

## ALERT

THIS ANNOUNCEMENT IS BEING COMMUNICATED TO

All Company Members

ACTION REQUIRED

Everyone is to ensure works underway and all future works are carefully controlled to manage compliance

## Waterproofing External Areas Continual Improvement

### QUALITY

29/01/2021

Incorrect construction of falls and expansion joints in wet areas can lead to non-compliance, water pooling and extensive damage to Hutchies' buildings and reputation. External waterproofing applies to podiums, balconies (incl window and door subsills), roof areas, terraces and planter boxes and is covered in [Hutchies' Quality Handbook Topic 3](#).

The below information sets out Hutchies' expectations when it comes to correctly building falls to wastes, including managing the design to ensure proper setout, selecting the right quality membrane products and adequately supervising the installation.

Failure to do this correctly can result in non-compliant construction and serious financial implications.

REFER TO HUTCHIES' QUALITY HANDBOOK TOPIC 3

[toolbox.hutchies.com.au/quality](https://toolbox.hutchies.com.au/quality)

**Please review each of the following critical steps / hold points to achieve a compliant solution:**

#### Design

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Managing the design proactively will ensure correct setout, number of stormwater outlets (and overflows), and selection of membrane and tile products.

Hutchies is particularly focused on ensuring the right tile format is used in the right areas. Smaller tiles around waste areas are preferable because they are more likely to achieve the required falls. In some cases, larger tiles must only be used under strict design and installation supervision to ensure the necessary additional splits are made to meet the required falls threshold.

Be aware that clients and architects may dispute this out of appeal to the design aesthetic. The waste position (and number of wastes) plays a large part of the final tile setout and must be coordinated with the final surface falls prior to slab construction. AS3958.1 provides guidance (section 5.4.6 and appendix D) as does AS3740 (section B4)

Concrete hobs must be used on balcony edges – any deviation from this must be submitted to the [Quality Team](#) for approval. Metal formwork systems are not to be used without [Quality Team](#) approval.

Specific details developed by Hutchies must be used where approved by the [Quality Team](#).

## Supervision

Supervising the structural substrate and structure surface process is instrumental to achieving the correct construction outcome. Refer to Hutchies' Key Principles on Structures 101 (page 37) on the Learning Management System (LMS).

HUTCHIES' LMS

[lms.hutchies.com.au](https://lms.hutchies.com.au)

Ensure concrete floors are laid to falls of 1 in 100 to wastes. The highpoints of the slab are the perimeter and low points the wastes. Checking falls using a digital level (photo below), laser level and water testing podiums to identify ponding areas to be patched / highspots to be ground. (ensure there is no ponding water)

Preparation of the substrate should be undertaken to the standards set out in Hutchies' Quality Handbook (Topics 3, 7 and 9) (references Ardex technical sheets). Cast in stormwater outlets (and puddle flanges where applicable) must be flush with substrate / surface (as applicable). Where puddle flanges are used for tiled beds, make sure you have these carefully recessed by grinding the surface and/or topping around the puddle flange prior to installing on a bed of Polyurethane (see Hutchies' Quality Handbook). The object is simply to ensure there is no lip – that water can drain (no ponding water)

REFER TO HUTCHIES' QUALITY HANDBOOK TOPIC 3

[toolbox.hutchies.com.au/quality](https://toolbox.hutchies.com.au/quality)

For construction movement joints, the substrate must fall away from the CJ (which must be the high point) and for exposed areas (roof etc) preferably have a localised ramp in the concrete surface to create a waterstop edge / hob to the CJ. Similarly, roof top penetrations should have hobs around them (see picture below).



At the top of stairs, ensure the top step is a high point and the substrate falls away from it to prevent water coming down the steps. Where steps are tiled / paved, ensure a waterstop angle is mechanically fixed at the top step and waterproofed in place to prevent water coming down the stairs and causing efflorescence. Ensure steps/landings do not pond water.



## Planter boxes

Planter boxes need falls in the planter at the base and a ventilation riser with coving in place incorporated in a proprietary puddle flange that allows free draining substrates and ventilation riser pipe (see example below).

SEE MORE

<https://l.hutchi.es/adf0d>

Planter boxes structures must not be located over expansion joints or share a common wall with a habitable area. A separate wall/cavity is required unless approved by the Quality team in rare/exceptional circumstances).

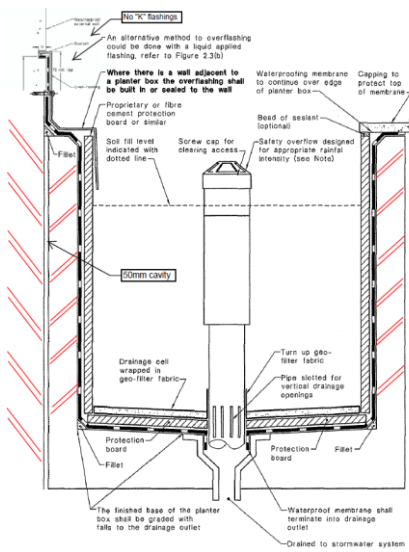
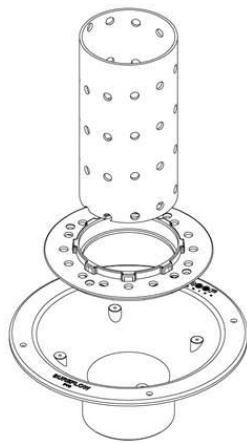


FIGURE 2.17 PLANTER BOX CONSTRUCTION



## Quality of waterproof membranes

Ensure the membranes have the correct preparation:

- Coving to the perimeter
- Primer
- Correct number and thickness of membrane coats

Check the membrane regularly for thickness for the Dry Film Thickness (DFT) with a Positector 200 DFT measurer (see sample report), select random areas for cutting out completed membrane for checking with digital callipers (see photo / example report) and static water test membranes with a bung (preferably) in the floor wastes to measure any water loss (see photo below).

SEE MORE

<https://l.hutchi.es/d193e>

<https://l.hutchi.es/f3fe6>



# HUTCHIES

## Bedding

Bedding to tiles / pavers to balcony / podiums etc must be 8-12 MPa maximum strength which is a 1 in 4 mix (per AS3958.1). This provides a level of porosity that allows the bedding to drain.

Bedding requires an expansion joint to be formed to the perimeter with compressible filler (Ableflex or similar) and carefully cut in (not to damage membranes) under tiled expansion joints.



In some cases tiles prepare a small bedding mix to set the wastes in position first and it's been found this is a far stronger mix that effectively creates a high strength bund that prevent the substrate bedding draining to the waste – effectively damming the balcony and creating a wet bed that creates efflorescence leaching up through the tiles, testing the membrane for weaknesses that lead to leaks or damaging the membranes (given most membranes are designed to free drain and are not designed for ponding/retaining water).

**Note** Always check curing times for primer, membrane and then tile glue to bedding.

In special applications where membranes are approved to be placed both under AND OVER bedding by Hutchies' **Quality Team**, the bedding MUST achieve the minimum strength of concrete required by the membrane manufacturer – usually 20-25 MPa which will not be achieved using site mixed materials. Proprietary bagged bedding is designed for this application.

REFER TO ARDEX WATERPROOFING PRODUCTS

<https://l.hutchi.es/e6ed3>

<https://l.hutchi.es/a3e24>

**Note** Always check curing times for each product as waterproofing over bedding requires a low moisture content or use of an epoxy primer to high moisture / fresh bedding.

## Surface falls and expansion joints in surface finishes

Tiled surfaces should be minimum 1 in 100 falls. The floor waste should be flush or 1mm below the tile surface to ensure there is free flowing drainage.

All areas MUST have expansion joints to the perimeter in the tile bed (as covered earlier) and tiles, and all areas must have expansion joints at maximum 4m centres each way and over any construction movement joints.

Ensure tiles are not installed tight to structure and rendered finishes completed down hard onto the tiles. This creates no room for movement.

Expansion joints are critical as per AS3958.1.



Darker tiles expand more than lighter tiles.

Poor quality tiles experience tile growth through moisture absorption over time more than higher quality (dense vitrified) tiles for example.

Without proper expansion the tiles will go drummy and / or pop as below and usually rectification has issues with tiles matching / spares.





# HUTCHIES

## Interface to window / door subsills

DO NOT seal the junction between the bottom of the subsill down turn leg (which must not be removed) and the tiled surface of the balcony:



FOR MORE INFORMATION, PLEASE CONTACT

Hutchies' Quality Team  
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Phone 1300 HUTCHIES

This announcement can also be found on Hutchies' Toolbox: <https://toolbox.hutchies.com.au/activities>