their packaging, or on a label or information sheet included in the packaging:

- a) number of this European Standard;
- b) manufacturer's and/or supplier's identification;
- c) product name;
- d) colour/pattern and batch number;
- e) symbol appropriate to the class of product according to Table 4;
- f) nominal dimensions of one floor covering element in millimetres;
- g) number of elements contained in a package;
- h) area in square metres contained in a package.

Table 4 — Classification symbols

	Domestic	Commercial
Moderate		
General		
Heavy		

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5.2 Packaging

Laminate floor coverings shall be delivered in packages designed to protect the corners, edges and surfaces of the product, under normal conditions of transport and handling. Installation, cleaning and maintenance instructions shall be delivered together with the product.

6 Test report

The test report shall include at least the following information:

- a) the name and address of the test laboratory;
- b) date of test report;
- c) a reference to this standard;
- d) the product tested;
- e) sampling information;
- f) test results;
- g) all deviations from this standard.

Annex A (normative)

Determination of thickness, length, width, squareness, straightness and flatness

A.1 Sampling

Take five laminate floor-covering elements as test specimens.

A.2 Conditioning

Test specimens are measured in the received state. For type approval or verification purposes, the test specimens shall be stabilized to a constant mass in an atmosphere of (23 ± 2) °C and (50 ± 5) % relative humidity. Constant mass is considered to be reached when the results of two successive weighing operations, carried out at an interval of 24 h, do not differ by more than 0,1 % of the mass of the test specimens.

A.3 Apparatus

A.3.1 Micrometer, calliper gauge or any other equivalent tool having flat and parallel circular measuring surfaces of at least 16 mm diameter and an operating force of (4 ± 1) N, with an accuracy of $\pm 0,05$ mm, for thickness measurements.

A.3.2 Calliper gauge or any other equivalent tools with an accuracy of $\pm 0,05$ mm for width measurements, and $\pm 0,1$ mm for length measurements.

A.3.3 Square with arms of at least 300 mm and having a maximum angular deviation of 0,02 mm over 300 mm.

A.3.4 Set of thickness gauges ranging from 0,05 mm to 0,10 mm in steps of 0,01 mm, and from 0,10 mm to 0,50 mm in steps of 0,05 mm.

A.3.5 Steel ruler of length at least equal to the length of the test specimen, and having a maximum straightness deviation of 0,05 mm over 1 000 mm.

A.3.6 Apparatus for measuring width flatness consisting of a dial gauge accurate to $\pm 0,01$ mm with a rounded tip of radius $\leq 5,5$ mm, installed centrally in relation to three rounded supports with radii ≥ 5 mm. The supports shall be adjustable along a T-shaped assembly of bars to provide the required gauge length. The measurement d shall not be less than the width w of the test specimen minus 10 mm. The tip of the gauge in contact with the face of the test specimen shall apply a force of $(1,0 \pm 0,5)$ N. The mass of the apparatus shall not affect the flatness of the test specimen beyond the limit of the accuracy of the gauge. See Figure A.1 for illustration. The instrument shall be set to zero against a suitable reference plate.