

Environmental technology

STERIMA - Liège

Biological wastewater treatment in container set-up

**Sterima** is specialized in integrated processes with regard to logistics and sterilization of surgical instruments. Until recently, these business activities were mainly carried out at the Bissegem site. To expand the existing capacity, a new establishment was built in 2017-2018 near the Liège airport in Bierset.

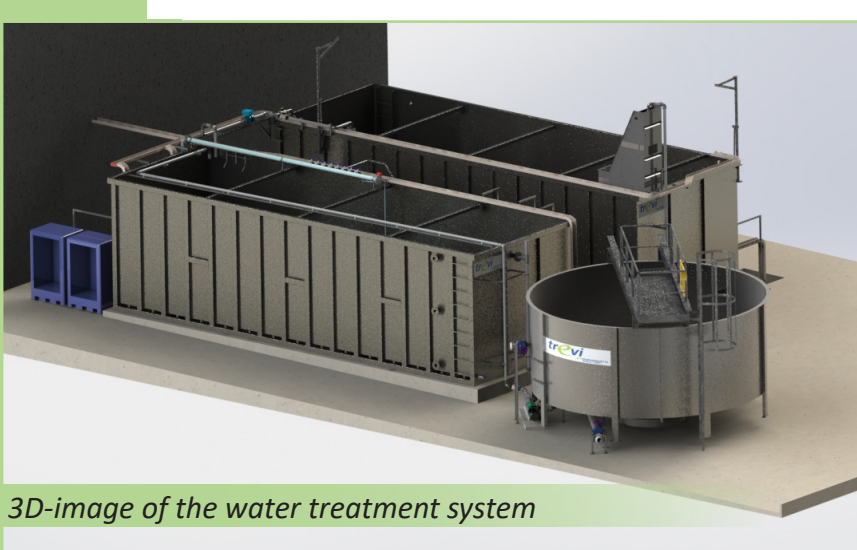
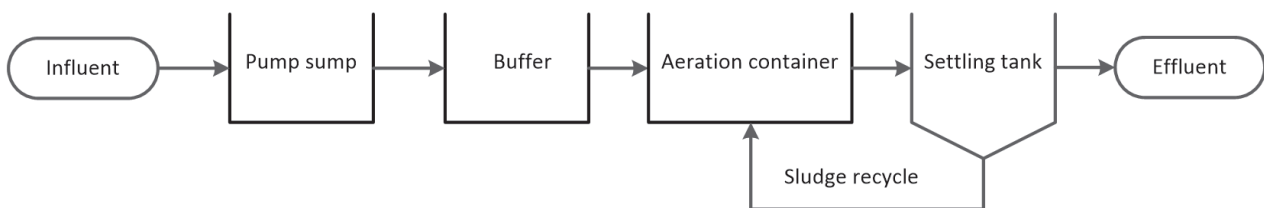
The generated wastewater as well as the municipal wastewater produced on-site is treated in a biological wastewater plant, including nitrification and denitrification processes.

Pilot tests have shown that the Sterima wastewater is readily biodegradable. In order to treat a flow of approximately 50 m<sup>3</sup>/d and taking into account the

expected waste load to be processed, Trevi opted for a continuous activated sludge treatment system, which consists of the components as shown, in the diagram below.

The buffer, aeration container and settling tank are made of stainless steel. The buffer and the aeration container provide a useful volume of 75 m<sup>3</sup>. The post settling tank has a diameter of 5 m and a conical bottom, allowing a continuous biological treatment.

The industrial wastewater is collected in a pump sump, to which the overflow of the septic tank is also connected.



3D-image of the water treatment system



Before entering the buffer, the wastewater passes a sieve bend which retains large contaminants. Due to the buffer basin, peak flows and peaks in concentration of pollutants are neutralized, allowing an even loading rate and improved operational reliability on the activated sludge aeration container.

In the activated sludge aeration container, eight fine-bubble aeration elements are installed, which are fed by a surpressor. The surpressor operates by a frequency control system in function of the actual demand of oxygen, minimizing energy consumption.

If necessary, the following chemicals can be added to the biological water treatment system: urea (as an additional nitrogen source), iron trichloride (active removal of phosphorus) and an anti-foaming agent.

In the settling tank the biologically purified wastewater is separated from the activated sludge. The latter is partly recycled to the biological treatment system. The effluent from the settling tank is discharged into surface water after passing a venturi flow meter.



*Buffer container with sieve bend (on the right)*



*Messner aeration elements*



*Post settling tank with scraper bridge and skimmer*



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