



**We Offer Solutions
Worldwide**

WATER TREATMENT TECHNOLOGIES

Reuse

of wastewater with advanced
filtration solutions...





ABOUT US...

Biyosis Environmental Technologies was established in Ankara with the initiative of environmental engineers who are experts in their fields. Biyosis, taking its power from the individual successes of its founders will take the position it deserves in the market with its layouts that make the difference in MBR Systems, which is a newly developing technology in Turkey and its designs that are unique for each project.

Biyosis, with its basic vision is to make the difference in the works it performs and to put its signature in projects that service quality and customer satisfaction are prioritized, are advancing with confident steps to become a long-standing company with roots deep under.



VISION

Giving services with an understanding of ethics and professional approach that will make the difference between the competitors in the sector, obtaining the maximum customer satisfaction and taking a good position in our sector are aimed at.

MISSION:

Our mission is to create an internal structure that will increase the quality of services we offer with our staff that have absorbed the importance of team work, capable of giving services to our customers according to their needs and targeting continuous development.

POLICY

- To fulfill the requirements of laws and relevant legislation strictly in all the jobs to be carried out,
- To work according to the conditions of the Quality Management System, international standards and relevant legislation and to improve the Quality Management System continuously.
- To take the expectations and suggestions of the customers into consideration and to work with high efficiency with a fully participative approach.
- To work to increase the customer satisfaction and efficiency of processes.
- To raise the awareness of employees and customers about the environment and to use all the possibilities provided by the technology to protect the environment.
- To provide a participative, safe and healthy working environment for the employees who are the most valuable assets. To be a firm that has made its objective to be respectful against mankind and society and following the ethical rules.

Biyosis offers its customers various alternatives for the treatment of stream water, well water and seawater as well as recycling of household and industrial wastewater.

Biyosis handles each project separately, and selects the most appropriate process among all the treatment processes in the literature to meet the requested values in designing its projects.

Our engineering department makes process analyses by taking water characteristics, flow rate, climatic and geographical conditions of the area that the plant will be installed in, criteria for discharge location and intended use of the treated water into consideration, and thus designs plants with minimum costs and optimal yield. Biyosis puts plants capable of operating under even the harshest conditions into practice thanks to its designs focusing on solutions.

These are plants with following characteristics with project designs made to provide giving services to a population equivalent to numbers between 10 and 15.000:

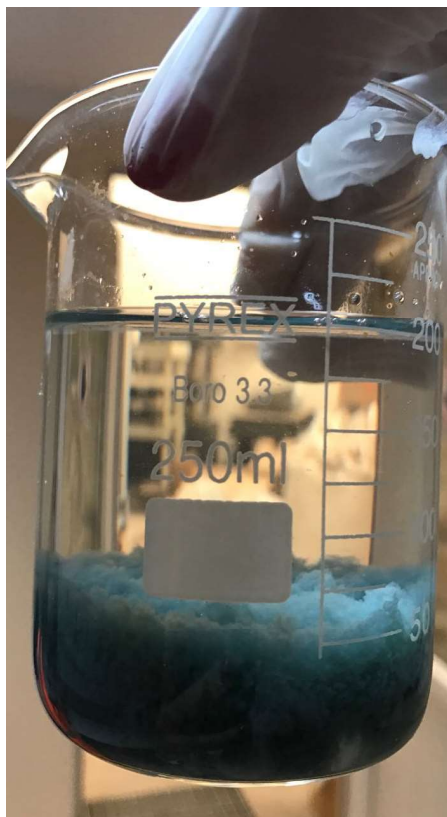
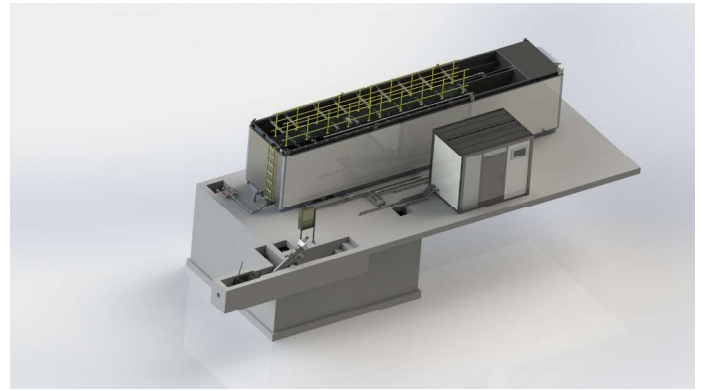
- Modular,
- Compact,
- Low energy consumption,
- Easy operation,
- Durable.

Several different processes including

- Sheet construction,
- Reinforced concrete

We are designed with design alternatives based on the intended use of the water to be treated:

- Sequencing batch reactor
- Long-aeration activated sludge
- Membrane Bioreactor (MBR)
- MBBR Process



Main sectors we offer our services:

- Factories and industrial establishments
- Holiday home complexes and touristic facilities,
- Schools, Hospitals and Military Facilities,
- Rest stops and Restaurants
- Farms and Slaughterhouses
- Camping facilities
- Houses and mass housing complexes
- Temporary settlements such as construction sites
- Vacation camps



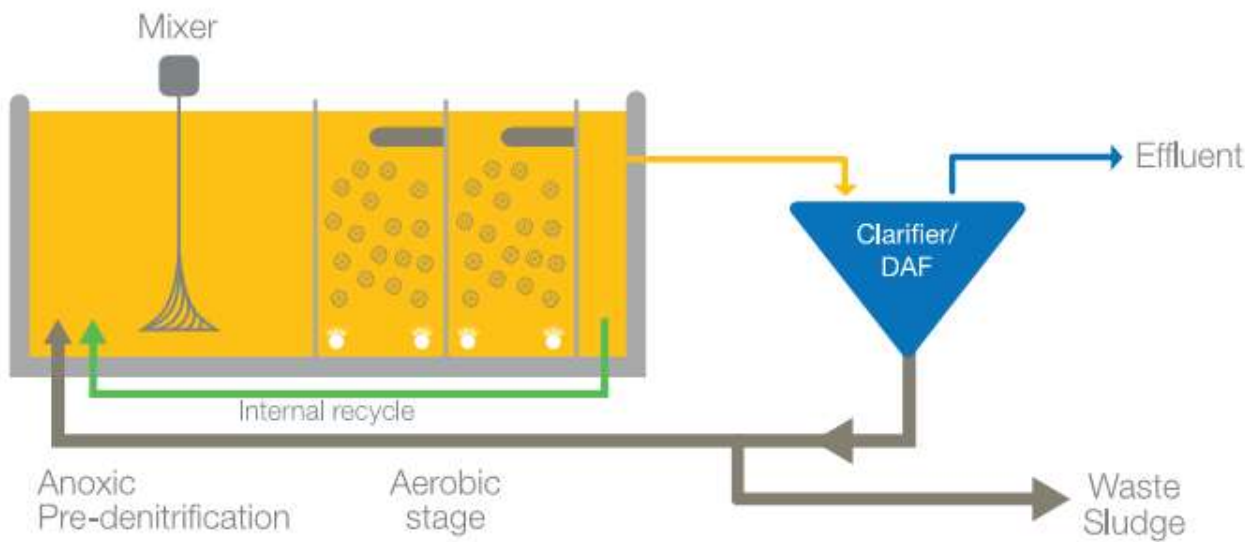
BiPAK MBBR SYSTEM:

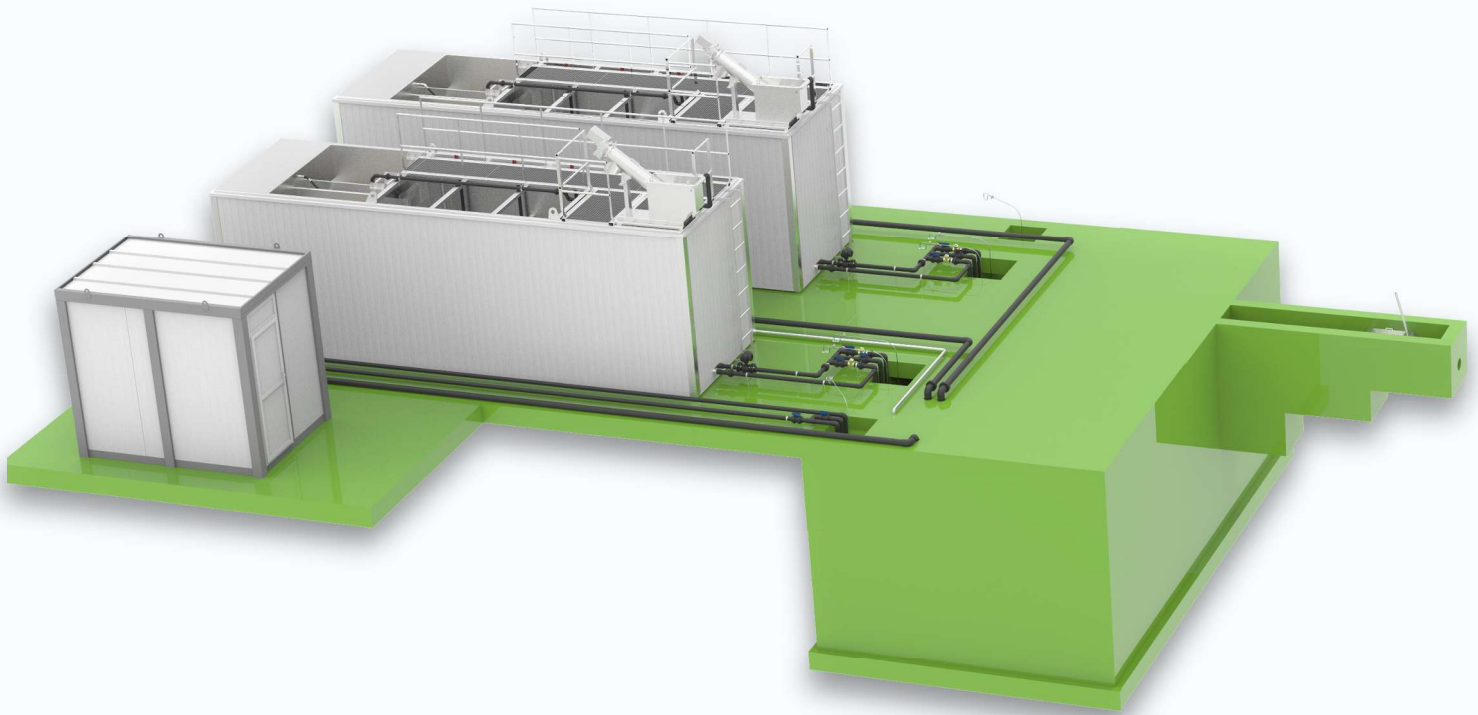
Biofilm processes utilize biofilm grown on carrier media in order to aerobically degrade soluble organic pollutants in the wastewater. These applications typically include a biological reactor filled with floating biomass carriers, a screen to prevent downstream migration of the carrier sand and an aeration grid. Different configurations may apply to address various scenarios.

The main characteristic of Moving Bed Biological Reactor (MBBR) configurations is that there is no sludge recycle from a secondary clarifier. MBBR is essentially a simple, once-through process, where all of the biological activity takes place on the biomass carriers. MBBR is usually followed by a solids separation system such as a secondary clarifier or DAF, in order to separate bio-solids produced in the process from the final effluent.

The main advantage of MBBR is robust and simpler reduction of soluble pollutants (soluble BOD or COD, NH_4^+ , etc.), with minimal process complexity, utilizing a significantly smaller footprint when compared to conventional aerobic treatment methods.

MBBR is typically used for either high load industrial applications or for robust simple-to-operate municipal facilities.

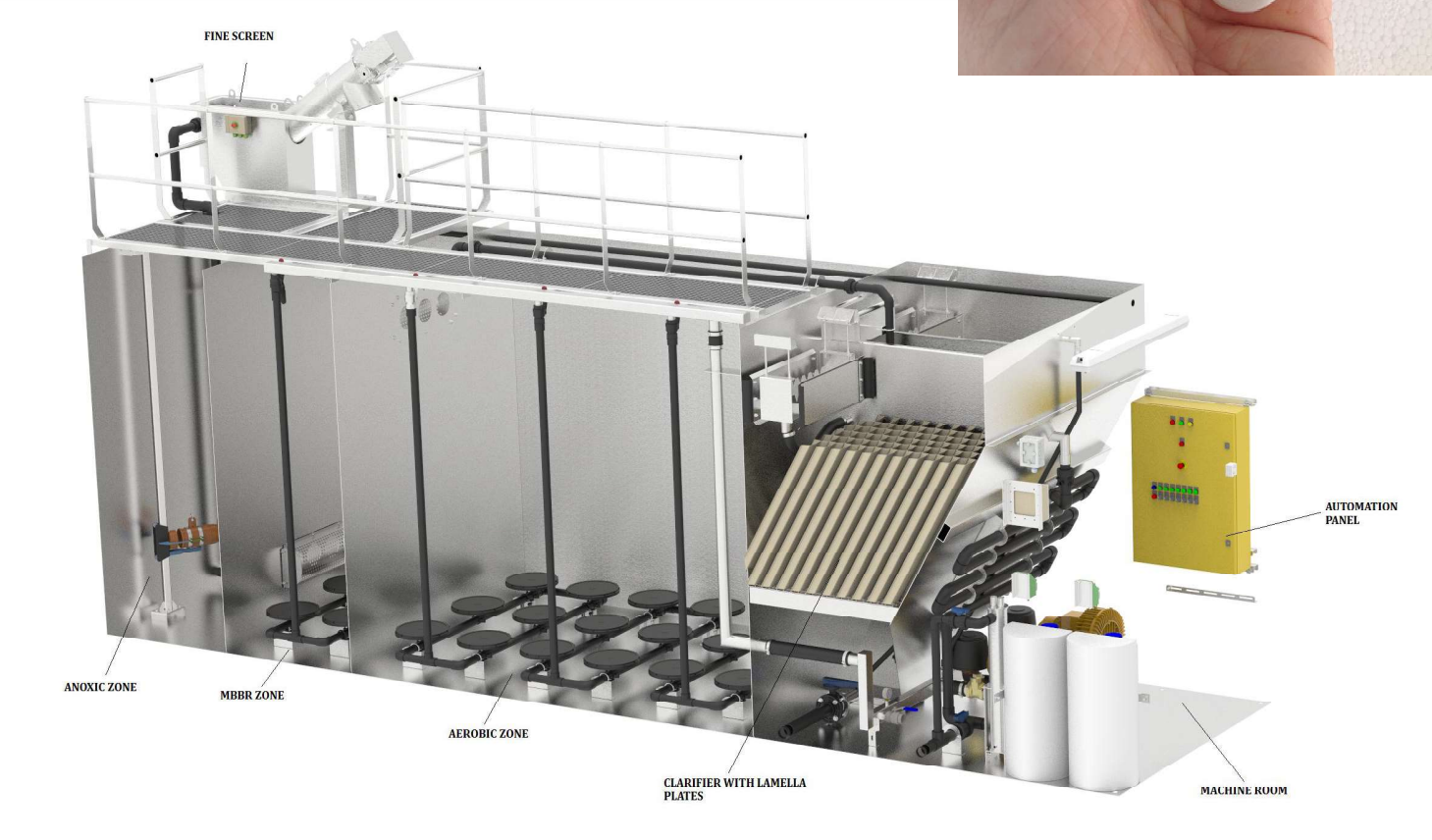


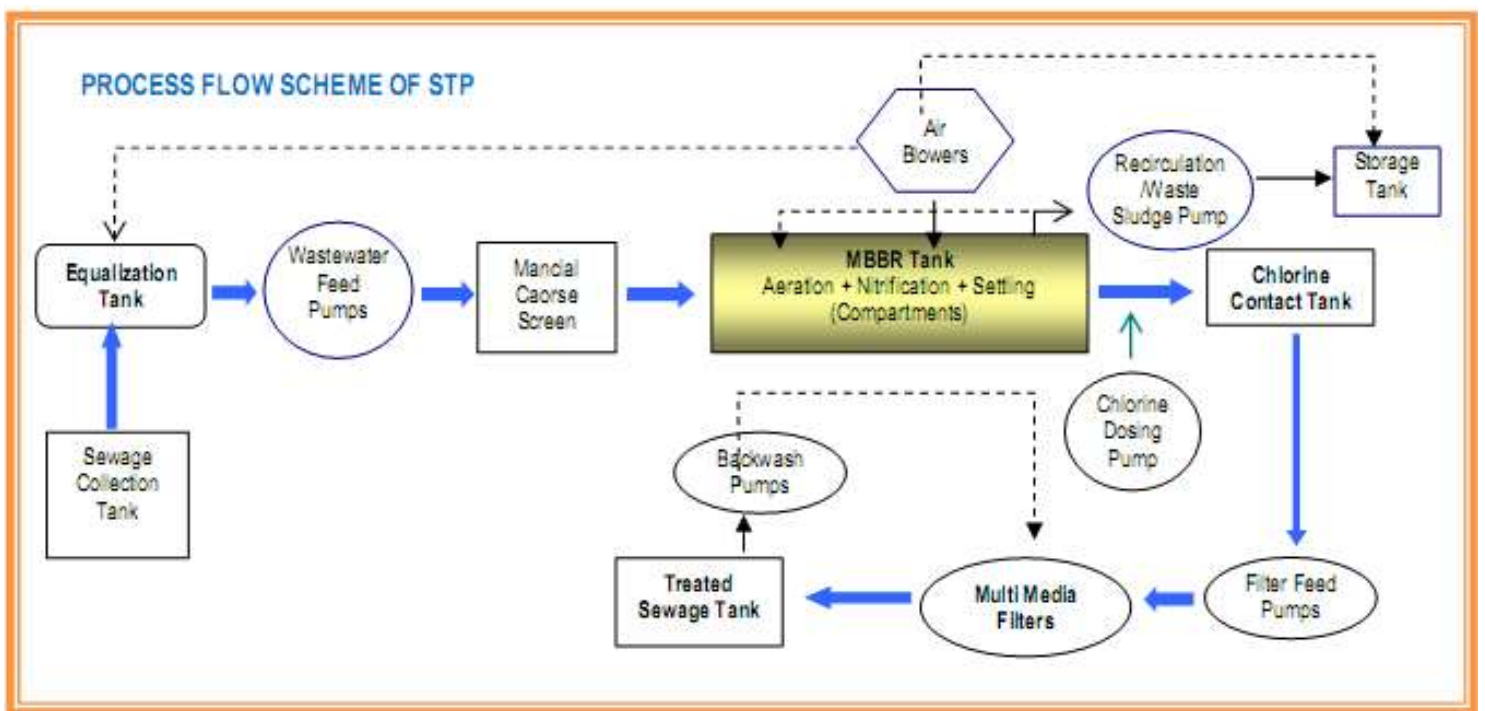


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The BioMedia is a high-performance carrier for biofilms, made of virgin PE and exclusively intended for being used in MBBR or IFAS process for the biological treatment of water and wastewater.

Using the BioMedia in fixed film application results in a dramatically reduced biodegradation efficiency and his hence in no way recommended.





ADVANTAGES OF MBBR SYSTEM:

- Easy-to-operate solution
- Unit maybe 'tailored' to particular client specifications
- Minimal footprint-Two options: up to 100 m³/day in a 20ft. container and up to 200 m³/day in a 40ft. Container
- Ability to upgrade capacity by adding parallel package plants to the same site
- Unit maybe used as a n interim or temporary solution ,for seasonal operation (e.g.resorts and hotels affected by high and low seasons)





BiPAK SBR SYSTEM:

Single Tank Unit Operation, hence Settling Tank and Sludge Recirculating System not required. SBR eliminates problems faced in Conventional Settling Tanks.

Complete Retention of suspended organics, biomass in Batch Reactors ensures enhanced bio-degradation of biological wastes, resulting in High quality MLSS. This ensures extended Filter Life.

This System allows for very long sludge retention time. The extended sludge retention allows for complete digestion of sludge within the system thereby greatly reducing the waste disposal issues.

Operation is simple and Automated hence minimal operator attention is required due to single unit operation and compact design.

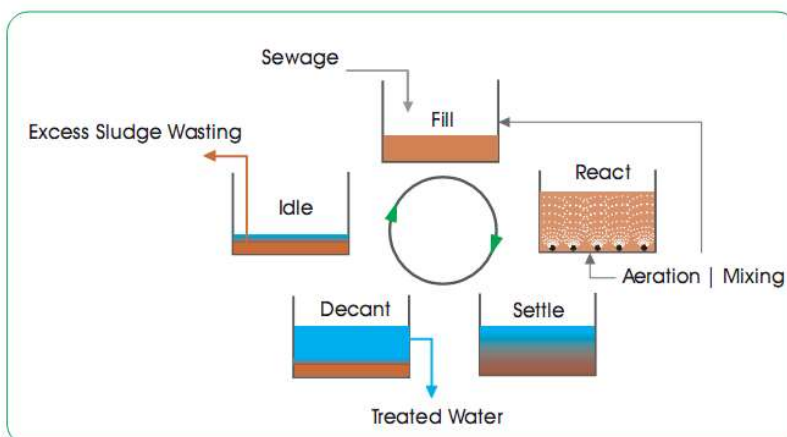
SBR is most suitable for underground STP Designs. SBR are modular in design and this allows for future expansion.

The existing Conventional Systems can be easily converted in SBR due to their compact design without additional Civil Works.

Advanced SBR

- Consistent good quality treated water for reuse applications (BOD < 15).
- Handle varying flow and organic loadings.
- No need of Settling Tank.
- No need of Sludge Recycling system.
- Less Foot Print.
- Low Sludge production.
- Retrofits on Existing Tanks.
- No clogging, cleaning and free from common treatment problems.
- Simultaneous Nitrate and Phosphate removal.
- Easier to control Filamentous Growth and Settling Problems.

SBR Operating Principle





MemBioSS MBR SYSTEM:

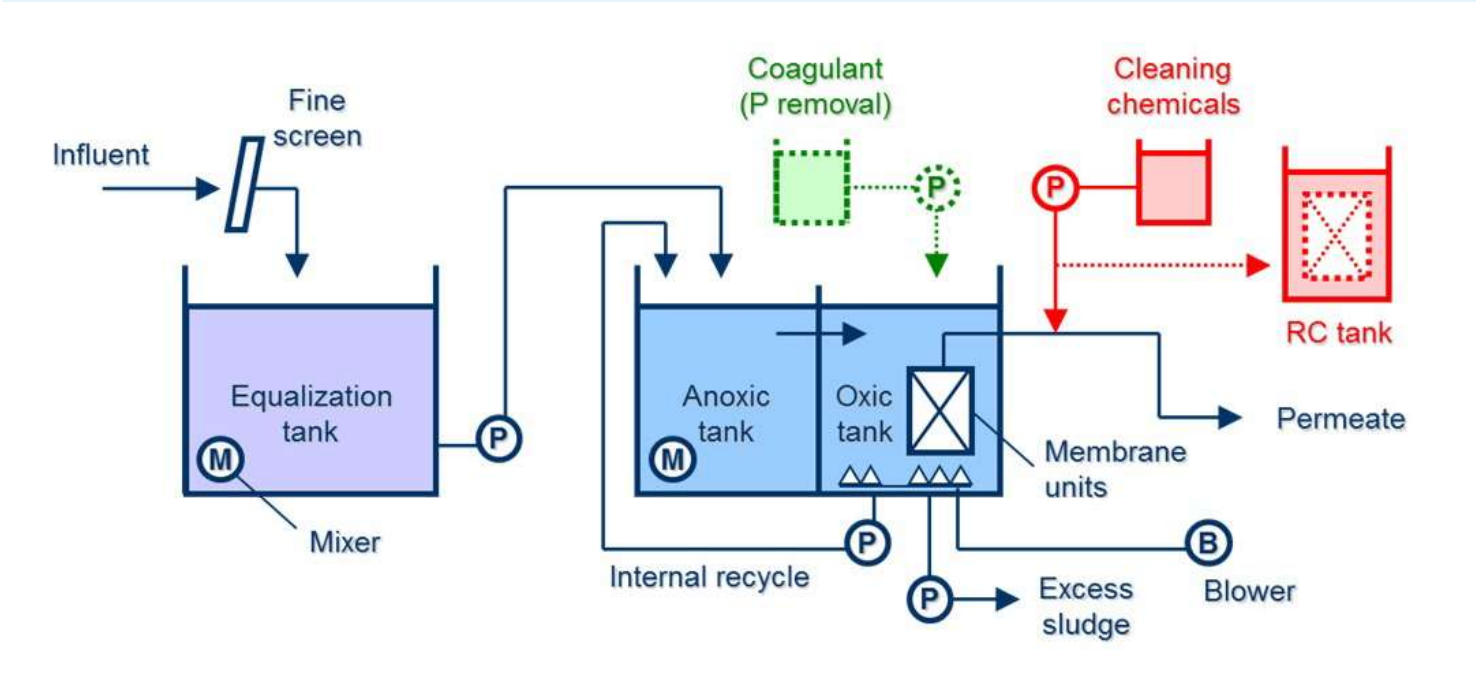
Technical progress in the field of municipal wastewater treatment, including the removal of eutrophication pollution loads, has in the past few years significantly improved the process flow of sewage treatment plants.

Conversely however very little attention had been paid to the high number of germs and bacteria in the sewage treatment plant outlet. To prevent the risk, micro and ultrafiltration combined with the activated sludge process has proved in recent years to be a suitable method to minimize the effluent load whilst retaining at the same time pathogenic germs thus meeting the ever increasing and tightening discharge standards for sewage treatment effluents, without the need for the 'classic' aeration and secondary clarification tanks or filtration and disinfection plants.

Furthermore, the increasing drinking water shortage particularly in the conurbations of semi-arid and arid countries requires rethinking and consideration of at least the partial reuse of treated wastewater as service water. Membrane systems can meet all standards applicable for water to be used for field irrigation.

The MBR process is a system of ultrafiltration membranes submerged with in the aeration tank. The resultant high effluent quality meets the most stringent regulations whilst also allowing for the capacity to meet the increasing and higher disposal legislation anticipated in the future, with optimised investment and operating costs.

The MBR system is a combination of biological wastewater treatment and high-efficient solids/liquid separation. The pre-screened wastewater is aerated, clarified biologically and all solids within the flow (particles, bacteria, viruses) removed by the ultrafiltration membrane in accordance with the low-pressure principle.





DAF SYSTEM For Industrial Wastewater:

Grease arrestors are the simplest devices for the removal of grease and oil (G&O), and fine suspended solids (SS) from trade wastewater. Their simple operating principle using adequate retention time and differences in specific gravity to separate and retain contaminants, produces wastewater quality under ideal conditions that is acceptable for small trade waste discharges.

Dissolved air flotation (DAF) is a proven and effective physical/chemical technology for treating a variety of industrial process and wastewater streams, including those from food processors, laundry facilities, pulp and paper producers, and biological wastewater treatment systems.

The BiDAF systems are designed to remove suspended solids (TSS), biochemical oxygen demand (BOD), and oils and greases (O&G) from a wastewater stream.

Contaminants are removed through the use of a dissolved air-in-water solution produced by injecting air under pressure into a recycle stream of clarified DAF effluent. This recycle stream is then combined and mixed with incoming wastewater in an internal contact chamber where the dissolved air comes out of solution in the form of very fine bubbles that attach to the contaminants. The bubbles and contaminants rise to the surface and form a floating bed of material that is removed by a surface skimmer into an internal hopper for further handling.

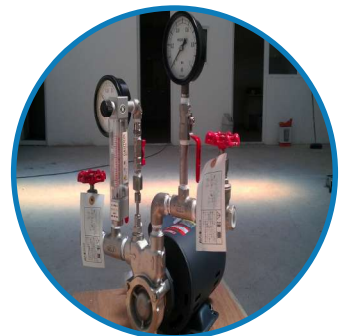
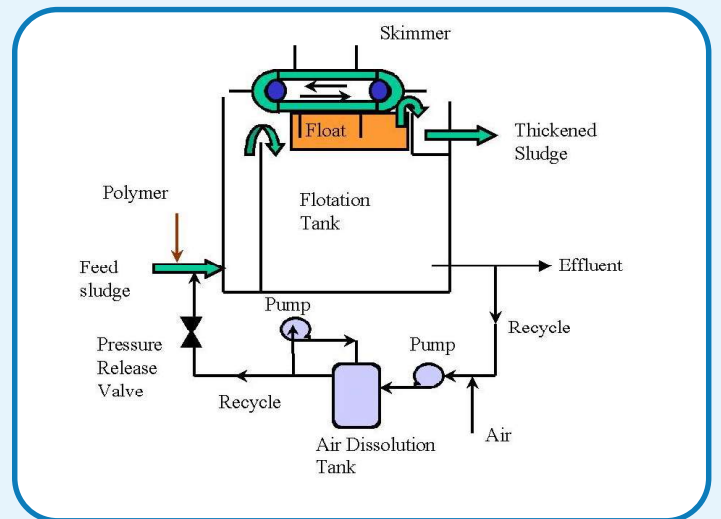
BiDAF have supplied a unique compact Micro-Bubble Generator, called KTM, contributing to remove contaminant particles with a small amount of chemical aid in the water purifying plant.

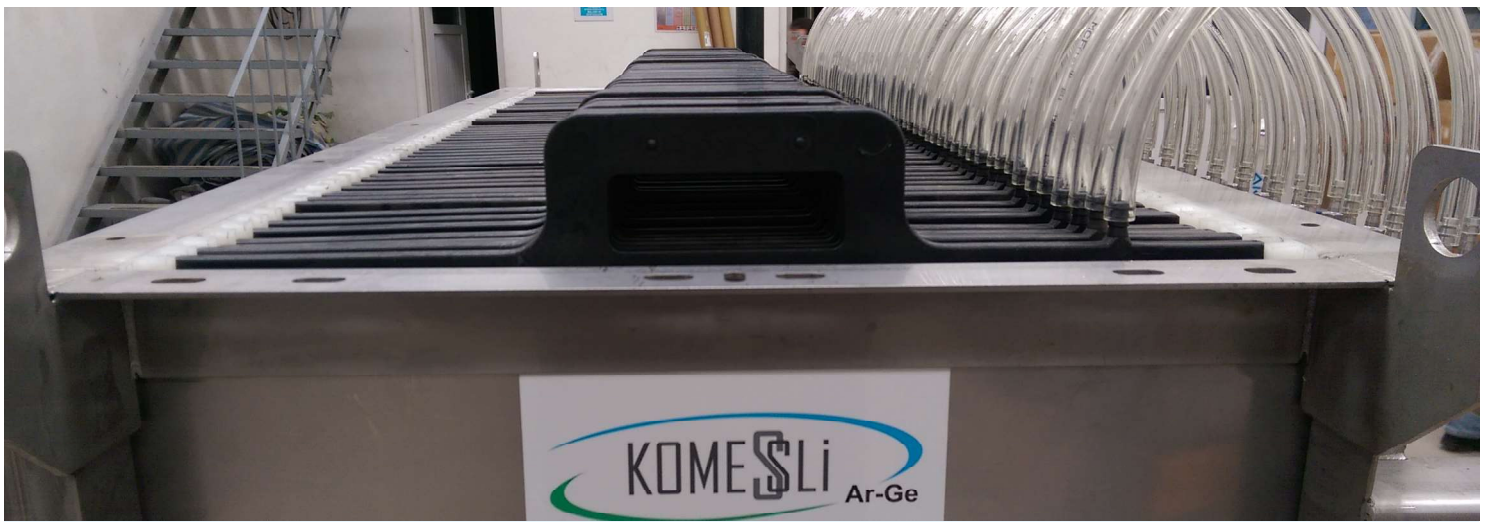
KTM has a highly precise and sophisticated pumping mechanism that can generate plenty of micro-bubbles by three hydro-dynamic principles: negative pressure sucking both air and water simultaneously from each port; air effectively mixed

into water; finally properly producing pressurized air-enriched discharge.

BiDAF, Dissolved Air Flotation Plants are used for a wide variety of industrial and municipal applications, such as:

- Slaughter houses
- Meat processing
- Fish processing
- Dairies
- Oil & Fat refineries
- Industrial kitchens
- Fast food providers
- Soap Works
- Cosmetics Industry
- Textile Industry
- Chemical Industry
- Petrochemical Industry
- Iron & Steel Industry
- Metal processing
- Galvanizing
- Land remediation
- Waste management
- Municipal Wastewater

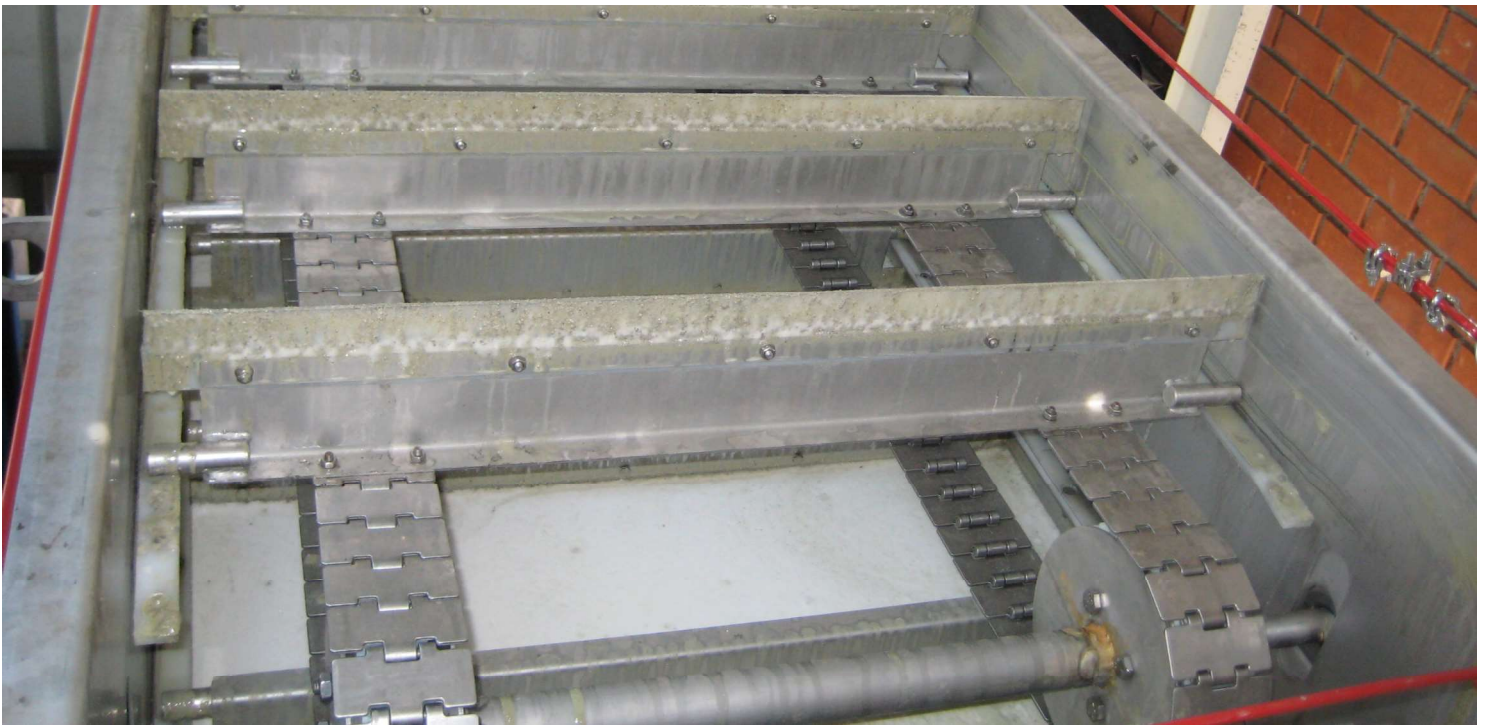




ADVANTAGES OF MBR SYSTEM:

- Maximum effluent quality due to the complete particle separation=>direct effluent reuse
- Compliance with hygienic standards due to the high bacteria and virus separation achieved by the UF membranes (37nm,150kDa).
- High concentrations of active biomass allow for a reduction in the aeration tank volume by up to 70%.
- Membrane covering layer control with minimum energy consumption through sequential cleaning of the membranes.
- Low operating costs due to minimum scouring air requirements.
- Reduced energy consumption for scouring air due to the centrally positioned air intake and low pressure.
- No periodic permeate back washing during filtration, no permeate loss and no continuous chemicals consumption.
- The transmembrane pressures are low and tranquil due to the high membrane permeability and subsequently have a positive effect up on the membrane life and minimise energy consumption.
- Innovative permeate discharge system prevents contamination on the permeate side.
- Complete stainless steel design for long life
- Easy identification and replacement of individual defective membrane modules.





ADVANTAGES

- Small footprint – When compared to other solids separation technologies (e.g. clarifiers)
- Highly efficient solids separation
- Low operational costs – Efficient design allowing for low chemicals usages and low energy requirements
- High solids concentration – The DAF achieves 4-6% of dry solids concentration and thus eliminates the need for sludge thickening prior to dewatering
- Maximum longevity – The DAF construction material ensure maximum durability of the DAF even under the most harsh environments (e.g. pH, salinity, corrosion)





Package Plant For DRINKING WATER:

BiPURE® Compact Water Package Treatment Plants are designed to supply high quality and safe water for small and medium communities.

BiPURE® compact and modular concept ensures to meet water quality requirements and potable water production. (According to the water specifications).

BiPURE® Compact Water Package Treatment Plant is completely factory built and delivered in steel shell package (containers), convenient for transportation and requiring minimal on-site assembly and installation work. This prefabricated construction and BIOSIS manufacturing capacity offer a speedy delivery and installation of plants with different capacities and lot of varieties for flocculation, filtration and disinfections.

BiPURE® package plant is based on standard and customized improved design criteria. Cost saving technology, simplicity and reliability of performances are its main characteristics.

BiPURE® integrates conventional physico-chemical treatment of the raw water by coagulation-flocculation, solids removal by settling, filtration and disinfecting.

BiPURE® is able to treat water with a variable and broad range of suspended solids and turbidity. Technological advances are utilized both in clarifier and filtration units and low detention times and high efficiencies are obtained.

BiPURE® produces safe, quality water having an effluent quality assurance that meets international and local drinking water standards.

BiPURE® Compact Water Package Treatment Plants are fully automatic and all operating modes controlled by Programmable Logic Controller (PLC).

The Package Plant for drinking water is easy to operate, has a low energy consumption and is ready to use.

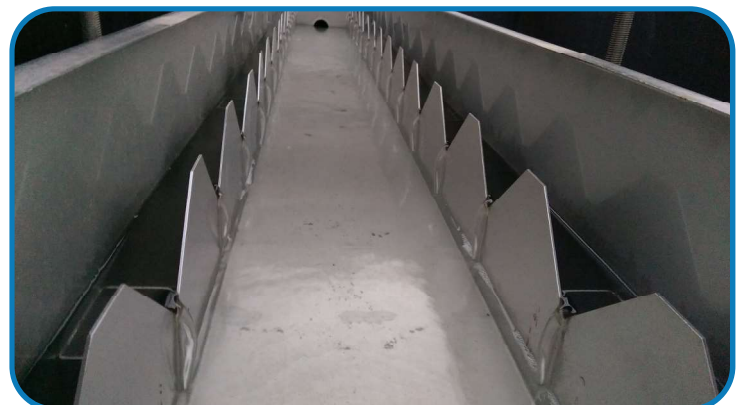
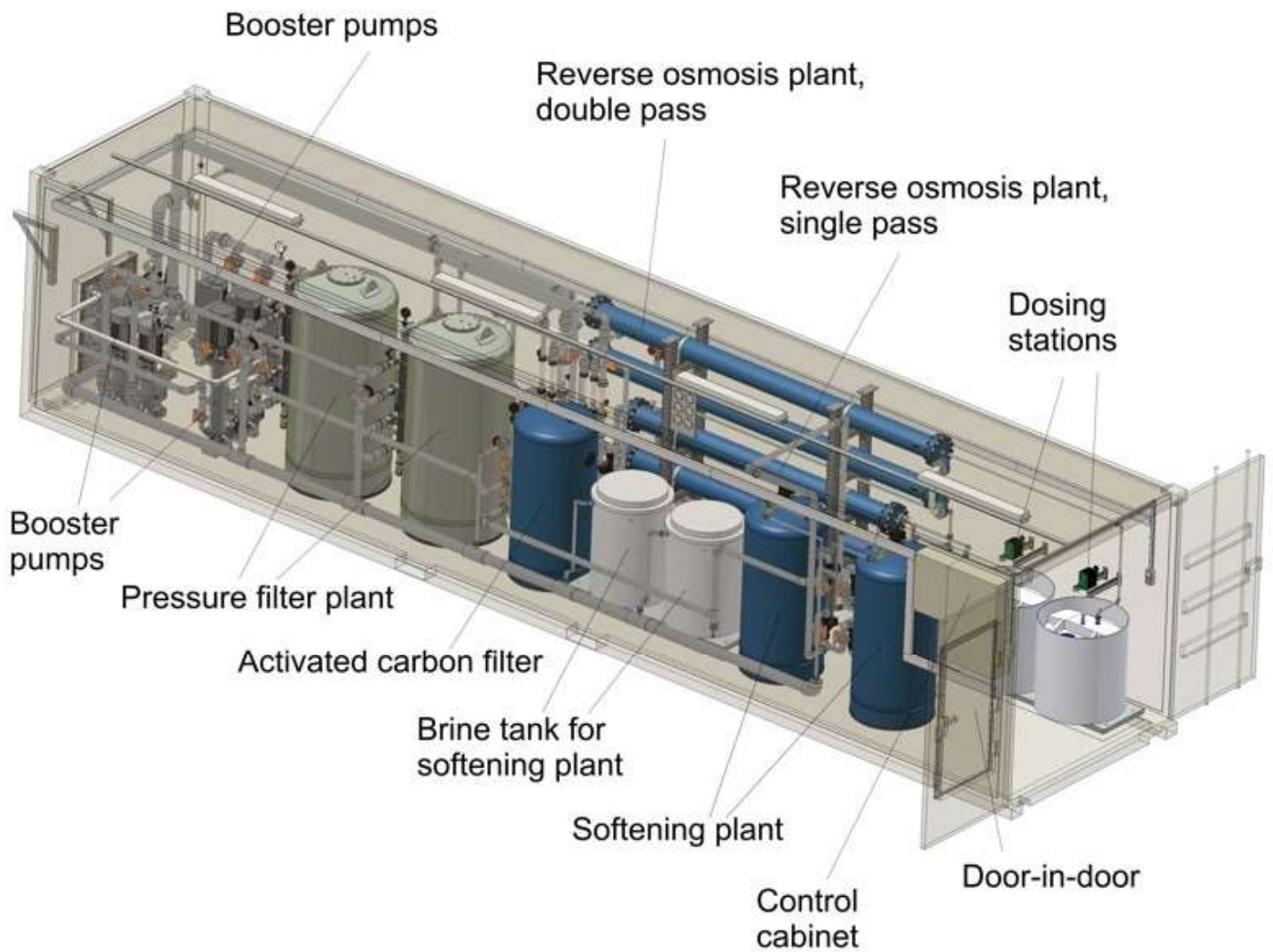
The Package Plant from BiPURE® Systems meets the WHO Guidelines for drinking-water quality and other international water quality standards.

Its versatile design makes it ideal for potable water treatment and industrial process water and also can be used as advanced treatment for wastewater or to reduce suspended solids, phosphorus and other contaminants like heavy metals.

Features

- Fast delivery and start-up due to the mobile concept
- High quality equipment in stainless steel housing
- Minimum construction work on site and easy to relocate
- Compact design and high packing density
- Treated water meets WHO Guidelines for drinking-water quality and other international water standards
- Very good price-performance ratio
- Low maintenance and minimum operation requirement





Innovative Designs ...





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