



Up to 10,000 PE



ATB Solutions

Wastewater treatment plant systems – new construction | retrofit

Wastewater treatment plants for countless industries

The environmentally sound treatment and recycling of wastewater poses major challenges for all of us. As experts in the field of wastewater treatment plants and wastewater technology, we offer specialised solutions for almost all industry segments. Whether it's high concentrations of organic substances, significant fluctuations in daily water volumes, changing temperatures or the use of strong cleaning agents or disinfectants – every industry has specific aspects that need to be taken into account over the long term and as sustainably as possible, as water is increasingly becoming a scarce resource.

Customers from very different branches of industry from all over the world have been relying on our applications for years. In the following, we will present a number of industries in greater detail, focusing on the aspect of climate and environmental protection. We also pay particular attention to personal requests and conduct on-site visits where necessary, allowing us to find just the right wastewater concept to satisfy almost any special requirement.



Camping

The camping industry has been experiencing strong growth for years. For some time now, the demand for individualised holidays combined with the feeling of freedom it brings has been attracting an increasing number of holidaymakers to campsites.

This creates a particular challenge for campsite operators. New campsites are being built and existing campsites need to be expanded. They are located out in the country, often near bodies of water suitable for recreation. In the evenings, campers sit in front of their tents and mobile homes. If the wastewater treatment plant happens to fail during this time, or if it emits an unpleasant odour, this can really dampen the holiday atmosphere.

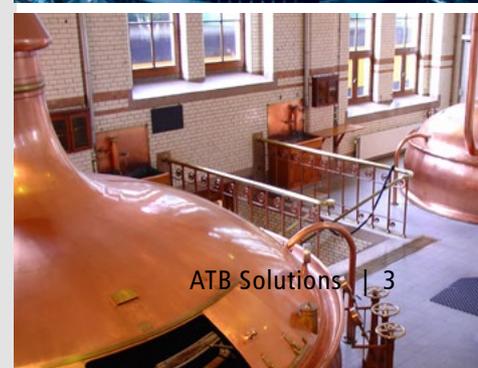
Beverage industry

While the consumption of sugary soft drinks is levelling off or even decreasing slightly in Germany and a number of other industrialised countries, their consumption continues to grow worldwide. Besides the health-related aspects for the populace, processing and bottling also result in considerable amounts of very highly contaminated wastewater that requires treatment. In the beverage industry, an increasing number of recycling processes are being designed for wastewater treatment with the aim of saving fresh water. ATB WATER assists customers with the configuration of a customised purification process. Thanks to insight gained from reference plants and the use of numerous proprietary products and components, ATB WATER is able to offer customer-specific optimised solutions based on a modular principle.

Breweries

Wastewater from breweries is generally contaminated with two different classes of pollutants. During the brewing process itself, an increasing amount of biological substances such as yeast, starch and sugar compounds are discharged into the wastewater. During the cleaning of brewing equipment (boilers, pipelines, etc.) and the rinsing of empty bottles, large quantities of chemical cleaning agents enter the wastewater from breweries.

A number of large breweries use special wastewater treatment processes to recycle substances such as diatomaceous earth and return them to the production process. Wastewater treatment plants that significantly reduce the environmental impact when discharging wastewater into municipal sewage systems (indirect discharge) are also important in this context. This is often required by the operator of the municipal wastewater treatment plant.



Meat industry

Wastewater from butcheries and abattoirs is heavily contaminated with fats and other organic substances such as faeces and hair. Furthermore, significant quantities of solids are released from the animals' intestines during slaughter. Fats and fatty acids in the wastewater from butcheries and other meat processing operations can accumulate in pipes and clog them. Fatty acids often result in the corrosion of wastewater pipes and other technical equipment in plants and wastewater treatment plants. In wastewater treatment plants, fats are a hindrance for biological purification. There are often also huge temperature differences. The use of cleaning agents is particularly important for hygiene reasons. This presents an additional challenge for wastewater treatment plants. A high level of organic contaminants from the meat industry can lead to over-fertilisation and the death of fish if discharged directly into bodies of water. Another problem arising from wastewater from the meat industry is a local issue due to the odour and the introduction of germs into bodies of water.

Refugee shelters

They are fleeing from fear, destitution and political persecution. By the millions, people around the world are being forced to leave their homes. A new crisis somewhere on our planet may result in another wave of refugees tomorrow. In the future, there will also be climate refugees. This can already be observed today, such as after extreme natural disasters. One particular challenge this brings with it is the construction of refugee camps. The sanitary conditions there are often catastrophic. There is often a lack of good wastewater treatment plants. In such cases, it is particularly important to provide a solution quickly. Avoiding illnesses and epidemics is of prime importance in refugee shelters. For this purpose, ATB WATER offers wastewater treatment plants not only as a container solution, but also as technologies which can be integrated into local settling ponds or locally constructed receptacles. We also provide wastewater treatment plants for sewage from stationary refugee accommodations which do not have their own connection to the sewage system.



Fish industry

Industrial fish processing operations often consume large quantities of water, for example when washing the raw product, producing tinned fish or making fish meal. Wastewater from the fish industry contains significant quantities of biological impurities, such as BOD, COD and high levels of nitrogen. ATB WATER offers environmentally friendly technologies for the reliable and efficient treatment of wastewater, for example in the processing of herring or fresh fish, or the manufacture of fish-based delicatessen products. All available worldwide, of course.

Food & beverage

Restaurants, large-scale kitchens and canteens are producing an increasing amount of wastewater containing fat. Furthermore, the daily quantities of wastewater fluctuate greatly due to events. One other challenge for wastewater treatment plants in the F&B industry are seasonal fluctuations, for example due to tourism. Our experts have realised countless projects in the F&B sector. Ski huts and brewery restaurants are also within our scope of expertise.

Hotel and tourism

The greatest challenge for a wastewater treatment plant in a hotel or resort are the seasonal fluctuations. Summer or winter operation can lead to considerable quantities of wastewater – often within just a few days. What we are dealing with here is the wastewater from the operation of the hotel and restaurants. In many cases, the recycling of water plays a major role. Many holiday resorts are located on islands, in arid regions or directly next to bodies of water. Clean water and pristine nature are therefore essential prerequisites for the tourism industry. Hence, you should only entrust your wastewater project to experts. ATB WATER has more than 20 years of experience in wastewater treatment plants for hotels, holiday resorts and the food and beverage industry.

Public facilities

Whether it's small villages, city districts or municipal facilities such as schools or other public communities: our SBR wastewater treatment plants can be optimally integrated, are tailored precisely to tackle your municipality's challenges, flexible in terms of operation, offer safe effluent values, and are of course easily expandable. In addition, our remote monitoring helps boost operational safety. Even in cities with centralised utility systems, our decentralised wastewater treatment plants can help to relieve the pressure on overburdened large-scale wastewater treatment plants and sewage systems.



Our AQUAMAX® PRO systems technology



AQUAMAX® PRO GZ
1-16 EW



AQUAMAX® PRO GZ
17-50 EW



AQUAMAX® PRO XL
50-1,000 p.e. or up to
150 m³/day

In collaboration with testing institutes and universities both at home and abroad, the AQUAMAX® PROFESSIONAL (or PRO) wastewater treatment plant was developed based on our market-leading AQUAMAX® small wastewater treatment plant for industrial users and smaller municipalities. This system operates using the tried-and-tested SBR process and offers highly economical solutions for almost all professional requirements.

The AQUAMAX® PRO series was designed specifically for irregularly occurring and highly contaminated wastewater from hotels, F&B, commercial and food-processing operations, as well as for settlements and smaller villages. We have standardised the plant technology of our PROFESSIONAL G and XL series for applications up to 1,000 PE. Furthermore, we also offer project-specific planned XXL systems ranging up to 10,000 PE.

Available with all AQUAMAX® PRO plants



imemflo® MBR Bioreactor

Efficient, most advanced technology for municipal and industrial wastewater treatment.

- Higher permeate quality for discharge or reuse
- No effects experienced due to fluctuations in influent flow
- Longer sludge retention time – results in less sludge
- Smaller space requirements compared to a conventional plant
- High sludge concentrations (4 to 12 g/l)
- Biological degradation of ammonium via nitrification process
- No secondary sedimentation basins

MBR combines the advantages of membrane filtration and classic biological wastewater treatment. A membrane module is used to filter the wastewater instead of a secondary sedimentation basin in a conventional activated sludge process. The resulting permeate exhibits a significantly higher wastewater quality than effluent discharged from conventional treatment processes.



AQUAMAX® PRO XXL **Up to 10,000 p.e. or** **up to 1,500 m³/day**



UV hygienisation



Safe phosphate removal



RDT (remote data transmission)

AQUAMAX® PRO G

The plant concept

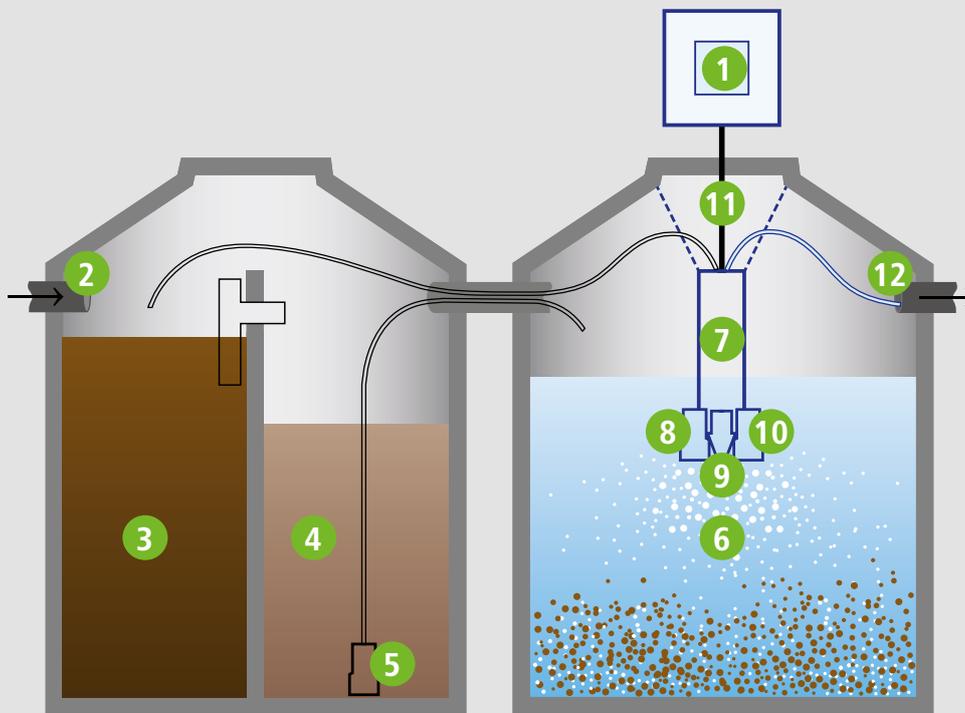
Developed specially for irregularly occurring and highly contaminated wastewater from hotels, F&B and food processing operations with a capacity of up to 50 PE or 7,500 litres/day: the „G“ models of the AQUAMAX® PRO. Complex adaptation of the tanks or underwater installation and maintenance work are now a thing of the past – even the retrofitting of old wastewater treatment plants can be done without earthworks. Thanks to the modular AQUAMAX® system, the AQUAMAX® PRO G can be expanded time and again and adapted to the latest legislation at any time via software updates – without having to invest in a whole new wastewater treatment plant.

And the most important thing: even under the most difficult conditions, the AQUAMAX® PRO G achieves a cleaning efficiency of up to 99%. The safe removal of nitrogen in accordance with European standard EN 12566, Part 3, is also no problem for the AQUAMAX® PRO G.

Need more features? We also offer hygienisation, phosphate removal and filtration as options. Doing so allows us to reliably comply with more stringent legal requirements. Would you like to use the treated wastewater to irrigate your green spaces? We have customised solutions for that, too.

Main areas of application

- Hotels
- Gastronomy
- Commercial enterprises
- Food industry

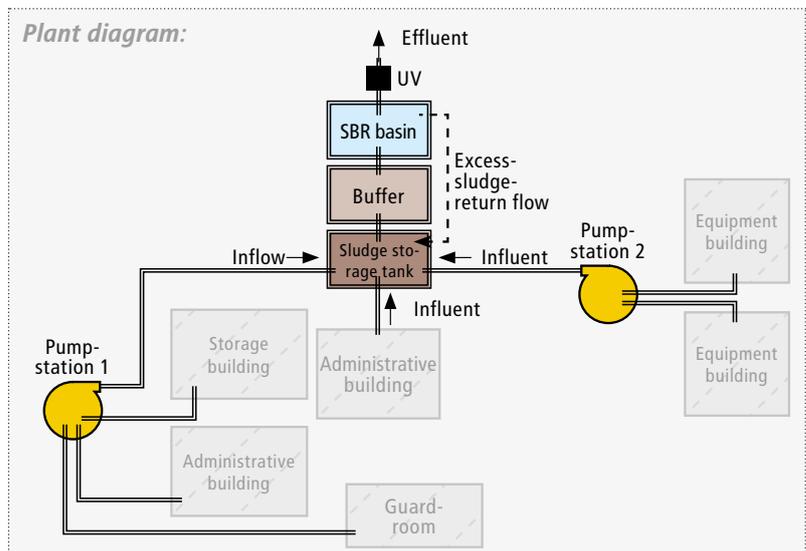


How the AQUAMAX® PRO G works

- | | |
|--|---|
| <ul style="list-style-type: none"> 1. Automatic control 2. Influent 3. Pre-sedimentation 4. Buffer 5. Feed pump 6. SBR | <ul style="list-style-type: none"> 7. Support frame 8. Clarified water pump 9. Submersible aerator 10. Sludge recirculation pump 11. Control cable 12. Effluent |
|--|---|

AQUAMAX® PRO G 40 PE reference plant

On the premises of a gas-fired power plant in Trinidad, a wastewater treatment plant was installed to treat the wastewater generated by employees. Two pump stations convey the wastewater to be treated from various buildings to the wastewater treatment plant. A UV unit for hygienisation was retrofitted later on.



AQUAMAX® PRO XL

The plant concept

Because it is a system based on standard components, this plant type can be realised quickly and easily. This wastewater treatment plant has been designed specifically for small settlements and villages, as well as for F&B operations, hotels and commercial enterprises. The combination of individual modularly structured SBR lines allows wastewater treatment plant sizes of 50 to 1,000 PE or up to 150 m³/day to be realised. Depending on the connection size, the required effluent parameters and the individual circumstances, the wastewater treatment plant is configured to suit your application with the use of standardised components.

This allows the system to be used flexibly and offers the advantage of high operational reliability thanks to its modular design. In addition, the AQUAMAX® PRO XL plant is particularly service-friendly, as all units can be removed individually and easily via the inspection openings of the wastewater treatment plant. This enables maintenance work and repairs without having to empty the tanks.

Need more features? We also offer hygienisation, phosphate removal and filtration as options. Doing so allows us to reliably comply with more stringent legal requirements. Would you like to use the treated wastewater to irrigate your green spaces? We have customised solutions for that, too.

Main areas of application

- Settlements and villages
- Public facilities
- Hotels
- Food & beverage
- Industrial operations
- Food industry

Tailored to your needs! The AQUAcalculatorPRO

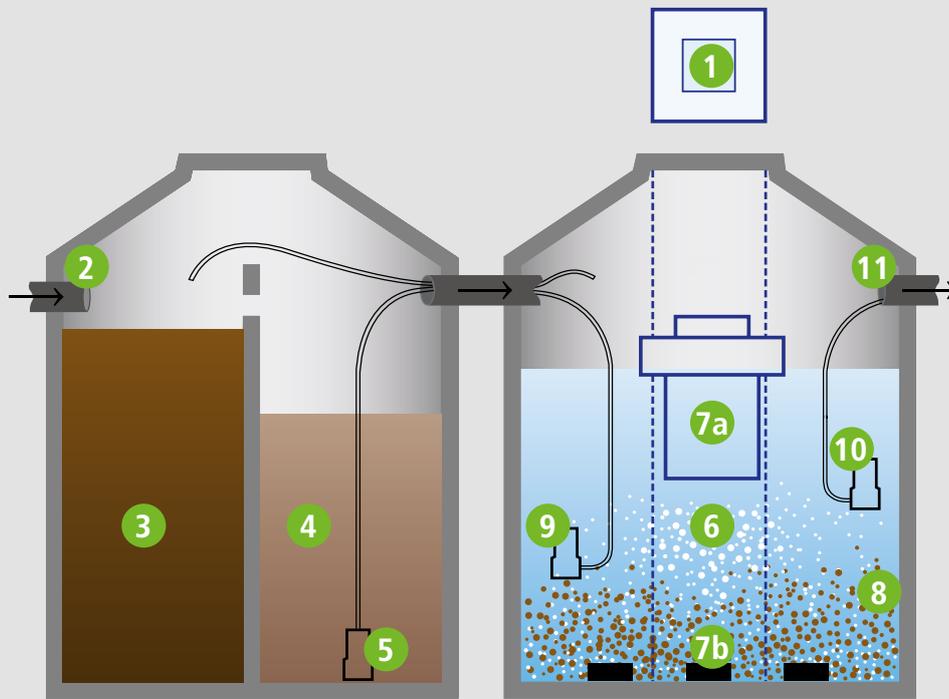
A quick, representative price quote in just a few steps!

Use our AQUAcalculatorPRO for AQUAMAX® PRO XL plants (currently from 50 to 750 PE) to obtain your project-specific estimate including a representative price quote. Simply enter and submit the available project data to receive further planning data immediately via email.

- ✓ No long waiting times!
- ✓ No time-consuming phone calls

CLICK HERE TO
THE ONLINE
CALCULATION





How the AQUAMAX® PRO XL works

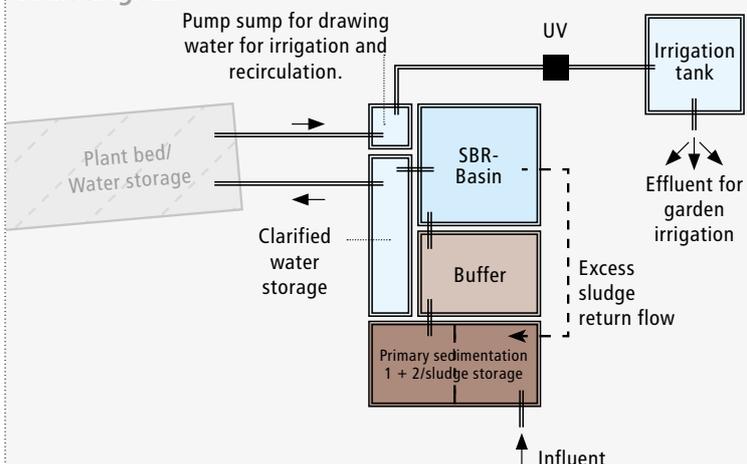
1. Automatic control
2. Influent
3. Pre-sedimentation
4. Buffer
5. Feed pump
6. SBR
7. Ventilation system (variant a: surface aerator, variant b: strip aerator and compressor)
8. Mixer (optional – not shown here)
9. Sludge recirculation pump
10. Clarified water pump
11. Control cable
12. Effluent

AQUAMAX® PRO XL 1 – 100 PE reference plant

This wastewater treatment plant treats the domestic wastewater of an entire care facility in Mexico (residents, employees, kitchen, etc.) and is connected to a downstream irrigation unit. After being discharged, the treated wastewater is used to irrigate the facility's own park containing numerous plants.



Plant diagram:



AQUAMAX® PRO XXL

The plant concept

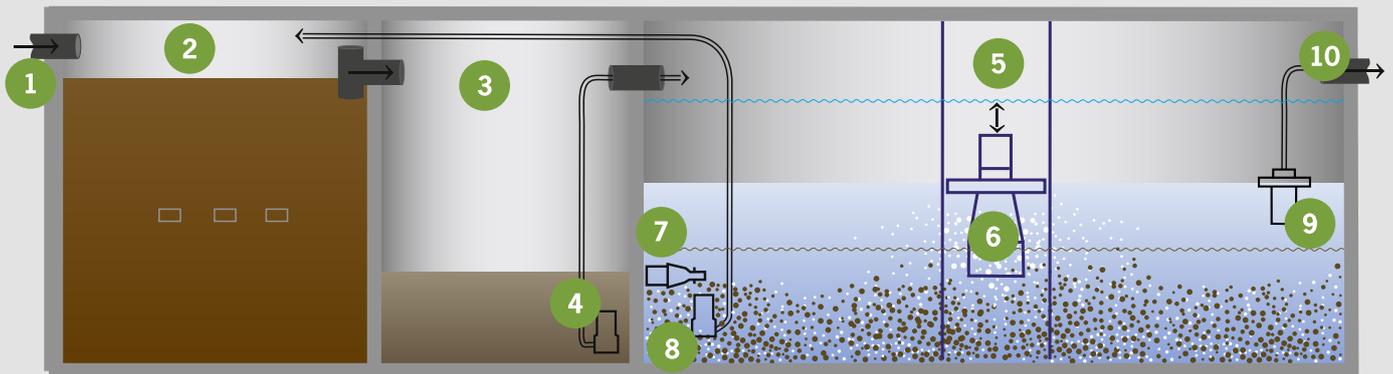
In addition to our standard range of wastewater treatment plants with a connected capacity of up to 1,000 PE, we also offer customised solutions for small and medium-sized municipal applications. In this field, we see ourselves as a product-independent planning and implementation company for wastewater treatment plants with a capacity of up to 10,000 PE or 1.500 m³/day.

Our scope of service and supply includes all the steps – from the process engineering concept for the wastewater treatment plant to the full technical dimensioning of all of the wastewater treatment plant's components – ranging from the influent pumping station, the mechanical pre-treatment and the biological treatment stage, to the treatment of the excess sludge. Our package is rounded off by the purchase of all components and materials from our upstream suppliers, the in-house engineering and production of the plant control system, the detailed inspection and preparation of all goods before dispatch, plus well-prepared documentation and installation on-site – worldwide. Custom solutions are not available off the rack. That is why we work with you to find the optimum solution for your wastewater treatment. A number of planning tasks need to be completed before the construction of any wastewater treatment plant. The better this preliminary work is carried out, the more efficiently the plant can be designed, planned and realised later on.

Hence, for larger projects, our PROFESSIONAL team is by your side right from the start with its comprehensive range of services, and will also be there to provide support even well after the completion of the plant. At the beginning of every wastewater treatment plant project, the following question inevitably arises: „What exactly needs to be built here?“ But in order to find an answer, a whole range of additional questions will need to be answered when determining the existing circumstances.

Main areas of application

- Industry
- Tourism
- Municipal applications



How the AQUAMAX® PRO XXL works

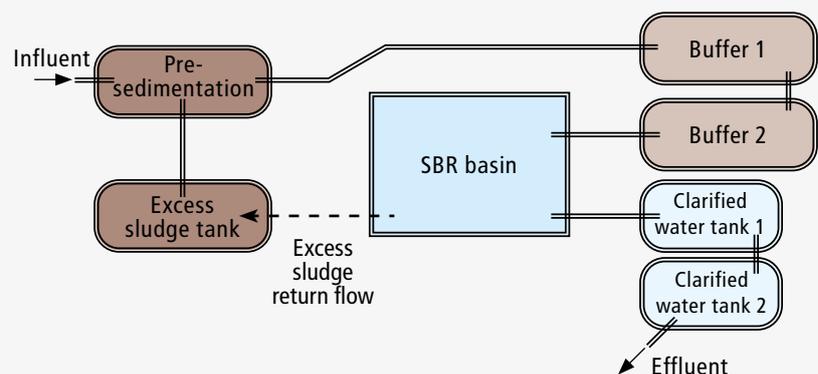
1. Influent
2. Pre-sedimentation
3. Buffer
4. Feed pump
5. SBR
6. Surface aerator
7. Mixer (optional)
8. Sludge recirculation and excess sludge pump
9. Clarified water decanter
10. Effluent

AQUAMAX® PRO XXL 1 – 1,000 PE reference plant

This caravan park is located in North Yorkshire (England). All domestic wastewater generated in the park is treated by an SBR plant designed for 1,000 PE. Due to the limited absorption capacity of the on-site leach field, a plastic tank with a throttled outlet was installed for the clarified water discharge.



Plant diagram:



SEMOCON Containerised wastewater treatment plant

The plant concept

SEMOCON containerised wastewater treatment plants are basically structured in the same way as conventional concrete wastewater treatment plants. Both SBR and continuous MBBR technology are available for the biological treatment processes. The standard design includes nitrification, denitrification and secondary sedimentation in separate treatment steps. The technical equipment and automation of the plant is included, and the plant is handed over as a turnkey system. The pre-treatment, storage and homogenisation of the wastewater is usually mapped on site by underground concrete basins and a pumping station to lift the raw wastewater into the biological reactor. However, at the customer's request, also all treatment stages can also be carried out in the SEMOCON containers. In this case, only the construction of the pumping station for lifting the water into the plant, the concrete foundation for the containers are placed and the outlet chamber are required on site.

Main areas of application

- Domestic wastewater treatment for small settlements
- Wastewater treatment for hotels and tourist complexes
- Special applications such as large temporary construction sites



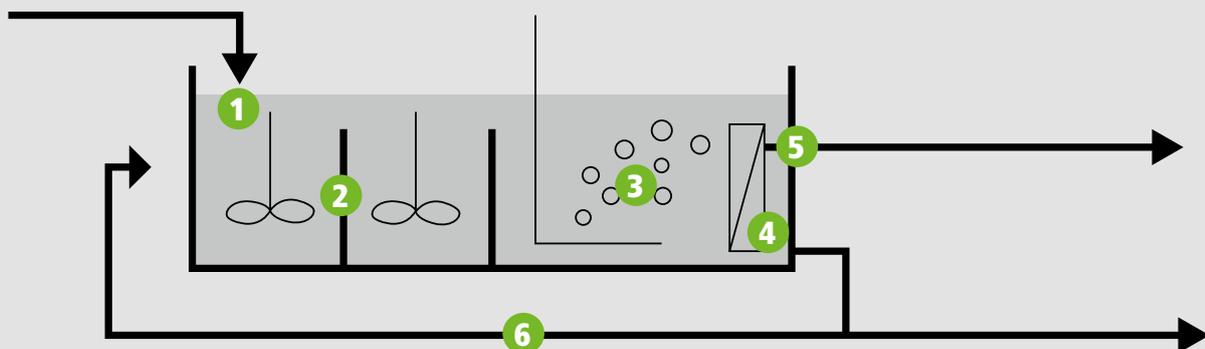
imemflo® – membrane bioreactor (MBR)

The plant concept

The imemflo® membrane bioreactor (MBR) can be described as part of a biological process in which small microorganisms break down pollutants before they are filtered by a series of submerged membranes. The membranes are housed in modules, which are in turn assembled into cartridges and installed in a basin (called an MBR). Air that is introduced via integrated diffusers passes through the membrane surfaces during filtration, mixing with the tank contents and supplying the biological process with oxygen.

Main areas of application

- Reuse of treated wastewater for flushing toilets, washing cars, construction, irrigation, etc.
- Hospitals
- Treatment of industrial wastewater for reuse of wastewater
- Automobile and machine engineering
- Food and beverage industries



1. Influent
2. Pre-treatment/anoxic basin – denitrification
3. Aeration/membrane bioreactor basin – nitrification
4. Submerged membrane filtration modules
5. Permeate
6. Sludge recirculation and removal

Perhaps also interesting for you?

Have a browse through our practice journals

Real-world examples of our industry solutions with detailed facts, data and information are available as free downloads from our website. Go directly to our Website and download the real-world examples and industry solutions you require.





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