

WASTEWATER

# Cyclor® Turbo

Sequencing Batch Reactor  
with densified sludge



Pilot tests at the Carcassonne WWTP

A biological treatment intensification process that combines performance, economy and resilience

- ⇒ **Ensure an excellent effluent quality**
- ⇒ **Lower operating costs**
- ⇒ **Reduce footprint**

## A compact solution in a reactor with optimized hydraulics

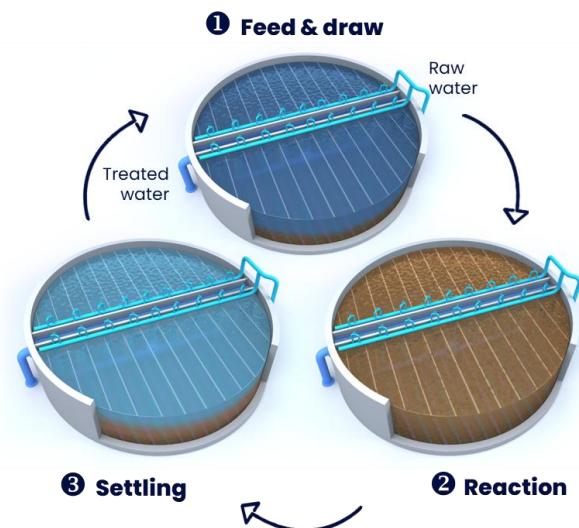
The solution combines the hydraulic and biological conditions to naturally develop a densified activated sludge with high settling capacity.

The raw water is fed under anaerobic conditions into the sludge bed, and simultaneously the treated water is taken from the upper part of the reactor using a patented fixed-level sealed system.

A compact solution  
up to

**-40%**

compared to a  
conventional SBR

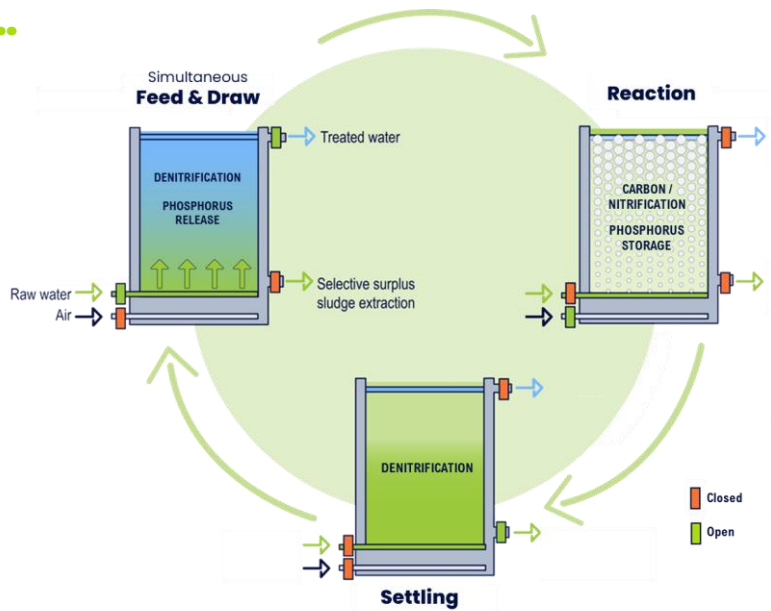


# The Cyclor® Turbo technology...

## Intensify biological treatment within less footprint

The Cyclor® Turbo process operates in three main phases within each cell:

- **Feed & Draw Phase:** The cell is fed at its bottom with raw water while the treated water flows out at its top, maintaining a constant liquid levels in the cell.
- **Reaction Phase:** It treats effluent by removing carbon, nitrogen by nitrification-denitrification and phosphorus by enhanced biological phosphorus removal.
- **Settling Phase:** Treated water is separated from sludge through rapid sedimentation thanks to sludge densification, with no filling or aeration. Excess sludge is removed.



The shape of the cells can be square, rectangular or circular depending the project specifications.

Furthermore, this technology includes two leak protection systems developed by SUEZ: an "AIR LOCK" system for stable water levels and cost savings, or a "WATER LEVEL LOWERING" system with limited variations, ideal for brownfield projects.

## ... what it can do for you

**Stabilized treated water quality**  
regardless of climatic conditions or operation variations.



### Improve settling properties

TSS < **15 mg/L**

Sludge settling velocity up to 4 times higher in comparison with conventional activated sludge.



**Footprint reduction divided by 2**  
in comparison with conventional activated sludge.



### Sustainability

Massive reduction in reagent requirements thanks to optimized biological dephosphatation.



### Energy cost saving

thanks to the simplified piezometric line and the absence of recirculation.

## Among our references

**La Roche-sur-Yon, France**  
26,000 m³/d (Greenfield)

**Central Manila, Philippines**  
180,000 m³/d (Greenfield)

**Morainvilliers, France**  
3,900 m³/d (Brownfield)

**Changsu Binjiang, China**  
8,000 m³/d (Brownfield)

**East St Paul, Manitoba, Canada:** Full-scale demonstration facility by NEXOM (Licensing partner) 800 m³/d

### SUEZ

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