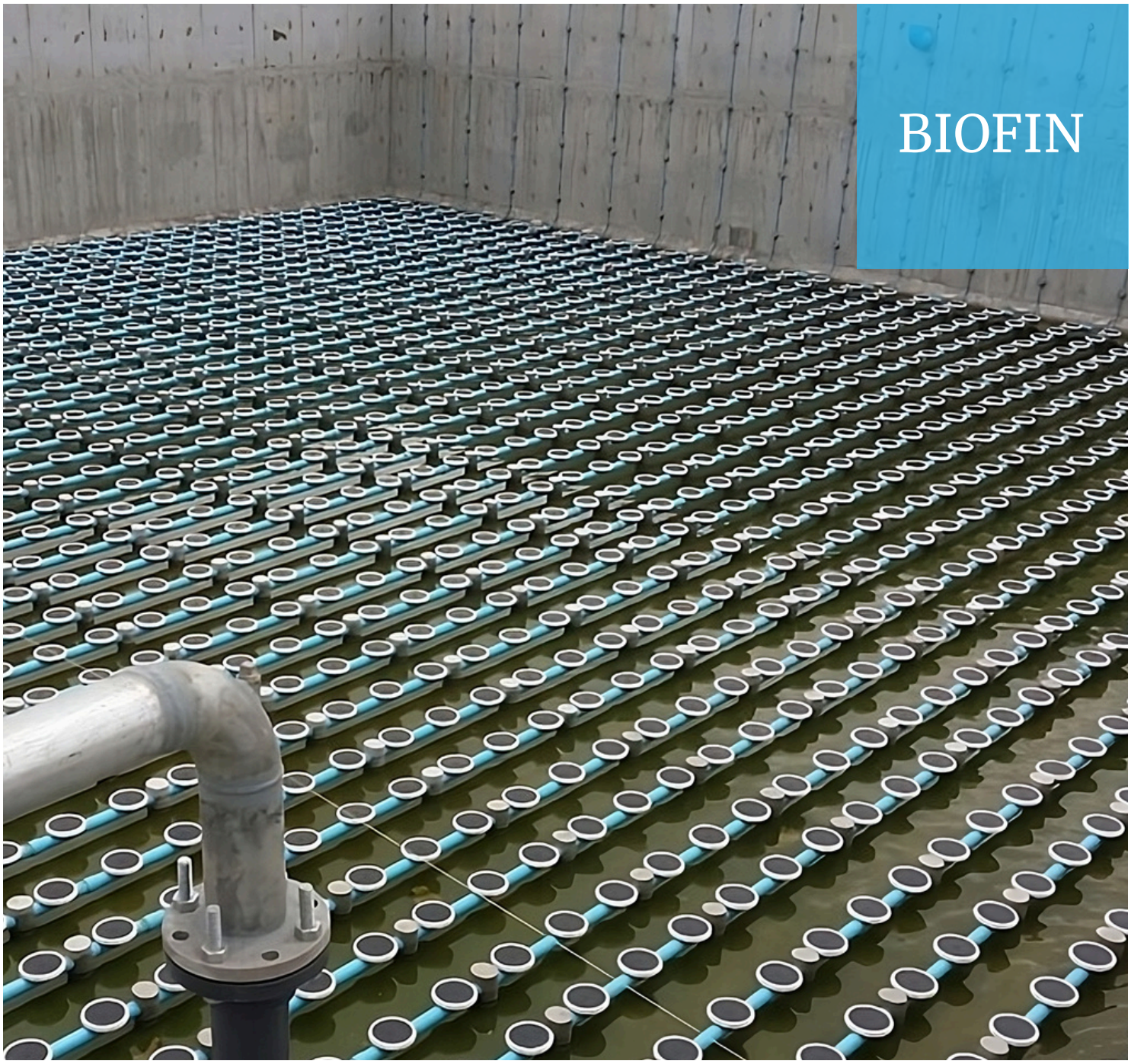
BIOFIN



Bubble Diffusers

Your Sustainable Partner In

Water Treatment

BIOFLOW
INDUSTRIES PVT LTD

Biofin **Bubble Diffusers**

In the process of wastewater treatment, aeration plays a critical role in transferring oxygen to microorganisms for producing a floc and mixing the liquor.

A useful method for aeration is diffused aeration, which involves the installation of porous diffusers at the bottom of the tank. During aeration, oxygen transfer occurs through the interface film between air and liquid, and it is directly proportional to the interface area.

When compared to mechanical aeration, diffused aeration is more effective at transferring oxygen to the liquid. For example, diffusers that emit 2mm bubbles present six times more surface area to the liquid then surface aerator that emit 10-12mm bubbles.

Effcient Oxygen Transfer

Low Energy Consumption

Durable Materials

Versatility in Design

Bubble diffusers come in various designs to suit different applications





Advantages

- Improved Oxygen Transfer: Bubble diffusers are highly effective in transferring oxygen into water compared to other diffusers. They create a larger surface area of bubbles, enhancing oxygen dissolution.
- Increased Efficiency: By raising the oxygen content in water, bubble diffusers boost the efficiency of the biological treatment process. This enables faster breakdown of organic matter, leading to quicker and more efficient wastewater treatment.
- Reduced Energy Costs: Operating at low pressure, bubble diffusers require less energy compared to other diffusers. This feature helps reduce the overall energy costs associated with wastewater treatment, which is a significant operational expense for treatment plants.
- Uniform Air Distribution: Bubble diffusers ensure uniform air bubble distribution throughout the wastewater. This ensures that all areas of the treatment tank receive sufficient oxygen, preventing the formation of harmful anaerobic bacteria that can disrupt the treatment process.
- Noise Reduction: One of the advantages of bubble diffusers is their quiet operation. This makes them a suitable choice for wastewater treatment plants located in populated areas where noise pollution might be a concern.
- Promotes Aerobic Activity: The increased oxygen levels resulting from bubble diffusers enhance the activity of aerobic microorganisms. These organisms are critical for effectively breaking down organic matter, improving the overall treatment process.

Applications



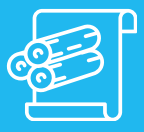
Municipal Waste water treatment



Sewage treatment plant



Pharmaceutical Industries



Pulp and paper Industries



Food and beverages Industries



Chemical Industries



Leather & Textile Industries



Aqua culture process etc

Types of **Materials**

Bioflow Tubular Diffusers Membranes come with a choice of materials, which have been designed to cater to different usage conditions.

- EPDM (ethylene propylene diene monomer): This membrane is manufactured using high- grade materials and rubber technology, with low plasticizer content to ensure quality. It is suitable for most municipal and industrial applications like waste water treatment plants.
- Silicon: Specially crafted with the industry-leading Dow Corning Silicon, this membrane boasts unparalleled quality. It is ideal for applications where fouling and chemical oxidation due to solvent exposure, high temperatures and specific chemical compatibilities are required. Our silicon membrane outperforms others in terms of durability and elasticity, making it a highly sought-after product.

MATERIAL AND MECHANICAL PROPERTIES FOR EPDM AND SILICON

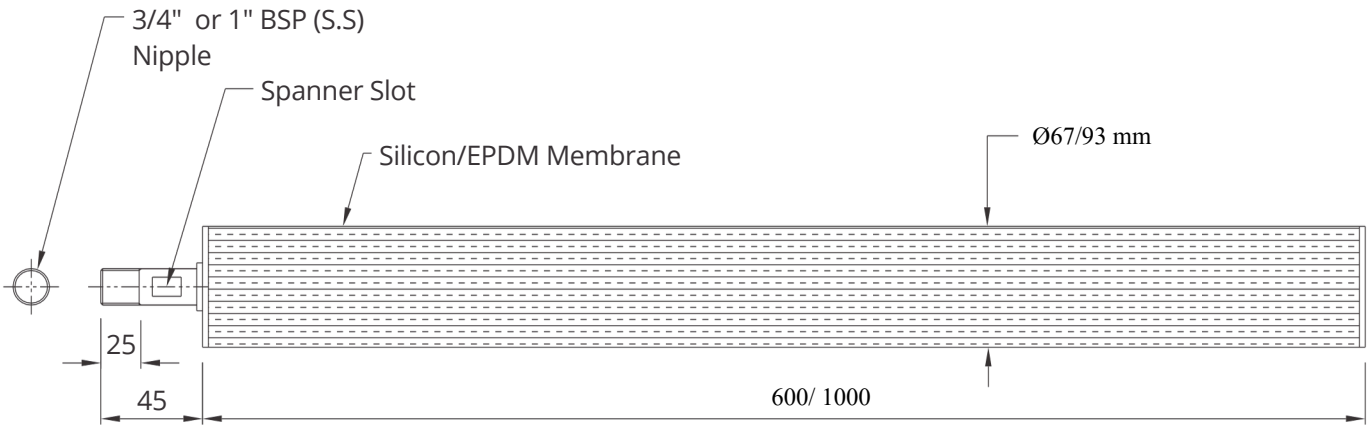
MECHANICAL PARAMETERS	EPDM	SILICON
Material Make up	Polymer 20-22% Carbon Black 45-50% Plasticizer 22-23% Others 3%	Polymer 99% Colour additives 0.1%
Colour	black	Opaque white Milky white Aqua blue
Wall Thickness	1.8 ± 0.2 mm overall	1.8 ± 0.2 mm overall
Hardness **(ASTM D-2240)**	45 ± 6 shore “A” 50± 6 shore “A”	60 ± 5 shore “A” 50 ± 5shore “A”
Tensile strength at break -KG/CM^2 **(ASTM D - 412)**	99 kg/cm^2	90 kg/cm^2
Elongation at break (ASTM D - 412)	400%	900%
Tear strength “die-T” **(ASTM D - 624)**	7.5 N/mm	9 N/mm
	Environmental Resistance Test	
Ozone resistance 75hrs, 40°C, 50mPa partial Ozone Pressure Non-cracking (ASTM D 1171 - 94)	Pass	Pass
Low Temp. property -40°C, Non brittle (ASTM D 832 - 92)	Pass	Pass
Density	1.2 g/cm3 ± 0.5	1.25 g/cm3 ± 0.5
MAX. Operating Air Temperature °C	60	95

Fine Bubble **Tubular Diffuser**

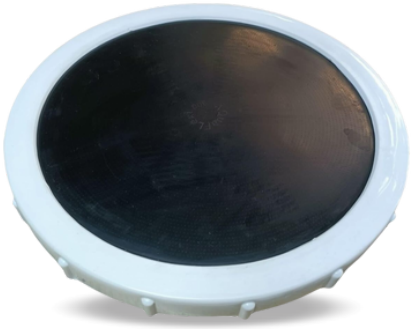
Specifications	**BIOFIN 600/65**	**BIOFIN 1000/65**	**BIOFIN 1000/93**	**BIOFIN 2000**
Size	65 x 620 mm / 2.6 x 24″	65 x 1020 mm / 2.6 x 40″	92 x 1020 mm / 3.6 x 40″	65 x 2200 mm / 2.6 x 80″
UPVC/PP support pipe OD	63 mm	63 mm	90 mm	63 mm
Membrane ID	63 mm	63 mm	90 mm	63 mm x 2 NOS
Perforation length	600 mm	1000 mm	1000 mm	2000 mm
Min active surface area	0.1 m^2	0.18 m^2	0.251 m^2	0.36 m^2
Air flow range/diffuser	2 - 7.5 m^3/hr	2 - 10 m^3/hr	2 - 15 m^3/hr	2 - 20 m^3/hr
Standard Design Flow	5 m^3/hr	7.5 m^3/hr	11 m^3/hr	12 m^3/hr to 16 m^3/hr (Max)
Perforation size	0.65 / 1 / 1.2 mm	0.65 / 1 / 1.2 mm	0.65 / 1 / 1.2 mm	0.65 / 1 / 1.2 mm
No. of perforations	8435 perforations	14080 perforations	22500 perforations	28200 perforations
Bubble size	0.75 - 1.9 mm	0.75 - 1.9 mm	0.75 - 1.9 mm	0.75 - 1.9 mm
Max. allowable air pressure	1.5 Kg/cm^2	1.5 Kg/cm^2	1.5 Kg/cm^2	1.5 Kg/cm^2
Max. permissible tank depth	9 m	9 m	9 m	9 m
Oxygen transfer per diffuser (SOTR) SAE in O_2 Kg / Kw / hr / mtr	Up to 4	Up to 4	Up to 4.32	Up to 4
Connection size	¾ BSP male	¾ BSP male	1.5″ BSP Male	
Working area	0.3 - 1 m	0.4 - 1.5 m^2	1 - 3 m^2	0.4 - 3.5 m^2
Weight	1 Kg	1.8 Kg	2.5 Kg	4.3 Kg







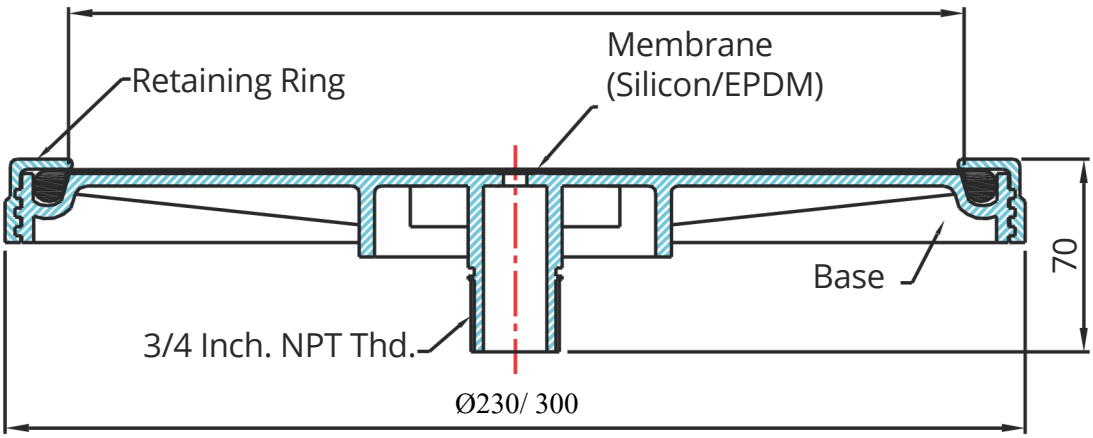
Fine Bubble **Disc Diffuser**







Specifications:	**BIOFIN 230**	**BIOFIN 300**
Membrane Material	EPDM / Silicon	EPDM / Silicon
Base and Ring	Glass filled Reinforced polypropylene (GFPP)	Glass filled Reinforced polypropylene (GFPP)
Connection	3/4" inches NPT MALE	3/4" inches NPT MALE
Airflow Range	0 to 12 m^3/hr	0 to 20 m^3/hr
Standard Design Flow	2.5 to 5 m^3/hr	4 to 8.5 m^3/hr
Perforated area (Active surface area)	0.0375 m^2	0.065 m^2
No. of perforations	6600	10,160 nos.
Perforation size	1 mm	1 mm
Bubble size	0.8 to 1.9 mm	0.8 to 1.9 mm
Working area	0.2 - 1 m/PCS	0.3 - 1.5 m/PCS
Max. allowable air pressure	1.5 Kg/cm^2	1.5 Kg/cm^2
Max. permissible tank depth	7.5 m	7.5 m
Weight	0.7 Kg	1.5 Kg



Coarse Bubble **Disc Diffuser**

Our Bio series Diffusers features a unique, uncomplicated design consisting of only two parts: a support base and a Flexible diaphragm. The diaphragm is constructed using a specially developed EPDM/Silicon rubber material, which guarantees superior performance and long-term durability.

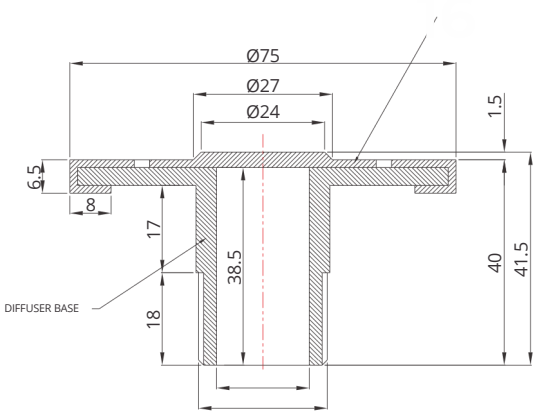
BIOFIN **80**

Specifications:

Shape	**Disc**
Size	Dia 80 mm (3″)
Bubble size	4 - 5 mm
Membrane material	EPDM / Silicon
Membrane support	PP / Steel
Operating Temp	35 °C (max 85°C)
Air discharge from	Top
Air discharge ports	10
Standard Airflow/diffuser	1 - 5 Nm^3/hr
Air flow Range/diffuser	1 - 15 Nm^3/hr
Min req. Qty for mixing	2
End connection	Male thread ¾″ BSP / NPT
Special arrangement	Non clog
Max pressure allowed	1 Kg/cm^2
Weight	40 gm



MEMBRANE (SILICON/EPDM)





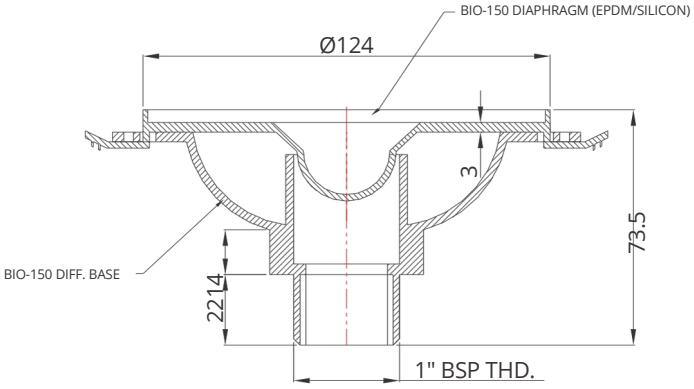
BIOFIN **150**

Specifications:

Specification	Value
Shape	Disc
Size	Dia 150 mm (6")
Bubble size	4 - 5 mm
Membrane material	EPDM / Silicon
Membrane support	ABS
Operating Temp	35 °C (max 85°C)
Air discharge from	Peripheral
Air discharge ports	8
Standard Airflow/diffuser	15 Nm^3/hr
Air flow Range/diffuser	4 - 25 Nm^3/hr
Min req. Qty for mixing	1
End connection	Male thread ¾" BSP / NPT
Special arrangement	Non clog
Max pressure allowed	1.5 Kg/cm^2
Weight	120 gm







Applications

- Activated sludge waste water treatment
- Equalization basin mixing / aeration
- Industrial waste water treatment
- Oxygen for sludge stabilization
- Aeration of pond and streams
- Aerobic digestors
- Treated water tank agitation
- Mixing purpose for effluent and dozing liquid like Lime,
- Ferrous, Sulphur solution

Accessories
for the aeration system

Saddles

Engineered for use on plastic and stainless-steel pipes, these products feature a cutting-edge locking system that utilizes a single bolt, significantly minimizing installation time. **However, it can be customized as per the requirement.**

- EVC patch for straightforward and rapid installation, eliminating the need for glue or specialized tools.
- Quick connection saddle, crafted from robust materials, easy to install, affordable, and simple to replace if needed.
- PVC saddle designed for gluing onto the pipe, ensuring a secure and robust seal.

Bioflow Industries offers a complete set of accessories that will make installation easier and convenient.



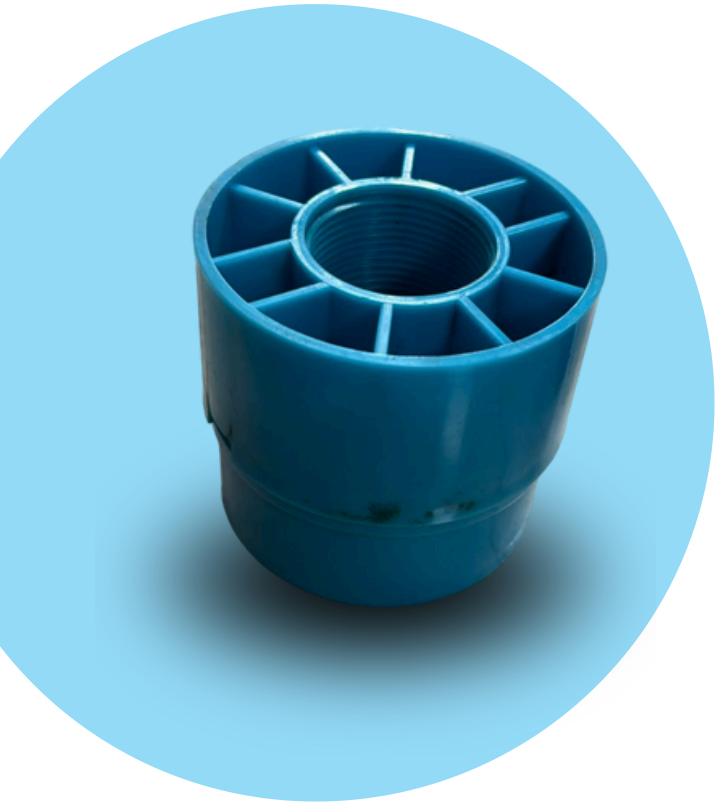
Clamp

Specifically designed for bottom aeration systems where air pressure typically falls below 10 meters of water column, these components facilitate quick installation compared to standard flanges due to their one-bolt connection.

They offer enhanced safety over slotted band joints, where the seal relies on two band clamps. The two stubs are constructed from ABS, while the clamp is made from durable polypropylene reinforced with 30% fiberglass (PPGF30%), featuring a bolt in A4 stainless steel.







End Cap

Bioflow Industries Pvt Ltd, offers top-of-the-line End Caps designed to meet the highest standards of durability and performance. These End Caps are essential components in various industrial applications, providing secure and reliable sealing solutions for pipelines and other fluid control systems.

Manufactured using premium quality materials, Bioflow's End Caps ensure excellent resistance to corrosion, wear, and extreme temperatures, making them suitable for a wide range of environments and industries.





An ISO 9001-2015 Company

BIOFLOW
INDUSTRIES PVT LTD

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