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# E3/AS1 and wet area flooring

From 4 November 2021, there will no longer be an Acceptable Solution in Building Code clause E3 *Internal moisture* for using timber or timber based products as linings and finishes to floors in wet areas. However, an Alternative Solution designed and specified to best practice is easy to do.

**QUERIES ARE** starting to come in to the BRANZ helpline about upcoming changes to E3/AS1, specifically the flooring options that will be available for household wet areas such as kitchens, bathrooms, laundries and toilet facilities.

Currently, both E3/AS1 Amendments 6 and 7 are a means of compliance during the transition period from 5 November 2020. However, from 4 November 2021, only E3/AS1 Amendment 7 can be used as a means of compliance.

## Flooring options in Amendment 6

Flooring options for wet areas are covered in E3/AS1 section 3.0 Watersplash, with the floor lining materials listed in 3.1.1 Floors. It covers linings and finishes to floors that satisfy the performance criteria for impervious and easily cleaned surfaces in areas exposed to watersplash.

In E3/AS1 Amendment 6, there are six flooring options – waterproof sheet materials (for example, PVC), ceramic or stone tiles, concrete or cement-based solid plaster, cork tile or sheet, monolithic coatings such as terrazzo and timber or timber-based products such as particleboard sealed with waterproof applied coatings.

Some of the six wet area flooring options in Amendment 6 were reasonably vague in their descriptions, and some did not have a very good history in use or were no longer in common usage.

At the end of 3.1.1, there is a note that in 'bathrooms used mainly by adults, carpet may be acceptable provided it is laid over an impervious surface'. It sounds a bit dodgy, but I once lived in a student ➤



Figure 1: Mātāi timber flooring that has stood up well to splashes and occasional floods over 25 years.

flat that had a carpeted bathroom floor, and I think it was fine although it was hard to tell – the walls were painted matt black, and the light bulb was red!

### **Submissions on proposed changes**

Last year, MBIE sought public submissions on the proposed changes to E3/AS1. Most submissions related to other aspects of E3/AS1 – sections pertaining to overflow, freewater (accidental overflow) containment and changes to floor wastes.

The evolving style of our residential building stock may have been a driving factor for many of the submissions. The single-storey stand-alone dwelling is becoming less common, and we are seeing more multi-unit medium-density housing projects springing up. The risk profile changes exponentially when a wet area water leak can affect rooms below and potentially multiple other adjacent tenancies.

Only a few comments were received on the change to wet area flooring materials and finishes. These included a desire for additional wet area flooring options – although those options were generally not backed by generic material and installation requirements.

### **Fewer options – no timber or timber-based products**

The flooring options retained in the revised E3/AS1 Amendment 7 (which came into effect on 5 November 2020) include the obvious linings and finishes such as waterproof sheet material (for example, PVC) with sealed joints, ceramic tiles and sealed or polished concrete floors – but now only slab on grade.

The removal of previous option (f) timber or timber-based products covers a wide range of timber flooring types and is a little more contentious.

One option that was previously included was 'particleboard sheet sealed with a waterproof applied coating', which is a fairly loose prescription. I can imagine the potential for poor performance from an inadequate interpretation of this 'waterproof flooring system'.

However, other timber flooring options seem far more durable and robust and able to be installed to a suitable level of specification (impervious and easily cleaned) for use in areas exposed to watersplash.

### **Timber systems in wet areas**

Not all timber overlay and clip-type systems are designed for use in these wet areas, but several are, and with suitable specific high-quality surface sealer coatings, they can remain durable and impervious.

Solid timber tongue and groove (T&G) floors, when installed correctly using suitable materials and sealer coatings, have traditionally performed well in domestic wet areas such as kitchens. Figure 1 shows the dishwasher installed nearly 25 years ago in my own kitchen on a Mātai T&G floor.

The floor has survived a couple of small floods with no issues, but we did apply four coats of sports-floor polyurethane to the entire room – including under all kitchen joinery – and lapped up the wall junctions.

Our bathrooms upstairs, on identical polyurethane-coated Mātai floorboards, have also had no problems over 25 years although they do have the safeguard of their original CP floor wastes installed during initial construction in 1936.

Our architectural practice regularly specifies new overlay and suspended timber T&G floors – often in new homes, but also to marry into

existing, original native timber T&G floors. In service areas where they might get a splash of water, they are timeless and extremely durable when done well, but that does mean using the best materials and experienced professional installers.

### **Alternative Solution is a good option**

Currently, design and building consents can use the conditions for compliance from either versions of E3/AS1 – Amendments 6 and 7. They are both currently effective to meet the requirements of Acceptable Solution E3/AS1.

On Thursday 4 November 2021, E3/AS1 switches to Amendment 7 only. Mark it in your diaries. From that day, say goodbye to any dream of a new painted chipboard bathroom floor. If you want a particular wet area floor other than PVC, tiles or concrete, it will have to be designed and consented as an Alternative Solution as a means to compliance.

This is not difficult for robust systems and where the risk of failure is lower, such as stand-alone housing. Take as an example my wet area Mātai T&G floor. If we design and specify to best practice and can illustrate good history of use of that flooring system, it should be able to satisfy a building consent authority.

Think of an Alternative Solution as freeing you from the constraints of Acceptable Solutions. You are no longer limited to just three wet area flooring options – you have an infinite number to choose from.

Maybe you will struggle to smuggle a shagpile carpet in the bathroom through building consent. However, this shouldn't deter you from presenting quality alternatives that you can justify as fit for purpose in your building consent applications. ◀