



BSI Standards Publication

## **Resilient floor coverings - Cork floor tiles - Specification**

---

EUROPEAN STANDARD

**EN 12104**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2018

ICS 79.100; 97.150

Supersedes EN 12104:2000

English Version

## Resilient floor coverings - Cork floor tiles - Specification

Revêtements de sols résilients - Dalles en liège -  
SpécificationElastische Bodenbeläge - Presskorkplatten -  
Spezifikationen

This European Standard was approved by CEN on 19 October 2018.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>		Page
<b>European foreword.....</b>		<b>3</b>
<b>1</b>	<b>Scope.....</b>	<b>4</b>
<b>2</b>	<b>Normative references.....</b>	<b>4</b>
<b>3</b>	<b>Terms and definitions.....</b>	<b>5</b>
<b>4</b>	<b>Requirements.....</b>	<b>5</b>
<b>4.1</b>	<b>General requirements.....</b>	<b>5</b>
<b>Table 1 — General requirements.....</b>		<b>5</b>
<b>4.2</b>	<b>Classification requirements.....</b>	<b>5</b>
<b>Table 2 — Classification requirements.....</b>		<b>6</b>
<b>5</b>	<b>Marking, labelling and packing.....</b>	<b>8</b>
<b>Annex A (informative) Optional properties.....</b>		<b>9</b>
<b>Annex B (informative) Supplementary information.....</b>		<b>10</b>
<b>Bibliography.....</b>		<b>11</b>

## European foreword

This document (EN 12104:2018) has been prepared by Technical Committee CEN/TC 134 “Floor coverings”, the secretariat of which is held by NBN.

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 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12104:2000.

In comparison with the previous edition, the following technical modifications have been made:

- specifications for wear resistance are added to Table 2;
- the normative references in Clause 2 have been updated, as well as the informative references in the Bibliography.

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

## 1 Scope

This document specifies the requirements for cork floor coverings made from agglomerated composition cork supplied in tile form which are designed to be used with a factory finish and/or an *in situ* finish.

Cork floor coverings can be covered with other complementary layers of decorative materials, e.g. decorative cork or wood veneers, with or without applied colours.

This document includes a classification system based on intensity of use which shows where cork floor tiles should give satisfactory service (see EN ISO 10874). It also specifies requirements for marking, labelling and packing.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 424, *Resilient floor coverings - Determination of the effect of simulated movement of a furniture leg*

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

EN 12466, *Resilient floor coverings - Vocabulary*

EN 13329:2016+A1:2017, *Laminate floor coverings - Elements with a surface layer based on aminoplastic thermosetting resins - Specifications, requirements and test methods*

EN 14354:2017, *Wood-based panels - Wood veneer floor coverings*

EN ISO 10874, *Resilient, textile and laminate floor coverings - Classification (ISO 10874)*

EN ISO 23997, *Resilient floor coverings - Determination of mass per unit area (ISO 23997)*

EN ISO 23999, *Resilient floor coverings - Determination of dimensional stability and curling after exposure to heat (ISO 23999)*

EN ISO 24342, *Resilient and textile floor-coverings - Determination of side length, edge, straightness and squareness of tiles (ISO 24342)*

EN ISO 24343-1, *Resilient and laminate floor coverings - Determination of indentation and residual indentation - Part 1: Residual indentation (ISO 24343-1)*

EN ISO 24346, *Resilient floor coverings - Determination of overall thickness (ISO 24346)*

### 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1

##### **agglomerated composition cork**

product obtained from the agglutination of cork granules with the addition of a binder

#### 3.2

##### **cork floor covering**

floor covering, the main component of which is agglomerated composition cork, intended to be used with a finish

[SOURCE: EN 12466:1998, 2.1.27]

## 4 Requirements

### 4.1 General requirements

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

**Table 1 — General requirements**

Property		Requirements	Test method
<b>Side length</b>	<b>mm</b>	deviation from nominal:	EN ISO 24342
<b>Squareness and Straightness of edges</b>	mm	≤ 0,2 % up to 1,0 mm maximum deviation allowed	
for side length ≤ 400 mm > 400 mm		≤ 0,5 ≤ 1,0	
<b>Overall thickness</b>	<b>mm</b>	nominal value: -0,10 + 0,15	EN ISO 24346
individual results sanded or finished <sup>a</sup> tiles			
<b>Apparent density</b>	<b>kg/m<sup>3</sup></b>	≥ nominal value ≥ 95 % nominal value	EN ISO 23997
average individual results			
<b>Dimensional stability</b>	<b>%</b>	≤ 0,25	EN ISO 23999
<b>Curling</b>	<b>mm</b>	≤ 2	EN ISO 23999

<sup>a</sup> Finishing coat(s) should be varnish, wax or others. Reference test method for wear resistance test needs to be declared by the manufacturers or suppliers.

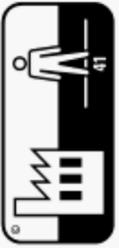
### 4.2 Classification requirements

Cork floor coverings described in this standard shall be classified as suitable for different levels of intensity of use in accordance with the performance requirements specified in Table 2, when tested in accordance with the test methods stated therein.

Classification shall conform to the system specified in EN ISO 10874.

Table 2 — Classification requirements

Class	Symbol	Level of use	Overall thickness mm	Apparent density (kg/m <sup>3</sup> )	Residual indentation mm	Effect of a castor chair <sup>a</sup>	Simulated movement of a furniture leg <sup>a</sup>	Wear resistance <sup>a</sup>	
21		Domestic Moderate/ Light	≥ 3,2	≥ 400	≤ 0,4	No disturbance to the surface other than slight change in appearance and no delamination shall occur after 10 000 cycles	No requirement	No requirement	No requirement
22		Domestic General/ Medium	≥ 4,0	≥ 450 with or without veneer	≤ 0,4			500	200
22+		Domestic General	≥ 4,0	≥ 450 with or without veneer	≤ 0,4			1 000	400
31		Commercial Moderate	≥ 4,0	≥ 450 with or without veneer	≤ 0,3	No disturbance to the surface other than slight change in appearance and no delamination shall occur after 25 000 cycles		2 500	1 000
32		Commercial General	≥ 4,0	≥ 500 with or without veneer	≤ 0,3			5 000	2 000

Class	Symbol	Level of use	Overall thickness mm	Apparent density (kg/m <sup>3</sup> )	Residual indentation mm	Effect of a castor chair <sup>a</sup>	Simulated movement of a furniture leg <sup>a</sup>	Wear resistance <sup>a</sup>
33		Commercial Heavy	≥ 4,0	≥ 500 with or without veneer	≤ 0,2		No damage shall be visible after testing with type 2 foot	7 000  5 000
34		Commercial Very Heavy	≥ 4,0	≥ 500 with or without veneer	≤ 0,2	No disturbance to the surface other than slight change in appearance and	No damage shall be visible after testing with type 2 foot	10 000  7 000
41		Industrial Moderate	≥ 4,0	≥ 500 with or without veneer	≤ 0,2	no delamination shall occur after 25 000 cycles		7 000  5 000
Relevant standard		EN ISO 1087 4	EN ISO 24346	EN ISO 23997	EN ISO 24343-1	EN 425	EN 424	EN 14354:2017, Annex D  EN 13329:2016 +A1:2017, Annex E

<sup>a</sup> Finishing coat(s) should be varnish, wax or others. Reference test method for wear resistance test, needs to be declared by the manufacturers or suppliers.

## **5 Marking, labelling and packing**

Cork floor coverings that conform to the requirements of this standard shall be clearly and indelibly marked by the manufacturer either in their package or on an adhesive label with the following information:

- a) number and the year of this document, i.e. EN 12104:2018;
- b) manufacturer's and/or or supplier's identification;
- c) product name including the finishing and batch number (possibly in code form);
- d) year of manufacture (last two digits);
- e) class/symbol of level of use;
- f) nominal dimensions and the area in square metres contained in a package;
- g) the warning that packages shall be stored shielded from direct sunlight and humidity.

**Annex A**  
(informative)

**Optional properties**

The following properties are considered important for some specific uses, as appropriate:

- effect of stains (see EN ISO 26987);
- electrical resistance (see EN 1081);
- thermal resistance (see EN 12664 and/or EN 12667);
- acoustic properties (see EN ISO 10140).

**Annex B**  
(informative)

**Supplementary information**

The manufacturer should provide information on the maintenance cycle of its products and prepare and issue a manual for the laying of cork floor coverings.

Cork floor coverings with a veneer layer should not be sanded.

## Bibliography

- [1] EN ISO 26987, *Resilient floor coverings - Determination of staining and resistance to chemicals (ISO 26987)*
- [2] EN 1081, *Resilient floor coverings - Determination of the electrical resistance*
- [3] EN 12664, *Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Dry and moist products of medium and low thermal resistance*
- [4] EN 12667, *Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Products of high and medium thermal resistance*
- [5] EN ISO 10140, *Acoustics — Laboratory measurement of sound insulation of building elements (ISO 10140)*

# British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

## About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

## Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at [bsigroup.com/standards](http://bsigroup.com/standards) or contacting our Customer Services team or Knowledge Centre.

## Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at [bsigroup.com/shop](http://bsigroup.com/shop), where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

## Copyright in BSI publications

All the content in BSI publications, including British Standards, is the property of and copyrighted by BSI or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use.

Save for the provisions below, you may not transfer, share or disseminate any portion of the standard to any other person. You may not adapt, distribute, commercially exploit, or publicly display the standard or any portion thereof in any manner whatsoever without BSI's prior written consent.

## Storing and using standards

Standards purchased in soft copy format:

- A British Standard purchased in soft copy format is licensed to a sole named user for personal or internal company use only.
- The standard may be stored on more than 1 device provided that it is accessible by the sole named user only and that only 1 copy is accessed at any one time.
- A single paper copy may be printed for personal or internal company use only.
- Standards purchased in hard copy format:
- A British Standard purchased in hard copy format is for personal or internal company use only.
- It may not be further reproduced – in any format – to create an additional copy. This includes scanning of the document.

If you need more than 1 copy of the document, or if you wish to share the document on an internal network, you can save money by choosing a subscription product (see 'Subscriptions').

## Reproducing extracts

For permission to reproduce content from BSI publications contact the BSI Copyright & Licensing team.

## Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to [bsigroup.com/subscriptions](http://bsigroup.com/subscriptions).

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

**PLUS** is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit [bsigroup.com/shop](http://bsigroup.com/shop).

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email [subscriptions@bsigroup.com](mailto:subscriptions@bsigroup.com).

## Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

## Useful Contacts

### Customer Services

**Tel:** +44 345 086 9001

**Email (orders):** [orders@bsigroup.com](mailto:orders@bsigroup.com)

**Email (enquiries):** [cservices@bsigroup.com](mailto:cservices@bsigroup.com)

### Subscriptions

**Tel:** +44 345 086 9001

**Email:** [subscriptions@bsigroup.com](mailto:subscriptions@bsigroup.com)

### Knowledge Centre

**Tel:** +44 20 8996 7004

**Email:** [knowledgecentre@bsigroup.com](mailto:knowledgecentre@bsigroup.com)

### Copyright & Licensing

**Tel:** +44 20 8996 7070

**Email:** [copyright@bsigroup.com](mailto:copyright@bsigroup.com)

## BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK