

## 1. Purpose and background

The purpose of this practice note is to provide clarification on how to adequately protect timber-based flooring (i.e. particleboard or H3.1 strand-floor) that form platform floors in wet areas, in structures designed and built within the scope limitation of NZBC Acceptable Solution E3/AS1 Internal moisture. Failure to provide adequate protection in wet areas will lead to reduced performance of the material.

Council is aware of a number of issues pertaining to the use of timber-based flooring when used as a substrate in wet areas particularly when the floor is tiled. The substrate has failed as moisture finds its way into the flooring and structural members causing decay. Reasons for failure are lack of maintenance on the membrane or membrane incorrectly applied.

## 2. Definition of wet area

NZS3602 calls up floor coverings to wet areas such as laundries, bathrooms, kitchens, shower rooms, ensuites and toilets shall be set out in E3/AS1.

E3/AS1 only refers to “water splash” not wet areas and there is no definition of water splash in the Building Code although it does have one for wet area, which includes bathrooms and the like including areas within a building supplied with a water supply.

A dictionary definition of splash reads “to cause (liquid) to fall or (of liquid) to be scattered in drops.

## 3. Legislative requirements

The New Zealand Building Code clause E3 deals with Internal Moisture; the mandatory provisions of this clause are:

### Objective

E3.1 The objective of this provision is to safeguard people against illness, injury or loss of amenity that could result from the accumulation of internal moisture

### Functional requirement

E3.2 Buildings must be constructed to avoid the likelihood of:

- Fungal growth or the accumulation of contaminants on linings and other building elements; and
- Free water overflow penetrating to an adjoining household unit; and
- Damage to building elements being caused by the presence of moisture

### Performance requirement

E3.3.3 Floor surfaces of any space containing sanitary fixtures or sanitary appliances must be impervious and easily cleaned.

#### 4. Can Pynefloor™ flooring be used in wet areas?

In the context of this practice note, Pynefloor™ flooring **means**

- Particleboard; and
- H3.1 strand-floor

Although E3/AS1 provides a list of finishes that meet the requirements of the Building Code the Laminex Group **only allows** the following materials on Pynefloor™ floors in wet areas

- Integrally waterproof sheet material with sealed joints (i.e. vinyl); or
- A wet area membrane that complies with AS/NZS4858 or one which carries a current BRANZ appraisal

##### **Vinyl floor coverings**

Vinyl floor coverings must be installed with heat welded joints and cove up the floor / wall intersection and any intersection between the floor and any fixtures to a height of 75mm.

Where coving at the intersection between the floor and the fixture (i.e. bath, cabinet, etc) is considered undesirable, the vinyl must be installed before the fixture is installed and cove up the wall / floor intersection behind and under all fixtures. In toilets, the vinyl must extend under the pan.

If the floor covering **is not** installed in this manner then particleboard flooring **must not be used** because failure of the membrane would **not** be detected during normal use and maintenance.

##### **Wet area membranes**

The installation of an appropriate membrane (please refer to the Trade Essentials Technical Bulletin for Pynefloor™ particleboard produced by the Laminex Group for details of current appraisals) must be installed in accordance with the manufacturer's recommendations. As with the vinyl floor covering, the membrane must be returned up the wall at least 75mm. If not appropriate, the membrane must continue under the fixture and return up the wall at the room perimeter.

##### **Important notes:**

Inspectors must be able to verify that the floor covering extends under fixtures and fittings as specified above, therefore an inspection maybe required before these are installed.

It is **strongly recommended** that floor drains be installed wherever possible to control the affect of any accidental flood. Care must be taken to ensure that any pipes or penetrations through the vinyl or wet area membrane are fully sealed to eliminate any water seepage through to the particleboard substrate

**If the floor is tiled, a waterproof grout must be used**

**Under no circumstances is polyurethane acceptable**

Please note the above statements are the manufacturer's requirements, as such they overrule the lining materials listed as being acceptable in E3/AS1

5. Reference material	
B2.3.1	For flooring to meet B2 (durability) it must be durable for the life of the building but no less than 50 years
B2/AS1 3.2.1	Part one of NZS 3602:2003 is an acceptable solution for meeting the durability requirements of timber building elements
B2/AS1 3.2.3	NZS3604:2011 is an acceptable solution for meeting durability requirements of buildings
NZS3602:2003 110.3.1	Floor coverings in “wet area” such as laundries, bathrooms, kitchens and toilets shall be set out in E3/AS1. Where maintenance of an impervious coating cannot be assured in wet areas plywood flooring treated to a minimum of H3 or solid pinus species or Douglas fir flooring treated to minimum H1.2 shall be used
NZS3602:2003 C110.3.1	Considerable undetected water damage to particleboard and surrounding wall floor framing can occur under baths used as a shower and under curtain types of shower trays. It is recommended that H3 treated plywood be used under such fittings where maintenance cannot be assured. Adjoining timber framing and timber supporting these fittings should be treated
NZS3602:2003 108.2	Wood based product floors are considered as “protected from the weather, but exposed to ground atmosphere and to achieve a 50-year durability requirement.”
NZS3602:2003 Table 1	Internal flooring, suspended ground floors, plywood, particleboard and other wood based products, in wet areas where maintenance of an impervious coating cannot be assured plywood or timber flooring that has been treated to a minimum of H3.1 shall be used
NZS3602:2003 4.3.1	Wood-based building components, preservative treatment, in-service moisture range and their end use environment shall comply with NZS 3602
NZS3602:2003 4.3.2	Timber and wood-based building components shall be protected against damage from moisture, and against significant variations of moisture content, both before and after installation or enclosure.
NZS3602:2003 4.3.4	Wood base building components used for flooring in such areas as in bathrooms, kitchens, laundries and toilets shall be protected by an impervious finish or lining with sealed joints NZS 3602:2003
E3.3.3	Floor surfaces of any space containing sanitary fixtures or sanitary appliances must be impervious and easily cleaned
E3.3.5	Surfaces of building elements likely to be splashed or become contaminate of the course of the intended use of the building must be impervious and easily cleaned.
E3/AS1 3.0	Water splash lining materials for floors in areas exposed to water splash, are: <ul style="list-style-type: none"> <li>• Integrally waterproof sheet material (vinyl)</li> <li>• Tiles / stone with max 6% water absorption and waterproof grout</li> </ul>

	<ul style="list-style-type: none"> <li>• Solid plaster or concrete</li> <li>• Cork tiles or sheet with sealed joints and coating (polyurethane)</li> <li>• Monolithic non-absorbent coating</li> <li>• Wood based product with waterproof coating (polyurethane)</li> </ul>
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