



E3/AS1 Marmoleum Alternative Solution Compliance

This technical guide talks to the INZIDE recommended “**alternative solution**” to meet the **E3/AS1 NZ Building Code** requirement. Using technical information to demonstrate Building Code compliance is allowable under MBIE guidelines, as described on MBIE’s [Building Performance website](#).

INZIDE has distributed Linoleum (a natural vinyl resilient substitute) in New Zealand under the Forbo Marmoleum brand since 2015. Marmoleum has a 150 year pedigree and is installed into residential and commercial spaces throughout the world, in areas such as kitchens, laundries, toilets, bathrooms, dining areas and/or wherever else a resilient product is required.

Marmoleum is manufactured in Holland by Forbo to strict ISO requirements (Quality, Environmental and Health & Safety) and is backed by INZIDE’s full 15-year performance warranty for commercial applications.

It is key to note that B2 Durability is a consideration behind E3 and in particular B2.3.1 “*Building elements must, with only normal maintenance, continue to satisfy the performance requirements of this code for the lesser of the specified intended life of the building, if stated, OR; c) 5 years if;*

- i. *The building elements are easy to access and replace, and*
- ii. *Failure of those building elements to comply with the building code would be easily detected during normal use of the building”*

Marmoleum is easy to access and replace and can be easily detected during normal use of the building. Marmoleum needs a 5 year life-span to meet code. Interface & Forbo LVT brands are backed by a FULL 15-year performance warranty for commercial applications and hence comply with B2 of the Building code.

E3 – Amendment 7 to Acceptable Solution E3/AS1 for internal moisture – effective 3rd November 2021

Amendment 7 reclassifies dishwashers and washing machines as Sanitary appliances and basins and sinks as Sanitary Fixtures. There is now a requirement to ensure flooring solutions have a finish that is both impervious and easily cleaned extending at least 1.5 metres from all sanitary fixtures and appliances. **Resilient sheet flooring is accepted automatically as an alternative solution as it is impervious. The code talks to vinyl but linoleum and rubber resilient are impervious and in sheet form the same as vinyl.**

E3.3.1

An adequate combination of thermal resistance, ventilation and space temperature must be provided to all habitable spaces, bathrooms, laundries and other spaces where moisture may be generated or may accumulate.

Please refer to page 42 of FloorNZ's [Best Practice Guidelines For the New Zealand Flooring Industry | Resilient Floor Coverings Planning and Installation](#) ("Best Practice Guidelines for Resilient Floor Coverings")

E3.3.2

Free water from accidental overflow from sanitary fixtures or sanitary appliances must be disposed of in a way that avoid loss of amenity or damage to household units or other property

Where a floor waste is installed (if any) is a building/plumbing design consideration (not a flooring design consideration).

If it is determined that the flooring material is required to "contain free waterflow from accidental overflow prior to disposal" (i.e. mopping up), then a waterproof membrane must be used and it is highly recommended that the marmoleum sheet is covered the standard 150mm up the wall.

E3.3.3

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

Forbo marmoleum is manufactured as a high-density base with an impervious urethane coat (topshield), making it impervious to moisture penetration. This urethane layer makes the marmoleum extremely easy to clean and provides high clarity.

Vinyl sheet is an acceptable solution. Therefore marmoleum having the same characteristics (though not mentioned specifically in E3) is also an acceptable solution.

Independently tested in New Zealand by SGS Industrial Certification Services, a 24-hour water spill test showed that there was no noticeable change to the marmoleum flooring and that there was no water penetration through to the flooring substrate when installed. In addition all perimeter edges and penetrations are to be sealed with a MS Silicone.

E3.3.4

Wall surfaces adjacent to sanitary fixtures or sanitary appliances must be impervious and easily cleaned.

Please refer to wall supplier/builder for specific wall information.

E3.3.5

Surfaces of building elements likely to be splashed or become contaminated during the intended use of the building, must be impervious and easily cleaned.

Refer answer provided to clause E3.3.3 above and to INZIDE's [Cleaning & Maintenance Guides](#)

E3.3.6

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

FloorNZ's Best Practice Guidelines for Resilient Floor Coverings (applicable to Forbo marmoleum) states that resilient sheet is to be welded and have no gaps or cracks around any part of the perimeter. In addition it is common for resilient sheet to be covered 150mm up the wall (thus containing watersplash) or have a silicon bead where the skirting board meets the marmoleum (vinyl) sheet floor.

Installation requirements to comply with clause E3.3.6 are the same as for vinyl sheet. The use of a silicone bead around the perimeter and a wet room adhesive being used. The use of a waterproof membrane (and primer) is a site-specific answer to:

- a) The watersplash being frequent enough to cause free flowing water; and/or
- b) The watersplash accumulating over time (not being mopped up regularly) causing free flowing water.

Forbo marmoleum complies with E3/AS1 as an acceptable alternative solution when this installation solution is used.

For further information, contact:

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