INTERNATIONAL STANDARD

ISO 24336

First edition
2005-03-01

Laminate floor coverings — Determination of thickness swelling after partial immersion in water

Revêtements de sol stratifiés — Détermination du gonflement en épaisseur après immersion partielle dans l'eau

Reference number
ISO 24336:2005(E)

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Published in Switzerland

Foreword

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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 24336 was prepared by Technical Committee ISO/TC 219, *Floor coverings*.

Laminate floor coverings — Determination of thickness swelling after partial immersion in water

1 Scope

This International Standard specifies a test method for the determination of thickness swelling of laminate floor-covering elements after partial immersion in water. The testing is destructive and is mainly intended to evaluate the behaviour of the laminate floor-covering element in contact with water. Possible pre-attached soft backing material, sub-layers or any other material integrated at the underside of the floor-covering element are not included in the test and should therefore be removed before testing.

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.

EN 13329:2000, *Laminate floor coverings — Specifications, requirements and test methods*

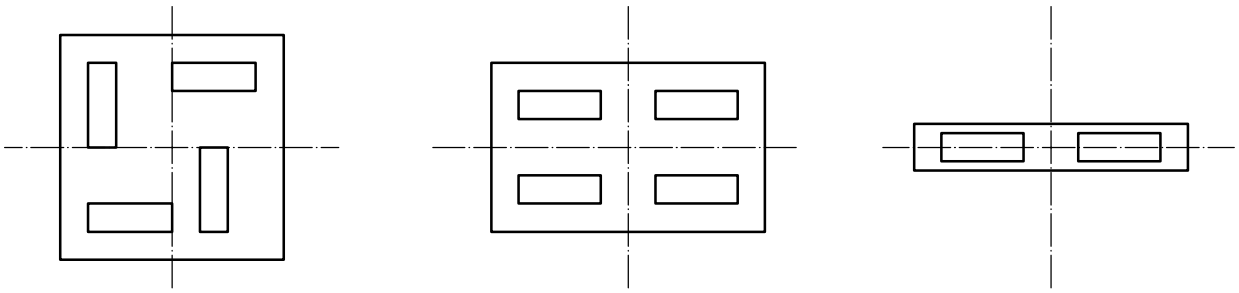
3 Principle

Samples of laminate floor-covering elements are partially immersed (50 mm) in water, at 20 °C, during 24 h. The resulting thickness swelling is determined.

4 Sampling

4.1 Cutting the test specimens

Cut four test specimens, measuring (150 ± 1) mm × (50 ± 1) mm out of a laminate floor-covering element. Take two samples in the direction parallel to one edge of the element, and two samples in the direction perpendicular to this first direction. Divide the element virtually into two equal parts, along both directions of the element. Take both sets of samples from each half of the element, in both directions. Take the samples, if possible, at least 20 mm away from both edges of the element. If this is impossible for some of the samples, the distance from the edge might be less than 20 mm, but in any case, the joint profile shall be cut away completely [see Figure 1a)]. If the width direction of the laminate floor-covering element is less than 150 mm, without taking into account the joint profile, all four test specimens may be taken in the length direction if possible [see Figure 1b)]. In the case that this is also impossible, the maximum number of samples shall be taken out of one floor-covering element [see Figure 1c)].



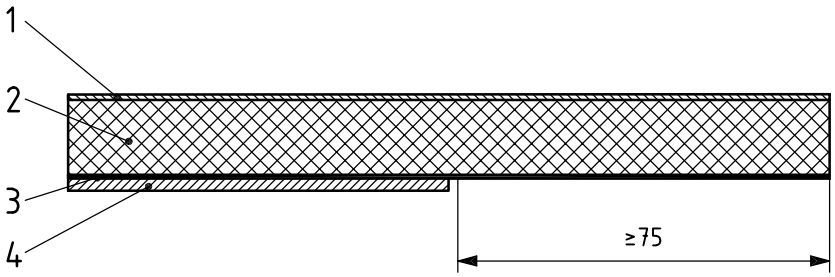
a) b) c)

Figure 1 — Different options for sampling of specimens

4.2 Preparation of the test specimens

Before testing or conditioning of the test specimens, any pre-attached soft backing material, sub-layer or any other material integrated at the underside of the floor-covering element shall be removed. Normally all laminate floor coverings contain a backing (balancing) layer, according to the definition in EN 13329. This backing layer shall be kept. Other pre-attached material is removed using a sharp knife or other sharp edge, either completely or at least to a minimum distance of 75 mm from the lower edge of the specimen (see drawing of a longitudinal cross-section through a specimen in Figure 2). Take particular care to remove any glue or adhesive used to bond the pre-attached material to the backing.

Dimensions in millimetres



Key

1 surface layer
2 substrate (core)
3 backing
4 pre-attached material

Figure 2 — Removal of pre-attached material from a specimen

5 Conditioning

Test specimens are measured in the received state.

For type approval or verification purposes, the test specimens shall be stabilized to a constant mass in an atmosphere of (23 ± 2) °C and (50 ± 5) % relative humidity. 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 specimens.

6 Apparatus

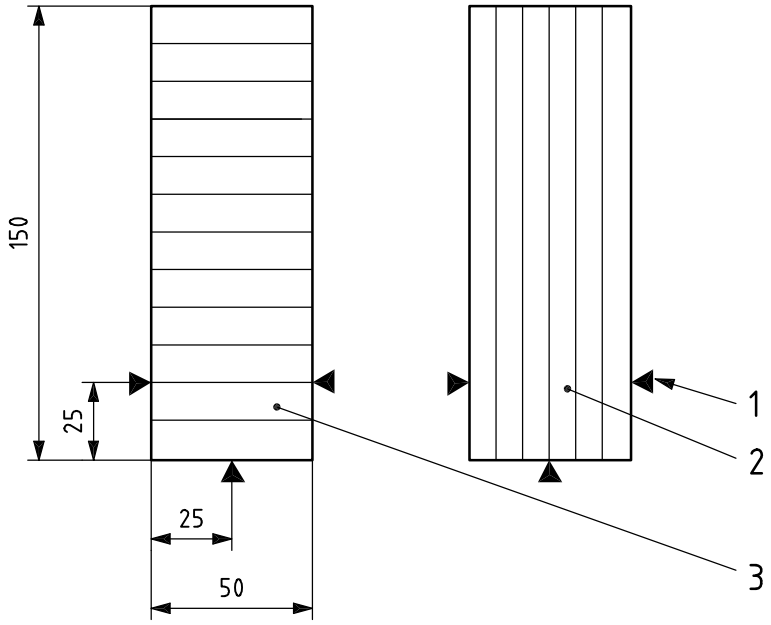
6.1 Water bath, large enough to ensure a constant water level, and built to be capable of maintaining the water temperature at (20 ± 1) °C during the testing time.

6.2 Micrometer, with flat and parallel circular measuring surfaces of diameter at least 5 mm, with an accuracy of ± 0,05 mm.

7 Test procedure

Determine the initial thickness (t_{in}) of the test specimens perpendicular to the extreme edges at the points as indicated in Figure 3. Measure the thickness of the part of the sample that is going to be put under water and, if relevant, has had its pre-attached material removed.

Dimensions in millimetres



Key

1 measuring point
2 samples taken in the length direction
3 samples taken in the width direction

Figure 3 — The six measuring points indicated by ▲

Place the available test specimens in the water bath as illustrated in Figure 4. Remove the test specimens after 24 h ± 15 min, and dry them immediately with a towel. Within 5 min after the removal from the water bath, determine the final thickness (t_{fin}) of the test specimens at the measuring points where the initial thickness has been determined.

Dimensions in millimetres

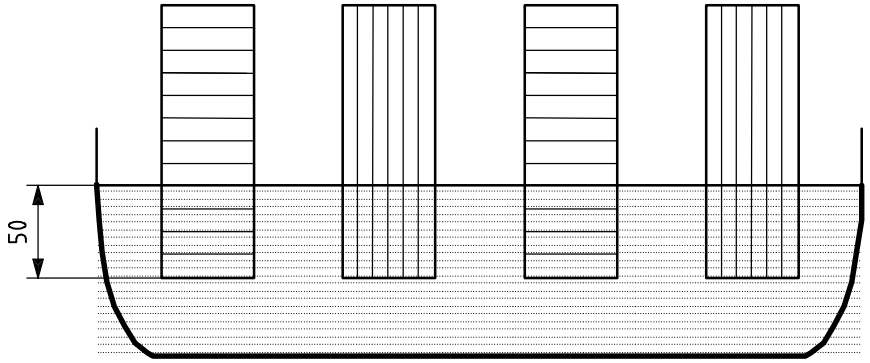


Figure 4 — The four specimens in the water bath

8 Calculation and expression of results

Record all values and determine the differences between initial and corresponding final thickness values. Calculate, for each pair of values, the thickness swelling in percent according to the formula:

$$\frac{\left(t_{fin} - t_{in}\right) \times 100}{t_{in}}$$

where

t_{in} is the initial thickness, in millimetres:

t_{fin} is the final thickness, in millimetres.

Express the average thickness swelling as the result, using the individual thickness swelling results from the measuring points, in percent to the nearest 0,1 %.

9 Precision

The precision of the method is not known. When interlaboratory data become available, the precision statement will be added in subsequent revisions of this International Standard.

10 Test report

The test report shall contain at least the following information:

a) reference to this International Standard (ISO 24336);

b) name and address of the laboratory that performed the test;

c) name and address of the company requesting the test;

d) name (brand, if any) and the type of the laminate floor covering tested;

e) sampling procedure and date of delivery of the test specimens;

f) date and period of the test(s);

g) climatic conditions applied to the test specimens prior to testing;

h) climatic conditions within the test room during the test;

i) test result(s) expressed in percent rounded to the nearest 0,1 %;

j) any deviations from this International Standard which might have affected the test results.

ICS 97.150

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