



# Application Guide

## Product Description

Sunstate Sands Pool Render is an interior cementitious render for swimming pools. The product is factory blended and packaged in an automated, quality assured facility which ensures its quality and consistency.

It is primarily designed for application onto concrete pool shells as a fully submerged interior finish.

Application should not commence until all other pool installations have been completed as full pool operation is required immediately after product application.

It must be installed by a competent, experienced trade persons in order for its full aesthetic potential and service life to be realised.

## Shell Preparation

### General Considerations

Sunstate Sands Pool Render requires a well cured, clean and even surface with an appropriate 'key' for bonding such as broomed or wood float finish.

All 'weepers' appearing on a concrete shell must be repaired and sealed prior to the application of Sunstate Sands Pool Render. The concrete shell must be mechanically cleaned to remove all loose and friable particles, dust, oil, grease and organic matter.

Fibre-crete shells must be scraped and sealed using an acrylic modified prep coat, such as Keycoat or similar.

## New Pools

Excessive blowholes or friable honeycombed areas should be filled with a strong, cementitious render or concrete repair mortar at least 24 hours prior to the application of Sunstate Sands Pool Render.

Subject to shell conditions, a key coat/slurry bond coat may be required. If the shell requires a key coat/slurry bond coat, apply Keycoat or equivalent with a broom to a thickness of 1 - 2mm, or as per manufacturer's instructions.

If an acid wash to the shell is required, use a mix ratio of 1-part hydrochloric acid to 5-parts water. Then hose down the surface and pump out all remaining fluid and debris.

## Renovations

### a) Paint or fibreglass coating over a concrete shell

Remove the interior coating completely. Remove any loose material or residue, wash with acid mix, hose down the surface with clean water and pump out all remaining fluid and debris.

Sunstate Sands Pool Render requires a well cured, clean and even surface with appropriate 'key' for bonding. If there is insufficient key for bonding, 'sparrow peck' the surface with a scutcheon or 'kanga' hammer and/or apply a slurry key coat as described above. To ensure an appropriate bond, we recommend an Keycoat coat/slurry coat be applied in all pool renovations. Broom-finish the key coat to provide a good mechanical key.

### b) Marblesheen or Pebble

Remove any 'drummy' or deteriorated areas back to the concrete shell. Fill these areas with a strong, cementitious render. It may be necessary to remove the old interior completely if unsound. 'Sparrow peck' the old surface with a scutcheon or 'kanga' hammer if required.

### c) Tile Band

The existing tile band must be detailed to allow the new interior render to finish flush with the tiles.

Using a diamond saw, make two cuts approximately 10mm deep -the first directly below the existing tile band and the second parallel cut, 150mm below the tile band. Remove the old interior finish section between the saw cuts up to the tile band.

Acid wash the exposed section and then water blast to remove all dust/organic debris. Thoroughly rinse with clean water so that all residues of acid and debris are removed.

Acid wash and/or re-grout tiles if needed, prior to the application of Sunstate Sands Pool Render.

Installation of a tile band is recommended to minimise the potential of colour variation and staining when dry.

## Product Mixing

*Before mixing Sunstate Sands Pool Render, check that the batch numbers and product colour on the bags are the same.*

Sunstate Sands Pool Render is added to a mixer with clean potable water (approximately 3 litres per 20kg bag). When adding water, always ensure consistent quantities of water per batch using a measuring vessel.

On-site conditions must be taken into consideration when establishing the mix water requirement e.g. the condition of the shell, required set time, size of pool, available labour, temperature, humidity, etc. Site conditions may require the water content to be varied up or down  $\pm 0.5$  litres per bag.

Generally a minimum mixing period of 3 minutes is required for consistency depending upon the mixing equipment and mix size.

One 20kg bag of Sunstate Sands Pool Render will cover approximately 1 m<sup>2</sup> of correctly prepared concrete surface, i.e. the concrete surface is to have a wood float or broom finish - not steel troweled.

Coverage estimate is based on nominal render thickness of 8-10mm. Variation to applied render thickness, water content and wastage will slightly change this coverage rate. A pool measuring 9m x 4.5m x 1.5m will require approximately 61 bags of Sunstate Sands Pool Render product.

*Do not add anything to Sunstate Sands Pool Render other than clean water. No other additives are necessary.*

However, if calcium chloride is needed, it must be completely dissolved and dispersed in water prior to addition to the mix. Never add calcium chloride as a dry additive to the mix. Prepare one dissolved batch of calcium chloride in water for each mix to ensure correct dosage.

Maximum addition rate of calcium chloride is 100grams per 20 kg bag. Excess calcium chloride (above 1.5% w/w cement) can cause render issues such as trapped moisture (greying/hydration-mottling), rapid drying causing cracking and /or crazing, poor bonding and the inability to close off the surface by working the water, air and fines to the surface.

Long term durability of the render can also be affected by excessive or improper use of calcium chloride

## Application Method

### Important Considerations

- Sunstate Sands Pool Render should only be applied after all other site works are complete (e.g. paving, landscaping and fences completely erected)
- Always erect a shade cover over and around the pool
- Sunstate Sands Pool Render should not be applied if the ambient temperature is less than 5°C or greater than 35 °C.
- Do not apply to hot, dry substrates - only render onto a well wetted surface
- Do not use grey Portland Cement or Builders Cement for slurry coats
- Do not allow joints to dry, always maintain a 'wet edge' when joining walls to the floor etc.
- Ensure adequate resources are available for product application.
- Installation of a tile band is recommended to minimise the potential of colour variation, staining and cracking when dry.

Always check the weather and pool surrounds prior to application. Take the necessary precautions to protect the application site to ensure no foreign material (dirt, leaves, bark, cig. butts, rain etc.) will fall or be blown into the pool whilst application is underway and during initial set.

### Step 1- Protection of works

Erect a cover to provide shade over and around the pool.

Appropriate shading provides:

- Protection from contaminants, sun, wind and rain
- Uniform moisture / drying rates over the entire pool (for ease of finishing)
- Protection from excess moisture loss during the curing process
- Vastly improved working conditions

*NOTE: The erected cover should remain in place until after the pool is acid washed the following morning. In high temperatures, leave the shade cover in place until pool is filled with water.*

## Step 2 – Shell/substrate conditioning

Remove any pooling water from the concrete shell floor prior to the application of Sunstate Sands Pool Render.

Wet the concrete shell surface thoroughly to adjust suction. Never apply Sunstate Sands Pool Render to a hot, dry pool shell. Always apply render onto a wetted, substrate.

A mist wand can be used to re-wet areas, as the pool is progressively coated.

## Step 3 – First or Scratch Coat

Sunstate Sands Pool Render should always be applied in two coats over a damp substrate (wet on wet).

Once mixed and the desired consistency is reached (refer to “Mixing”), the creamy render is applied to a damp shell by hand or concrete pump, scratch coating all surfaces, steps etc. with steel pool trowels.

The first coat (‘scratch’ coat) of Sunstate Sands Pool Render MUST go onto the concrete shell BEFORE the shell dries off, i.e. the shell MUST be damp. The scratch coat is applied as a thin layer, typically 2-3mm in thickness to promote adhesion to the shell and the subsequent “top coat”.

It is very important to ensure this scratch coat is well keyed to the substrate using adequate trowel pressure/techniques to ensure entrapped air between the scratch coat and shell is removed.

*NOTE: The scratch coat MUST NOT be allowed to dry prior to the application of the top coat.*

## Step 4 – Top Coat

Apply a top coat to the still tacky scratch coat, trowel to a smooth and even thickness - do not over trowel at this stage.

Steel trowel Sunstate Sands Pool Render into place (8 – 10mm thick), removing any air bubbles caused by pockets in the shell or over troweling when too wet.

Trowel first finish of top coat to a sufficient level to establish overall profile/shape.

Following initial placement of the top coat, progressively trowel this coat a further 3-4 passes with steel trowels to ensure proper compaction/compression of the render and removal of any entrapped air.

Depending on site conditions, light misting of the render surface maybe necessary with each trowel pass to achieve the necessary quality of finish. It is generally advantageous to progressively remove any slurry from the trowel with each trowel cycle.

The render surface should progressively become more compacted and transparent i.e. the aggregate should be quite visible through a thin slurry veneer by this stage.

The final surface finish should be fully compacted, dense, and smooth. 'Spiked shoes' must be worn to walk on the wet floor during final placement.

NOTE: *Always maintain a 'wet edge' when joining walls to floors, etc.*

### Step 5 - Acid wash

Acid wash should take place on the following day of application or when the render is sufficiently cured in cold conditions. The surface must achieve "hard set" to ensure the acid washing process does not damage the surface. If the surface is still 'green', delay the acid wash.

The pool must be washed down with mains water – not recycled, dam or bore – and must be filled immediately on completion of acid wash. Under the normal range of conditions this would occur 24-48 hours after completion of work.

Acid washing should only be performed by experienced contractors or personnel using recognised procedures that cater for the safe and environmentally appropriate use of chemicals and the final appearance of the surface. Always use appropriate personal protective equipment.

Suggested Materials and Equipment	
Personal protective equipment	Hydrochloric acid
Acid resistant brooms	Slurpee or submersible pump
Hose and fittings	Measuring vessel
Funnel	1 x High Pressure Water Blaster
Sponges	2 or 3 Watering cans (9lt) with diffusion roses
Expansion plugs	

#### Step 5.1

Hose walls down to remove dust and dirt, put hose down return lines to clean out rubbish and clean out skimmer box.

#### Step 5.2

Add water to the pool leaving a pool of water around main drain (1.5 – 2 metres in diameter) on floor of pool to dilute any acid run-off from washing.

NOTE: *Maintain this pool of water throughout entire acid wash procedure*

### Step 5.3

Fill a watering can with required amount of water, and then add acid. This is best done in the pool of water near the main drain to prevent over etching caused by spillage.

Use a standard garden watering can with a fine diffusion rose (reduces run-off and conserves acid) and an acid resistant broom. Have the hose and discharge pump ready for use.

*NOTE: Acid to Water ratio for ALL colours is 1:8-10 concentration of acid: water*

### Step 5.4 (This step requires a minimum of 2 people)

Position the pump or Slurpee hose at deepest point of pool (main drain or hydrostatic valve).

Ensure to cap off return pipes with expansion plugs (40mm - 50mm) or rubber bungs to prevent the acid solution entering pipes and later running out forming a streak below pipe.

#### Floors

Starting at the deepest point of the pool and working towards the shallow end, pour acid solution from the watering can back and forth, evenly over floor of pool.

Brush acid around with broom so that it is evenly applied and does not form tracks on the floor. It is also useful to use the broom to disturb the pool of water around the main drain to prevent a ring from etching the floor. Ensure that the entire surface is acid washed.

Once the floor has been acid washed, thoroughly wet the floor to neutralise any excess acid.

#### Walls

Acid wash the walls of the pool from bottom to top. Progressively detailing 1-2 m<sup>2</sup> sections of wall and then washing off that section with water generally yields a more consistent finish. Ensure the floor stays wet while washing the wall to prevent over exposure or streaking.

*NOTE: Avoid applying acid on the tile band as the tile grout lines can leave streaks on Sunstate Sands Pool Render.*

Be watchful and disperse any puddling or run-off tracks of acid solution on or from flat surfaces, steps, ledges, benches or fittings. Broom these off immediately to ensure that acid doesn't over expose these areas. Running water may be used to dilute any run-off on floor. Again, use the broom to disturb the pool of water around the main drain to prevent a ring from etching the floor.

Using pump/Slurpee, remove all water and acid waste residue from area around main drain. If needed, apply diluted acid mixture to this area to ensure even exposure consistent with rest of surface.

Hose off residue and remove all water and acid wash residue from floor.

Thoroughly wash surface with high pressure water blaster (test pressure first). The water blaster will remove any cement residue loosened by the acid cleaning process. The use of the water blaster to clean the surface will produce a more uniform aesthetic appearance.

When the acid/pressure cleaning is completed, drain the pool immediately using Slurpee or submersible pump. Ensure all acid wash residue is removed from pool interior, check hydrostatic value for correct operation & sealing.

*NOTE: Fill pool with clean, potable, fresh water immediately on completion of final wash.*

Where the use of bore water for final pool filling cannot be avoided, seek specialist advice about water treatment requirements prior to filling.

Add Pool Stain Remover's "Scale & Stain Eliminator" or equivalent at the prescribed rate to the pool water as a preventative measure for scale and staining issues for Sunstate Sand Pool Render and any other cementitious render finishes.

Once the pool starts to fill, it mustn't be stopped. Leave the hose in the pool once filling commences and fill to the waterline tile or coping (if no waterline tile).

Please refer to Sunstate Sands Pool Render Start-up Procedure for more important information about initial start-up of your Sunstate Sands Pool Render pool.