

WAPOTEC[®] System

An innovative water treatment system for commercial swimming pools that provides water of outstanding clarity and hygiene.

With the **WAPOTEC[®]** System you can expect:

- Clear, clean pool water
- A pool that's safe for bathers with asthmatic or skin conditions
- An odour-free pool environment
- Efficiency in eliminating biofilms
- A treatment that doesn't produce combined chlorine or THMs
- Savings on energy, water and chemicals
- A reduced carbon footprint



before



after

What a difference the Wapotec[®] System makes!

Water clarity, odour and hygiene are greatly improved as more pollutants are removed from the pool.



We do fantastic things with water!

What is the Wapotec® System?

Using an advanced flocculation/filtration process and chlorine dioxide, the Wapotec® System enhances the efficiency of traditional chlorine treatment in a two-part process:

- **Enhanced filtration** – to optimise water quality and reduce chlorination by-products, irritation to swimmers and corrosive air-borne vapours.
- **Advanced disinfection** – using a safe chlorine dioxide based process, which does not produce combined chlorine or THMs as a result of the oxidation of bacteria and organic debris.

The result? Excellent water quality and a comfortable odour-free environment - as well as energy-saving advantages.

Why Wapotec®?

Public swimming pools are under pressure to reduce water consumption as well as operating costs for heating air and water, whilst providing excellent water quality.

Getting the balance right is often difficult, particularly in facilities with high bather loads or where the pool has little 'recovery time' without bathers. Today's higher water temperatures and the tendency for utilising more natural daylight in the pool environment increase demands on the pool treatment system.

If filtration is inefficient, chlorine will need to do more work – producing more by-products, a corrosive atmosphere and irritation to swimmers and pool staff. With the Wapotec® System, pool water quality can be dramatically improved.



Corrosion damage to fixtures can lead to repair bills of tens of thousands of pounds in just a few years.

The effect on air quality and corrosion

Air quality problems are often blamed on incorrect HVAC system design, insufficient fresh air mix or turnover rates. Design and operation are important, but if the water quality is not optimal, the air quality will always suffer.

For example, THMs (trihalomethanes), mainly in the form of chloroform, are produced as a result of the action of chlorine on certain organic substances. Generally, the higher the organic loading in the pool, the more THMs will be formed.

As well as being harmful to pool staff and regular swimmers, THMs hydrolyse in the pool hall atmosphere to be deposited as hydrochloric acid on steel surfaces. As this acidic moisture evaporates, highly corrosive chloride salts remain on the stainless steel surfaces causing pitting and corrosion. This can be prevented with the Wapotec System.

How does the Wapotec® System work?

The Wapotec® System optimises the treatment steps of coagulation, flocculation, filtration and disinfection.

Step 1

The first step of the WAPOTEC System enhances flocculation/filtration. HydroSan®, a liquid flocculation agent, is injected in small quantities in addition to PAC (polyaluminium chloride). HydroSan accelerates the flocculation process to help capture and bind more particles together, enabling the sand filter to remove a larger proportion of debris and substances from the pool water.

Unlike using PAC alone, HydroSan produces a porous floc structure, allowing the sand filter to operate with lower flow resistance, whilst retaining more filtered debris on the filter surface.

As the pool water is physically cleaner, the oxidation workload for chlorine is reduced - meaning fewer disinfection by-products and lower chemical and fresh water consumption.



The WAPOTEC® System uses precision dosing stations with Alldos 'TrueDos Plus3' dosing pumps for accuracy and reliability. Technical involvement for the operator is minimal, and servicing/audit visits are all part of the technical support service, at no extra charge.

Step 2

HydroXan®, a patented TCDO (tetrachlorodecaoxygen) compound, is used in combination with chlorine to modify the disinfection chemistry. On contact with organic substances, and in the presence of chlorine, HydroXan produces a small residual of chlorine dioxide. A powerful oxidising agent, chlorine dioxide does not produce combined chlorine or THMs through oxidation. It is much faster acting than chlorine and excellent in destroying pool odour and reducing irritation.

Hydroxan® can greatly improve the pool water quality by taking on a significant portion of the oxidation workload that would otherwise be done, less efficiently, by chlorine. Hydroxan® is maintained as a residual in the pool water, providing protection of your water quality the instant that bathers enter the water - something that UV and ozone treatments can't provide.



Biofilm removal during the treatment of a balance tank, producing a slimy deposit. Biofilms can protect pathogenic bacteria such as P.Aeruginosa and Legionella against chlorine disinfection.

Chlorine dioxide has significant advantages

- The only disinfectant effective against biofilms - a slimy substance that can form in balance tanks and filters, allowing harmful bacteria to proliferate.
- Chlorine dioxide is recognised for its efficacy in countering cryptosporidium in around six hours at normal operating residuals and pool temperatures - faster than ozone and UV systems, which require at least six pool turnovers to treat the majority of the pool water.
- TCDO is classified as non-toxic and non-irritant at the concentrations of use in the Wapotec System. As no toxic or carcinogenic chlorination by-products are formed during oxidation, chlorine dioxide has the lowest environmental impact of any biocide in use in swimming pools today.

Fast acting and effective

The Wapotec® System provides a complete pool water treatment method for excellent effects on the water and air quality in the pool hall. Set-up costs are lower than most alternative treatments, and the System offers long-term cost and environmental benefits.



Optimised flocculation-filtration is the fastest, most effective method of physically removing parasites such as Cryptosporidium and Giardia. As you can see from the table, the System provides extra help in disinfecting and clarifying pool water.

without Wapotec®	Filtration	Chlorination	Resulting in chloramines and odour	
with Wapotec®	Enhanced flocculation-filtration	Chlorination	Chlorine dioxide oxidation	Reduction in chloramines and odour

What other system does all this?

- Produces excellent water quality.
- Neutralises pool odour - no 'chlorine smell'.
- Supremely efficient in preventing biofilms.
- Does not produce combined chlorine or THMs.
- Fast acting. Effective against cryptosporidium in six hours – faster than ozone or UV systems.
- Reduces irritation.
- Chlorine dioxide has the lowest environmental impact of any swimming pool disinfection system.
- Reduces water consumption and air/water heating costs.



We do fantastic things with water!