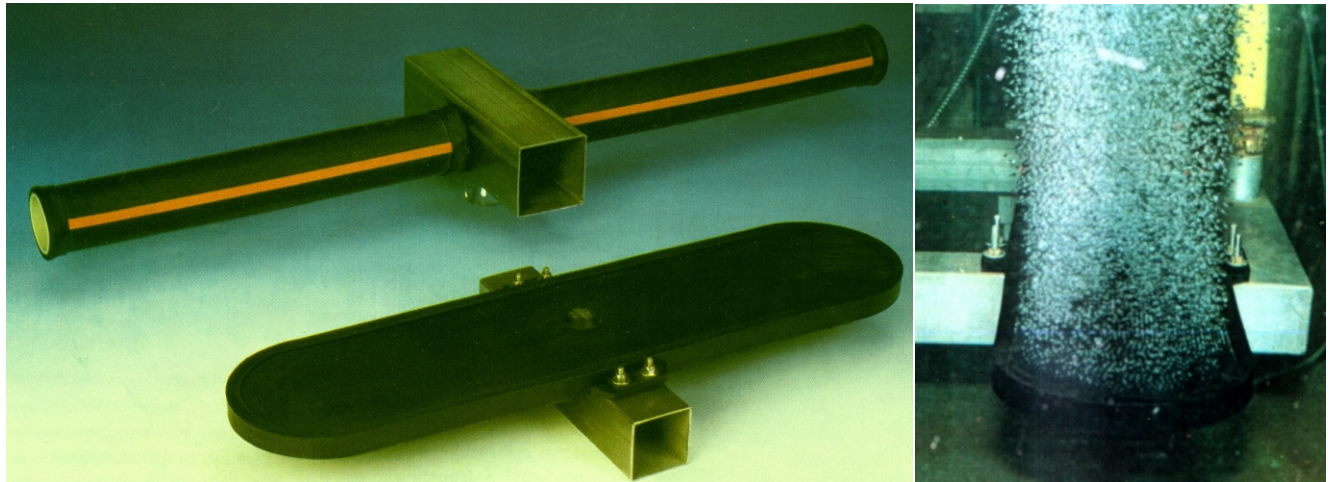


## OxyFlex<sup>®</sup> Aerators

Energy-efficient diffusers for any wastewater treatment plant



### Description

Following OSORNO's philosophy of providing technologically advanced, automatically controlled environmental systems, aeration membranes used in our wastewater treatment must possess extended lifetimes. They must also provide a high dynamic range of operation, to match the dynamic range available with compressors. OxyFlex<sup>®</sup> membrane plate diffusers meet both these criteria. Fabricated from either EPDM, silicone, or PU rubber membranes, diffusion holes are cut, not punched, which prevents premature ageing of the materials, and provides a tight seal in case of a failure. A unique bolt-on system makes the replacement of individual aerators a simple task.

OxyFlex<sup>®</sup> membranes are characterised not only by a long lifetime, but by a low head loss, making them the choice for efficient aeration. Two different aerator sizes are available.

### Application

OxyFlex<sup>®</sup> aerators can be used for any wastewater aeration application. The high dynamic range of operation is especially advantageous for automatically controlled systems, where aeration and cost of operation depend on actual loads thus providing substantial savings, as is provided with OSORNO's "aeration on demand" philosophy.

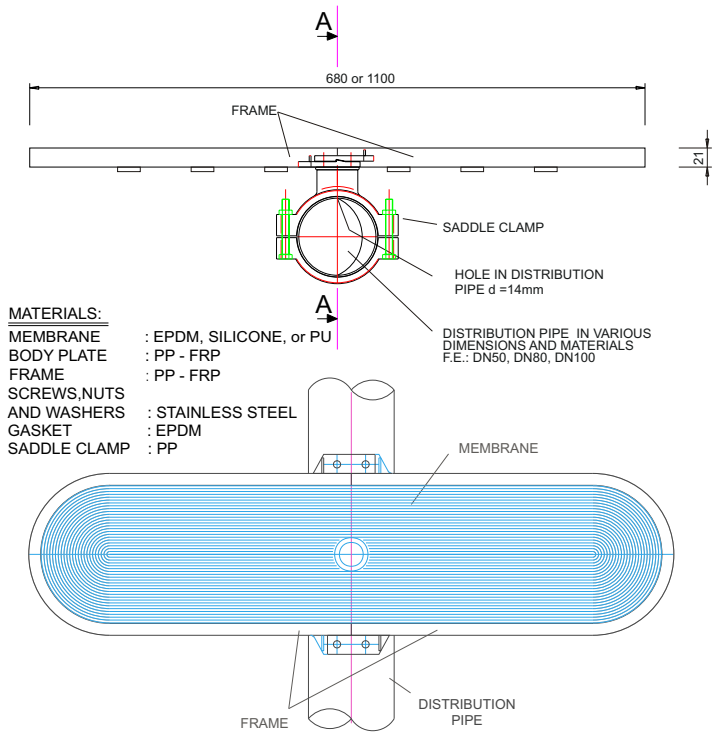
### Construction Materials

OxyFlex<sup>®</sup> flat membrane aerators consist of an aeration membrane held in a fibre-reinforced polypropylene enclosure. Likewise, OxyFlex<sup>®</sup> tubular aerators use a membrane support of polypropylene. Three choices of membrane materials are of highest quality: plasticiser-poor EPDM, plasticiser-free silicone (for M650 only), or plasticiser-free PU rubber (for M1100 only). Membranes are attached to hollow square stainless steel pipe, but can also be attached to round stainless steel or PP pipes.

### Installation

Membranes are attached to hollow square steel pipe with a minimum size of 50 x 50 mm. A 32 mm round hole is drilled into the steel, and stainless steel bolts are welded onto the tubing. The aerator is placed onto the bolts and tightened using a torque wrench. Special self-lock stainless steel nuts provide protection against vibration effects. A tight seal is provided with a flat EPDM gasket. It is recommended that OxyFlex<sup>®</sup> tubular aerators be installed on square stainless steel pipe.

# OxyFlex® Aerators



## Unique Features

Fibre-reinforced PP enclosure.

- Three membrane materials are available: EPDM, Silicone, and PU rubber.
- Membrane is cut, not punched, for maximum lifetime.
- Two sizes of membrane, 650 mm and 1100 mm.
- Three different slot sizes are available: medium, fine, and super fine.
- High dynamic range of operation makes these membranes the ideal partner for automatically controlled systems.
- Easy installation and replacement.
- Very low installed height minimises the dead zone at the bottom of the aeration basin.

## Lifetime

OxyFlex® aerators have 15 years of history (EPDM membranes), and have shown exceptional durability, with life expectancies exceeding 5 years. In the numerous installations worldwide, membrane rupture has rarely been observed. The four years of application history of silicone membranes indicates a life expectancy exceeding 10 years.

## Performance

	<b>M 650</b>	<b>M 1100</b>	<b>T 1000</b>	<b>T1500</b>
<b>Air Flow, medium</b>	up to 16 m <sup>3</sup> /h	not recommended	not recommended	not recommended
<b>Air Flow, fine</b>	up to 14 m <sup>3</sup> /h	not recommended	up to 12 m <sup>3</sup> /h	up to 18 m <sup>3</sup> /h
<b>Air Flow, super fine</b>	up to 12.5 m <sup>3</sup> /h	up to 18 m <sup>3</sup> /h	up to 10 m <sup>3</sup> /h	up to 15 m <sup>3</sup> /h
<b>Dimensions</b>	660 x 160 mm	1100 x 200 mm	64 x 1000 mm	64 x 1500 mm
<b>Aeration Area</b>	0.1 m <sup>2</sup>	0.2 m <sup>2</sup>	N/A	N/A
<b>Minimum Distance between aerators</b>	220 mm	260 mm	250 mm	250 mm
<b>Material</b>	EPDM or silicone	EPDM or PU	EPDM or silicone	EPDM or silicone

The membranes tolerate air flows of 120% of the listed normal operating conditions, and tolerate a minimum air flow of 30%. Silicone membranes have about 30% lower head loss than EPDM membranes, and proportionally lower operating cost of the facility. Professor Pöpel of Darmstadt Technical University, State of Hessen Testing Centre for Water and Wastewater, has confirmed in an August 1994 test report an average net aeration efficiency of 7.8 kg O<sub>2</sub>/kWh for OxyFlex® membranes, with an oxygen absorption of 25.1 g O<sub>2</sub>/m<sup>3</sup> and per metre depth. The full report is available upon request.

## Ordering Information

Please let us help you find the right choice of aeration system for your application. The most energy efficient aeration systems are those where the aerators and the compressors work jointly as a high performance team. Our advice to your engineer and your technical staff is part of our service. For inquiries, please send a note by eMail to Postmaster@osorno.ca or by mail or fax (see below).

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