SLOVENSKI STANDARD
oSIST prEN 14978:2013

01-december-2013

Laminatne talne obloge - Elementi z vrhnjo plastjo iz akrila, polimeriziranega z elektronskim žarkom - Specifikacije, zahteve in preskusne metode

Laminate floor coverings - Elements with acrylic based surface layer, electron beam cured - Specifications, requirements and test methods

Laminatböden - Elemente mit einer elektronenstrahlgehärteten Deckschicht auf Acryl-Basis - Spezifikationen, Anforderungen und Prüfverfahren

Revêtements de sol stratifiés - Éléments à parement à base acrylique traités par des faisceaux d'électrons - Spécifications, exigences et méthodes d'essai

Ta slovenski standard je istoveten z: **prEN 14978**

ICS:

97.150	Netekstilne talne obloge	Non-textile floor coverings

oSIST prEN 14978:2013 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 14978

October 2013

ICS 97.150

Will supersede EN 14978:2006

English Version

Laminate floor coverings - Elements with acrylic based surface layer, electron beam cured - Specifications, requirements and test methods

Revêtements de sol stratifiés - Éléments à parement à base acrylique traités par des faisceaux d'électrons - Spécifications, exigences et méthodes d'essai

Laminatböden - Elemente mit einer elektronenstrahlgehärteten Deckschicht auf Acryl-Basis - Spezifikationen, Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 134.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

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

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. prEN 14978:2013: E

Contents

Page

Foreword

This document (prEN 14978:2013) 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 14978:2006.

Compared to EN 14978:2006 the following changes have been made.

a) General definition for laminate floor coverings included.

b) Defined foam for a system test for impact resistance with the big ball and castor chair resistance added

c) Requirements for level of use 32 and 33 for floor coverings with a high gloss level added.

d) Test method and requirements for abrasion resistance for floor coverings with a high gloss level changed.

e) Requirements for cigarette resistance deleted.

f) Technical characteristic micro-scratch resistance added.

1 Scope

This European Standard specifies requirements for laminate floor coverings as defined in 3.1.

It includes a classification system based on EN ISO 10874, 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, e.g. for use in domestic kitchens. This standard does not specify requirements related to areas that are subject to frequent wetting, such as bathrooms, laundry rooms or saunas.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CEN/TS 16354, *Laminate floor coverings — Underlays — Specification, requirements and test methods*

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 438-2, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) - Determination of properties*

prEN 13329:2013, *Laminate floor coverings — Elements with a surface layer based on aminoplastic thermosetting resins — Specifications, requirements and test methods*

prEN 15468, *Laminate floor coverings — Elements with directly applied printing and resin surface layer - Specifications, requirements and test methods*

EN 16094, *Laminate floor coverings — Test method for the determination of micro-scratch resistance*

EN ISO 2813, *Paints and varnishes — Determination of specular gloss of non-metallic paint films at 20°, 60° and 85 ° (ISO 2813:1994, including Technical Corrigendum 1:1997)*

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

EN ISO 10874, *Resilient, textile and laminate floor coverings — Classification (ISO 10874:2009)*

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

ISO 24336, *Laminate floor coverings — Determination of thickness swelling after partial immersion in water*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 13329:2013 and the following apply.

3.1
laminate floor covering
rigid floor covering, typically in a plank or tile format, with a multiple layer structure: e.g. backer, substrate and décor. The planks/tiles have worked edges that allow the product to be joined together to form a larger integral unit. The product may vary in surface texture and gloss level

Laminate flooring does not include products having a resilient, stone, textile, wood, leather or metal top surfacing material(s).

3.1.1
acrylic based surface layer
upper decorative layer intended to be the visible side when the floor is installed

Note 1 to entry: This layer consists of resins which are hardened using beams (normally acrylate, methacrylate or similar) and impregnated and surfaced decorative materials (normally paper), which all together are hardened through the application of a sufficient dose of electron beams and constant pressure. The surface layer produced with this technique is called 'electron-beam pressed laminate (EPL)'. The surface layer is bonded to a substrate (usually a wood-based panel).

3.1.2
substrate
core material of the laminate floor covering

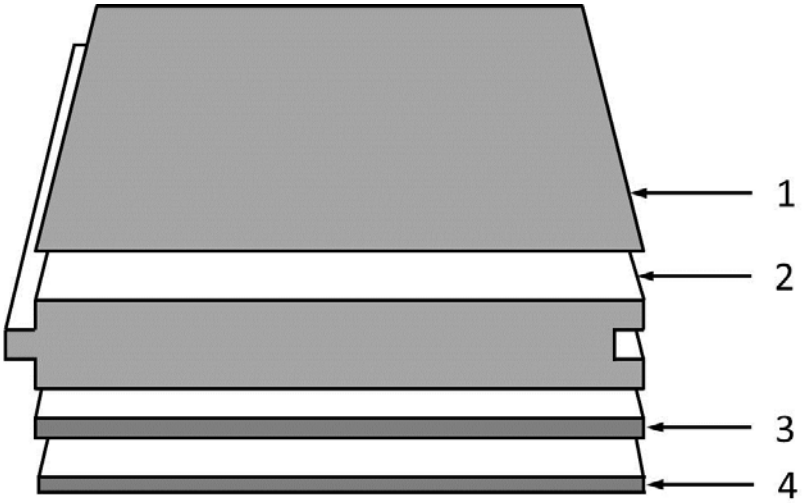
Note 1 to entry: It is generally a particle board, as defined in EN 309, a Medium Density Fibreboard or a High Density Fibreboard (MDF or HDF), as defined in EN 316.

3.1.3
backer
layer opposite to the surface layer used to balance and stabilise the product

Note 1 to entry: The backer is generally made of impregnated papers.

3.1.4
underlay
layer placed between the laminate floor covering and the subfloor to impart specific properties. Some laminate floor covering products have the underlay pre-attached directly to the backer

3.2
laminate floor covering element
piece of the floor covering with profiled edges to facilitate assembly at installation (see Figure 1)



Key

1 surface layer
2 substrate
3 backer
4 underlay (optional)

Figure 1 — Construction of a laminate floor-covering element

4 Characteristics

Laminate floor coverings according to this standard shall conform to the general requirements given in prEN 13329:2013, Table 1, with the following modifications.

— For special applications, such as decorative pattern effects, tighter tolerances shall be permitted if necessary.

— Tolerances of the tongue and groove shall be such that when, for the purposes of 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.

5 Classification

5.1 General

Prior to classification testing, the specular gloss level of the laminate floor covering shall be determined in accordance with EN ISO 2813, with a detection angle of 60°. A distinction shall be made between two specular gloss levels of the surface layer:

— common gloss level: specular gloss level < 85 units

— high gloss level: specular gloss level ≥ 85 units

5.2 Floor coverings with a common gloss level

Laminate floor coverings conforming to this standard with a common gloss level shall be classified as being suitable for different levels of use according to the requirements specified in prEN 13329:2013, Table 2, when tested by the methods given therein. Classification shall conform to the scheme specified in EN ISO 10874.

5.3 Floor coverings with a high gloss level

Laminate floor coverings conforming to this standard with a high gloss level shall be classified as being suitable for different levels of use according to the requirements specified in Table 1, when tested by the methods given therein. Classification shall conform to the scheme specified in EN ISO 10874.

For big ball impact test and castor chair test, the test shall be carried out with the pre-attached underlays or with the same prescribed underlay. In all other cases the standard foam of (2 ± 0,4) mm thickness with a CS value of (60 ±10) kPa[1] according to CEN/TS 16354 shall be used.

NOTE The product Selitflex 1,6 made by Selit GmbH is an example of a suitable product available commercially. This information is given for the convenience of users of this European Standard and does not constitute an endorsement by CEN of this product. Equivalent products may be used if they can be shown to lead to the same results.

Table 1 — Classification requirements and levels of use for floor coverings with a high gloss level

	Level of use						
	Domestic			Commercial			
	Moderate	General	Heavy	Moderate	General	Heavy	
Class	**21**	**22**	**23**	**31**	**32**	**33**	**Test method**
Abrasion resistance	≥ 1 000 revolutions		≥ 2 000 revolutions		≥ 4 000 rev.	≥ 6 000 rev.	prEN 15468, Annex A
Impact resistance Small ball Big ball	≥ 8 N ≥ 500 mm				≥ 12 N ≥ 500 mm	≥ 15 N ≥ 500 mm	EN 13329, Annex F
Resistance to staining	4, (groups 1 and 2) 3, (group 3)	5, (groups 1 and 2) 4, (group 3)					EN 438-2
Effect of a furniture leg			No damage shall be visible, when tested with foot type 0				EN 424
Effect of a castor chair	- ——		10 000 cycles, No damage [b]		20 000 cycles No damage [b]	25 000 cycles No damage [b]	EN ISO 4918 [a]
Thickness swelling	≤ 20 %		≤ 18 %			≤ 15 %	ISO 24336
Locking strength	-				$F_{l0,2} \geq 1$ kN/m $Fs_{0,2} \geq 2$ kN/m		ISO 24335
Surface soundness	≥ 1,0 N/mm²				≥ 1,25 N/mm²		EN 13329, Annex D

a Using soft castor wheels W PU (95 ±5) Shore A except for class 34 wheels H PA (95 ±5) Shore A

b After the test a maximum openings of the joints and a maximum height differences of 0,20 mm is allowed measured with test devices according to B.3.

6 Additional characteristics and requirements

When any of the characteristics given in Table 2 are required for specific applications, the laminate floor coverings shall be tested by the methods given therein. The properties stated in Table 2 are considered important for some specific products or applications.

Table 2 — Additional characteristics and requirements

Characteristic	Requirement/comments	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 Hmax. – Hmin. ≤ 3 %.	EN 322
Appearance, surface defects	Minor surface defects as defined in EN 438 shall be permitted.	EN 438-2
Resistance to scratching	The elements shall have a minimum resistance to scratching of rating 3.	EN 438-2
Micro-scratch resistance	Can be declared as micro-scratch resistance classes according to procedure A a/or B	EN 16094

7 Marking, designation and packaging

7.1 Marking

NOTE For CE-marking, see EN 14041.

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 on an 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) level of use symbols appropriate to the ISO 10874 and in accordance with Table 3;

f) nominal dimensions of one floor covering element in millimetres; if relevant: nominal thickness of pre-attached underlay

g) nominal thickness of products with pre-attached underlay e.g. 10 (8 + 2) mm

h) number of elements contained in a package;

i) area contained in a package in square metres.