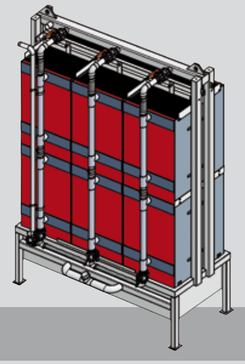

Foto: M. Krüttgen

MaxFlow Membran Filtration GmbH

Innovative Technology for the Environment

Innovative Water Treatment with **MaxFlow** Membrane Module

MaxFlow membrane modules

are applied among others for the following applications:

- ✓ Municipal wastewater treatment; centralized and decentralized
- ✓ Mobile wastewater treatment
- ✓ Marine industry
- ✓ Textile industry
- ✓ Food industry
- ✓ Slaughterhouse
- ✓ Fish farms
- ✓ Beverage industry
- ✓ Dairy industry
- ✓ Breweries
- ✓ Malt breweries
- ✓ Pharmaceutical industry
- ✓ Laundromats
- ✓ Paper industry
- ✓ Waste management industry
- ✓ Biogas and bioethanol plants
- ✓ Animal rendering industry
- ✓ Landfill leachate treatment

Benefits at a Glance

- ✓ Application in MBR and blank filtration
- ✓ Maximum filtration capacity
- ✓ Innovative multi-module arrangement
- ✓ Minimal cleaning requirements
- ✓ Low operating cost
- ✓ High packing density
- ✓ Long life module expectancy
- ✓ Excellent effluent quality
- ✓ High clogging and fouling resistance
- ✓ Simple plant design

The MaxFlow membrane module:

- ✓ Patented, innovative MaxFlow membrane filtration module for the use in membrane bioreactor processes (MBR), in the tertiary treatment of wastewater treatment plant effluent, and for blank filtration of water and wastewater .
- ✓ Due to the use of durable and chemically stable membrane materials (PES / PVDF), the MaxFlow membrane module has a high filtration performance with low fouling potential. By using low differential operating pressures, scaling is effectively prevented.
- ✓ The innovative MaxFlow module „open channel design“ provides optimal biofilm control and minimizes the quantity of chemical cleaning procedures. Multi-module arrangements guarantee extremely high energy efficiency plus a high packing density per square meter. This further reduces plant operating costs.
- ✓ The compact module design enables multi-stack module arrangements using shallow water levels. Therefore, a future plant upgrade to increase capacity is easy to implement.
- ✓ The MaxFlow membrane module is resistant to clogging due to its open-channel design. A simple screen or settling tank is sufficient as pre-treatment.
- ✓ The MaxFlow filtration modules can be cleaned inside the process tank using the „cleaning in place” (CIP) method. Depending on the wastewater source, cleaning intervals range between 2-6 months. The modules may also be cleaned outside the process tank if desired.
- ✓ The robust design and the safe, easy handling of MaxFlow membrane modules allow for simple plant layouts.
- ✓ Most existing conventional treatment plants can be retrofitted with Maxflow membranes due to the flexible and compact nature of our membrane module design.

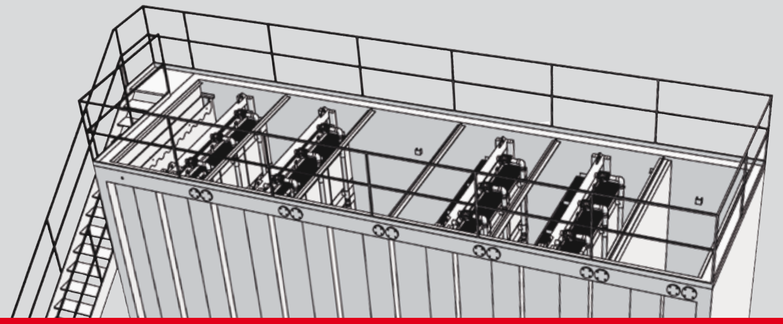

Foto: www.fotosearch.de

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Wastewater Treatment and Water Recycling with **MaxFlow** Membrane Modules

The application of membrane bioreactor technology represents a quantum leap in the use of biological wastewater treatment processes. While conventional treatment processes focus on the degradation of organic contaminants and nutrients such as nitrogen and phosphorous, MBR processes also retain turbidity and microorganisms. This generates high-quality reuse water. MBR plants are extremely compact in size due to their high level of biomass and elimination of clarifiers.

Further, the modular nature of membrane modules provides for very flexible plant concepts that can “grow”, allowing investments to be made only when needed.

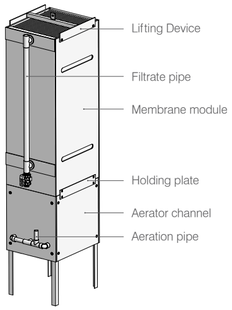
Membrane material

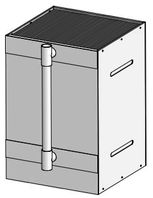
Filtration system	Ultrafiltration U70, U20, U06	Microfiltration M70, M20, M06
Membrane material	PES	PVDF
Cut-off, pore size	150 kDa	0.2 µm
Permaebility, pure water	> 300 l/(m²*h*bar)	1000 l/(m²*h*bar)

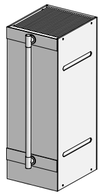
Beneath the standard modules it is possible to manufacture “custom-made” modules with special shape, due to our flexible production line. Therefore MaxFlow Membrane Modules will fit to nearly all MBR applications.

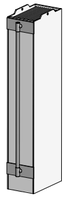
Module data

	U70-003 M70-003	U20-002 M20-002	U06-001 M06-001
Membrane surface (ca.)	70 m²	20 m²	6 m²
Dimensions			
Width (ca.) ± 2,5	736 mm	385 mm	185 mm
Hight (ca.) ± 0,0	1070 mm	1058 mm	1090 mm
Depth without filtration pipe (ca.) ± 2,5	716 mm	466 mm	316 mm
Dry weight (ca.)	160 kg	66 kg	36 kg
Filtrate pipe	DN 50	DN 25	DN 16
Air demand per footprint (ca.)	48 Nm³/h	16 Nm³/h	4.8 Nm³/h









Operation data

Operation parameters	
Flux rate, activated sludge*	15 - 30 l/(m²*h)
MLSS	8 - 15 g/l
Operating pressure	20 -250 mbar
Back wash pressure	< 50 mbar
Temperature range	5 - 50 °C
Cleaning	
Cleaning agents**	bases, oxidants, tensides, acids
Cleaning period	dependant on sewage, normally 2-4 times per year
pH cleaning	2 - 11 (max. 30 °C)
Aeration	
Tube diffusers	medium-sized bubbles
Aerator channel hight without legs (ca.)	440 mm
Aerator channel hight with legs (ca.)	740 mm
Pressure loss of diffusers (ca.)	80 mbar
Module data	
Design of filter bags	plate membrane, sandwich
Grouting	wastewater resistant plastics
Housing	protective PVC plates
Operation	continuous
	cyclic
	pumped
	gravity-flow
Number of filtrate connections	2

* dependent on activated sludge
** see O&M manual

Do you have any questions? Please contact us!

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How to find us

Directions

Exit highway A42 at „Gelsenkirchen - Zentrum“. Take the first right onto Grothusstraße. Pass Shell gas station on your right. At the second traffic light (near the Aral gas station), turn left onto Gewerkenstraße, which later changes to Magdeburger Straße. After approx. 400 m, **MaxFlow Membran Filtration GmbH** will be on your left.

www.maxflow-gmbh.com