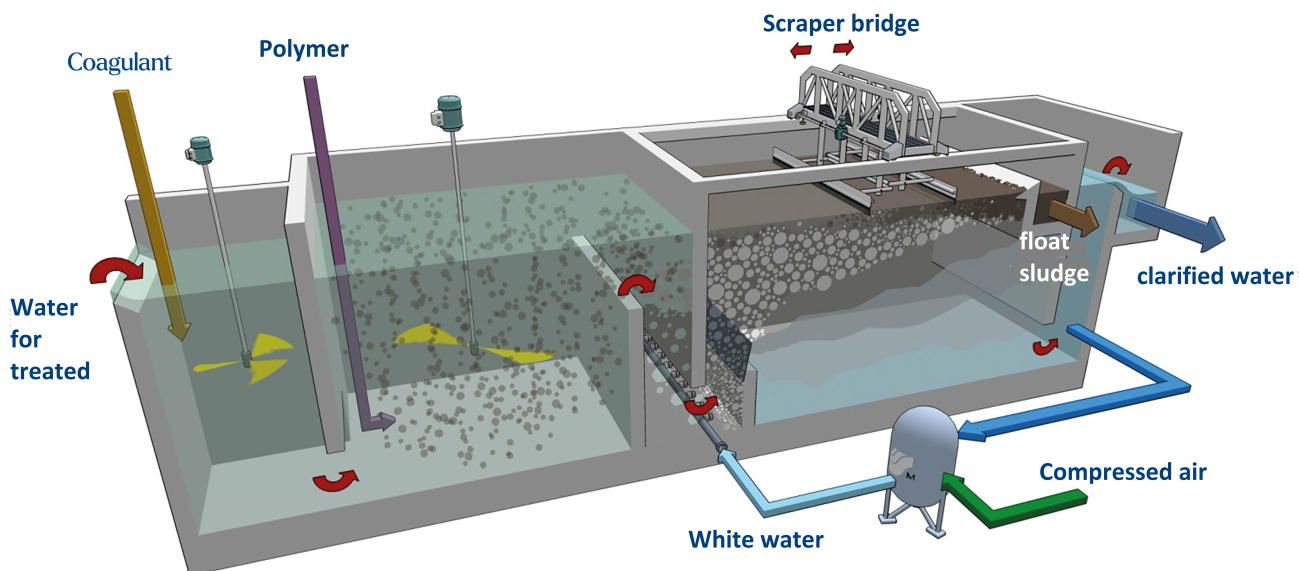


FLOTATION AÉROFLUX[®]

Process for removing organic matter and algae during the clarification stage

DID YOU KNOW? 80% of impurities (organic matter) are removed during the clarification stage. For every 1,000 liters of treated water, 2 liters of sludge are discharged.



AEROFLUX[®] technology is a process based on the principle of Dissolved Air Flotation (DAF) used for the clarification of drinking water.

The process involves lightening the floc with very fine air bubbles, causing it to float to the surface and form a thin layer of sludge that is periodically scraped off for sludge removal. These fine air bubbles are generated by injecting air into a pressure vessel partially filled with water (at 5-6 bars of pressure). This air-water mixture, known as white water, is channeled out of the vessel and released into the flotation unit where the previously flocculated water enters, through injection nozzles.

APPLICATION AREAS

- Removal of algae in surface water such as highly eutrophic reservoirs and rivers.
- Decolorization of low-suspended solids but highly turbid peat water due to its coloration.

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OPERATION

- Coagulation causes fine suspended particles and colloids to agglomerate into flocs.
- Flocculation facilitates the formation of larger flocs by adding a polymer. Flotation is then made possible by generating white water (air-water mixture) that produces fine air bubbles, which carry the flocs to the surface for flotation.
- The flocs are scraped off, and clarified water is collected through an overflow.



A process ensuring impeccable water quality.

- **Low water losses in this process:** When sludge is removed by scraping, water losses are minimal, as low as 0.2% (on average, 0.5%). When sludge is removed by lifting from the water surface, water loss can reach 1.5%.
- **Stable process operation**, even during algal blooms.
- **Capability to handle frequent plant shutdowns and restarts** without compromising treatment quality.

PERFORMANCE

The advantages of this process include:

- **Relatively small footprint**, comparable to EQUIFLUX® type lamellar settler, with velocities of up to 10 m/h.
- Effective removal of organic matter and algae.
- **Relatively high sludge concentration** (10-25 g/L) when removed by scraping. These significant concentrations indeed allow bypassing the construction of a thickening facility downstream of the clarification.

REFERENCE

Arguenon-Penthièvre, Bringall, Longeron, Graon, Saint-Briec, Kerné Uhel, Bois Joli, Saint-Lô



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