



COMMERCIAL POOL SURFACE CARE MANUAL

A guide to maintaining CGT's reinforced PVC membrane systems to support long-term performance.



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Membrane Care and Maintenance

CGT reinforced PVC membrane is a specialty pool surfacing solution for swimming pools in commercial applications. All CGT membranes have been carefully designed, engineered and manufactured to provide an excellent solution to the waterproofing and finish demands of all types of pool construction, and pool programming. These surfaces offer superior, long life-cycle resistance to effects of climate, pool chemicals, UV light, and swimmer interaction.

CGT understands the challenges in achieving and maintaining consistently good water chemistry. With this in mind, CGT reinforced membrane has been formulated to help operators overcome these challenges by providing extended protection against biological growth, while being easy to care for. And, with the shared goal of having the membrane perform and look great over its entire lifecycle, it is important that your pool chemistry stay within acceptable ranges and that chemicals are not misused. Water chemistry outside of acceptable ranges can harm the membrane's performance and aesthetic.

Recommendation: Water test kits are a reliable way to keep informed of your current water chemistry. Your preferred vendor of test kits can be a strong resource for additional expertise on pool chemistry.

Inspecting for Foreign Debris

The presence of foreign debris introduced into the pool during construction can cause damage to the membrane and result in leaks. It is important to wear appropriate footwear whenever walking or working in the pool, and to take preventative measures to minimize construction materials such as nails, screws, wire, concrete splatter, tools, ladders, scaffolding, etc. from coming into contact with the membrane. Prior to filling the pool, it is recommended to perform a thorough inspection of the entire pool and fittings for foreign debris and any potential damage that may have been caused. Any damage found in the inspection should be remedied prior to filling the pool. Upon starting the circulation system, any debris introduced into the pool from the piping should also be removed appropriately.

Water Awareness

Water from your Municipality's potable water delivery system and well water can be acceptable sources for filling your pool and topping up from evaporation and splash out water loss. Whatever your source of water, it is important that you ensure it does not contain heavy metals such as iron, copper, or manganese. These metals can cause discoloration of the membrane. If your water has a high concentration of calcium (hard water), you should take appropriate measures to reduce lime and calcium to acceptable levels, avoiding damage to the surface of the membrane.

Recommendation: depending on your region, source water can vary from season to season. Having your water tested for the presence of heavy metals twice a year will help identify any seasonal changes.

pH Levels

Water pH is the measure of acidity/basicity level in your pool. The pH level you maintain (between 7.2 and 7.6) could affect swimmer comfort and the effectiveness of the chlorine in keeping your pool clean. Chlorine needs a certain pH level to kill bacteria and algae. Total alkalinity for optimal performance of the membrane is in the range of 80 to 100 ppm. Water chemistry outside of these ranges could reduce the effectiveness of chlorine and can cause corrosion and/or metal deposits to form.

Free Available Chlorine Levels

Free available chlorine (FAC), or the residual amount of unreacted chlorine contained in the water, should be maintained between 1.0 and 3.0 ppm or as per local regulations. If the free chlorine drifts too low, algal and bacterial growth may occur and prolonged exposure could stain the membrane. Pool surfaces are also susceptible to bleaching or loss of colour if exposed to high concentrations of FAC. Should recommended concentrations be adhered to, slight bleaching and fading can occur gradually over a period of several years.

Increase in Chlorine Levels in Special Circumstances

Outside of normal operation parameters, there may be reasons to superchlorinate your pool. Direct contact of the membrane with trichloro-iso-cyanurate stabilized chlorine can result in an almost total bleaching of colour in a time as short as 6 to 24 hours. The reasons are a high available chlorine content of 90%, the low solubility or rate of dissipation of the granules or pucks, and extremely low pH produced in the contact areas.

The immediate effects of other types of chlorine such as dichlorisocyanurate, calcium hypochlorite, sodium hypochlorite (liquid chlorine) is not as rapid and severe if they are not mixed with other chemicals during or shortly after addition to the pool. Solutions of the above chlorines can be applied directly to the membrane for several hours to bleach stains without adversely affecting the membrane.

If the concentrations of the above FAC are allowed to remain higher than the recommended levels of 5.0 ppm for superchlorination or 10.0 ppm for shocking, or for long periods of time, gradual bleaching of most membranes will occur. If the concentration level exceeds 10.0 ppm, be aware of the potential for negative effects of the membrane.

Water Stabilizer Levels*

Where cyanuric acid stabilizer is used, it is recommended to have your pool routinely stabilized in a range between 25 ppm and 50 ppm. A level of less than 50 ppm combined with a pH level of less than 7.0 and/or a FAC level higher than 3.0 ppm can cause the membrane to reach its cycle.

*Check with your local/state/provincial regulations

Calcium Hardness

Calcium levels should be kept at a minimum level of 200 ppm to avoid creating corrosive conditions. Calcium levels over 500 ppm may cause problems such as cloudy water or scaling on the surface of the membrane.

Water Temperature

The maximum recommended water temperature for the membrane is 35°C (95°F). Warmer water can breed higher levels of bacteria, which increases the need for additional chemicals. Increased chemical use can negatively impact the membrane lifecycle performance.

Introduction of Pool Chemicals

For optimal conditions, please treat the pool with one chemical at a time to ensure the membrane achieves its lifecycle. High concentrations in small areas and combinations of pool treatment chemicals may have a negative effect on the colour of the membrane.

Cleaning Products and Materials

CGT reinforced membrane's transparent topcoat provides strong protection from micro-abrasion and the adherence of contaminants. Proper surface cleaning may include the use of soft brushes, soft microfiber towels, pressure washing (under safe practices), gentle agitation, and cleaning products specifically designed for the removal of contaminants from the surface of the membrane so as to maintain the integrity and performance of the topcoat. **Do not use** abrasive cleaning products or processes (e.g., steel wool, sharp bristled brushes, scouring pads, etc.). It is recommendable to first test cleaning products in a small, inconspicuous area prior to general application. Always follow the manufacturer's instructions, paying special attention to dilution rates, dwell times, and product application/removal instructions as applicable.

Swimming Pool Covers

A swimming pool cover for the offseason may help reduce the accumulation of debris and organic matter that may have negative effects on the membrane.

Closing/Winterizing the Pool

At the end of the pool season, adjust the water level to the aquatic consultant and/or pool supplier's recommended level. Perform periodic checks for larger debris that has fallen in the pool and remove.

Organic Staining

Organic stains can range widely in colour and intensity.

The most common sources of organic stains are:

- Dirt
- Mud
- Leaves
- Algae/Bacteria
- Bugs
- Other organic debris

Green or brown membrane stains usually come from organic matter like algae, leaves, bugs, and mud.

Red or purple stains often come from berries or fruit falling into the pool from nearby bushes or overhead trees. Light pink stains can also be a sign of bacterial buildup.

Black stains/spots on a pool membrane can come from algae buildup.

Metal Staining

Metal stains come in a wide range of colors and are typically caused by:

- Metal pool parts (ladders)
- Corroded pool pipes
- Pool heaters
- Water

Teal or blue-green stains indicate that you have an issue with copper. The copper stains could be originating from pipes or they could be leaching from the pool heater due to improper chemical maintenance.

Reddish-brown stains typically come from iron in the pool. Sometimes, the pool membrane will also be stained yellow. These rusty patches on the membrane can come from metal parts, like handrails or ladders, but they can also be caused by corroded iron pipes or well water.

Grey to black stains on a pool membrane also often come from metals like manganese which usually comes from well water

Note: Most pool stains are also either caused or worsened by inadequate water chemistry conditions.

Tips to Reduce the Risk of Pool Membrane Stains

- Keep your pool chemistry balanced
- Keep debris out of the pool, and don't let leaves or dirt sit on steps or the pool floor
- Use metal sequesters when needed to keep metals from building up again if you've had problems with it in the past
- Using a pool cover to keep dirt and debris out
- Brush and vacuum your pool as required to avoid accumulation of contaminants

Please consider that the above circumstances are unlikely to occur if proper care and maintenance of the swimming pool are observed.

Should you have any questions about your pool, call your dealer – they are your pool professionals.





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