

Moving Bed BioReactor MBBR System

Biological Treatment



FRC's MBBR system uses floating biofilm media in aerated tanks to reduce BOD, nitrogen, and phosphorus with no need for RAS or MLSS monitoring.

FRC's Moving Bed Biofilm Reactor (MBBR) is a high-rate biological treatment system that supports dense microbial growth on suspended carrier media. The result is a compact, self-regulating process that efficiently removes BOD, nitrogen, phosphorus, and COD without the operational burden of traditional activated sludge systems.

The MBBR process uses specialized plastic carriers suspended in an aerated tank to provide a high surface area for biofilm growth. As wastewater flows through the tank, bacteria living on the carrier media consume organic contaminants (BOD/COD) and nutrients such as nitrogen and phosphorus. Aeration keeps the carriers in motion and supplies oxygen. Excess biomass naturally sloughs off and is removed in downstream treatment. No sludge return or manual wasting is required, allowing for hands-off operation.

Key Features

- High surface area media for elevated biomass concentration
- No Return Activated Sludge (RAS) or MLSS monitoring required
- Automated, low-maintenance biological treatment
- Compact footprint with scalable tank design
- Durable stainless-steel or concrete tank construction
- Compatible with DAF or clarifier solids removal

Specifications

- **Fill Volume:** 30 – 70% of tank with carrier media
- **Construction:** Stainless-steel or concrete tanks
- **Operation:** Fully automated, no RAS or MLSS management

Options

- High-efficiency aeration blowers and diffusers
- Carrier media (see MBBR Media section)
- DO, ORP, pH, and temperature instrumentation
- SCADA-ready control panels
- Catwalks, platforms, and retrofit kits

Applications

- Industrial BOD/COD removal
- Municipal wastewater and decentralized plants
- Nutrient reduction for nitrogen and phosphorus
- Plant upgrades and retrofits with space constraints

Why choose an MBBR system?

FRC's MBBR offers robust performance with minimal operator input, making it the ideal solution for biological wastewater treatment in modern, space-conscious plants.

How can we help you?
Contact us today to find
your best solution.



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