

BS EN 1816:2010



BSI Standards Publication

# Resilient floor coverings — Specification for homogeneous and heterogeneous smooth rubber floor coverings with foam backing

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**National foreword**

This British Standard is the UK implementation of EN 1816:2010. It supersedes BS EN 1816:1998 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/3/60, Textile & Resilient Floor Coverings.

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

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**Amendments issued since publication**

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English Version

**Resilient floor coverings - Specification for homogeneous and heterogeneous smooth rubber floor coverings with foam backing**

Revêtements de sol résilients - Spécifications des revêtements de sol homogènes et hétérogènes en caoutchouc lisse avec semelle en mousse

Elastische Bodenbeläge - Spezifikation für homogene und heterogene ebene Elastomer-Bodenbeläge mit Schaumstoffbeschichtung

This European Standard was approved by CEN on 20 May 2010.

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## Foreword

This document (EN 1816:2010) has been prepared by Technical Committee CEN/TC 134 “Resilient, textile and laminate 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of an identical text or by endorsement, at the latest by December 2010, and conflicting national standards shall be withdrawn at the latest by December 2010.

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## 1 Scope

This European Standard specifies the characteristics of homogeneous and heterogeneous smooth (including grained or embossed) rubber floor coverings with foam backing, supplied in roll or in tile form.

This European Standard includes a classification system based on intensity of use, which shows where these resilient floor coverings should give satisfactory service (see EN 685). It also specifies requirements for marking.

## 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 425, *Resilient and laminate floor coverings – Castor chair test*

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

EN 427, *Resilient floor coverings – Determination of the side length, squareness and straightness of tiles*

EN 428, *Resilient floor coverings – Determination of overall thickness*

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

EN 431, *Resilient floor coverings – Determination of peel resistance*

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 685, *Resilient floor coverings – Classification*

EN 12466:1998, *Resilient floor coverings – Vocabulary*

EN ISO 105-B02:1999, *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)*

ISO 4649:2002, *Rubber, vulcanized or thermoplastic – Determination of abrasion resistance using a rotating cylindrical drum device*

ISO 7619:2004 (all parts), *Rubber, vulcanized or thermoplastic – Determination of indentation hardness*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12466:1998 and the following apply.

### 3.1 homogeneous rubber floor covering

floor covering based on natural or synthetic rubber with one or more layers of the same composition and colour, patterned throughout its thickness

### 3.2

#### heterogeneous rubber floor covering

floor covering based on natural or synthetic rubber consisting of a wear layer and other compact layers which differ in composition and/or design and can contain a reinforcement

## 4 General requirements

All homogeneous and heterogeneous smooth rubber floor coverings with foam backing shall conform to the appropriate general requirements specified in Table 1, when tested in accordance with the test methods given therein.

**Table 1 — General requirements**

Property	Requirements	Test method
Roll form: length width	not less than the stated nominal values	EN 426
Tiles: side length  squareness and straightness for side of length: ≤ 610 mm > 610 mm	tolerance allowed: ± 0,15 % of nominal length  tolerance allowed: ± 0,25 mm ± 0,35 mm	EN 427
Dimensional stability	tolerance allowed ±0,4 %	EN 434
Thickness of foam backing	not less than the stated nominal value	EN 429
Flexibility: diameter of mandrel 20 mm	no cracking	EN 435 Method A
Hardness of wear layer	≥ 75 Shore A	ISO 7619:2004
Residual indentation (after static loading)	average value ≤ 0,25 mm	EN 433
Peel resistance	average value ≤ 50 N/50 mm or rupture in the foam	EN 431
Abrasion resistance of wear layer	≤ 250 mm <sup>3</sup>	ISO 4649:2002 Method A, vertical load (5 ± 0,1) N
Colour fastness to artificial light <sup>a</sup>	6 minimum on blue wool scale ≥ 3 on grey scale	EN ISO 105-B02:1999 Method 3
<sup>a</sup> Expose a full size test specimen. Store a further test specimen in the dark, which will constitute the reference standard for assessment of colour change.		

## 5 Classification requirements

All the homogeneous and heterogeneous smooth rubber floor coverings with foam backing shall be classified in accordance with the requirements for overall thickness and the wear layer thickness specified in Table 2, when tested in accordance with the test methods given therein.

Table 2 — Classification requirements

Class (see EN 685)	Level of use	Minimum overall thickness <sup>a</sup> (homogeneous and heterogeneous) mm	Minimum thickness of wear layer <sup>b</sup> (heterogeneous) mm	Effect of a castor chair
21	domestic moderate	2,5	1,0	No requirement
22	domestic general/ medium	2,5	1,0	
22+	domestic general	2,5	1,0	
23	domestic heavy	3,5	1,0	
31	commercial moderate	3,5	1,0	
32	commercial general	3,5	1,0	If tested for verification, no disturbance to the surface other than slight change due to flatter appearance – no delamination shall occur
33	commercial heavy	3,5	1,0	
Test method		EN 428	EN 429	EN 425
<p><sup>a</sup> The average overall thickness shall have a tolerance of <math>\pm 0,20</math> mm and no individual result shall exceed 0,25 mm from the nominal.</p> <p><sup>b</sup> The average thickness of the wear layer shall have a tolerance of <math>\pm 0,20</math> mm and no individual result shall exceed 0,25 mm from the nominal.</p>				

## 6 Marking

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

- a) reference to this European Standard, i.e. EN 1816:2010;
- b) manufacturer's or supplier's identification;
- c) product name;
- d) colour/pattern, and batch and roll number if applicable;
- e) class/symbol, as specified in EN 685;
- f) covered area for rolls.



## **Annex A** (informative)

### **Optional properties**

The following properties are considered important for some specific uses:

- electrostatic propensity (EN 1815);
- effect of stains (EN 423);
- effect of simulated movement of a furniture leg (EN 424);
- cigarette resistance (see EN 1399).

In general use, a rubber floor covering, depending on the colour and/or pattern, is expected to have the following rating when tested in accordance with EN 1399.

Method A, stubbed cigarettes; rating 4 or higher

Method B, burning cigarettes; rating 3 or higher

## Bibliography

- [1] EN 423, *Resilient floor coverings – Determination of the resistance to staining*
- [2] EN 424, *Resilient floor coverings – Determination of the effect of simulated movement of a furniture leg*
- [3] EN 1815, *Resilient and textile floor coverings – Assessment of static electrical propensity*
- [4] EN 1399, *Resilient floor coverings – Determination of resistance to stubbed and burning cigarettes*

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