

A brand of  
Aqseptence Group

## Passavant® Fine Bubble Aeration ROEFLEX® BIOFLEX®

Economically aeration of activated tanks in biological wastewater treatment plants – while ensuring maximum oxygen transfer efficiency and a high level of process flexibility.



With its Passavant® product portfolio of surface aerators and diffusers, Aqseptence Group offers you optimal solutions to meet the wide range of demands placed on key areas of wastewater treatment processes. Our tried and tested membrane diffusers for compressed air aeration systems are employed in wastewater treatment plants throughout the world and have been continuously improved and developed by our company for more than 25 years.

When air is supplied, fine slits will open in the elastic membrane and fine air bubbles will be released into the water. When the air supply is suspended, the slits close completely. The hydrostatic head presses the membrane firmly onto the support pipe, thereby the air inlet opening is sealed. This double sealing procedure prevents liquid entry into the aeration system. In contrast to rigid porous diffusers e.g. ceramic, intermittent operation is possible and a high level of operational reliability and flexibility is thus ensured.

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### Benefits

- Successful long-term use in innumerable installations worldwide
- Simple installation and low level of investment
- High oxygen transfer – confirmed in numerous tests at accredited institutes
- Optimum adjustment to tank form and diffuser depth
- Best possible design – considering diffuser density, air flow and oxygen transfer – due to many years of experience

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### Applications

In most cases the membrane material used in municipal plants is a EPDM, which has been tried and tested over many years. However, silicone

is frequently used in industrial plants as it has a high resistance to oils, grease and aromatic compounds.

## Product variants

### ROEFLEX® Disc Diffuser

The success of this type is based in its simple and robust construction. It consists of a convex disc which is covered by a slitted membrane. The membrane spans the edge of the disc and is additionally secured by a ring. Due to its unique convex form, the membrane is lifted evenly when air is supplied, thereby the air is uniformly released as fine bubbles over the entire surface of the diffuser.

The ROEFLEX® Disc Diffuser can be mounted on the distribution pipe in two ways: with an R 1/2" connection thread or with a connecting port. The connection thread is fastened by turning into distribution pipe, the connecting port is fastened to a drill hole in the distribution pipe by means of

an EPDM adapter. These options ensure that the ROEFLEX® has low investment and assembly costs.

### BIOFLEX® Tube Diffuser

In this design an elastic slitted tube membrane is mounted onto a cylindrical support tube with clamps. During air supply the tube membranes will expand, thereby the slits get opened and the air will be released into the water in fine bubbles.

In general, two complete diffusers are mounted onto square cycling nipped hollow profiles with a connector. Circular pipes can also be used, in this case adapters for round pipes are required.

## Design sizes & performance

	ROEFLEX® Disc Diffuser	BIOFLEX® Tube Diffuser
<b>Diameter</b>	320 mm	–
<b>Active Membrane length</b>	–	500 / 750 / 1,000 mm
<b>Active membrane surface</b>	0.08 m <sup>2</sup>	0.09 / 0.135 / 0.180 m <sup>2</sup>
<b>Air flow</b>	0 – 12 Nm <sup>3</sup> / (h × diffuser)	0 – 12 Nm <sup>3</sup> / (h × m <sub>diffuser</sub> )



Detailed image  
ROEFLEX®, EPDM

# Materials

In order to supply the appropriate diffuser for every treatment process, Aqseptence Group provides a variety of elastomer membranes which are created for individual type of wastewater.

## ROEFLEX® Disc Diffuser

<b>Membrane</b>	EPDM / Silicone
<b>Support</b>	glass fibre reinforced polyamide

## BIOFLEX® Tube Diffuser

<b>Membrane</b>	EPDM / Silicone
<b>Support</b>	PP

Detailed image  
BIOFLEX®,  
Silicone

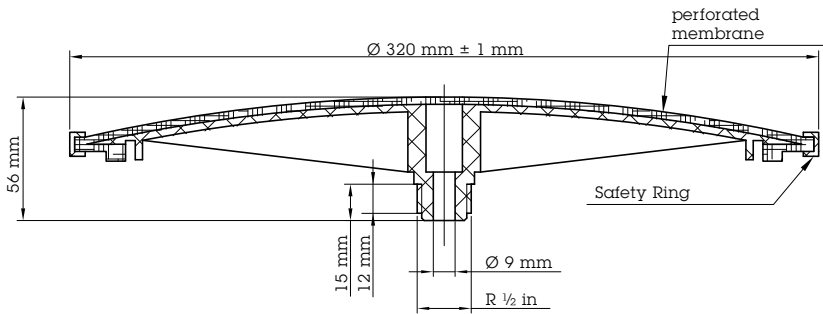


Detailed image  
BIOFLEX®,  
EPDM

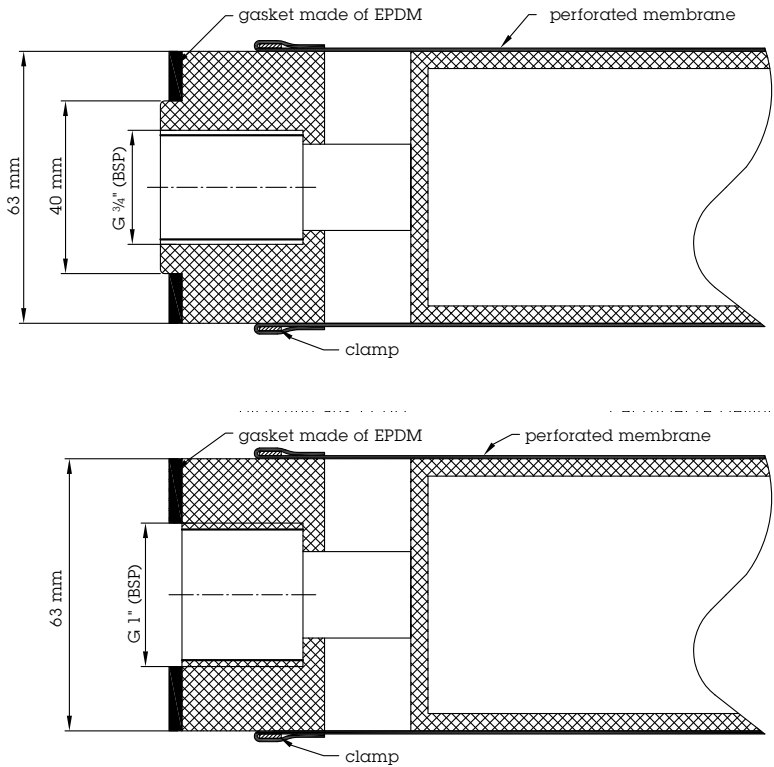


# Technical drawings

ROEFLEX®



BIOFLEX®



## Options

- ROEFLEX® Disc Diffusers can be supplied with diffuser grids in stainless steel or plastic (ABS or PVC)
  - The BIOFLEX® Tube Diffuser is suitable for a wide range of connection bore holes and hollow profiles and can be adapted to circular tube systems.
- We are able to supply new diffusers or just membranes for replacement membranes and diffusers for conversion and optimisation and also complete new aeration systems, including blowers and compressed air lines. The combination of our diffusers with rotary piston compressors and Aqualogic® control software ensures maximum energy efficiency.

## Fields of operation

The main fields of operation for fine bubble diffuser systems are aeration and mixing processes in activated sludge tanks and grit traps in municipal and industrial wastewater treatment plants. In addition, these are used in:

- Aerobic treatment of landfill leachate and liquid manure
- Adjustment of pH-value by means of CO<sub>2</sub> stripping
- Preservation of fresh water in buffer tanks
- Oxygen transfer in fish ponds
- Oxygen enrichment in rivers and lakes

## Unique features

Our aeration technology solutions have proven to be both flexible and reliable in daily use, due to their well-designed construction and long service life cycle:

### ROEFLEX® Disc Diffuser

- Tried and tested robust construction
- Integrated shut-off valve

### BIOFLEX® Tube Diffuser

- Flexible connection options
- Appropriate membrane material for each application field

ROEFLEX®  
in operation



BIOFLEX®  
in operation



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The technical data stated in this brochure are indicative only and have to be determined for each individual case.  
Reserve technical changes.