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Adhesives for floor coverings - Requirements for mechanical and electrical performance

Adhésifs pour revêtements du sol - Spécifications

Klebstoffe für Bodenbeläge - Anforderungen an das mechanische und elektrische Verhalten

This European Standard was approved by CEN on 1 October 2003.

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 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 Management Centre has the same status as the official versions.

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Foreword

This document EN 14259:2003 has been prepared by Technical Committee CEN /TC 193, "Adhesives", the secretariat of which is held by AENOR.

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of an identical text or by endorsement, at the latest by June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

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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Introduction

Some floor coverings are installed on a sub floor with an adhesive. Producers of both floor coverings and adhesives need to evaluate specific combinations to ensure that they are mutually compatible. It is also important when developing adhesives to ensure that they are suitable for use with one, or a group of floor coverings. Those involved with these products and their installation also need to agree whether a particular combination of an adhesive with a group of floor coverings is capable of giving satisfactory performance during application and in use. Therefore they need a common and accepted guideline of performance for the products when tested together.

1 Scope

This European Standard specifies performance requirements of an adhesive when tested to a standard method with a characteristic type of floor covering. The values defined in this standard are considered to indicate a general suitability for use of an adhesive with the corresponding group of floor coverings. This standard can also be used for the evaluation of a particular floor covering with the corresponding type of adhesive. This standard does not contain criteria or recommendations for the practical installation of floor coverings. The values given in this standard also do not guarantee the complete functionality of combinations of adhesives and floor coverings in practical application.

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2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 923, *Adhesives — Terms and definitions.*

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

EN 1372, *Adhesives — Test method for adhesives for floor and wall coverings — Peel test.*

EN 1373, *Adhesives - Test method for adhesives for floor and wall coverings - Shear test.*

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

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

EN 1841, *Adhesives — Test methods for adhesives for floor coverings and wall coverings — Determination of dimensional changes of a linoleum floor covering in contact with an adhesive.*

EN 1903, *Adhesives — Test method for adhesives for plastic or rubber floor coverings or wall coverings — Determination of dimensional changes after accelerated ageing.*

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

EN 12466, *Resilient floor coverings – Vocabulary.*

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

EN 13415, *Adhesives — Test of adhesives for floor coverings — Determination of the electrical resistance of adhesive films.*

ISO 2424, *Textile floor coverings – Vocabulary.*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 923 and the following apply.

3.1

floor covering

a floor covering according to EN 12466 is a prefabricated product in sheet or tile form, which can be used to cover a floor from wall to wall. Typical floor coverings are made of textiles as described in ISO 2424, needle-felts, PVC, linoleum, rubber and others

3.2

adhesive for floor coverings

adhesive, which is applied on a supporting subfloor and intended to produce a firm and durable bond between the floor covering and the subfloor

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4 Principles

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Floor coverings vary in composition and construction, therefore they require specific adhesives to obtain a satisfactory performance of the final floor:

EXAMPLE 1.

- PVC floor coverings may contain high amounts of plasticizers. In order to get a durable bond under all practical conditions the adhesives for PVC floor coverings must be sufficiently resistant to plasticizer migration. To evaluate this, a typical PVC floor covering according to EN 649, is bonded with the adhesive under test and the peel strength is measured according to EN 1372 and dimensional change according to EN 1903.

EXAMPLE 2.

- Linoleum is sensitive to water and can show dimensional changes if in contact with water. Aqueous adhesives may influence the dimensional stability of linoleum to different extent depending on water content, consistency, drying properties, hardness etc. The influence of an adhesive on the dimensional stability of linoleum is measured according to EN 1841.

5 Performance requirements

5.1 Mechanical performance

Performance requirements for adhesives for floor coverings are specified in Table 1.

The values given in Table 1 are drawn from laboratory experience and can be used as a guideline in adhesives development and recommendations. They can also be used to assess the suitability of a given floor covering with a given adhesive. Combinations of an adhesive and a floor covering, which under laboratory conditions show values equal or higher in case of strength measurements or equal or lower in case of dimensional change measurements

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respectively than the values given in Table 1, are considered to indicate satisfactory performance under normal practical use and conditions.

By written mutual agreement between the manufacturer of the adhesive and the supplier of the floor covering the values for performance requirement may be defined below or beyond the values given in Table 1.

5.2 Electrical performance

The electrical resistance of electrical conductive adhesives is determined according to EN 13415.

Table 1 — Adhesives for floor coverings.

Adhesive for:	Test standard and corresponding performance requirements				Standard floor covering	Electrical performance ^d
	EN 1372 Peel strength min. N/mm	EN 1373 Shear strength min. N/mm ²	EN 1841 Dimensional change (transversely) max. %	EN 1903 Dimensional change max. %		
Polyvinyl chloride floor coverings	1,0	0,3	n.a. ^b	0,2	EN 649	EN 13415 Electrical resistance max. Ω 3×10^5
Rubber floor coverings, smooth	1,2 ^a	n.r. ^c	n.a. ^b	0,2	EN 1817 ^a	3×10^5
Polyolefin floor coverings	1,0	0,3	n.a. ^b	0,2	Homogeneous type	3×10^5
Linoleum floor coverings	0,5	0,5	0,2	n.a. ^b	EN 548	3×10^5
Textile floor coverings	0,5	n.r. ^c	n.a. ^b	n.a. ^b	EN 1307 EN 1470 EN 13297	5×10^6

NOTE Performance requirements at all mandatory storage conditions of the test standard. For the general evaluation of an adhesive a floor covering which is typical for the intended standard group of floor coverings (see last column) should be used in the test.

^a for profiled rubber floor coverings according to EN 12199 the value is 2,0 N/mm.

^b Not applicable

^c Not required

^d For conductive floor coverings only.