

**FLOORCO TRADING LTD.**

**Overlay Wood Flooring System**

**Alternative Solution Guidance - Compliance With New Zealand Building Code.**

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## 1. About this document

This document provides evidence of how FLOORCO WOOD flooring will comply with the NZ building code.

- ✓ This document is to be used with the FLOORCO TRADING LTD Overlay wood flooring system installation guide.
- ✓ To adhere to FLOORCO TRADING LTD. overlay stone plastic composite flooring system installation guide.
- ✓ The maintenance and care guide provided by FLOORCO must be adhered to.



## 2. B2 Durability

The B2 durability performance clauses B2.3.1(C) (i) (ii) Satisfy the performance requirements 5 years. More information please following:

| Product          | Compliance to B2 Clause                                  | Applications                            | Intended life        |
|------------------|--|---|----------------------|
| WOOD<br>FLOORING | B2 Durability: Performance Clauses B2.3.1(C) (i)<br>(ii) | Satisfy the performance<br>requirements | 5 years<br>(Table 1) |

**B2/VM 1.1.1** Verification of durability based on in-service history of a building element, including materials, components and systems shall take into account but not be limited to

- a) Length of service,
- b) Environment of use,
- c) Intensity of use,
- d) Any reaction with adjacent materials,
- e) Limitations in performance,
- f) Degree of degradation, and
- g) Changes in formulation.

**B2/VM 1.2.1** Verification of durability based on successful performance in a laboratory test shall be accompanied by an assessment of the tests performed, their relevance to field and service conditions, and in particular:

- a) Types of degradation mechanisms likely to be induced by testing,
- b) The degradation mechanisms likely in service,
- c) Details of methods of assessment,
- d) Variability of results, and
- e) The relevance of the test to the building element under study

**B2.3.2** Individual building elements which are components of a building system and are difficult to access or replace must either:

- a) Types of degradation mechanisms likely to be induced by testing,
- b) The degradation mechanisms likely

### Compliance with B2

- In-service history
- Laboratory testing

## 2.1 B2/VM1.1.1 IN-SERVICE HISTORY

Laminate flooring has a long history of installation in residential homes and Commercial, Laminate flooring collections have carried on this tradition in New Zealand, where they have been installed in various buildings for over 5 years. If there are any questions, feel free to contact us, and we will provide the original invoice.

### Case Studies

| Address | Use in time.<br>(Months) | Areas of Application                      | Are customers satisfied? |
|---------|--------------------------|---|--------------------------|
|         | 58                       | Kitchen, Living Room, Hallways,           | GOOD                     |
|         | 54                       | Kitchen, Living Room, Hallways            | GOOD                     |
|         | 53                       | Kitchen, Living Room, Hallways,           | GOOD                     |
|         | 52                       | Kitchen, Living Room, Hallways            | GOOD                     |
|         | 51                       | Kitchen, bathroom, Living Room            | GOOD                     |
|         | 57                       | Kitchen, Living Room, Hallways, bedroom   | GOOD                     |
|         | 61                       | Kitchen, Living Room, bathroom            | GOOD                     |
|         | 50                       | Kitchen, Living Room, Hallways            | GOOD                     |
|         | 62                       | Kitchen, Living Room, Hallways            | GOOD                     |
|         | 63                       | Kitchen, Living Room, Hallways, bathroom  | GOOD                     |
|         | 69                       | Kitchen, Living Room, Hallways, bathroom  | GOOD                     |
|         | 61                       | Kitchen, Living Room, Hallways, bedroom   | GOOD                     |
|         | 61                       | Kitchen, Living Room, Hallways, bedroom   | GOOD                     |
|         | 57                       | Kitchen, Living Room, Hallways            | GOOD                     |
|         | 55                       | Kitchen, Living Room, Hallways, bathroom  | GOOD                     |
|         | 60                       | Kitchen, Living Room, Hallways            | GOOD                     |
|         | 58                       | Kitchen                                   | GOOD                     |
|         | 54                       | Kitchen, Living Room                      | GOOD                     |
|         | 68                       | Kitchen, Living Room, Hallways, bathroom, | GOOD                     |

To ensure privacy, the address has been hidden. If needed, please contact us, and we will provide the address and invoice as proof of use.

## 2.2 2/VM1.2.1 IN- LABORATORY-TESTING

Our products have been tested by NZWTA and INTERTEK (IANZ-accredited Laboratory)

| Methods      | Performance Clause   | Result   |
|--------------|----------------------|--|
| ISO4760:2022 | Response to Moisture | No change – Little to no noticeable change in edge swell or panel surface life.            |
| ISO4760:2022 | Impervious           | No Migration of water along the upper surface, and No migration of water to the underside. |

Regarding the product performance, please refer to the following information:

<https://floorco.co.nz/wood-flooring-report/>

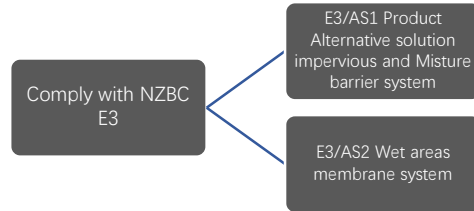
## 2.3 Expert literature and Guidance

In 2021, BRANZ released a document titled "E3/AS1 and Wet Area Flooring," which provides evidence of the durability of Matai flooring for over 25 years.

<https://www.buildmagazine.org.nz/assets/PDF/Build-186-37-Design-Right-E3-AS1-And-Wet-Area-Flooring.pdf>

### 3. E3 – Internal Moisture Impervious

Our flooring product can comply with E3 via two methods: Product Alternative Solution (Impervious & Moisture Barrier surface with D4 PVA Joints/Caulk Perimeter) or E3/AS2 (Wet area Membrane system). The choice depends on the specific environment, circumstances, and client requirements.



This guide offers an **Product's alternative solution**. To understand E3/AS2, **please refer to the overlay flooring system installation & design guides**.

| Product              | Compliance to E3 Clause  | Applications    | Warranty   |
|----------------------|--|-----------------|------------|
| <b>WOOD FLOORING</b> | Internal moisture: Performance clauses E3.3.3 and E3.3.5, E3.3.6 | Wet area floors | 15-30years |

#### NZBC E3/AS1 (Acceptable Solution)

- E3.3.3 Floor surfaces of any space containing sanitary fixtures or sanitary appliances must be impervious and easily cleaned.
- E3.3.2 Frewater from accidental overflow from sanitary fixtures or sanitary appliances must be disposed of in a way that avoids loss of amenity or damage to household units or other property.
- E3.3.5: Surfaces of building elements likely to be splashed or become contaminated in the course of the intended use of the building, must be impervious and easily cleaned.
- E3.3.6 Surfaces of building elements likely to be splashed must be constructed in a way that prevents water splash from penetrating behind linings or into concealed spaces.

#### Compliance with

- E3.3.3 and E3.3.5 Laboratory testing & D3 PVA & E3.1.1 – impervious
- E3,3,2 Exemption under E3/AS1 2.0.2
- E3.3.6 Integrated Solution

### 3.1 Impervious – E3.3.3 and E3.3.5

Impervious is defined in the E3/AS1 Acceptable solution as “Impervious – that which does not allow the passage of moisture”. While performance clauses E3.3.3 and E3.3.5 require impervious surfaces around sanitary fixtures/appliances, there are no verification methods provided.

Refer to page 11 of E3/AS1 which states “No specific methods have been adopted for verifying compliance with the Performance of NZBC E3.”

The Objective (E3.1) and Functional (E3.2) requirement of E3 is to prevent illness/injury or damage through accumulation of moisture, or damage caused by free water penetration.

#### Compliance

As there are no verification methods provided to test for an impervious surface, Our product was tested using the ISO 4760 testing method by NZWTA LTD. (IANZ accredited laboratory), and the results showed no migration of water to the underside. This implies that the product is impervious.

<https://floorco.co.nz/category/report/>

#### Test Method

Four boards are assembled with D3 PVA applied to the joints.

Cutting the 4 pieces of samples assembling them into a "T joint" configuration, and conducting the test thrice. 100ml of dye solution was applied at the "T Joint" of the sample, with a sealant used to prevent leakage. The sample was placed on white paper towels to detect any dye penetration and left at 20°C, 65% Relative Humidity conditions for 24 hours for examination of dye penetration through the backing.

E3.1.1 Other floor finishes may also be capable of satisfying the performance for impervious and easily cleaned, if installed in a manner that prevents gaps or cracks within the finish and at any parts of its perimeter that are exposed to watersplash, and/or if the surface is sealed with a suitable durable coating.

- ✓ Use D3 PVA to adhesive the flooring joint that prevents the occurrence of gaps or cracks within the finish., adhering to the requirements of the Overlay Flooring System Installation Guide.
- ✓ To prevent gaps or cracks at any part of the flooring perimeter exposed to water splash, specific installation guidelines should be followed. A particular filler is to be used to seal any parts of the perimeter and fixed items in the area (e.g., floor-to-wall junction, kitchen waste pipes) exposed to water splash, extending to a minimum of 1.5m from all sanitary fixtures and appliances in open-plan rooms as per 3.1.1 of E3/AS1.

### **3.2 Overflow - E3.3.2**

E3/AS1 2.0.1 If a sanitary fixture is located where an accidental overflow could damage an adjoining household unit or other property, then Containment and floor wastes that meet the requirements of Paragraphs 2.1.1 and shall be provided, or the exemption for household kitchen sinks and laundry tubs with integrated overflows that meet Paragraph 2.0.2 shall apply.

When in effect, the overflow clause in E3/AS1 requires, Floor Coverings 75mm at Wall Junctions and Floor wastes provided to satisfy Paragraph 2.0.1 b) shall comply with NZBC Clause G13. A graded floor is not essential in this situation.

#### **Compliance:**

We recommend that the comply with the exemption provided under E3/AS1 2.0.2.

Household kitchen sinks and laundry tubs that have an integrated overflow with a minimum flow rate of 0.25 l/s do not require additional overflow provisions such as containment and a floor waste where:

- a) The maximum flow rate from the inlet tap(s) is less than the flow rate of the integrated overflow for that sink or tub, or
- b) The water supplies to the inlet tap(s) for that sink or tub are fitted with proprietary flow restrictors (such as cartridges) to limit the tap flow rate to less than the flow rate of the integrated overflow for the sink or tub.

### **3.3 water splash from penetrating behind linings or into concealed spaces – E3.3.6**

Surfaces of building elements likely to be splashed must be constructed in a way that prevents water splash from penetrating behind linings or into concealed spaces.

#### **Compliance:**

Gap sealing and the use of D3 PVA adhesive for joints, along with the procedures outlined in the "Overlay Flooring Installation Guide's Wet Areas Membrane System" section, can prevent water splash from penetrating behind linings or into concealed spaces. Overlay Flooring Installation Guide refer: <https://floorco.co.nz/flooring-instruction-centre/>



## 4. C1 Critical Radiant Flux

| Product              | Compliance to C3 Clause  |
|----------------------|--|
| <b>WOOD FLOORING</b> | C3 : Performance Clauses C3.4(B)<br>the floor surface materials in the following areas of buildings must meet the performance criteria specified |

| Area of building  | Buildings not protected with an automatic fire sprinkler system | Buildings protected with an automatic fire sprinkler system |
|---|---|---|
| Sleeping areas and exit ways in buildings where care or detention is provided | 4.5kW/m <sup>2</sup>  | 2.2kW/m <sup>2</sup>  |
| Exitways in all other buildings   | 2.2kW/m <sup>2</sup>  | 2.2kW/m <sup>2</sup>  |
| Firecells accommodating more than 50 persons                                  | 2.2kW/m <sup>2</sup>  | 1.2kW/m <sup>2</sup>  |
| All other occupied spaces except household unites                             | 1.2kW/m <sup>2</sup>  | 1.2kW/m <sup>2</sup>  |

### Compliance

Our flooring is Acceptable in all areas, with the sole exception of the building that Sleeping areas and exit ways in buildings where care or detention is provided and the Buildings not protected with an automatic fire sprinkler system, which necessitates a rating of  $\geq 4.5 \text{ kW/m}^2$ .

Refer testing report:

<https://floorco.co.nz/category/report/>

## 5. D1 Access Routes – Slip Resistant Stair Nosing

### Compliance

According to Section D1/AS1, HANDBOOK 197 can be consulted for guidance on minimum slip resistance values in different areas, based on the Wet Pendulum test carried out in accordance with AS 4586.

handrails are present in classification X grade. Our flooring product is Classification Y or X. For design information, please refer to our "**Overlay Flooring Install System Product Performance Compliance Design Guide.**"

<https://floorco.co.nz/product-performance-compliance-design-guide/>

## 6. F2 Hazardous Building Materials

### Compliance

Our product are Low-formaldehyde and E1 rating when tested.

Refer testing report: <https://floorco.co.nz/category/report/>

Installers should strictly adhere to the health and safety requirements outlined in the "**Overlay Flooring System Installation Guide.**" <https://floorco.co.nz/flooring-instruction-centre/>

## 7. G6 Airborne and impact sound

According to sections G6.3.1 & 6.3.2, materials in the following areas of buildings must meet the specified performance criteria: The Sound Transmission Class (STC) of walls, floors, and ceilings shall be no less than 55, and the Impact Insulation Class (IIC) of floors shall be no less than 55, determined in accordance with ASTM 492.

Our products have been tested to have an IIC (Impact Insulation Class) of 53 and an STC (Sound Transmission Class) of 53. Although these values do not meet the standard, by adhering to the requirements outlined in Chapter 8 of the "**Overlay Flooring Install System Product Performance Compliance Design Guide,**" utilizing Acoustic Underlay, it is easy to satisfy the criteria set forth in G6 for IIC & STC greater than 55.

### Compliance

The test reports for the Acoustic Underlay can be reviewed <https://floorco.co.nz/underlay-report/>



## References

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1. Code of Practice for Wet Area Membrane Systems page45 – page52, 4<sup>th</sup> Edition published August, 2020 – By the Waterproofing Membrane Association Incorporated (previously the Membrane Group of New Zealand)
2. Floor coverings resilient sheet and tiles installation practices. By NZS/AS1884:2013 – New Zealand Standard.
3. Timber Flooring industry standard, By Australasian Timber Flooring Association
4. FLOORCO Engineered wood flooring installation Instructions 2rd Edition –By FLOORCO trading Ltd.
5. Resilient floor coverings planning and installation 1first Edition 2019 – By The Flooring Association for the flooring industry.
6. Vinyl & Hybrid Flooring industry standard, By Australasian Timber Flooring Association
7. Product Technical Data Sheet <https://floorco.co.nz/technical-data-sheet-tds/>
8. Product testing Report <https://floorco.co.nz/category/report/>
9. Flooring Install Instruction Guide <https://floorco.co.nz/flooring-instruction-centre/>
10. Overlay Flooring System Product Performance Compliance Design Guide.<https://floorco.co.nz/product-performance-compliance-design-guide/>
11. Overlay Laminate Flooring system installation Guide <https://floorco.co.nz/wooden-install-instructions/>

## Contact

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