



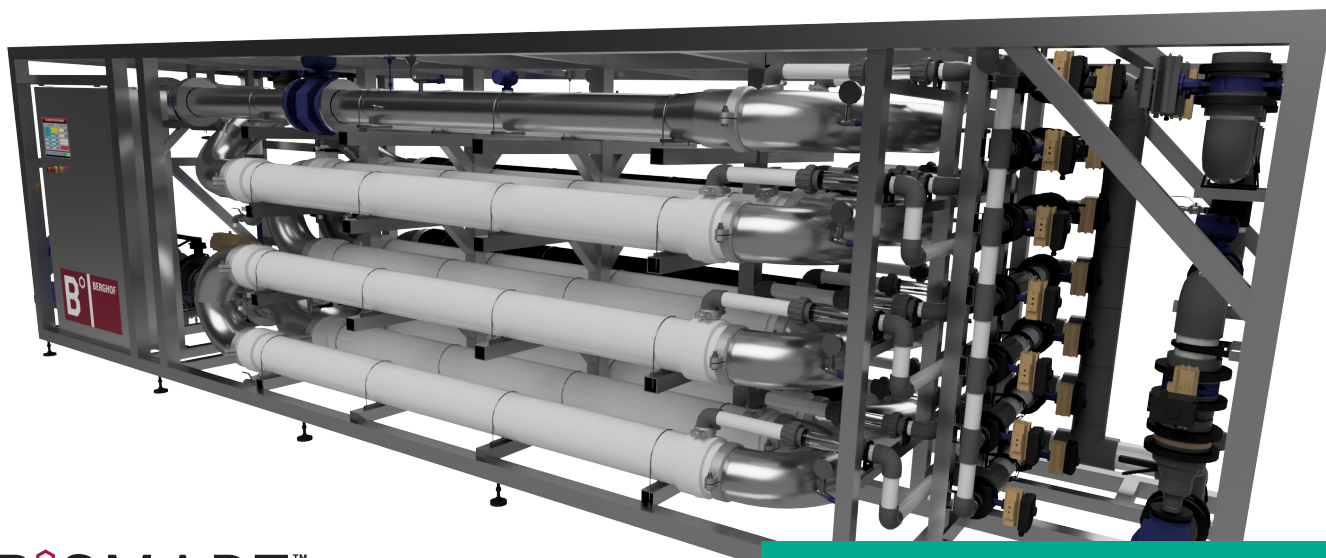
THINK OUTSIDE THE BOX

B°SMART™
External Filtration System



Membranes
Think outside the box

www.berghofmembranes.com



B^oSMART™

The B-SMART™ self-regulating system of Berghof Membranes that is positioned outside the bioreactor or feed tank and delivers clear advantages to improve your treatment process.

THE EXTERNAL PRINCIPLE

The Berghof Membranes filtration systems are positioned outside the bioreactor or feed tank and utilize variable crossflow velocity to keep the membranes working at optimal conditions. This ensure lower energy consumption, easier maintenance and improved OPEX.

Self-regulating operation

The intelligently designed software of the B-SMART external system from Berghof Membranes continuously monitors system data in real time to control pump speed, backwash and cleaning frequency, thereby minimizing maintenance time and costs.

Fouling Control

The Berghof tubular PVDF membranes were designed with superior robustness to ensure long membrane life and easy cleanability. Based on the inside-out principle, feed flows in an axial direction inside the tube and clean water permeates through the membrane wall. This ensures superior fouling control.

Stable Permeate Flow

Regardless of feed flow and quality, the built-in intelligent software automatically adjusts system parameters to accommodate varying conditions to maintain desired output. Operators can count on the system's performance to meet strict permeate standards and avoid costly shut-downs.

Low Velocity & Low Energy

Berghof Membranes designed its innovative external system to help customers reduce energy costs. Through its advanced integrated software, the system automatically adjusts to varying feed conditions to operate at the lowest possible velocity to minimize energy usage.

Optimum Transmembrane Pressure (TMP)

Increasing TMP values pose a real challenge as a result of varying feed quality. The B-SMART self-regulating external system automatically adjusts system parameters to reduce fouling tendency and maintain optimum TMP values throughout the system.

B^oSMART™ System from Berghof Membranes

The new standard in adaptability

	Feed	Membrane		Flux rate	Permeate flow		Energy	Footprint	
	TSS	Diameter	Surface	Range	Single loop skid	Double loop skid	Average	Single loop skid	Double loop skid
	g/l	mm	m ²	l/m ² .h	m ³ /h	m ³ /h	kWh/m ³	L,W,H (m)	L,W,H (m)
Anaerobic MBR	20-30	8 mm	53.4	20 - 60	7.5-22.5	15.0-45.0	0.7-2.5	10.5,1.0,2.4	10.5,2.0,2.4
MBR	10-20			50 - 80	22.0-28.0	40.0-56.0	0.5-0.8		
Direct filtration	0.3-10	5 mm	67.2	75 - 120	35.0-45.0	70.0-90.0	0.2-0.5		



Dairy



Leachate



Oil & Gas



Food & Beverage



Mining



Chemical

AUTOMATED CLEANING

The intelligent combination of variable velocity, backwashing, chemical enhanced backwash and cleaning in place makes the B-SMART system a revolutionary solution for the treatment of industrial effluent.

1. Variable crossflow velocity

If the normal TMP values are in excess of 10-15%, the system progressively increases crossflow velocity up to 2-3 m/s in order to create optimal turbulence to remove fouling & normalize TMP values.

2. Individual module backwash

If an increase in crossflow velocity is not sufficient to completely eliminate fouling, then the system will automatically initiate permeate backwash protocols.

3. Chemical-Enhanced Backwash

If neither increase in velocity or permeate backwash prove to be sufficient in restoring normal performance, the system implements a chemical-enhanced backwash to eliminate fouling.

4. Cleaning-In-Place (CIP)

In rare cases when abnormal fouling occurs in the wastewater, an automatic CIP is initiated to eliminate stubborn foulants.

BERGHOF MEMBRANES

The leader in tubular membrane solutions

Berghof Membrane Technology GmbH (BMT), part of the Berghof Group, is the leading manufacturer of tubular membranes for the filtration and separation of process streams and wastewater in a variety of industries including dairy, landfills, food & beverage, chemical, pharmaceutical, and oil & gas.

BMT products are manufactured to the highest quality standards in the company's fully automated facility in Eningen, Germany.

With more than 50 years of experience and over 1,000 installed systems across the globe, Berghof Membranes prides itself on the robustness, flexibility, energy efficiency and superior quality of its external filtration membranes and solutions.

When it comes to membrane filtration, think outside the box and contact Berghof Membranes today.

THINKING OUTSIDE THE BOX.

Many treatment systems are incapable of handling fluctuations in volume and concentration of industrial effluent and wastewater. In addition, these systems are prone to fouling and cleaning is a time consuming, costly and dirty process.

At Berghof Membranes we believe in external membrane filtration. Our treatment systems are placed outside the bioreactor or feed tank, which means the systems are easy to clean and maintain. Our membranes are superior in robustness, durability and fouling resistance.



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