



**SLOVENSKI STANDARD**  
**SIST EN 14041:2005**

**01-marec-2005**

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Resilient, textile and laminate floor coverings - Essential characteristics

Elastische, textile und Laminat-Bodenbeläge - Wesentliche Eigenschaften

Revetements de sol résilients, textiles et stratifiés - Caractéristiques essentielles

**Ta slovenski standard je istoveten z: EN 14041:2004**

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59.080.60	Tekstilne talne obloge	Textile floor coverings
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ICS 59.080.60; 97.150

English version

## Resilient, textile and laminate floor coverings - Essential characteristics

Revêtements de sol résilients, textiles et stratifiés -  
Caractéristiques essentielles

Elastische, textile Bodenbeläge und Laminatböden -  
Wesentliche Eigenschaften

This European Standard was approved by CEN on 2 February 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Foreword

This document (EN 14041:2004) has been prepared by Technical Committee CEN/TC 134 “Resilient, textile and laminate floor coverings”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by May 2006.

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, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

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

- resilient floor coverings manufactured from plastics, linoleum, cork or rubber, excluding loose-laid mats;
- textile floor coverings, excluding loose-laid mats and rugs;
- laminate floor coverings;
- floor panels for loose-laying.

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 or externally, 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.

## 2 Normative references

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.*

ENV 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.*

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

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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.*

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

EN 12466:1998, *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 13238:2001, *Reaction to fire tests for building products – Conditioning procedures and general rules for selection of substrates.*

EN 13329, *Laminate floor coverings – Specifications, requirements and test methods.*

EN 13501-1:2002, *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 9001, *Quality management systems – Requirements.*

EN ISO 9239-1:2002, *Reaction to fire tests for floorings – Part 1: Determination of the burning behaviour using a radiant heat source (ISO 9239-1:2002).*

EN ISO 11925-2:2002, *Reaction to fire tests - Ignitability of building products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2:2002).*

ISO 1957, *Machine-made textile floor coverings – Selection and cutting of specimens for physical tests.*

ISO 2424:1992, *Textile floor coverings – Vocabulary.*

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

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

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



### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12466:1998 and ISO 2424:1992 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 the defined safety property remains unchanged (does not get worse)

### 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, 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 13238:2001 according to the intended end use.

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

Where required, textile floor coverings specimens to be tested shall be subjected to the laboratory spray extraction cleaning procedure according to ISO 11379 with the following modifications.

- 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.
- Carry out the first cleaning cycle using the reference cleaning solution at ambient temperature ( $25\text{ °C} \pm 10\text{ °C}$ ) and the second and third cleaning cycle with water at ambient temperature without any addition of chemicals.

4.1.4 Classification

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 13501-1:2002 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<sub>fl</sub>, 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 <sup>1</sup>	Product detail	Minimum density (kg/m <sup>3</sup> )	Minimum overall thickness (mm)	Class <sup>2</sup> Floorings
Laminate floor coverings	Laminate floor coverings manufactured in accordance with EN 13329:2000	800	6,5	E <sub>fl</sub>

<sup>1</sup> 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.

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

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

Floor covering type <sup>1</sup>	EN product standard	Class <sup>3</sup> Floorings
Non-FR machine-made wall-to-wall pile carpets and pile carpet tiles <sup>2</sup>	EN 1307	E <sub>fl</sub>
Non-FR needled textile floor coverings without pile <sup>2</sup>	EN 1470	E <sub>fl</sub>
Non-FR needled textile floor coverings with pile <sup>2</sup>	EN 13297	E <sub>fl</sub>

<sup>1</sup> Floor covering glued or loose laid over a Class A2-s1,d0 substrate.

<sup>2</sup> Textile floor coverings having a total mass of max. 4,8 kg/m<sup>2</sup>, a minimum pile thickness of 1,8 mm (ISO 1766) and:

- 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 100% polyamide,
- a surface of 100% polypropylene and if with SBR-foam backing, a total mass of > 0,780 kg/m<sup>2</sup>. All polypropylene carpets with other foam backings are excluded.

<sup>3</sup> Class as provided for in Table 2 in the Annex to Decision 2000/147/EC.

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

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

<sup>1</sup> 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.

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

#### 4.2 Content of pentachlorophenol (PCP)<sup>1</sup>

Resilient, textile and laminate floor coverings shall not contain PCP or a derivative thereof as a component in the production process of the product or of its raw materials. In cases where verification is required, if the content is less than 0,1 % by mass by the method of Annex B, this requirement shall be considered to be met.

#### 4.3 Formaldehyde emission

When formaldehyde-containing materials have been added to the product as a part of the production process, the product shall be tested and classified into one of two classes: E1 or E2, as specified in Table 4 and Table 5.

NOTE Products of class E1 can be used without causing an indoor air concentration greater than  $0,1 \times 10^{-6}$  (0,1 ppm) of formaldehyde.

<sup>1</sup> Attention is drawn to Commission Directive 1999/51/EC that covers restrictions on the marketing and use of certain dangerous substances including PCP and is reflected in national regulations.

The test requirement does not apply to floor coverings to which no formaldehyde-containing materials were added during production or post-production processing. These need not be classified, but may, without any testing, be declared as E1.

**Table 4 – Formaldehyde class E1**

	Test method	Requirement
Initial type testing <sup>a</sup>	ENV 717-1	Release ≤ 0,124 mg/m <sup>3</sup>
Factory production control	ENV 717-1	Release ≤ 0,124 mg/m <sup>3</sup>
	EN 717-2	Release ≤ 3,5 mg/m <sup>2</sup> h
<sup>a</sup> For established products, initial type testing may also be done on the basis of existing data with EN 717-2 testing, either from factory production control or from external inspection.		

**Table 5 – Formaldehyde class E2**

	Test method	Requirement
Initial type testing	ENV 717-1	Release > 0,124 mg/m <sup>3</sup>
	EN 717-2	Release > 3,5 mg/m <sup>2</sup> h to ≤ 8 mg/m <sup>2</sup> h
Factory production control	ENV 717-1	Release > 0,124 mg/m <sup>3</sup>
	EN 717-2	Release > 3,5 mg/m <sup>2</sup> h to ≤ 8 mg/m <sup>2</sup> h

**4.4 Water-tightness**

Where required, resilient floor coverings shall meet the requirements of EN 13553.

**4.5 Slip resistance**

**4.5.1 Classification**

If a claim for slip resistance is made, the floor covering intended to be used in dry and non-contaminated conditions shall have a dynamic coefficient of friction of ≥ 0,30 when tested ex-factory under dry conditions in accordance with EN 13893 and shall be declared as technical class DS.

Although such floors may be subjected to occasional spillage and wet cleaning, the manufacturer does not guarantee the performance under these conditions.

If no claim for slip resistance is made, the floor coverings for which no performance has been determined shall be declared as technical class NPD.