



EPDM & Silicone Tube Diffuser



Tube Diffuser Components

- EPDM & Silicone Diffuser Tubes
- EPDM & Silicone Replacement Membranes
- PP Diffuser Tubes
- Adapters & Connectors
- Seals & Clamps
- Aeration Accessories

About us

The company IBS FRANK SOMMER is specialized in aeration technology for industrial and municipal wastewater treatment.

Solutions and Engineering

Our aim is to offer innovative and inexpensive solutions and products for municipal and industrial applications.

Fine Bubble Aeration Products for Wastewater Treatment

IBS FRANK SOMMER provides a wide range of high quality aeration products, replacement membranes and adapters for many diffuser manufacturers to both corporate customers and end-users.

High Quality Tube Diffuser and Diffuser Membranes

All our high quality EPDM and SILICONE tube diffuser membranes are made and perforated in Germany. The sleeve material is optimized for wastewater aeration in intermediate operation and proven over many years in hundreds of plants. Our precise micro perforation ensures highest oxygen transfer and efficiency.

The high quality supporting tubes are made of environmental friendly PP without any glue.

OEM Tubes and Diffuser Accessories

We are also supporting our corporate customers with standard and custom made OEM aeration products, accessories and services, such as standard and non-standard diffuser tubes, connectors, saddles, adaptors, clamps, and many more.

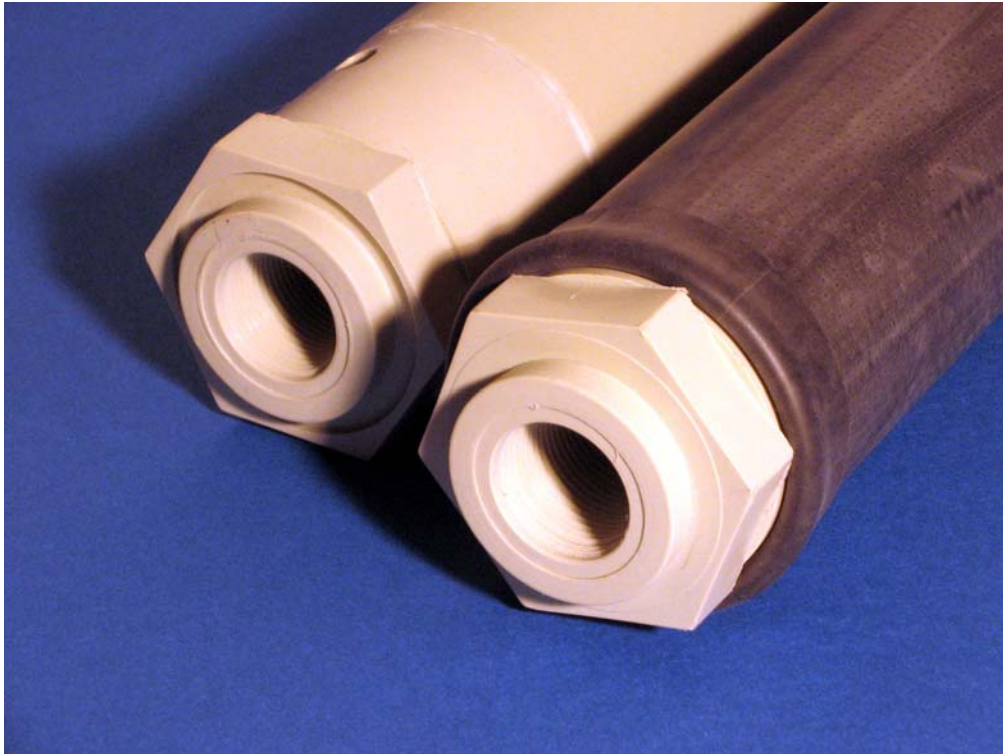
Send us your inquiry and we'll be looking forward to serve you.

With best regards from Hamburg, Germany

Dipl.-Ing. Frank Sommer
Owner and Managing Director
Firma IBS FRANK SOMMER



Fine Bubble Aeration



IBS SOMMER Tube Diffuser

- High quality EPDM & SILICONE tube diffuser
- Standard outer diameter 63mm (other diameters on request)
- Standard lengths 500mm, 750mm and 1000mm (other lengths on request)
- High oxygen transfer due to fine bubble aeration
- High oxygen input
- High energy efficiency
- Low maintenance and long lifetime
- Optimized for intermittent aeration
- Environmental friendly high quality PP supporting tubes
- No corrosion as all parts designed in rubber, plastic and stainless steel

Tube Diffuser

IBS SOMMER Tube Diffuser

High quality tube diffusers for fine-bubbling aeration suitable for permanent and intermittent operation in biological waste water treatment plants.

- High resistance against the biochemical substances of waste waters
- Different membrane sleeves materials available
- Replacement tube membranes and spare parts for self-installation for different lengths and diameters
- Pre-mounted membranes on PP diffuser-bodies, 63 mm diameter, each with two stainless steel clamps
- Spare parts: tube diffusers, seals, connectors, stainless steel hose clamps, valves, saddles, pipes in stainless steel and plastic, and many more
- All our membranes are made in Germany

Applications

- Municipal waste water treatment plants
- Industrial waste water treatment plants
- Fish farming
- Drinking water aeration
- Aeration of rivers and lakes

Membrane Sleeve Materials

Depending on the application, the wastewater and the preferences of the customer we offer high quality diffuser tube membranes made of EPDM and silicone.

- TDM-EPDM-NORM is a high quality EPDM membrane suitable for intermittent operation. The EPDM mixture is optimized for municipal waste water treatment and guarantees very good chemical resistance to the biochemical substances in municipal wastewater. The membrane distinguishes itself by low pressure loss, high efficiency and low operation cost.
- TDM-EPDM-LP is a high quality EPDM membrane suitable for intermittent operation. The EPDM mixture is optimized for municipal and industrial waste water treatment. The content of plasticizer is only 12 % which prevents early indurations and guarantees long lifetime. The high elastomer content guarantees excellent chemical resistance to the biochemical substances in municipal and industrial waste water.
- TDM-SILIC-S is a high quality silicone membrane suitable for intermittent operation. The membrane is developed for industrial wastewater treatment plants and municipal wastewater plants with mainly industrial wastewater. Silicone mixtures are free of plasticizer and guarantee excellent chemical resistance to the biochemical substances in municipal and industrial waste water.

Other diffuser membrane materials are available on request!

Tube Diffuser

Membrane Material Selection Sheet

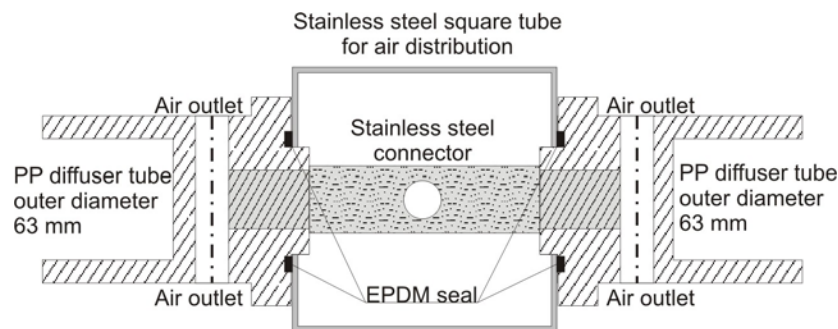
| | Sleeve material | Municipal wastewater | Industrial wastewater | Wastewater with high loads of oils and solvents ³⁾ | Intermediate operation | Operating temperature range | Life-time | Price |
|---------------------------|-----------------|----------------------|-----------------------|---|------------------------|-----------------------------|-----------|-------|
| TDM-EPDM-LP ¹⁾ | EPDM | ++ | 0 | - | + | + | + | ++ |
| TDM-EPDM-LP ²⁾ | EPDM | ++ | + | - | ++ | + | ++ | + |
| TDT-EPDM-FLEX | EPDM | ++ | 0 | - | ++ | 0 | + | ++ |
| TDM-SILIC-S | Silicone | ++ | ++ | ++ | + | ++ | + | 0 |

Description: ++ excellent + good 0 fair - poor

- 1) Flat heated sleeve
- 2) Sleeve heated on a mandrel (very round sleeve with nearly no folding phenomena in intermediate operation)
- 3) Such as oils, greases, fats, hydrocarbons, etc.

Tube Diffuser Installation

The square air distribution pipe is made of stainless steel and has two holes (Ø40 or 45 mm) at opposite sides. The tube diffuser will be screwed from both sides on the stainless steel connector till the connection is tight. For more details please refer to our mounting and maintenance instructions!



Above Drawing shows a diffuser installation on a square air distribution pipe.

The installation on round stainless steel and PVC air distribution pipes requires adaptor on each side (available for DN 80 and DN 100). For the installation on PVC air distribution pipes we suggest to fix the diffuser tubes at the open end with our diffuser tube end-holder to stabilize the complete piping structure.

Air release working principle

The air flows through air distribution pipe and connector into the area between supporting tube and membrane, which is sealed on both ends by clamps. The membrane expands by the air pressure and the micro-perforation opens and the air will be released into the water. When the air is shut off, the membrane will pull together and the micro-perforation will close that no water can enter the air distribution system.

Tube Diffuser Accessories

Connectors

Connectors are used to connect the tube diffuser on square air distributing pipes.

Material: stainless steel 1.4301 (on request PP)

Lengths: 130mm and 150mm (for 80 and 100mm square air distribution tubes)

Threads: 3/4" and 1"



For round Stainless Steel and PVC air distribution pipes we are also offer saddle systems where connectors are not needed.

Clamps

Two clamps for each diffuser are used to fix the EPDM or SILICONE membranes on both ends of the diffuser.

Material: stainless steel 1.4301 (on request 1.4571)

Sizes: suitable for 63mm tube diffuser



Other sizes on request.

Accessories

Adaptors for round air distribution pipes (DN 80, DN 100), saddle systems for round and square air distribution pipes EPDM seals, saddle systems for round pipes, ground fixing devices, end caps and closer as well as custom made products for your specific aeration project.



For inquiries please contact: info@ibs-sommer.de.

Other Parts made of PP, PVC and stainless steel

Molded, turned or welded parts made of PP, ABS, PVC and stainless steel.

Cost efficiency mold making.

Cost efficiency laser cutting and stamping abilities.

Several surface treatments are possible.



For inquiries please contact: info@ibs-sommer.de.

FAQ

What is the operation airflow range of IBS Tube Diffuser?

The airflow range is from 1 to 12 m³_N/h. Usually we suggest a operation at the lower end for best transfer efficiency.

Are all diffuser tube membranes compatible with each other?

Depending on the outer diameter of the diffuser tube, most diffuser tube systems are compatible with each other and can be equipped with IBS SOMMER diffuser membranes.

How long is the lifetime of a diffuser membrane?

Depending on the installation, the way of operation and the wastewater ingredients a diffuser membrane lasts between 2 and 10 years. The average lifetime is about 5 years.

How often should I inspect my diffusers?

There is no fixed inspection period. Inspections should be made when there is significant pressure loss change, a change in surface characteristics of the aeration basin or an increase of energy consumption.

What are the key influence factors to pressure loss?

Beside the design of the diffuser tube, the key influence factors to the pressure loss are the wall thickness of the membrane sleeve and the slot size of the perforation (not the membrane material). Smaller slot sizes will lead to higher pressure loss - but installed in a well designed and well operated system they also result in higher energy efficiency and lower energy costs! This results from smaller bubble sizes which lead to a higher oxygen transfer. To save energy and operation costs we recommend energy optimized plant design with relatively high diffuser densities, intelligent control philosophy.

What are the key influence factors to a diffused aeration system?

Beside wastewater characteristics and process, the key influence factors to a diffused aeration system are diffuser type, diffuser performance, diffuser placement, diffuser density, air flow per diffuser, basin geometry and basin depth and DO control system.

What are possible reasons if the blower pressure rises continuously?

A significant increase in blower pressure is a sign of difficulties in the system. Possible reasons can be the piping, valves or diffuser membrane fouling or deterioration. The system should be inspected, damaged membranes may need to be replaced. Please be aware that depending on the diffuser sleeve material, diffuser membranes can be damaged by some ingredients of the wastewater. In this case a change of membrane sleeve material should be considered.

How can I assemble IBS SOMMER diffuser tubes in my existing system?

We offer many kinds of standard and custom made adapters for nearly each supporting pipe system (round pipe, square pipe, stainless steel pipes, PVC pipes, threads holes, etc.).

What are the advantages of PP diffuser tubes compared to PVC diffuser tubes?

PP tubes have a higher temperature resistance (100^o C as compared to 60^o C) and the welded connection is long-lasting and much stronger than the glue connection of PVC tubes. PP tubes are more environmental friendly than PVC tubes and can be recycled easily.

For more information's please contact: info@ibs-sommer.de.



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