# MBR Membrane Product Specification

# (MBR-1250-30)

## 1. Product Introduction

### 1.1 MBR Introduction

**Membrane Bioreactor (MBR)** is an advanced wastewater treatment technology that combines **activated sludge process** with **membrane filtration**. It replaces the secondary sedimentation tank in traditional processes with membrane modules, achieving efficient solid-liquid separation.

1.2 Product Features

- **High-quality Effluent**: Stable output of **SS-free** water, meeting strict reuse standards.
- **Small Footprint**: Compact design, **30-50% smaller** than conventional systems.
- **High MLSS**: Operates at **8,000-12,000 mg/L** MLSS, boosting treatment capacity.
- **Low Sludge Production**: Reduces sludge disposal costs.
- **Easy Automation**: Simple operation, low labor intensity.
- **Long Membrane Life**: Robust PVDF material with proper maintenance.
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## 2. Product Range & Specifications

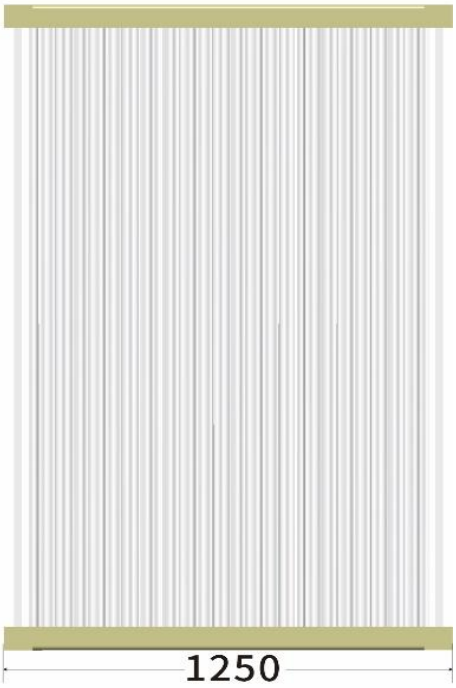
2.1 Membrane Material

- **PVDF (Polyvinylidene Fluoride)**: Excellent **chemical resistance, mechanical strength, and anti-fouling properties**.
- **Nominal Pore Size**: **0.03 μm (microfiltration)**.

2.2 Module Types

2.2.1 Hollow Fiber (Submerged)

- **Model**: **MBR-1250-30**
- **Effective Area**: **30 $m^2$/module**
- **Dimensions (L*W*H)**: **1250*30*2000 mm**
- **Dry Weight**: **~15 kg**
- **Design Flux**: **15-25 LMH**




**3. Technical Parameters**

| Item | Standard Value |
|---|---|
| **Operating Temp** | **5-40°C** |
| **pH Range** | **2-10 (continuous); 2-12 (cleaning)** |
| **Initial TMP** | **< 10 kPa** |
| **Max. TMP** | **35 kPa** |
| **Aeration Intensity** | **50-70 $Nm^3/m^2 \cdot h$** |
| **Design Flux** | **15-25 LMH (domestic sewage)** |
| **Backwash Flux** | **20-60 LMH** |
| **Max. Backwash Pressure** | **70 kPa** |

**4. Installation & Commissioning**

4.1 Pre-installation

- Check components for damage.
- Prepare foundation/rack level.
- Ensure **1 mm fine screening** for influent.

4.2 Installation Steps

1. Place module in membrane tank.
2. Connect permeate pipe, aeration pipe, and fittings.
3. Fill tank with water to submerge membrane.
4. Test for leaks.

4.3 Commissioning

- Start aeration first (**30 min**).
- Initiate suction pump at **low flux** (50% design).
- Gradually increase flux over **1-2 weeks**.
- Monitor TMP daily.

## 5. Operation & Maintenance

5.1 Normal Operation

- **Continuous aeration** for scouring (DO > 2 mg/L).
- **Intermittent suction**: **8 min on / 2 min off**.
- Maintain MLSS **8,000-12,000 mg/L**.

5.2 Daily Maintenance

- Record TMP, flux, temperature, pH.
- Inspect for broken fibers (replace if >5% broken).
- Check aeration uniformity.

5.3 Cleaning

5.3.1 Physical Cleaning (Weekly)

- **Backwash**: Permeate, **30-60 sec**.
- **Relaxation**: Stop suction, **30-60 sec**.

5.3.2 Chemical Cleaning (Monthly / When TMP > 30 kPa)

1. **Offline Clean**:
    - **Step 1 (Alkaline)**: **0.3-0.5% NaClO**, soak **2-4 h**.
    - **Step 2 (Acid)**: **0.5-1.0% Citric Acid**, soak **1-2 h**.
2. Rinse thoroughly with clean water.

5.4 Shutdown

- **Short-term (<7 days)**: Keep aeration on.
- **Long-term (>7 days)**: Chemical clean, soak in **0.5% NaClO**, keep moist.

## 6. Troubleshooting

| Problem | Cause | Solution |
|---|---|---|
| **TMP rises fast** | Fouling; high MLSS; low aeration | Clean; reduce MLSS; increase aeration |
| **Low permeate** | Clogged; broken fibers; air lock | Clean; replace; bleed air |
| **Poor quality** | Broken fibers; damaged seals | Replace module; repair seals |

COOPERATE

**7. Safety & Handling**

- Avoid contact with **strong oxidizers** (concentrated NaClO).
- Wear **gloves/goggles** when handling chemicals.
- Do not drop or impact modules.
- Protect from **freezing** (<0°C).

**8. Packaging & Storage**

- Packed in **carton with plastic film**.
- Store **indoors, dry, 5-30°C**.
- Keep sealed to prevent drying.

**9. Quality Assurance**

- **12-month warranty** against material defects.
- Warranty void if misused, improper cleaning, or unauthorized repair.