



SLOVENSKI STANDARD
oSIST prEN 14041:2011
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Netekstilne, tekstilne in laminirane (plastene) talne obloge - Bistvene značilnosti

Resilient, textile and laminate floor coverings - Essential characteristics

Elastische, textile und Laminat-Bodenbeläge - Wesentliche Eigenschaften

Revêtements de sol résilients, textiles et stratifiés - Caractéristiques essentielles

Ta slovenski standard je istoveten z: prEN 14041

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ICS:

59.080.60	Tekstilne talne obloge	Textile floor coverings
97.150	Netekstilne talne obloge	Non-textile floor coverings

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Resilient, textile and laminate floor coverings - Essential characteristics

Revêtements de sol résilients, textiles et en stratifiés -
Caractéristiques essentielles

Elastische, textile und Laminat-Bodenbeläge - Wesentliche
Eigenschaften

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.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (prEN 14041:2011) has been prepared by Technical Committee CEN/TC 134 “Resilient, textile and laminate floor coverings”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14041:2004.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, B, C or D, which is an integral part of this document.

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1 Scope

This document specifies the health, safety and energy saving requirements for:

- a) resilient floor coverings manufactured from plastics, linoleum, cork or rubber, excluding loose-laid mats;
- b) textile floor coverings, excluding loose-laid (barrier) mats and rugs;
- c) laminate floor coverings as defined in EN 13329, EN 14978 or EN 15468;
- d) floor panels for loose-laying containing as component one of the above mentioned resilient or textile floor coverings.

It also specifies procedures for testing for the evaluation of conformity of the products and the requirements for marking and labelling.

The products are intended for use as floor coverings within a building according to the manufacturer's specifications.

This document does not apply to floor coverings containing asbestos.

This document does not specify requirements unrelated to health, safety and energy saving, which are covered in the separate European Standards for these products, listed in Annex A. To perform correctly, products covered by this standard require correct installation and maintenance. This document does not, however, cover installation or maintenance, but does give advice on minimising slip hazards.

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2 Normative references

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The following referenced documents are indispensable for the application 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 548, *Resilient floor coverings – Specification for plain and decorative linoleum.*

EN 649, *Resilient floor coverings – Homogeneous and heterogeneous polyvinyl chloride floor coverings – Specification.*

EN 651, *Resilient floor coverings – Polyvinyl chloride floor coverings with foam layer – Specification.*

EN 652, *Resilient floor coverings – Polyvinyl chloride floor coverings with cork-based backing – Specification.*

EN 653, *Resilient floor coverings – Expanded (cushioned) polyvinyl chloride floor coverings – Specification.*

EN 654, *Resilient floor coverings – Semi-flexible polyvinyl chloride tiles – Specification.*

EN 687, *Resilient floor coverings – Specification for plain and decorative linoleum on a corkment backing.*

EN 717-1, *Wood-based panels – Determination of formaldehyde release – Part 1: Formaldehyde emission by the chamber method.*

EN 717-2, *Wood-based panels – Determination of formaldehyde release – Part 2: Formaldehyde release by the gas analysis method.*

EN 1081, *Resilient floor coverings – Determination of the electrical resistance.*

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EN 1307, *Textile floor coverings – Classification of pile carpets.*

EN 1470, *Textile floor coverings – Classification of needled floor coverings except for needled pile floor coverings.*

ISO 1765, *Machine-made textile floor coverings -- Determination of thickness*

ISO 1766, *Textile floor coverings -- Determination of thickness of pile above the substrate*

EN 1815, *Resilient and textile floor coverings – Assessment of static electrical propensity.*

EN 1816, *Resilient floor coverings – Specification for homogeneous and heterogeneous smooth rubber floor coverings with foam backing.*

EN 1817, *Resilient floor coverings – Specification for homogeneous and heterogeneous smooth rubber floor coverings.*

ISO 2424, *Textile floor coverings – Vocabulary.*

ISO 6356, *Textile floor coverings – Assessment of static electrical propensity – Walking test.*

ISO 8302, *Thermal insulation – Determination of steady-state thermal resistance and related properties – guarded hot plate apparatus*

EN ISO 9001, *Quality management systems – Requirements.*

EN ISO 9239-1, *Reaction to fire tests for floorings – Part 1: Determination of the burning behaviour using a radiant heat source.*

EN ISO 10456, *Building materials and products – Hygrothermal properties -- Tabulated design values and procedures for determining declared and design thermal values*

ISO 10580, *Resilient, textile and laminate floor coverings -- Test method for volatile organic compound (VOC) emissions*

ISO 10965, *Textile floor coverings – Determination of electrical resistance.*

EN ISO 11925-2, *Reaction to fire tests - Ignitability of building products subjected to direct impingement of flame - Part 2: Single-flame source test.*

ISO 11379, *Textile floor coverings – Laboratory cleaning procedure using spray extraction.*

EN 12103 *Resilient floor coverings - Specification for cork underlays*

EN 12199, *Resilient floor coverings – Specifications for homogeneous and heterogeneous relief rubber floor coverings.*

EN 12466, *Resilient floor coverings – Vocabulary.*

EN 12524, *Building materials and products – Hygrothermal properties – Tabulated design values.*

EN 12673, *Water quality – Gas chromatographic determination of some selected chlorophenols in water.*

EN 12664, *Thermal performance of building materials and products – Determination of thermal resistance by means of guarded hot plate and heat flow meter methods – Dry and moist products of medium and low thermal resistance.*

EN 12667, *Thermal performance of building materials and products – Determination of thermal resistance by means of guarded hot plate and heat flow meter methods – Products of high and medium thermal resistance.*

EN 13238, *Reaction to fire tests for building products – Conditioning procedures and general rules for selection of substrates.*

EN 13297, *Textile floor coverings – Classification of needled pile floor coverings.*

EN 13329, *Laminate floor coverings - Elements with a surface layer based on aminoplastic thermosetting resins - Specifications , requirements and tests methods*

EN 13501-1, *Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests.*

EN 13553, *Resilient floor coverings – Polyvinyl chloride floor coverings for use in special wet areas – Specification.*

EN 13893, *Resilient, laminate and textile floor coverings – Measurement of dynamic coefficient of friction on dry floor surfaces.*

EN ISO 14040 *Environmental management - Life cycle assessment - Principles and framework*

EN ISO 14044 *Environmental management - Life cycle assessment - Requirements and guidelines*

EN ISO 14025 *Environmental labels and declarations - Type III environmental declarations - Principles and procedures*

EN 15114 , *Textile floor coverings – classification of textile floor coverings without pile*

CEN TS 15398, *Resilient, textile and laminate floor coverings - Floor covering standard symbols*

CEN TS 15447 *Mounting & fixing in reaction to fire tests under the Construction Products Directive*

prEN 15804 *Sustainability of construction works – Environmental product declarations – core rules for the product category of construction products*

ISO 16000-3, *Indoor air -- Part 3: Determination of formaldehyde and other carbonyl compounds -- Active sampling method*

ISO 16000-6, *Indoor air -- Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA sorbent, thermal desorption and gas chromatography using MS/FID*

EN ISO 16000-9, *Indoor air – Part 9: Determination of the emission of volatile organic compounds from building products and furnishing – Emission test chamber method*

ISO 16000-10, *Indoor air -- Part 10: Determination of the emission of volatile organic compounds from building products and furnishing -- Emission test cell method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12466 and ISO 2424 and the following apply.

3.1 family of products
range of products within defined limits of variability defined by the manufacturer or a technical specification of the product parameters and, if relevant, end-use parameters for which essential characteristics remain unchanged.

3.2 type III environmental product declaration
environmental declaration providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information.

NOTE 1 The predetermined parameters are based on the EN ISO 14040 series of standards, which is made up of EN ISO 14040 and EN ISO 14044.

NOTE 2: The additional environmental information may be quantitative or qualitative.

[EN ISO 14025]

3.3 product category rules (PCR)
set of specific rules, requirements and guidelines for developing Type III environmental declarations (3.2)

[EN ISO 14025]

3.4 volatile organic compound (VOC)
compound, as specified in ISO 16000-6, which elute between and including *n*-hexane and *n*-hexadecane (excluding formaldehyde) on a non-polar capillary chromatographic column, measured in the test chamber air by active sampling on Tenax TA sorbent, thermal desorption (TD) and gas chromatography (GC) using mass spectrometry (MS) or flame ionization detection (FID)

3.5 total volatile organic compound (TVOC)
sum of the concentrations of identified and unidentified volatile organic compounds eluting between and including *n*-hexane and *n*-hexadecane on a non-polar capillary gas chromatography column

NOTE 1 For quantification of the identified compounds, their individual response is used. The areas of the unidentified peaks are converted on molecular mass basis to concentrations using the toluene response factor (Reference [2]. in the Bibliography).

NOTE 2 Due to practical reasons to be taken into account for test chambers, this definition differs slightly from the specification in ISO 16000-6. In ISO 16000-6, TVOC are related to the sampling medium Tenax TA^{®1)} on which the TVOC are adsorbed.

NOTE 3 The emission test method described in this International Standard is optimum for the range of compounds specified by the definition of total volatile organic compounds (TVOC).

1) Tenax TA[®] is the trade name of a product manufactured by Enka Research Institute NV (NL) and Buchem BV (NL). This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of the product named. Equivalent products may be used if they can be shown to lead to the same results

3.6**carbonyl compounds**

low-molecular-mass aldehyde and ketone volatile organic compounds which are measured in the test chamber air by active sampling on cartridges containing a solid support coated with an acid solution of 2,4-dinitrophenylhydrazine (DNPH) as a derivatizing reagent

3.7**mass concentration** C_i

ratio of mass of VOC_i per volume in the emission test chamber

NOTE Mass concentration is expressed in micrograms per cubic metre.

3.8**detection limit**

minimum quantity which can be detected analytically with this test method

NOTE A detection limit of $2 \mu\text{g}/\text{m}^3$ is defined for use in this International Standard.

3.9**determination limit**

minimum quantity of a detected substance above which quantification is possible

NOTE Due to technical restriction of the apparatus and the accuracy of the test method, a determination limit of $10 \mu\text{g}/\text{m}^3$ is defined for use in this International Standard.

3.10**lowest concentrations of interest (standards.iteh.ai)****LCI_i**

lowest concentration above which, according to best professional judgment, an organic compound might have some adverse effect on people in the indoor environment

3.11**risk evaluation value****R_i-value**

for the evaluation of each compound i the ratio R_i is established as defined in the following equation:

$R_i = C_i / \text{LCI}_i$ for all C_i above the determination limit and for which a LCI value is listed in Annex G

3.12**risk index****R-value**

termed risk index defined as the sum of all R_i

4 Requirements**4.1 Reaction to fire****4.1.1 Specimen preparation and conditioning**

Preparation of test specimens shall be as defined in the appropriate fire test standard and CEN/TS 15447, except in the case of textile floor coverings where a washing and cleaning procedure similar to that used in practice may be required to verify the durability of surface fire retardant treatments (see 4.1.3)

The specimens shall be tested on one of the two standard substrates specified for floorings in EN 13238 according to the intended end use.

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The composition of the product, including the presence of any fire retardant additive (if applicable), shall be declared by the manufacturer prior to type testing.

4.1.2 Application rules

If the specimens are tested using an adhesive, the test result is valid for the tested floor covering with that adhesive, or the generic adhesive type, in end use conditions.

If the specimens are tested without using an adhesive, the test result is valid for the tested floor covering with and without using adhesives in end use conditions.

4.1.3 Durability aspects

In all situations where a fire retardant has been added to the surface material during the finishing process of the textile floor covering by spray, foam or other technology, textile floor covering specimens shall be subjected to the laboratory spray extraction cleaning procedure according to ISO 11379 with the following modifications:

- a) Clean the test specimens three times, with an interval of $2\text{ h} \pm 15\text{ min}$ between cycles, each cleaning cycle consisting of two strokes:
 - for the first stroke use the spray extraction machine with simultaneous spray and extraction;
 - for the second stroke operate the machine only as an extraction machine.
- b) Carry out the first cleaning cycle using the reference cleaning solution at ambient temperature (25 ± 10) °C and the second and third cleaning cycle with water at ambient temperature without any addition of chemicals.

4.1.4 Classification

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If a claim for reaction to fire performance is made, the floor covering (except as provided for below) shall be tested and classified according to the requirements of EN 13501-1 and the resulting class and subclass (as appropriate to the class itself) shall be declared.

If it is decided to make no claim for reaction to fire performance, i.e. it is decided to place a product or family of products on the market as Class F_{fl} , no testing is required for this product or family of products.

The products listed in Tables 1, 2 and 3, in the end uses identified in the tables, are classified without further testing (CWFT) in the classes shown and do not require testing in respect of these end uses and classes.

NOTE The provisions of Tables 1, 2 and 3 are subject to final approval by the Standing Committee for Construction. Users of this standard should, therefore, refer to the published EC Decisions, when they become available, to verify the details. Any changes necessary to these standards will be published in a Corrigendum.

Table 1 – Classes of reaction to fire for laminate floor coverings, classified without further testing

Floor covering type ¹	Product detail	Minimum density (kg/m ³)	Minimum overall thickness (mm)	Class ² Floorings
Laminate floor coverings	Laminate floor coverings manufactured in accordance with EN 13329	800	6,5	E_{fl}

¹ Floor covering loose laid over any wood based substrate of at least Class D-s2,d0 or any substrate of at least Class A2-s1,d0.

² Class as provided for in Table 2 in the Annex to Decision 2000/147/EC.

Table 2 – Classes of reaction to fire for textile floor coverings, classified without further testing

Floor covering type ¹	EN product standard	Class ³ Floorings
Non-FR machine-made wall-to-wall pile carpets and pile carpet tiles ²	EN 1307	E _{fl}
Non-FR needled textile floor coverings without pile ²	EN 1470	E _{fl}
Non-FR needled textile floor coverings with pile ²	EN 13297	E _{fl}
Non-FR textile floor coverings without pile ⁴	EN 15114	E _{fl}
<p>¹) Floor covering glued or loose laid over a Class A2-s1,d0 substrate.</p> <p>²) Textile floor coverings having a total mass of max. 4,8 kg/m², a minimum thickness of pile above the substrate of 1,8 mm (ISO 1766) and:</p> <ul style="list-style-type: none"> - a surface of 100% wool, - a surface of 80% wool or more - 20% polyamide or less, - a surface of 80% wool or more - 20% polyamide/polyester or less, - a surface of 80 % wool or more – 20 % polypropylene/polyester or less, - a surface of 100% polyamide, - a surface of 10 % polyamide (or wool) or more – 90 % polypropylene or less and if with SBR-foam backing, a total mass of > 0,780 kg/m². All carpets of this product family with other foam backings are excluded - a surface of 100% polypropylene and if with SBR-foam backing, a total mass of > 0,780 kg/m². All polypropylene carpets with other foam backings are excluded. <p>³) Class as provided for in Table 2 in the Annex to Decision 2000/147/EC.</p> <p>⁴) Textile floor coverings without pile having a total mass of maximum 2.6 kg/m², a minimum total thickness (ISO 1765) of 2.0 mm and</p> <ul style="list-style-type: none"> - a fibre composition of 50 % wool or more – 50% (jute and cotton in any proportion) or less, - a fibre composition of 50 % polypropylene or less – 50 % polyamide (or wool) or more, - a fibre composition of 100% polyamide, - a fibre composition of 100 % polypropylene - a surface of 80 % wool or more – 20 % polypropylene/polyester or less 		

Table 3 – Classes of reaction to fire for resilient floor coverings, classified without further testing

Floor covering type ¹	EN product standard	Minimum mass (kg/m ²)	Maximum mass (kg/m ²)	Minimum overall thickness (mm)	Class ² Floorings
Plain & decorative Linoleum	EN 548	2,3	4,9	2	E _{fl}
Homogeneous and heterogeneous polyvinyl chloride floor coverings	EN 649	2,3	3,9	1,5	E _{fl}
Polyvinyl chloride floor coverings with foam layer	EN 651	1,7	5,4	2	E _{fl}
Polyvinyl chloride floor covering with cork-based backing	EN 652	3,4	3,7	3,2	E _{fl}
Expanded (cushioned) polyvinyl chloride floor coverings	EN 653	1,0	2,8	1,1	E _{fl}
Semi-flexible polyvinyl chloride tiles	EN 654	4,2	5,0	2	E _{fl}
Linoleum on corkment backing	EN 687	2,9	5,3	2,5	E _{fl}
Homogeneous and heterogeneous smooth rubber floor coverings with foam backing	EN 1816	3,4	4,3	4	E _{fl}
Homogeneous and heterogeneous smooth rubber floor coverings	EN 1817	3,0	6,0	1,8	E _{fl}
Homogeneous and heterogeneous relief rubber floor coverings	EN 12199	4,6	6,7	2,5	E _{fl}

¹ Floor covering loose laid over any wood based substrate of at least Class D-s2,d0 or any substrate of at least Class A2-s1,d0.

² Class as provided for in Table 2 in the Annex to Decision 2000/147/EC.

Normative Annex E gives guidance for defining a family of products in relation to fire performance relevant to initial type testing, factory production control and assessment of conformity. The product parameters influencing the reaction to fire performance of floor coverings are given.

4.2 Requirements concerning the content of dangerous substances

If the substances listed in table 4 are not added in the manufacture process of the floor covering or any of its raw materials, then the floor covering does not need to be tested.

In all other cases verification is required according to the test methods in table 4 and requirements in table 4 have to be met.

Table 4 – Test methods for the determination of dangerous substances

Preliminary proposal*			
Substance (s)	Preliminary description of the proposed test methods	References	Levels
	R: resilient floor coverings T: textile floor coverings L: laminate floor coverings		
PCP	R: See annex B for resilient floor covering		
	T: See annex B for textile floor covering		
	L: sample preparation: solvent extraction, derivatization detection: GC/ECD	CEN/TR 14823	
benzyl butyl phthalate (BBP)	R: <i>in process</i>		
	T: sample preparation: solvent extraction detection: GC/MS		
bis (2 ethylhexyl) phthalate (DEHP)			
dibutyl phthalate (DBP)	L: sample preparation: solvent extraction detection: GC/MS		
alkanes, C10-13, chloro (SCCP)	R: <i>in process</i>		
	T: sample preparation: solvent extraction detection: LC/MS or GC/MS		
	L: sample preparation: solvent extraction detection: LC/MS or GC/MS		
penta , octa-, and decabromodiphenylether	R: <i>in process</i>		
	T: sample preparation: solvent extraction detection: GC/MS		

* The TC134 progress on the requirement of amendment to mandate M119 rev.1 is depending on the CEN TC351 progress for the development of test methods including the corresponding validation process.