



MEMPULSE® MBR SYSTEM

UNIQUE, ROBUST SYSTEM THAT MINIMIZES SCOURING AIR FLOW AND FOOTPRINT

MEMCOR® PRODUCTS

MEMPULSE® MBR SYSTEM

The MemPulse® MBR system from DuPont Water Solutions employs a unique wastewater treatment process that combines activated sludge treatment with MEMCOR membrane filtration resulting in greater effluent quality at a reduced life-cycle cost. The system delivers greater stability of the membrane environment, operational flexibility and reduced maintenance requirements resulting in significant cost savings.

BENEFITS OF UPGRADING TO MEMPULSE MBR

- High-quality effluent
- Drastically reduced system footprint
- Fewer process steps
- Eliminates sludge settleability issues
- Modular expansion capacity

The MemPulse® MBR System provides:

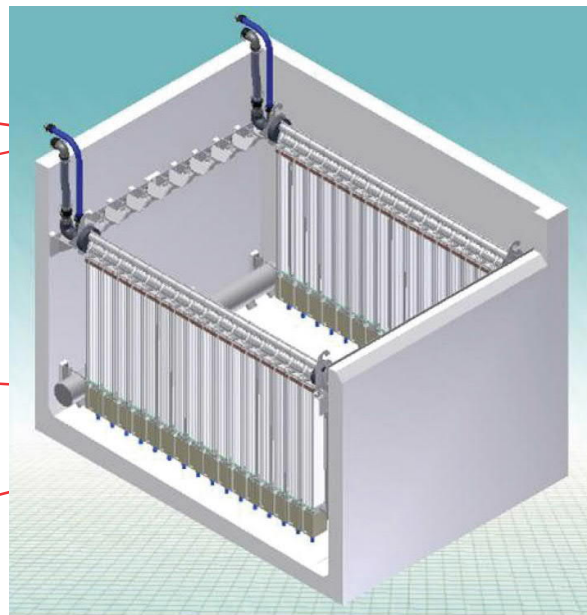
- Flexible modular rack design – fits in most tank arrangements
- Pulsed, plug flow aeration for channeling & solids build up prevention
- Continuous air scour flow to each membrane rack
- Market leading low energy consumption. Reduces aeration by up to 50% or $<0.08 \text{ kWh/m}^3$.
- Reduction of operation & maintenance costs with no moving parts in the aeration process
- Easy to handle modules and racks

AIR SUPPLY

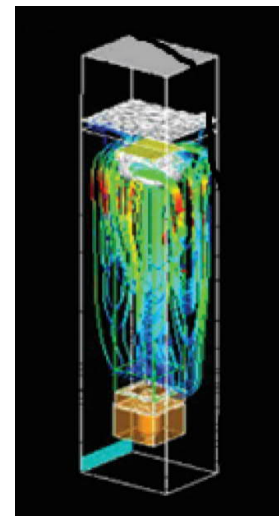
FILTRATE COLLECTION

MIXED LIQUOR FEED

MEMPULSE® MBR DEVICES



The MemPulse® modular rack design allows for plant design flexibility and compatibility with nearly any existing tank or plant footprint.



Graphic above depicts air scouring efficiencies achieved by introducing a plug flow of air at the base of each module.

SOLUTIONS FOR YOUR INSTALLATION

The MemPulse® MBR system combines a compact modular rack design and the B40N Membrane to deliver greater filtration performance with reduced aeration flow.

The MemPulse MBR system has a proven track record of achieving superior effluent quality in a reduced footprint and at a lower life-cycle cost in the most challenging environments. The system is successfully operating in applications ranging from municipal wastewater plants to the most difficult industrial applications such as oil refineries.

DELIVERING RELIABILITY & OPERATIONAL SIMPLICITY

The MemPulse MBR system is designed to increase reliability, decrease operating and maintenance costs and dramatically reduce energy usage. A continuous air flow is evenly distributed to each MemPulse device located directly at the base of each MBR module. The system randomly introduces air at the base of the membrane module in the form of large bubbles or slugs that increase in size as they move up the membrane fibers. The size and the random nature of the large slugs of air prevent trash and solids build up by pushing debris away from the membrane fibres at the surface.

At the same time the large aeration pulse creates an airlift flow that draws mixed liquor into the bottom of each membrane module through an airlift tube. The air bubbles then blend with the mixed liquor and rise between the individual membrane fibers. This creates a unique crossflow pattern, providing an even distribution of mixed liquor and a reduction of solids concentration on the membrane surface.

The cross flow combined with random, slug aeration prevents channeling and solids accumulation on the membrane surface resulting in greater system efficiency and reduced air scour. In addition; the up-flow pattern in the tank creates a flotation effect that moves grease, scum and other floatable constituents to the surface for removal.

PROVEN AND RELIABLE

The MEMCOR Product line has been leading the membrane industry for over 30 years and has had a dedicated MBR team since 1995. The membranes used in the MemPulse system have been proven in the field since 2007.

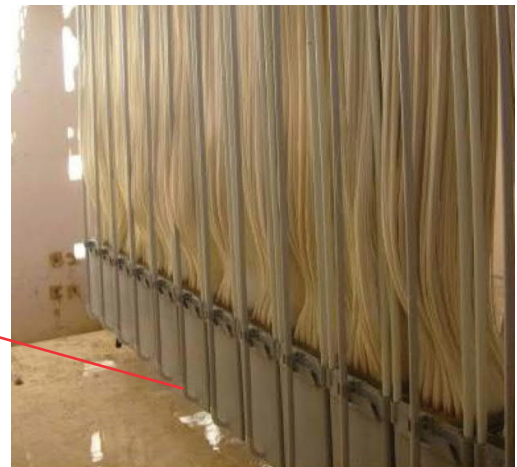
The efficiencies achieved with the MemPulse MBR system coupled with a proven installation base of over 150 plants and the experience of the MEMCOR MBR team make this DuPont technology ideally suited for a wide range of municipal and industrial applications.

A LEGACY OF TECHNICAL LEADERSHIP

MEMCOR® branded technology (or products) has led the industry with a series of “first to market” advancements that have increased the productivity of MBR systems.

- **Separate Membrane Tank:** Allows easy cleaning of membranes & independent optimization of MOS and bio process.
- **Improved MLSS distribution:** The introduction of the MemJet™ system greatly improved system performance with superior hydraulics within the membrane environment.
- **Removal of Release Tanks:** First to use priming educators. Now the industry standard.
- **Replace cyclic with Plug Flow Aeration:** The technology used in the MemPulse system was later introduced with further enhancements that cut energy consumption to up to half of traditional systems and no moving parts.

MEMPULSE®
MBR DEVICES



Random plug airflow generated at the base of the membrane modules increase scouring effectiveness and minimize energy consumption.

MEMCOR[®]
a DuPont[™] brand

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DuPont Water Solutions

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