

# Timber Floors in Wet Areas.

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This article addresses the technical issues raised by a question we received from an architect a while back regarding floors in wet areas in Australian conditions.

The question related to the waterproofing of a cork floor, and whether a product and application specification existed to achieve this requirement. We get asked this question, more often about wooden floors, in various forms a few times a year in relation to bathrooms, toilets and occasionally laundries. The subject has a few different areas for discussion.

(Note: this information focuses on Australian conditions – NZ situations will differ)

There are specific requirements for the construction of bathroom floors written into the NCC (National Construction Code); in essence the floor needs to be impervious to moisture. It is best to think of it being sort of like a swimming pool – you need to keep the water in the room. Leakage, of course, can cause problems with the general building envelope, so clearly it needs to be controlled.

This would naturally exclude wood/cork if it were taken as being part of the actual structure of the floor. It has been argued however that the floor covering, irrespective of type, should not be considered to be a part of the floor structure, and thus not have to be waterproof. This is a discussion that needs to be resolved before installation.

No manufacturer is ever likely to claim that a site-applied finish system for



wood/cork is waterproof; but they certainly are water-resistant, as has been proved many times with installation in bars, pubs, clubs, kitchens, etc. Interestingly, there is no clear AU / NZ Standard to test finishes against to show exactly how finishes perform in relation to a 'waterproof' test.

The discussion regarding coatings and bathrooms is best divided into two separate areas:

#### **Water resistance and slip resistance**

All finishes are resistant to spillage and will cope with the occasional amount of

water. If you use a bathmat and then lift it from the floor after a bath or shower then a few drops of water lying around won't be a problem. If you leave puddles of water around for a few hours, then what may happen is that you will see some haziness develop as some of the moisture gets absorbed into the surface of the finish. Usually this will disappear in the next few hours as the moisture evaporates. The same can be seen in other areas such as kitchens, restaurants, etc. Some moisture is fine but excess needs to be removed.

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If you leave lots of water around or leave a very wet mat on the floor for many hours, then it is possible that the moisture could get through the finish into the wood; water staining is not usual but with sufficient water it is a possibility. Spillage of things like shampoo, liquid soaps, laundry/dishwasher concentrated detergents, should be wiped up immediately.

Slip resistance is an issue discussed more and more often. As it stands, there is no requirement for finishes in a domestic situation to meet a slip resistant standard (outside of new staircases). However, anecdotally building inspectors are asking more often about water resistance, and slip resistance is becoming part of that discussion. Slip resistant coatings are designed to improve the slip resistance of surfaces, but are not 'nonslip' and can only work within a certain level of tolerance - essentially, small amounts of surface moisture rather than puddles of water. A slip resistant finish won't stop you slipping over on a wet bathroom floor.

### Timber and moisture

Timber/cork behave pretty well in an environment where temperature and humidity are fairly constant with changes being slow and gentle. However, we have all seen issues where timber has expanded or contracted due to extremes of humidity and/or temperature, particularly where that change has been rapid.

It is clear to all of us in the industry that timber in bathrooms will potentially suffer due to movement from moisture changes. Temperatures are usually high so the air can hold more moisture + there is moisture from what you do in a bathroom + there is spillage of water. If the temperature drops though the ability of the air to hold as much moisture decreases, so humidity increases. You also often have to consider the potential effect of underfloor heating or heat lamps.

This can give you expansion or contraction on the joints, potentially leaving an unacceptable surface - both

from the physical and aesthetic point of view. In addition, it can lead to damage to the finish across the joints. If the floor opens, then the finish will split along the joints, meaning that you can get white lines and sometimes delamination + moisture can potentially get under the floor.

Cork doesn't usually react to produce gaps between panels/tiles; but the absorption of moisture can result in swelling of the cork particles resulting in 'ridges' along the joints from expansion and occasionally faint 'ripples' in the surface.

It is important if you are asked to work in a bathroom or other wet area, that the customer understands the potential issues. If the homeowner is sensible and wipes up, lifts mats and towels from the floor, runs an extractor, then wood and cork are perfectly viable floor coverings.

