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QUALITY HOMES

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TILING AND WATERPROOFING SPECIFICATION

- Before commencing any tiling, please ensure that you have set up a meeting with the owner (if possible) to discuss all aspects of the tiling and for them to confirm the actual tiles delivered are what they are expecting. Your supervisor will be able to provide a contact number for the client.

- Check that the waterproofing is not damaged before laying any tiles.

- There have been a number of changes made to the 2023 NCC edition. Please make yourself familiar with them and if you have any questions, do not hesitate to ask for clarification. It is important to understand that while compliance must be achieved with the NCC, there are a number of departures that apply exclusively to Qld by way of the Qld Development Code. The QDC incorporates the Livable Housing requirements and falls to floor wastes.
  The following link will take you directly to the Health and amenity section where you will find all of the subsections relating to waterproofing.
  https://ncc.abcb.gov.au/editions/ncc-2022/adopted/housing-provisions/10-health-and-amenity/part-102-wet-area-waterproofing

NCC Part 10.2 Wet area waterproofing

SCAN ME

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- **Water stops** are an area that often fall short of compliance. The following may help summarise the various applications;
  a) If the entire wet area is set down for bedding and **NO** shower screen is to be provided, the waterstop angle must be set up a min of 1500mm from the shower rose and the top must be level with the intended finished height of the tile (not at the bottom of the tile) Falls to the shower waste and floor waste (if installed) must be min 1:80.
  The following detail from the QDC is DQH's preferred shower setup on a concrete slab. Please note, typically we will **not** have the main floor outside the shower bedded, it will be flat for reasons explained later in this manual.

- The shower will typically be fully waterproofed with a waterstop set up under the shower screen. The area outside the enclosed shower will be flashed/waterproofed at the floor/wall junctions and a waterstop set up at the entrance to the bathroom. As the area outside the shower is a Cat 3 wet area and the concrete floor is considered water resistant (10.2.9), it is not necessary to fully waterproof the floor.
  A Highset constructed with a Fibre Cement sheet floor will however be fully waterproofed despite also being classified as "water resistant".

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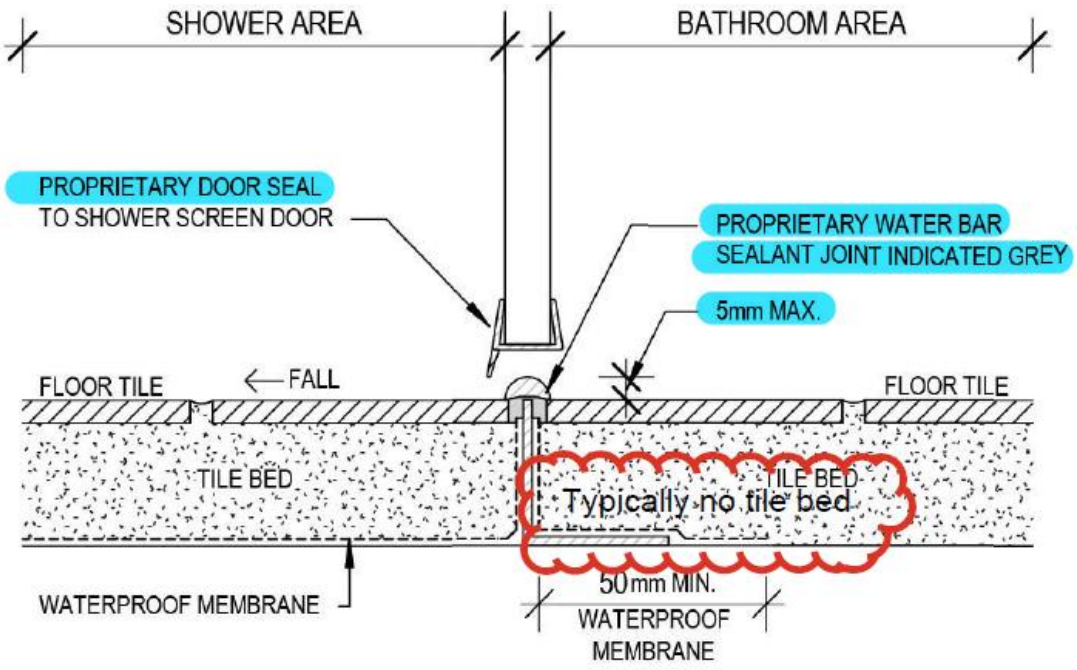
Figure A4(3)



Cavity slider waterstops should be set up in the middle of the door and they must have a **return** back to the door frame to prevent water from entering the cavity. Ideally these should be set up by the waterproofer and sealed in place with the membrane. Alternatively, it can be set up on the inside (bathroom side) of the pocket but the downside to this method is that the floor covering from the adjoining room will be visible so avoid this if possible.

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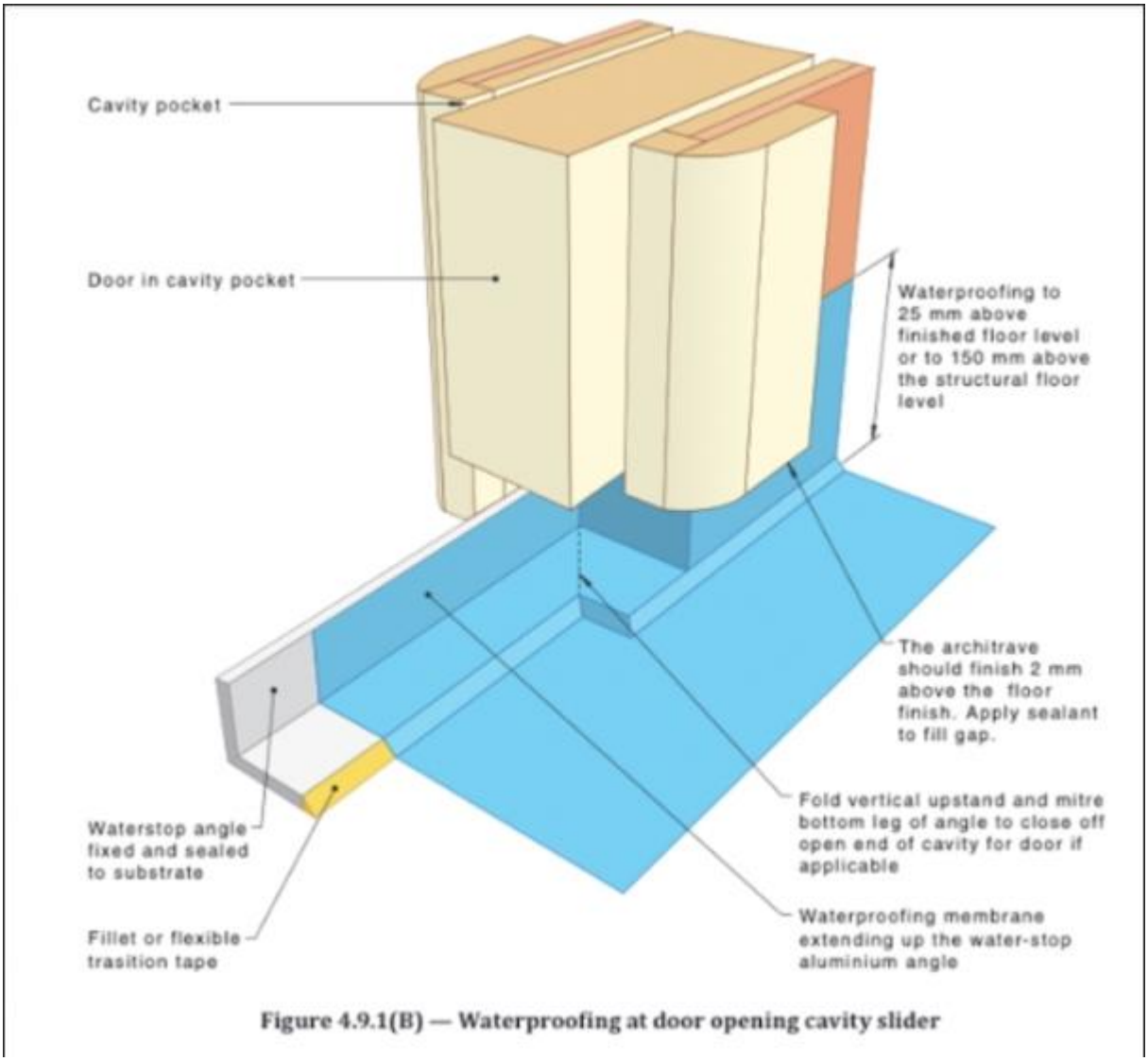

Figure 4.9.1(B) — Waterproofing at door opening cavity slider

- All doorways/entrances to wet areas must have an aluminium waterstop. This must be set up to suit the external floor coverings and particular attention should be given to the LH requirements for achieving a max 5mm step

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- Do NOT tile cavity sliders without first ensuring that the correct sheet material has been installed. This material can be either 9mm Villaboard or 10mm Wet Stop Gyprock, but CANNOT be less in thickness (i.e. 6mm Villaboard is NOT a suitable material) Check that adequate fixings have been installed into the rails as per the following information sheet. It is **vital** that the door is removed and the "spacers" provided with the cavity unit are securely in place prior to tiling and *not* removed until glue and grout are completely dry. The door should also not be reinstalled until the glue and grout are completely dry.
- Tiling a cavity slider

ELEVATION OF PLATINUM CAVITY ASSEMBLY: (prepared by JELD-WEN)
To support the installation instruction (provided with each unit), the below details specific construction requirements of wall cladding when tiles are to be applied to a wall. These guidelines must be adhered to and that will ensure the optimal performance of the Platinum Cavity*.
*Installation and application of tile substrate sheet, waterproofing, tile adhesive, tile grout and tiles must be fitted in reference to the manufacturer's guidelines.

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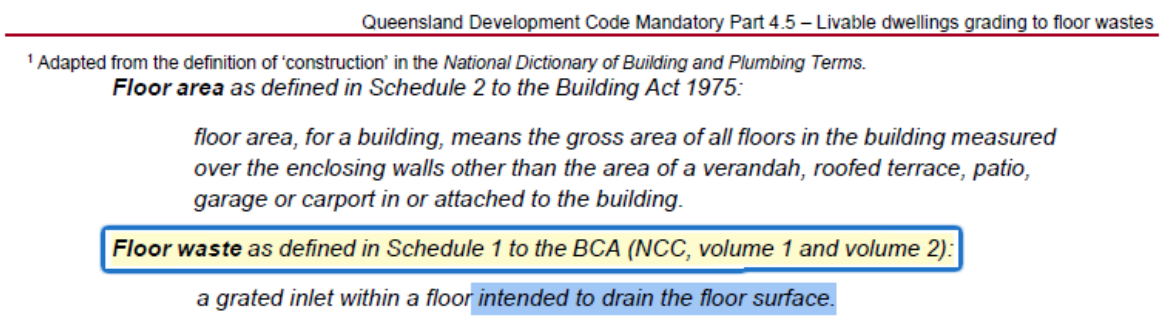
- There has been a great deal of confusion within the industry navigating between the NCC and the Qld Development Code (QDC) In Qld, we must adopt the QDC guidelines. The QDC overrides the NCC, therefore the following falls are based on the QDC Mandatory Part 4.5 – Livable dwellings and grading to floor wastes version 1.1. This document is available for free download at the following link or use the QR Code on page 10 of this manual.
  https://www.housing.qld.gov.au/__data/assets/pdf_file/0025/73627/qdcmp4-5-pending-LivableDwellingsGradingFloorWastes.pdf

- **Falls to floor Wastes (i.e in a bathroom/ensuite floor) The QDC** states that there must be a **Minimum** of 1:100 fall. Example – 1.5M divided by 100 = 15mm.
  The **Maximum** fall permitted is 1:80. Example - 1.5M divided by 80 = 19mm fall.
  1:80 can also be expressed using 1.25% as the formula. Example 1.5M x 1.25% = 19mm.
  Falls to the **shower waste** in the **LH nominated bathroom and all other bathrooms** must be min 1:80
  The QDC notes that it has adopted falls nominated in AS3740:2021 so these are different to those stated in the NCC.

  The following section explains the difference between a "Floor Waste" and a "Service Gully" This is crucial when determining whether or not fall is required. The majority of DQH designs are based on the following QDC criteria and very rarely would we ever have fall to a Service Gully (sometimes referred to as a "Floor Waste", but it should only be called this if it is intended to drain water)


Queensland Development Code Mandatory Part 4.5 – Livable dwellings grading to floor wastes

[1] Adapted from the definition of 'construction' in the *National Dictionary of Building and Plumbing Terms.*

***Floor area** as defined in Schedule 2 to the Building Act 1975:*

floor area, for a building, means the gross area of all floors in the building measured over the enclosing walls other than the area of a verandah, roofed terrace, patio, garage or carport in or attached to the building.

***Floor waste** as defined in Schedule 1 to the BCA (NCC, volume 1 and volume 2):*

a grated inlet within a floor intended to drain the floor surface.

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2 Grading to floor wastes

Explanatory information

Objective

The objective of this Part is to—

(a) safeguard occupants from illness or injury and protect buildings from damage caused by—
  (i) internal water from wet areas; and
  (ii) the accumulation of internal moisture in the building; and
(b) protect other property from damage caused by redirected internal water from wet areas.

Functional statement

A building including internal wet areas is to be constructed in a way that protects people, the building and other property from the adverse effects of internal water from wet areas.

A building is to be constructed to avoid the likelihood of—

(a) the creation of unhealthy or dangerous conditions; and
(b) damage to building elements, caused by dampness or water overflow from bathrooms, laundries and the like.

A building is to be provided with suitable means for the sanitary disposal of wastewater.

Source: F2O1/F2F1/F2F2 in the BCA (NCC, volume 1) and H4O1/H4F1/H4F3 in the BCA (NCC, volume 2).

P5 Performance criteria

1) Class 1 buildings must comply with H4P1 in the BCA (NCC, volume 2).
2) Each sole-occupancy unit on the ground or entry level of class 2 buildings must comply with F2P1 and F2P2 in the BCA (NCC, volume 1).

A5 Acceptable solution

1) Subject to A5(2) to A5(7):
   (a) Class 1 buildings must comply with H4D1 to H4D3 in the BCA (NCC, volume 2).
   (b) Each sole-occupancy unit on the ground or entry level of class 2 buildings must comply with F2D1 to F2D4 in the BCA (NCC, volume 1).
2) Where a floor waste is installed—
   (a) the fall of a floor plane to the waste must have a:
      (i) minimum continuous fall of 1:100; and
      (ii) maximum continuous fall of 1:80[7] or
   (b) each entrance to the wet area must have a linear drain that extends across the full extent of the entrance to the wet area and is connected to sanitary plumbing or drainage; or
   (c) each entrance to the wet area must have a weir that:
      (i) extends across the full extent of the entrance to the wet area;
      (ii) is at least 10 millimetres above the height of the floor waste; and
      (iii) has a maximum gradient of 1:8 and be located anywhere within the door jamb for an entrance to the wet area or within 100 millimetres of the door jamb for the wet area; or
   (d) each entrance to the wet area must have a weir that:

[7] The grades prescribed in A5(2)(a)(i) and (ii) have been varied to align with AS 3740:2021 Waterproofing of domestic wet areas.

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- There are various options available in the QDC under "A5 Acceptable Solutions" to achieve compliance. DQH's plans and specifications have been developed to comply with A5(2)(e)
  (i) All vessels are provided with a built in overflows
  (ii) Toilet cisterns incorporate an internal overflow back into the pan
  (iii) All flexible hose assemblies must have approved flood stop safety valves fitted

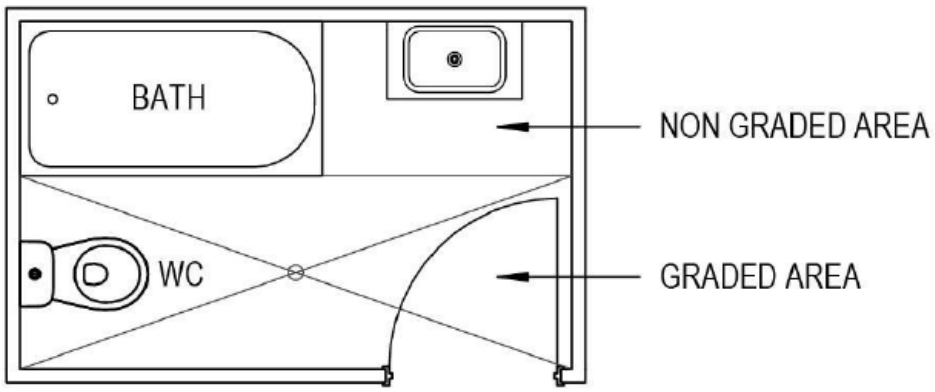
  A5 (3) states "if all vessels and fixtures comply with the above, the floor does not have to be graded.
  To clarify this statement, if a shower screen is to be installed (that complies with Livable Housing) the shower is the Cat 1 wet area so the floor waste by definition is intended to "drain the surface", therefore must have a fall of 1:80 for a shower

gradients referred to in A5(2)(d)(i) and (ii).

Note:

- The acceptable gradient within a shower area should be no less than 1:80.[10]
- The reference to 'complying weir' in A5(4) means a weir which complies with A5(2)(c) or A5(2)(d).
- Figures A5(5) is for informative purposes only.

Figure A5(5)



[8] Water Mark Technical Specification 479 Flood stop safety valve.
[9] See Figure A5(5).
[10] This acceptable gradient aligns with section (a) in 10.2.14 'Shower area requirements' and 10.2.12 'Construction of wet area floors – falls' in the ABCB Housing Provisions.

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If a “Service or Connection Gully” is installed outside the enclosed shower (e.g. to connect a bath) that floor does not require fall of any kind as it is not intended to “drain the floor surface” rather it is a convenient connection gully and also provides a potential future clear-out point. This facilitates the use of large format tiles and reduces the likelihood of having to split them.

(i) is at least 10 millimetres above the height of the floor waste; and

(ii) the fall of the floor plane from the entrance of the wet area does not exceed 1:80; or

(e) all:

(i) vessels (such as a basin or bath) in the wet area must be provided with in-built overflow protection; and

(ii) water closet cisterns in the wet area must incorporate an internal overflow which directs any overflowing water to the water closet pan; and

(iii) flexible hose assemblies used for the connection of fixtures contained in the wet area must be fitted with flood stop safety valves approved under WMTS-479[8].

3) If all vessels and fixtures comply with A5(2)(e), the floor does not have to be graded.

4) If each entrance to the wet area has a linear drain or a complying weir, the floor does not have to be graded.

5) Any area of the floor that is separated from the entrance by a graded area does not have to be graded.[9]

6) A5(5) only applies if all fixtures in a wet area are located on:

(a) a graded floor area that complies with the gradients referred to in A5(2)(a)(i) and A5(2)(a)(ii); or

(b) an ungraded area that is separated from the entrance by a graded floor area that complies with gradients referred to in A5(2)(a)(i) and A5(2)(a)(ii).

7) For the purposes of A5(5), ‘separated from the entrance by a graded floor area’ means that water cannot flow out of the entrance without passing over a graded area that complies with the gradients referred to in A5(2)(a)(i) and (ii).

Note:

- The acceptable gradient within a shower area should be no less than 1:80.[10]
- The reference to ‘complying weir’ in A5(4) means a weir which complies with A5(2)(c) or A5(2)(d).
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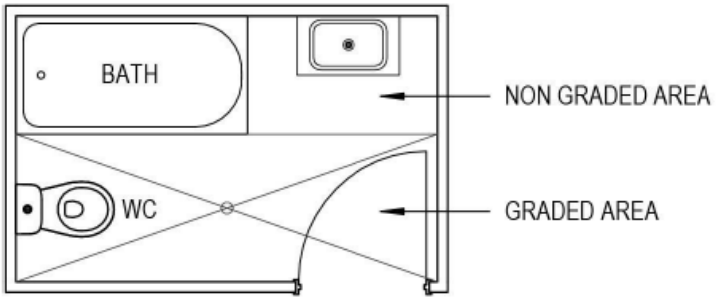

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Qld Development Code 4.5

- DQH engage silicone applicators to carry out most of the silicone work. Please keep all internal corners, wall to ceiling joints and benchtop splashback tiles free of grout to ensure silicone sealant can be properly installed. Full height tiling to ceiling should have a min 3mm gap for movement and be kept clear and clean for sealant post painting.
- In the case of tiled shower screen hobs (rarely used these days) please ensure you silicone the inside/top of the tile (where the screen will cover it) to prevent water from bypassing the shower screen and making its way into the bathroom. This is required for two reasons – one, the shower screens are usually installed before the main silicone work is done and two, shower screens must only be sealed from the **outside** to enable water to run back into the shower recess through the drainage system built into the sills

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as the glass rubbers are not designed to be watertight.