SLOVENSKI STANDARD
SIST EN 14978:2016+A1:2021

01-november-2021

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: **EN 14978:2016+A1:2021**

ICS:

97.150	Talne obloge	Floor coverings

SIST EN 14978:2016+A1:2021 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14978:2016+A1

September 2021

ICS 97.150

Supersedes EN 14978:2016

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

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

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European foreword

This document (EN 14978:2016+A1:2021) has been prepared by Technical Committee CEN/TC 134 "Resilient, textile and laminate floor coverings", the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by March 2022, and conflicting national standards shall be withdrawn at the latest by March 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes ▌A1⟩ EN 14978:2016 ⟨A1▌.

This document includes Amendment 1 approved by CEN on 18 July 2021.

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

▌A1⟩ In comparison with EN 14978:2016 (original version), the new consolidated version EN 14978:2016+A1:2021 (new version of EN 14978:2016), contains the following technical modifications:

— Normative references: replace EN 424, *Resilient floor coverings - Determination of the effect of simulated movement of a furniture leg* with EN ISO 16581, *Resilient and laminate floor coverings — Determination of the effect of simulated movement of a furniture leg*;

— Normative references: add EN 17368, *Laminate floor coverings — Determination of impact resistance with small ball*";

— Scope: replacement of the last paragraph;

— term 3.3 substrate: replacement of the definition;

— Table 1: change the requirements and test method for impact resistance: small ball and addition of footnote to table [c] as clarification for testing; replacement of Table 1. ⟨A1▌

Compared to EN 14978:2006 the following changes have been made ▌A1⟩ in EN 14978:2016 ⟨A1▌:

a) general definition for laminate floor coverings included;

b) defined underlay for impact resistance test with the large diameter ball added;

c) requirements for castor chair test changed;

d) requirements for level of use 32 and 33 for floor coverings with a high gloss level added;

e) test method and requirements for abrasion resistance for floor coverings with a high gloss level changed;

f) requirements for cigarette resistance deleted;

g) technical characteristic micro-scratch resistance added.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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

1 Scope

This European Standard specifies characteristics, requirements and test methods for laminate floor coverings with acrylic based surface layer, electron beam cured as defined in 3.1 and 3.2.

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.

[A1⟩ Laminate floor coverings are generally designed for floating installations and are considered for domestic and commercial levels of use, including domestic kitchens. This document does not specify requirements relating to the use in areas which are subjected to frequent wetting, such as bathrooms, laundry rooms or saunas. In general laminate floor coverings can only be used in those areas when authorized by the manufacturer and under conditions described in the manufacturer's installation guidelines. ⟨A1]

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.

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

[A1⟩ EN ISO 16581, *Resilient and laminate floor coverings — Determination of the effect of simulated movement of a furniture leg (ISO 16581)* ⟨A1]

EN 425:2002, *Resilient and laminate floor coverings - Castor chair test*

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

[A1⟩ EN 13329:2016+A2:2021 ⟨A1], *Laminate floor coverings — Elements with a surface layer based on aminoplastic thermosetting resins — Specifications, requirements and test methods*

[A1⟩ EN 15468:2016+A1:2021 ⟨A1], *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*

[A1⟩ EN 17368, *Laminate floor coverings — Determination of impact resistance with small ball* ⟨A1]

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

EN ISO 2813, *Paints and varnishes - Determination of gloss value at 20°, 60° and 85° (ISO 2813)*

EN ISO 10874, *Resilient, textile and laminate floor coverings - Classification (ISO 10874)*

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 A1⟩ EN 13329:2016+A2:2021 ⟨A1 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

Note 1 to entry: 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.

Note 2 to entry: Laminate flooring does not include products having a resilient, stone, textile, wood, leather or metal top surfacing material(s).

3.2
acrylic based surface layer
upper decorative layer intended to be the visible side when the floor is installed consisting 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

Note 1 to entry: 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).

3.3
substrate
A1⟩ core material of the laminate floor covering containing wood for at least 65 % in mass ⟨A1

Note 1 to entry: It is generally a particleboard, as defined in EN 309, or a dry process fibreboard (MDF) as defined in EN 316 or a so called High Density Fibreboard (HDF) which is a MDF-board with a density ≥ 800 kg/m³.

3.4
backer
layer opposite to the surface layer used to balance and stabilize the product

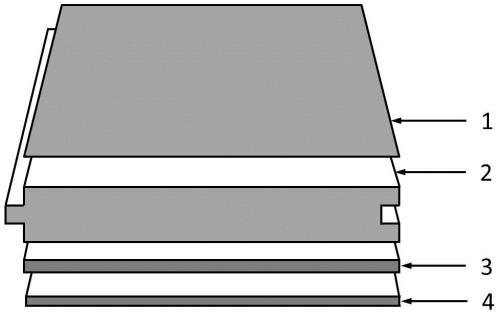
Note 1 to entry: The backer is generally made of impregnated papers.

3.5
underlay
layer placed between the laminate floor covering and the subfloor to impart specific properties

Note 1 to entry: Some laminate floor covering products have the underlay pre-attached directly to the backer.

3.6
laminate floor covering element
piece of the floor covering with profiled edges to facilitate assembly at installation

Note 1 to entry: 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 EN 13329:2016, 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 EN 13329:2016, 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 the large ball impact test a standard EPS foam of (1,8 ± 0,2) mm thickness, with a CS value of (60 ± 10) kPa and with PC-value of (0,9 ± 0,1) mm shall be used. The three parameters of the foam shall be determined according to CEN/TS 16354.[1)]

〈A1〉 Table 1 — Classification requirements and level 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.	EN 15468:2016+A1:2021, Annex A
Impact resistance Small ball	≥ 10 mm				≥ 35 mm	≥ 70 mm	EN 17368 [c]
Big ball	≥ 500 mm				≥ 750 mm	≥ 1 000 mm	EN 13329:2016+A2:2021, Annex H
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 ISO 16581
Effect of a castor chair	-	25 000 cycles, No damage [a]					EN 425:2002 [b]
Thickness swelling	≤ 20 %		≤ 18 %			≤ 15 %	ISO 24336
Locking strength	-				$f_{l0,2}$ ≥ 1 kN/m (length) $f_{s0,2}$ ≥ 2 kN/m (width)		ISO 24334
Surface	≥ 1,0 N/mm^2				≥ 1,25 N/mm^2		EN 13329:2016+

1) The product “Selitflex 1,6 mm” made by Selit Dämmtechnik 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.