BRITISH STANDARD

BS EN
13413:2002

Resilient floor coverings — Polyvinyl chloride floor coverings on a filled fibrous backing — Specification

The European Standard EN 13413:2001 has the status of a British Standard

ICS 97.150

National foreword

This British Standard is the official English language version of EN 13413:2001.

The UK participation in its preparation was entrusted to Technical Committee PRI/60, Resilient floor coverings, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

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EUROPEAN STANDARD

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EN 13413

December 2001

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English version

Resilient floor coverings - Polyvinyl chloride floor coverings on a filled fibrous backing - Specification

Revêtements de sol résilients - Revêtements de sol à base de polychlorure de vinyle sur semelle en fibre minérale - Spécifications

Elastische Bodenbeläge - Polyvinylchlorid-Bodenbeläge mit einem Rücken aus Fasermaterial - Spezifikationen

This European Standard was approved by CEN on 4 November 2001.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN 13413:2001 E

Foreword

This European Standard has been prepared by Technical Committee CEN /TC 134, "Resilient and textile 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of an identical text or by endorsement, at the latest by June 2002, and conflicting national standards shall be withdrawn at the latest by June 2002.

Annexes A and B are informative.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the characteristics of floor coverings with compact surface layers, made of polyvinyl chloride and modifications thereof, on a filled fibrous backing and supplied in roll form.

To encourage the consumer to make an informed choice, the standard includes a classification system (see EN 685) based on intensity of use, which shows where these floor coverings should give satisfactory service. It also specifies requirement for marking.

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 424, *Resilient floor coverings — Determination of the effect of simulated movement of a furniture leg.*

EN 425, *Resilient floor coverings — Determination of the effect of a castor chair*.

EN 426, *Resilient floor coverings — Determination of width, length, straightness and flatness of sheet material.*

EN 428, *Resilient floor coverings — Determination of overall thickness.*

EN 429, *Resilient floor coverings — Determination of the thickness of layers.*

EN 430, *Resilient floor coverings — Determination of mass per unit area.*

EN 432, *Resilient floor coverings — Determination of shear force.*

EN 433, *Resilient floor coverings — Determination of residual indentation after static loading.*

EN 434, *Resilient floor coverings —Determination of dimensional stability and curling after exposure to heat.*

EN 435, *Resilient floor coverings — Determination of flexibility.*

EN 660-1, *Resilient floor coverings — Determination of wear resistance — Part 1: Stuttgart test.*

EN 660-2, *Resilient floor coverings — Determination of wear resistance — Part 2: Frick-Taber test.*

EN 661, *Resilient floor coverings — Determination of the spreading of water.*

EN 684, *Resilient floor coverings — Determination of seam strength.*

EN 685, *Resilient floor coverings — Classification.*

EN 12466, *Resilient floor coverings — Vocabulary.*

EN ISO 105-B02, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test (ISO 105-B02:1994, including Amendment 1:1998).*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions of EN 12466 and the following terms and definitions apply:

3.1
filled fibrous backing
a backing made in a wet process, predominantly from mineral fillers, as well as synthetic and natural fibres (non-asbestos formulated), binders, and which is suitable for use as a support for floor covering

3.2
polyvinyl chloride floor covering on a filled fibrous backing
floor covering consisting of polyvinyl chloride surface layer applied to a filled fibrous backing

4 Requirements

4.1 General requirements

Polyvinyl chloride floor coverings described in this standard shall conform with the appropriate general requirements specified in Table 1, when tested in accordance with the methods given therein.

4.2 Classification Requirements

4.2.1 Wear group classification

Floor coverings described in this standard shall be classified in the appropriate wear group specified in Table 2, i.e. in group T, P, M, when tested in accordance with EN 660-1 or EN 660-2.

NOTE The tests are intended to determine the wear resistance of wear layers defined either by thickness loss (EN 660-1) or volume loss (EN 660-2).

Floor coverings with a transparent wear layer are *a priori* group T and need not be tested.

4.2.2 Level of use classification

Floor coverings described in this standard shall be classified as suitable for different levels of use in accordance with the performance requirements specified in Table 3, when tested with the methods given therein. Classification shall conform to the scheme established in EN 685.

Table 1 – General Requirements

Property		Requirements	Test Method
length width	m mm	not less than the nominal value not less than the nominal value	EN 426
Overall thickness Average Individual results	mm	 Nominal value + 0,18 - 0,15 Nominal value ± 0,20	EN 428
Total mass per unit area (average)	g/m²	Nominal value +13 % - 10 %	EN 430
Residual indentation (average)	mm	Average value ≤ 0,2	EN 433
Dimensional stability	%	≤ 0,4	EN 434
Curling after exposure to heat [1)]	mm	≤ 8	
Colour fastness to artificial light		6 minimum	EN ISO 105-BO2 : Method 3 [2)]
Shear force of backing	N	Average ≥ 360 No individual value < 280	EN 432
Spreading of water		Time for water to spread to one edge of test piece ≥ 16 h	EN 661
Flexibility		Test using a 20 mm mandrel. For products that show signs of cracking, perform a further test using a 40 mm mandrel. If results show no further cracking record the use of a 40 mm diameter mandrel	EN 435 Method A

[1)] The test needs only to be carried out for products which are to be laid unbonded to the subfloor. The test needs not be carried out for fully bonded materials.

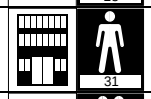
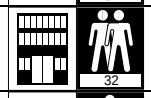
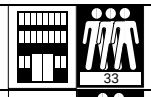
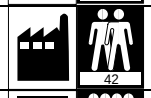
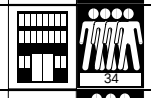
[2)] Expose a full size test sample. Store a further test sample in the dark, which will constitute the reference standard for the assessment of colour change.

Table 2 – Classification requirements for wear groups

Property	Wear class				Test method
	T	P	M	F	
Thickness loss Δl mm	$\Delta l \leq 0{,}08$ [1)]	$0{,}08 < \Delta l \leq 0{,}15$	$0{,}15 < \Delta l \leq 0{,}30$	$0{,}30 < \Delta l \leq 0{,}60$	EN 660-1
Volume loss F_V mm^3	$F_V \leq 2{,}0$ [1)]	$2{,}0 < F_V \leq 4{,}0$	$4{,}0 < F_V \leq 7{,}5$	$7{,}5 < F_V \leq 15{,}0$	EN 660-2

[1)] If tested for verification

Table 3 – Classification requirements for level of use

Class	Symbol	Level of use	Thickness of wear layer mm [1] Nominal value			Effect of a castor chair	Seam strength N/50 mm	Simulated movement of a furniture leg	
			T	P	M				
21		domestic moderate	0,15	0,25	0,40	No requirement	No requirement	No requirement	
22		domestic general	0,20	0,35	0,50			No damage shall be visible when tested with a type 3 foot.	
23		domestic heavy	0,30	0,45	0,65				
31		commercial moderate							
32		commercial general	0,40	0,55	0,80		When welded in accordance		When welded in
41		industrial moderate				If tested, no disturbance to	with the manufacturer's Instructions:	No damage	accordance with manufacturer's instructions: no damage
33		commercial heavy	0,55	0,70	1,00	the surface other than	average value:	shall be visible	shall be visible to
42		industrial general				slight change	≥ 240 individual	when tested	seams when tested
34		commercial very heavy	0,70	1,00	1,50	in appearance and no	values : ≥ 180	with a type 2 foot	with a type 0 foot
43		industrial heavy				delamination shall occur			
Test method			EN 429			EN 425	EN 684	EN 424	

[1] The average shall be the nominal value +13 % but not more than 0,1 mm.
-10 %
No individual value shall exceed 0,5 mm or 15 % below the nominal, whichever is the greater.

5 Marking

Floor coverings described in this standard and/or their packaging shall bear the following marking:

a) number and date of the European Standard i.e. EN 13413:2001;

b) manufacturer's or supplier's identification;

c) product name;

d) colour/pattern and batch and roll number;

e) classes/symbols appropriate for the product;

f) length, width, thickness;

g) statement regarding method of bonding.

Cleaning and maintenance instructions shall be delivered together with the product.

Annex A
(informative)

Optional properties

Where the following properties are required for specific applications, the floor covering should be tested in accordance with the appropriate methods.

- electrical resistance (EN 1081);
- electrostatic propensity (EN 1815);
- effect of stains (EN 423);
- heavy swivel castor (EN 1818).

Annex B
(informative)

Additional methods of test

The following test methods are also available for this type of products but do not form part of the specification:

- curling on exposure to moisture (EN 662);
- conventional pattern depth (EN 663);
- volatile loss (EN 664);
- exudation of plasticisers (EN 665);
- gelling (EN 666);
- mass/unit area of a reinforcement backing (EN 718);
- determination of peel resistance (EN 431).

Bibliography

EN 423, *Resilient floor coverings — Determination of resistance to staining.*

EN 431, *Resilient floor coverings — Determination of peel resistance.*

EN 662, *Resilient floor coverings — Determination of curling on exposure to moisture.*

EN 663, *Resilient floor coverings — Determination of conventional pattern depth.*

EN 664, *Resilient floor coverings — Determination of volatile loss.*

EN 665, *Resilient floor coverings — Determination of exudation of plasticizers.*

EN 666, *Resilient floor coverings — Determination of gelling.*

EN 718, *Resilient floor coverings — Determination of mass per unit area of a reinforcement or a backing of polyvinyl chloride floor coverings.*

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

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

EN 1818, *Resilient floor coverings — Determination of the effect of loaded heavy duty castors.*

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