

BUILDING CODE · E3 INTERNAL MOISTURE

E3 Alternative Solution Château

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

DOCUMENT	VW-E3-CH-001 · version 3.1
DATE ISSUED	1 September 2026
SUPERSEDES	all previous Vienna Woods E3 / E3-ASI Amendment letters for this collection, however dated
APPLIES TO	Château — 15 mm engineered board, tongue and groove, full-spread adhesive, glue-down, lacquered builds only
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 — SUBMITTED AS THIS COLLECTION

The laboratory recorded the sample by its construction and coating rather than by collection name. Vienna Woods submitted Château boards for this test and holds it as the Château submission. The test 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. Château is also supplied with a UV-oil finish on some sizes, which this report does not cover. The laboratory recorded the tested sample as lacquer-coated, and under E3 the coating is the impervious surface, so the result is offered for the lacquered builds only. Where an oiled Château board is specified in a room containing sanitary fixtures, contact Vienna Woods.

Laboratory	New Zealand Wool Testing Authority Ltd (NZWTA), IANZ-accredited
Report number	1435555.6
Standard	Based on ISO 4760:2022(E)
Method	Laminate flooring — topical moisture resistance — assembled joint (modified)
Date tested	5 October 2022
Sample as recorded	“Flooring planks: Coating – Lacquer Connection System – T & G”
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.
Specimens	3, tested in triplicate
Maximum wet swell	0.45 mm
Maximum recovered swell, 24 hours	0.45 mm — specimen 1 at position 1 measured the same figure wet and recovered, so that position had not recovered within 24 hours. The other five readings recovered to 0.21 mm or less.
Water penetration through the joints	None on any specimen. On specimen 1 the laboratory also recorded that the water was able to channel through the joints and puddle on the surface of the planks, and that water was left inside the ring after 24 hours.
On disassembly	No evidence of water penetrating the joints on any specimen; water remained on the surface of the joints.
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 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).

APPENDIX — THE TEST BEHIND THIS STATEMENT

New Zealand Wool Testing Authority Ltd
Report 1435555.6

Based on ISO 4760:2022(E) · tested 5 October 2022. Reproduced in full and unaltered on the pages that follow (report pages 1–5 of 5).

No. 1435555.6

(Please quote this number in all correspondence)

CLIENT:
 Vienna Woods
 2 Roxburgh Street
 Newmarket
 Auckland 1023

SAMPLE RECEIVED FROM:
 Vienna Woods

Date Received: 3.10.22

Attn.: Damon Jackson

SAMPLE DESCRIPTION:
 Flooring planks:
 Coating – Lacquer
 Connection System – T & G

Client Order No.:

Client Reference:

1 of 5

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 305 mm width 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°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: 5/0/2022

Note: Shelley's Aquadhere PVA wood glue applied on 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 (Positions 2 to 4)	0.27	0.18	0.13	0.21	0.10	0.02
Final average (Position 1)	0.45	0.26	0.20	0.45	0.06	0.07

	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)

"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 ONLY. This document shall not be reproduced except in full.


 C Judan
 Key Technical Person

10/10/2022

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	Wet Swell		
	Specimen 1	Specimen 2	Specimen 3
Observations:	The water was able to channel through the joints and puddle on the surface of the planks. However, No water penetration through the joints. There was water left inside the ring after 24 hrs.	No water penetration through the joints.	No water penetration through the joints.

	Recovered Swell		
	Specimen 1	Specimen 2	Specimen 3
Disassembly Observations:	No evidence of water penetrating the joints. Water remained on the surface of the joints.	No evidence of water penetrating the joints. Water remained on the surface of the joints.	No evidence of water penetrating the joints. Water remained on the surface of the joints.

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.

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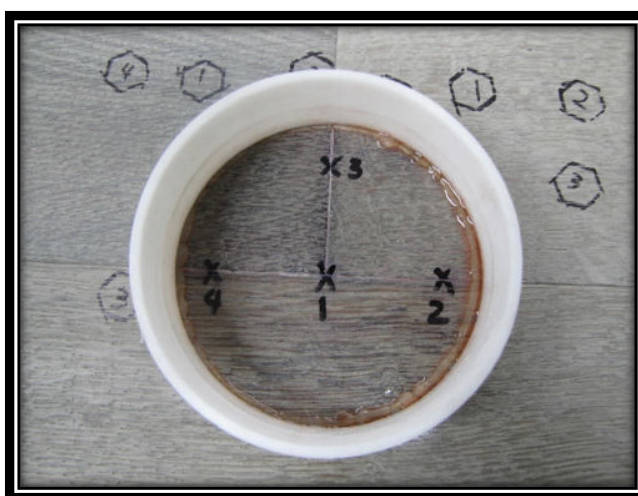
Client Order No.:

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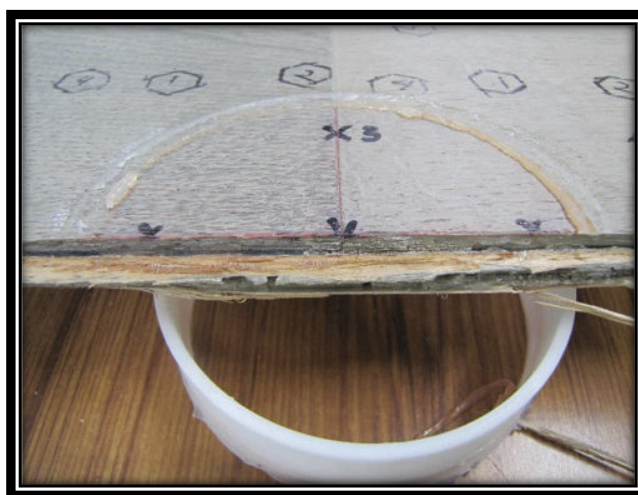
24 hrs With Water



Wet Swell



Recovered Swell



Recovered Swell (Disassembled)

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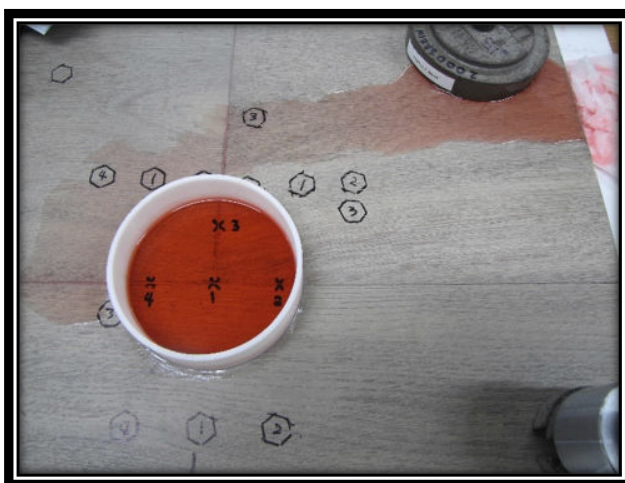
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Sample 1 - Water was able to channel through the joints and puddle on the surface of the planks.

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