



BSI Standards Publication

<http://www.china-gauges.com/>

## Resilient floor coverings — Cork floor tiles — Specification

---

## National foreword

This British Standard is the UK implementation of EN 12104:2023. It supersedes BS EN 12104:2018, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/60, Resilient and Laminate Floor Coverings.

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

### Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2023  
Published by BSI Standards Limited 2023

ISBN 978 0 539 21950 0

ICS 79.100; 97.150

### Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2023.

### Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

---

EUROPEAN STANDARD

**EN 12104**

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2023

ICS 79.100; 97.150

Supersedes EN 12104:2018

English Version

**Resilient floor coverings - Cork floor tiles - Specification**Revêtements de sol résilients - Dalles en liège -  
SpécificationElastische Bodenbeläge - Presskorkplatten -  
Spezifikation

This European Standard was approved by CEN on 28 February 2023.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye 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**

## Contents

	Page
European foreword.....	3
1 Scope.....	4
2 Normative references.....	4
3 Terms and definitions .....	4
4 Requirements.....	5
4.1 General requirements.....	5
4.2 Classification requirements.....	5
5 Marking, labelling and packing.....	7
Annex A (informative) Optional properties .....	8
Annex B (informative) Supplementary information .....	9
Bibliography.....	10

## European foreword

This document (EN 12104:2023) has been prepared by Technical Committee CEN/TC 134 “Resilient, textile, laminate and modular mechanical locked 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 November 2023, and conflicting national standards shall be withdrawn at the latest by November 2023.

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 12104:2008.

The main changes compared to the previous edition are listed below:

- Scope review.
- Normative references.
- General requirements:
  - 1) Dimensional stability requirement and test method.
- Classification requirements:
  - 1) Residual indentation requirements review based on apparent density value.
  - 2) Effect of Castor chair requirements review, surface type notes and test method update.
  - 3) Wear resistance eliminate option EN 13329:2016+A1:2017, Annex E, and requirements review for varnish surfaces.
- Optional Properties review.
- Bibliography update.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## 1 Scope

This document specifies the requirements for cork floor coverings made from agglomerated composition cork, with or without a decorative surface layer, with or without applied colours, supplied in tile form which are designed to be used with a factory finish and/or an *in situ* finish.

The cork floor decorative surface layer can be made of cork or other bio-based decorative materials, e.g. wood or bamboo veneers, linoleum, leather or natural fibres.

This document includes a classification system based on intensity of use which shows where cork floor tiles with a factory finish can 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 12466, *Resilient floor coverings - Vocabulary*

EN 15468:2016+A1:2021, *Laminate floor coverings - Elements with directly applied printing and resin surface layer - Specifications, requirements and test methods*

EN ISO 4918, *Resilient, textile and laminate floor coverings - Castor chair test (ISO 4918)*

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

EN ISO 16581, *Resilient and laminate floor coverings - Determination of the effect of simulated movement of a furniture leg (ISO 16581)*

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 terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://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 document 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> mm	deviation from nominal: ≤ 0,2 % up to 1,0 mm maximum	EN ISO 24342
<b>Squareness and straightness of edges</b> mm for side length ≤ 400 mm > 400 mm	≤ 0,5 ≤ 1,0	
<b>Overall thickness</b> mm Average of the overall thickness Individual results of the overall thickness	nominal value − 0,10 + 0,15 average value ±0,15	EN ISO 24346
<b>Apparent density</b> kg/m <sup>3</sup> Average Individual results	≥ nominal value ≥ 95 % nominal value	EN ISO 23997
<b>Dimensional stability</b> <sup>a</sup> %	≤ 0,30	EN ISO 23999
<b>Curling</b> <sup>a</sup> mm	≤  4	EN ISO 23999
<sup>a</sup> Allow the test specimens to recondition for 7 days (±0,5 d) after exposure to heat and before measuring the final values.		

**4.2 Classification requirements**

Cork floor coverings described in this document 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 for cork floor coverings with a factory finish

Class	Level of use	Overall thickness mm	Apparent density <sup>a</sup> kg/m <sup>3</sup>	Residual indentation <sup>a</sup> mm	Effect of a castor chair	Simulated movement of a furniture leg	Wear resistance <sup>a</sup>
21	Domestic Moderate	≥ 3,2	≥ 450	≤ 0,4	No requirement	No requirement	No requirement
22	Domestic General	≥ 4,0	≥ 450	≤ 0,4	No requirement	No requirement	500
23	Domestic Heavy	≥ 4,0	≥ 450	≤ 0,4	No disturbance to the surface other than slight change in appearance and no delamination shall occur after 10 000 cycles	No damage shall be visible after testing with type 2 foot	1 000
31	Commercial Moderate	≥ 4,0	≥ 450	≤ 0,4	No disturbance to the surface other than slight change in appearance and no delamination shall occur after 10 000 cycles	No damage shall be visible after testing with type 2 foot	2 500
32	Commercial General	≥ 4,0	≥ 500	≤ 0,3	No disturbance to the surface other than slight change in appearance and no delamination shall occur after 25 000 cycles	No damage shall be visible after testing with type 2 foot	3 500
33	Commercial Heavy	≥ 4,0	≥ 500	≤ 0,3	No disturbance to the surface other than slight change in appearance and no delamination shall occur after 25 000 cycles	No damage shall be visible after testing with type 2 foot	5 000
34	Commercial Very Heavy	≥ 4,0	≥ 500	≤ 0,3	No disturbance to the surface other than slight change in appearance and no delamination shall occur after 25 000 cycles	No damage shall be visible after testing with type 2 foot	7 000
41	Light industrial Moderate	≥ 4,0	≥ 500	≤ 0,3	No disturbance to the surface other than slight change in appearance and no delamination shall occur after 25 000 cycles	No damage shall be visible after testing with type 2 foot	7 000
Reference test method	EN ISO 10874	EN ISO 24346	EN ISO 23997	EN ISO 24343-1	EN ISO 4918	EN ISO 16581	EN 15468:2016+A1:2021, Annex A

<sup>a</sup> Not applicable for sanded, oil or wax factory finish.



## 5 Marking, labelling and packing

Cork floor coverings that conform to the requirements of this document shall be clearly marked by the manufacturer either in their package or on a label with the following information:

- a) number and the year of this document, i.e. EN 12104:2023;
- b) manufacturer's and/or or supplier's identification;
- c) product name including the finishing and batch number (possibly in code form);
- d) class/symbol of level of use;
- e) nominal dimensions and the area in square metres contained in a package;
- f) the warning that packages shall be stored shielded from direct sunlight and humidity.

**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:

- Effect of stains, EN 438-2: Group 1 for 10 min only, Group 2 and Group 3 as mentioned in the standard;
- Micro-Scratch Resistance, EN 16094;
- Electrical resistance, EN 1081;
- Thermal conductivity / Thermal resistance, EN 12667;
- Impact Sound Insulation, EN ISO 10140-3:2021.

**Annex B**  
(informative)

**Supplementary information**

The manufacturer should provide installation and maintenance instructions of its products.

<http://www.china-gauges.com/>

## Bibliography

- [1] EN 438-2, *High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 2: Determination of properties*
- [2] EN 1081, *Resilient, laminate and modular multilayer floor coverings - Determination of the electrical resistance*
- [3] 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*
- [4] EN 16094, *Laminate floor coverings - Test method for the determination of micro-scratch resistance*
- [5] EN ISO 10140-3, *Acoustics - Laboratory measurement of sound insulation of building elements - Part 3: Measurement of impact sound insulation (ISO 10140-3)*

<http://www.china-gauges.com/>

# 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 one device provided that it is accessible by the sole named user only and that only one 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 one 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 and 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 [cservices@bsigroup.com](mailto:cservices@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:** [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