

Xpress™ Membrane Bioreactor Packaged Plants

The Xpress™ membrane bioreactor (MBR) packaged plant from Siemens Water Technologies is a robust wastewater treatment process with inherent features designed to reduce maintenance and provide reliable and efficient wastewater treatment for small scale applications.

The Xpress™ utilizes the immersed membrane bioreactor operating system from the MBR process, a unique wastewater treatment process designed for municipal and industrial applications.

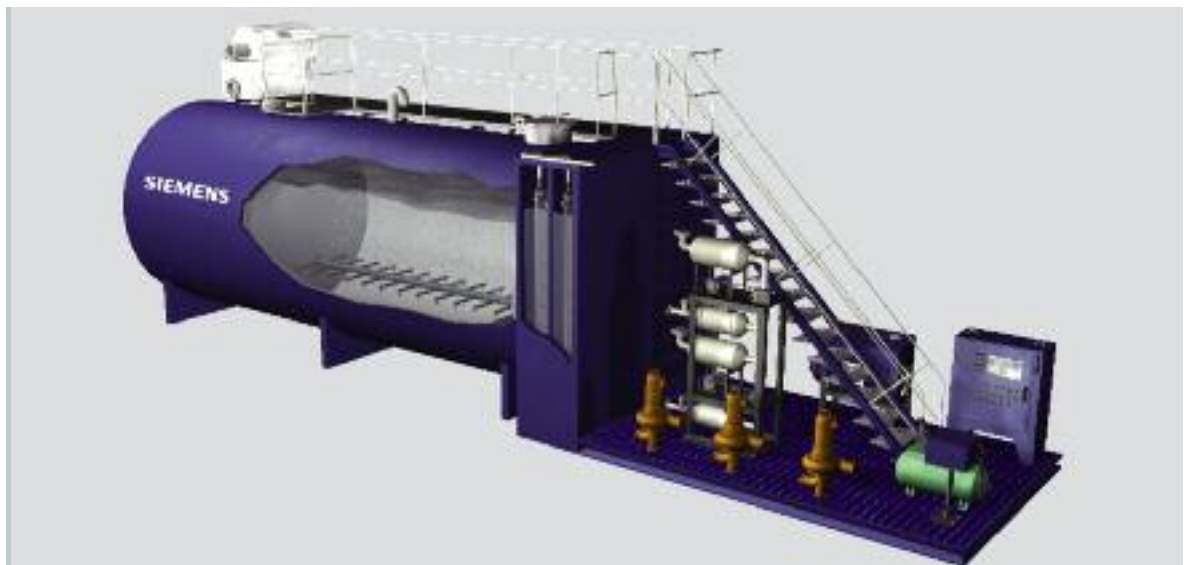
Membrane bioreactor systems may be used in such applications as water reuse, new housing developments, parks and resorts, retrofits, municipalities, industrial and turnkey projects. With the limited supply of potable water to support communities and industries, the increased cost of water and wastewater treatment, and stricter environmental regulations

the MBR process is a viable solution for current and future wastewater treatment.

Xpress™ Process

The pre-designed and skid-mounted system can be offloaded quickly and efficiently at your wastewater treatment site. Designed for applications from 25,000 gallons per day (gpd) to 100,000 gpd, the Xpress is ideally suited for land development sites, golf courses, resorts, small municipalities or industrial applications. The prefabricated steel tanks will include pre-installed internals and skid-mounted pumps and blowers to reduce time and onsite labor for installation.

In the MBR process, wastewater is screened before entering the tank where biological treatment process takes place. Aeration within the aerobic reactor zone provides oxygen for the biological respiration and maintains solids in suspension. To retain the active biomass in the process, the MBR relies on submerged



membranes rather than clarifiers, eliminating sludge settleability issues. This allows the biological process to operate at long sludge ages (typically 20-100 days) and increased mixed liquor suspended solids (MLSS) concentrations (typically 8,000–14,000 mg/L). High MLSS concentrations promote numerous process benefits, including stable operation, complete nitrification, and reduced biosolids production reducing biological volume requirements (and associated footprint) to only 20–30 percent of conventional biological processes. Further, the membrane tanks provide extremely space efficient solids separation and do not require a clarifier in the system.

The submerged microfiltration membranes are located in a separated membrane tank, and consist of polymeric hollow fibers. These hollow fibers are bound together in modules, using a unique dual-potting system. By applying a low vacuum to the inside of the hollow fibers, the fully oxidized and nitrified water is filtered through the membranes. Meanwhile, mixed liquor and air are pumped continuously into each membrane module fiber bundle. The resulting flow across the membrane (known as cross-flow) continuously scours the membrane surface, preventing solids buildup.

There are many equipment variations, configurations, and options that can be used with the MBR system, all of which are designed to provide the necessary treatment for each wastewater project. Equipment selection is dependent on effluent requirements, ease of maintenance and operation, power consumption, future expansion, and initial capital costs. Above all, the Xpress™ MBR operating system is designed to be safe and convenient for plant operators.

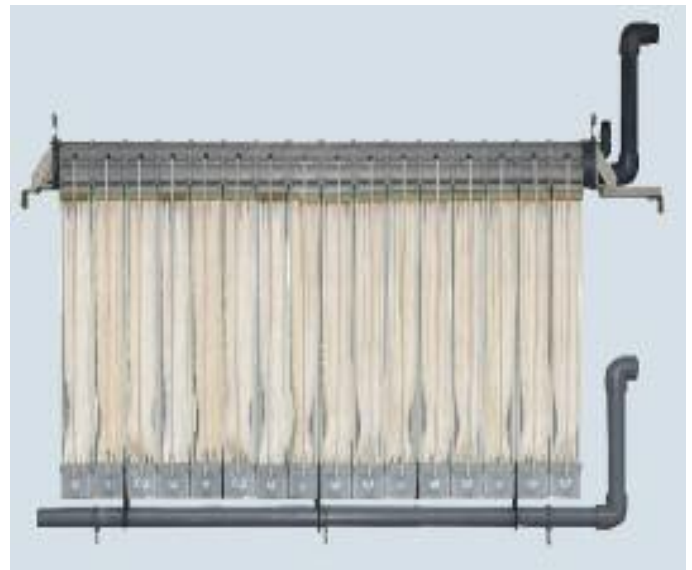
Features & Benefits

- Pre-assembled and pre-skidded equipment package
- Compact design
- Advanced nitrogen and P removal
- Prescreening
- Low-cost wastewater treatment system
- Minimal operator attention

Applications

- Water reuse and recycling
- Ground and surface water discharges requiring advanced treatment
- Pretreatment for reverse osmosis (RO) or other advanced filtration processes
- Satellite reclamation
- Industrial wastewater
- Residential and commercial development
- Food and beverage applications
- Pharmaceutical projects
- Remote installations
- Emergency response wastewater treatment
- Military bases and rapid infrastructure deployment
- Sports facilities, schools, and office parks, etc...

The Xpress™ MBR packaged plant system from Siemens Water Technologies provides reliable and efficient wastewater treatment for your small scale applications.



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