

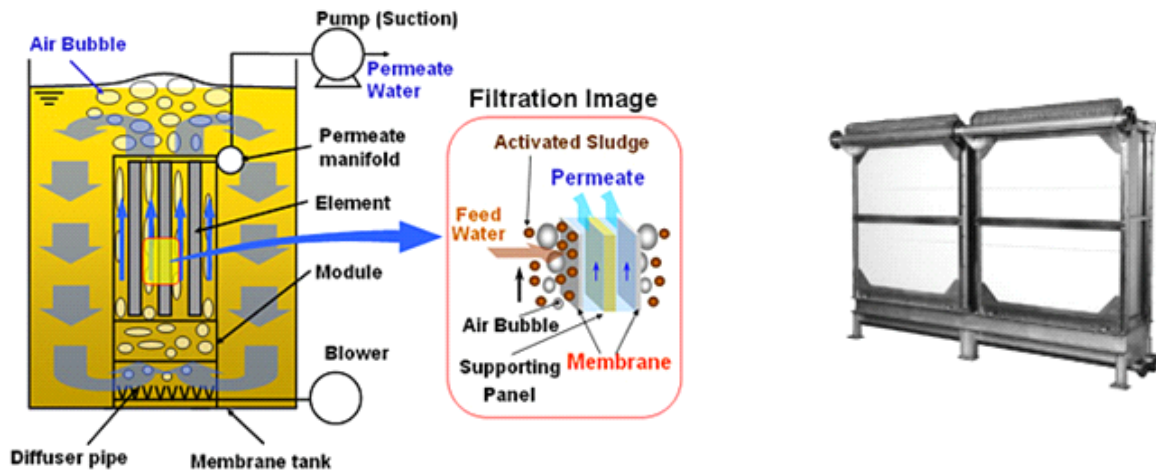
# BioMatch Containerized Systems

Capacity: 33,000 to 132,000 GPD

**MBR**  
**Series**

The experience of Enviromatch in advance wastewater treatment is applied in our new compact containerized biological treatment unit. BioMatch provides a capacity range starting from 125 and up to 500 m<sup>3</sup>/d (depending of the effluent requirements). This unit is the core treatment part of an integrated Waste Water Treatment Plant (WWTP).

Our BioMatch system is based on an advanced treatment process known as Membrane Bio-Reactor (MBR) which provides several benefits. MBR process is an Activated Sludge reactor followed by a submerged membrane system for the separation of solids, bacteria and viruses from treated water. The submerged membrane bioreactor treats and disinfects wastewater in a compact, single stage process.



## APPLICATIONS

BioMatch can be used for both Domestic wastewater (e.g. Municipalities, hotels, house complexes, camps, etc.) and Industrial wastewater applications (food & drink industry, cosmetics, textile, etc. for details please contact Enviromatch).

The quality of the treated effluent can help the operator to comply with the most stringent discharge standards and opens new opportunities for water re-use such as:

- + Irrigation for landscaping, agricultural crops and produce
- + Industrial, manufacturing and processing non-potable water applications
- + Recharge of rivers and aquifers
- + Reduction on high cost desalinated water usage
- + Reduction on already scarce potable water consumption
- + Environment preservation

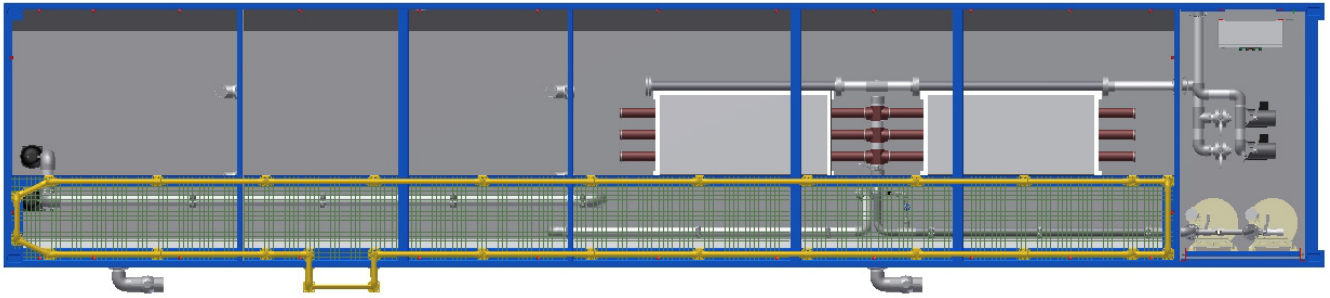
## KEY FEATURES AND ADVANTAGES OF BIOMATCH UNIT

- + Suitable for both domestic and industrial wastewater applications
- + Very small footprint area. Typically 75% smaller than a conventional plant
- + Containerized Unit. Easy and low cost transportation all over the world
- + Easy installation. Only a concrete pad is required
- + Minimum time for wastewater plant implementation and quick system start-up. Odor free and clog free operation
- + Easy to be operated and maintained, with little 'on site' staffing requirements
- + Fully automated system that could be monitored either locally or globally. A colored HMI touch screen is standard
- + Very high quality effluent, disinfected, with high bacteria and virus removal, ready for reuse. Might be direct feed to RO systems for further TDS removal
- + Effluent compliance with EU bathing water directive and California Title 22 CR
- + Lower operating costs comparing solutions with the same effluent quality results

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## NEW ENVIROMATCH CONTAINERIZED MBR UNIT

Our standard BioMatch model is a high rate bioreactor with BOD removal efficiency rates (more than 98%) includes full nitrification and de-nitrification process and optional chemical phosphorus removal with precipitation.

All BioMatch units can be transported by standard road-trucks or shipped as ISO containers and are capable to reach even the most distant part of the world. This fact makes our Treatment Units the easiest and fastest way to implement a WWTP at any terrain and under any condition. Furthermore, it might include frost protection, heated engine-room, insulated and top-closed tanks. As standard in all models, the equipment room includes lockable doors for security reasons.

For bigger models an additional equipment room may be required (prefabricated or not) in order to install the air-blowers, the electrical switch board (MCC) and also to accommodate a small office for the operator and/or a storage area. The units can be combined (working in parallel treatment lines) in order to provide technical solutions in bigger WWTP plants. Alternatively, MBR method can be implemented in prefabricated tanks that are assembled on site with minimum time and maximum quality, in cases of greater capacities requirements.

## EQUIPMENT ROOM COMPLETE WITH THE FOLLOWING INSTALLED AND TESTED EQUIPMENT

- + Two (1 duty/ 1 standby) regenerative air blowers, complete with swing check valve, inlet filter/ silencer & safety valve;
- + One electrical oil-free air compressor with storage tank;
- + Two (1 duty/ 1 standby) Chlorine dosing pumps;
- + Two (1 duty/ 1 standby) self priming pumps;
- + One control panel; All equipment wiring terminated to the control panel;
- + Overhead lighting;
- + Epoxy coated steel supports;
- + Galvanized steel and PVC interconnecting piping.

### INSTRUMENTATION

- + Air Compressor pressure switch
- + Air Compressor pressure gauges, 2 1/2" dial size
- + Air Blower pressure gauges, 2 1/2" dial size
- + Permeate water Paddlewheel Flowmeter
- + Diaphragm differential pressure sensor

### VALVES

- + Galvanized steel aeration piping
- + PVC low pressure piping
- + Pneumatically actuated C.I. butterfly valves

### ELECTRICAL

- + Siemens PLC based control panel featuring:
  - Power supply: 460V / 3ph / 60Hz
  - Programmable time delays and set points
  - Weintek HMI colored touch screen
  - VFD pump and blower motor control
  - Status indication lamps and switches
  - IP54 enclosure with disconnect and Interlocking rotary handle
- + 120V/60Hz control voltage

## AVAILABLE OPTIONS

- + 380-415V/3 Ph/50Hz power supply, 220V control panel
- + 230V/3 Ph/60Hz power supply
- + Equalization tank level float switches
- + Equalization tank Ultrasonic level transmitter
- + Equalizing pump(s) motor starter with over load relay
- + Feed pH controller / sensor
- + Feed ORP controller / sensor
- + Feed TDS / conductivity sensor
- + Custom designed units

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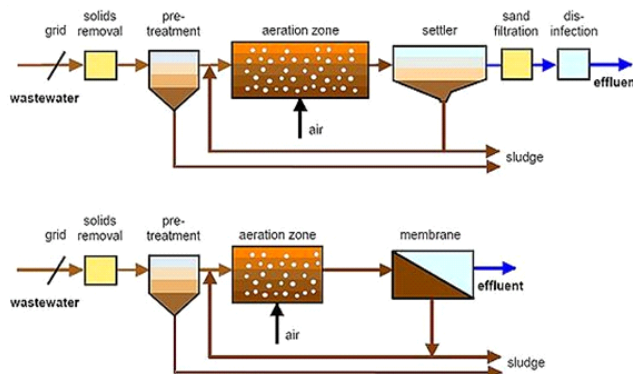
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## REQUIRED EQUIPMENT FOR A COMPLETE WWTP

EnviroMatch MBR Biological Treatment Unit is part of an integrated Treatment Facility commonly referred to as a Waste Water Treatment Plant (WWTP).

In order to have a complete WWTP, additional equipment will be required and offered:

- A Pretreatment Stage including coarse (10mm) following by a fine (1mm) screening, grit-sand and grease removal.
- Equalization tank (prefabricated or concrete) with feeding submersible sewage pumps.
- Sludge storage tank (prefabricated or concrete)
- Disinfection treatment with UV system and / or chlorination.
- A clean water (effluent) storage tank for water reuse
- MBR-04 models and multiple units will require an additional Equipment Room.



All the above treatment stages and facilities should be designed and dimensioned by a qualified engineer and fully approved by EnviroMatch.

## DESIGN PARAMETERS

### INFLUENT CHARACTERISTICS

The BioMatch system has been designed and dimensioned with the below influent basic characteristics:

Wastewater inflow:	200	L/PE/day
BOD (Organic Carbon):	300	mg/L
Total Nitrogen (T-N):	45	mg/L
Total Phosphorus (T-P):	15	mg/L
Total Suspended Solids (TSS):	350	mg/L

### EFFLUENT CHARACTERISTICS

Expected effluent characteristics from the BioMatch system are listed below:

BOD (Organic Carbon):	≤ 10	mg/L
Total Suspended Solids (TSS):	≤ 2	mg/L
Turbidity:	≤ 2	NTU
Total Nitrogen (T-N):	≤ 15	mg/L
Total Phosphorus (T-P):	≤ 2 *	mg/L

\* with chemical removal

## SPECIFICATIONS AND DIMENSIONS

The range of models of our BioMatch Systems:

Model No.	Flow	Dimensions		
		Length	Width	Height
	(m <sup>3</sup> / day / GPD)	(mm)	(mm)	(mm)
BMM-01	125 / 33,000	6,060	2,400	2,900
BMM-02	250 / 66,000	12,200	2,400	2,900
BMM-04	500 / 132,000	12,200	2,400	2,900

Multiple units of the same size shall be used for larger flows.  
For applications with different influent characteristics, customized models will be specified.  
Dimensions and other technical data may be changed without our responsibility.  
Please contact us for any upgrade.



**EnviroMatch, Inc.**  
Water and Wastewater Treatment Systems

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