



SLOVENSKI STANDARD
oSIST prEN 17539:2020
01-julij-2020

Modularne mehansko spojene talne obloge (MMF) - Ugotavljanje geometrijskih značilnosti

Modular mechanical locked floor coverings (MMF) - Determination of geometrical characteristics

Modulare mehrlagige, schwimmende Fußbodenplatten mit einem mechanischen Schließsystem - Bestimmung der geometrischen Merkmale

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ICS:

97.150

Talne obloge

Floor coverings

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en

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Modular mechanical locked floor coverings (MMF) - Determination of geometrical characteristics

Modulare mehrlagige, schwimmende Fußbodenplatten
mit einem mechanischen Schließsystem - Bestimmung
der geometrischen Merkmale

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 134.

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.

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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.

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

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European foreword

This document (prEN 17539) has been prepared by Technical Committee CEN/TC 134 “Resilient, textile and laminate floor coverings”, the secretariat of which is held by NBN.

This document is currently submitted to CEN Enquiry.

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Introduction

The technical committee CEN TC134 decided to develop a series of generic test methods able to demonstrate the characteristics of modular mechanical locked floor covering panels. This series of test methods will be used in the common part of individual product specification standards.

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1 Scope

This document describes test methods for determination of the geometrical characteristics of modular mechanical locked floor covering panels in respect to thickness, length, width, squareness, straightness, width flatness, length flatness, openings between assembled elements and height differences between assembled elements.

The geometrical characteristics of modular mechanical locked panels are important considerations because installed flooring will have an objectionable appearance if these performance criteria are not followed. This can cause the installed panels to line up unevenly, producing unsightly seams, uneven surfaces and corners that do not match.

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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 <https://www.iso.org/obp>
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3.1

floor covering panel with mechanical locking system

rigid or semi-rigid floor covering, typically in a plank or tile format, consisting of a compact layer of a substrate and a decorative surface layer for floating installation

3.2

squareness

measurement of the amount each corner of the tile deviates from 90°

3.3

straightness

property of an edge to be straight, unbent

4 Principles

4.1 Thickness

The test piece is placed between two parallel plates, and the distance between them is measured, the contact pressure being adapted to suit the structure of the test piece.

4.2 Length and width

The surface dimensions of a modular mechanical locked floor covering panel are measured by a contact method at defined positions in each direction.

prEN 17539 (E)**4.3 Squareness**

To assess the squareness, each corner of a right-angled panel is fitted into the dihedral angle of a precision square and the maximum gap between the arm of the square and the ends of the panel is measured.

4.4 Straightness

To assess the straightness, the maximum opening between the panel and the straight edge is measured using a suitable gauge.

4.5 Flatness

To assess width flatness the deviation in height is measured by direct contact with a dial gauge maintained at constant height. To assess length flatness the maximum opening between the panel and a straight edge is measured using a gauge.

4.6 Openings and height differences

A standard assembly is fixed together, openings of the assembled specimens are measured with thickness gauges and height differences are measured with callipers or depth gauges at standard predefined points.

5 Apparatus**5.1 Apparatus for thickness measurement****5.1.1** Movable circular upper plate.

For various types of floor covering panel structures, the diameter of the upper plate, the applied mass, the area and the pressure shall be in accordance with Table 1.

5.1.2 Fixed lower plate, at least equal to size of the upper plate and at least 15 cm².

5.1.3 Dial gauge, to measure the distance between the plates to an accuracy of 0,01 mm (0,1 mm over a range of 25 mm for textiles).

5.1.4 Straight edge, for example a ruler, for brushing the surface of textile specimens.

5.2 Apparatus for length and width measurement

A dial gauge, a sliding calliper gauge or equivalent device with an accuracy of 0,05 mm for measurements up to 610 mm and an accuracy of 0,1 mm for measurements over 610 mm.

5.3 Apparatus for squareness measurement

Flat bedplate apparatus, for measuring squareness of panels. This apparatus shall be an "L" shaped steel device having an angle of 1,570 80 rad (90°) with a tolerance of $\pm 0,000 18$ rad (0,01°).

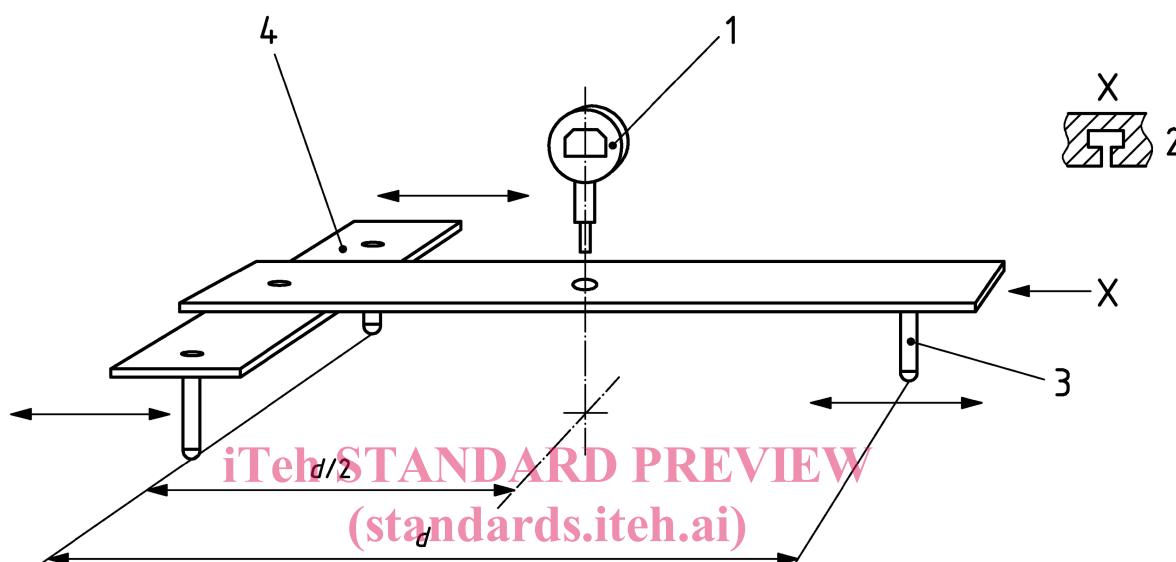
5.4 Apparatus for straightness measurement

5.4.1 Calibrated straight edge (steel ruler), of length at least equal to the length of the specimens, and having a maximum straightness deviation of 0,05 mm over 1,000 mm.

5.4.2 A set of thickness gauges.

5.5 Apparatus for determination of flatness

5.5.1 Apparatus for measuring width flatness, consisting of a dial gauge accurate to $\pm 0,01$ mm with a rounded tip of radius 5,5 mm, installed centrally in relation to three rounded supports with radii 5 mm. The supports shall be adjustable along a T-shaped assembly of bars to provide the required gauge length. The measurement, d , shall not be less than the width, of the test specimen minus 10 mm. The tip of the gauge in contact with the face of the test specimen shall apply a force of $(1,0 \pm 0,5)$ N. The mass of the apparatus shall not affect the flatness of the test specimen beyond the limit of the accuracy of the gauge. The instrument shall be set to zero against a suitable flat reference plate. See Figure 1.



Key

- 1 dial gauge
- 2 T-groove
- 3 adjustable pin
- 4 adjustable bridge

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Figure 1 — Example of apparatus for measuring width flatness

5.5.2 Apparatus for measuring length flatness consisting of a plain rigid surface, at least as long as the floor panel, having a maximum straightness deviation of 0,05 mm over 1 000 mm.

5.5.3 A feeler thickness gauge or sliding calliper, or equivalent tool to measure the deviation between the plate and the floor panel to an accuracy of 0,05 mm.

5.6 Apparatus for openings and height differences

5.6.1 Set of thickness gauges ranging from 0,05 mm to 0,50 mm in steps of 0,05 mm.

5.6.2 Calliper gauge or a depth gauge, with a scale interval of 0,05 mm.

5.6.3 Test surface of appropriate size that is rigid, horizontal and flat.

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6 Sampling and selection of specimens

Take five panels. Where a pack of panels comprises the sample, ensure that the first and the last panels are not selected for testing.

For thickness testing test specimens may be a single sample of nominal manufactured size or cut to a minimum size of 125 mm × 125 mm (cut pieces should be selected from different panels). For thickness testing of textile specimens with a pile, lightly brush the use-surface, firstly against, and then with, the direction of pile lean using the straight edge (5.1.4).

For length and width testing mark the machine direction of the material on every panel. If the machine direction cannot be determined by the appearance of the material, mark one direction, report that the machine direction could not be determined.

For testing of openings and heights a further 3 panels shall be taken, i.e. 8 panels in total.

All surfaces of a specimen shall be free from foreign bodies and any protrusion from the face and edges.

These materials shall be removed prior to the start of the test.

7 Atmosphere for conditioning and testing

The samples can be conditioned by the following methods:

- i) For test specimens with moisture sensitive substrates, condition the test specimen at (23 ± 2) °C and (50 ± 5) % relative humidity to a constant mass. Constant mass is considered to be reached when the results of two successive weighing operations, carried out at an interval of 24 h, do not differ by more than 0,1 % of the mass of the test specimen.
- ii) For test specimens with resilient/textile surfaces but without moisture sensitive substrates: condition the test specimen for 24 h at (23 ± 2) °C and (50 ± 5) % relative humidity.
- iii) Laminate products (without textile or resilient surface layer) can be measured in the received state.

Only conditioning methods i) and ii) should be used for type approval or verification purposes.

8 Procedure

8.1 Determination of thickness

8.1.1 Make sure the test instrument is level.

8.1.2 Select the upper plate dimension and force applied according to Table 1. And check that the presser foot and plates are clean.

Table 1 — Plate and force settings

Diameter of upper plate mm	Area mm ²	Approximate corresponding pressure kPa
25,3 ± 0,1	500	4

8.1.3 Set the dial gauge to zero by allowing the presser foot to rest on the lower plate (anvil).