ACCREDITED IANZ TESTING LABORATORY

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

No. 1568799.9

(Please quote this number in all correspondence)

CLIENT:
Godfrey Hirst New Zealand Ltd.
PO Box 97 145
SAMC, Manukau

Attn.: Marty Veele

SAMPLE RECEIVED FROM:
Godfrey Hirst New Zealand Ltd.

Date Received: 15.5.24

SAMPLE DESCRIPTION:
6322250 Villa GH Engineered 14.2 timber flooring planks assembly fixed to a clear Perspex base using:
- 1 Part Polyurethane wood adhesive solvent free
- Clicseal in joins

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 samples are adhered to a clear Perspex sheet using a single component urethane type adhesive that allows the underside of the sample to be inspected to enable detection of any dye penetration though the joints.
The testing was performed in triplicate.
Weights were not used on these samples.
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 underside of the sample was inspected through the clear Perspex to enable detection of any dye penetration through the sample.
The sample was left at 20^{o}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: 19/5/2025
Note: Samples were assembled /adhesive fixed to Perspex 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)	0.06	0.19	0.03	0.01	0.02	0.00
Final Results (Position 1)	0.15	0.06	0.06	0.00	0.00	0.00

	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

C Judan
Key Technical Person
23/05/2025

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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)

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:	No	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.

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Key Technical Person

23/05/2025

NZWTA WOOL TESTING

NZWTA TEXTILES AND MATERIALS TESTING

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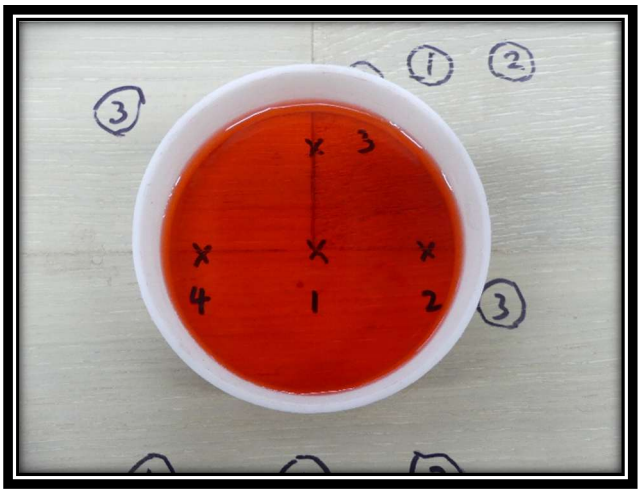
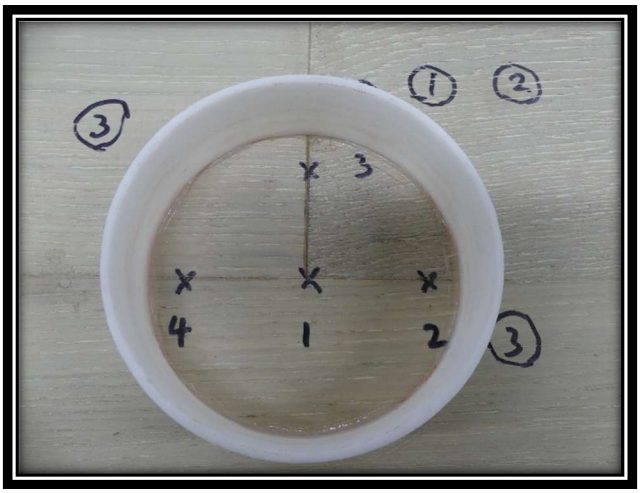
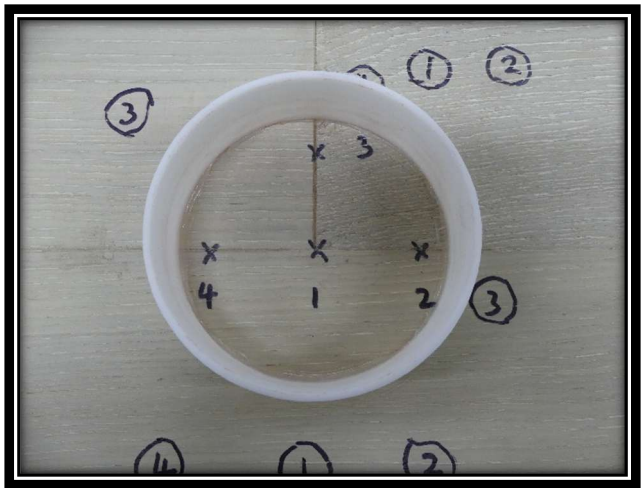


24 Hrs with Water



Wet Swell



Recovered Swell

Recovered Swell (Disassembled)

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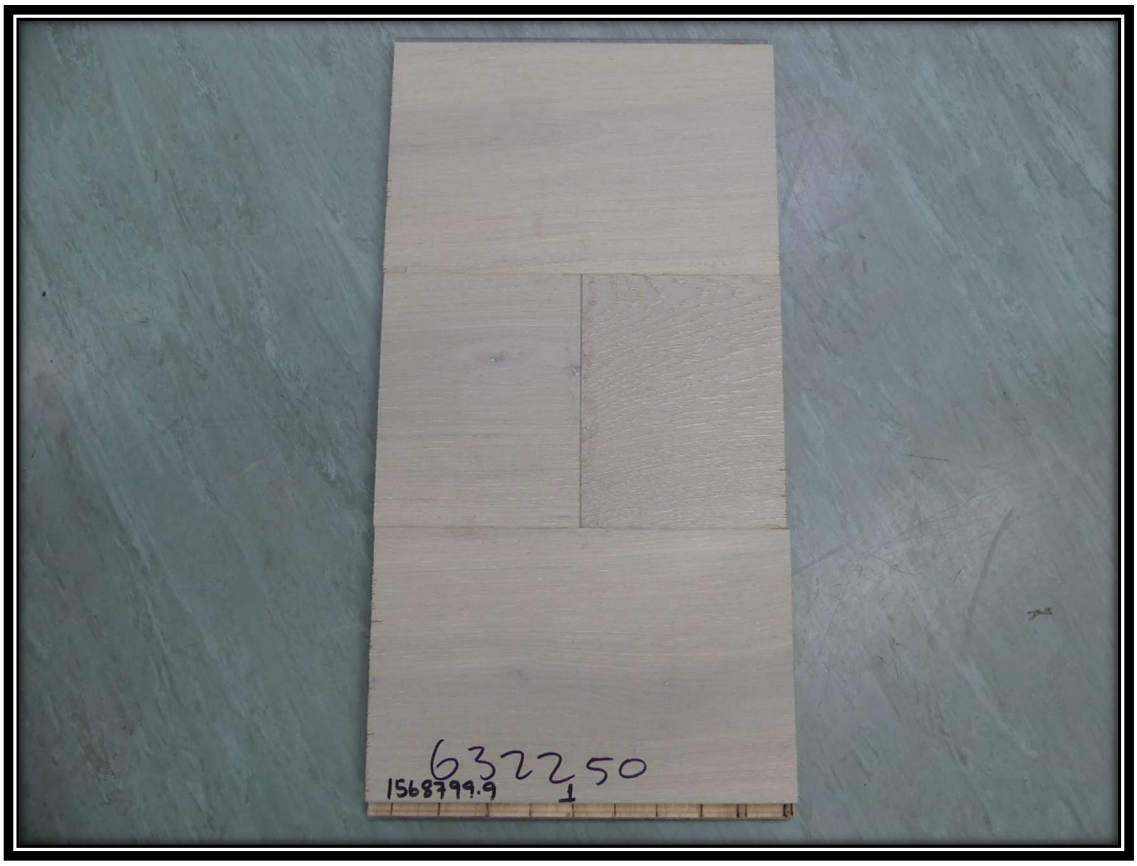

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