

EPL Co., Ltd.



Catalogue



Environmental Solution
Provider for People and
the Environment



Greetings

EPL Co., Ltd., as an environmental solution provider, is committed to becoming one of leading environmental companies, based on the accumulated technology and know-how over the years. These include the installation, operations, and verification of environmental infrastructure as well as designs, commissioning, and maintenance of environmental infrastructure.

EPL Co., Ltd.
Executives and Employees

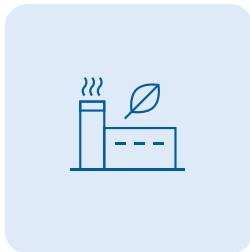
Business Area

Drinking water and Sewage/Septage/Wastewater Treatment



- ✓ IRBC-BBR Process
- ✓ Variable Controlled MLE Process
- ✓ e-PACT Process
- ✓ e-DAF
- ✓ Spring Fiber filter
- ✓ Functional Filter
- ✓ Membrane System
- ✓ Wastewater Recycling

Deodorization



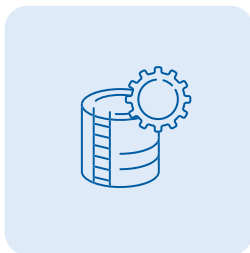
- ✓ Low Temperature Plasma Deodorizer
- Chemical deodorization
- Microbial deodorization
- ✓ Ammonia Stripping Tower

Clean Air



- ✓ Bag Filter
- ✓ Scrubber
- ✓ Cyclone Separator
- ✓ Electric Collection Filter
- ✓ Absorber
- ✓ RTO / RCO

Commissioning/Test Run/Maintenance



- ✓ Wastewater Recycling System
- ✓ Leachate Treatment System
- ✓ TMS management

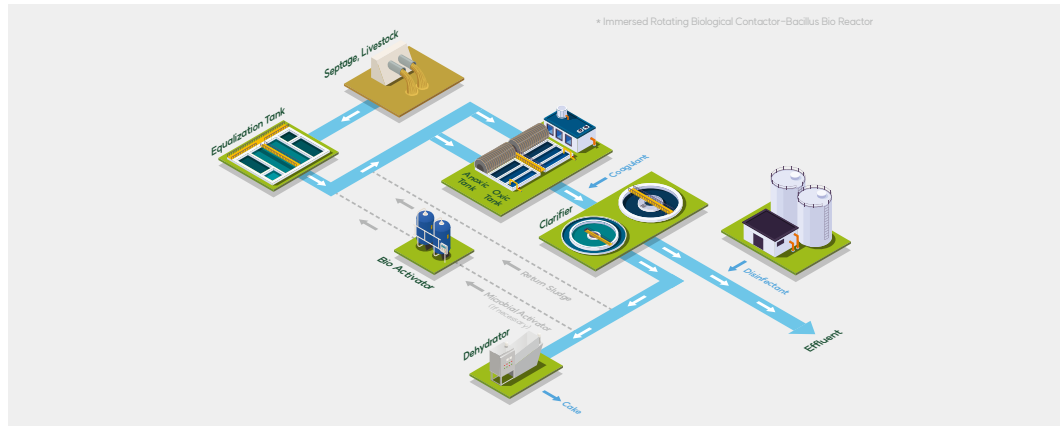
Equipment/Chemicals



- ✓ Variable Control Aerator & Mixer
- ✓ Microbubble diffuser
- ✓ e - Destruviter
- ✓ e - Descaler
- ✓ TOC Equipment & TMS Installation
- ✓ Microorganism Activator
- ✓ Composite Deodorizer
- ✓ Coagulant

IRBC-BBR Process

Introduction



This process is the combination technology of Rotating Biological Contactor(RBC) immersion device and biological reactor to optimize the treatment of Total Organic Carbon, Total Nitrogen and Total Phosphorus.

Features

- Optimization for high-concentration wastewater treatment
- Application to existing sewage and wastewater treatment plants for process-switch to the advanced treatment
- Minimization of the installation area
- Easy maintenance by simplified structure
- Economical CAPEX and OPEX

Performance comparison

Category	IRBC-BBR Process	Standard Activated Sludge Process	A ² /O Process
Treatment efficiency	T-N : 80 ~ 95%	T-N : 20 ~ 30%	T-N : 60 ~ 75%
	T-P : 75 ~ 90%	T-P : 10 ~ 20%	T-P : 50 ~ 70%
	BOD : 96% ~	BOD : 90% ~	BOD : 90% ~

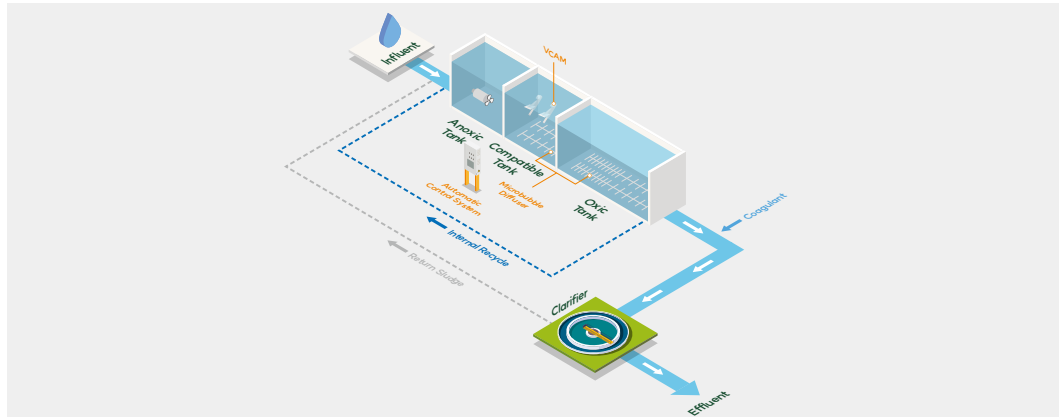
Reference

Location	Capacity
Giheung Septage Treatment Plant	100m ³ /day
Jangseong-gun Septage Treatment Plant	60m ³ /day
Namhae-gun Septage Treatment Plant	50m ³ /day
Uiryong-gun Septage Treatment Plant	130m ³ /day
Busan OO Sanitation Office	3,500m ³ /day



Variable Controlled MLE Process

Introduction



This specialized MLE process can actively respond to seasonal load fluctuations and temperature changes and is optimized for nitrogen removal. The compatible tank can be converted into an aerobic or anoxic condition depending on the operation conditions.

Features

- Active response to load fluctuations and temperature changes through a variable-controlled aeration system
- Energy saving through automatic control of turbo blower according to the dissolved oxygen concentration
- Maximization of oxygen delivery through microbubble diffuser
- Optimization of T-N & TOC removal
- T-P removal through chemical injection
- Easy maintenance through simplified process
- Application to existing sewage and wastewater treatment plants for process-switch to the advanced treatment

Application

Sewage/Septage
/Wastewater
Treatment plant

Food wastewater
Treatment plant

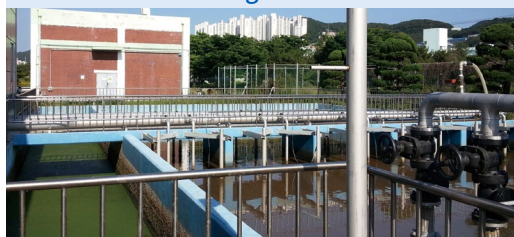
Leachate
Treatment plant

Food Processing
wastewater
Treatment plant

Reference

Location	Capacity	Location	Capacity
Busan 00 Sewage Treatment Plant	1,400m ³ /day	Busan 00 Sewage Treatment Plant	65,000m ³ /day
Ulsan 00 Sewage Treatment Plant	40,000m ³ /day	Ulsan 00 Sewage Treatment Plant	250,000m ³ /day
Pyeongtaek 00 Sewage Treatment Plant	75,000m ³ /day	Food Wastewater Treatment Plant	1,000m ³ /day
Gyeongsan Public Sewage Treatment Plant	40,000m ³ /day	Busan 00 Leachate Treatment Plant	800m ³ /day

Busan 00 Sewage Treatment Plant

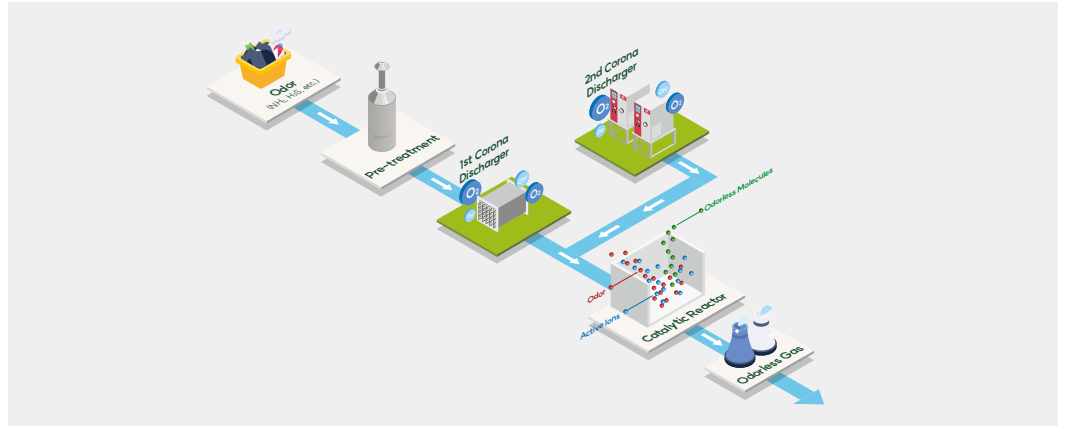


Busan 00 Leachate Treatment Plant



Low Temperature Plasma Deodorizer

Introduction



After oxidizing and decomposing the odor by active ions in the corona discharge part, the remaining odor is removed from the rear catalyst reaction part.

Features

- Ion oxidation technology through corona discharge and active ions
- Improvement of deodorization through catalyst
- Good effect on complex odors
- Less secondary pollutants and eco-friendly technology
- Low energy and chemical costs for maintenance
- Application to high-concentration odor in pretreatment facilities

Application

Influent and relay pump station of Wastewater Treatment Plant

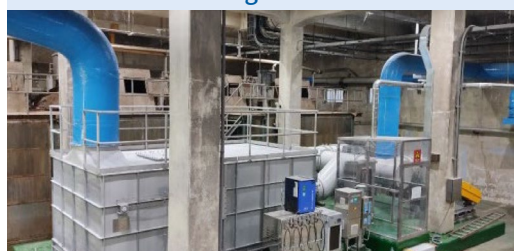
Sludge Treatment Plant

Non-point source pollution reduction facility

Reference

Location	Capacity
Busan OO Sewage Treatment Plant	80CMM
Busan OO Sewage Treatment Plant	400CMM
Seoul OO Water Recycling Center	120CMM, 10CMM
Busan OO Non-point source pollution reduction system	40CMM
Ulsan OO Sewage Treatment Plant	200CMM, 210CMM

Busan OO Sewage Treatment Plant

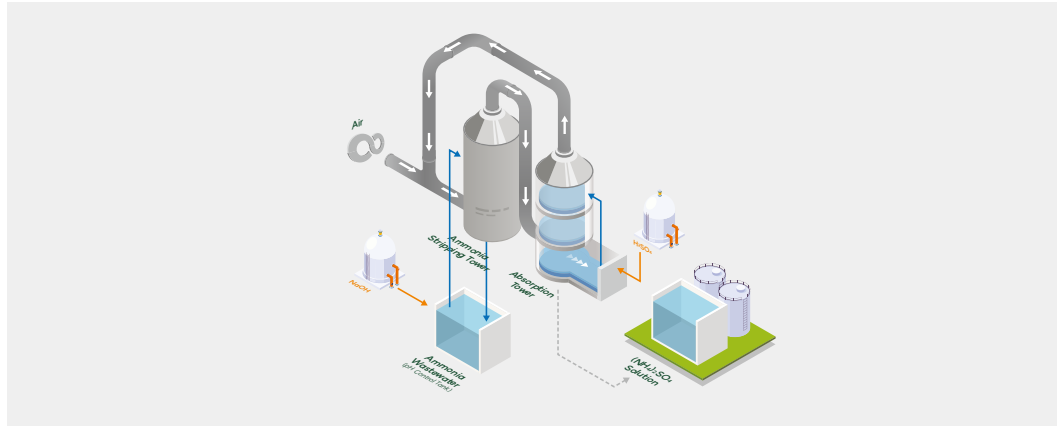


Seoul OO Water Recycling Center



Ammonia Stripping Tower

Introduction



This technology converts high-concentration ammonium ions in the water into ammonia gas through pH adjustment and then removes them through air stripping. Ammonia gas is absorbed by an acid absorbent.

Features

- Suitability for treatment of high nitrogen wastewater
- High removal efficiency of nitrogen
- Suitability for wastewater with high pH
- Low CAPEX and easy maintenance
- Suitability for high-salinity wastewater
- Zero emission of deaerating ammonia
- Installation without interfering with existing treatment facilities
- Recycling of ammonia by-product

Application

Sites with the generation of high-concentrations of ammonia nitrogen such as wastewater and landfill leachate

Sites with difficulty in biological treatment of high-concentration and high-salinity wastewater

Sites where want to recycle ammonia as liquid fertilizer

Reference

Location	Capacity
Busan Leachate Treatment Plant	300m ³ /day
Ulsan OO Leachate Treatment Plant	300m ³ /day
Gyeongju OO Wastewater Treatment Plant	300m ³ /day
Busan OO Leachate Treatment Plant	800m ³ /day

Gyeongju OO Wastewater Treatment Plant

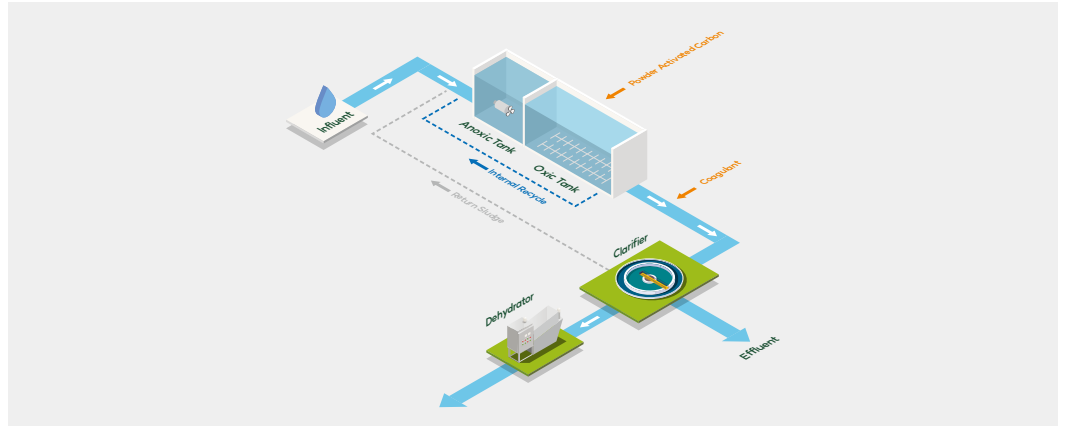


Busan OO Leachate Treatment Plant



e-PACT Process

Introduction



This technology is to improve treatment efficiency by injecting bio-activated carbon into a bioreactor to activate microorganisms. Especially, it is suitable for the treatment of non-degradable Total Organic Carbon(TOC).

Features

- Adsorption & decomposition of non-degradable macromolecules that cause TOC
- Improvement of biological reaction rate
- Improvement of microbial activity and microbial habitat
- Reduction of odor and color in bioreactors
- Improvement of sludge sedimentation
- Lowering the moisture content of sludge cake with increasing efficiency of dehydration

Application

Sites with difficulty of removing TOC – with no difficulty of removing COD

Sites with difficulty removing TOC even at excessive costs such as electrolysis, ozone oxidation, etc.

Sites with strong odor from the bioreactor

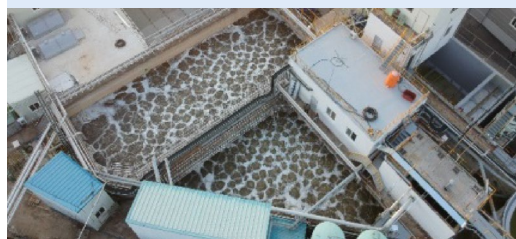
Sites with difficulty to change existing civil structures

Sites considering bio-carriers to increase the retention time of bioreactor

Reference

Location	Capacity
OO Food Factory Wastewater Treatment Plant	1,000m ³ /day
Busan OO Leachate Treatment Plant	800m ³ /day

OO Food Factory Wastewater Treatment Plant

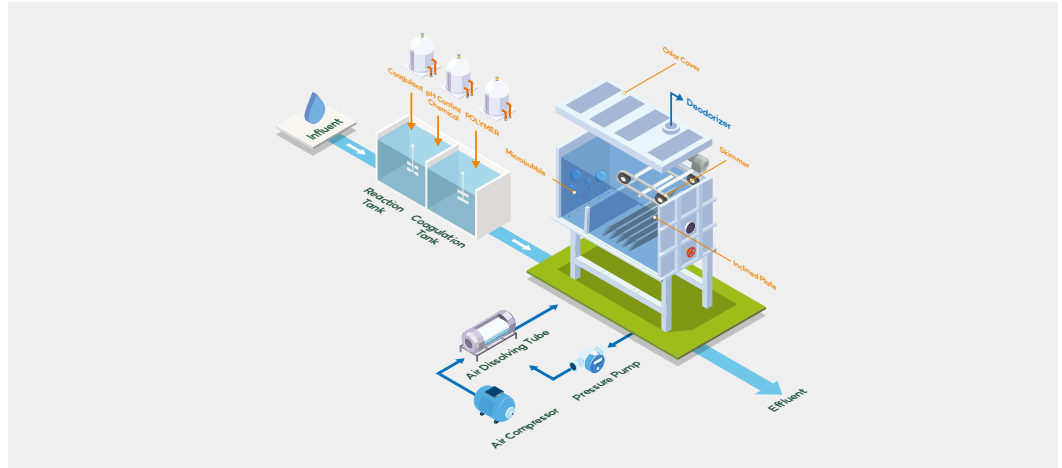


Busan OO Leachate Treatment Plant



e-DAF (Dissolved Air Flotation)

Introduction



e-DAF removes FOG and particulate matter of low specific gravity in water by floating it with microbubble.

Features

- Good effect for the removal of SS, T-P, FOG, and algae
- High performance with specialized Air Dissolving Tube(ADT) for flotation
- Minimization of the installation area by improving performance through the inclined plates to increase flotation efficiency
- Prevention of odor sources together with linking odor-blocking and deodorization facilities

Application

Pretreatment and tertiary treatment for wastewater & sewage treatment plants	Treatment of the supernatant by sludge thickening and the instream flow water
Treatment and reuse of SS, T-P and FOG	Pretreatment of membrane filtration system
Treatment of algae in rivers, lakes, dams, etc	Treatment of backwashing water and concentrate of Filter & Membrane(MF/UF/RO and so on)
Turbidity treatment for drinking water and industrial water treatment plants	Treatment of Leachate

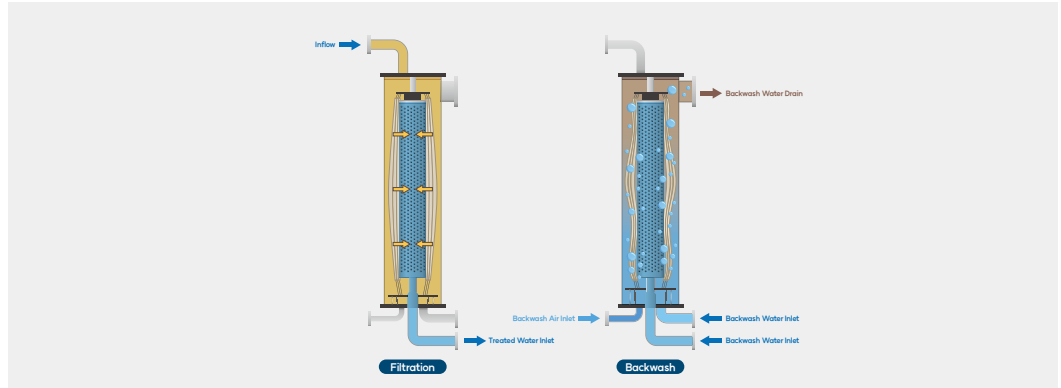
Reference

Location	Capacity
Busan OO Leachate Treatment Plant	800m ³ /day
Ulsan OO Wastewater Treatment Plant	500m ³ /day



Spring Fiber Filter

Introduction



This filter removes particulate contaminants from water through fiber filter media. The spring maximizes the filter's efficiency by compressing the fiber filter media during filtration and by relaxing during backwashing.

Features

- Minimization of the installation area by less than 1/5 of the sand filter
- Excellent treated water quality due to the application of the fiber filter media according to guaranteed water quality
- No need for the additional external device to relax & compress the fiber filter media
- Simple structure which easily assembles and operates
- Long-term use of the spring by the design for the prevention of elasticity degradation

Performance

Parameter	Raw water	Treated water	
		No Coagulant	Coagulant
Turbidity	5-15 NTU	2-8 NTU	0.1-0.3 NTU
	≤ 100 NTU	5-20 NTU	0.5-1.5 NTU
SS	10-20 mg/L	3-5 mg/L	0.5-2 mg/L
BOD	7-12 mg/L	5-8 mg/L	3-6 mg/L
T-P	1.5-2 mg/L	1.5-2 mg/L	0.1-0.5 mg/L

* The above water quality may vary depending on site conditions, water characteristics, etc.







Reference

Location	Capacity
Philippines OO Water Treatment Plant	15,000m ³ /day, 25,000m ³ /day
OO Food Factory Wastewater Treatment Plant	1,200m ³ /day
Busan OO Leachate Treatment Plant	800m ³ /day
Uiryong Floor Fountain Filtration System	60m ³ /day



Functional Filter

Functional Filter Media

<p>Katalox Light</p> 	<p>Catalytic Carbon</p> 	<p>Crystolite</p> 
<ul style="list-style-type: none"> · High MnO₂ coating(10%) zeolite · Iron & Manganese removal 	<ul style="list-style-type: none"> · Feroxyhyte coated GAC (coconut carbon) · TOC, COD, Phenol, PFOA, PFOS 	<ul style="list-style-type: none"> · Granulated feroxyhyte 99% · Microfiltration media · SDI, Turbidity, NH₃-N
<p>Ferrollox</p> 	<p>Titansorb</p> 	<p>Zeosorb</p> 
<ul style="list-style-type: none"> · Granulated Ferric Hydroxide · T-P, As, Heavy Metals 	<ul style="list-style-type: none"> · Granulated Titanium dioxide · As(III&V), Heavy Metals, Uranium 	<ul style="list-style-type: none"> · Granulated Zeolite · Turbidity, NH₃-N

Functional Filter



Our functional filter can be applied to the suitable functional media in the type of pollutants such as SS, Color, Odor, Fe, Mn, As, etc.

Features

- Application of the suitable functional media according to the type of pollutants
- Easy installation and maintenance
- Stable water quality by using special eco-friendly filter media and adsorbents (Made in Germany)
- Economical design by classification of allowable pressure (2.5, 4, 6, 8, and 10 bar)
- Strong to acid & alkali

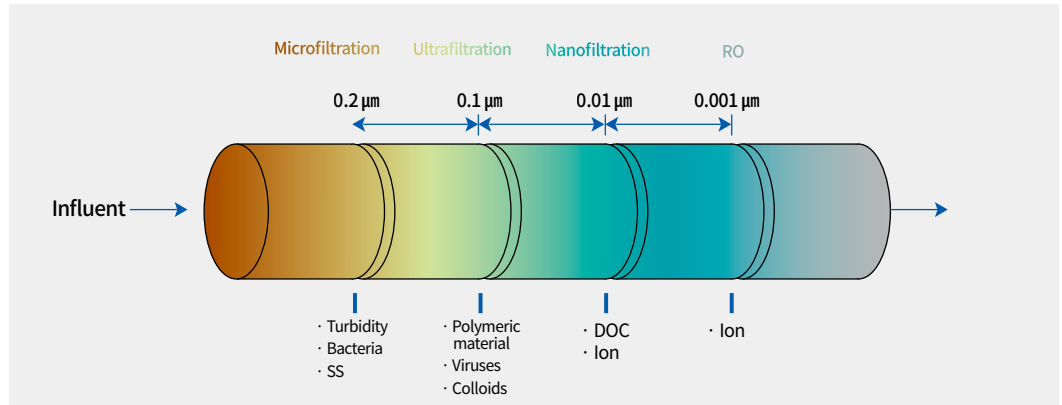
Specification

Q (m ³ /hr)	Dimension (mm)	Bed depth (mm)	Weight (kg)
6~12	Ø772 x 1918H	1200	66
13~26	Ø1100 x 2115H	1200	181
23~46	Ø1442 x 2158H	1200	275
47~94	Ø2042 x 2243H	1200	590
100~150	Ø2190 x 3026H	1200	590
130~195	Ø2190 x 3890H	1200	1110
200~300	Ø2190 x 5950H	1200	2110

* There are various specifications of filters other than the above.

Membrane Filtration System

Introduction



This technology treats pollutants, impurities, and salinity in water through membranes with pores of various sizes. This is applied to BWRO, SWRO, pure water production, and wastewater recycling.

Features

- Satisfaction of the demanding water quality by customers
- Low CAPEX/OPEX due to high recovery rate and low energy design
- Minimization of the installation area
- Easy operation and remote control by the automatic system

Performance

Filter category	Influent		Effluent	
	Turbidity	TDS	Turbidity	TDS
MF	≤ 5~15NTU	-	≤ 0.2NTU	-
UF	≤ 5~15NTU	-	≤ 0.2NTU	-
NF	≤ 5NTU	1000~2000ppm	≤ 0.1NTU	70%
BWRO	≤ 3NTU	2000~5000ppm	≤ 0.1NTU	80 ~ 90%
SWRO	≤ 5NTU	30000~35000ppm	≤ 0.1NTU	95%

* The above water quality may vary depending on site conditions, water characteristics, etc

Reference

Location	Capacity
OO Food Factory Wastewater Treatment Plant	720m ³ /day X 2SET (BWRO)
Jeju OO Tower	2,900m ³ /day (UF)



Sewage · Wastewater Recycling System

Introduction



Our recycling system reuses water discharged from sewage and wastewater treatment plants as industrial water, recreation water, stream flow management, etc., through the membrane filtration system.

Features

- Customized design by purpose
- Minimization of the installation area
- Low CAPEX and OPEX
- Easy operation and remote control by the automatic system
- Stable treatment performance

Performance

Parameter	Average treatment performance	
	For instream flow, agriculture, waterfront, landscaping	For industrial use
Turbidity	≤ 2.0NTU	≤ 0.5NTU
TDS	-	≤ 300ppm
BOD	≤ 3ppm	≤ 3ppm
T-P	≤ 0.5ppm	≤ 0.5ppm

* Customized design is available according to the required water quality.

Reference

Location	Capacity
OO Food Factory Wastewater Treatment Plant	720m ³ /day X 2SET (BWRO)
Jeju OO Tower	2,900m ³ /day (UF)



Variable Control Aerator & Mixer

This multi-functional equipment can actively control the amount of aeration and mix the bioreactor according to the influent load fluctuations.

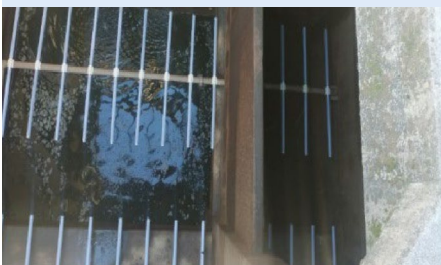


Microbubble Diffuser

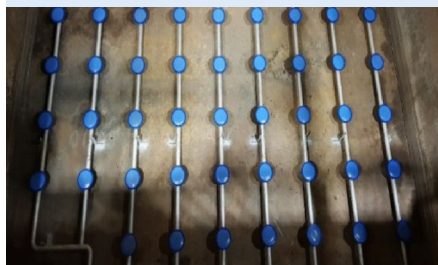
As it is made of silicon polyurethane material, our microbubble diffuser has high durability, excellent resilience, and high oxygen delivery efficiency.



Ulsan OO Instream Flow Water Treatment Plant



Busan OO Leachate Treatment Plant



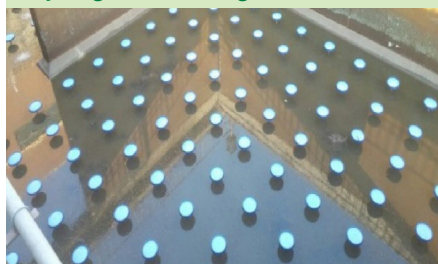
Jeju OO Sewage Treatment Plant



Busan OO Sewage Treatment Plant



Pyeongtaek OO Sewage Treatment Plant



Busan OO Sewage Treatment Plant



Introduction

ACTIFLO® = Compact Technology
up to 50 times smaller
conventional clarification

- Conventional clarifiers**
0.5-1.5m/h
- Sludge blanket clarifiers**
4-8m/h
- Lamella or DAF clarifiers**
10-20m/h
- Actiflo®**
40-120m/h

Actiflo® is a range of products offering a high rate and compact water clarification process.

Features

- Stable treatment even with influent load fluctuations
- Compatible with other VEOLIA water treatment processes (Actiflo, Multiflo, Spidflow, etc.)
- 1,000+ installations worldwide
- High sedimentation rate (> 30 m/h)
- Small installation area (1/8 vs. lamellar or DAF, 1/50 vs. conventional clarifier)

Introduction




EVALED®, packaged evaporation system, reduces throughput capacity through recirculation and achieves high concentration rates and separation efficiency.

Features

- Vacuum evaporation system evaluated by extreme energy conservation technology
- 30+ model capacities and 3000+ installations worldwide
- Ehaled series for low energy consumption and installation site
- PC series (heat pump) - RV series (mechanical vapor recompression) - AC series (hot/cold water)

 37 Dusil-ro, Geumjeong-gu, Busan, Republic of Korea

 Tel +82. 51. 912. 6661

 Fax +82. 51. 912. 6662

 E-mail proepl@daum.net

 Homepage www.proepl.com