

Notes from a Balcony Inspection

[inShare](#)

"Leaking through to the apartment below"

The property was inspected by Mr P. Evans, Registered Builder, Trade Qualified, Certified Waterproofer, Vice President of The Australian Institute of Waterproofing, Cert 111 OH & S, 40 yrs in Construction.

Here are his notes, which are a great read for anyone in the constructon industry:

Upon inspecting the balcony without performing invasive testing (lifting tiles) an audio test on random tiles confirmed the tiles are de-bonding in a large majority of the balcony area consisting of approx 70M2.

These tiles are know in the industry as "drummy" due to the hollow sound made when impacted with a firm mass.

It can be deduced (as expansion joints have closed up tight) that the tiles have expanded within themselves also expansion joints are not as plentiful or of correct width to allow growth and expansion/contraction of the tiled areas as a whole.

Tiles of a dark colouring are more prone to expansion as they absorb the heat more readily.

The quality of the biscuit (fired clay back of tile) vary greatly in quality and some are more prone to tile growth than others. (i.e - cheap tiles are usually poor quality clays and firing processes)

This "growth" causes the tiles to be forced upwards as they have no other way to go, especially if the tiles are laid too close to the perimeter walls as well. The upward movement can cause tearing (if installed) of the membrane below tiles or at least dislodging tiles. This can be seen particularly at the expansion joints where the tiles are lifting and tend to peak upward more than the general field of tiles.



The effervescence (whitish coloured calcification of salts and minerals) migrating up from the joints shows us the

sand and cement screed below tiles is holding water in the long term as the effervescence requires dormant water to form. (This is similar to stalagmites / stalactites in caves)

This particular balcony shows extreme signs of calcification at the west end on the outside edge and down the wall to the neighbour below. Noting this overall problem is evident in the neighbouring apartments as well.

It can be determined that (if installed) the membrane is below the screed and is laid flat on the "level" concrete base slab.

If the membrane (presuming it is installed) is not selected correctly in the first instance, it can quickly degrade under constant emersion and break down or re-emulsify and allow water to migrate through to adjacent surface.

Water, once allowed to interrogate concrete structures can migrate great distances. This can cause issues with adjacent masonry and or metal surface and create premature self destruction. Concrete is designed to last approx 50 yrs under normal conditions, if water is allowed to permeate, degradation rapidly increases.

This is mainly due to the metal reinforcing mesh (reo bar), etc, embedded in the concrete rusting at much higher rate. Rust expands upon itself causing the concrete to expand beyond its own limitations and "blowout" (chunks of concrete -usually in shape of a typical flying saucer) or at the least cause cracking, which in turn exacerbates the problem many times over.

It is a ticking time bomb!

This is (I am sorry to report) a very wide spread problem and a lot of builders, designers, architects, engineers and in particular tradespeople simply do not know or try to understand what proper waterproofing is all about.

The impact of bad selection and or application is an enormous problem in the construction industry today.

It can be resolved by using the correct application with the right materials for the job.

I would be happy expand on my comments as required, should the reader require.

Regards

Paul Evans
Vice President
Australian Institute of Waterproofing