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SIST EN 14978:2006

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ICS 97.150

English Version

Laminate floor coverings - Elements with acrylic based surface layer, electron beam cured - Specifications, requirements and test methods

Revêtements de sol stratifiés - Éléments à parement à base acrylique traités par des faisceaux d'électrons - Spécifications, exigences et méthodes d'essai

Laminatböden - Elemente mit einer elektronenstrahlgehärteten Deckschicht auf Acryl-Basis - Spezifikation, Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 18 May 2006.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 14978:2006) has been prepared by Technical Committee CEN/TC 134 “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of an identical text or by endorsement, at the latest by December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

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

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1 Scope

This European Standard specifies requirements for laminate floor coverings with an acrylic based surface layer (as defined in Clause 3).

It includes a classification system based on EN 685, 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. It also specifies requirements for marking and packaging.

Laminate floor coverings are considered for domestic and commercial levels of use. This standard does not specify requirements related to areas that are subjected to frequent wetting, such as bathrooms, laundry rooms or saunas, but the products covered by this standard are applicable for use in domestic kitchens.

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 322, *Wood-based panels - Determination of moisture content*

EN 424, *Resilient floor coverings - Determination of the effect of the simulated movement of a furniture leg*

EN 425, *Resilient and laminate floor coverings - Castor chair test*

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EN 438-2, *High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (Usually called Laminates) - Part 2: Determination of properties*

EN 438-5, *High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (Usually called Laminates) - Part 5: Classification and specifications for flooring grade laminates less than 2 mm thick intended for bonding to supporting substrates*

EN 685, *Resilient, textile and laminate floor coverings - Classification*

EN 12529:1998, *Castors and wheels - Castors for furniture - Castors for swivel chairs — Requirements*

EN 13329:2006, *Laminate floor coverings - Elements with a surface layer based on aminoplastic thermosetting resins - Specifications, requirements and test methods*

EN 14354:2004, *Wood-based panels - Wood veneer floor covering*

EN ISO 2813, *Paints and varnishes - Determination of specular gloss of non-metallic paint films at 20°, 60° and 85° (ISO 2813:1994, including Technical Corrigendum 1:1997)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13329:2006 and the following apply.

3.1

laminated floor covering

floor covering with a surface layer consisting of one or more thin sheets of a decorative material (usually paper), impregnated with either aminoplastic, thermosetting resins (usually melamine) or impregnated and surfaced with an acrylate and/or metacrylate resin

NOTE 1 By the simultaneous action of heat and pressure, the sheets impregnated with aminoplastic resins are either pressed as such (HPL, CPL, Compact) and in the case of HPL and CPL bonded to a substrate (usually wood-based panels), or in the case of DPL, directly pressed to a substrate (usually wood-based panels).

NOTE 2 When using acrylate and/or metacrylate resins the simultaneous action of electron beams and pressure are used to produce the thin sheets, which are then bonded to a substrate (usually wood-based panels).

NOTE 3 The product is usually finished with a backing (e.g. HPL, CPL, EPL, impregnated papers and veneers) primarily used as a balancing material.

3.2

acrylic based surface layer

upper decorative layer intended to be the visible side when the floor is installed

NOTE This layer consists of resins which are hardened using electron beams (normally acrylate, metacrylate or similar) 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. The surface layer produced with this technique is called 'Electron-beam Pressed Laminates (EPL)'.
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4 Characteristics

Laminated floor coverings according to this standard shall conform to the general requirements given in EN 13329:2006, Table 1, with the following modifications:

- for special applications, such as decorative pattern effects, tighter tolerances shall be permitted if necessary;
- tolerances of the tongue and groove shall be such that when, for the purposes of testing, the elements are assembled without glue, the maximum permissible opening and height difference values are not exceeded;
- to determine the capability of laminated floor coverings to withstand ambient humidity variations, a laboratory test in controlled conditions shall be made.

5 Classification

5.1 General

For all laminate floor coverings conforming to this standard, a distinction between the two specular gloss-levels of the surface layer shall be done prior to classification testing. The specular gloss level shall be determined following testing in accordance with EN ISO 2813 with a detection angle of 60 °. The distinction between the two specular gloss levels shall be as follows:

common gloss level	specular gloss level < 85 units
high gloss level	specular gloss level ≥ 85 units

5.2 Floor coverings with a common gloss level

Laminate floor coverings conforming to this standard with a common gloss level as described in 5.1, shall be classified as being suitable for different levels of use according to the requirements specified in EN 13329:2006, Table 2, when tested by the methods given therein. Classification shall conform to the scheme specified in EN 685.

5.3 Floor coverings with a high gloss level

Laminate floor coverings conforming to this standard, with a high gloss level as described in 5.1, shall be classified as being suitable for different levels of use according to the requirements specified in Table 1, when tested by the methods given therein. Classification shall conform to the scheme specified in EN 685.

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Table 1 — Classification requirements and levels of use for floor coverings with a high gloss level

	Levels of use				Test method
	Domestic			Commercial	
Class:	Moderate	General	Heavy	Moderate	
	21	22	23	31	
Wear resistance	≥ 3 000 rev.	≥ 4 000 rev.	≥ 7 000 rev.		EN 14354:2004, Annex D
Impact resistance	IC 1				EN 13329:2006 Annex F
Resistance to staining	4, (groups 1 and 2) 3, (groups 3)	5, (groups 1 and 2) 4, (groups 3)			EN 438-2
Resistance to cigarette burns	—	3			EN 438-2
Effect of a furniture leg	—		No change shall be visible when tested with foot type 0		EN 424
Effect of a castor chair	iTeh STANDARD PREVIEW (standards.itech.ai)			No change in appearance or damage, as defined in EN 425. Single-wheel castors as defined in EN 12529:1998, 5.4.4.2 (Type W) shall be used.	EN 425
Thickness swelling	≤ 20,0 % SIST EN 14978:2006 https://standards.itech.ai/catalog/standards/sist/4b26f22d-24ac-4a63-a207-2b7043ef16a7/sist-en-14978-2006			≤ 18,0 %	EN 13329:2006 Annex G

6 Additional characteristics and requirements

When any of the characteristics given in Table 2 are called for to specific applications, the laminate floor coverings shall be tested by the methods given therein.

NOTE The properties that are stated in Table 2 are considered important for some specific products or applications.

Table 2 — Additional characteristics and requirements

Characteristic	Requirement	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 EN 438-5 shall be permitted	EN 438-5
Resistance to scratching	The elements shall have a minimum resistance to scratching of rating 3 when tested as per EN 438-2	EN 438-2