

NEUTHOX® removes legionella bacteria and biofilm

Hotel Terme della Sardegna (Sardinia, Italy) saves 12.000 € yearly by having a clean water sistem

Danish Clean Water is the manufacturer of an ECA generator, which produces the disinfectant liquid, NEUTHOX®.

NEUTHOX® is produced through an electrolysis process, where only electrical power, common salt and water is used, and is a clear 100 % biodegradable liquid which eliminates dangerous bacteria, such as Legionella and Salmonella, in water.

The DCW generator is fully automatic and adds NEUTHOX® to the water system using a programmable controller, which ensures that the dosage is adjusted to the current bacteria content in the water.

Over a period of time NEUTHOX® will remove the existing biofilm in the piping completely, and continuous use will prevent biofilm from occurring again in the future.




Danish Clean Water



"It has long been widely believed that hard chemistry was the only effective weapon against legionella. With our generator, you can certainly prevent and combat legionella- without risk to either people or environment"

*Hardy Jepsen
Director of Danish Clean Water*

Fact about legionella

Legionella is a bacteria which occurs naturally in surface water, rivers, lakes, wastewater and drinking water. The bacteria thrives in warm water, which is why it is often found in hot water installations. Legionella spreads via water particles in the air, and inhalation of the bacteria therefore becomes a risk, when e.g. showering in water that holds the bacteria. Legionella is known to cause Legionnaires' disease or Legion fever, which is a form of pneumonia, and the flu like Pontiac fever.

What is biofilm?

Biofilm consists of living and dead organic, and inorganic material collected on a surface, which in water systems typically occurs as a patch on a pipe surface. Biofilm contributes to increased bacterial levels, taste and odor changes, corrosion, and reduced material life *.

Biofilm has a slimy substance, which forms a protective layer for the bacteria to live in. Eliminating the bacteria can therefore be a challenge, since the biofilm has to be removed first.

* 2003 World Health Organization (WHO): Heterotrophic Plate Counts and Drinking-water Safety. Edited by J. Bartram, J. Cotruvo, M. Exner, C. Fricker, A. Glasmacher. Published by IWA Publishing, London, UK. ISBN: 1 84339 025 6.

Hotel successfully removes dangerous bacteria with NEUTHOX®



hot water



cold water



DCW's solution

Hotel Terme della Sardegna has existed for more than 20 years, but it was not until recently that the hotel experienced a severe problem with Legionella bacteria in their water system. Due to the lack of knowledge and information about these bacteria 20 years ago, the hydraulic circuit at the hotel was designed without the concepts that are standard today, e.g. a valve to discharge water on each floor, and no dead zone where water is not circulated. The hotel uses the hot water for special body treatments, and whirlpools, where inhalation of the water particles most likely will occur, which is why it is particularly important that the water is free of dangerous bacteria.

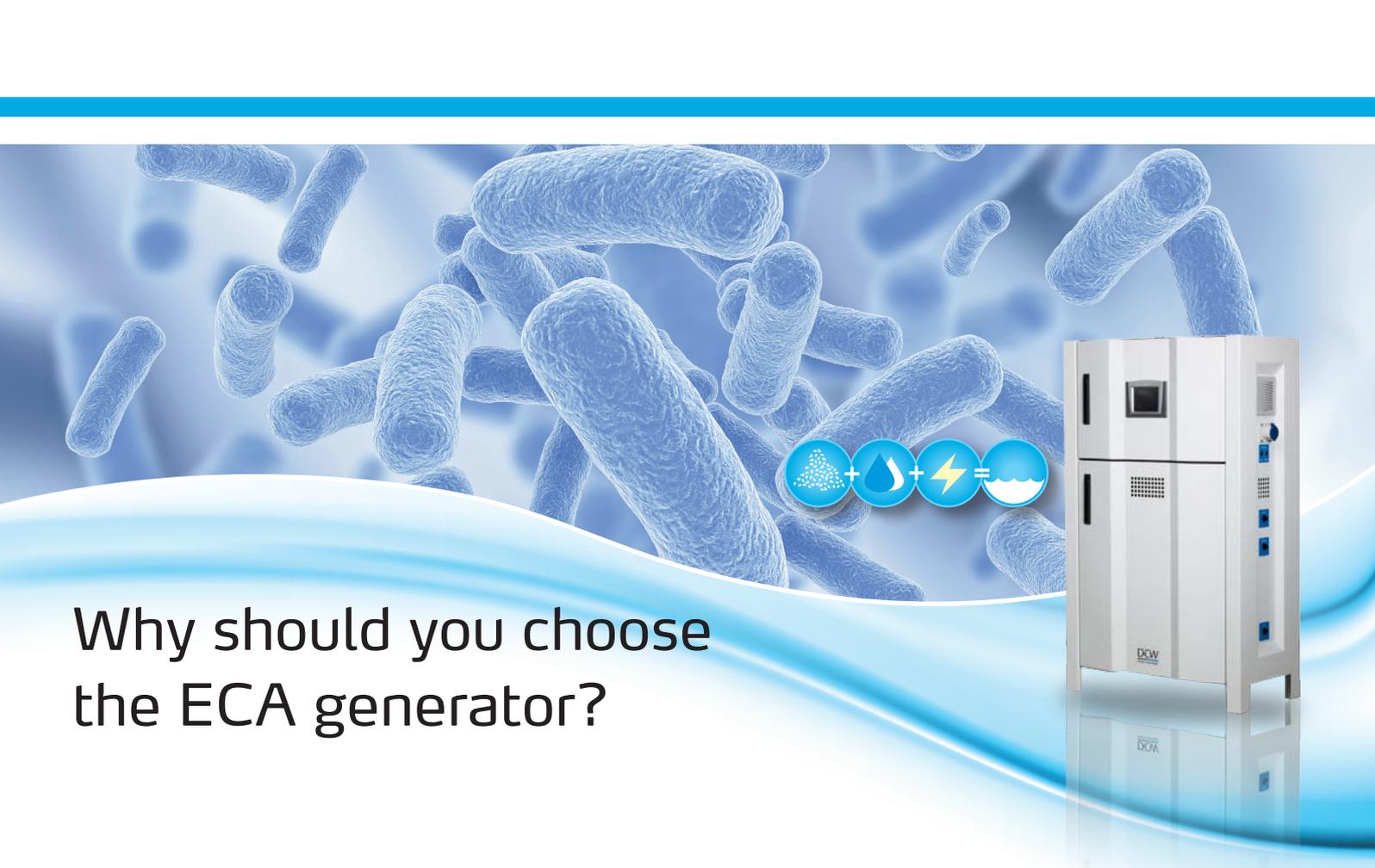
The pictures above shows the state of the hot (left) and the cold (right) water after the first dosage of NEUTHOX® - this was the result for the first few seconds. The colour of the warm water on the left is caused by the amount of biofilm in the water, which was incredibly high.

The biggest challenge was to remove the biofilm from one of the shower installations, where modification had been done to the pipeline years ago. The line was complex, and formed a siphon, where the concentration of biofilm was extremely high. In order to remove the biofilm, the line had to be modified once more, and a valve had to be added, so water could be discharged.

DCW's solution

The valves installed in the pipe that created a similar siphon. The vertical valve is to discharge the water, the other to open/close the passage of water.

From some months they have Legionella <math><10\text{ cfu/l}</math> (Not detectable) in each point where we cover with NEUTHOX® (shower, tap, vents)



Why should you choose the ECA generator?

There are plenty of good reasons to invest in an ECA generator, and many benefits to be gained. NEUTHOX® is produced with a modest amount of salt, water, and electric power and is a non-toxic and eco-friendly product. NEUTHOX® will terminate potentially dangerous bacteria like E-coli and Salmonella, and is a means to having peace of mind. You needn't worry about bacteria infested water pipes, or handling harmful chemicals when improving the hygiene with our ECA generator.

Good reasons to invest in one of our ECA generators:

- **Non-toxic and eco-friendly product**
- **Even at small doses NEUTHOX® removes biofilm in water systems**
- **NEUTHOX® can be used for multiple purposes**
- **Full automatic and user-friendly generator**
- **Procurement and storage of hazardous chemicals will no longer be necessary**
- **High quality components**



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