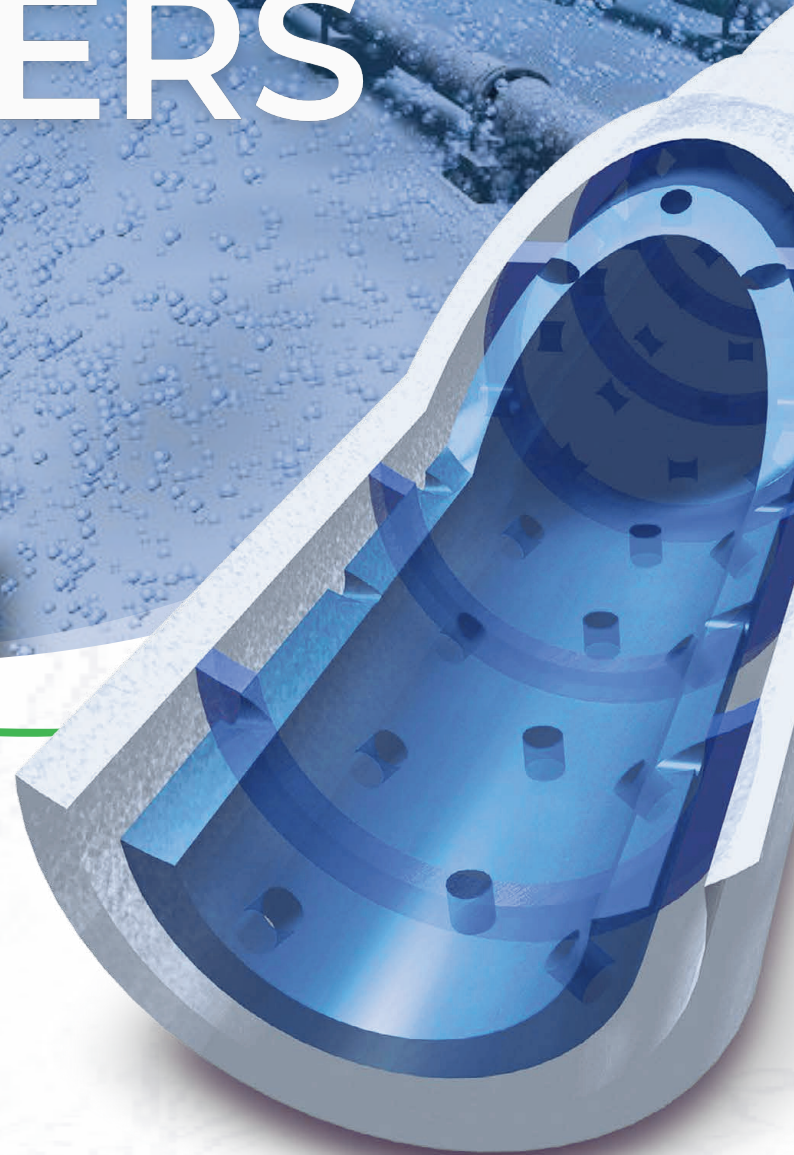




EUROTECK
ENVIRONMENTAL (P) LTD
LET'S RECYCLE

AIR DIFFUSERS

HIGH EFFICIENCY
without
maintenance





EUROTECK
ENVIRONMENTAL (P) LTD
LET'S RECYCLE

FOR MORE THAN 25
YEARS ESMIL
GROUP DELIVERED
MORE THAN 700
000 LINEAR METERS
OF AIR DIFFUSERS
AND CONTINUES
THIS INPUT
INCREASING

ADVANTAGES OF ESMIL TUBE AIR DIFFUSERS

- **Do not require cleaning and washing.** The external polyethylene layer with "fibro-porous" construction provides for tough, reliable operation of the aeration system without the need for routine cleaning and washing.
- **Effective mass transfer and sludge mixing.**
The bubbles which the ESMIL Air Diffusers produce have a diameter of only 2-3 mm which is ideal for oxygen transfer and mixing.
- **Reduced operating costs** due to low pressure loss.
- Due to the internal perforated pipe and "fibro-porous" design of the outer tube, the ESMIL Air Diffusers provide **uniform air distribution over the entire area of the aeration tank.**
- **Additional resistance to water hammers, pressure drops and other mechanical impacts** is provided due to the special design of the ESMIL Air diffuser.
- **ESMIL aeration system is easy to assemble.** Elements of the system are quickly assembled by threaded joints. Diffusers are fastened to the bottom with the fastening step of 2 m.
- The rate of air flow supplied to our ESMIL Tube Air Diffusers is 2-2.5 times higher than to conventional membrane diffusers. **This provides for lower investment and capital costs on projects.**
- Due to the use of the thermoplastic materials in their design, ESMIL Air Diffusers are **resistant to a wide range of challenging environmental and temperature conditions.**
- ESMIL Air Diffusers provide **consistent, reliable and stable performance during their long service life.**



**HULAN DISTRICT,
HARBIN, CHINA**
(Installation of ESMIL Aeration System)



SHANYIN, CHINA
(Installation of ESMIL Aeration System)



HERZLIYA, ISRAEL
(Installation of ESMIL Aeration System)





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AERATION SYSTEMS ON THE BASIS OF TUBE DIFFUSERS

ESMIL Tube Air Diffusers were developed for application in municipal and industrial wastewater treatment plants. Their primary use is for supplying the required levels of oxygen to wastewater in the aeration tank while providing an efficient mixing.

OSTRÓDA WWTP, POLAND

Capacity: 10 000 m³/d

Equipment: 129 linear meters
of ESMIL tube air diffusers



MORE THAN 400
WATER AND
SEWAGE
COMPANIES IN 10
COUNTRIES HAVE
CHOSEN ESMIL
TUBE
AIR DIFFUSERS



HERZLIYA WWTP, ISRAEL

Capacity: 22 000 m³/d

Equipment: 600 linear meters
of ESMIL tube air diffusers



ESMIL PROVIDES UP TO 6 YEAR WARRANTY FOR THE AIR DIFFUSERS, THOUGH THE PRACTICE SHOWS THAT THEY OPERATE SUCCESSFULLY AFTER THE EXPIRY OF THE WARRANTY PERIOD



DESIGN OF ESMIL TUBE AIR DIFFUSERS

The ESMIL Tube Air Diffuser is made up of two pipes. The gap between two pipes is supported by inserted one into another with an air gap running cross ring insertions. between them.

The outer pipe is porous in construction and is made from low-density polyethylene (LDPE). This pipe is called a fibro-porous disperser. During its manufacturing, a pneumatic extrusion process is utilized, when aerodynamically formed fibers from melted polyethylene are applied on a form-maker forming a pipe.

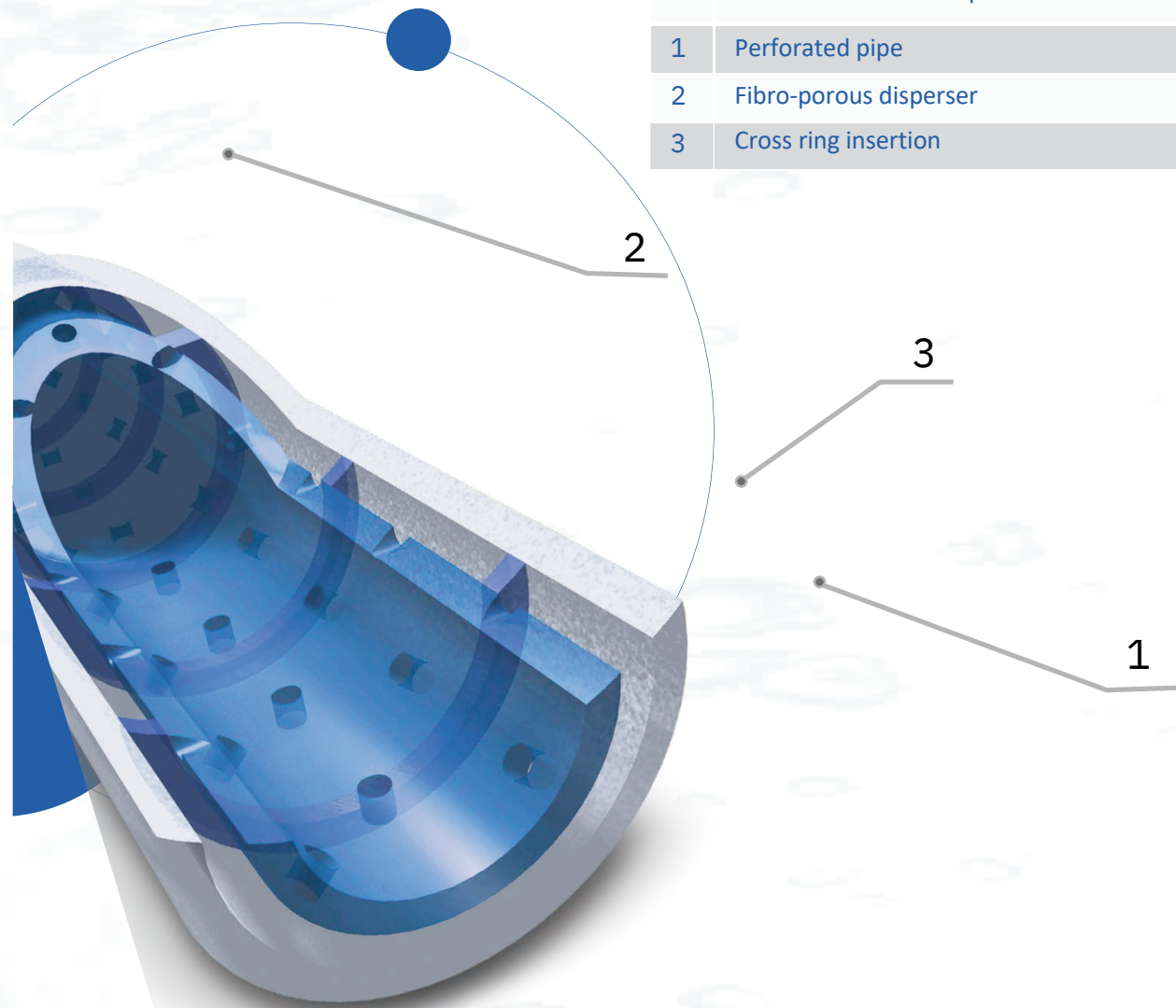
The inner pipe is made from PVC and is perforated.

The supply air enters the gap between the inner and outer pipes through the numerous hole openings in the inner supply pipe. The air is then dispersed into the aerated liquid through the «fibro-porous» construction of the outer pipe forming numerous and consistent bubbles.

Forcing the air into the inner pipe and uniformly out through the «fibro porous» outer pipe provides a consistently uniform air distribution in the liquid you want aerated. This enables us to achieve a superior aeration efficiency with minimal energy cost.

COMPONENTS AND MATERIALS

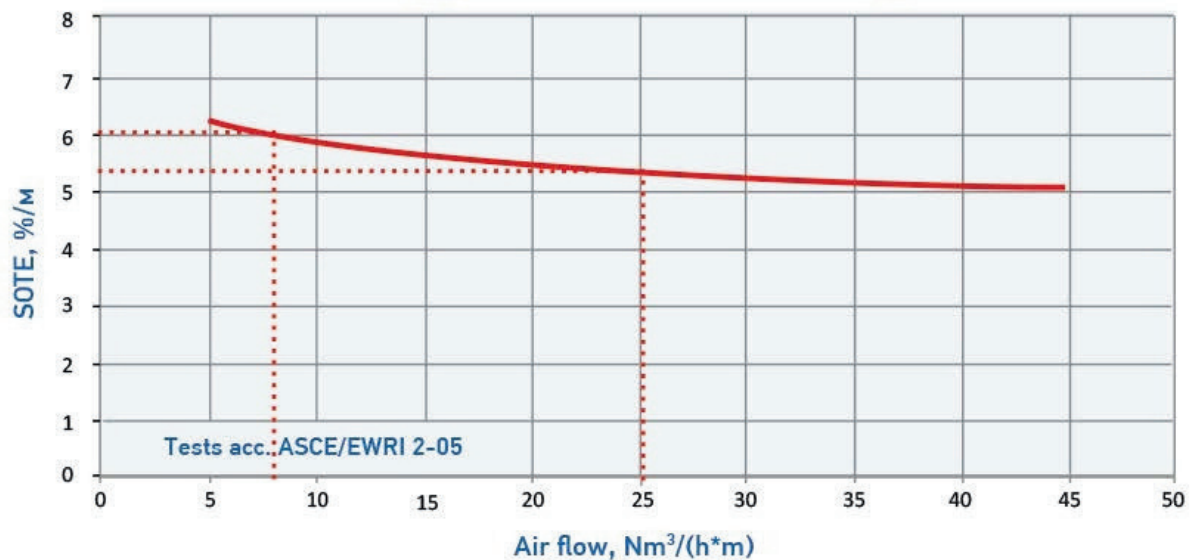
	Description	Material
1	Perforated pipe	PVC
2	Fibro-porous disperser	LDPE
3	Cross ring insertion	LDPE



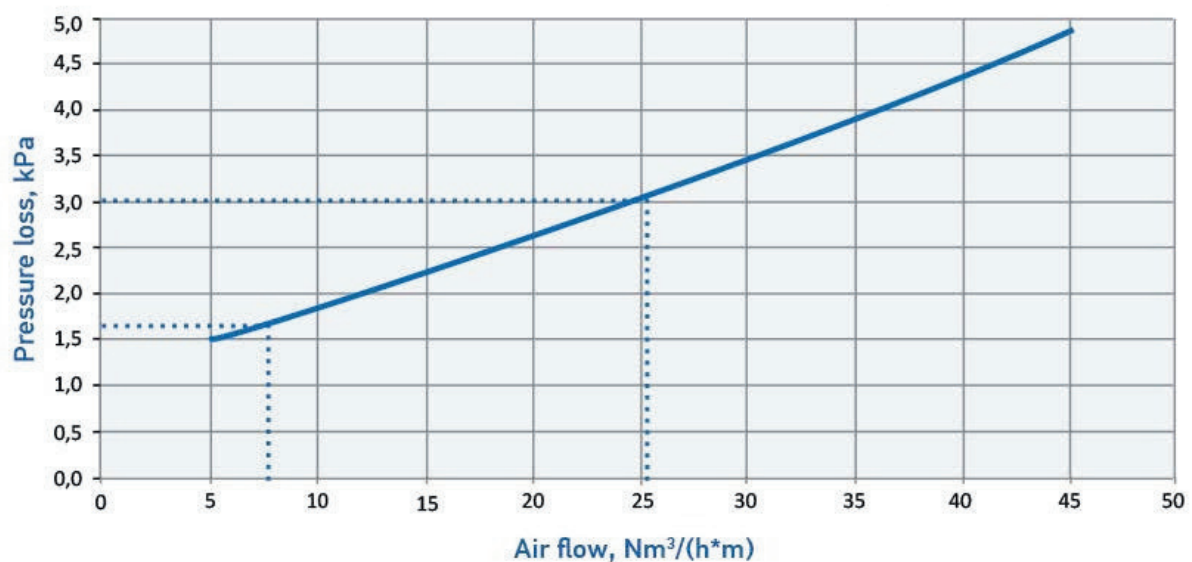
TECHNICAL CHARACTERISTICS

Airflow range	5-45 Nm ³ /(h*m)
Design airflow	8-25 Nm ³ /(h*m)
Air diffuser diameter	0,12 m
Air diffuser length	1-2 m
Bubble diameter	1-3 mm
Inlet air temperature	up to 100 °C

Oxygen transfer efficiency



Pressure loss characteristics



REFERENCE OF CJSC “MUNICIPAL TREATMENT FACILITIES” :

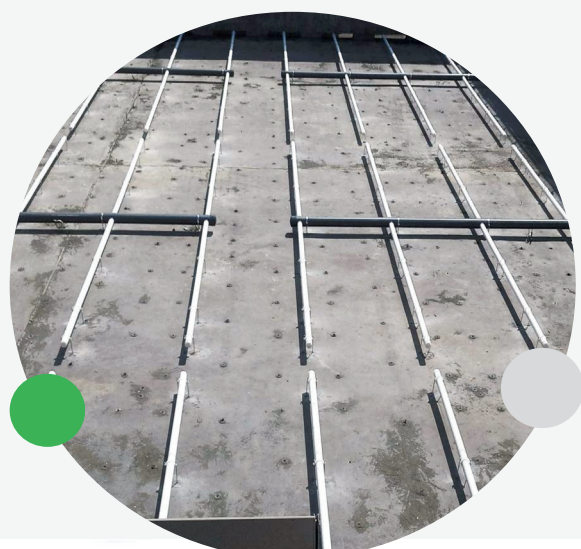
“Major repair works of the aeration system in the aeration tanks were executed in 2009-2010. The ESMIL diffusers were installed in the aeration tanks. The total number of aeration branches in each aeration tank is 10 (including 3 branches in the first and second corridors each and 2 branches in the third and fourth corridors each).

Consequently, the following results were reached:

- The uniform air distribution prevented the formation of stagnant zones, whereby the decay of activated sludge stopped.
- The fine-bubble aeration ensured an effective saturation of the mixed liquor with air, thus increasing the activity of microorganisms in the activated sludge.
- The electricity consumption for the operation of the aeration system was reduced by 20 000 kWh/day;
- The efficiency of nitrogen compounds' removal increased.

In addition, simple and fast installation works may also be attributed to the advantages of ESMIL diffusers.”

ESMIL tube air diffusers allow the significant reduction of energy consumption at wastewater treatment plants.



WE OFFER OUR CLIENTS:

- Inspection of wastewater treatment facilities prior to the reconstruction (analysis of qualitative and quantitative composition of wastewater for the selection of the optimal treatment scheme);
- Individual approach to each facility, application of nonstandard solutions and various methods of installation; Selection of air diffusers based on calculated, experimental and laboratory data;
- 6 year warranty period with the actual service life of 12 years;
- Installation and commissioning of our equipment.

For more than 25 years of work we have gained the unique experience that allows us to offer customers only the most effective solutions.



REFERENCE OF THE CHIEF OF WASTEWATER TREATMENT FACILITIES AND PUMP STATIONS IN HERZLIYA CITY (ISRAEL):

“... In November 2013 we launched the first section of the reactor with ESMIL tube air diffusers.

The results exceeded all our most optimistic expectations. The quantity of consumed air as well as the energy was significantly reduced. Liquid saturation with oxygen was stable and uniform throughout the whole basin. After 2 months, without waiting for the end of 6-month period of supervision of air diffusers operation, as agreed earlier, it was decided to replace the diffusers installed in two other sections with ESMIL Air Diffusers, and that was done gradually.

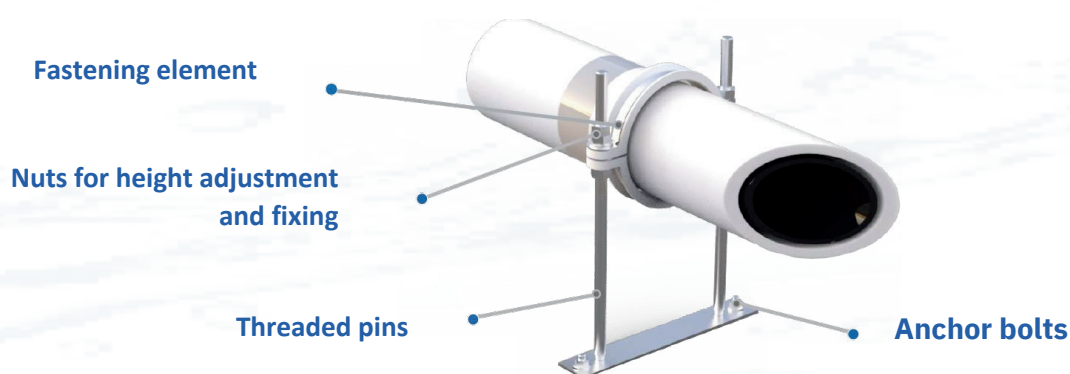
Today the entire reactor (3 sections) is equipped with ESMIL Air Diffusers and we are very pleased with the results obtained. The desired concentration of oxygen (approx. 2 mg/l) is maintained in all sections with much lower energy consumption.

Most of the day (14-16 hours) we use one air blower (4500 m³) and during peak hours (8-10 hours) we use two blowers, whereas before the replacement of aerators we had to use 2-3 air blowers”.



INSTALLATION

According to the wishes of the customers, three installation options are available.



INSTALLATION OF ESMIL AERATORS

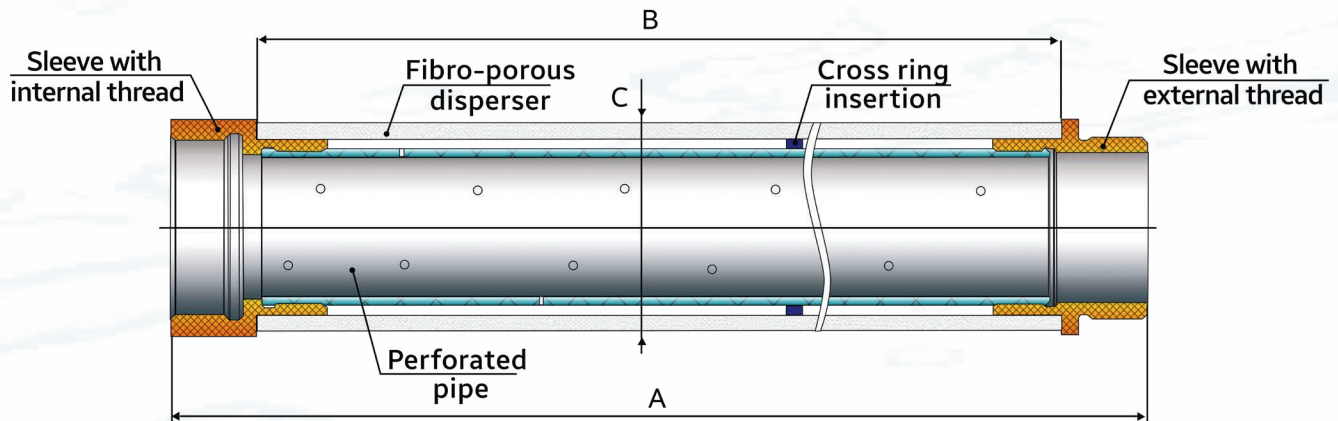
Threaded diffuser joints feature simple installation in branches up to 20 m length and result in fewer air manifolds.

Air manifolds are delivered with factory-welded diffuser adapters to facilitate installation.
No field welding required.

All metal parts, air manifolds and drop legs available in stainless (304/316) steel.



DIMENSIONS



Type	Total length (A), mm	Disperser length (B), mm	External diameter (C), mm	Disperser wall thickness, mm	Total weight, kg
APKV-1	1020	940	120	10	4
APKV-1.5	1525	1445	120	10	6
APKV-2	2025	1945	120	10	8





ONE PRODUCER FOR DIFFERENT WASTEWATER TREATMENT STAGES:

Equipment for mechanical, biological, physicochemical wastewater treatment as well as sludge dewatering equipment is produced on the ESMIL manufacturing plants.

- Screens and fine screens (Catenary Screen, Bar Screen, Back Raked Screen, Step Screen, Screw Screen, Rotary Drum Screen);
- Grinding Screens and Waste Grinders;
- Conveyors and Presses;
- Grit & Grease Separation and Treatment (Tangential Grit Chamber, Chain Scraper, Combined Mechanical Treatment Unit M-Comby);
- Penstocks;
- Aeration systems based on Tube Air Diffusers;
- Equipment for clarifiers (Radial Scraper, Radial Suction Scraper, Chain Scraper);
- Equipment for sludge treatment (Multi-Disc Screw Press MDQ, Disc Press JD, Screw Press Thickener MDQ-T, Belt Press, Belt Thickener);
- DA F- Units;
- Containerised wastewater treatment and sludge dewatering units.

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