
**Laminate flooring — Topical moisture
resistance — Assembled joint**

Sol stratifié — Résistance à l'humidité superficielle – joint assemblé

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The purpose of this document is to evaluate small occasional topical moisture spill resistance properties of a laminate flooring such as e.g. a glass of water falling and spilling then cleaned immediately after. A laminate floor plank/tile is cut into pieces then connected using the profiled locking edges and fastened into an assembled floating “T joint” configuration. The assembled specimen or elements are exposed to surface water, evaluated for surface swell effect, after removing the water as well as after a recovery time period. Evaluation criteria is qualitative, as well as quantitative. The method can also be utilized to evaluate joint leakage, when exposed to surface water.

This document describes how to evaluate and rate the test specimens. It also provides an annex work sheet to log and help assess specimen rating and measurement scores.

Some of the content of this document was already published in NALFA Surface Water Test_08-01-2019 [1].

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Laminate flooring — Topical moisture resistance — Assembled joint

1 Scope

This document specifies a test method to evaluate moisture resistance to surface water exposure of a joined, floating, laminate flooring assembly/element. This document also establishes criteria for rating and assessing performance.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1

surface swell

evaluation of visible and measurable raised edges of an assembled Laminate flooring panel/element joint when exposed to water on the surface

3.2

assembled flooring joint

portions of a Laminate floor plank/tiles held together by their profiled edges that lock together

3.3

qualitative rating

visual and tactile assessment of the assembled flooring joints after exposure to the surface water swell test

3.4

quantitative rating

measures assessment of the thickness swelling of the assembled flooring joints after the surface water swell test

3.5

wet swell

quantitative rating of the specimen joint for surface water swell test, measured immediately after 24 h of exposure and removal of the surface water

3.6

recovery swell

quantitative rating of the specimen flooring joint for surface water swell test, measured after 24 h exposure, followed by 24 h recovery (re-drying)

4 Materials needed

4.1 Planks

Three planks with undamaged profiled edges. The test is to be run in triplicate. Each test requires one plank.

4.2 Plastic ring

The plastic ring shall be PVC Pipe, or equivalent having (100 ± 5) mm (4 inch) inner diameter, minimum 25,4 mm (1 inch) tall.

4.3 Beaker

Beaker capable of measuring (100 ± 5) ml (3,4 fl. oz.) of water, should give approximately 9 mm (0,375 inch) deep water height in the plastic ring.

4.4 Distilled or de-ionized water

Distilled or de-ionized water, room temperature; (23 ± 3) °C [(73 ± 5) °F].

4.5 Dye colour

The dye colours shall be red or blue.

4.6 Sealant

Vaseline, silicone caulk or plumbers' putty shall be used to seal the ring to the laminate plank.

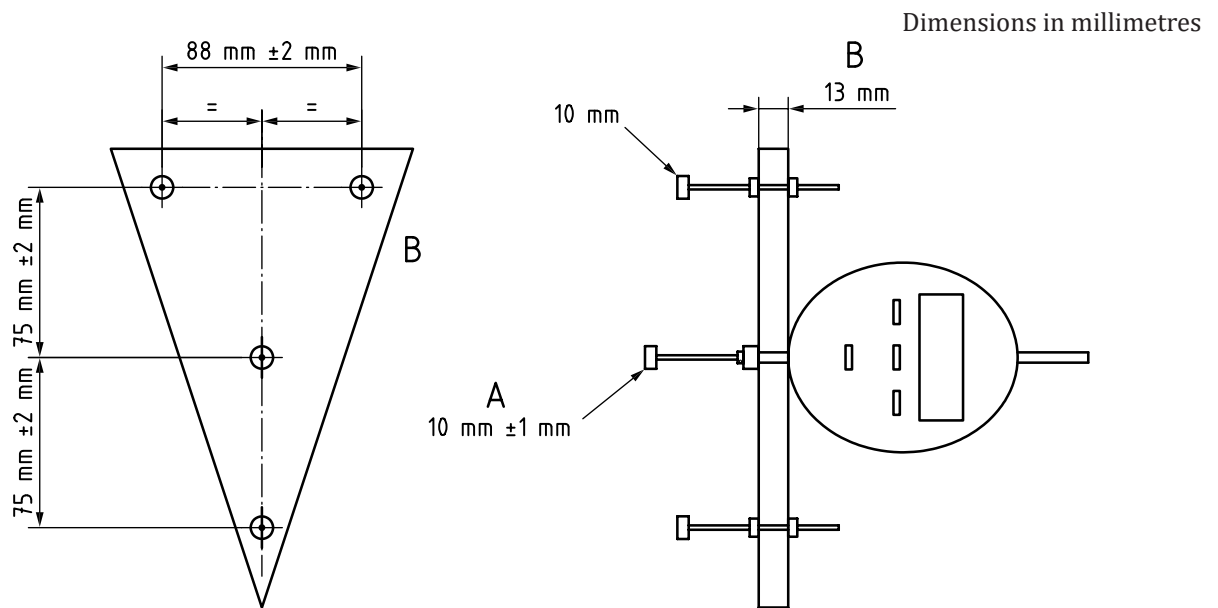
4.7 Measuring device

The measuring device shall consist of a three footed flat support frame with dial indicator comparator that can measure changes in surface height at a specified position (see [Figure 1](#)). A different device may be used on condition that equivalence to the three footed device is proven.

The unit shall be equipped with a micrometer gauge capable of measuring up to nominal 25 mm (1 inch) graduated to 0,02 mm (0,001 inches). The foot/anvil of the indicator shall have a diameter of (10 ± 1) mm [$(0,394 \pm 0,039)$ inches] with an exerted force of 1 N (0,22 lb-force).

Other suitable devices may be utilized, provided they offer at least equivalent measurement capability.

The same calibrated measurement gauge shall be used for before and after testing measurements.



Key

- A micrometer with nominal 10 mm feet (3/8 inch)
- B rigid acrylic plate or equivalent

Figure 1 — Example measuring device

5 Conditioning

Prior to testing for surface swell properties, specimens are to be conditioned per manufacturer's pre-installation acclimation recommendations and if acclimation conditions are not specified then acclimate specimens at $(23 \pm 3) ^\circ\text{C}$ [$(73 \pm 5) ^\circ\text{F}$] and $(50 \pm 5) \%$ relative humidity for 24 h.

6 Procedure

6.1 Assembling the test specimen

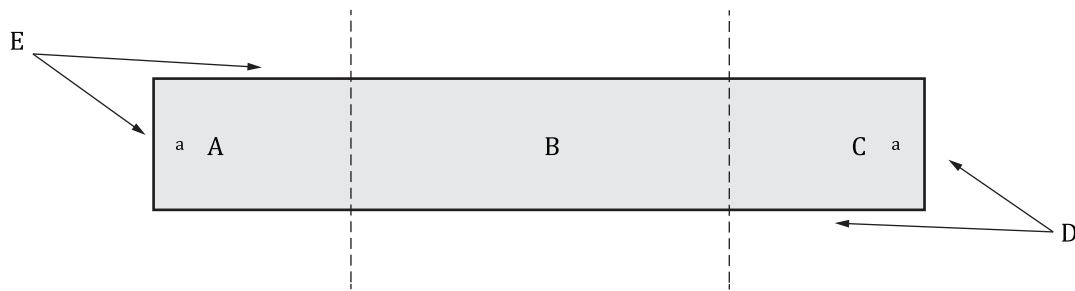
6.1.1 Inspection

Inspect each test plank and ensure they are free of damage on all 4 sides.

6.1.2 Cutting

Cut a minimum of $(152,4 \pm 0,5) \text{ mm}$ (6 inch) off of both ends (Part A and C) of the laminate plank and use a minimum $(304,8 \pm 5) \text{ mm}$ (12 inch) from the center (Part B). See [Figure 2](#).

It should be noted that cutting wood products can generate wood dust. Wear suitable dust mask or use with adequate vacuum exhaust to avoid dust inhalation exposure.



Key

- | | | | |
|---|---|---|-----------------|
| a | reference for assembling planks | D | tongue side/end |
| A | left end of the laminate plank, refer to 6.2 | E | groove side/end |
| B | middle part of the laminate plank, refer to 6.2 | | |
| C | right end of the laminate plank, refer to 6.2 | | |

Figure 2 — Plank layout (x 3 test assemblies)

6.1.3 Cleaning

Prior to assembly, make sure to thoroughly clean profiled edges of each specimen part (A, B and C). Preference is to use an air gun and blow the profiled edges clean, followed by cleaning with a small brush, suited to the task.

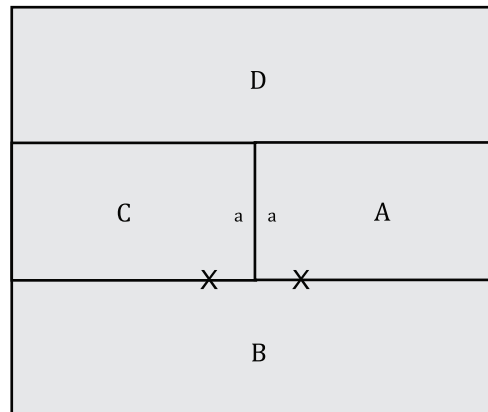
6.1.4 Assembly

Assemble parts A and C according to the manufacturer's recommended installation instructions, making sure the tongue and groove sections are properly engaged. Join part B (Groove side) to the assembled parts C and A (Tongue side) according to the manufacturer's recommended installation instructions, to create the inverted "T" joint. Finally join part D on the other side of A and C used to help ensure the assembly remains flat during testing, see [Figure 3](#).

NOTE Review assembly to ensure no visible gaps between the elements. Assembling, testing, viewing and rating should be in a well-lighted area with specimens placed on a sturdy, flat bench or table, with good viewing access at typical countertop or table top height.

6.1.5 Gaps

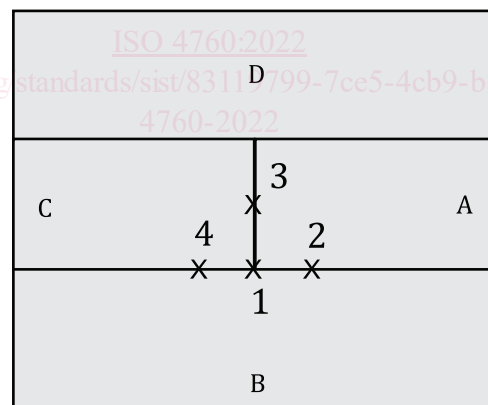
When assembling test specimen, if any gaps are noticed, the test specimen should be disassembled, according to manufacturer recommended disassembly instructions, recleaned then reassembled, according to manufacturer recommended installation instructions, prior to testing.

**Key**

- A refer to [6.1.2](#)
- B refer to [6.1.2](#)
- C refer to [6.1.2](#)
- D a bridge or joint support brace
- a reference for assembling planks refer to [Figure 2](#)

Figure 3 — Assembled Plank Layout with bridge or joint support**6.1.6 Test positions**

Mark test positions as denoted in [Figure 4](#).

**Key**

- A refer to [6.2](#)
- B refer to [6.2](#)
- C refer to [6.2](#)
- D refer to [6.2](#) bridge or joint support brace
- 1 test position 1 – Intersect point of inverted “T” Joint
- 2 test position 2 – 38,1 mm (1,5 inch) from test position 1 to right
- 3 test position 3 – 38,1 mm (1,5 inch) above test position 1
- 4 test position 4 – 38,1 mm (1,5 inch) from test position 1 to left

Figure 4 — Test Positions on Assembled Planks (x 3 test assemblies)