

Membrane Plate Diffuser System

OXYFLEX<sup>®</sup> MF 1100



Power up your wastewater:  
**Save between 20% and 50%**  
**aeration energy costs**



**Supratec**

# Cut costs with modern aeration technology



## Get a grip on energy costs.

Treating wastewater requires a lot of energy. Municipal budgets can easily be strained in times of rising energy costs.

The main energy guzzler at water purification plants is the aeration system, consuming some 70%. But there is a better alternative to watching your money vanish literally into thin air: the Supratec OXYFLEX® system enables you to save between 20 and 50% of your aeration energy costs!

## Your investment pays for itself after just one to two years.

Investing in greater aeration efficiency always makes sense, and the Supratec OXYFLEX® MF 1100 system can be installed in any wastewater treatment plant. The plant in Stammheim, Cologne, for example, was able to cut energy costs by 800,000 Euros in the first year alone.

## See how much you could save in your plant:

To estimate the annual energy consumption of a wastewater treatment plant, assume 16 kWh electricity per PE (population equivalent) for aeration. Thus, a plant for 50,000 inhabitants consumes 50,000 x 16 kWh = 800,000 kWh per year.

Replacing conventional tube diffusers with OXYFLEX® MF 1100 plate diffusers leads to an average energy saving of 30%. At a cost of 0.15 €/kWh, this means savings of some 36,000 Euros per year. The system has a payback period for the acquisition and retrofitting of less than two years.



## Supratec in concrete terms: The Kiel-Bülk Project

This wastewater treatment plant, built in 1999, was equipped with 8,100 tube diffusers of 70 mm diameter consuming up to 60,000 Nm<sup>3</sup> air per hour (7.4 Nm<sup>3</sup> per metre). In 2005 Supratec replaced the old diffusers on the existing piping with 5,400 OXYFLEX® MF 1100 plate diffusers, which are each fed by 11.1 Nm<sup>3</sup> per hour.

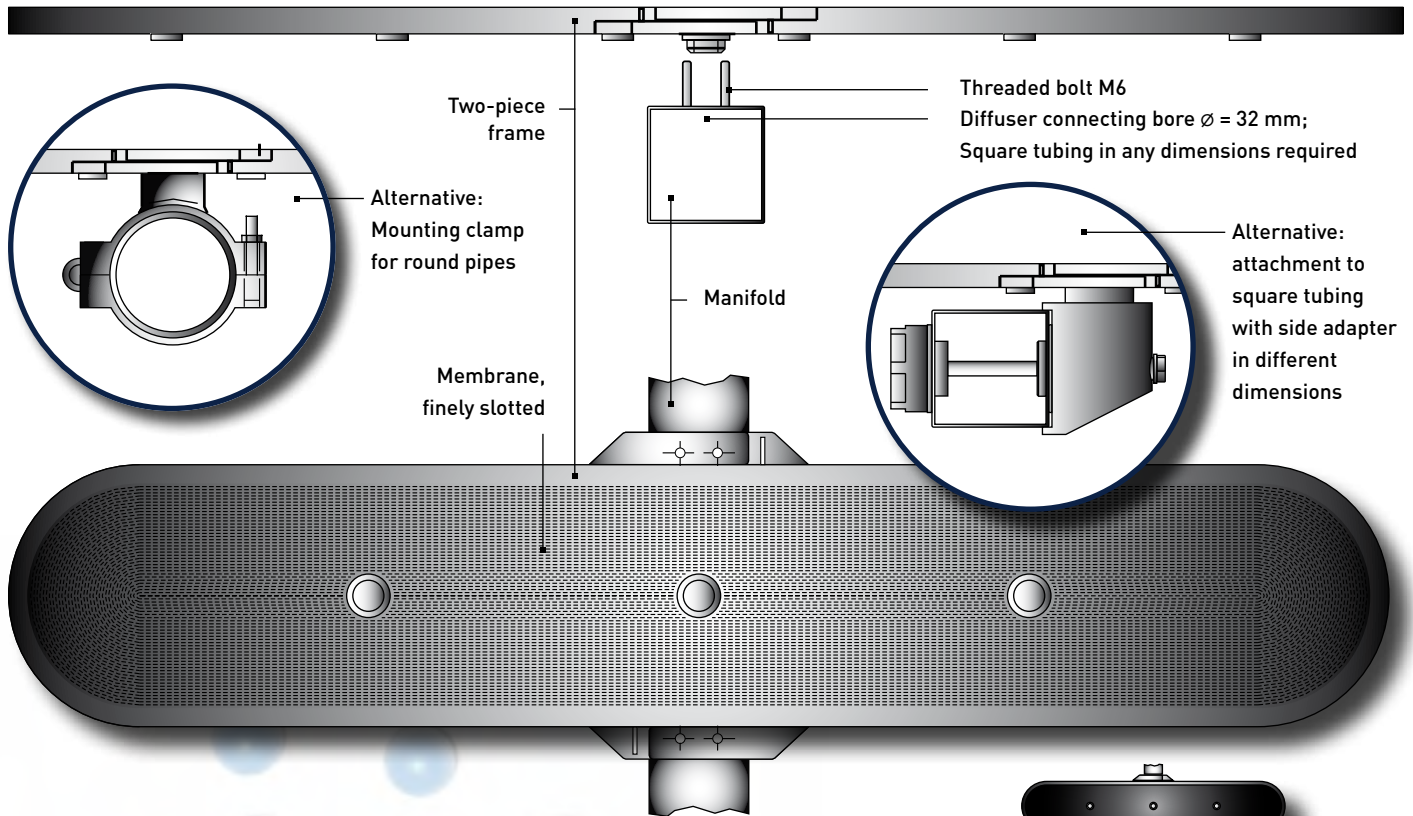
**Tube diffuser degassing area:**  
0.07 m<sup>2</sup> x 8,100 = 567 m<sup>2</sup>

**Plate diffuser degassing area:**  
0.2 m<sup>2</sup> x 5,400 = 1,080 m<sup>2</sup>

The larger degassing area and low pressure loss greatly increased efficiency. The operator reported a 40% energy saving in the first year. The additional costs for installing plate diffusers – rather than replacing the depleted tube diffuser membranes – were recovered in less than two years.

# Membrane Plate Diffuser System

## OXYFLEX® MF 1100



### Superior energy balance, durability and safety.

The membrane plate diffuser OXYFLEX® MF 1100 is designed for an energetically efficient specific air flow with a comparatively small quantity of compressed air:

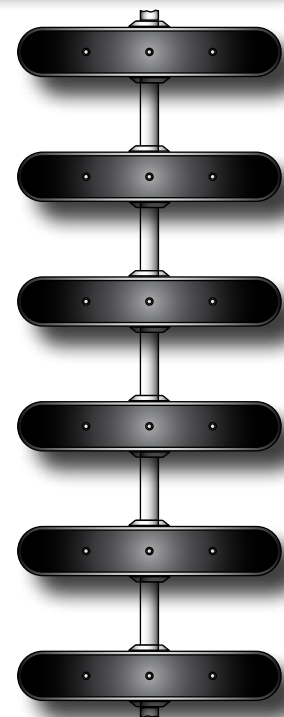
- One OXYFLEX® MF 1100 element replaces 2 x 1,000 mm or 2 x 750 mm tube diffusers and extends the effective degassing area.
- The entire surface of the OXYFLEX® MF 1100 element is constantly active.
- The larger gas inlet area of an OXYFLEX® MF 1100 element causes more oxygen to actually reach the water, thereby increasing efficiency.

### OXYFLEX® MF 1100 reduces energy costs and improves wastewater treatment quality.

In addition to the superior energy balance of OXYFLEX® MF 1100, you also benefit from the system's extreme durability and high operational reliability. With EPDM tube diffusers, the unavoidable membrane shrinkage causes an extreme drop in pressure and limits function. In contrast, membrane plate diffusers remain fully functional with only minimal pressure loss.

Even in the case of 5% shrinkage, the membrane can still rise from the body and achieve its full effect without an increase in specific compressed air flow. The Supratec standard EPDM membrane has been proving its worth for up to 15 years in numerous wastewater treatment plants.

All OXYFLEX® MF 1100 membrane plate diffusers implemented in municipal wastewater treatment plants include a 5 year warranty at no extra cost.



OXYFLEX®-MF membrane plate diffusers are suitable for retrofitting to existing stainless steel and plastic pipes, round pipe or rectangular, of different diameters.

Membrane Plate Diffuser System

# OXYFLEX® MF 1100

**Reduce costs,  
improve quality,  
protect the environment.**

Switching to OXYFLEX® MF 1100 is the sensible choice in any wastewater treatment plant.

Supratec produces all known fine-bubble aeration systems. Our modular system is universally suitable for round and rectangular aeration pipes of any diameter. We have wide-ranging practical experience in installing and retrofitting OXYFLEX® MF 1100 in wastewater treatment plants, and can also provide a tailor-made solution for your plant.

**We would be happy to supply you with further information and advice:**

**Supratec – Gesellschaft für Umwelt- und Verfahrenstechnik mbH**

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