Biofouling Prevention in Cooling Towers

- Prevent biofouling formation
- Lower bacterial counts
- Reduce chemical expenses
**Biofouling Prevention in Cooling Towers**

The LG Sonic Industrial Line provides cost-effective solutions to prevent and control biofouling through the use of ultrasonic sound waves.

**Benefits of the ultrasonic treatment:**

- Prevent biofouling formation
- Lower bacterial counts
- Reduce chemical expenses

Within the Industrial Line, there is an Industrial Wet or Industrial Dry option available depending on the specific situation.

**LG Sonic Industrial Wet**

- Throughout the water body, within a pipe or mounted alongside a submerged surface

**LG Sonic Industrial Dry**

- Through the dry side of a surface such as a pipe. The ultrasound is effectively transmitted through the material

<table>
<thead>
<tr>
<th>How the ultrasound is transmitted</th>
<th>Which problem will be solved</th>
<th>Typical applications</th>
<th>Treatment range</th>
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</thead>
<tbody>
<tr>
<td>Throughout the water body, within a pipe or mounted alongside a submerged surface</td>
<td>Reduce floating algae, prevent the growth of biofouling on the walls</td>
<td>Cooling basins, Clarifiers</td>
<td>Up to 30m/100ft per device</td>
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<tr>
<td>Through the dry side of a surface such as a pipe. The ultrasound is effectively transmitted through the material</td>
<td>Prevent the growth of biofouling in heat exchanges and pipes.</td>
<td>Heat exchanges, Sea chests</td>
<td>Up to 10m/30ft per device</td>
</tr>
</tbody>
</table>

**How Ultrasound can Prevent Biofouling Formation**

Specific ultrasonic frequencies, waveforms and amplitudes can be utilised to directly target biofilms. Benefits of the ultrasonic treatment:

1. Prevent bacteria from settling on a surface in the primary stages of biofilm formation
2. Alter the structure of an existing biofilm, eventually breaking it down
3. Control potential algae attaching to a biofilm

*Learn more about ultrasound*
LG Sonic Biofouling Prevention Products

LG Sonic Industrial Wet

The LG Sonic Industrial Wet uses sound waves to prevent biofouling growth. The solution is to install one or multiple systems that transmit specific ultrasonic parameters depending on the level of contamination.

- Specific ultrasonic parameters reduce up to 70% of the biocide use
- Integrated Aquawiper™ automatically cleans the ultrasonic transmitter
- Remotely controlled, avoiding the need for frequent site visits

LG Sonic Industrial Dry

The LG Sonic Industrial Dry uses sound waves to prevent biofouling growth. The solution is to install one or multiple systems that transmit specific ultrasonic parameters depending on the level of contamination.

- Multiple ultrasonic programs for effective biofouling prevention
- Ultrasonic treatment reduces chemical consumption
- No use of cavitation for a longer product lifetime

Learn more about the LG Sonic Industrial Line
**The challenge**
Al Futtaim Cooling district plant incorporated LG Sonic technology into their chemical treatment program to reduce biocide consumption in the cooling towers and to improve the water quality.

**Applied product**

LG Sonic Industrial Wet

**Key results**
- Up to 69% reduction in biocide dosage
- Up to 53% reduction in anti-scalant dosage
- Microbial analysis showed that the water was of satisfactory quality and within specific limits

“Lowered algae, biofilm formation, bacterial counts, and chemical consumption”.

**Case study: Biocide Reduction in a Cooling Basin**

Over 10,000 LG Sonic algae and biofouling control products have been successfully installed in a wide range of applications in 52 different countries

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**LG SONIC**
Leading in ultrasonic algae control