

Thursday 11 November - How to ensure the safety of your water

It is recommended to disinfect any surface water supplies like lakes, rivers, springs and shallow wells. On water from a water pumping system, with no disinfection techniques, for drinkable water, a microbiological analysis and a well disinfection should be done twice a year, to ensure the safety.

Among available procedures, the ultraviolet process finds frequent applications for unsafe well and surface water supplies with microbial contamination like bacteria, viruses, protozoan and other microbial contaminants. The ultraviolet is chosen in many different applications like homes, cottages, businesses, farms, municipalities, camping, for the water heater legionella control, etc.

If your water has microbial contamination, your first step is to know what contaminants are in the water supplies with a chemical analysis. The results will determine the proper pre-filtration if necessary.

Find appropriate system

- Many factors water quality and water flow influence the fluence (dose) of the radiance in a particular reactor.
- Fluence is a product of UV intensity and residence time within the reactor changes in the flow rates through a reactor will change the delivered fluence.
- NSF/ANSI standard stipulates that the UV system should produce a fluence of at least 40 mj/cm² at the fixed alarm point.

Installation procedures

- Pre-treatment is required when minimum water characteristics don't correspond.
- In front, installation of an appropriate spores reduction unit approved by NSF/ANSI standard. This will prevent microbial contaminants to use the particles as shield to survive the UV fluence. The UV lamp irradiates the organism with a lethal dose of germicidal UV light, rupturing its DNA (or RNA), rendering it incapable of reproducing and ultimately incapable of causing infection!
- A solenoid valve should be installed to stop water in case of a power surge, this will

prevent the contamination of the plumbing.

- A flow reduction is needed to get the proper delivered fluence.
- A disinfection of the plumbing to eliminate existing contamination.

Maintenance of the UV system

- After 9,000 hours (about 1 year) of continual service, the lamp should be replaced.
- A disinfection is recommended when changing the lamp.
- The quartz sleeve and the sensor window should be cleaned periodically.
- Approximately every six months, depending on the water usage, the filters should be changed.
- The proper maintenance of pre-treatment equipment is essential for the UV system to function properly.

When you choose a tested and recognized system by *NSF international for the performance of disinfection (class A) according to NSF/ANSI 55 standard, an experienced technician, up to standard installation and proper maintenance, the quality of the water is assured.