BRITISH STANDARD

BS EN
12781:2001

Wallcoverings — Specification for cork panels

The European Standard EN 12781:2001 has the status of a British Standard

ICS 79.100; 91.180

National foreword

This British Standard is the official English language version of EN 12781:2001.

The UK participation in its preparation was entrusted to Technical Committee CW/35, Wallcoverings, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/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.

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This British Standard, having been prepared under the direction of the Consumer Products and Services Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 March 2001

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 13 and a back cover.

The BSI copyright date displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

ISBN 0 580 37010 0

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12781

January 2001

ICS 79.100; 91.180

English version

Wallcoverings - Specification for cork panels

Revêtements muraux - Spécification pour les panneaux en liège

Wandbekleidungen - Festlegung für Korkplatten

This European Standard was approved by CEN on 5 January 2001.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 12781:2001 E

Contents

Foreword

This European Standard has been prepared by CEN/TC 99 "Wallcoverings" 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of an identical text or by endorsement, at the latest by July 2001, and conflicting national standards shall be withdrawn at the latest by July 2001.

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 requirements of cork panels to be used as wallcoverings within buildings. The standard contains provisions for the evaluation of conformity of the product. It also includes requirements for marking, packaging and labelling.

According to their constitution cork panels may be grouped into three types in accordance with the description in Table 1.

Table 1 - Constitution of cork panels

TYPE	Constitution of panels
I	Expanded cork (cork board)
II	Agglomerated composition cork
III	Layers with two or more of the preceding types

Cork panels may be covered with other complementary layers of decorative materials, e.g. decorative cork, with or without coloured applications.

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 publication 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 427 *Resilient floor coverings - Determination of the side length, squareness and straightness of tiles*

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

EN 823 *Thermal insulating products for building applications - Determination of thickness*

EN 12089 *Thermal insulating products for building applications - Determination of bending behaviour*

EN 12105 *Resilient floor coverings - Determination of the moisture content of agglomerated composition cork*

EN 12149 *Wallcoverings in roll form - Determination of migration of heavy metals and certain other elements, of vinyl chloride monomer and of formaldehyde release*

ISO 7322 *Composition cork - Test methods*

ISO 8724 *Cork decorative panels – Specification*

EN ISO 9001 *Quality systems - Model for quality assurance in design,development, production, installation and servicing (ISO 9001:1994)*

EN ISO 9002 *Quality systems - Model for quality assurance in design,development, production, installation and servicing (ISO 9002:1994)*

3 Terms and definitions

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

3.1

cork

protective layer of the cork oak tree (*Quercus suber* L.) which can be periodically removed from its trunk and branches to provide the raw material for cork products

3.2

granulated cork

fragments of cork obtained by grinding and/or milling raw or manufactured cork

3.3

agglomerated composition cork

product obtained from the agglutination of granulated cork with the addition of a binder not derived from cork cells

3.4

expanded cork (cork board)

product made from granulated cork expanded and bonded exclusively with its own natural binder exuded from cork cells by heating under pressure

3.5

wallcovering

product, supplied either in panel or roll form**,** for hanging onto internal walls or ceilings in buildings by means of an adhesive covering the whole of the interface between the wallcovering and the support

3.6

cork wallcovering

product mainly made from cork or agglomerated composition cork or a combination of these, supplied either in panel or roll form, whose main intended use is for indoor application

3.7

batch

defined quantity of some commodity manufactured or produced under conditions which are presumed uniform

3.8

test specimen

part of a sample prepared for a test

4 Requirements

Cork panels shall conform with the requirements specified in Table 2, when tested in accordance with the methods given therein.

NOTE Information on additional properties is given in annex B.

5 Test methods

5.1 Sampling

The sample for testing shall be taken from the available material, either during the process or from the final product. Test specimens shall be taken, one per panel, at a minimum distance of 50 mm from the

edges. Each test specimen shall be squarely cut and have edges perpendicular to its surface and not show any cracks or folds.

The minimum number of test specimens required to get one test result on a product property is given in Table 2.

5.2 Conditioning

Test specimens shall be conditioned before testing for at least 12 h at (23 ± 5) ºC. In case of dispute, they shall be conditioned before testing at (23 ± 2) ºC and (50 ± 5) % relative humidity, for at least 24 h. Before the determination of the moisture content no conditioning shall be done.

5.3 Testing

Tests shall be carried out in accordance with the standards referred to in table 2. The test result on a product property is the mean of the measured values on the number of test specimens mentioned in Table 2.

Table 2 – Requirements

Property	Requirements	Dimension (or mass) of test specimens	Test Method	Number of test specimens to get one result
Side length	maximum deviation from nominal dimensions[a]:± 0,5 %	full panel	EN 427	5
Squareness and Straightness	maximum deviation:			
side ≤ 400 mm	≤ 0,5 mm	full panel	EN 427	5
side > 400 mm	≤ 1,0 mm			
Overall thickness				5
Type I:	Thickness ≥ 10 mm maximum deviation from nominal value ± 0,8 mm	full panel	EN 823	
Types II and III:	Thickness ≥ 2 mm maximum deviation from nominal value ± 0,3 mm	full panel	ISO 7322	
Bending strength Type I	≥ 130 kPa	300 mm x 150 mm	EN 12089 method B	5
Tensile strength Types II and III	≥ 200 kPa	100 mm x 50 mm	ISO 7322	3
Dimensional stability	≤ 0,4 %	full panel	EN 434	3
Curling	≤ 6 mm	full panel	EN 434	3
Moisture content	≤ 7 %	100 mm x 100 mm	EN 12105	3
Resistance of gluing	shall not unglue	100 mm x 100 mm	ISO 8724 annex A	3
Formaldehyde released	≤ 95 mg/kg	50 mm x 25 mm (10 g to 15 g)	EN 12149 method C[b]	3

[a] See annex B

[b] With modifications given in annex A

6 Evaluation of conformity

The evaluation of conformity shall be based on factory production control and tests on samples taken at the factory, following the provisions given in annex C of this European Standard.

7 Marking, labelling and packaging

Products conforming to the requirements of this standard shall be clearly and indelibly marked by the manufacturer either on the packaging or on an adhesive label with the following information:

a) the number and the year of this standard, i.e. EN 12781:2001;
b) name or supplier's identification;
c) the product name and batch number (possibly in code form);
d) year of manufacture (last two digits);
e) the nominal dimensions of the panels;
f) the number of panels in each package;
g) a warning that packages should be stored/shielded from direct sunlight and atmospheric humidity.

Annex A

(normative)

Modifications, for cork products, to general test method C given in EN 12149

For the purposes of this standard the test method C referred to in EN 12149 shall be modified for cork products, in accordance with the following, the rest of the standard remaining unchanged:

1 Scope

Test method C also applies to cork wallcoverings in panel form.

6.5 Standard solutions

Use at least five solutions and a blank. The concentration of these standards shall be such that they will allow the interpolation of results and the reading of the values for the test specimens at the middle of the calibration curve.

Examples of standard solutions appropriate for cork products are given in Table 1:

Table 1 - Examples of standard solutions

Volume of standard B (ml)	Volume of water (ml)	Formaldehyde content (μg/ml)
0	100	0
5	95	0,75
10	90	1,50
20	80	3,00
50	50	7,50
100	0	15,00

6.6 Apparatus

6.6.9 Balance, accurate to read 0,1 milligram

Annex B

(informative)

Optional Properties

B.1 General

The manufacturer may choose to give additional information concerning other product properties than those given in Table 2 of this standard.

This information should be given as limit values obtained by carrying out tests in accordance with the test methods referred to below.

B.2 Linear dimensions

The commonly preferred linear dimensions of cork panels are given in Table B.1.

Table B.1 - Preferred dimensions

Dimension	Nominal size (mm)	Test method
Length	300 or 500	EN 427
Width	300 or 500 or 600 or 900	EN 427

Other dimensions may be established by agreement between parties.

B.3 Apparent density

The apparent density of cork wallcoverings should be determined on five full panels. In case of type I, the apparent density should be determined according to EN 1602; for types II and III, EN 672 should be used. The values should be given in the manufacturer's data sheet.

B.4 Acoustic properties

If products are required for airborne sound insulation, they should be tested in accordance with EN ISO 140-3. The weighted sound reduction index, R_w, should be derived according to EN ISO 717-1 and declared by the manufacturer in decibels.

B.5 Thermal properties

Due to their natural properties, cork wallcoverings contribute to reducing energy consumption. To evaluate its contribution to the thermal performance of the walls, the product should be tested for thermal resistance (R) or thermal conductivity (λ) in accordance with prEN 12667:2000 and the value declared by the manufacturer in $m^2 \cdot K/W$ or $W/(m \cdot K)$.

Annex C

(normative)

Factory production control and initial type testing

C.1 General

Factory Production Control (FPC) means the permanent internal control of production exercised by the manufacturer. Its implementation shall be achieved by controls on raw and constituent materials, on processes and manufacturing equipment and on finished products and by making use of the results thus obtained.

Factory production control shall be operated according to a documented system which shall be laid down in a quality manual. The manufacturer's documentation shall be relevant to the production and process control used.

FPC shall be based on:

a) control of raw material,
b) process control,
c) testing of products,
d) calibration plan,
e) traceability.

Where the production unit has a quality management system in accordance with EN ISO 9001 or EN ISO 9002 and made specific to the requirements of this standard, this is deemed to satisfy the general requirements of FPC.

C.2 Control of raw material

The manufacturer shall ensure that raw and other constituent materials conform to the requirements specified by him. In determining checks required, consideration shall be given to the control exercised by the supplier and the documented evidence of this conformity.

C.3 Process control

In order to manufacture products which conform to this European Standard, the manufacturer shall control his process and perform inspection and tests as described in his production control system documentation.

C.4 Testing of products

C.4.1 Direct testing

When introducing a product which is manufactured against this standard, the manufacturer shall carry out initial type testing (ITT) for the product in order to ensure product conformity. ITT shall be repeated on changes or modifications of production if these are likely to affect conformity of the products with this standard.

The manufacturer shall regularly test the finished products. These tests shall be carried out according to the methods specified in clause 5 of this standard or, in case of indirect testing, according to C.4.2.

Samples shall be drawn periodically from each production line according to the manufacturer's test plan.

C.4.2 Indirect testing

Indirect testing is a means by which a given property may be assessed through the testing of one or more other properties, if there is a known correlation between these properties and evidence of this correlation can be demonstrated.

For each indirect testing procedure applied at a place of production, the sampling plan and the compliance criteria for the indirect property shall be specified, taking into account the relevant correlation between the corresponding properties.

The use of indirect testing shall result in the same confidence level on the property concerned as when using the direct testing. In case of dispute, the normative method shall be used.

C.5 Inspection and testing status

The inspection and testing status of the products shall be identified by means which clearly indicate the conformity or non-conformity of the product with regard to the inspections and tests performed.

C.6 Inspection and tests records

The results of inspection and testing on finished products shall be recorded in the manufacturer’s documentation and shall contain, at least, the following indications:

a) product identification,
b) date of manufacture,
c) test methods,
d) test results,
e) identification of the person carrying out the inspection.

Where products do not satisfy the requirements of the standard, the manufacturer shall immediately take the steps necessary to rectify the deficiency. Non-conforming products or batches shall be isolated and marked accordingly.

When the deficiency has been identified and rectified, the test or inspection shall be repeated, according to the procedures laid down in the manufacturer's manual.

In the event that products are dispatched before the result of the inspection is available, notification shall be made to customers to prevent any consequential damage.

C.7 Calibration plan

Test equipment shall be calibrated and/or checked against equipment or samples traceable to relevant international or national reference samples (standards) according to a calibration plan. When no such reference samples exist, the basis used for internal checks or calibrations shall be documented. The minimum frequencies of checks or calibrations shall conform to the manufacturer's manual.

The calibration of all test equipment shall be repeated if any repair or failure which could upset the calibration occurs.

C.8 Traceability of products

Delivered individual products or product batches shall be identifiable and traceable to their production origin.

Annex D

(informative)

Supplementary information

Manufacturers should prepare and provide information on the maintenance cycle of their products and instructions on their laying, the implementation of which is beyond their control.

Bibliography

EN 672	Resilient floor coverings - Determination of apparent density of agglomerated cork
EN 1602	Thermal insulating products for building applications - Determination of apparent density
EN ISO 140-3	Acoustics - Measurements of sound insulation in buildings and of building elements - Part 3: Laboratory measurements of airborne sound insulation of building elements (ISO 140-3:1995)
EN ISO 717-1	Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation (ISO 717-1:1996)
prEN 12667:2000	Thermal performance of building materials - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Products of high and medium thermal resistance

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