



Understanding AS 3740:2021 “Waterproofing of domestic wet areas”

A Guide to Floor Waste and Fall Requirements



INTRODUCTION


Two of the most frequently reported building issues are improper floor grading in wet areas and non-compliance with waterproofing regulations. According to government research, the most prevalent major building defect in strata communities in New South Wales is related to waterproofing, accounting for 23% of the surveyed buildings¹

Water seeping into adjacent building elements due to improper floor grading and inadequate waterproof membrane installation in key areas, such as around the floor waste, frequently results in building damage. A myriad of issues can follow, including mildew and mould growth or cracks in concrete, that impact structural integrity. This can lead to costly repairs that could have easily been avoided.

A common practice nowadays is to aim for the bare minimum specifications when constructing a new building. The most basic objective of any construction project should be to keep our buildings and people safe and preventing loss of amenity. This is more easily achieved by exceeding the requirements for wet area waterproofing in terms of material, design, and installation.

The importance of floor grading quality and waterproofing has been emphasised in the 2021 version of AS 3740 (AS 3740:2021) "Waterproofing of domestic wet areas" and the 2022 update of the National Construction Code (NCC 2022). Below, we consider how the recent updates to these documents impact floor waste and fall requirements.





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KEY LEGAL REQUIREMENTS

The NCC and AS 3740 both contain information on materials and methods required in relation to waterproofing bathrooms and wet areas such as bathrooms and laundries. The NCC Vol. 1 covers Class 2 to 9 buildings, while Vol. 2 "Housing Provisions" covers Class 1 and 10 buildings.

NCC Vol. 2 cites AS 3740 as a "Deemed-to-Satisfy" document. Thus, a solution will meet the NCC's mandatory Performance Requirements provided that all of AS 3740's provisions are adhered to in full. AS 3740 contains the detailed waterproofing of wet area provisions for Class 1 buildings (houses). AS 3740 is also applicable to some commercial building classes under NCC Vol. 1.

WHEN ARE FLOOR WASTES IN BATHROOMS REQUIRED?

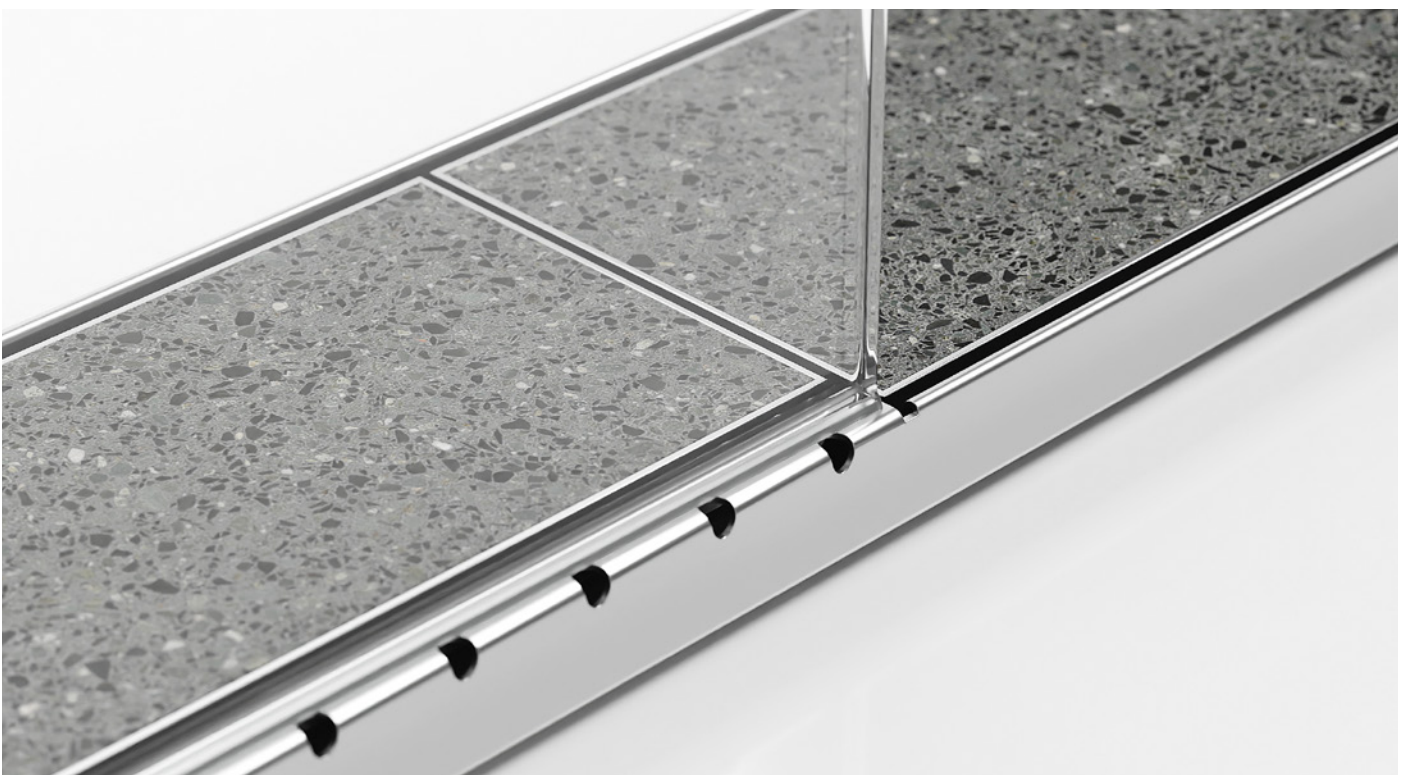
A floor waste must be installed where there is a shower, in a room containing a urinal, and in bathrooms and laundries if they are located at any level above a sole-occupancy unit or a public space. These requirements apply to apartment buildings (Class 2), hotels, motels, and boarding houses (Class 3), and residential areas of commercial buildings (Class 4 parts of a building) in accordance with NCC Vol. 1. Areas like public foyers and reception areas would be considered "public spaces" within a building.

The floor of wet areas must be waterproof and graded to the floor waste to allow water to drain away effectively. The NCC specifies the required floor fall, waterproofing specifications, and floor waste installation details.

According to AS 3740:2021 and the NCC Vol. 2, a floor waste must be available in shower areas of a Class 1

building. Where a combined shower and bath does not have a screen of 900mm or more, the shower will be considered "unenclosed" and an additional floor waste will be required. An additional floor waste is not "required" for the space outside an enclosed shower, nor is one "required" for other wet areas like the laundry room or in a water closet (WC).

Even where it is not required, floor wastes are nonetheless frequently installed in wet areas; these are regarded as "voluntary installations". It is important for owners to understand how the requirements in the NCC 2022 and AS 3740 will impact the design and construction of the wet area in relation to voluntary installations. If the proposal involves not installing a floor waste, the owner needs to be made aware of the risks.





FALLS IN INTERNAL WET AREAS

Falls in floor finishes ensure water exits the area at the floor waste. The NCC 2022 stipulates that when a floor waste is installed, whether it is done so voluntarily or in order to comply with the NCC requirements, the floor must fall to the floor waste in accordance with the prescribed grades, which are a minimum fall of 1:80 and a maximum fall of 1:50.

The 2020 version of AS 3740 (AS 3740:2010) did not include fall requirements for the structural substrate in Category 1 or 2 wet areas. This has changed in AS 3740:2021, which now includes fall requirements for floor finishes as well as the structural substrate.

The fall requirements in AS 3740:2021 are as follows:

- Where a floor waste is provided in a wet area, the membrane shall be applied to a substrate with a minimum 1:100 fall towards the floor waste (Clause 2.3.1). This requirement is intended to help avoid ponding in the substrate.

- In Category 1 wet areas, the fall in the shower area floor finish shall be a minimum of 1:80 (Clause 2.3.2).
- In Category 2 wet areas, the fall in the wet area floor finish adjacent to the shower area where there is a floor waste shall be a minimum of 1:100 (Clause 2.3.5).
- In Category 3 wet areas, there is no fall requirement in the wet area floor finish where there is no floor waste and the shower is enclosed (Clause 2.3.4).
- In a whole bathroom designed as an unenclosed shower without a shower screen installed, the floor substrate under the membrane shall have a minimum fall of 1:80 (Clause 2.3.5).

Good building practice recommends a fall of 1:60 to 1:80 in Category 1 wet areas (high risk) and a 1:100 fall in Category 2 wet areas (moderate risk).

WATERPROOFING CONSIDERATIONS

Waterproofing the area surrounding the floor waste shields your building from moisture and water damage. This process is completed by using a waterproofing system, which, as defined by AS 3740, is a combination of elements that are required to achieve a waterproof barrier. A waterproofing system will typically include the substrate, membrane, bond breakers, waterstops, sealants and finishes.

A “waterstop” is defined as a vertical extension of the waterproofing system forming a barrier to prevent the passage of moisture in the floor. As part of a

waterproofing system, waterstops are used to keep moisture beneath the finished surface from escaping the wet area and impacting other building materials and structural components. This water can come from regular use, such as taking a shower or using a water basin.

Waterstops are typically installed at wet area doorways and around the perimeter of baths and showers. Whether the shower area is enclosed or not, frameless, semi-frameless, or framed, among other considerations, will determine the proper location and height of the waterstop.



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SIMPLIFY BATHROOM DRAINAGE WITH STORMTECH'S SHOWER SCREEN SUPPORT

The culmination of Stormtech's wealth of industry experience and after extensive collaboration with designers, builders, tilers, regulators and waterproofing consultants, the 120SCS Shower Screen Support drain represents the latest innovation in bathroom drainage.

Stormtech's 120SCS Shower Screen Support drain will help you meet the new requirements in the NCC 2020 and AS 3740:2021 while at the same time drastically simplifying bathroom design and installation. This groundbreaking product, which includes a Shower Screen Support Channel for any Stormtech grating style, is a versatile linear drainage system that provides dual functions as a drain for both sides of the shower screen, and a support for the shower screen itself.

Made from 316 Stainless Steel, the 120SCS is designed for flexibility, and ease of installation. Wall-to-wall installation allows a simple dual fall across the bathroom. As a result, a single floor waste can drain the entire bathroom, meaning designers are no longer required to detail the intricate geometries in which the bathroom floor will fall to a traditional centred floor waste. Additionally, as the simple dual fall sheds water more effectively, they are free to use larger format tiles to create the impression of space in smaller bathrooms.

The intent of the Shower Screen Support is to move the waterstop to the entrance of the bathroom away from the edge of the shower area. By doing so, the entire bathroom is considered a Category 1 wet area. Thus, the minimum standard is exceeded, and the need for a waterstop at the doorway is eliminated.

Waterproofing is even easier too as the waterproofed substrate falls towards the location below where the Shower Screen Support Channel drain will be, and less water will find its way through grout joints due to effective watershedding.

REFERENCES

- ¹ Office of the Building Commissioner and Strata Community Association (NSW). "Research report on serious defects in recently completed strata buildings across New South Wales." NSW Government. <https://www.nsw.gov.au/building-commissioner/building-and-construction-resources/research-on-serious-building-defects-nsw-strata-communities> (accessed 6 November 2023).

All information provided correct as of November 2023

