

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13329:2016 sisaldab Euroopa standardi EN 13329:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 13329:2016 consists of the English text of the European standard EN 13329:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 09.03.2016.	Date of Availability of the European standard is 09.03.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 97.150

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:

Aru 10, 10317 Tallinn, Eesti; koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

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

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

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

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

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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-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.



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

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

Contents	Page
European foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Requirements	7
4.1 General requirements	7
4.2 Classification requirements	8
4.3 Additional technical characteristics	10
5 Marking and packaging	10
5.1 Marking.....	10
5.2 Packaging	11
6 Test report	11
Annex A (normative) Determination of thickness, length, width, squareness, straightness and flatness	12
A.1 Sampling.....	12
A.2 Conditioning.....	12
A.3 Apparatus.....	12
A.4 Procedure.....	14
A.4.1 Determination of thickness (t)	14
A.4.2 Determination of length (l).....	15
A.4.3 Determination of width (w)	16
A.4.4 Determination of dimensions of squared elements	16
A.4.5 Determination of squareness (q)	17
A.4.6 Determination of straightness (s).....	17
A.4.7 Determination of width flatness (f_w).....	18
A.4.8 Determination of length flatness (f_l).....	18
A.5 Calculation and expression of results.....	19
A.5.1 Thickness (t)	19
A.5.2 Length (l).....	19
A.5.3 Width (w)	19
A.5.4 Squareness (q)	19
A.5.5 Straightness (s)	20
A.5.6 Width flatness (f_w)	20
A.5.7 Length flatness (f_l)	20
Annex B (normative) Determination of openings and height difference between elements	21
B.1 Sampling.....	21
B.2 Conditioning.....	21
B.3 Apparatus.....	21
B.4 Procedure.....	21
B.4.1 Assembling	21
B.4.2 Determination of opening between elements (o)	22
B.4.3 Determination of height difference (h).....	22
B.5 Calculation and expression of results.....	22

Annex C (normative) Determination of dimensional variations after changes in relative humidity	23
C.1 General	23
C.2 Sampling	23
C.3 Conditioning	23
C.4 Calculation and expression of results	24
Annex D (normative) Determination of surface soundness	25
D.1 General	25
D.2 Sampling	25
D.3 Conditioning	25
D.4 Procedure	25
D.4.1 Preparing the test specimen	25
D.4.2 Bonding the steel pad to the surface	26
D.4.3 Determination of force at fracture	26
D.5 Calculation and expression of results	26
Annex E (normative) Determination of abrasion resistance and abrasion classification	27
E.1 Sampling	27
E.2 Conditioning	27
E.3 Apparatus	28
E.3.1 Testing machine	28
E.3.2 Additional material or equipment	31
E.4 Procedure	31
E.4.1 General	31
E.4.2 Preparation of test specimens and abrasive papers	31
E.4.3 Preparation of abrasive wheels	31
E.4.4 Determination of the abrasion rate of abrasive paper	31
E.4.5 Abrasion of test specimen	32
E.4.6 Expression of results	33
E.4.7 Test report	33
Annex F (normative) Calibration and Maintenance of Abrasion equipment	34
F.1 General	34
F.2 Apparatus	34
F.3 Procedure	34
F.3.1 Bearing Wear	34
F.3.2 Shaft Wear	34
F.3.3 Alignment	35
Annex G (normative) Measurement of shore A hardness	37
Annex H (normative) Determination of impact resistance and impact classification	38
H.1 General	38
H.2 Sampling	38
H.3 Apparatus	38
H.4 Procedure	38
H.4.1 Large-diameter ball test	38
H.4.2 Small-diameter ball test	39
Bibliography	42

European foreword

This document (EN 13329:2016) 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 13329:2006+A1:2008.

Compared to EN 13329:2006+A1:2008, the following changes have been made:

- a) general definition for laminate floor coverings included;
- b) test method for the light fastness stated more precisely;
- c) general requirements for thickness tolerances of elements with pre-attached underlays added;
- d) requirements for abrasion resistance changed;
- e) requirements for cigarette resistance deleted;
- f) general requirements for surface soundness changed into a classification requirement, requirements partly increased;
- g) defined underlay for the impact resistance test with the large diameter ball added and requirements for this property changed;
- h) requirements for castor chair test changed;
- i) requirements for thickness swelling partly changed;
- j) requirements for locking strength added;
- k) requirements for dimensional stability changed;
- l) technical characteristic micro-scratch resistance added;
- m) test method for abrasion resistance in Annex E stated more precisely;
- n) Annex G for hardness measurements for abrasion wheels added;
- o) test method for impact resistance in Annex H stated more precisely.

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.

1 Scope

This European Standard specifies characteristics, requirements and test methods for laminate floor coverings with a surface layer based on aminoplastic thermosetting resins as defined in 3.1 and 3.2. 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 considered for domestic and commercial levels of use, including domestic kitchens. This standard does not specify requirements relating to areas which are subjected 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 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 425:2002, *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 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 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 4892-2:2006/A1:2009, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (ISO 4892-2:2006/Amd1:2009)*

EN ISO 6506-1, *Metallic materials - Brinell hardness test - Part 1: Test method (ISO 6506-1)*

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

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

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*

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 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.

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
substrate
core material of the laminate floor covering

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 $\geq 800 \text{ kg/m}^3$.

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