



IPC® MEMBRANE BIOREACTOR (MBR)

ANIMAL WASTE – RENDAC NV, BELGIUM

Project Background

The modular approach of the IPC® modules led to a plant design with double-deck modules to expand in the same footprint to add an additional module layer on top to increase the capacity with an additional 50%.

In FASE 2, 8 double decks IPC® membrane modules were modified to 8 triple decks by adding 8 additional modules on top of the exiting membrane towers. The tank size is only 1,6 m x 6 m and 4,5 m high and has a tank surface area of 9,6 m².

This UNIQUE expansion delivered very a high capacity per footprint and a low specific aeration demand:

-Capacity/footprint: 6,3 m³ permeate/m² filtration tank footprint

-Capacity/footprint: 12,5 m³ permeate/m²module footprint

- Specific Aeration Demand per hour and per permeate volume produced, SADp = 6,5 Nm³ Air scour/h.m³ permeate.

Project: FASE 2 - Membrane Bioreactor (MBR) for industrial wastewater

Customer: Rendac, Denderleeuw, (B)

Application: Animal waste treatment

Capacity: 60 m³/h

Feedwater: Wastewater originating from Animal waste and carcasses, high in FOGs and Nitrogen

Amount of IPC® membrane modules FASE 2:

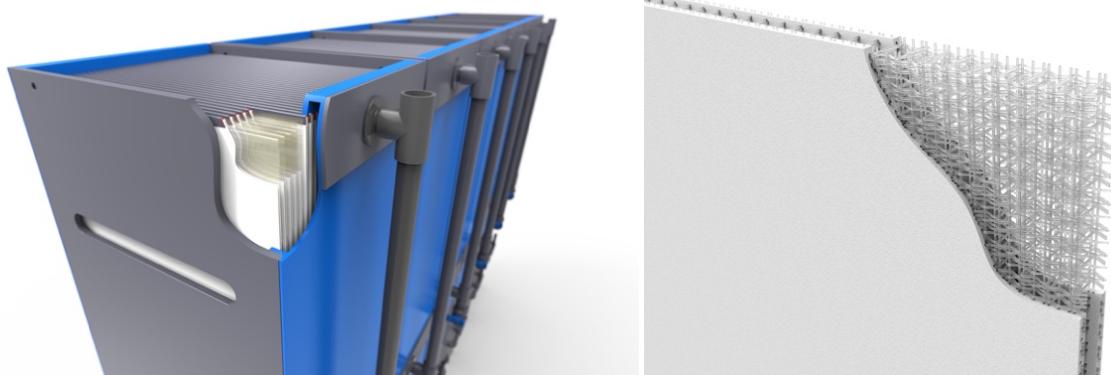
24 Modules (1,920 m²)

8 Triple Deck Modules

Start-up: October 2019

Project was delivered by





Integrated Permeate Channel (IPC®) membrane modules

The IPC® membrane modules are flat sheet membrane modules, which are constructed by many parallel-arranged membrane envelopes with defined distances between these envelopes. The individual envelopes are comprised of a 3D spacer fabric and coated with a PVDF ultrafiltration (UF) membrane which is anchored within the spacer. This anchoring allows for the unique high pressure backwash of the IPC® membranes. As a result, these membranes are operated at a much higher flux rates than other flat panel submerged membranes. The full-scale membrane bioreactor system delivers a higher capacity per footprint at a significantly lower operational expense compared to competitors.



reducing the world's water footprint

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