USSU

MBR WASTEWATER TREATMENT SYSTEMS

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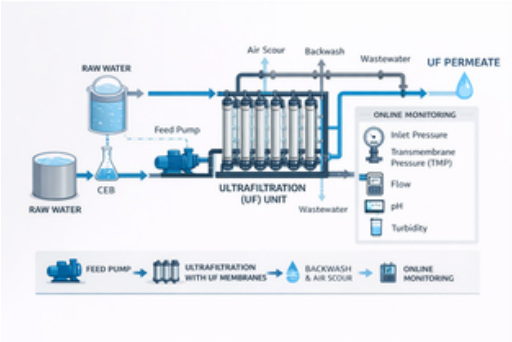
General Overview

The Membrane Bioreactor (MBR) is an advanced wastewater treatment technology that combines biological treatment with membrane filtration. MBR systems produce high-quality effluent suitable for reuse applications while maintaining a compact plant footprint.



Working Principle

In an MBR system, biological degradation occurs in the aeration tank, while submerged or side-stream membranes separate treated water from biomass. The membrane barrier replaces the conventional secondary clarifier, ensuring superior suspended solids and pathogen removal.

- ·Influent Screening and Equalization
- ·Biological Aeration Tank
- ·Membrane Filtration (UF/Microfiltration)
- ·Permeate Collection
- ·Sludge Wasting and Handling

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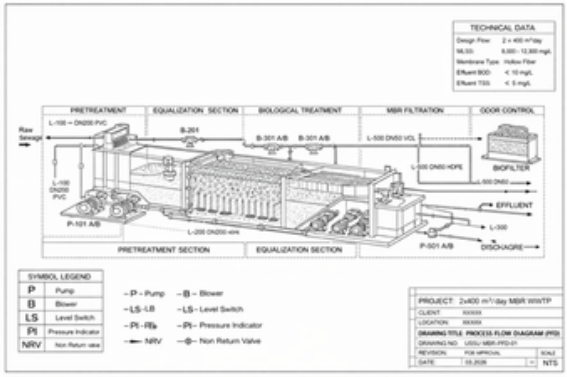
MAIN COMPONENTS

- ·Biological Aeration Tank (Carbon Steel / Concrete / SS)
- ·Membrane Modules (Flat Sheet or Hollow Fiber)
- ·Air Scouring System
- ·Permeate Pumps
- ·Blowers and Diffusers
- ·CIP (Cleaning in Place) System
- ·Instrumentation & PLC Control Panel



Typical Operating Parameters

Parameter	Range
Flux Rate	15 – 30 LMH
MLSS Concentration	8,000 – 15,000 mg/L
Effluent TSS	< 5 mg/L
BOD Removal Efficiency	> 95%
Membrane Pore Size	0.04 – 0.4 µm

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TYPICAL APPLICATIONS

- Hospitals & Healthcare Facilities
- Municipal Wastewater Treatment Plants
- Industrial Effluent Treatment
- Hotels and Resorts
- Oil & Gas Facilities
- Food & Beverage Industry
- Water Reuse and Recycling Projects

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Advantages of MBR Technology

- Superior effluent quality suitable for reuse
- Compact footprint (no secondary clarifier required)
- High biomass concentration and stable operation
- Excellent pathogen removal
- Expandable modular membrane configuration
- Reduced sludge production compared to conventional systems

Engineering & Documentation

- Process design and membrane sizing calculations
- GA drawings and P&ID documentation
- Hydraulic and air scouring analysis
- CIP system design
- Factory Acceptance Test (FAT) documentation
- Commissioning & performance testing support

Project Experience

- Municipal & industrial installations
- Oil & Gas wastewater applications
- High temperature climate design
- Containerized modular systems

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WHY CHOOSE US?

T.C.
TÜRK PATENT ve MARKA KURUMU

MARKA TESCİL BELGESİ

Marka No : 2020 144180 - Ticaret - Hizmet

Marka Sahibi : USSU MÜHENDİSLİK ARITMA VE MAKİNA TİCARET SANAYİ LİMİTED ŞİRKETİ
TÜRKİYE CUMHURİYETİ
GÜNGÖREN MAH. DİYAR SK. 30 -32/6 Çekmeköy İstanbul

Emtiası : 11 , 35 , 42
İlişiktedir.

İşbu Marka 19/11/2020 tarihinden itibaren ON YIL süreyle 30/04/2021 tarihinde tescil edilmiştir.

Prof. Dr. Habip ASAN
Türk Patent ve Marka Kurumu Başkanı

TÜRK PATENT

- **QUICK FEEDBACK**
- **BEST COMPETITIVE PRICING**
- **CONTINUOUS TECHNICAL SERVICE SUPPORT**
- **WESTERN EUROPE EQUIPMENT**

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We Design Based on Real Hydraulic Calculations

- Filtration velocity optimization
- Media depth calculation
- Backwash expansion analysis
- Pressure drop estimation

We do not oversize vessels unnecessarily — and we do not undersize them.

Engineered Internal Distribution

Channeling is the silent killer of filter performance.
We ensure:

- Uniform inlet distribution
- Correct nozzle spacing
- Balanced hydraulic profile

Performance comes from internal design, not only vessel size.

Process-Oriented Engineering

We understand where the filter stands in the process:

- RO pretreatment protection
- Turbidity compliance
- TSS reduction before reuse

A multimedia filter is not an isolated tank — It is part of a system.

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Reliable Operation

- Long filtration cycles
- Stable pressure drop behavior
- Efficient media cleaning
- Low maintenance requirements

Designed for continuous industrial operation.

Custom Solutions

- Skid-mounted compact units
- Containerized filtration systems
- High-flow industrial batteries
- ATEX applications
- Seawater prefiltration designs

We build according to project requirements — not catalog limitations.

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We're excited to work with you

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TÜRK PATENT ve MARKA KURUMU

MARKA YENİLEME BELGESİ

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Emtiası : 11 , 35
İlişiktedir.

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T.C. TÜRK PATENT ve MARKA KURUMU MARKALAR DAİRESİ BAŞKANLIĞI 1923

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Kurumu Başkanı

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