

INFO SHEET

*Performance Through
Technology and Service*

Testing Pool Surfaces for Moisture – Black Plastic Sheet Test ASTM -D – 4263

Some concrete pools (inc with Pebblecrete, Marblesheen) surfaces can seem to be dry however there is moisture within the concrete or surface finish. It's important to check before you start any paint application. Any moisture trapped beneath the coating may cause its failure.

Note: Even quite dense concrete can be moisture permeable and if so, it can bring calcium and sodium salts from the concrete to the underlying surface of the coating, (neither Pebblecrete or Marblesheen offer any moisture resistance) These salts if blocked by an impermeable coating, (epoxy – PnF) will cause deterioration of the upper layer of concrete. This then fails and the coating comes away with it. High moisture content in concrete tends to want to equalize and so ground water – moisture will pass through concrete to the dryer upper surfaces. Meaning don't leave a coated pool empty either for longer than needed.



A simple test to see if water – moisture is an issue is this test. If in doubt, make use of it.

Process is:

1. Look for any areas that seem damp (darker colour than the rest)
- 2 Look for an cracks or weeping areas or calcium build ups or if painted, then blisters.
3. Usually include 4 – 6 test sites that include the deep end, the shallow end and any from #'s 1 and 2.
4. With heavy duty black plastic (Bunnings etc) cut into 400mm x 400 mm squares.
5. To a “dry” surface apply the black plastic and seal securely ALL the way around with a heavy-duty tape to make sure no water – moisture leakage. (If need be, with a rough surface make extra wide taping).
6. Allow to stay in place for 24 plus hours and with no rain!
7. Return and peel up gently looking for any moisture droplets on the underside. (And or a dark colouration on the concrete surface beneath)
8. If no moisture present you should be ok to proceed. This test only determines if moisture was there at this time and does not give an “reading” as such.
9. If moisture present then either investigate the cause (**see over**) or allow for a longer drying of the surface and retest.
10. If this test indicated NO moisture on the day, it does not mean no moisture was present the past or can be present in the future. (e.g. high water, leaking pipes etc can occur in the past or future)

If moisture is present on the underside of the plastic or darker surface, then:

1. It infers there is moisture in the substrate and if you proceed with a coating there is the possibility of some paint failure in the future.
2. Swimming pools (concrete) are designed to have a DPC (damp proof course) beneath the concrete slab. This may or may not have been installed and it seems to depend on the whim of the pool builder. If installed it may have been damaged at the time of the concrete placement and thus negating some or ALL of its intended protection so stop ground moisture entering the concrete. You have no way of knowing about this and should be tagging your quotes accordingly.
3. Try to see if there is reason for the moisture issue. These can include:
 - a. High water table, tidal areas (around rivers, sea, marinas)
 - b. On the side of a hill or in a valley (don't need to be of significant height difference, a few metres are enough)
 - c. Is there a large water rainwater catchment near the pool, be it a lawn, paved area etc and where \ and how does it drain?
 - d. Leaking water (house or pool) pipes (pool movement, or settlement, clay soils)
 - e. Garden banks or trees near the pool and root issues.
 - f. See if any cracks in the surface (Pebble, Marblesheen) and are they structural into or through the shell? (If so, fix them)

Proceed or not:

If none of the above and no history of the pool etc available, then you can proceed, however we strongly recommend that you point out in writing to the pool owner there seems to be a moisture issue, the cause of which is not apparent, and as the coating is basically moisture and water proof, there is the prospect of its failure in whole or in part. And they need to sign off on this as well.

If you are not able to get this acceptance by the owner, then it's best to decline further work and get paid for what you have done. They may be okay with a permeable finish such as Marblesheen, but it will still tend to become drummy – dislodge overtime (as will a fibreglass liner alternative).