

Pal Tiya Premium for Large Outdoor Art

Pal Tiya Premium has become the sculpting material of choice for many professional artists, movie prop shops, hobby crafters and students all over the world. It was developed in New Zealand by Pal Tiya International specifically for the creation of large permanent outdoor sculptures. Artists of all levels of expertise use Pal Tiya Premium in the USA, Canada, the United Kingdom, Europe, Australia and New Zealand. It is a tested, safe and dependable material for creating art, especially those works intended for the outdoors and demanding weather.

Pal Tiya Premium is an excellent outdoor sculpting material, tested to the standards of the building industry.

Pal Tiya Premium successfully passed the ASTM C666/666M – 03 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

This test is used universally by the building industry to determine viability as an outdoor material.

Our particular test was performed by the labs at CSIRO (Commonwealth Scientific and Industrial Research Organisation), the Australian Registered Testing Authority.

How the ASTM C666/666M test is carried out.

A correctly mixed and cured sample of Pal Tiya Premium is placed in a specialist machine, wetted

down and rapidly frozen to -18 C (-0.4 F) to form hard ice, it is then thawed again to +16 C (+60.8 F). This aggressive hot-cold thermal "shocking" is repeated 24/7, 300 times over several months. It is designed to quickly discover any flaws inherent in a material destined for outdoor use.

We made the tests deliberately harder because we wanted the best sculpting material possible.

The samples we froze also contained specific sculptural elements, to accurately measure the performance of PTP with real world conditions a sculptor would encounter.

Below is a summary table of the things we did to additionally stress the samples during the tests.

Sculptural Element Tested	ASTM C666/666M Result
We deliberately left gaps and exposed spaces between laminated layers of Pal Tiya Premium to allow water to penetrate far more than normal.	There was no water migration along or into the exposed layers. No delamination between layers
We intentionally sculpted thin, blended or feathered edges on the surface over previously cured and hardened layers. Ultra-thin layers tend to peel and delaminate especially along the leading edge of a new batch	There was no delamination or lifting along the thin feathered edges. There was no water migration under these edges to pop off the fine transition between new and older batches
Ice expansion can be destructive if captured within the details of a sculpture, especially those penetrating to older lower layers. We sculpted deep water/ice capturing ravines into the surface, specifically reaching and exposing deeper areas to encourage delamination and breakage into older layers. We also aggressively frayed the ravine fibers to hold the ice in these deep features.	The captured ice expanding in the ravines did not break off any details. The water did not migrate into the exposed lower layers of the ravines. There was no delamination at the base of the ravines into the lower batches
Extreme wet and freezing weather changes can quickly erode fine surface details. We drew delicate and shallow designs into the surface to observe any reduction of quality.	The delicate details drawn onto the surfaces remained unaffected and clear.

But I live in a region that has colder and hotter temperature extremes.

The test focuses on the most extreme changes (frozen to not frozen) when the most stress is put on the material. Temperatures outside these ranges will not impact the durability of any properly mixed and cured pieces.

How long will Pal Tiya Premium last?

Concrete and mortars are used extensively in the construction and civil engineering industries with an assumed lifespan of between 30 and 100 years. Pal Tiya Premium is formulated to remove many of the potential issues that other construction grade concretes experience, especially with thin wall construction techniques.

We were inspired by the concrete and mortar used in the construction of the famous Colosseum in Rome over 1900 years ago.

We have designed Pal Tiya Premium so that when correctly mixed and cured it will last 40-60 years in very high wear and tear environments (climbed / physically handled on a daily basis by lots of people). A piece that is not the subject of multiple daily interactions will last considerably longer.

We like the idea that some pieces created in Pal Tiya Premium will be inspected by archaeologists in a few thousand years' time – and will be suitably confusing to them.

Obviously, the design and siting of a sculpture will impact how well the material will stand up over time – large extrusions would be at risk if not sufficiently reinforced with a suitable armature.

Before you start.

Make sure you familiarise yourself with all the available online guidance and information regarding planning, building, mixing, sculpting, curing and painting available at www.paltiya.com