SLOVENSKI STANDARD
oSIST prEN 17456:2020

01-januar-2020

Lesene talne obloge in parket - Ugotavljanje delaminacije zgornje in spodnje plasti večslojnih elementov - Preskusna metoda

Wood flooring and parquet - Determination of top and bottom layer delamination of multilayer elements - Test method

Holzfußböden und Parkett - Bestimmung der Delaminierung der Decklagen von Mehrschichtelementen - Prüfverfahren

Planchers en bois et parquets - Détermination du décollement de la couche supérieure et de la couche inférieure des éléments contrecollés - Méthode d'essai

Ta slovenski standard je istoveten z: **prEN 17456**

ICS:

79.080	Polizdelki iz lesa	Semi-manufactures of timber
97.150	Talne obloge	Floor coverings

oSIST prEN 17456:2020 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 17456

November 2019

ICS 79.080

English Version

Wood flooring and parquet - Determination of top and bottom layer delamination of multilayer elements - Test method

Planchers en bois et parquets - Détermination du décollement de la couche supérieure et de la couche inférieure des éléments contrecollés - Méthode d'essai

Holzfußböden und Parkett - Bestimmung der Delaminierung der Decklagen von Mehrschichtelementen - Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 175.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. prEN 17456:2019 E

Contents

Page

European foreword

This document (prEN 17456:2019) has been prepared by Technical Committee CEN/TC 175 “Round and Sawn Timber”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document has no previous edition.

Introduction

This document is one of a series of standards specifying requirements and test methods for wood flooring and wood panelling and cladding.

This document specifies a test method to test and evaluate the top layer bonding of multilayer parquet with different structures, dimensions and adhesives.

Floor heating systems, low energy or passive houses as well as public areas with heavy exposures represent a potential high stress to wood flooring and parquet elements that require them to withstand the effects of temperature and humidity occurring in practical installation situations.

The test method described in this document simulates these situations. By that the already existing large amount of knowledge about multilayer parquet and values for product characteristics attested by long use and experience is extended for the benefit of producers, installers, dealers and customers. For new products, technical data will have to be verified by testing.

NOTE A Round Robin trial was carried out involving seven international laboratories. There it was concluded that a very good agreement in terms of delamination between the laboratories was observed when very low or very high delamination was rated. At moderate delamination's, there was strong scattering of the individual values within the laboratories, partially between 0 % and 100 % delamination, but also between the laboratories sometimes very significant differences in the results occurred. The test method is therefore suitable as a yes/no decision for failure in the top layer bonding or poor product quality but it does not allow quantification. It has to be used in conjunction with low limits of allowable delamination.

1 Scope

This document specifies a test method to determine the top layer delamination of multilayer parquet elements according to EN 13489 with different structures, dimensions and adhesives for internal use as flooring, at the time of the first delivery of the product.

The document specifies 2 pre-treatments (PT1 and PT2) of the test specimens.

The test methods described in this document allow to determine the minimum top layer bonding quality, also for the use application on floor heating, and for the identification of bonding failure.

NOTE 1 For this application, the pre-treatments have proven to be suitable.

This document does not apply to the bonding quality of plywood if it is in use in the multilayer parquet construction.

NOTE 2 This standard doesn't allow to estimate the compatibility of use in wet conditions.

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.

ISO 554, *Standard atmospheres for conditioning and/or testing- Specification*

EN 13489, *Wood-flooring and parquet - Multi-layer parquet elements*

EN 13756, *Wood flooring and parquet - Terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13756 and the following apply.

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

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

3.1
top layer
finished or unfinished upper wood layer intended to be the visible side when the floor is installed

3.2
delamination of top layer
detachment of the top layer of a multilayer construction, as result of failure of the adhesive, either in the adhesive itself or at the interface with the adherend

4 Principle

Samples from multi-layer parquet elements are subjected to a pre-treatment according to 6.2. Afterwards the delamination of top layer bonding is assessed according to 6.3. Results are expressed in percent of top layer width according to Clause 7.

5 Apparatus

5.1 Conditioning room

Room or chamber, controlled at a temperature of (23 ± 2) °C and a relative humidity of (50 ± 5) %, in accordance with ISO 554.

5.2 Water bath

Water bath capable to maintain a temperature of (20 ± 2) °C.

5.3 Balance

Balance capable of weighing to the nearest 0,01 g.

5.4 Convection drying oven

Drying oven with internal air circulation and a permanent air exchange for drying at (60 ± 2) °C and (80 ± 2) °C.

5.5 Sliding calliper

Calliper for measurements to the nearest 0,1 mm with a sufficient length to measure over the whole panel width.

5.6 Feeler gauge

Feeler gauge 0,2 mm thick.

6 Procedure

6.1 Preparation

6.1.1 Sampling

Cut one test specimen from each of at least five multi-layer parquet elements to a size of:

100 mm length x element width x element thickness.

If this specimen is taken from one of the element ends, the short side profile shall be cut off.

The long-side profiles shall not be cut off, these profiles shall not be assessed in the trial.

Test specimen shall be without any manufacturing defects (e.g. cracks in the glue line) or knot holes at the cross section.

6.1.2 Conditioning

The test specimen shall be conditioned at a relative humidity of (50 ± 5) % and a temperature of (23 ± 2) °C in the conditioning room (5.1), to constant mass prior to measurement.

NOTE Constant mass is considered to be reached when the results of two successive weighing operations carried out at an internal of 24 h do not differ by more than 0,1 % of the mass of the element.

6.1.3 Measurement and recording before pre-treatment

Proceed as follows with the method of measurement and record the results.

For each test specimen:

a) one cross section (area with saw cut) shall be marked with an “A” and the other one with a “B” with a water-insoluble pen;

b) its mass shall be determined with the balance described in 5.3 with an accuracy of 0,01 g and record the result;

c) its top layer width shall be determined at cross-section “A”.

6.2 Pre-treatment

6.2.1 General

The respective test specimens undergo the planned pre-treatment process as described in 6.2.2 and 6.2.3.

6.2.2 Pre-treatment PT1 oven drying

Each test specimen shall be dried in the convection dry oven described in 5.4 for (100 ± 1) h at a temperature of (60 ± 2) °C. The cut edge of the test pieces shall be parallel to the air flow. The arrangement of test specimen shall ensure a constant drying on all sides. The loading of the dry oven shall ensure a reproducible drying process.

6.2.3 Pre-treatment PT2 cold water storage and re-drying

a) Each test specimen shall be put in the container according to 5.2 for (6 ± 0,25) h immersion in water with a permanent temperature of (20 ± 2) °C. The test specimens shall be put in an upright position, completely submerged (distance between the upper edge of test piece and the surface of the water shall be 20 mm, at least), with at least 10 mm distance from each other and to the edge of the container. To prevent floating and secure water contact with the largest possible parts of sample surface the test specimen shall be weighted (e.g. metal nets on the container bottom and for weighting);

b) after water immersion each test specimen shall be stored for (24 ± 2) h at a relative humidity of (50 ± 5) % and a temperature of (23 ± 2) °C in the conditioning room (5.1). The arrangement of test specimen shall ensure a constant drying on all sides;

c) afterwards each test specimen shall be dried in the convection dry oven described in 5.4 for (8 ± 1) h drying at a temperature of (60 ± 2) °C followed by (16 ± 1) h at a temperature of (80 ± 2) °C. The drying conditions shall comply with 6.2.2.

NOTE Different specific water absorptions of wood species can influence the test result.

6.3 Evaluation of delamination

For each test specimen:

a) the delamination of top layer bonding shall be evaluated visually at both cross sections (A and B));

b) if a delamination of top layer bonding is visible, it shall be tested with the feeler gauge described in 5.6. In so doing the feeler gauge shall be held at 65 mm from its free tip. Where the feeler gauge can enter the opening deeper than 5mm, it shall be marked at the cross sections with a pen;

c) failure in top layer or substrate layer, shall not be counted as delamination of top layer bonding, but shall be reported (e.g. "failure substrate layer");

d) the delamination length of top layer bonding shall be measured with the sliding calliper described in 5.5 and the sum of delaminated length of adhesive joints of each layer type at each cross section shall be recorded.

7 Calculation and expression of results

The delamination as a percentage of delaminated length related to the top layer width in the initial state shall be calculated for each cross section.

Calculate the mean of the delamination of top layer (D_t) of the at least 10 cross sections.

8 Test report

The test report shall contain at least the following information:

a) all details necessary to identify the product tested;

b) reference to this document, prEN 17456;

c) name and address of the testing laboratory;

d) identification number of the test report;

e) name and address of the organization or the person who ordered the test;

f) used pre-treatment (PT1 or PT2);

g) mean value of top layer (D_t) delamination and single values;

h) failure in top layer or substrate layer, if relevant;

i) any deviation from the test method specified;

j) authorization date of the test report.