BUILDING CODE · E3 INTERNAL MOISTURE

# E3 Alternative Solution Flamingo

Substantiation for specifying Flamingo engineered oak flooring in rooms containing sanitary fixtures and sanitary appliances, as an Alternative Solution to E3/AS1.

| | |
|---|---|
| DOCUMENT | VW-E3-FL-001 · version 3.0 |
| DATE ISSUED | 11 August 2026 |
| SUPERSEDES | all previous Vienna Woods E3 / E3-ASI Amendment letters for this collection, however dated |
| APPLIES TO | Flamingo — 15 mm engineered board, tongue and groove, full-spread adhesive, glue-down, oil finish |
| AUDIENCE | Architects · specifiers · building consent authorities · installers |

## 1 WHAT E3 ASKS OF A FLOOR

NZBC clause E3 *Internal Moisture* requires that surfaces in rooms containing sanitary fixtures or appliances be **impervious** and **easily cleaned**, so that splash cannot pass behind linings or into concealed spaces.

Timber and timber-based flooring was removed from the list of acceptable surfaces at **E3/AS1 2nd edition, Amendment 7**. A timber floor in these rooms is therefore no longer covered by the Acceptable Solution, and is specified as an **Alternative Solution** — the route this document supports.

## 2 THE EVIDENCE

### TESTED — THIS COLLECTION

The report below names this collection on its own sample description. The samples tested were from the Raftwood range within Flamingo. The report is offered for the Raftwood range as tested. Other Flamingo ranges share the 15 mm board and the tongue-and-groove profile; where one is specified in a room with sanitary fixtures, confirm the surface coating with Vienna Woods before relying on this report. It was carried out on an assembled joint — the boards cut and profiled together, with adhesive worked into the joints as our installation requires — because that joint, not the board face, is where water reaches a substrate.

| | |
|---|---|
| **Laboratory** | New Zealand Wool Testing Authority Ltd (NZWTA), IANZ-accredited |
| **Report number** | 1542718.0 |
| **Standard** | Based on ISO 4760:2022(E) |
| **Method** | Laminate flooring — topical moisture resistance — assembled joint (modified) |
| **Date tested** | 19 November 2024 |
| **Sample as recorded** | “Flamingo Raftwoods flooring planks assembly with Selleys PVA adhesive applied in the joints.” |
| **Joint tested** | Tongue and groove, PVA applied to the joints before assembly |
| **Assembly tested** | Floating T-joint, as the method specifies. The installed floor is additionally bonded to the substrate in full-spread adhesive. |



Supersedes all previous Vienna Woods E3 / E3-ASI Amendment letters for this collection, however dated. An Alternative Solution offered on an evidence basis; compliance is determined by the building consent authority on each project.

| | |
|---|---|
| **Specimens** | 3, tested in triplicate |
| **Maximum wet swell** | 0.17 mm |
| **Maximum recovered swell, 24 hours** | 0.16 mm |
| **Migration of water along the upper surface** | No on any specimen during the test; yes on specimen 1 when the joints were disassembled, no on specimens 2 and 3. |
| **Migration of water to the underside** | No on every specimen, during the test and on disassembly. |
| **Method variation** | Conditioned at 20 °C / 65 % RH rather than the method's 23 °C / 50 % RH, which leaves the boards roughly 2.8 % higher in moisture content than the method specifies — the direction that flatters both the swell measurements and the migration result, and it should be read that way. It is also closer to a New Zealand interior in service than 23 °C / 50 % RH. |

- The report records that it applies only to the samples tested.
- The laboratory records that no specific methods have been adopted for verifying compliance with the performance of NZBC E3. The report is a measurement, not a determination of Building Code compliance.

## 3 THE CONDITIONS THIS IS OFFERED ON

The tested assembly had adhesive worked into the joints. The claim is the tested thing only where the floor is built the same way, so within **1.5 m of sanitary fixtures and appliances**, in addition to our standard glue-down instructions:

1. A flexible waterproof sealant at the **perimeter**, where the floor meets cabinetry or skirting. It can be colour-matched so it reads as a shadow line.
2. **D3 PVA** adhesive worked into the groove of the tongue-and-groove profile, sealing the joint. Enough to close it, not so much that it shows on the surface.
3. The floor laid in **full-spread adhesive** to a substrate prepared and moisture-tested to our installation guide (VW-INS-001).

## 4 EASILY CLEANED, AND KEPT THAT WAY

The surface is cleaned with a vacuum and a damp mop — the same regime as floor finishes that remain Acceptable Solutions. A coated timber floor is a **maintainable** surface rather than a permanent one: E3 asks that the surface be able to be kept impervious across its durability life, which means re-coating or re-oiling to the care guide rather than leaving it to wear through. Care guides are published at viennawoods.co.nz/resources.

> **What this document does not do.** It does not state that the floor complies with the Building Code. An Alternative Solution is accepted or declined by the **building consent authority** on each project, on the evidence put in front of it. This document and the report behind it are that evidence. It is not a product certification, and it is not an appraisal.

Prepared by Vienna Woods Ltd, 2 Roxburgh Street, Newmarket, Auckland 1023 · 0800 843 662 · info@viennawoods.co.nz. Related: NZBC Compliance Guide (VW-NZBC-001) · Product Technical Statement (VW-PTS-001) · Installation Guide (VW-INS-001) · BPIR (VW-BPIR-001).



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APPENDIX — THE TEST BEHIND THIS STATEMENT

# New Zealand Wool Testing Authority Ltd
# Report 1542718.0

Based on ISO 4760:2022(E) · tested 19 November 2024. Reproduced in full and unaltered on the pages that follow (report pages 1–4 of 4).



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NZWTA WOOL TESTING

NZWTA TEXTILES AND MATERIALS TESTING

ACCREDITED IANZ TESTING LABORATORY

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

# No. 1542718.0

(Please quote this number in all correspondence)

CLIENT:
Vienna Woods
2 Roxburgh Street
Newmarket
Auckland 1023

Attn.: Damon Jackson

SAMPLE RECEIVED FROM:
Vienna Woods

Date Received: 15.11.24

SAMPLE DESCRIPTION:
Flamingo Raftwoods flooring planks assembly with Selleys PVA adhesive applied in the joints.

Client Order No.:

Client Reference:



**RESILIENT FLOOR COVERINGS (BASED ON ISO 4760:2022(E) - LAMINATE FLOORING – TOPICAL MOISTURE RESISTANCE – ASSEMBLED JOINT (MODIFIED))**

**Method**

The sample was cut into pieces then connected using the profiled locking edges and fastened into an assembled floating "T joint" configuration as per the test method . The testing was performed in triplicate.
Weights were placed on the outer corners of the test specimens to keep the samples flat throughout the test procedure.
100 mls of dye solution was applied onto the sample surface. It was poured into a cylinder 100mm diameter placed in the centre of the sample at the "T joint." Sealant was used at the plank/cylinder interface to avoid leakage.
The sample was placed on white paper towels prior to testing to enable detection of any dye penetration through the joints.
The sample was left at 20°C, 65% Relative Humidity room conditions for 24 hours after the dye was added and then examined for dye penetration through the backing (not $23^0$C, 50% RH as stated in the method).
If swelling measurements are requested, thickness measurements are taken at specified test positions - before water, within 15 minutes after water removal (qualitative and quantitative) and 24 hours after removal of water (qualitative and quantitative).
Quantitative measurements are used to calculate surface swell in mm (within 15 minutes after water removal) and recovery swell (24 hours after removal of water).

Date Tested: 19/11/2024
Note: Selleys PVA Adhesive was applied in the joints before being assembled by the client.

**Results:**

| Quantitative Results: | Wet Swell (mm) | | | Recovered Swell (mm) | | |
|---|---|---|---|---|---|---|
| | **Specimen 1** | **Specimen 2** | **Specimen 3** | **Specimen 1** | **Specimen 2** | **Specimen 3** |
| Final Average Results (Positions 2 to 4) | 0.07 | 0.08 | 0.17 | 0.02 | 0.02 | 0.03 |
| Final Results (Position 1) | 0.10 | 0.08 | 0.11 | 0.03 | 0.00 | 0.16 |

| | Wet Swell | | | Recovered Swell | | |
|---|---|---|---|---|---|---|
| | Specimen 1 | Specimen 2 | Specimen 3 | Specimen 1 | Specimen 2 | Specimen 3 |
| Qualitative Ratings (individual results): | 1 | 1 | 1 | 1 | 1 | 1 |

**Qualitative Grade:**
1 = No change - Little to no noticeable change in edge swell or panel surface lift
2 = Slight swelling - Slight swelling, small ridge along one or more joints, very little if any panel surface lift
3 = Moderate - Noticeable edge swelling and some panel surface lift extending away from joint
4 = Objectional - Severely raise edge and swelling extending noticeably under the panel surface
5 = Failed test - Water leaked out of the ring, leaving no continuous film of water inside the ring
(this grade is given even if there is no swell of the edge joint)

C Judan
Key Technical Person
21/11/2024

**"THIS REPORT APPLIES ONLY TO THE SAMPLES TESTED"**
Samples and their identifying descriptions have been provided by the client unless otherwise stated. NZWTA Ltd makes no warranty, implied or otherwise as to the source of the tested samples. The above results are designed to provide THE CLIENT WITH GUIDANCE INFORMATION 0NLY. This document shall not be reproduced except in full.

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| Observations: | Specimen 1 | Specimen 2 | Specimen 3 |
|---|---|---|---|
| Migration of water along the upper surface: | No | No | No |
| Migration of water to the underside: | No | No | No |

| Disassembly Observations: | Specimen 1 | Specimen 2 | Specimen 3 |
|---|---|---|---|
| Migration of water along the upper surface: | Yes | No | No |
| Migration of water to the underside: | No | No | No |

Note: The Acceptable Solutions and verification methods, New Zealand Building Code E3 Internal Moisture defines on page 9 definitions - "**Impervious**" - that which does not allow the passage of moisture. While E3.3.3 and E3.3.6 require impervious surfaces about sanitary appliances/fixtures, the impervious performance criteria compliance covered in Page 11 mentions "No specific methods have been adopted for verifying compliance with the performance of NZBC E3." In summary, the Objective (3.1) and Functional requirement (3.2) of E3 is to prevent illness/injury or damage through accumulation of moisture, or damage caused by free water penetration.

This ISO test method is used internationally and has been independently performed in New Zealand. The result of this test verified that this product's assembled joint over a 24 hour period did not allow water penetration through to the substrate, or if tested at the edges where edge sealant has been applied.

C Judan
Key Technical Person

21/11/2024

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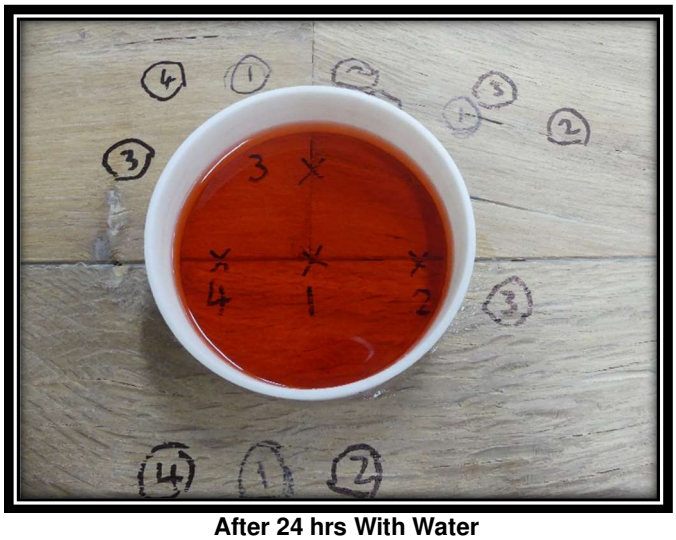
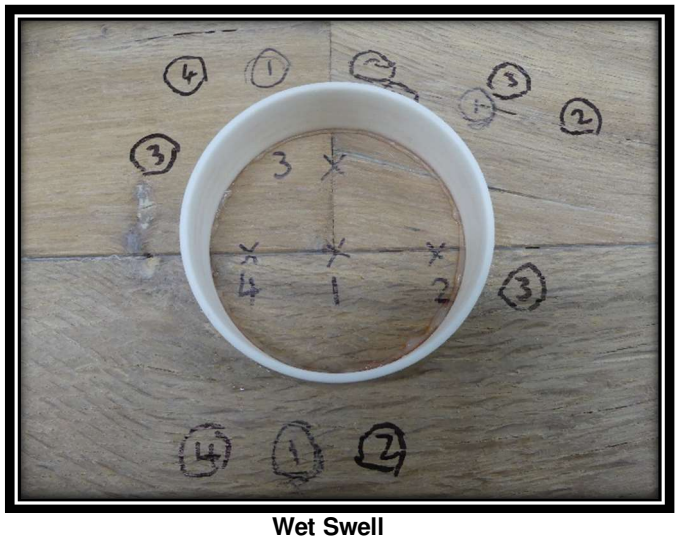
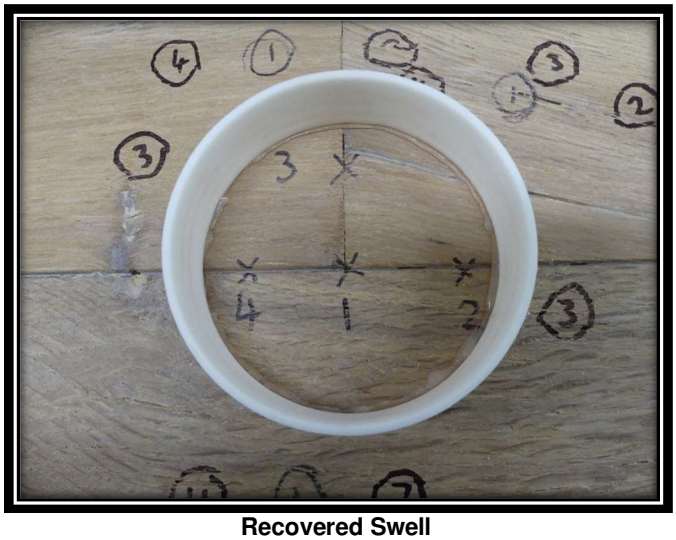


**After 24 hrs With Water**



**Wet Swell**



**Recovered Swell**

**Recovered Swell (Disassembled)**

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21/11/2024

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