



# SLOVENSKI STANDARD

## SIST EN 15468:2016

01-maj-2016

Nadomešča:  
SIST EN 15468:2008

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**Laminatne talne obloge - Elementi z direktnim nanosom potiska in sloja iz umetne smole - Specifikacije, zahteve in preskusne metode**

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

Laminatböden - Direktbedruckte Elemente mit Kunstharz-Deckschicht - Spezifikationen, Anforderungen und Prüfverfahren

Revêtements de sol stratifiés - Éléments comportant une couche d'impression appliquée directement et une couche de surface à base de résine - Spécifications, exigences et méthodes d'essai

**Ta slovenski standard je istoveten z: EN 15468:2016**

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**ICS:**

97.150      Netekstilne talne obloge      Non-textile floor coverings

**SIST EN 15468:2016**      **en,fr,de**

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EUROPEAN STANDARD

**EN 15468**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 97.150

Supersedes EN 15468:2007

English Version

## Laminate floor coverings - Elements with directly applied printing and resin surface layer - Specifications, requirements and test methods

Revêtements de sol stratifiés - Éléments comportant une couche d'impression appliquée directement et une couche de surface à base de résine - Spécifications, exigences et méthodes d'essai

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This European Standard was approved by CEN on 27 November 2015.

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

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

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## European foreword

This document (EN 15468:2016) 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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

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 15468:2007.

Compared to EN 15468:2007, the following changes have been made:

- a) general definition for laminate floor coverings included;
- b) test method for abrasion resistance based on falling sand method and requirements based on this test method added;
- c) defined underlay for impact resistance test with the large diameter ball added;
- d) Table 1 (classification requirements) changed in accordance with EN 13329:2016, Table 2 (classification requirements);
- e) technical characteristic micro-scratch resistance 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, 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 the United Kingdom.

**EN 15468:2016 (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 ISO 10874, providing 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. in domestic kitchens. This standard does not specify requirements relating 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.

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 425:2002, *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)*

EN 13329:2016, *Laminate floor coverings — Elements with a surface layer based on aminoplastic thermosetting resins — Specifications, requirements and test methods*

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

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

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

EN ISO 868:2003, *Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868:2003)*

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*

ASTM D785, *Standard Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials*

FEPA standard 42-D, *Grains of fused aluminium oxide, silicon carbide and other abrasive materials for bonded abrasives and for general industrial applications*

FEPA standard 44-D, *Grains of fused aluminium oxide, silicon carbide and other abrasive materials. Determination of bulk density*

### 3 Terms and definitions

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

NOTE This European Standard specifies characteristics, requirements and test methods for laminate floor coverings with directly applied printing and resin surface layer as defined in 3.1 and 3.2.

#### 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

##### **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).

#### 3.3

##### **substrate**

core material of the laminate floor covering

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https://standards.iteh.ai/catalog/standards/sist/0908bc88-b9d4-4628-a104-f5cd9eff9cbf/sist-en-15468-2016](https://standards.iteh.ai/catalog/standards/sist/0908bc88-b9d4-4628-a104-f5cd9eff9cbf/sist-en-15468-2016)

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  $\geq 800$  kg/m<sup>3</sup>.

#### 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

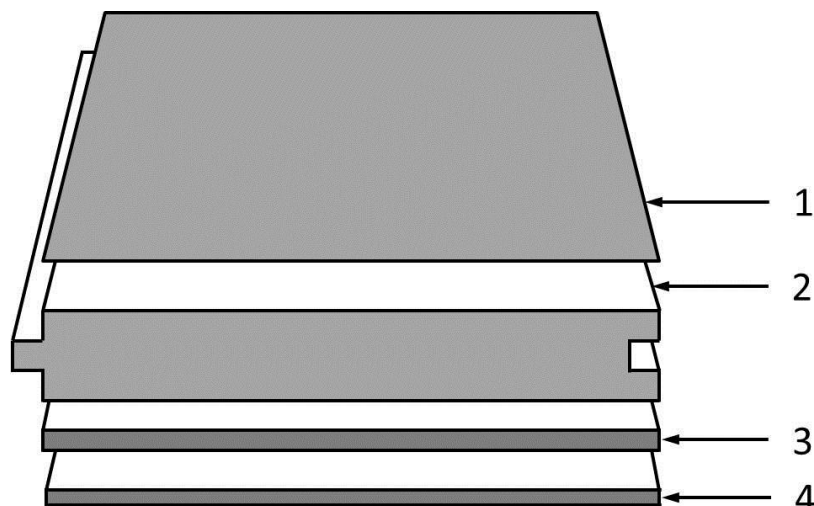
Note 1 to entry: Some laminate floor covering products have the underlay pre-attached directly to the backer.

#### 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— Laminate floor-covering element**  
(standards.iteh.ai)

## 4 Requirements

### 4.1 General requirements

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<https://standards.iteh.ai/catalog/standards/sist/0908bc88-b9d4-4628-a104-f5cd9eff9cbf/sist-en-15468-2016>

Laminate floor coverings according to this standard shall conform to the general requirements given in EN 13329:2016 when tested by the methods given therein.

For special applications, such as decorative pattern effects, tighter tolerances might 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.

### 4.2 Classification requirements

Laminate floor coverings using the PDL technologies, according to this standard, shall be classified as suitable for different levels of use according to the classification 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 big ball impact test a standard EPS foam of  $(1,8 \pm 0,2)$  mm thickness, with a CS value of  $(60 \pm 10)$  kPa and with PC-value of  $(0,9 \pm 0,1)$  mm shall be used. The three parameters of the foam shall be determined according to CEN/TS 16354.<sup>1)</sup>

<sup>1)</sup> 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.



**Table 1 — Classification requirements and levels of use for floor coverings using PDL technologies**

Class:	Levels of use						Test method
	Domestic			Commercial			
	Moderate	General	Heavy	Moderate	General	Heavy	
	21	22	23	31	32	33	
<b>Abrasion resistance</b>	AC1	AC2	AC3		AC4	AC5	EN 13329:2016, <b>Annex E</b>
<b>Alternative: Abrasion resistance</b>	AC1	AC2	AC3		AC 4	AC 5	<b>Annex A</b>
<b>Impact resistance</b>							
<b>Small ball</b>	$\geq 8 N$			$\geq 12 N$		$\geq 15 N$	EN 13329:2016, <b>Annex H</b>
<b>Big ball</b>	$\geq 500 mm$			$\geq 750 mm$		$\geq 1\ 000 mm$	
<b>Resistance to staining</b>	4, (groups 1 and 2) 3, (group 3)	5, (groups 1 and 2) 4, (group 3)					EN 438-2
<b>Effect of a furniture leg</b>	—	No damage shall be visible, when tested with foot type 0					EN 424
<b>Effect of a castor chair</b>	—	25 000 cycles, No damage <sup>a</sup>					EN 425:2002 b
<b>Thickness swelling</b>	$\leq 20\ %$	$\leq 18\ %$			$\leq 15\ %$		ISO 24336
<b>Locking Strength</b>	-				$f_{0,2} \geq 1\ kN/m$ (length) $f_{s0,2} \geq 2\ kN/m$ (width)		ISO 24334
<b>Surface soundness</b>	$\geq 1,0\ N/mm^2$				$\geq 1,25\ N/mm^2$		EN 13329:2016, <b>Annex D</b>
<sup>a</sup> No visible damage on the surface of the assembled test area caused by detachment of layers, opening of joints, or crazing. Ignore any flattening or change in appearance, e.g. change in gloss. <sup>b</sup> Using soft castor wheels W PU (95 ± 5) Shore A.							

### 4.3 Additional technical characteristics

When any of the characteristics given in Table 2 are requested 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 2 — Additional technical characteristics

Characteristic	Comment	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 the EN 438 series are permitted.	EN 438-2
Micro-scratch resistance	Can be declared as microscratch resistance classes according to procedure A and/or B.	EN 16094

## 5 Marking and packaging

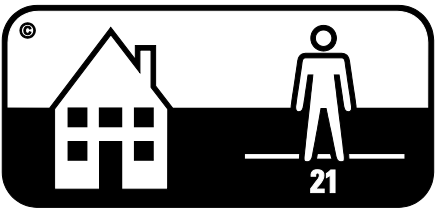
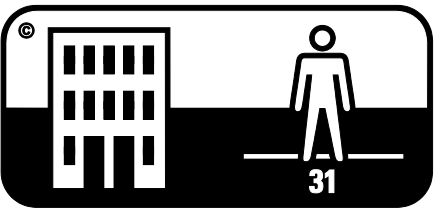
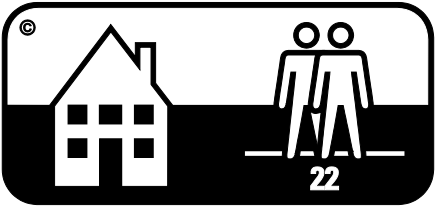
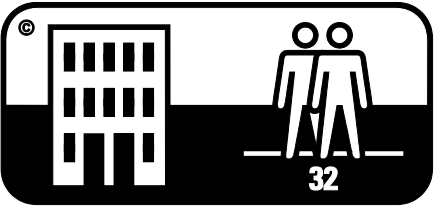

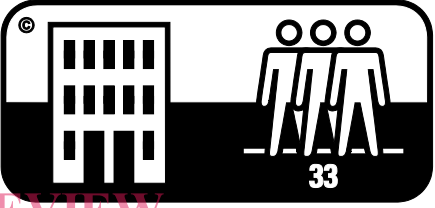
### 5.1 Marking

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 information sheet included in the packaging:

- a) a reference to 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 EN ISO 10874 and in accordance with Table 3;
- f) declaration which abrasion method (EN 13329:2016, Annex E or EN 15468, Annex A) was used for declaration of level of use;
- g) nominal dimensions of one floor covering element in millimetres; if relevant: nominal thickness of pre-attached underlay, 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 meters.

Table 3 — Classification symbols

Intensity of use according to EN ISO 10874	Domestic	Commercial
Moderate		
General		
Heavy		

## 5.2 Packaging

(standards.iteh.ai)

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:

- the name and address of the test laboratory;
- date of test report;
- a reference to this standard and the used abrasion test method;
- full description of the product tested;
- sampling information;
- test results;
- all deviations from this standard.