# TECHNICAL BULLETIN – TB112

# PEBBLECRETE AND MARBLESHEEN

**JULY 2024**

## INTRODUCTION & SCOPE

A common question ARDEX Technical Services receives concerns the application of levelling compounds, waterproofing membranes, and ceramic tile adhesives over 'Pebblecrete' and the faux marble finish render used in swimming pools.

In this bulletin, we shall briefly discuss the surface preparation required and why it isn't acceptable to apply materials to these finishes.

## WHAT IS PEBBLECRETE?

During the 1970s and 1980s, 'Pebblecrete' was introduced as a decorative rendering medium or wear surface used on verandas, decks, pool surrounds, driveways and often on tilt panel slabs and cement façade features. The basis of 'Pebblecrete' is a decorative aggregate, either natural pebbles or a manufactured equivalent and a binder. The binders can be either a Portland cement-based material or a resin-rich epoxy. Commonly the finished surface is coated with a clear and glossy polyurethane or acrylic sealant.

'Pebblecrete' should not be confused with concrete displaying exposed aggregate (sometimes polished), which is not an applied finish but a treatment method of an existing concrete substrate.

## PEBBLECRETE AS A SUBSTRATE

Adhering levelling compounds, tile adhesives, or membranes to a surface requires that surface to be stable, well bonded and usually porous. Older 'Pebblecrete' surfaces can be poorly bonded, meaning the surface can lift and break away, taking the overlying surface. Levelling compounds can develop a degree of tension during curing, and tile systems tend to move with changes in temperature and wetness. These stresses can also affect the bond of 'Pebblecrete' to the substrate.

There can also be issues with adhesion to 'Pebblecrete' regarding the binder, sealers, and nature of the aggregate. Sealers can act as release agents, leading to the applied material de-bonding. Resin-rich epoxies can be difficult to bond to due to their surface properties and chemical inertness. Weathering can also lead to chalkiness in the

epoxy, which provides a weak layer. Highly polished and smooth river aggregates provide a non-porous surface, which is not ideal for bonding to.

## WHAT IS FAUX MARBLE

In the last 50 years, a moderately common approach to finishing the shell of concrete pools has been the placement of a decorative render made from white cement and ground-up marble or light-coloured limestone. The mixture makes the pool look lined with white stone, resembling a monolithic marble-clad surface. One of the common names is ‘Marblesheen’, but there are also ‘Marblelite’ and some other more modern tradenames in the industry.

## FAUX MARBLE AS A SUBSTRATE

The properties of this type of render are problematic, as the material has aged and become porous and brittle, which can occur in 10 years, though some pools last 30 years or more. Another feature of the render is the high cement content, which can make it prone to shrinkage and develop cracking and de-bonding.

As a substrate for tiling, the surface can become too weak even after surface preparation to ‘open the matrix,’ or it can crumble and break up after tiling. The shrinkage properties of a newly applied finish make it unsuitable for use with waterproofing membranes or barrier coats placed under the new render. The finish develops cracks or shears the membrane surface.

## RECOMMENDED SURFACE PREPARATION

ARDEX recommends mechanical removal of ‘Pebblecrete’ from the substrate before applying levelling cement, ceramic tile adhesives, and membranes.

The marblesheen render is also removed completely by mechanical preparation before any attempts at re-waterproofing and/or tiling the pool. However, caution is required because pools rendered before 1990 can contain asbestos as part of the matrix (fibres help reinforce). Hence, removal requires careful evaluation of the pool, its age, and local regulations on handling asbestos-containing materials (for example, the QLD Govt. gives this advice; http://www.deir.qld.gov.au/asbestos/know-where/marblesheen-pool-coatings-containing-asbestos.htm).

Mechanical methods include diamond grinding, scabbling, scarifying, and shot or grit blasting to open porous concrete. This approach removes any uncertainty about the type or stability of the ‘Pebblecrete’ and marble render and eliminates adhesive bond/compatibility issues.

## PEBBLECRETE AND MARBLESHEEN OVER ARDEX MEMBRANES

ARDEX does not recommend the application of “Pebblecrete” or Marblesheen over any of our membranes. There are several reasons for this, but the chief one is the shrinkage of the “Pebblecrete” or marble sheen.

Waterproof membranes are flexible and generally can’t survive the shrinkage stress that an applied layer of “Pebblecrete” or Marblesheen would exert. ARDEX has seen several failures related to this over the years.

In conclusion, ARDEX does not recommend the application of “Pebblecrete” or Marblesheen over ARDEX WPM002, ARDEX WPM001 or any other membrane we manufacture.



**REASON FOR REVISION-ISSUER**
Content review, change of company slogan and address

**DOCUMENT REVIEW REQUIRED**
**24 months or whenever third-party suppliers change their recommendations.**

**Australia:** 1300 788 780
**New Zealand:** 643 384 3029

Web: www.ardexaustralia.com
email: technical.services@ardexaustralia.com
Address: 2 Buda Way, Kemps Creek NSW 2178