NZWTA WOOL TESTING

NZWTA TEXTILES AND MATERIALS TESTING

No. 1463477.8

(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: 2.6.23

SAMPLE DESCRIPTION:
Luxury Vinyl flooring planks – Code 456999 1498X246 fixed to a clear Perspex base using:
- Rapid set smoothing compound and absorbent mat used to prepare Perspex to receive the planks.
- Adhesive Polyurethane 1 part.

Client Order No.:

Client Reference:

ISO 4760:2022(E) - LAMINATE FLOORING – TOPICAL MOISTURE RESISTANCE – ASSEMBLED JOINT (MODIFIED)

Method

This test method has been modified to suit Luxury vinyl tile flooring that is square butt joined without a joining mechanism. The modification involves adhesive fixing the tiles with 100 percent bond coverage then applying the same test method over the "T joint" to determine if coloured dye will penetrate through the substrate.
The samples are first adhered over an absorbent mat cloth that has been pre-coated with a flooring cementitious feathering compound to allow and simulate how the adhesive would actually set up on a typical timber or concrete substrate.
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: 6/6/2023
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 (Positions 2 to 4)	0.02	0.00	0.01	0.00	0.00	0.00
Final average (Position 1)	0.00	0.03	0.00	0.00	0.03	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 08/06/2023
Key Technical Person

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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:	Yes	Yes	Yes
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	Yes	Yes
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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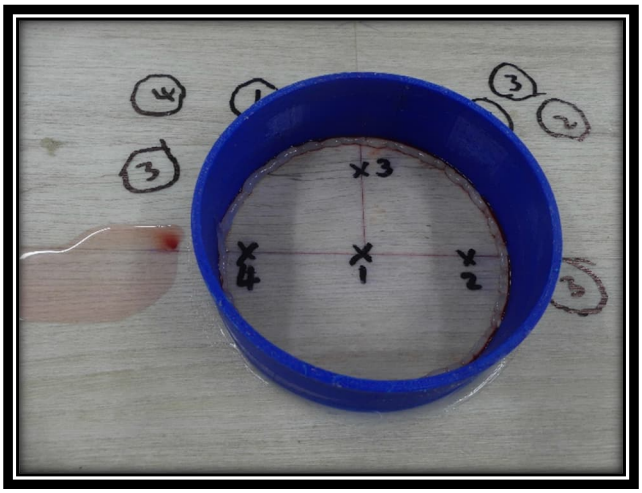
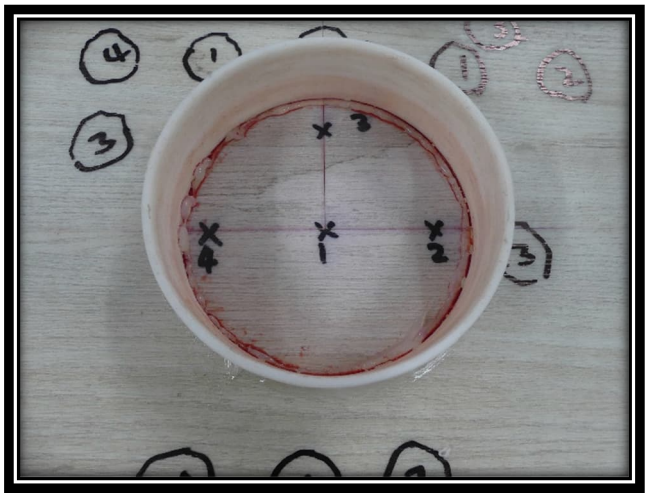
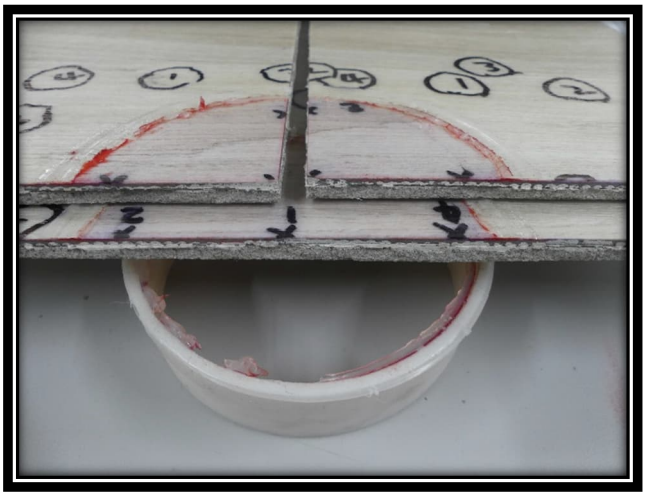
After 24 hrs With Water



Wet Swell



Recovered Swell



Recovered Swell (Disassembled)

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