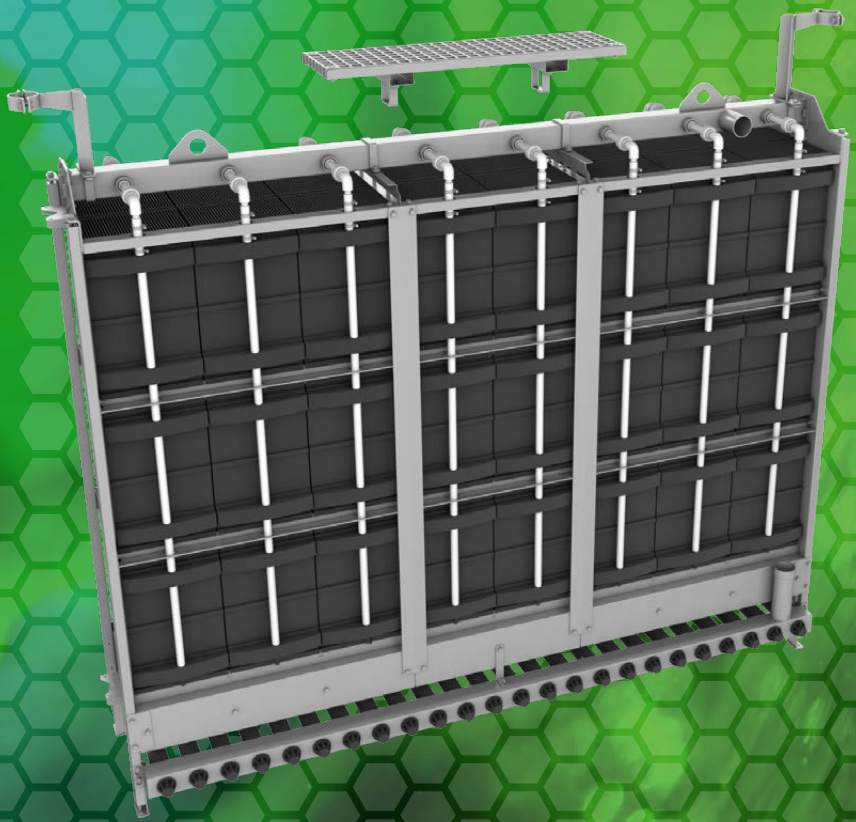
Life is good - with clean water

Submerged modules for **membrane bioreactors** (MBR)



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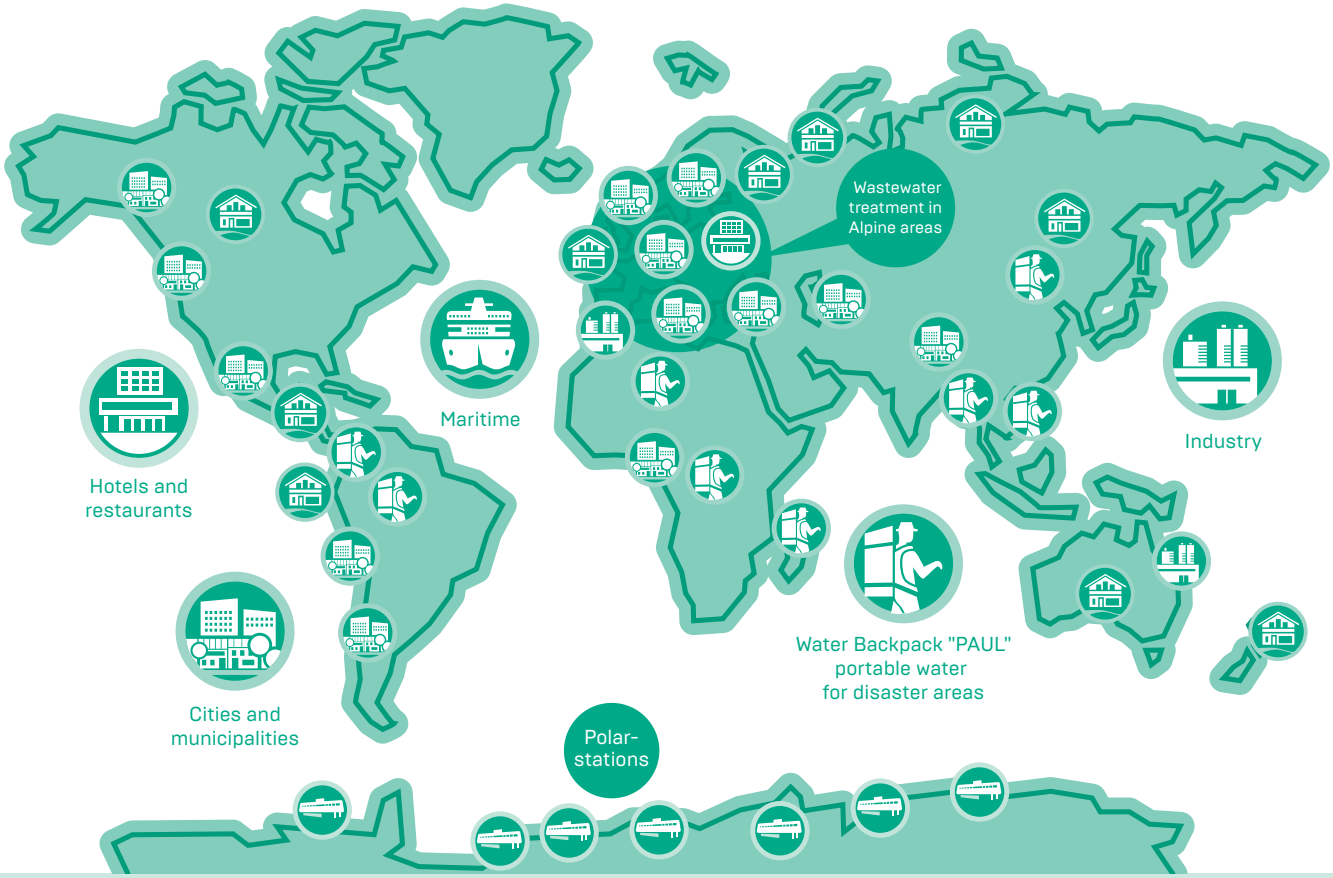
MARTIN
MEMBRANE SYSTEMS
A WILO COMPANY



MARTIN MEMBRANE SYSTEMS

Water is the vital resource on which all life is based. **MARTIN Systems** guarantee the highest level of wastewater treatment with innovative membrane filters.

MARTIN Systems ensure that water is free from pathogenic microorganisms, contains no environmentally harmful pollutants and is cleaned of turbid matter that could affect quality. In this way, the water can be re-used thus saving natural resources.

Expertise

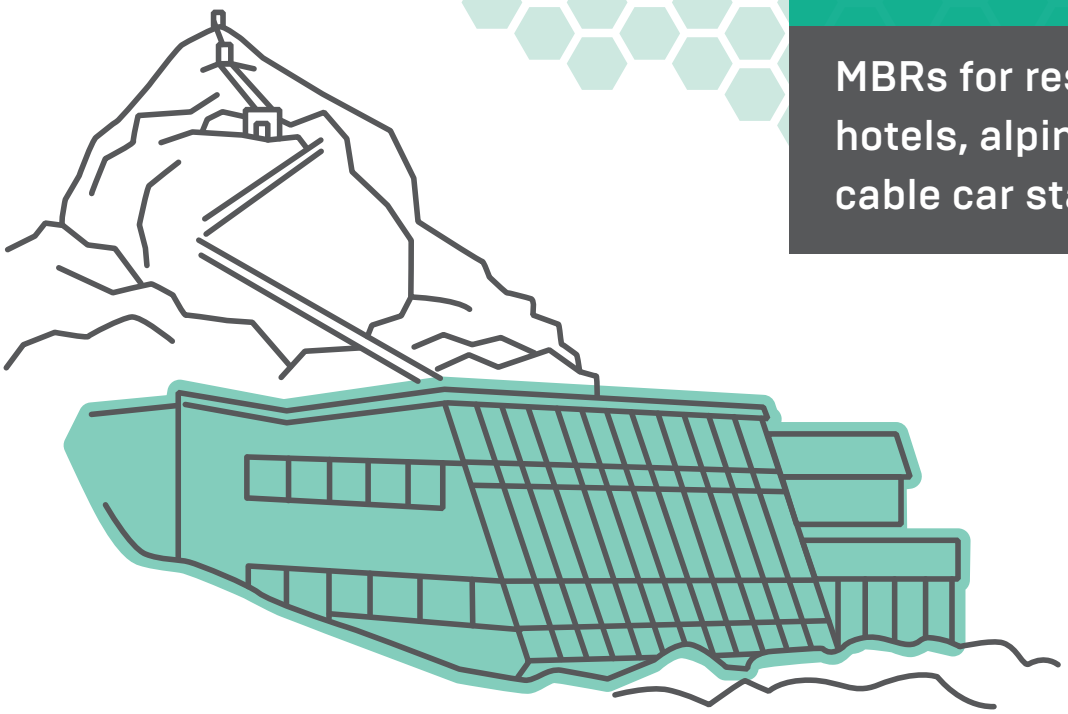
With the experience of more than 80,000 membrane systems installed in the fields of marine, municipal and industrial water treatment, we have managed to make membrane technology economically viable for world-wide applications. Highly qualified and dedicated experts in the areas of research and development, production, sales, commercial and technical handling as well as our comprehensive after-sales service guarantee the success of our products.

Motivation

Our future-oriented and innovative products are aimed at the continuous improvement in the quality of life. As an environmental protection company, we also feel committed to healthcare, in particular to the improvement of water hygiene and thus to the protection of water as the basis of life. The guiding principle of all our actions is the economically viable provision of people and the environment with the best possible water protection technology.

Alpine areas

MBRs for restaurants, hotels, alpine huts and cable car stations



Research and development

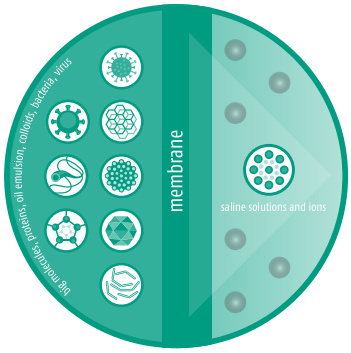
Our engineers, scientists and application technicians work in teams to solve the problems of a society that is becoming increasingly conscious of the environment and sensitised to health protection. And beyond the company itself, we co-operate on an interdisciplinary basis with renowned international institutes on cutting-edge research projects.
Our key focus is on the recycling of wastewater with special attention being devoted to the retention of pathogens and the reduction of turbid matter and pollutants.

Quality

Our products are exceptionally hard-wearing and durable even under extreme conditions thanks to the use of high-quality materials. Our in-depth manufacturing competence makes their production and sale economically viable.
Constant quality controls from the receipt of the materials through to despatch and after-sales service are key to our products‘ high acceptance and to ongoing customer satisfaction. Our quality-conscious methods have been confirmed in accordance with DIN EN ISO 9001:2015.
Our high standards are reflected in the application of environmentally friendly processes and methods and number among the company‘s guiding principles.

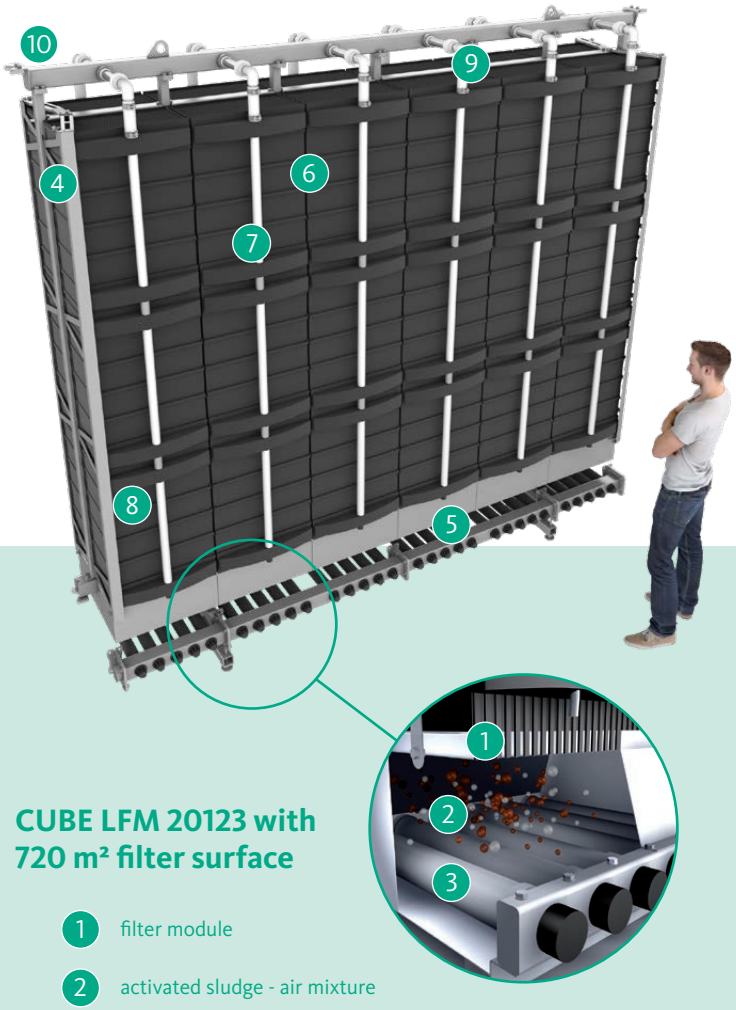
Submerged modules

for all MBR applications



The mean pore diameter of the membranes is only thirty-five millionths of a millimetre (0.000035 mm).

In comparison, the diameter of an enteric bacteria (E-Coli) is approx. one thousandth of a millimetre (0.001 mm), so that the siClaro® membrane represents an impassable barrier for these bacteria.



The ultra-filtration membrane used for siClaro® wastewater treatment physically separates smallest particles down to colloids from liquids on the basis of its defined pore size (<0.1 µm). The membrane holds these substances back without changing them either physically or chemically. This means that dangerous substances cannot even be produced.

We utilise user-friendly flat membranes made of organic polymers which, in combination with the sophisticated filter design, effectively prevent clogging of the filter due to hairs, fibres or other unhygienic coarse matter.

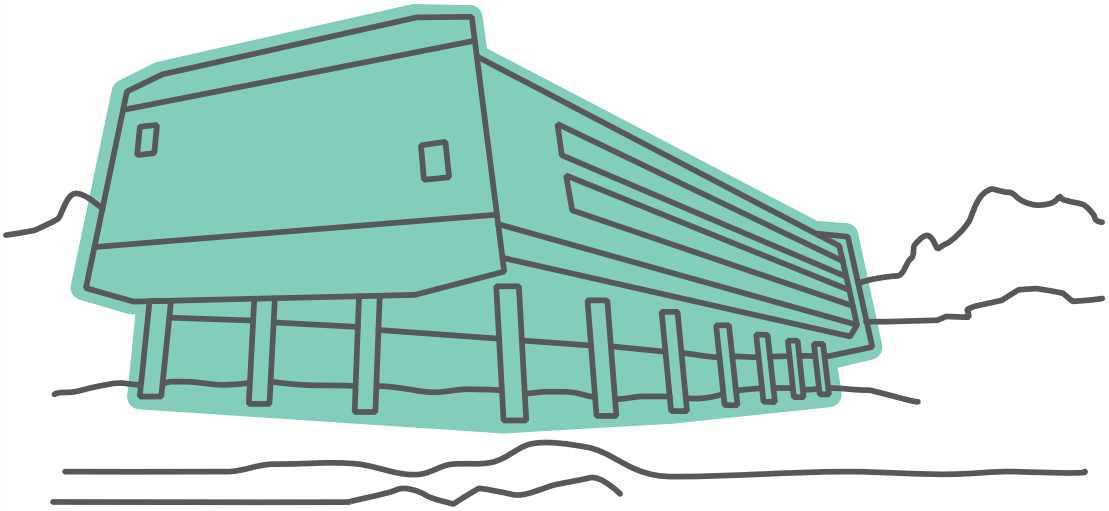
The filtrate produced by the plant meets the high bathing water quality standards according to the directive 75/160/EEC set by the Council of the European Community.
Our ultra-filtration membrane is an insurmountable barrier for bacteria and large viruses such as the dangerous polio pathogen. The smallest organic molecules, metal ions and even dissolved salts, which are partly vital, can pass through the ultra-filtration membrane.

CUBE LFM 20123 with 720 m² filter surface

1. filter module
2. activated sludge - air mixture
3. aerator for air scouring
4. frame
5. up-streaming foot
6. filter modules
7. filtrate extraction
8. scouring air connection
9. filtrate connection
10. guide rail

Polar areas

Leading in MBR supply for Antarctica stations



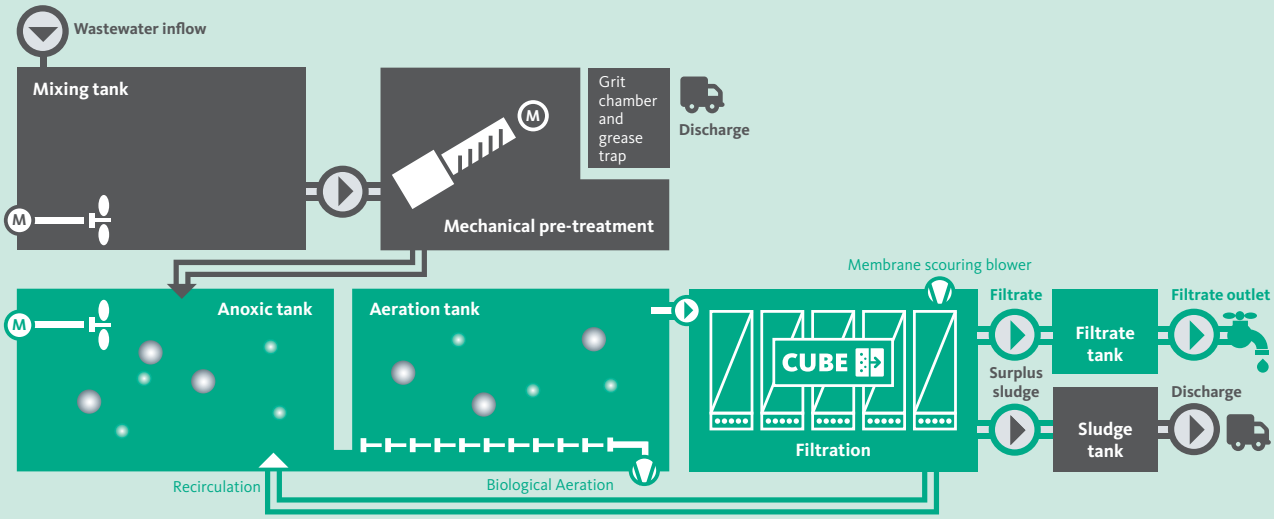
This technology is a combination of the proven activated sludge technology and the innovative membrane process and offers a number of advantages over conventional aeration plants.

The membrane filters are installed directly in the aeration tank or in downstream filtration chambers and ensure that activated sludge, bacteria and viruses are safely retained there.

A conventional secondary settling tank is thus no longer needed to achieve the highest effluent quality.

Advantages

- Small footprint, compact design, no secondary settling tank required
- Excellent effluent quality, disinfection of the effluent from the wastewater treatment plant
- Re-usage of the filtrate as process water, for example
- Robust design
- Reliable operation

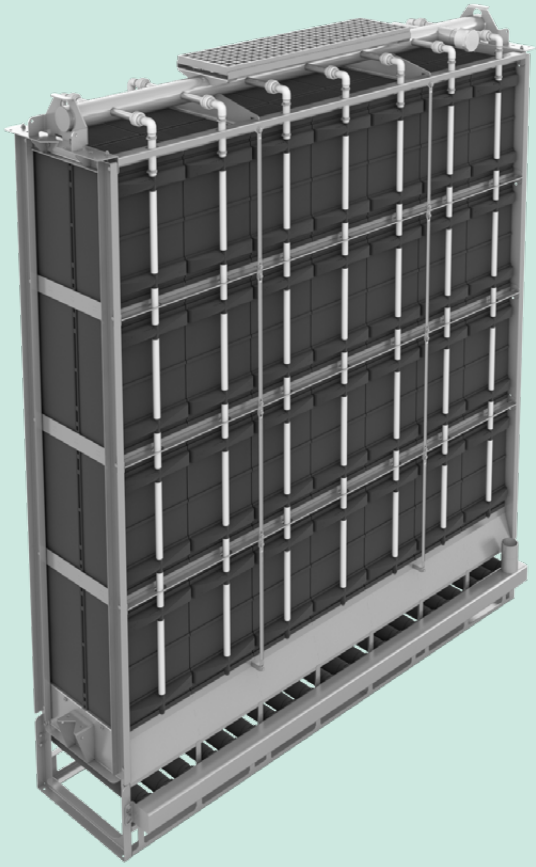


Filter sizes and technical specifications

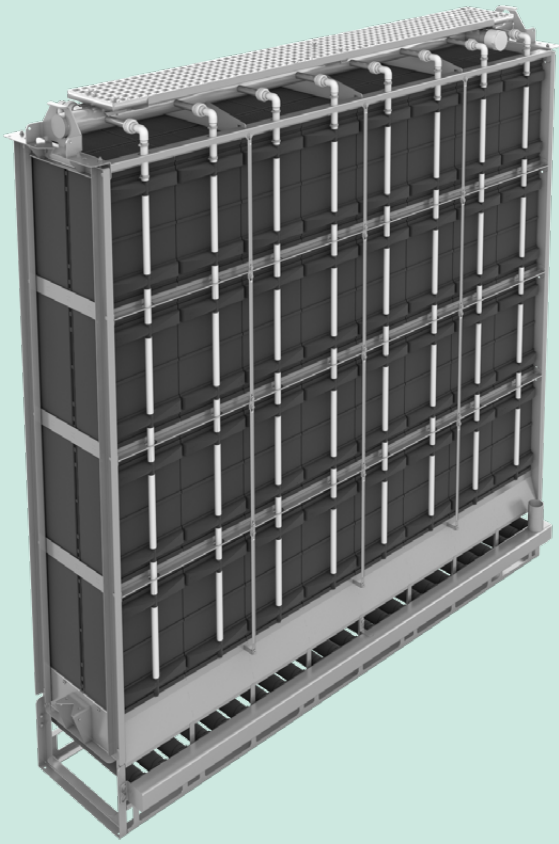
Membrane characteristics

Material	Organic polymer, PES
Cut-off limit	Ultra-filtration
MWCO	150 kDalton
Nominal pore size	approx. 35 nm
Maximum pore size	0.1 µm

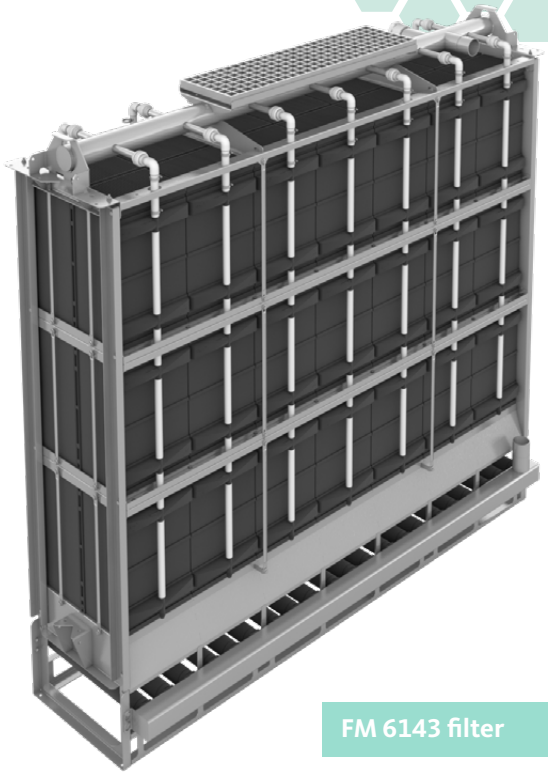
FM 6123 filter



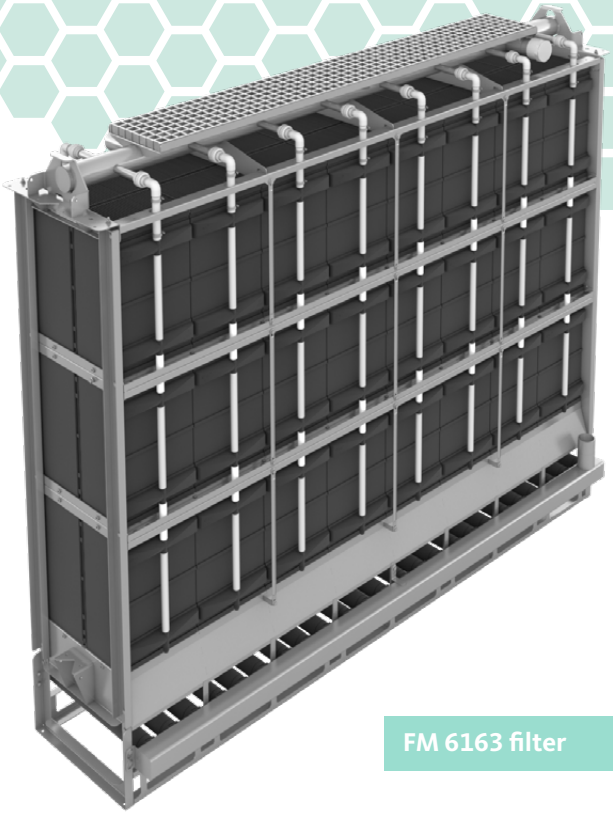
FM 6144 filter



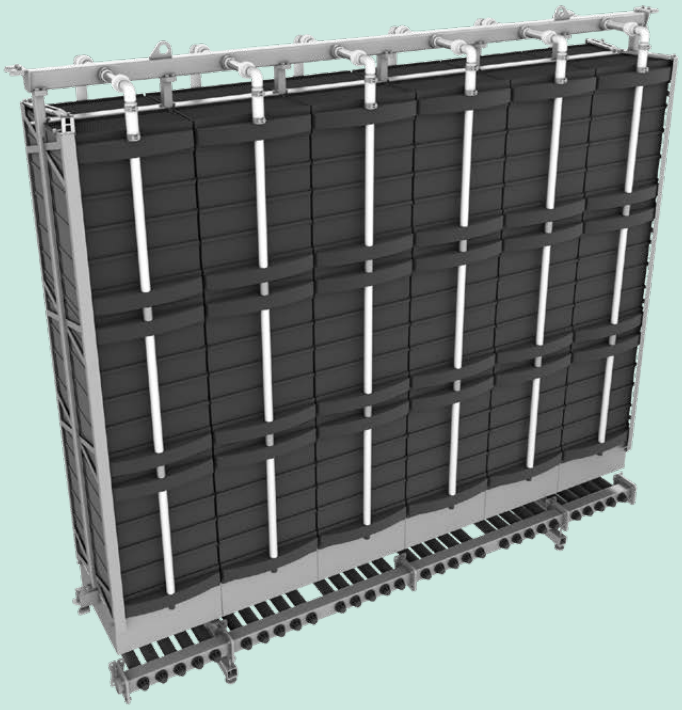
FM 6164 filter



FM 6143 filter



FM 6163 filter



CUBE LFM 20123

With more than 80,000 installed membrane modules **MARTIN Systems** is your competent partner in submerged MBR filter modules for all applications.
For our customers, we are continuously expanding our product range and invest in the expansion and optimization of our production.
In 2016 we present for the very first time the new CUBE filter generation. In 2020, we have updated the design.

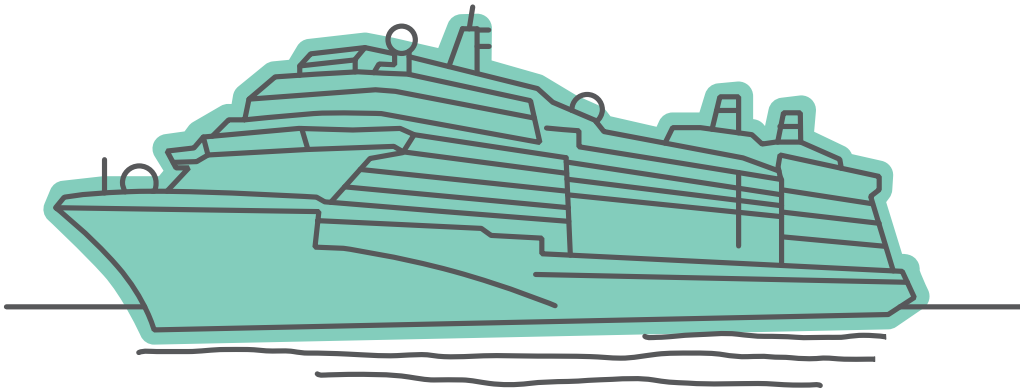
The use of high-grade plastics (PP) and stainless steel components (SS 304, SS 316 optional) guarantees the highest quality and a long service life.

The modular design makes for flexibility when configuring other filter sizes. **Please ask for our detailed engineering catalogue and find out more about our entire range of products.**

Type	Filter surface in m^2	Dimensions in mm (L x H x W)	Dry weight in kg
FM 6123	225	2058 x 642 x 2247	391
FM 6143	262,5	2373 x 642 x 2247	471
FM 6163	300	2688 x 642 x 2247	540
FM 6144	350	2373 x 642 x 2775	596
FM 6164	400	2688 x 642 x 2775	678
LFM 20102	400	3190 x 730 x 2376	900
LFM 20103	600	3190 x 730 x 3174	1100

Across the Ocean

MBR supply for cruise vessels, special vessels, navy vessels and super yachts



There is a huge demand for modern, powerful plants to treat municipal wastewater. From the degradation of carbon through to the extensive elimination of nutrients and disinfection – **MARTIN Systems** offer the optimum solution for all needs.

Low cost of investment

- Easy installation of the membrane segments
- Little peripheral equipment since there is no need for backwashing
- Small activation volumes thanks to a high concentration of active biomass
- Space-saving design, small footprint

Low operating costs

- Minimum energy demand for scouring air due to the patented sequential cleaning of the membrane surface
- Minimum consumption of chemicals for cleaning
- Minimum energy demand for filtrate extraction due to low trans-membrane pressures
- Long membrane life time thanks to gentle filtration
- No risk of blocking or clogging
- Easy maintenance
- Reliable compliance with hygiene standards thanks to the high cut-off performance of the UF membranes (37 nm, 150 kDa)
- Fully automated filtration operation

Countryside

Compact wastewater treatment plant

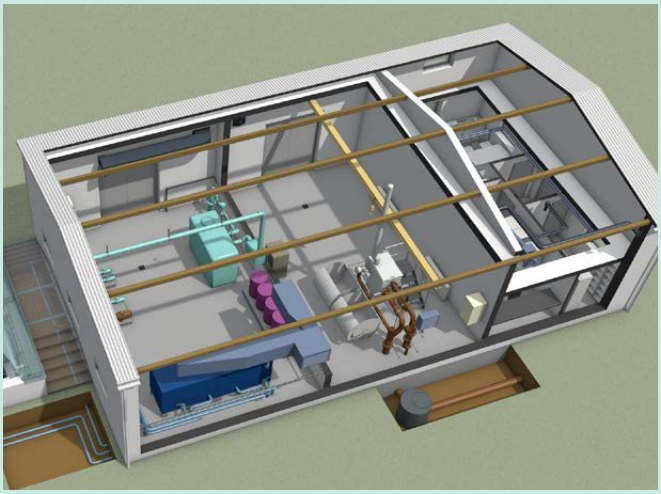
Industrial wastewater in particular often contains high concentrations of organic components.

Due to the relatively high residual concentrations of dissolved substances, physical-chemical technologies are only partly suitable for the complete treatment of such wastewaters.

Since they have a high demand in chemicals and produce large quantities of surplus sludge during the precipitation processes, these technologies incur high disposal and operating costs.

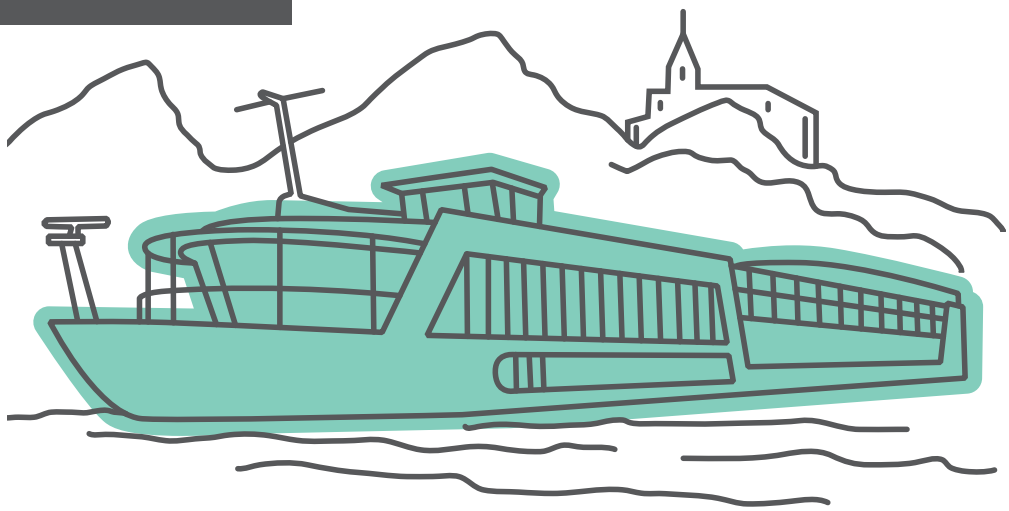
Biological technologies, however, have proven to be ideal for the treatment of wastewater from different industries, though the operation of conventional secondary settling tanks often causes problems in the aeration process.

MARTIN Systems combine the aerobic biological process and membrane filtration to separate the activated sludge. Membrane bioreactors (MBR) work at high biomass concentrations and retain the biomass completely.
The filtration units from MARTIN Systems are supplied as complete filtration containers ready for installation in parallel downstream of the aeration tank.
Existing plants can thus be easily upgraded. The plants are designed and dimensioned individually on the basis of pilot tests with original wastewater. Special pilot plants are available for this purpose.



Riverside

Leading in MBR maritime wastewater treatment for river cruise vessels



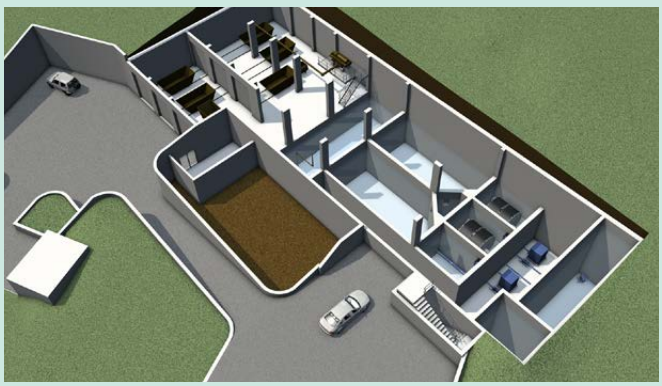
We guarantee first-class support for our customers in planning and operating their plants plus international after-sales service.

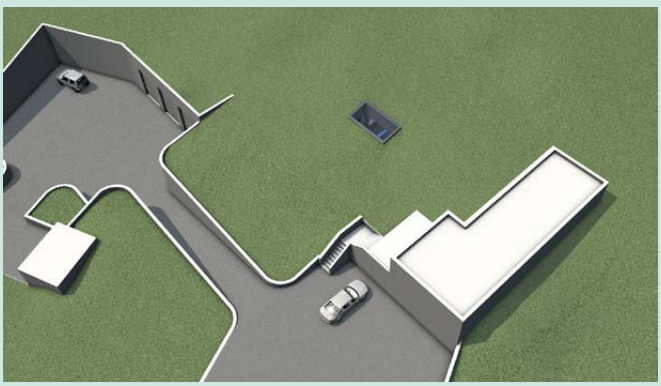
MARTIN Systems provide the ideal wastewater treatment solution in the municipal sector for:

- Cities, towns, villages
- Hotels, holiday parks
- Business parks
- Motorway service stations
- Restaurants
- Sports and recreational facilities

Complete filtration units from MARTIN Systems are used in the following industries:

- Food industry (beverages/breweries)
- Paper and pulp industry
- Chemical, cosmetics and paint industry
- Regenerative energy, renewable resources
- Washing processes (rinsing water)
- Metal, electrical and automotive industry
- Special wastewaters (landfill leachate, plane defrosting)
- After-treatment of anerobic reactors, flocculation and precipitation units





MBR-References


Washing water recycling, textile industry / Spain


Compact wastewater treatment plant / UAE


Motorway service station / Germany


Business park / Germany


Restaurant / Switzerland


Marina / Spain

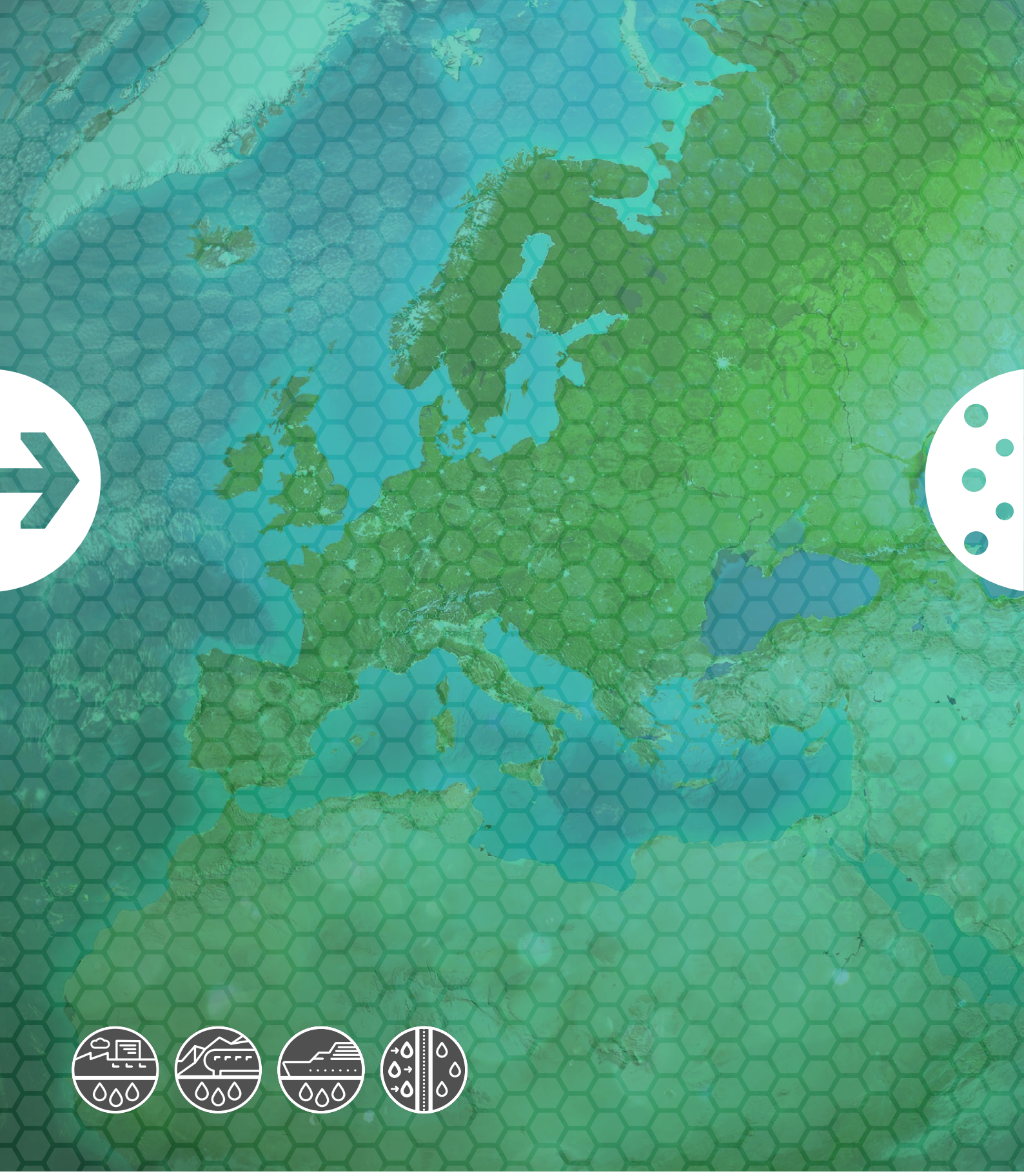

Polar station / Antarctica


Petrol station / Australia


Municipal wastewater treatment plant / Germany


Landfill leachate plant / Germany


Centralised municipal waste-water treatment / Germany



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