INTERNATIONAL STANDARD

ISO 9149

Second edition
2010-11-01

Cork wallcoverings in rolls — Specifications

Revêtements muraux de liège en rouleaux — Spécifications

Reference number
ISO 9149:2010(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 9149 was prepared by the European Committee for Standardization (CEN) (as EN 13085) and was adopted, under a special “fast-track procedure”, by Technical Committee ISO/TC 87, *Cork*, in parallel with its approval by the ISO member bodies.

This second edition cancels and replaces the first edition (ISO 9149:1987), which has been technically revised.

Cork wallcoverings in rolls — Specifications

1 Scope

This International Standard specifies the requirements of cork wallcoverings in roll form to be used within buildings. The standard contains provisions for the evaluation of conformity of the product. It also includes requirements for marking, packaging and labelling.

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.

ISO 633, *Cork — Vocabulary*

ISO 2066, *Resilient floor coverings — Determination of moisture content of agglomerated composition cork*

ISO 4708:2000, *Composition cork — Gasket material — Test methods*

ISO 7322, *Composition cork — Test methods*

ISO 9229, *Thermal insulation — Vocabulary*

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

EN 12149:1997, *Wallcoverings in roll form — Determination of migration of heavy metals and certain other elements, of vinyl chloride monomer and of formaldehyde release*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 633 and ISO 9229 and the following apply.

3.1
agglomerated composition cork
product obtained from the agglutination of granulated cork with the addition of a binder not derived from cork cells

3.2
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

3.3
cork wallcoverings
product mainly made from cork or agglomerated composition cork, supplied either in panel or roll form, whose main intended use is for indoor application

3.4
batch
defined quantity of some commodity manufactured or produced under conditions which are presumed uniform

3.5
test specimen
part of a sample prepared for a test

4 Requirements

Cork rolls described in this International Standard shall conform to the appropriate requirements specified in Table 1, when tested in accordance with 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 from the sample at a minimum distance of 100 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 1.

5.2 Conditioning

Test specimens shall be conditioned before testing for at least 12 h at (23 ± 5) °C. In case of dispute, they shall be conditioned before testing at (23 ± 2) °C 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 1. The test result on a product property is the mean of the measured values on the number of test specimens given in Table 1.

Table 1 — Requirements

Property	Requirements	Dimension (or mass) of test specimens	Test method	Number of test specimens to get one result
Dimensions width length	Maximum deviation from nominal value ±1 % ⩾ nominal	 200 mm × w[a] full roll	EN 426	 5 1
Straightness	Tolerance allowed from nominal value: 1 % per each 5 m length	full roll		1
Overall thickness	Maximum deviation from nominal value: ±0,3 mm	100 mm × 50 mm	ISO 7322	5
Tensile strength[b]	⩾ 200 kPa	100 mm × 50 mm	ISO 7322	3 + 3[c]
Moisture content	⩽ 7 %	100 mm × 50 mm	ISO 2066	3
Flexibility	There shall be no cracks or failure	150 mm × 15 mm	ISO 4708:2000 Method A	3
Formaldehyde released	⩽ 95 mg/kg	50 mm × 25 mm (10 g to 15 g)	EN 12149:1997 Method C[d]	3

a Where w is the nominal width of the roll.

b Applicable to thicknesses not less than 2 mm.

c Three test specimens shall be tested in the manufacturing direction and three in the perpendicular direction.

d With the 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.

7 Marking, labelling and packaging

Products conforming to the requirements of this International 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 year of this International Standard, i.e. ISO 9149:2010;

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 rolls or sheets;

f) the covered area, in square metres;

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 given in EN 12149

For the purposes of this International Standard, 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 in EN 12149 also applies to cork wallcoverings in roll form.

6.5 Standard solution

The results shall be reported only when they reach the range of interpolation of the calibration curve, and shall be presented under the values of the first standard or superior to the values of the last standard (when applicable), whenever they are out of the calibration range more than 10 %.

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, with a resolution of 0,1 mg.

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 1.

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

B.2 Apparent density

The apparent density of cork wallcoverings in rolls should be determined in accordance with ISO 3850 on five test specimens with dimensions 100 mm × 100 mm. The values should be given in the manufacturer's technical data sheet.

B.3 Acoustic properties

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

B.4 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 EN 12667:2001 and the value declared by the manufacturer in $m^2 \cdot K/W$ or W/(m 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, and

e) traceability.

Where the production unit has a quality management system according to ISO 9001 and made specific to the requirements of this International 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 International 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 to be manufactured against this International 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 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 test 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 this International 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.