

Industrial Wastewater



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Challenge

Increasing municipal restrictions, tighter water quality standards and rising surcharges on discharge water can potentially reduce the profitability of your plant. Traditional wastewater treatment primarily uses biological degradation in bioreactors, followed by a clarification step, which is typically a sedimentation process. These plants tend to have a large footprint and do not produce water of a re-usable quality.

Solution

For more efficient wastewater treatment and to provide high quality water for re-use, the Membrane BioReactor (MBR) has been developed. The Norit Crossflow MBR is a compact purification system combining the biological degradation step with a membrane separation process. The wastewater is fed to the bioreactor where the organic components are broken down by the activated sludge. Next, the activated sludge is passed through the membrane filtration unit, separating the water from the sludge. The concentrated sludge is sent back to the bioreactor and the particle-free permeate is discharged or re-used as permitted.

The membranes are configured in a unique side stream set-up outside of the bioreactor. This offers a simple and easy to maintain stand-alone system that is fully enclosed and does not expose the operator to fumes or sludge. Norit X-Flow's ultrafiltration membrane provides a robust purification solution. The water can either be re-used directly or further treated as required, such as through reverse osmosis, activated carbon or UV.



MBR

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Benefits

- Tight UF membrane
 - Turbidity < 0.1 NTU
 - Silt Density Index < 3
- Crossflow filtration
 - Limited energy consumption
 - Simple layout
 - High flux rates
- Cleaning In Place
 - Fully automated cleanings
 - Use of low cost chemicals
- Fully automatic operation
 - Logging of operating parameters
- Pressurized system
 - Fully enclosed
 - No operator exposure to fumes or aerosols

Applications

- Industrial (typical application)
 - ♦ Automotive industry
 - ♦ Beverage industry, where high BOD/COD loads need to be reduced
 - breweries
 - malt houses
 - ♦ Chemical industry
 - ♦ Cruise ship/marine
 - ♦ Dairy industry
 - ♦ Food industry
 - ♦ Leachate, effluent coming from landfill sites
 - ♦ Textile industry
- Municipal (only for specific applications)



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X-Flow North America reserves the right to make changes in the technical specifications at any time.

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MBR

Norit
leading in purification

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