

Balconies Information

How to waterproof and reduce efflorescence

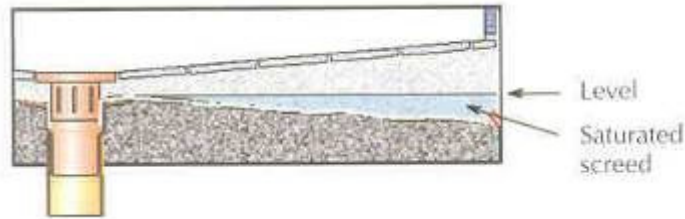


CONCRETE PROTECTION
WATERPROOFING SOLUTIONS

With existing structures, the balcony may be showing efflorescence as a bi-product of poor waterproofing design.

Efflorescence in the construction sector is characterised as an accumulation of calcium crystals and salts that disfigures the top, edges or underside of masonry. Efflorescence cannot form without water, so the problem is focused to external surfaces exposed to rain or from moisture leaching into the tiling system from elsewhere, such as groundwater, or planter boxes.

The two key principles for minimising efflorescence are: First, minimise water entering the tiling system; Second, direct water that penetrates the tiling system to a designed outlet. Waterproofing membranes are key to the strategy.



Typical efflorescence in mortar joints from saturated screed



Remove saturated screed to get back to slab or primary structure



Efflorescence directed to the drain

Principles of Concrete Balcony Waterproofing to reduce efflorescence

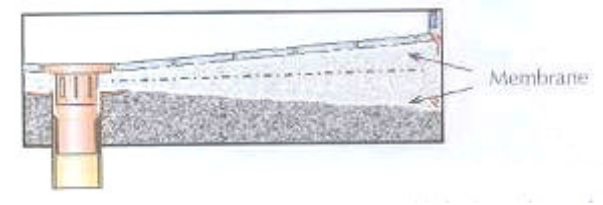
Principle 1: Minimising water entry

The entry of water into the tile screed can be minimised by a couple of effective methods: First, applying a waterproofing membrane both under and over the screed; Second by sealing the surface of the tiles and grout joints with a penetrating water repellent.

The advantages of a waterproofing membrane both under and over the screed are that it excludes moisture from the tile screed, and it is better able to withstand movement and any cracking of the screed (the top membrane acts as a crack suppression membrane).

Using only one membrane on top of the screed is acceptable, however, detailing the bond breaker/fillet joints is critical and difficult because it must occur at the junction of walls and floors and be contained within the thickness of the tile.

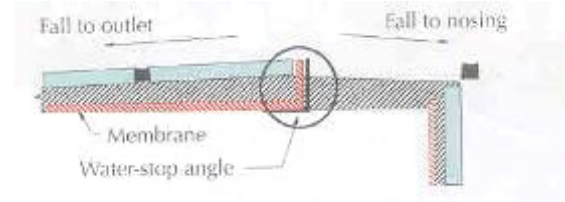
The final step in minimising water entry is sealing the surface of the finished tiling and grout joints with a water repellent (also stain resistant). Most external tiling systems will benefit from the application of a penetrating repellent sealer, but should not be relied upon as the sole method of waterproofing. Water will eventually enter through small cracks in the system and require reapplication regularly.



Principle 2: Directing water to an outlet

The second principle for waterproofing and reducing efflorescence is to ensure that any water that penetrates the tiling or decorative surface is directed to a designed outlet. To enable this, it is imperative that there are positive falls in the substrate before any waterproofing membrane is applied. Substrate falls must not be allowed to go to a free drain unless the salt-laden water is collected by a gutter.

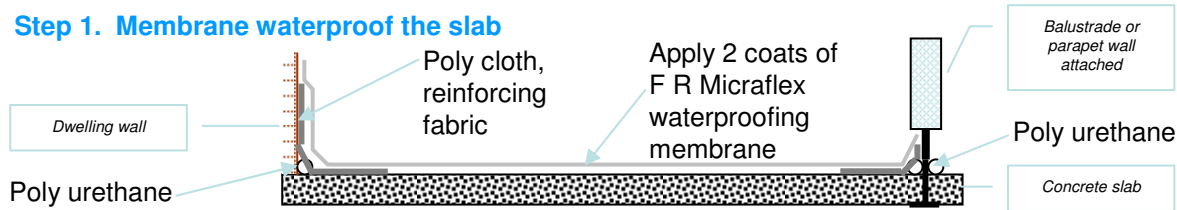
A water-stop angle (90 degree extrusion) sealed to the surface or incorporated into the waterproofing system, fitted at free edges and behind nosing will ensure water is contained and directed correctly.



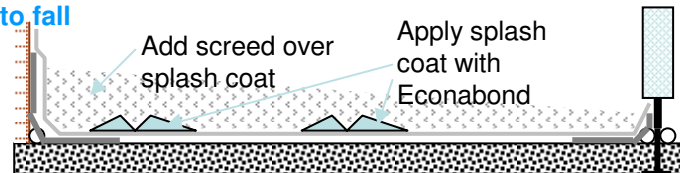
Products and methods of waterproofing concrete slab balconies

It is preferable that the balcony substrate is constructed to have a fall. However, many are constructed flat as the diagrams depict.

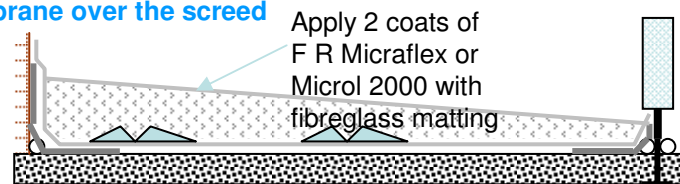
Step 1. Membrane waterproof the slab



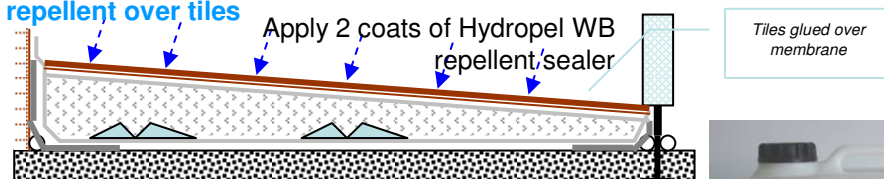
Step 2. Add screed to fall



Step 3. Apply membrane over the screed



Step 4. Apply water repellent over tiles



NB: drawings not to scale. Conceptual view only.



Bonding Agent



Poly Urethane



Reinforcing fabric



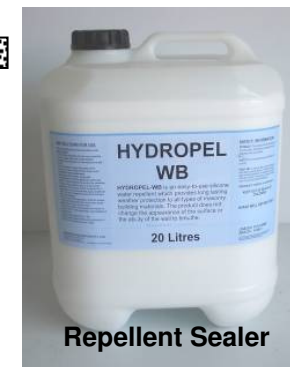
Membrane



Membrane

Optional Final Step

Once the balcony has been tiled, apply two coats of Hydropol as a penetrating water repellent.



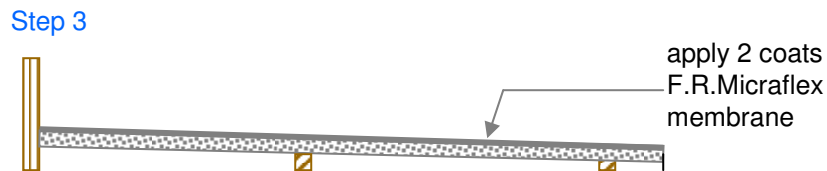
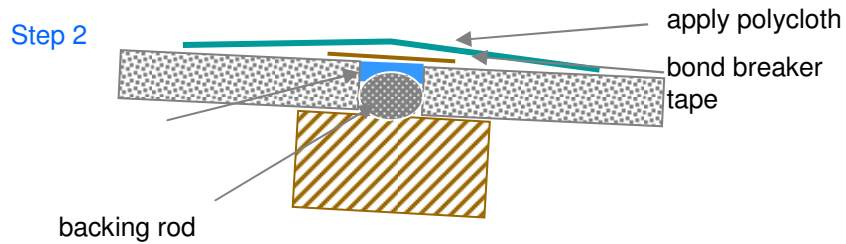
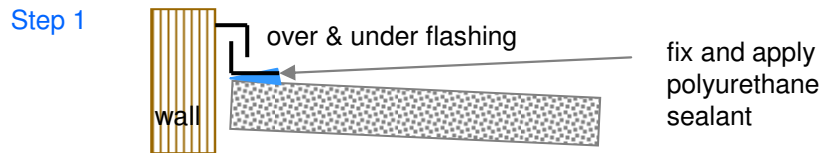
Repellent Sealer



Products and methods of waterproofing compressed cement sheet balconies

Follow the manufacturers instructions for substrate installation. The following steps will ensure waterproofing.

Waterproof protection is easy and avoids damage.



Optional Final Step

Once the balcony has been tiled, apply two coats of Hydropel as a penetrating water repellent.



Check List for a Balcony Job.

Existing Balcony:

- Check drainage design to ensure adequate fall and water exit.
- Check for signs of efflorescence and likely causes.
- Assess if existing surface is suitable or removal of old screed required
- Does the slab require crack repair

OK

Work

Waterproofing Existing & New Balconies:

- Membrane with fabric reinforcing all wall joints and exit points
- Membrane the slab
- Prepare screed to fall, may require splash coat to get good key
- Membrane over the screed, ensuring joints and exits are covered
- Assess if the finished surface requires a water repellent coating

Note: don't allow other trades to penetrate the surface of the balcony once the waterproofing process has been completed. A common problem is that balustrade is constructed after balcony has been waterproofed, resulting in waterproofing protection being compromised .

