The information stated within this document is for reference only and is not intended to be used as a basis for exact pool and pool water maintenance. Please contact a pool water specialist in your area for more precise and concise pool water maintenance requirements and to set up a suitable pool water maintenance regimen for the specific pool. For more information please refer to the LATICRETE Tiled Swimming Pools, Fountains and Spas Technical Design Manual, TDS 179 “Pool Maintenance Guide”, and TDS 192 “Installation of Ceramic Tile in Swimming Pools”. To locate a pool water specialist in your area please visit www.apsp.org.

Opening a Pool

- Remove, clean and store the pool cover
- Thoroughly clean and vacuum the pool
- Add water to the desired height at the prescribed rate of 1” (25mm) per hour
- Test water balance, pH, Calcium Hardness, Cyanuric Acid, and Total Alkalinity levels
- Inspect electrical service, filters, skimmers, drains, ladders, diving boards, plugs, gauges, and other important components of the system
- Lubricate fittings, valves, o-rings, and plugs
- Inspect tile and grout installations, and clean tiles and skimmer with cleanser
- Take a sample of pool water to a pool water expert for analysis
- Clean and inspect pool deck
- Skim pool water surface and vacuum pool bottom
- Backwash filter if necessary
- Shock pool water to breakpoint levels
- Adopt a routine maintenance program for the season
- Add algaece as required

Pool Maintenance (daily)

- Run pool filter for 10 - 12 hours
- Test and adjust sanitizer level (may require more frequent testing depending upon bather load and environmental conditions)
- Visually inspect pool water for clarity, color and visible contaminants
- Test and adjust pH (may require more frequent testing depending upon bather load and environmental conditions)
- Water temperature

Pool Maintenance (2 – 3 times weekly)

- Empty skimmer and pump basket (may require more frequent cleaning)

Pool Maintenance (weekly)

- Test and adjust Alkalinity
- Test and adjust Oxidizer and Stabilizer levels
- Remove leaves and debris
- Brush pool walls and floor and vacuum pool
- Check filter pressure and backwash only if required
- Check water level and adjust as necessary at the prescribed rate of 1” (25mm) per hour
- Add a preventative dose of algaece as necessary
Pool Maintenance (bi-weekly)

- Test and adjust Calcium Hardness

Pool Maintenance (monthly)

- Best advice, take a sample of pool water to a pool water expert for analysis
- Test and adjust for Total Dissolved Solids
- Test and adjust for Metals
- Test Cyanuric Acid levels (unless stabilized chlorine is used, then test once every two weeks)
- Chemically clean the filter
- Visually inspect tile, grout, sealant, and other exposed elements of pool
- Conduct Langelier Saturation Index ($LSI = pH + TF + AF + CF - 12.1$) evaluation and adjust as necessary

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Total Alkalinity †</th>
<th>Calcium Hardness</th>
</tr>
</thead>
<tbody>
<tr>
<td>°F</td>
<td>TF</td>
<td>ppm</td>
</tr>
<tr>
<td>32</td>
<td>0.0</td>
<td>25</td>
</tr>
<tr>
<td>37</td>
<td>0.1</td>
<td>50</td>
</tr>
<tr>
<td>46</td>
<td>0.2</td>
<td>75</td>
</tr>
<tr>
<td>53</td>
<td>0.3</td>
<td>100</td>
</tr>
<tr>
<td>60</td>
<td>0.4</td>
<td>125</td>
</tr>
<tr>
<td>66</td>
<td>0.5</td>
<td>150</td>
</tr>
<tr>
<td>76</td>
<td>0.6</td>
<td>200</td>
</tr>
<tr>
<td>84</td>
<td>0.7</td>
<td>250</td>
</tr>
<tr>
<td>94</td>
<td>0.8</td>
<td>300</td>
</tr>
<tr>
<td>105</td>
<td>0.9</td>
<td>400</td>
</tr>
<tr>
<td>800</td>
<td>2.9</td>
<td>800</td>
</tr>
</tbody>
</table>

Use the reading closest to your actual reading in choosing the factor.

† Total alkalinity in this context refers to the total of carbonate and bicarbonate alkalinity. If cyanuric acid is used, a correction factor must be used (refer to local pool water specialist for the cyanuric acid correction factor).

Source: ANSI/APSP-11 2009

For example: The Langelier Saturation Index of pool water (without cyanuric acid correction factor) with a pH of 7.6, a temperature of 81°F (TF), Total Alkalinity (AF) of 100, and Calcium Hardness (CF) of 400 is calculated as $SI = 7.6 + 0.7 + 2.0 + 2.2 - 12.1 = 0.4$.

Closing a Pool

- Best advice, take a sample of pool water to a pool water expert for analysis
- Balance the pool water chemistry, typically to the following levels;
  - pH: 7.2 – 7.6
  - Total Alkalinity: 80 – 120 parts per million (ppm) [80 – 120 mL/L]
  - Calcium Hardness: 180 – 220 ppm
- Run the filter continuously for 24 – 48 hours
- Remove skimmer baskets, cleaners, ladders, wall fittings, and solar blankets from the pool
- Lower the water level in the pool to 6” (150mm) below the skimmer level at the prescribed rate of 1” (25mm) per hour
- Drain all pumping, filtering, heating, and sanitizing equipment to prevent damage caused by freezing
- Lubricate o-rings, valves and plugs to make opening the pool in the spring easier
- Thoroughly clean and vacuum the pool
- Winterize the plumbing by blowing out the lines and plug the lines with expansion plugs
- Add winterizing algaecide
- Cover the pool with a tight fitting cover
<table>
<thead>
<tr>
<th>Chemical</th>
<th>Minimum</th>
<th>Ideal</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine</td>
<td>1 ppm (0.001 mL/L)</td>
<td>2 - 3 ppm (0.002 – 0.003 mL/L)</td>
<td>4.0 ppm (0.004 mL/L)</td>
</tr>
<tr>
<td>Cyanuric Acid</td>
<td>25 ppm (0.025 mL/L)</td>
<td>30 - 80 ppm (0.03 – 0.08 mL/L)</td>
<td>100 ppm (0.1 mL/L)</td>
</tr>
<tr>
<td>Bromine</td>
<td>2 ppm (0.0002 mL/L)</td>
<td>2.5 - 4 ppm (0.0025 – 0.004 mL/L)</td>
<td>5 ppm (0.005 mL/L)</td>
</tr>
<tr>
<td>Total Alkalinity</td>
<td>60 ppm (0.06 mL/L)</td>
<td>80 - 120 ppm (0.08 – 0.12 mL/L)</td>
<td>180 ppm (0.18 mL/L)</td>
</tr>
<tr>
<td>Calcium Hardness</td>
<td>150 ppm (0.15 mL/L)</td>
<td>200 - 400 ppm (0.25 – 0.4 mL/L)</td>
<td>1000 ppm (1.0 mL/L)</td>
</tr>
<tr>
<td>Total Dissolved Solids</td>
<td>NA</td>
<td>NA</td>
<td>Shall not exceed 1500 ppm*</td>
</tr>
<tr>
<td>Cyanuric Acid</td>
<td>0 ppm (0 mL/L)</td>
<td>0 ppm (0 mL/L)</td>
<td>0.1 ppm (0.0001 mL/L)</td>
</tr>
<tr>
<td>pH</td>
<td>7.2</td>
<td>7.4 - 7.6</td>
<td>7.8</td>
</tr>
</tbody>
</table>

* Shall not exceed 1500 ppm at start up.


Check with local pool water specialist for specific pool water guidelines and ranges for each specific pool project.