

Controlling the sequential aeration operation

The nitrification and denitrification stages are optimised by strict control of the aeration by using the ECOREDOX™ or REGUL-N™ systems.

Based on a measure of redox potential in the biological tank, ECOREDOX™ and REGUL-N™ ensure a good balance between the times when the aeration system is on and when it is off.

An additional ammonia level monitoring by REGUL-N™ downstream to the clarifier provides extra refining for the control of nitrogen treatment.

Furthermore, this ideal control of the biomass need for oxygen, used at numerous OTV sites, guarantees large energy savings.

Your Contact



AZENIT™ Wastewater



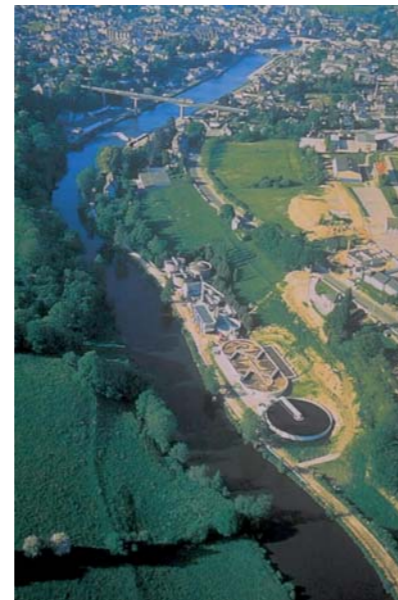
Definition and Application

AZENIT™ is a biological process for waste water treatment and is based around the activated sludge principle.

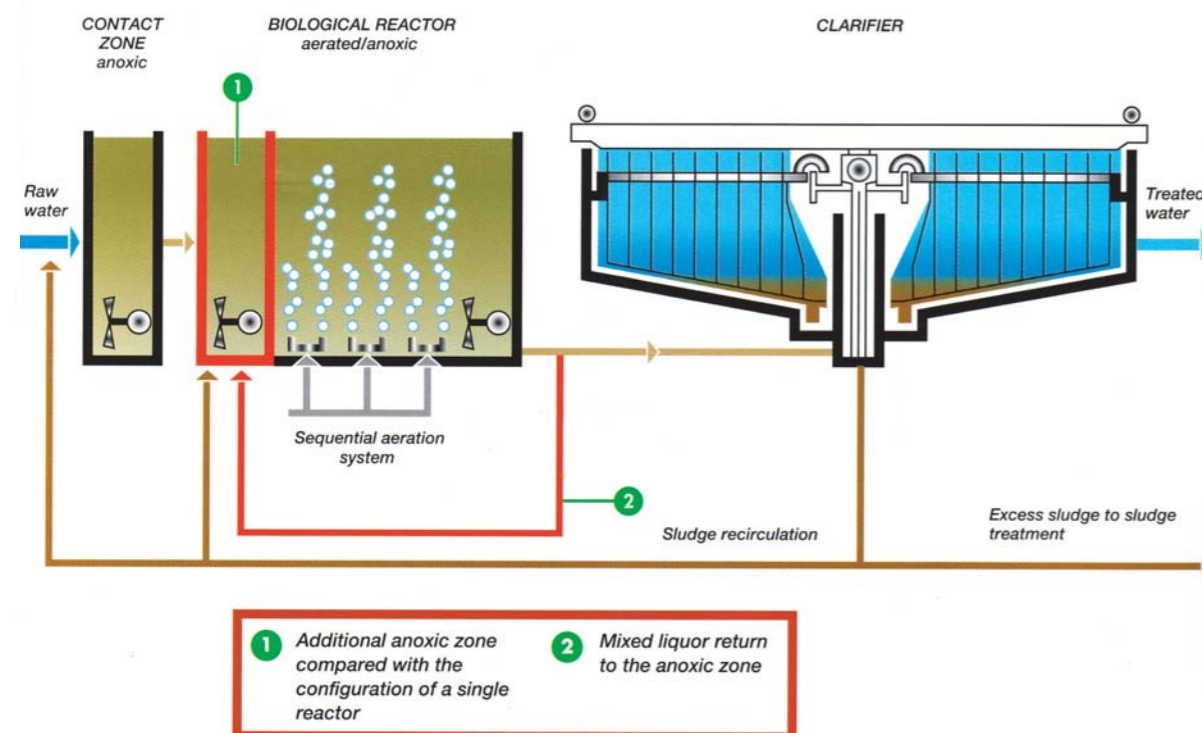
The AZENIT™ process is based on experience gained over many years of research, development and operational plants. The process provides the maximum quality and reliability for treatment plants.

AZENIT™ provides complete control of nitrification and denitrification within a single reactor thanks to the original principle of sequential aeration operation in conjunction with the implementation of a bacterial selector at the inlet to the treatment.

A variant of the process (AZENIT™ P) enables biological phosphorous removal in addition to carbon and nitrogen based pollution removal. This is achieved by the provision of a strictly anaerobic zone at the inlet of the biological treatment.



Operation Diagram



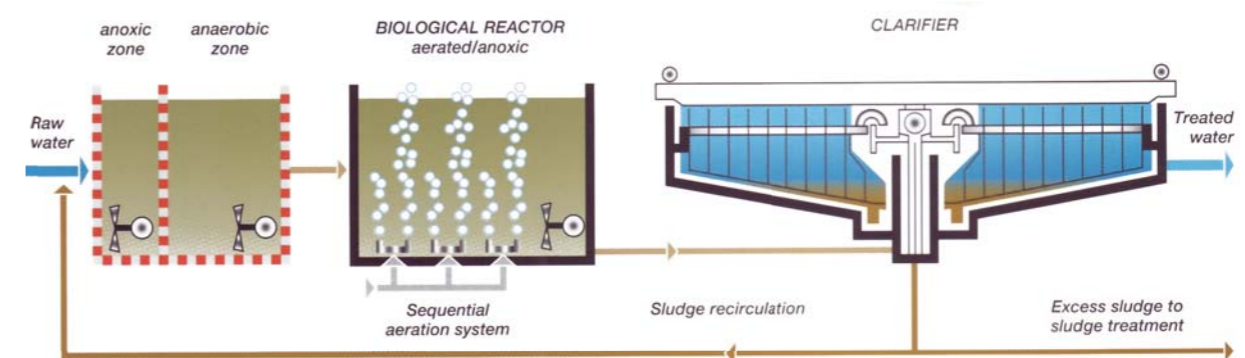
Basic Principles

AZENIT™ can be applied either as a direct treatment of raw water or downstream of a primary settling stage.

The influent passes through a contact zone where the inlet water is mixed with recirculated sludge. This first stage enables selection of non-filamentous species thus avoiding any floc expansion phenomena (bulking). Carbon-based pollution is oxidised and nitrogen eliminated in a biological reactor fitted with a sequential aeration control system (ECOREDOX™, REGUL-N™). The bacteria adapt their activity to the organic load and aeration conditions, some carry out nitrification in aerated conditions, others eliminate carbon and carry out denitrification during the non-aeration phases. The biomass concentration is maintained in the reactor by the partial recirculation of sludges from the clarifier.

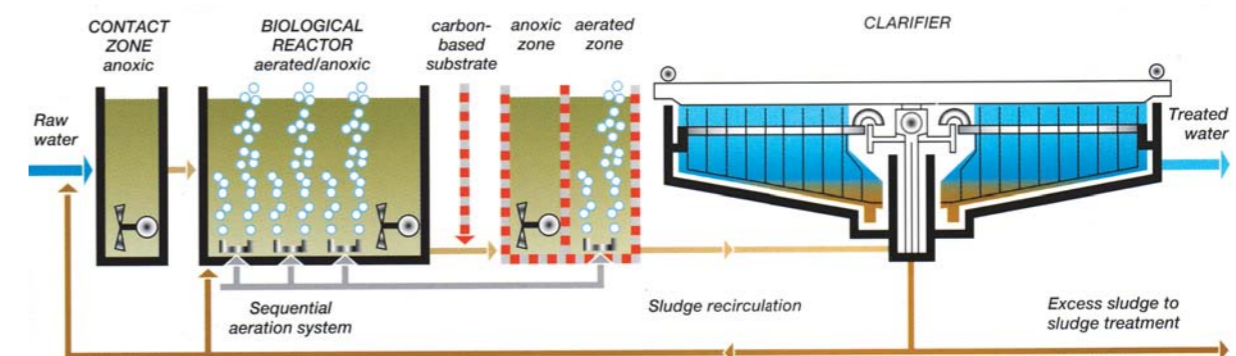
Depending upon the characteristics of the waste water to be treated, AZENIT™ can be used in two configurations:

- biological treatment in a single reactor,
- a single reactor with a dedicated anoxic zone upstream in which the mixed liquors are recirculated.



Biological Phosphorous Removal :

The biological process is readily extendable to provide phosphorous removal (AZENIT™ P). This is facilitated by the introduction of a small upstream anoxic zone providing strict anaerobic conditions. Assimilation of phosphorous by the biomass is optimised at this stage. The anoxic zone replaces the contact zone.



To adapt to particular conditions :

For stringent final water quality or when the influent is carbon-limited, carbon-based substrate is injected downstream of the biological tank. This post-denitrification stage gives optimum control of nitrates at the outlet with a minimum amount of added reagent (AZENIT™ C+ configuration).