



iWATER MBBR

Containerized Wastewater Treatment Plant based on Moving Bed Bio Reactor (MBBR) Technology



Containerized MBBR Technology WTP



Effluent from MBBR STP Settling Tank

Compact MBBR Wastewater Systems

1

Minimal Operation and Maintenance Costs and use of Chemicals

2

Recycle and Reuse water for Irrigation and Recreation

3

Save Water, Energy, Money and Conserve the Environment

4

**MBBR Wastewater Treatment Plants
Compact yet Complete and Affordable**

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Possible Application

- Labor Camps
- Small Industries
- Residential Areas
- Hotels and Resorts
- Construction Sites
- Universities

EARTHCAD ENVIRONMENT – MBR STP

Earthcad Environment Packaged iWater MBBR Treatment Systems are state of the art yet affordable plants which are capable of giving excellent quality Treated Sewage on a small footprint.

The System is a Combination of the Fixed Film and Activated Sludge Process, Activate Sludge has process stability and provides a high degree of treatment and Fixed Film Processes are inherently stable and resistant to organic and hydraulic shock loadings.

By incorporating Activated Sludge Recirculation (RAS) higher high quality Biomass can be maintained. This makes the Process more stable, more responsive to load fluctuations and provides better oxygen diffusion, mixing and energy efficiency then conventional MBBR.

Design Basis

PH	7.0-8.5
BOD (mg/l)	300-350 mg/l
COD (mg/l)	400-600 mg/l
Suspended solids (mg/l)	300-400 mg/l
Ammonical Nitrogen	40-50 mg/l

Treated Effluent Quality

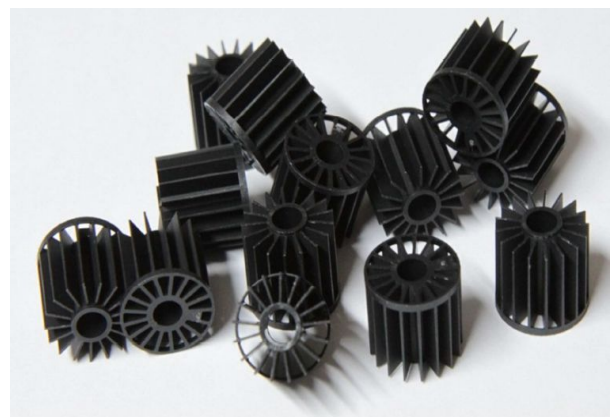
BOD	< 15 mg/l
COD	< 100 mg/l
Suspended solids	< 15 mg/l
Ammonical Nitrogen	< 5 mg/l
PH	7.0-8.5



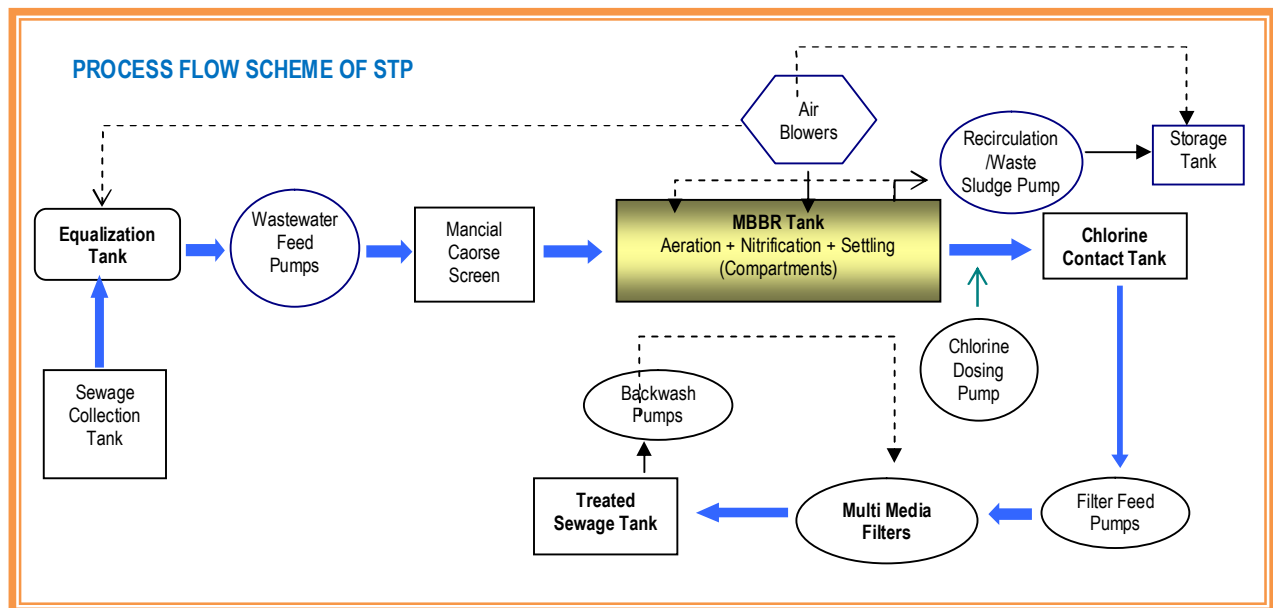
Top Vies of MBBR Plant

Process Flow Scheme

- Raw Wastewater Feed Pumps
- Air Blowers and Coarse Bubble Diffusers for Equalization/Sludge Tank (Optional)
- Electromagnetic Flow Meters at Inlet of STP
- Manual Coarse Screen, Bar Type, 10 mm
- Aeration Tanks with Coarse Bubble Diffusers and Air Piping
- Bio Media inside Aeration Tank
- Air Blowers for Aeration Tanks
- Sludge Recirculation/Waste Pumps
- Motorized Valves for Sludge Wasting
- Settling Tank with Tube Deck Media
- Sodium Hypochlorite Disinfection System
- Manual/Automatic Multi Media Filter
- Filter Feed Pumps
- Backwash Pumps
- Electrical Control Panel, Form 2
- Internal and external Interconnecting Piping and accessories
- Electrical Power and Instrumentation Cables with all fittings, Cable Trays , clamps and accessories



State of the art GEA – BIO MEDIA, MOC PP



Salient Features

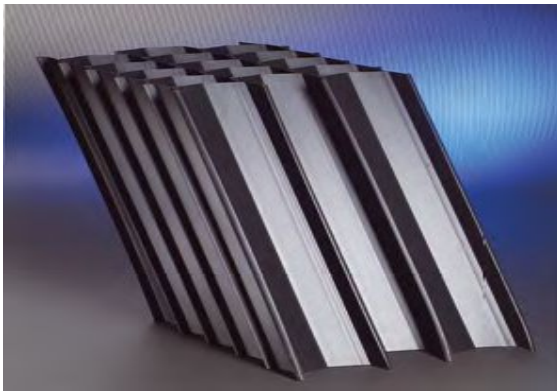
- Factory made plug and play system with small footprint
- All Units on Duty Standby Basis and of International Makes
- MLSS Concentrations of 2000-3000 mg/l which increases SRT resulting in better biology and performance
- Reduction in sludge production and less sludge needs to be wasted compared to Conventional MBBR
- Safe HRT enabling stable and sustainable Biology and better Aeration and Nitrification.
- Using very conservative surface area loading rates for the Biomedia thereby ensuring design for peak flows
- Positive Displacement Blowers for Aeration instead of Side Channel Blower which are better in quality and long lasting
- Coarse Bubble Differs for Aeration specially designed to ensure the swirling action to keep Bio Media in suspension
- State of the art Bio Media from GEA – Germany which creates the perfect environment for bacteria to grow on the large rough surfaces
- State of the art Tube Deck Media made up of high quality PVC material which enables proper settling of solids
- Filtration Velocity of not more than 10 m²/m³.h inside the Multi Media Filter thereby ensuring good tertiary treatment
- MSEP Tank structurally very stable and fabricated in such a way that there is no bulging



Aeration Tank filled with Bio Media



Filtration System of MBBR STP



GEA/Munters Tube Deck Media in PVC



Hypochlorite Dosing System for Disinfection

<i>Model No.</i>	<i>*Capacity (m3/d)</i>	<i>Population (persons)</i>	<i>Inlet (BOD/TSS)</i>	<i>Outlet (BOD/TSS)</i>	<i>Tank Dimensions</i>	<i>Multi Media Filter Diameter</i>
IWATER MBR 100	100	500	300/400	15/15	4.5 m * 2.5 m * 3.5 m	30 Inch
IWATER MBR 150	150	750	300/400	15/15	6.3 m * 2.5 m * 3.5 m	36 Inch
IWATER MBR 200	200	1000	300/400	15/15	8.2 m * 2.5 m * 3.5 m	42 Inch
IWATER MBR 250	250	1250	300/400	15/15	10.1 m * 2.5 m * 3.5 m	48 Inch
IWATER MBR 300	300	1500	300/400	15/15	12.0 m * 2.5 m * 3.5 m	48 Inch
IWATER MBR 350	350	1750	300/400	15/15	12.0 m * 3.0 m * 3.5 m	63 Inch

*Calculations are based on discharge of 200 liters of Wastewater per person per day.

If bigger capacity is required than the standard modules can be added in parallel



TSE Sample from MBBR STP



Very Stable Biology inside Aeration Tank



Equalization/Sludge Tank with Raw Sewage Pumps



Aeration Positive Displacement Blowers