SLOVENSKI STANDARD
SIST EN 13329:2024

01-februar-2024

Laminatne talne obloge - Specifikacije, zahteve in preskusne metode

Laminate floor coverings - Specifications, requirements and test methods

Laminatböden - Spezifikationen, Anforderungen und Prüfverfahren

Revêtements de sol stratifiés - Spécifications, exigences et méthodes d'essai

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ICS:

97.150 Talne obloge Floor coverings

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English Version

Laminate floor coverings - Specifications, requirements and test methods

Revêtements de sol stratifiés - Spécifications, exigences et méthodes d'essai

Laminatböden - Spezifikationen, Anforderungen und Prüfverfahren

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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 13329:2023) 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of an identical text or by endorsement, at the latest by June 2024, and conflicting national standards shall be withdrawn at the latest by June 2024.

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 EN 13329:2016+A2:2021, EN 14978:2016+A1:2021 and EN 15468:2016+A1:2021.

The main changes compared to EN 13329:2016+A2:2021, EN 14978:2016+A1:2021 and EN 15468:2016+A1:2021 are listed below:

— EN 13329, EN 14978 and EN 15468 merged;

— Annex A and Annex B on determination of geometrical characteristics replaced by reference to EN 17539 in Table 1;

— Annex E, Annex F and Annex G on determination of abrasion resistance replaced by reference to ISO 24338 in Table 2;

— specification of underlay in 4.2 modified;

— in Table 2 requirements for impact resistance with large ball reduced due to modified underlay;

— in Table 2 castor chair test according to EN 425 replaced by test according to EN ISO 4918 with adjusted requirements;

— in Table 3 water resistance according to ISO 4760 introduced as additional technical characteristic;

— information on recycling added as 4.4 and Annex D.

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, Türkiye and the United Kingdom.

1 Scope

This document specifies characteristics, requirements and test methods for laminate floor coverings with a surface layer as defined in 3.2 to 3.5. It also specifies requirements for marking and packaging.

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.

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.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 438-2, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Part 2: Determination of properties*

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

EN 16354, *Laminate floor coverings — Underlays — Specification, requirements and test methods*

EN 17368, *Laminate floor coverings — Determination of impact resistance with small ball*

EN 17539, *Modular mechanical locked floor coverings (MMF) — Determination of geometrical characteristics*

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

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

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

EN ISO 4892-2:2013,[1] *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2:2013)*

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

[1] As impacted by EN ISO 4892-2:2013/A1:2021.

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

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

EN ISO 24343-1, *Resilient and laminate floor coverings — Determination of indentation and residual indentation — Part 1: Residual indentation (ISO 24343-1)*

ISO 4760:2022, *Laminate flooring — Topical moisture resistance — Assembled joint*

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*

ISO 24338, *Laminate floor coverings — Determination of abrasion resistance*

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 document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1
laminate floor covering
rigid floor covering, typically in a plank or tile format, with a multiple layer structure: e.g. backer, substrate, décor and worked edges that allow the product to be joined together to form a larger integral unit

Note 1 to entry: Laminate flooring does not include products having a resilient, stone, textile, wood, leather or metal top surfacing material(s).

3.2
surface layer based on aminoplastic thermosetting resins
upper decorative layer, which may vary in surface texture and gloss level, consisting of one or more thin sheets of a fibrous material (usually paper), impregnated with aminoplastic, thermosetting resins (usually melamine)

Note 1 to entry: 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 backer (e.g. HPL, CPL, impregnated papers), primarily used as a balancing material.

3.3
resin based surface layer
upper decorative layer intended to be the visible side when the floor is installed, consisting of resins (usually acrylate, methacrylate or similar) which are cured using UV radiation or other curing methods

Note 1 to entry: It can exhibit impregnated and coated materials (generally décor paper), or at least one paint or varnish layer applied direct on the board using indirect printing, direct printing or digital printing. The combination of the multi-layered surface produced with this technique is called Printed Décor Laminate (PDL).

3.4
acrylic based surface layer
upper decorative layer intended to be the visible side when the floor is installed consisting of resins (normally acrylate, methacrylate or similar) which are hardened using beams 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.

3.5
acrylic based surface layer with a high gloss level
upper decorative layer as defined in 3.4 with a specular gloss level ≥ 85 units determined in accordance with EN ISO 2813 with a detection angle of 60°

3.6
substrate
core material of the laminate floor covering containing wood for at least 65 % in mass

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 an MDF-board with a density ≥ 800 kg/m^3.

3.7
backer
layer opposite to the surface layer used to balance and stabilize the product

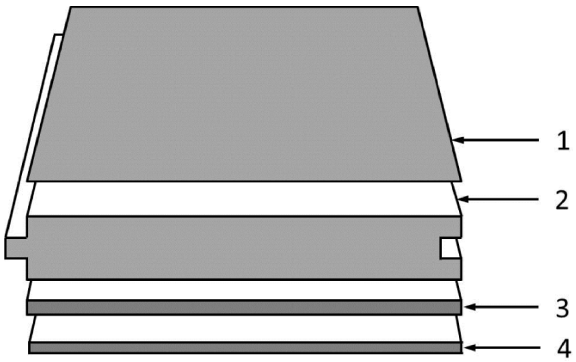
Note 1 to entry: The backer is generally made of impregnated papers.

3.8
pre-attached underlay
layer of resilient material pre-attached directly to the backer (3.7) to impart specific properties

Note 1 to entry: For laminate floor coverings without a pre-attached underlay, a separate underlay is generally laid between the laminate flooring and the subfloor during installation. For reasons of realistic system testing, separate underlays can be required for some tests according to this document.

3.9
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 pre-attached underlay (optional)

Figure 1— Laminate floorcovering 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 specified therein.

Table 1 — General requirements

Characteristic	Requirement	Test method
Thickness of the element, *(t)* without pre-attached underlay	$\Delta t_{average} \leq 0{,}50$ mm, relative to nominal value $t_{max.} - t_{min.} \leq 0{,}50$ mm	EN 17539
Thickness of the element, (*t*) with pre-attached underlay	$\Delta t_{average} \leq 0{,}50$ mm, relative to nominal value $t_{max.} - t_{min.} \leq 0{,}80$ mm	EN 17539
Length of the surface layer, (*l)*	For the nominal values given, no measured value shall exceed: $l \leq 1\,500$ mm: $\Delta l \leq 0{,}5$ mm $l > 1\,500$ mm: $\Delta l \leq 0{,}3$ mm/m	EN 17539
Width of the surface layer, (*w)*	$\Delta w_{average} \leq 0{,}10$ mm, relative to nominal value $w_{max.} - w_{min.} \leq 0{,}20$ mm	EN 17539
Length and width of squared elements, (*l = w)*	$\Delta l_{average} \leq 0{,}10$ mm relative to nominal value $\Delta w_{average} \leq 0{,}10$ mm, relative to nominal value $l_{max.} - l_{min.} \leq 0{,}20$ mm $w_{max.} - w_{min.} \leq 0{,}20$ mm	EN 17539
Squareness of the element, (*q)*	$q_{max.} \leq 0{,}20$ mm	EN 17539
Straightness of the surface layer, (*s)*	$s_{max.} \leq 0{,}30$ mm/m	EN 17539
Flatness of the element, (*f)*	Maximum single values: $f_{w,\,concave} \leq 0{,}15$ % $f_{w,\,convex} \leq 0{,}20$ % $f_{l,\,concave} \leq 0{,}50$ % $f_{l,\,convex} \leq 1{,}00$ %	EN 17539
Openings between elements, (*o)*	$o_{average} \leq 0{,}15$ mm $o_{max.} \leq 0{,}20$ mm	EN 17539
Height difference between elements, (*h)*	$h_{average} \leq 0{,}10$ mm $h_{max.} \leq 0{,}15$ mm	EN 17539
Dimensional variations after changes in relative humidity, *(δl, δw)*	$\delta l_{average} \leq 0{,}9$ mm $\delta w_{average} \leq 0{,}9$ mm	Annex (A)
Light fastness	Colour contrast between unexposed and exposed sample part ≥ 4 of grey scale according to EN 20105-A02	EN ISO 4892-2: 2013 procedure B – cycle 2 or cycle 5 (50 % rel. hum.) [a] [b]
Static indentation	residual indentation ≤ 0,05 mm	EN ISO 24343-1[c]

[a] Test until blue wool scale No. 6 according to EN ISO 105-B02 (= colour contrast 4 on the grey scale according to EN 20105-A02 between exposed and unexposed part of blue wool scale).

[b] Allow sample (24 ± 1 h) recovery time without light exposure at 23 °C and 50 % rel. humidity before taking final assessment.

[c] To be tested without underlay. Pre-attached underlays shall be removed.