

Understanding Silicone Peeling in Stainless Steel Tank Pools

Silicone plays a crucial role in sealing and protecting stainless steel tank pools—especially around joints, seams, and fittings. However, under certain conditions, silicone can begin to peel away from surfaces, leading to leaks, contamination, or aesthetic issues. Knowing how to identify, prevent, and treat silicone peeling helps protect your investment and keep your pool safe and sealed.



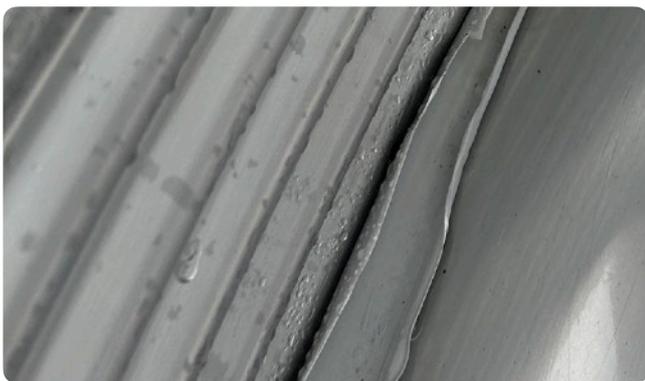
Possible Causes

UV Exposure:

Over time, constant exposure to sunlight can degrade silicone sealants. UV radiation causes them to become brittle or shrink, reducing adhesion and flexibility.

Movement and Flexing:

Temperature fluctuations or shifting bases can lead to movement in the tank structure. Excessive flexing may stress silicone joints, causing them to separate or lift from the surface.



Fluctuations in Temperature:

Stainless steel expands and contracts with heat and cold. These thermal shifts can cause silicone to stretch and compress repeatedly, eventually leading to cracks, peeling, or detachment.

Constant Water Turbulence:

Frequent movement caused by swimmers, jets, or splashing creates ongoing pressure and vibration around seams and joints. Over time, this mechanical stress can weaken the silicone's bond and cause it to peel, especially in high-traffic pools or plunge pools used for hydrotherapy.

Chemical Degradation:

Improper water balance or harsh chemical treatments can degrade silicone over time. High chlorine levels, low pH, or other chemicals not suitable for silicone can contribute to peeling.

Ageing & Wear:

Even under ideal conditions, silicone has a limited service life. Like sealants used in bathrooms, pool silicone will eventually require maintenance or replacement. Over time, it may show signs of visual wear such as slight lifting at the edges, surface cracking, chalking, mild discolouration, or a gradual loss of bond and flexibility due to age.

Identifying Peeling Silicone

Visual Clues:

- Visible lifting or curling at silicone edges
- Gaps forming between silicone and steel
- Discolouration, cracking, or chalking of the silicone
- Water seepage around fittings or seams
- Visible water around the base of the pool

Common Locations:

- Around suction, jets and lights
- At vertical and horizontal seam joints
- At wall to floor internal corners
- Along base lap joints

Preventive Measures

Limit UV Exposure:

Install shade sails or use pool covers where possible to reduce UV degradation.

Maintain Correct Chemistry:

Maintain water chemistry within the ideal ranges:

- pH: 7.2–7.6
- Chlorine: 1.0–3.0 ppm
- Total Alkalinity: 80–120 ppm
- Calcium Hardness: 200–400 ppm

Regular Inspection & Touch-ups:

Check silicone joints every 6 months and reapply if you notice early signs of lifting or discolouration. Catching issues early avoids more costly repairs.

Remedial Actions

Spot Repair:

For small peeling areas:

1. Cut away the loose silicone using a plastic scraper, copper or stainless blade or spatular.
2. Clean the area thoroughly with isopropyl alcohol.
3. Allow to dry fully before applying a fresh bead of pool-grade silicone.
4. Massage in removing any air bubbles.
5. Smooth using a wet finger or finishing tool.
6. Allow to cure fully (usually 24–48 hours).



Full Reapplication:

If large sections are affected, it's best to reseal the entire joint or pool:

1. Cut away all old silicone using a plastic scraper, copper or stainless blade or spatular.
2. Clean the area thoroughly with isopropyl alcohol.
3. Allow to dry fully before applying new silicone in one continuous motion, avoiding breaks or air gaps.
4. Smooth using a wet finger or finishing tool.
5. Allow to cure fully (usually 24–48 hours).

Install a Pool Liner or Membrane:

In cases where silicone joints are repeatedly failing due to movement, age, or exposure, installing a vinyl liner or membrane can offer a long-term solution. The liner forms a waterproof barrier between pool water and the steel structure, reducing reliance on silicone joints and helping prevent leaks and corrosion caused by water ingress.

For added peace of mind and to extend your warranty coverage, a liner installation may also be recommended in high-use or coastal environments.