BIOSANT

Water & Wastewater Treatment Specialist

ISO 9001:2015 UKAS MANAGEMENT SYSTEMS 8289 Cert.No. 1030895

ISO 14001:2015 UKAS MANAGEMENT SYSTEMS 8289 Cert.No. 1030896

OHSAS 18001:2007 UKAS MANAGEMENT SYSTEMS 8289 Cert.No. 1030897

Wastewater Treatment Plant (WWTP)

Sewage Treatment Plant (STP)

Water Treatment Plant (WTP)

Supporting Products

Company Profile

About Us: BIOSANT

CONTENTS

PT. BIOSANT TIRTA LESTARI is a contractor and consultant company experienced in Water & Wastewater Treatment Systems. Was found in February 2014. Helping in the efficiency, purification, and usage of water in Indonesia to serve a healthier and a better quality of water in industrial areas, factories, offices, apartments, and housing areas.

We also provide wastewater installations, to reduce the pollutants/wastewater from the production process so that can be met the national, regional, and international standards for industries. Using IPAL (*Instalasi Pengolahan Air Limbah*), it is hoped that the interests of all stakeholders can be fulfilled, especially for the surrounding community.

The principle of reusing, reducing, and recycling technology is used in the anaerobic and aerobic Sewage Treatment Plant (STP) systems, as well as the Wastewater Treatment Plant (WWTP).

We are supported by experts and experienced engineers. Our products meet product quality standards, operational costs, economical maintenance, and after-sales guarantee. Several leading companies in Indonesia have trusted us to handle wastewater and clean water problems in their buildings and projects.

Please find our products and projects details on the website **www.biosant.co.id**.

Vision

We aspire to be the most innovative company in solving the wastewater problems and purifying the wastewater into clean water so that our environment becomes clean, clear, eco-friendly, and pollutant-free.

Mission

- Always give the best performance in every project
- Become a partner and a consultant for customers to create an eco-friendly and a clean environment
- Prioritizing an excellency in operations and customer satisfaction in every sector.

Our Certifications

Certificate of Registration

PT. BIOSANT TIRTA LESTARI

JL. RAYA HANKAM NO. 7, KELURAHAN JATIRAHAYU, KECAMATAN PONDOK MELATI, KOTA BEKASI, 17414, INDONESIA

has been assessed and Certified by Otabu Global Services Pvt. Ltd.
as meeting the requirements of:

ISO 14001:2015

Environmental Management System

For the following scope of activities:

DESIGN, ENGINEERING AND CONSTRUCTION OF SEWAGE TREATMENT PLANT (STP), WASTE WATER TREATMENT PLANT (WWTP), WATER TREATMENT PLANT (WTP), MEMBRANE BIO REACTOR SYSTEM (MBR), REVERSE OSMOSIS SYSTEM (RO), SEA WATER REVERSE OSMOSIS SYSTEM (SWRO), ULTRA FILTRATION SYSTEM (UF), ADVANCED OXYDATION PROCESS SYSTEM (AOP), FRP WATER TANK, FIBERGLASS PRODUCT, STAINLESS STEEL PRODUCT AND MILD STEEL PRODUCT

Issue No :01
Date of Certification: 29 October 2021
1st Surveillance Due: 28 October 2022

Revision No ( ) : NA
2nd Surveillance Due: 28 October 2023
Certificate Expiry: 28 October 2024
(subject to the company maintaining its system to the required standard)

Certificate No:- 1029E214021

To Verify this Certificate please visit at www.otabuglobal.com

Dr. Anita Gupta
(Managing Director)

Otabu Global Services Private Limited
Accredited by IAS (International Accreditation Service, Inc.)
(3060 Saturn Street, Suite 100, Brea, California 92821 U.S.A.)
Validity of this certificate is subject to annual surveillance audits done successfully
This Certificate Of Registration Remains The Property of Otabu Global Services Private Limited and Shall be Returned Immediately Upon Request
Email: info@otabuglobal.com / Website: www.otabuglobal.com

Certificate of Registration

PT. BIOSANT TIRTA LESTARI

JL. RAYA HANKAM NO. 7, KELURAHAN JATIRAHAYU, KECAMATAN PONDOK MELATI, KOTA BEKASI, 17414, INDONESIA

has been assessed and Certified by Otabu Global Services Pvt. Ltd.
as meeting the requirements of:

ISO 45001:2018

Occupational Health & Safety Management System

For the following scope of activities:

DESIGN, ENGINEERING AND CONSTRUCTION OF SEWAGE TREATMENT PLANT (STP), WASTE WATER TREATMENT PLANT (WWTP), WATER TREATMENT PLANT (WTP), MEMBRANE BIO REACTOR SYSTEM (MBR), REVERSE OSMOSIS SYSTEM (RO), SEA WATER REVERSE OSMOSIS SYSTEM (SWRO), ULTRA FILTRATION SYSTEM (UF), ADVANCED OXYDATION PROCESS SYSTEM (AOP), FRP WATER TANK, FIBERGLASS PRODUCT, STAINLESS STEEL PRODUCT AND MILD STEEL PRODUCT

Issue No :01
Date of Certification: 29 October 2021
1st Surveillance Due: 28 October 2022

Revision No ( ) : NA
2nd Surveillance Due: 28 October 2023
Certificate Expiry: 28 October 2024
(subject to the company maintaining its system to the required standard)

Certificate No:- 1029O214121

To Verify this Certificate please visit at www.otabuglobal.com

Dr. Anita Gupta
(Managing Director)

Otabu Global Services Private Limited
Accredited by IAS (International Accreditation Service, Inc.)
(3060 Saturn Street, Suite 100, Brea, California 92821 U.S.A.)
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Email: info@otabuglobal.com / Website: www.otabuglobal.com

Certificate of Registration

PT. BIOSANT TIRTA LESTARI

JL. RAYA HANKAM NO. 7, KELURAHAN JATIRAHAYU, KECAMATAN PONDOK MELATI, KOTA BEKASI, 17414, INDONESIA

has been assessed and Certified by Otabu Global Services Pvt. Ltd.
as meeting the requirements of:

ISO 9001:2015

Quality Management System

For the following scope of activities:

DESIGN, ENGINEERING AND CONSTRUCTION OF SEWAGE TREATMENT PLANT (STP), WASTE WATER TREATMENT PLANT (WWTP), WATER TREATMENT PLANT (WTP), MEMBRANE BIO REACTOR SYSTEM (MBR), REVERSE OSMOSIS SYSTEM (RO), SEA WATER REVERSE OSMOSIS SYSTEM (SWRO), ULTRA FILTRATION SYSTEM (UF), ADVANCED OXYDATION PROCESS SYSTEM (AOP), FRP WATER TANK, FIBERGLASS PRODUCT, STAINLESS STEEL PRODUCT AND MILD STEEL PRODUCT

Issue No :01
Date of Certification: 29 October 2021
1st Surveillance Due: 28 October 2022

Revision No ( ) : NA
2nd Surveillance Due: 28 October 2023
Certificate Expiry: 28 October 2024
(subject to the company maintaining its system to the required standard)

Certificate No:- 1029Q213921

To Verify this Certificate please visit at www.otabuglobal.com

Dr. Anita Gupta
(Managing Director)

Otabu Global Services Private Limited
Accredited by IAS (International Accreditation Service, Inc.)
(3060 Saturn Street, Suite 100, Brea, California 92821 U.S.A.)
Validity of this certificate is subject to annual surveillance audits done successfully
This Certificate Of Registration Remains The Property of Otabu Global Services Private Limited and Shall be Returned Immediately Upon Request
Email: info@otabuglobal.com / Website: www.otabuglobal.com

KEMENTERIAN LINGKUNGAN HIDUP DAN KEHUTANAN
SEKRETARIAT JENDERAL
Gedung Manggala Wanabakti, Jalan Gator Subroto
Jakarta 10270, Kotak Pos 6505
Telepon : 5730191, Faximile : 5738732

Oktober, 2019

Nomor : S.1003/SETJEN/SLK/STD.2/10/2019
Lampiran : 1 (satú) berkas
Hal : Registrasi Teknologi Ramah Lingkungan
Instalasi Pengolah Air Limbah Domestik

Yth.
Direktur PT BIOSANT TIRTA LESTARI
Jl. Blok Lio Gg., H Komarudin RT 008/RW 019
Depok, Pancoran Mas

Menindaklanjuti surat Direktur PT BIOSANT TIRTA LESTARI No: 015/BTL-SK/VII/2019 tanggal 24 Juli 2019 perihal Permohonan Registrasi Teknologi Ramah Lingkungan, maka bersama ini disampaikan bahwa:

1. Merujuk:
   a. Undang-undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup, Pasal 63 ayat 1 butir v bahwa Pemerintah mengoordinasikan, mengembangkan, dan mensosialisasikan pemanfaatan teknologi ramah lingkungan hidup;
   b. Peraturan Menteri Negara Lingkungan Hidup No:22 Tahun 2009 tentang Tata Laksana Registrasi Kompetensi Bidang Lingkungan.
   c. Peraturan Menteri Lingkungan Hidup No: 2 Tahun 2014 tentang Pencantuman Logo Ekolabel.
   d. Keputusan Sekretaris Jenderal Kementerian Lingkungan Hidup dan Kehutanan Nomor: SK.5/SETJEN/SLK/STD.2/2/2019 tanggal 4 Februari 2019 tentang Komite Teknis Verifikasi Teknologi Ramah Lingkungan.
   e. SNI 14031 -2017 : Manajemen Lingkungan – Verifikasi Teknologi Lingkungan.
2. Telah dilakukan Review dan Verifikasi terhadap teknologi Instalasi Pengolah Air Limbah Domestik sistem Anaerobik Aerobik merk **"BIOSANT"** disaksikan oleh Komite Teknis Verifikasi Teknologi Ramah Lingkungan, dengan informasi profil teknologi sebagai mana terlampir.
3. Berdasarkan butir 1 dan 2 diatas, permohonan registrasi Teknologi Ramah Lingkungan telah disetujui dengan nomor registrasi : 090/TIRL/Reg-L/KLHK dan masa berakhir nomor registrasi berlaku dalam jangka waktu 3 (tiga) tahun.

Demikian disampaikan, atas perhatian Saudara diucapkan terimakasih.

Sekretaris Jenderal,

Dr.Ir. Bambang Hendroyono, M.M
NIP. 19640930 198903 1 001

Tembusan Yth:
1. Menteri Lingkungan Hidup dan Kehutanan (sebagai laporan);
2. Direktur Jenderal Pengendalian Pencemaran dan Kerusakan Lingkungan, KLHK;
3. Direktur Jenderal Pelayanan Kesehatan, Kementerian Kesehatan;
4. Direktur Pengembangan Penyehatan Lingkungan pemukiman, Ditjen Cipta Karya, Kementerian Pekerjaan Umum dan Perumahan Rakyat.

PEMERINTAH KOTA DEPOK
DINAS PENANAMAN MODAL DAN PELAYANAN TERPADU SATU PINTU
JL. MARGONDA RAYA NO. 54 DEPOK Telp. (021) 77217266 - 61, Fax. (021) 7721726/2 DEPOK 16431

IZIN USAHA JASA KONSTRUKSI
Nomor : 602/1830/DPMPTSP/PSG-II/IUJK/VII/2019

Dasar :

1. Undang-undang Nomor 18 Tahun 1999 Tentang Jasa Konstruksi;
2. Peraturan Pemerintah No. 28 Tahun 2000 sebagaimana telah diubah Peraturan Pemerintah No. 4 Tahun 2010, Perubahan ke dua Peraturan Pemerintah No. 92 Tahun 2010 Tentang Usaha dan Peran Masyarakat Jasa Konstruksi;
3. Peraturan Pemerintah No. 29 Tahun 2000 Tentang Penyelenggaraan Jasa Konstruksi sebagaimana telah diubah dengan Peraturan Pemerintah No. 59 Tahun 2010;
4. Peraturan Presiden No. 54 Tahun 2004 tentang Pedoman Pelaksanaan Pengadaan Barang/ Jasa Instansi Pemerintah;
5. Peraturan Menteri Pekerjaan Umum No. 4 Tahun 2011 tentang Pedoman Persyaratan Pelaksanaan Izin Usaha Jasa Konstruksi Nasional;
6. Peraturan Daerah Kota Depok Nomor 07 Tahun 2003 tentang Izin Usaha Jasa Konstruksi;
7. Peraturan Daerah Kota Depok Nomor 8 Tahun 2016 tentang Pembentukan dan Susunan Perangkat Daerah Kota Depok;
8. Surat Rekomendasi dari Tim Teknis Perizinan Kota Depok Nomor : 600/1685/VII/DPE/ IUJK/2019 tanggal 10 Juli 2019

Memberi izin Kepada

Nama Perusahaan	: PT. BIOSANT TIRTA LESTARI
Nama Penanggung Jawab Perusahaan	: DEDE MAHMUDIN, ST
Alamat Kantor Perusahaan	: Jl. Kembang Lio No. 1 RT. 006/013 Kel Depok Kec Pancoran Mas
Kota	: DEPOK
Provinsi	: Jawa Barat
Kode Pos	:
Nomor Telepon	:
Nomor NPWP	: 66.265.087.8-412.000
Berlaku sampai dengan	: 16 Juli 2020

Izin Usaha Jasa Konstruksi (IUJK) ini berlaku untuk melaksanakan kegiatan Usaha Jasa Perasahaan/ Perorangan Konstruksi di seluruh Negeri Kesatuan Republik Indonesia

Klasifikasi Perusahaan	: Menengah (M)
Bidang Pekerjaan	: 1. Mekanikal 2. Tata Lingkungan

Ditetapkan di : DEPOK
Pada Tanggal : 17 Juli 2019

KEPALA DINAS PENANAMAN MODAL DAN PELAYANAN TERPADU SATU PINTU

Dra. Hj. Yulfiani Machtar, MM.
Pembina Utama Muda, IVc
NIP. 19600731 198103 2 003

REPUBLIK INDONESIA
KEMENTERIAN HUKUM DAN HAK ASASI MANUSIA

SERTIFIKAT MEREK

Menteri Hukum dan Hak Asasi Manusia atas nama Negara Republik Indonesia berdasarkan Undang-Undang Nomor 15 Tahun 2001 Tentang Merek, memberikan hak Merek kepada :

Nama dan alamat Pemegang Merek	: PT. BIOSANT TIRTA LESTARI, Jl. Kembang Lio No.1. RT 006 RW 013, Pancoran Mas, Kota Depok 16431
Tanggal Penerimaan	: 24 Maret 2014
Nomor Pendaftaran	: IDM000623728
Elikat Merek	: BIOSANT

Perlindungan hak merek tersebut diberikan untuk jangka waktu 10 (sepuluh) tahun terhitung sejak tanggal penerimaan sampai dengan tanggal 24 Maret 2024, dan jangka waktu perlindungan itu dapat diperpanjang (Pasal 28).

Sertifikat merek ini dilampiri dengan contoh merek dan jenis barang/jasa yang tidak terpisahkan dari sertifikat ini.

a.n. MENTERI HUKUM DAN HAK ASASI MANUSIA
DIREKTUR JENDERAL KEKAYAAN INTELEKTUAL

Dr. Freddy Harris, S.H., LL.M., ACCS.
NIP. 196611181994031001

LEMBAGA PENGEMBANGAN JASA KONSTRUKSI
Construction Services Development Board of Indonesia

SERTIFIKAT BADAN USAHA JASA PELAKSANA KONSTRUKSI

Berdasarkan Undang - Undang No. 2 Tahun 2017 tentang Jasa Konstruksi dengan ini Lembaga Pengembangan Jasa Konstruksi menetapkan bahwa :

Nama Badan Usaha	: **BIOSANT TIRTA LESTARI, PT**
Nama Pimpinan / PJBU	: **Dede Mahmudin, ST**
Alamat Badan Usaha	: Jl. Kembang Lio No. 1 RT. 006/013 Kel. Depok Kec. Pancoran Mas
Kabupaten / Kota	: Kota Depok Kode Pos :
Provinsi	: Jawa Barat
No. Telepon	: 021- Fax :
E-mail	: info@biosant.co.id
NPWP	: 66.265.087.8-412.000
Jenis Usaha	: Jasa Pelaksana Konstruksi
Sifat Usaha	: Umum
Kekayaan Bersih	: Rp. 550,000,000
No Registrasi	: **0 - 3276 - 07 - 016 - 1 - 10 - 108088**

Dinyatakan memiliki kompetensi dan kemampuan untuk melaksanakan pekerjaan konstruksi sesuai dengan klasifikasi dan kualifikasi sebagaimana tercantum dalam sertifikat ini.
Sertifikat ini diterbitkan pada tanggal 22 Mei 2017 dan berlaku sampai dengan tanggal 21 Mei 2020 dengan disertai kewajiban untuk melakukan registrasi ulang pada tahun ke-2 paling lambat tanggal 21 November 2018 dan registrasi ulang pada tahun ke-3 paling lambat tanggal 21 November 2019.

Ditetapkan di : Bandung
Pada tanggal : 1 Oktober 2019

Lembaga Pengembangan Jasa Konstruksi
Provinsi Jawa Barat
Badan Pelaksana

Manajer Eksekutif

M. Taufik, BE

Keterangan:
1. QRCode dan Data yang tertera dalam SBU ini dapat diverifikasi melalui Aplikasi LPJK Certificate Scanner
2. Sertifikat ini tidak memerlukan tanda tangan basah karena telah ditandatangani secara elektronik (Digital Signature)

RINCIAN KLASIFIKASI DAN KUALIFIKASI
BADAN USAHA JASA PELAKSANA KONSTRUKSI

Nama Badan Usaha : **BIOSANT TIRTA LESTARI, PT**
Klasifikasi Bidang Usaha : **Bangunan Sipil**
Kualifikasi Bidang Usaha : **Menengah**
Anggota Asosiasi : **GAPEKSINDO**

No	Subkualifikasi	Kode Subklasifikasi	Subklasifikasi	Kemampuan Dasar	
				Tahun	Nilai (juta Rp)
1	M1	SI002	Jasa Pelaksana Konstruksi Instalasi Pengolahan Air Minum dan Air Limbah Serta Bangunan Pengolahan Sampah.	-	-
2	M1	SI003	Jasa Pelaksana Untuk Konstruksi Perpipaan Air Minum Jarak Jauh	-	-
3	M1	SI009	Jasa Pelaksana Untuk Konstruksi Perpipaan Air Limbah Lokal	-	-

Ali Abudan
KETUA UMUM

LEMBAGA PENGEMBANGAN JASA KONSTRUKSI
Construction Services Development Board of Indonesia

SERTIFIKAT BADAN USAHA JASA PELAKSANA KONSTRUKSI

Berdasarkan Undang - Undang No. 2 Tahun 2017 tentang Jasa Konstruksi dengan ini Lembaga Pengembangan Jasa Konstruksi menetapkan bahwa :

Nama Badan Usaha	: **BIOSANT TIRTA LESTARI, PT**
Nama Pimpinan / PJBU	: **Dede Mahmudin, ST**
Alamat Badan Usaha	: Jl. Kembang Lio No. 1 RT. 006/013 Kel. Depok Kec. Pancoran Mas
Kabupaten / Kota	: Kota Depok Kode Pos :
Provinsi	: Jawa Barat
No. Telepon	: 021- Fax :
E-mail	: info@biosant.co.id
NPWP	: 66.265.087.8-412.000
Jenis Usaha	: Jasa Pelaksana Konstruksi
Sifat Usaha	: Umum
Kekayaan Bersih	: Rp. 550,000,000
No Registrasi	: **0 - 3276 - 08 - 016 - 1 - 10 - 108088**

Dinyatakan memiliki kompetensi dan kemampuan untuk melaksanakan pekerjaan konstruksi sesuai dengan klasifikasi dan kualifikasi sebagaimana tercantum dalam sertifikat ini.
Sertifikat ini diterbitkan pada tanggal 1 Oktober 2019 dan berlaku sampai dengan tanggal 30 September 2022 dengan disertai kewajiban untuk melakukan registrasi ulang pada tahun ke-2 paling lambat tanggal 30 Maret 2021 dan registrasi ulang pada tahun ke-3 paling lambat tanggal 30 Maret 2022.

Ditetapkan di : Bandung
Pada tanggal : 1 Oktober 2019

Lembaga Pengembangan Jasa Konstruksi
Provinsi Jawa Barat
Badan Pelaksana

Manajer Eksekutif

M. Taufik, BE

Keterangan:
1. QRCode dan Data yang tertera dalam SBU ini dapat diverifikasi melalui Aplikasi LPJK Certificate Scanner
2. Sertifikat ini tidak memerlukan tanda tangan basah karena telah ditandatangani secara elektronik (Digital Signature)

RINCIAN KLASIFIKASI DAN KUALIFIKASI
BADAN USAHA JASA PELAKSANA KONSTRUKSI

Nama Badan Usaha : **BIOSANT TIRTA LESTARI, PT**
Klasifikasi Bidang Usaha : **Instalasi Mekanikal dan Elektrikal**
Kualifikasi Bidang Usaha : **Menengah**
Anggota Asosiasi : **GAPEKSINDO**

No	Subkualifikasi	Kode Subklasifikasi	Subklasifikasi	Kemampuan Dasar	
				Tahun	Nilai (juta Rp)
1	M1	MK002	Jasa Pelaksana konstruksi Pemasangan Pipa Air (Plumbing) dalam Bangunan dan Saluarannya	-	-

Ali Abudan
KETUA UMUM

6514691

BADAN NASIONAL SERTIFIKASI PROFESI
INDONESIAN PROFESSIONAL CERTIFICATION AUTHORITY

SERTIFIKAT KOMPETENSI
CERTIFICATE OF COMPETENCE

No. 39000 3125.0 0003433 2021

Dengan ini menyatakan bahwa,
This is certify that,

Bambang Setiawan

No.Reg. LGK.1445.02205 2021

Telah kompeten pada bidang:
Is competent in the area of:

Pengolahan Air Limbah
Water Pollution Control

Dengan kualifikasi/Kompetensi:
With Qualification/Competency:

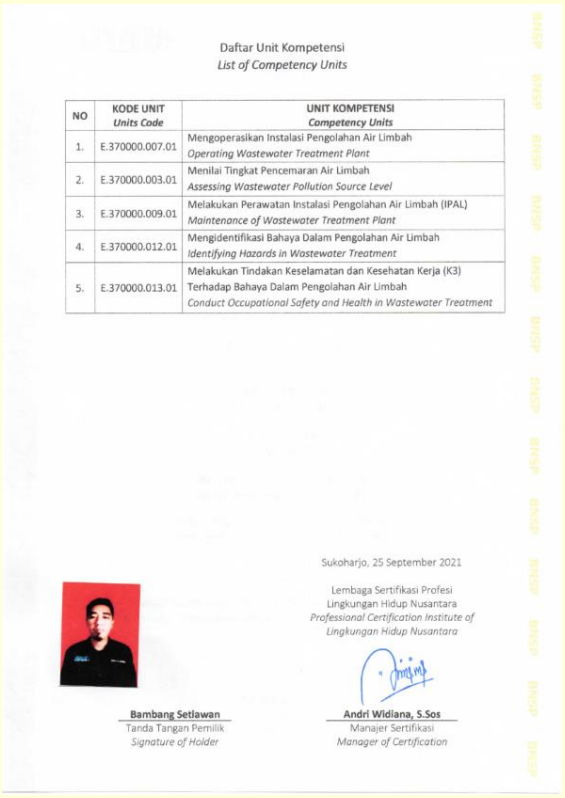
Penanggung Jawab Operasional
Responsible Person Operational

Sertifikat ini berlaku untuk: 3 (tiga) tahun
This certificate is valid for: 3 (three) years

Sukoharjo, 25 September 2021

Lembaga Sertifikasi Profesi Lingkungan Hidup Nusantara
Professional Certification Institute of Lingkungan Hidup Nusantara

Ari Widodo, S.E
Ketua
Chairman



Daftar Unit Kompetensi
List of Competency Units

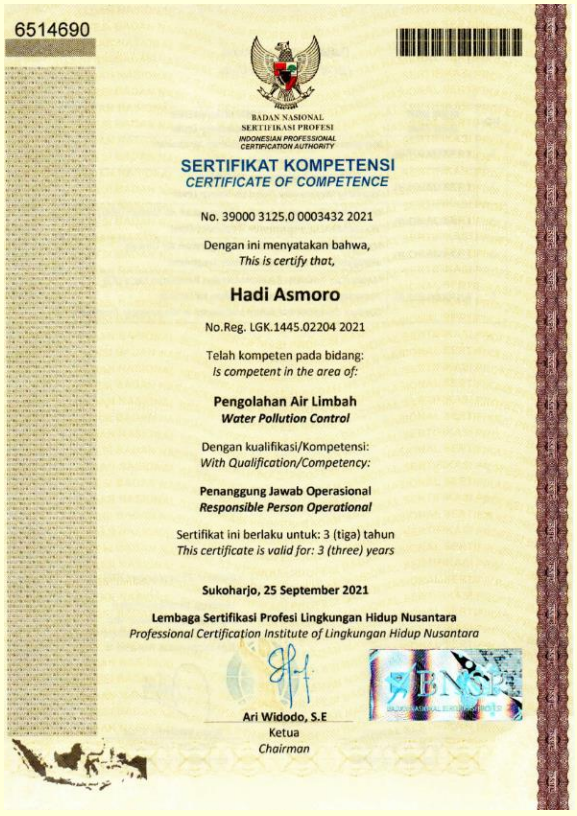
NO	KODE UNIT *Units Code*	UNIT KOMPETENSI *Competency Units*
1.	E.370000.007.01	Mengoperasikan Instalasi Pengolahan Air Limbah *Operating Wastewater Treatment Plant*
2.	E.370000.003.01	Menilai Tingkat Pencemaran Air Limbah *Assessing Wastewater Pollution Source Level*
3.	E.370000.009.01	Melakukan Perawatan Instalasi Pengolahan Air Limbah (IPAL) *Maintenance of Wastewater Treatment Plant*
4.	E.370000.012.01	Mengidentifikasi Bahaya Dalam Pengolahan Air Limbah *Identifying Hazards in Wastewater Treatment*
5.	E.370000.013.01	Melakukan Tindakan Keselamatan dan Kesehatan Kerja (K3) Terhadap Bahaya Dalam Pengolahan Air Limbah *Conduct Occupational Safety and Health in Wastewater Treatment*

Sukoharjo, 25 September 2021

Lembaga Sertifikasi Profesi
Lingkungan Hidup Nusantara
Professional Certification Institute of Lingkungan Hidup Nusantara

Bambang Setiawan
Tanda Tangan Pemilik
Signature of Holder

Andri Widiana, S.Sos
Manajer Sertifikasi
Manager of Certification



6514690

BADAN NASIONAL SERTIFIKASI PROFESI
INDONESIAN PROFESSIONAL CERTIFICATION AUTHORITY

SERTIFIKAT KOMPETENSI
CERTIFICATE OF COMPETENCE

No. 39000 3125.0 0003432 2021

Dengan ini menyatakan bahwa,
This is certify that,

Hadi Asmoro

No.Reg. LGK.1445.02204 2021

Telah kompeten pada bidang:
Is competent in the area of:

Pengolahan Air Limbah
Water Pollution Control

Dengan kualifikasi/Kompetensi:
With Qualification/Competency:

Penanggung Jawab Operasional
Responsible Person Operational

Sertifikat ini berlaku untuk: 3 (tiga) tahun
This certificate is valid for: 3 (three) years

Sukoharjo, 25 September 2021

Lembaga Sertifikasi Profesi Lingkungan Hidup Nusantara
Professional Certification Institute of Lingkungan Hidup Nusantara

Ari Widodo, S.E
Ketua
Chairman

Daftar Unit Kompetensi
List of Competency Units

NO	KODE UNIT *Units Code*	UNIT KOMPETENSI *Competency Units*
1.	E.370000.007.01	Mengoperasikan Instalasi Pengolahan Air Limbah *Operating Wastewater Treatment Plant*
2.	E.370000.003.01	Menilai Tingkat Pencemaran Air Limbah *Assessing Wastewater Pollution Source Level*
3.	E.370000.009.01	Melakukan Perawatan Instalasi Pengolahan Air Limbah (IPAL) *Maintenance of Wastewater Treatment Plant*
4.	E.370000.012.01	Mengidentifikasi Bahaya Dalam Pengolahan Air Limbah *Identifying Hazards in Wastewater Treatment*
5.	E.370000.013.01	Melakukan Tindakan Keselamatan dan Kesehatan Kerja (K3) Terhadap Bahaya Dalam Pengolahan Air Limbah *Conduct Occupational Safety and Health in Wastewater Treatment*

Sukoharjo, 25 September 2021

Lembaga Sertifikasi Profesi
Lingkungan Hidup Nusantara
Professional Certification Institute of Lingkungan Hidup Nusantara

Hadi Asmoro
Tanda Tangan Pemilik
Signature of Holder

Andri Widiana, S.Sos
Manajer Sertifikasi
Manager of Certification

Wastewater Treatment Plant (WWTP) Package

ETP / WWTP

NetLAB

Steps of Wastewater Treatment Process

NEUTRALIZATION
The process of adjusting the acidity level (pH) of the influent wastewater

PRESIPITATION
Addition of agglomerating chemicals, namely a combination of coagulants (PAC/Alum) and flocculants (polymers)

SETTLING
Separation of solids/flocs from wastewater with the addition of Plate Settlers

POLISHING
The refinement process included tracing solids or mud that may still escape using a sand filter from the absorption of metal elements with exchange resin media

Nowadays, the level of wastewater pollution is quite worrying, one of the elements of pollutants is the presence of heavy metals/toxicity that cannot be decomposed naturally by the environment, such as iron, lead manganese, and mercury (Fe, Pb, Mn, and Hg). To solve these problems, Biosant presents NetLAB, a laboratory-scale waste treatment package product with several types of capacities, NetLab in a compact and integrated design and guarantees the quality of outlets that meet quality standards.

Implementation of Biosant WWTP

- Hospitals (*Pretreatment*)
- Electroplating Industries
- Laboratories
- Industries that producing heavy metals

Tabel NetLAB Biosant

MODEL	KAPASITAS (M^3/JAM)	DIMENSI			KEBUTUHAN LISTRIK
		PANJANG	LEBAR	TINGGI	
NetLAB-1	1	1950	900	1250	1
NetLAB-3	3	2700	1350	1250	1.5
NetLAB-5	5	3500	1600	1250	2

The Excellencies of Biosant WWTP

- Able to treat wastewater with high BOD/COD levels
- The system works automatically
- Gains less mud
- Low electricity requirement
- Small area & easy to move

Sewage Treatment Plant (STP) Package

BIOSANT Sewage Treatment Plant (STP) is a modern domestic wastewater treatment system / septic tank (the sewage can be from the toilet, oil/grease waste, dishwashing, and bathroom), using Biofilter technology by utilizing aerobic and anaerobic bacteria which will decompose the wastewater.

Domestic wastewater quality standard parameters based on **Minister of Environment and Forestry Regulation No. P.68/MENLHK-SETJEN/2016/9 August 2016**

Parameter	Unit	Max Level
pH	-	6-9
BOD	mg/L	30
COD	mg/L	100
TSS	mg/L	30
Oil & Fat	mg/L	5
Ammonia	mg/L	10
Total Coliform	Total/100 ml	3000

Bio-Tank Package

Water pollution caused by domestic waste nowadays is very worrying. Based on a survey, there is at least 60 to 70 percent of water pollution in urban areas is caused by domestic waste. The relevant agencies have made various efforts, but the results have not been optimal yet.

BIOSANT recommends a product package for Sewage Treatment Plant (STP) that is environmentally friendly and based on biotechnology. The technology applied is the “BioHybrid System". This system can optimize the growth of decomposing bacteria in the STP unit. Bacteria are not only developed in wastewater media (Suspended Growth) but are developed on the surface of Biomedia (Fixed Film Growth). Using Biomedia in an area, around 550 m^2/m^3, with material made of HDPE which is proven to be able to optimize bacterial growth, durable, and maintenance-free. Thus, BIOSANT solution can be the most suitable, quick, effective, and efficient to improve the quality of domestic wastewater.

The Advantages of The BIOSANT System:

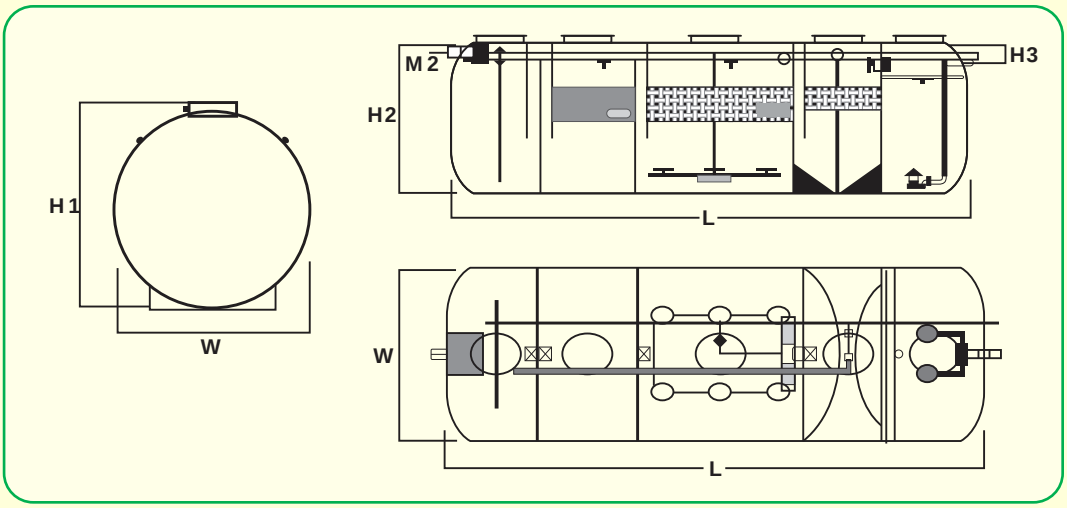
1. The system is compact because it is packaged in one tank
2. Relatively small area requirement
3. Easy and quick in installation
4. Easy in operation and maintenance
5. Non-clogging media and maintenance-free
6. Can be used in fluctuated load
7. The tank is made of fiberglass using a filament winding machine based on ASTM-3299
8. Can be installed in building basements, parking lots, parks, etc.
9. Supported by experienced experts
10. The effluent complies with the regulations of the ministry of environment – *Kementrian Lingkungan Hidup* (KLH).

Assessment of wastewater parameters per capita

Parameter	Value(s)
Wastewater per capita	250 Liter / orang / day
BOD Inlet	250 mg/L
BOD Outlet	50 mg/L
BOD Reduction Efficiency	80%
Residual time of wastewater in the reactor	- 1-3 days for anaerobic process - At least 1 day for aerobic process or a combination of anaerobic – aerobic
Types of treated wastewater	Toilets, bathrooms, used washing water, kitchens, sinks, etc
Anaerobic Process	Only reduce organic pollutants (BOD, COD) and Suspended Solids (SS), effluent BOD < 60 mg/L
Aerobic process / aeration	Only reduces organic pollutants (BOD, COD) and Suspended Solids (SS), ammonia, sulfides
Combination of anaerobic – aerobic	Detergent, and so on, effluent BOD < 300 mg/L
Constraint	This system requires a certain area, so it is not suitable for areas with high population density

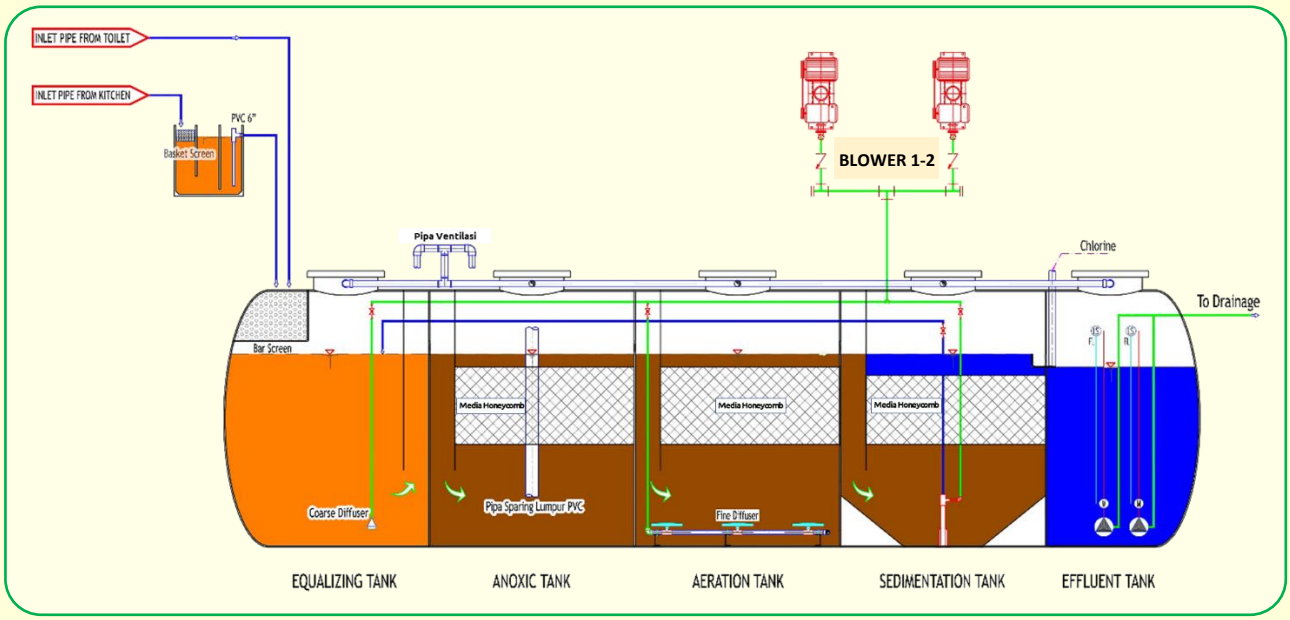
Sources	Clean Water Usage	Wastewater Discharge	Unit
Luxury home	250	200	Liters/Occupant/Day
Ordinary house	150	120	Liters/Occupant/Day
Apartment	250	200	Liters/Occupant/Day
Flats	100	60	Liters/Occupant/Day
Dormitory	120	96	Liters/Occupant/Day
Health center clinic	3	2,7	Liters/Visitors/Day
Luxury hospital	1000	800	Liters/Number of Patient Beds/Day
Middle hospital	750	600	Liters/Number of Patient Beds/Day
General hospital	425	340	Liters/Number of Patient Beds/Day
Primary school	40	32	Liters/Students/Day
Junior high school	50	40	Liters/Students/Day
High school	60	64	Liters/Students/Day
College	60	64	Liters/Student/Day
Home shop / office	100	80	Liters/Occupants & Employees/Day
Office building	50	40	Liters/Employee/Day
Mall / dept store	6	4,5	Liter/m^2 Floor Area/Day
Factory / industry	50	40	Liters/Employee/Day
Station / terminal	3	2,7	Liters/Passengers Arriving & Leaving/Day
Airport	3	2,7	Liters/Passengers Arriving & Leaving/Day
Restaurant	10	13,5	Liters/Seat/Day
Theater	10	9	Liters/Seat/Day
Cinema hall	10	9	Liters/Seat/Day
Luxury hotel up to 2-star	100	120	Liters/Beds/Day
Luxury hotel up to 5 star	200	200	Liters/Beds/Day
Office building	5	4,5	Liters/Person/Day (Without Water for Wudhu)
Library	25	22,5	Liters/Number of Visitors/Day
Bar	30	24	Liters/Number of Visitors/Day
Social gathering	30	27	Liters/Number of Visitors/Day
Train at night	235	160	Liters/Number of Seats/Day
Meeting hall	20	20	Liters/Seat/Day
Laboratory	150	120	Liters/Number of Staff/Day
Traditional / modern market	40	35	Liters/Stall/Day

The Dimension of Tank



Type	Waste Flowrate (m^3/day)	Influent BOD (m/g/L)	BOD Loading (kg/day)	Total Width (W)	Total Height (H1)	Total Length (L)	Inflow Pipe Depth (H2)	Outflow Pipe Depth (H3)	Inflow / Outflow Pipe (mm)	Manhole Cover (Da.mm)
BTL - 5	5	280	1.40	1500	1720	4200	300	400	150	500
BTL - 7	7	280	1.96	1500	1720	5900	300	400	150	500
BTL - 10	10	280	2.80	2000	2220	4700	400	500	150	500
BTL - 15	15	280	4.20	2000	2220	7000	400	500	150	500
BTL - 20	20	280	5.60	2000	2220	9000	400	500	150	500
BTL - 25	25	280	7.00	2000	2220	10000	400	500	150	500
BTL - 30	30	280	8.40	2000	2220	11000	400	500	150	500
BTL - 35	35	280	9.80	2000	2220	12000	400	500	150	500
BTL - 40	40	280	11.20	2500	2720	9000	400	500	150	500
BTL - 50	50	280	14.00	2500	2720	10500	400	500	150	500
BTL - 60	60	280	16.80	2500	2720	12000	400	500	150	500
BTL - 70	70	280	19.60	2500	2720	15000	400	500	150	500
BTL - 80	80	280	22.45	2500	2720	17000	400	500	150	500
BTL - 90	90	280	22.50	2500	2720	19000	400	500	150	500
BTL - 100	100	280	28.00	2500	2720	21000	400	500	150	500
BTL - 120	120	280	33.60	2500	2720	24000	400	500	150	500
BTL - 140	140	280	39.20	2500	2720	27000	400	500	150	500
BTL - 160	160	280	50.40	3000	3220	22000	400	500	150	500
BTL - 180	180	280	56.60	3000	3220	25000	400	500	150	500
BTL - 200	200	280	67.20	3000	3220	27000	400	500	150	500
BTL - 240	240	280	72.80	3000	3220	35000	400	500	150	500
BTL - 260	260	280	78.40	3000	3220	37000	400	500	150	500
BTL - 280	280	280	84.00	3000	3220	39000	400	500	150	500
BTL - 320	320	280	89.60	3000	3220	43000	400	500	150	500
BTL - 360	360	280	100.80	3000	3220	47000	400	500	150	500
BTL - 400	400	280	112.00	3000	3220	51000	400	500	150	500

Process Diagram



List of Materials


BLOWER

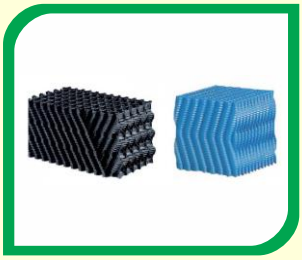

FINE BUBBLE DIFUSER

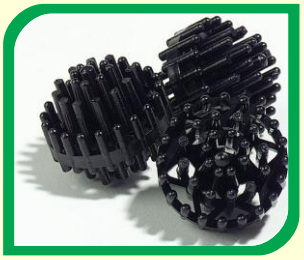
COARSE BUBBLE DIFUSER


EFFLUENT PUMP & JET AERATOR


DIAPHRAGHMA BLOWER


PANEL CONTROL


MEDIA HONEYCOMB


MEDIA BIOBALL


SAND & CARBON FILTER


BOOSTER PUMP

FILTER PUMP


BAR SCREEN

Extended Aeration & Contact Aeration

BIOSANT Contact Aeration is Biosant's innovative product for domestic waste treatment (Sewage Treatment Plant) from a conventional system known as the Extended Aeration system. The system optimizes the growth of bacteria suspended in wastewater to achieve an optimal bacterial population and a large area or volume of the tub is required. The Biosant Contact Aeration system is not only optimizing the growth of suspended bacteria, but also the growth of bacteria that is developed by adhering to the surface of the Bio-media. In other words, Biosant Contact Aeration is a combination of adhering bacterial growth and suspended bacterial growth. So, with this system the volume of the aeration tank required is relatively small.

Our Biosant Contact Aeration design is very simple and flexible, making it easier to operate, maintain, and replace spare parts. Meanwhile, our main equipment, such as blowers, air diffusers, and biomedia, is the best materials, so the installed system can work optimally and last a long time.

BIOSANT Contact Aeration focuses on the air usage efficiency by adding high efficiency biomedia and fine bubble diffuser, thereby reducing area requirements and electricity usage costs. Therefore, we BIOSANT, supported by the best experts, modern, effective, and efficient waste treatment products so that it becomes the best solution to produce quality wastewater that meets the quality standards of the Ministry of Environment and Forestry (*Standar Baku Mutu MEN KLH*).

Jakarta International Stadium - JIS

The Main Equipment

The Implementation:

1. Office buildings
2. Hospitals
3. Schools & universities
4. Factories
5. Shopping center
6. Cluster area
7. Apartments
8. Hotels
9. Resort

The air supply can be supported set in various ways, using:

1. Blower dan diffuser
2. Submersible Aerator
3. Submersible blower & diffuser
4. Surface aerator

Steps of STP Process


Bar/Basket Screen


Equalizing Tank

Sediment Tank

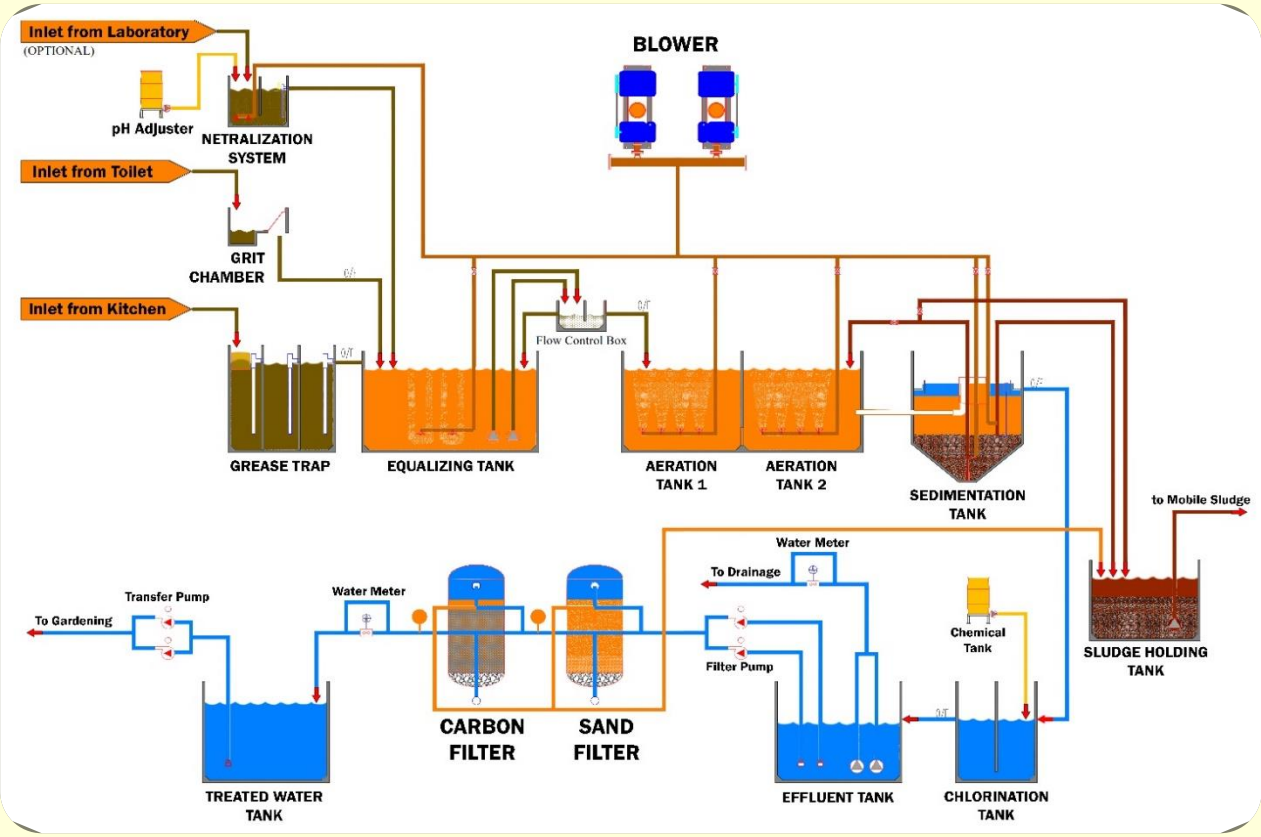
Aeration Tank


Chlorination Tank


Effluent Tank

Sludge Tank


Recycling System



Type	Capacity M^3/hari	BOD in (ppm)	BOD out (ppm)	BOD load (BOD5 kgs/ day)	Tank Dimension				Area (m^2)
					Length (m)	Width (m)	Height (m)	Water Level (m)	
BCA-30	30	350	20	9,9	5	3	3	2,5	15
BCA-40	40	350	20	13,2	6	3	3	2,5	18
BCA-50	50	350	20	16,5	8	3	3	2,5	24
BCA-60	60	350	20	19,8	7	4	3	2,5	28
BCA-70	70	350	20	23,1	8	4	3	2,5	32
BCA-80	80	350	20	26,4	7	5	3	2,5	35
BCA-90	90	350	20	29,7	8	5	3	2,5	40
BCA-100	100	350	20	33	9	5	3	2,5	45
BCA-150	150	350	20	49,5	10	6	3,5	3	60
BCA-200	200	350	20	66	13	6	3,5	3	78
BCA-250	250	350	20	82,5	16	6	3,5	3	96
BCA-300	300	350	20	99	19	6	3,5	3	114
BCA-350	350	350	20	115,5	17	8	3,5	3	136
BCA-400	400	350	20	132	19	8	3,5	3	152
BCA-500	500	350	20	165	24	8	3,5	3	192
BCA-600	600	350	20	198	25	8	4	3,5	200
BCA-700	700	350	20	231	23	10	4	3,5	230
BCA-800	800	350	20	264	27	10	4	3,5	270
BCA-900	900	350	20	297	30	10	4	3,5	300
BCA-1000	1000	350	20	330	33	10	4	3,5	330

Water Treatment Plant (WTP) Package

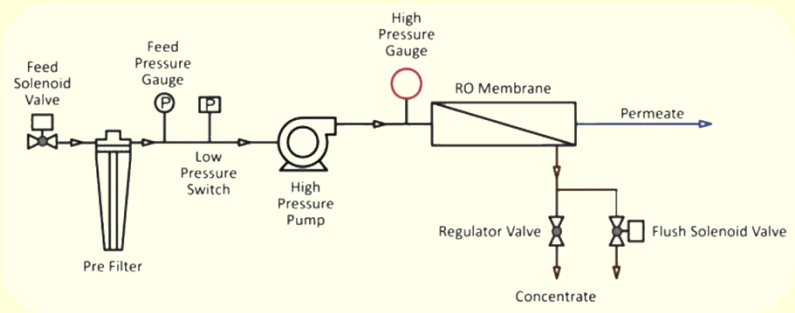
Reverse Osmosis (RO)

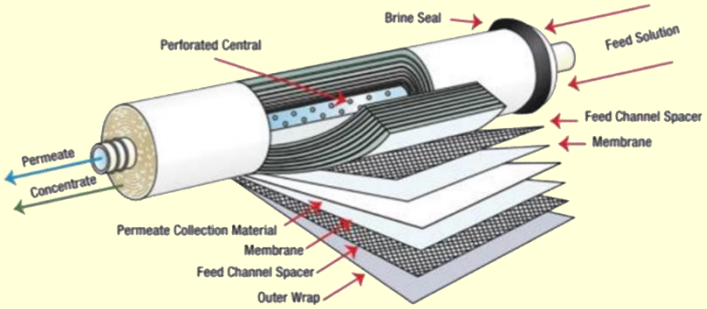
We manufacture the best-performing RO systems creating high-efficiency membranes. This osmosis system acts as a molecular filter for dissolved impurities such as minerals, organic, and inorganic particles. It also helps to remove microbes, such as bacterial and viral spores, which is cannot be removed by other ion exchange techniques.

The low maintenance cost and usage of chemicals make it more environmentally friendly and highly recommended because such ion exchange systems use electrical energy instead of chemicals used by other ion exchange systems.

RO absorption can be used by the industry and municipal government to consistently supply pure drinking water and also can process the drinking water into high-purity water for being used in the microelectronic, food and beverage, power plant, and pharmaceutical industries.

Schematic of Standard RO System





Reverse Osmosis - How Does It Work

Reverse osmosis (RO) is a separation process using pressure that forces the solvent through a membrane, holding the solute on one side, and allowing the pure solvent to pass to the other side. Formally, this process forces solvent from an area of high solute concentration through the membrane to an area of low solute concentration by applying a pressure that exceeds the osmotic pressure. The reverse of the normal process of osmosis, is the natural movement of solvent from an area of low solute concentration, through a membrane, to an area of high solute concentration when no external pressure is applied. This membrane is semipermeable, meaning that it allows the passage of solvent but does not dissolve.

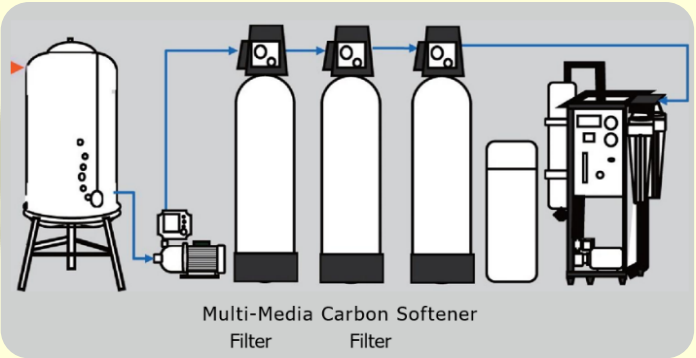
The Implementation in Industries

Agriculture / Automotive / Schools and Government Institutions / Power and Energy / Entertainment and Leisure / Food and Beverage / Health and Medicine / Life Sciences / Marine / Microelectronics / Mining and Hydrometallurgy / Oil & Gas / Textile Manufacturing

Economical Industrial RO System

- Food Service
- Commercial POE
- Laboratory
- Ice Making Factory
- Hemodialysis
- Water Store
- Factory Process Water
- Colling Tower

Standard System Assembly




RW-800


RA-800


RA-3000


RA-6000

Installation Strategy

- Raw Water -> Antiscalant -> RA System (R0)
  Simple design without chlorine in raw water
- Raw Water -> MMF -> Antiscalant -> RA System (R0)
  Groundwater with feed TDS < 500 ppm
- Raw Water -> MMF -> ACF -> Antiscalant -> RA System (R0)
  Safe design for most apps
- Raw Water -> MMF -> ACF -> Softener -> RA System (R0)
  Typical market design but not suitable for brackish water
- Raw Water -> MMF -> ACF -> UF -> Break Tank -> RA System (R0)
  When RO membrane blocks every 1 month
- When the production requirement is 2-4 M^3/h, several parallel-mounted RAGOOOs are cheaper than having one big system
- At the same time, it provides no downtime for the maintenance and molding of smaller system legs.

Model	RA-800	RA-1500	RA-3000	RA-4500	RA-6000
Recovery Rate	18-75%	18-75%	34-75%	45-75%	50-75%
Vessel Array	1	1	1	1	1
Vessel Size	2540 x 1	4040 x 1	2540 x 1	2540 x 1	2540 x 1
Permeate Flow	2.2 LPM	3.9 LPM	2.2 LPM	2.2 LPM	2.2 LPM
Feed Pipe	3/8" FNPT	3/4" FNPT	3/4" FNPT	3/4" FNPT	3/4" FNPT
Permeate Pipe	3/8"	3/8"	1/2"	1/2"	1/2"
Concentrate Pipe	3/8"	3/8"	1/2"	1/2"	1/2"
Flush Pipe	3/8"	3/8"	1/2"	1/2"	1/2"
Pump & Motor	Rotary Vane 0.5HP	Multistage 2.5HP	Multistage 2.5HP	Multistage 2.5HP	Multistage 2.5HP
Dimension (cm)	66 x 45 x 130	69 x 45 x 130	69 x 63 x 130	69 x 63 x 130	69 x 63 x 130
Weight (Kg)	35	45	88	94	100

Sea Water RO System

Low Maintenance Danfoss HP Pump

Making Drinkable Seawater

Supported by engineering excellence and membrane-based water treatment expertise, Biosant standard membrane systems include reliability and efficiency in a compact design. The SWDF series provides a reliable source of fresh water with a large production capacity, with minimal space and maintenance requirements. This configuration provides maximum space utility while combining ease of control and safety standard.

Danfoss I-Save Energy Recovery System

Biosant SWDF System Specification

Model	Flow rate	Membrane Array	Est. Power	Est. Load	Dimension (LxWxH)
SWDF-120	5 M^3/hour	5 element x 2	10.6 kW	2500 Kg	700 x 110 x 220 cm
SWDF-150	6 M^3/hour	6 element x 2	12.5 kW	2700 Kg	700 x 110 x 220 cm
SWDF-250	9 M^3/hour	6 element x 3	18.2 kW	3000 Kg	700 x 110 x 220 cm
SWDF-300	12 M^3/hour	6 element x 4	23.9 kW	3500 Kg	700 x 110 x 220 cm

The specs above are calculated based on:
feed TDS 35,000 ppm, average recovery 35%, average flux 13.5 L/m^2/hour, with appropriate pre-treatment and chemical dosing, system will not require for CIP within 1 year.

Low & High Pressure Air Relief Valve

Digital Control with Standard MODBUS

Feed Operation Parameters & Design

Feed Water Parameters	Sea Water	
	Normal	Max
TDS (mg/l)	35.000	38.500
pH	7,5	7,7
Turbidity (NTU)	< 0,2	0,2
SDI	< 3	3
Oil & Grease (mg/l)	0	0
Chlorine (mg/l)	0	0
TOC (mg/l)	< 1	1

*) Seepage Water Quality: TDS <250 mg / l

Operating Parameters	Max Condition
Temperature ^{O}C	35
Recovery rate	45%
Feed pressure	65 bars
Back pressure	1 bar

SWM series Water Makers with Auto-Flush

The uncomplicated SWM series water makers are designed to fit anywhere. Measuring about 2 - 3 cubic feet, small sails and sailors have the opportunity and convenience of a BIOSANT water maker without space constraints. Featuring a simple interface, the SWM series can be monitored via the control panel or remotely (optional). The SWM series can produce 300 to 5,000 liters of fresh water per day and is the perfect seaworthy companion for the solo cruiser.

SWC series (8-14CMD) for Commercial SWRO

BIOSANT Commercial Seawater Reverse Osmosis SWC Series. The system is designed and manufactured for seawater applications requiring a capacity of 2,100 to 3,800 gallons per day. The BIOSANT SWC Series Reverse Osmosis System is equipped with premium components, which is included a 316 plunger-type pump for high performance and corrosion resistance, a high-quality corrosion-resistant aluminum frame, a programmable computer controller with many built-in features, and a fiberglass membrane housing for power.

Filter Tank

Filtering water means removing its turbidity, from the coarsest particles to colloidal matter, absorbing unsightly tastes, odors or colors, removing iron and manganese from it or neutralizing its acidity.

BIOSANT can help you design high quality water filtration equipment covering a wide range of Commercial and Industrial applications. A wide selection of filter media and components ensures you have the right unit to meet your exact needs. Whether your project requires filters to remove turbidity, remove iron, or control taste and odor, choose BIOSANT units for years for reliable and trouble-free operation.

Multimedia Sand Filter (Turbidity Removal)
Impurities are removed from the water by passing through layers of quartzite sand of various gradations. Installation of 3 Sand Filters is recommended when the turbidity load (sand, lime, scale, colloid, etc.) of the water is very high, affecting water quality and producing deposits and accelerating in pipelines, boilers, faucets and on domestic and industrial equipment in general. BIOSANT Multi-Media filters typically remove 15 (Kg in micron or larger) particles. All media included in our filters are carefully selected according to particle size, so the media maintains stratification during backwashing and rinsing.

Activated Carbon Filter (Color & Odor Removal)
Carbon filter is a water purification method that uses a piece of activated carbon to remove contaminants and impurities, utilizing chemical adsorption. Each piece of carbon is designed to provide a large portion of the surface area, to allow contaminants, the most likely exposure to the filter media. The BIOSANT carbon filter is most effective at removing chlorine, sediment and volatile organic compounds (VOCs) from water. Shell, coconut shell and coconut shell based activated carbon with various sizes available, choose for different applications.

Clino-X Filter (Turbidity Removal & Ion Exchange)
The Clino-X is excellent as a water treatment filter. It can be used for both commercial and home installations. Pool filter is a very useful application. Depending on the requirements for particle removal, Clino-X can be substituted for sand, or used in conjunction with sand. The filter material can be easily disposed of in any outdoor. Locations without harming the environment, or being re-elevated with salt water. Clino- X' is ideal for wastewater treatment. It is the material of choice for removing ammonium, lead and many heavy metal ions.

Iron Removal Filter (Iron, Manganese & Arsenic Removal)
DMI-65 is the most advanced catalytic water filtration media used in iron removal filtration systems, having a very high ability to remove Iron (Fe) and Manganese (Mn) simultaneously through inexpensive catalytic oxidation and low deposit retention. DMI-65 will also remove arsenic from water supplies under good conditions. DMI-65 has been shown to eliminate arsenic associated with iron-containing influents. Ferric chloride is used when treating feedwaters with high feed arsenic levels.

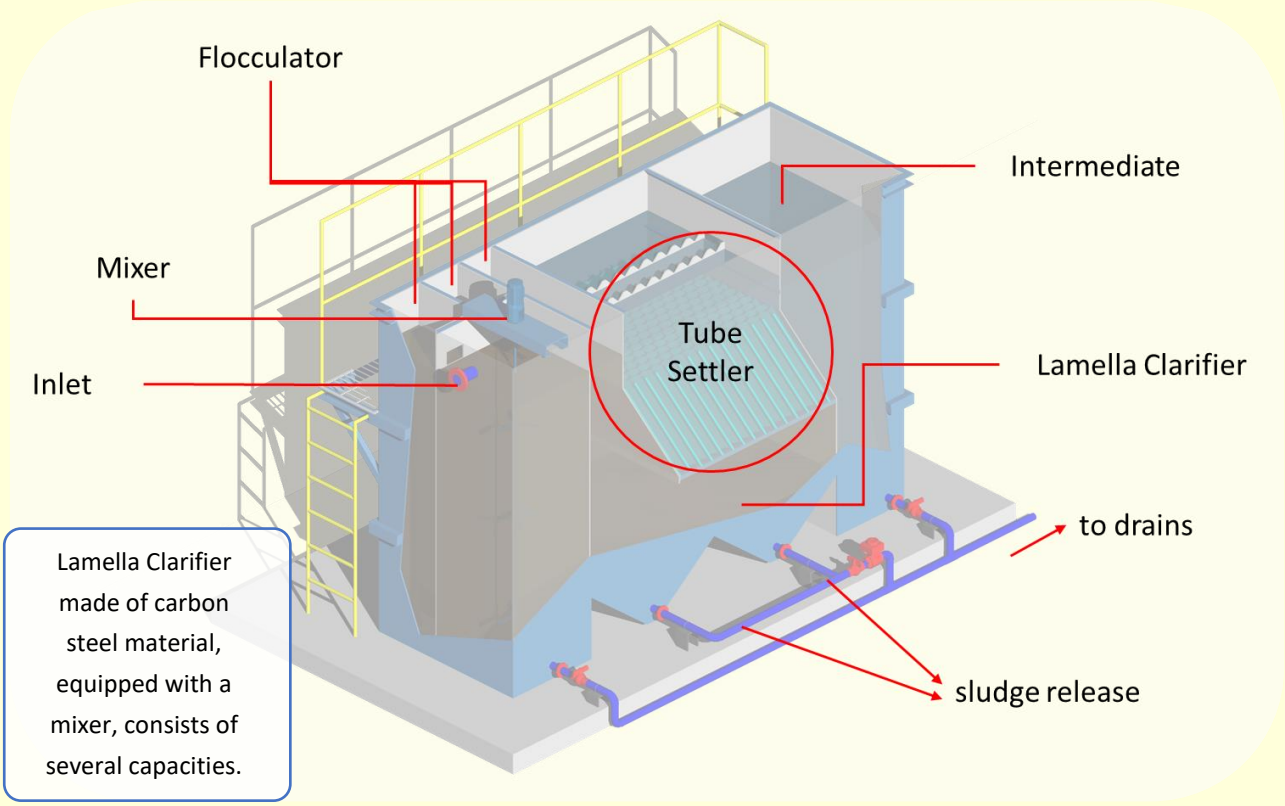
Water Softener (Hardness Removal)
reduces the concentration of calcium or magnesium ions in hard water. These "violent ions" cause two main types of problems. Metal ions react with calcium-sensitive soaps and detergents, hindering their ability to lather well and forming unsightly deposits. The presence of "hardness 'Ions' also inhibits the cleaning effect of detergent formulations. BIOSANT Water Softeners provide soft water to meet the demanding specifications of all types of businesses and institutions with simple and reliable equipment in a thin protective surface.

Evolet Anti-Scale Filter (Preventing Hard Scale Formation)
Evolet 5C3 Anti-Scaling System converts calcium ions into calcium crystals, which are stable and cannot stick to pipes, surfaces, hardware, heat exchange components or components. The crystals are so small that they are easily rinsed off by running water. The trillions of microscopic crystals of activated lime provide a very high total surface area for further epitaxial crystallization. A further result is the removal of pre-existing lime scale from plumbing, keeping pipes and equipment lime-free while leaving a thin protective surface.

WTP Package: Lamella Clarifier

Lamella Clarifier is one of the wastewater treatment techniques. This lamella consists of several plates called lamella plates, usually made of metal. The lamella plates are arranged vertically with a side slope of ±30 degrees. The inflow is on the left and right side of the Lamella Plate. The outflow consists of two, namely slurry flow and pure water flow. The slurry flow is at the bottom (sedimentation), while the pure water flow is at the top of the lamella plate. The feed stream previously added with polymer flocculants enters the side of the lamella plate and is evenly distributed in the lamella plate, down to the bottom along with the dissolved solids. Due to the force of gravity, the solids will fall to the bottom and collect. The sloping design of the lamella plate will prevent solids from being carried back along with the water. With a sufficiently large water rate, the water will bend and then rise to the top towards the outflow as pure water.

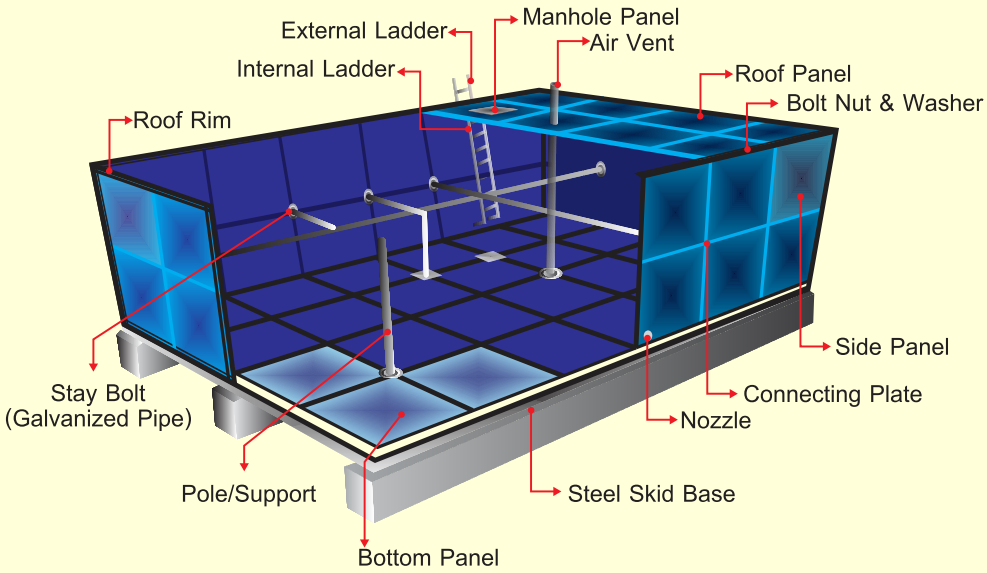
This lamella plate is easy to disassemble, even during operation. Usually, washing the lamella plate is once a week, to prevent the growth of moss which is generally found at the bottom of the lamella plate.



Lamella Clarifier made of carbon steel material, equipped with a mixer, consists of several capacities.

Supporting Products

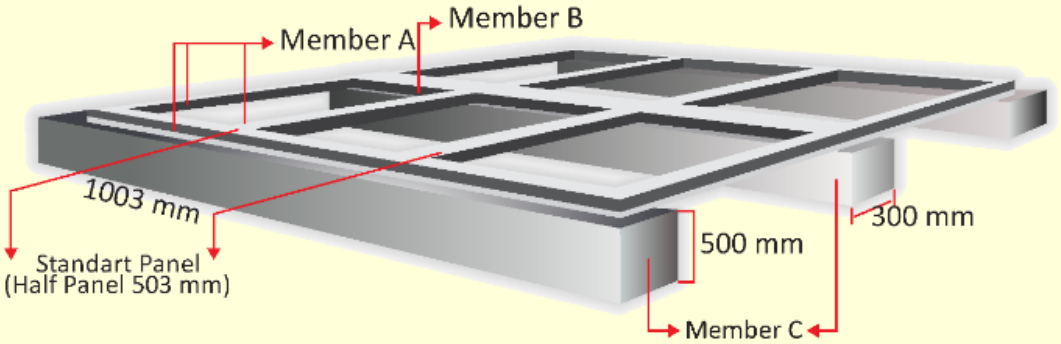
Top Water Reservoir (Panel Tank)

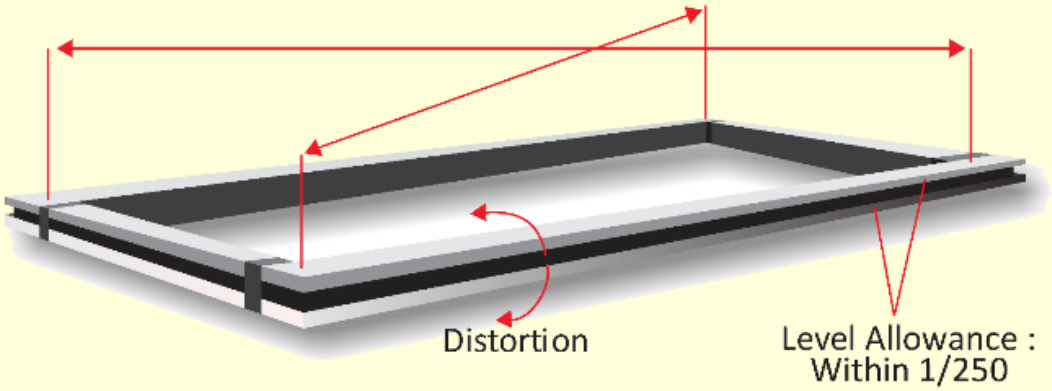


Standard Fabrication:

1. AS 2634 - Chemical Plant Equipment Made from Glass Fiber Reinforced Plastics (GRP); based on Thermosetting Resins
2. SS 245 - Glass reinforced polyester section water tanks
3. ASME RTP - Reinforced Thermosetting Plastic Corrosion Resistant Equipment

Steel Skid Base





Tank Height	A (UNP Steel)	B (UNP Steel)	C (Foundation)
1000 mm	120 x 55 x 6 mm	120 x 55 x 6 mm	Concrete
1500 mm	120 x 55 x 6 mm	120 x 55 x 6 mm	Concrete
2000 mm	120 x 55 x 6 mm	120 x 55 x 6 mm	Concrete
2500 mm	150 x 75 x 6,5 mm	150 x 75 x 6,5 mm	Concrete
3000 mm	150 x 75 x 6,5 mm	150 x 75 x 6,5 mm	Concrete
3500 mm	150 x 75 x 6,5 mm	150 x 75 x 6,5 mm	Concrete
4000 mm	200 x 75 x 8,5 mm	200 x 75 x 8,5 mm	Concrete

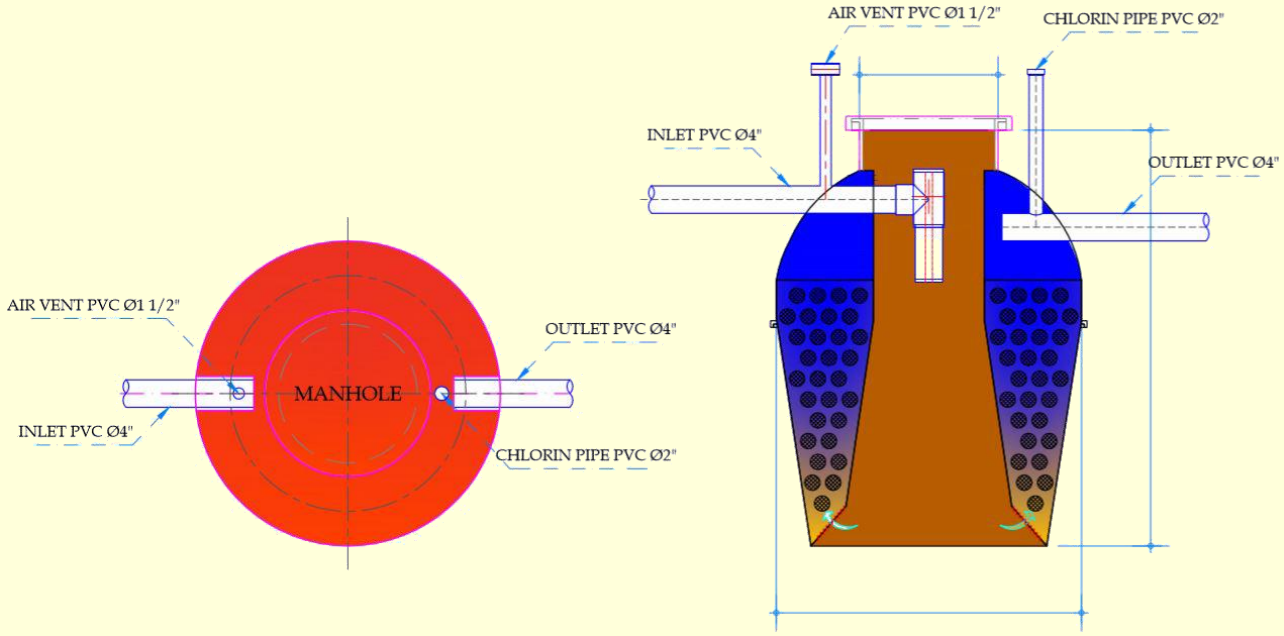
BIO Septic Tank

BIOSANT presents a Domestic Waste Treatment (BIOSEPTICTANK) package that is environmentally friendly and based on biotechnology. The technology used is "BIOHYBRID" where this system not only optimizes the growth of decomposing bacteria suspended in water (Suspended Growth), but also the growth of bacteria attached to the surface of the media (Fixed Film Growth). So the population of decomposing bacteria living in the septic tank unit is very high. Thus, the efficiency of domestic waste decomposition will also increase

BIOSANT uses the addition of Biomedia with the largest area of 550 m2/m2 as well as material made of HDPE which is proven to accelerate bacterial growth and is durable and maintenance-free. So that through this system Biosant can be the right, fast, effective, and efficient solution to improve the quality of domestic wastewater disposal.

Installation Stage: Biosant's Modern Biotech Septic Tank

1. Soil excavation is wider (minimum 30-40 cm) than the tank diameter
2. Given a smooth foundation with a thickness of +/- 10 – 15 cm as a medium between the bottom of the tank and the floor surface.
3. Make sure the distance/elevation of the tank inlet (from the toilet) is higher than the tank outlet (to the drainage city)



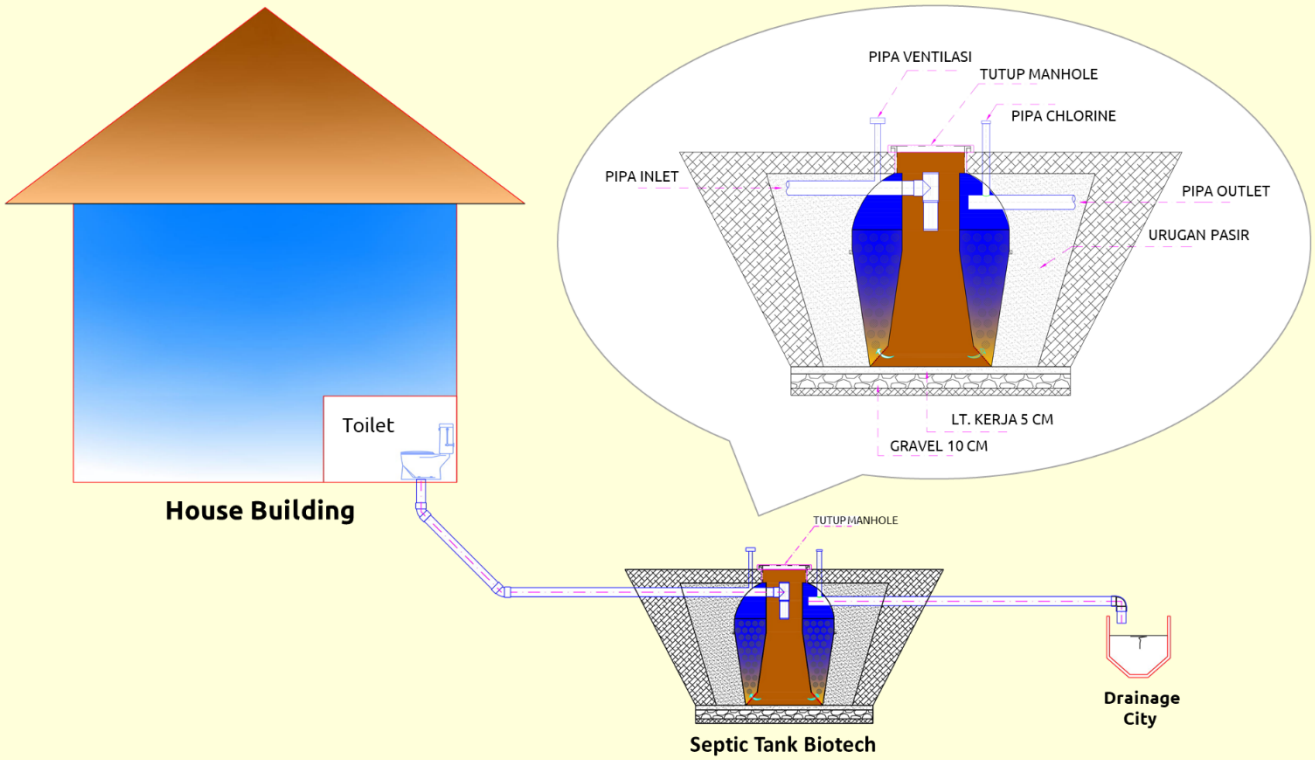
4. Fill the water with 80% of the volume of the tank and after that let it sit for 5 minutes and then gradually fill it with soil.

Caution: do not mix the soil with gravel or other solid material because it can damage the tank lining

5. Cover the tank with soil/sand then cover it with plants to the level of the manhole and the ventilation should not be closed because it is used for maintenance/maintenance

6. Give reinforced concrete if a parking lot or road is built/used on it]

Type	Number of Users (Persons)	Tank Volume	Tank Dimension		Pipe Diameter				Excavation Dimension	
			Diameter (mm)	Height (mm)	Inlet (inch)	Outlet (inch)	Desift (inch)	Airvent (inch)	Diameter (mm)	Height (mm)
BST-4	2-4	1,3	1100	1500	4	4	2	1,5	1700	2000
BST-8	6-8	2	1300	1500	4	4	2	1,5	1900	2000
BST-12	10-12	2,6	1550	1600	4	4	2	1,5	2200	2100
BST-16	14-16	3,4	1550	1700	4	4	2	1,5	2200	2200
BST-20	18-20	4	1750	2000	4	4	2	1,5	2400	2500



Portable Grease Trap

Grease (fat) from the kitchen is one of the domestic wastes that cannot be decomposed naturally. The source of grease comes from cooking oil, butter, milk, cheese, meat, etc.

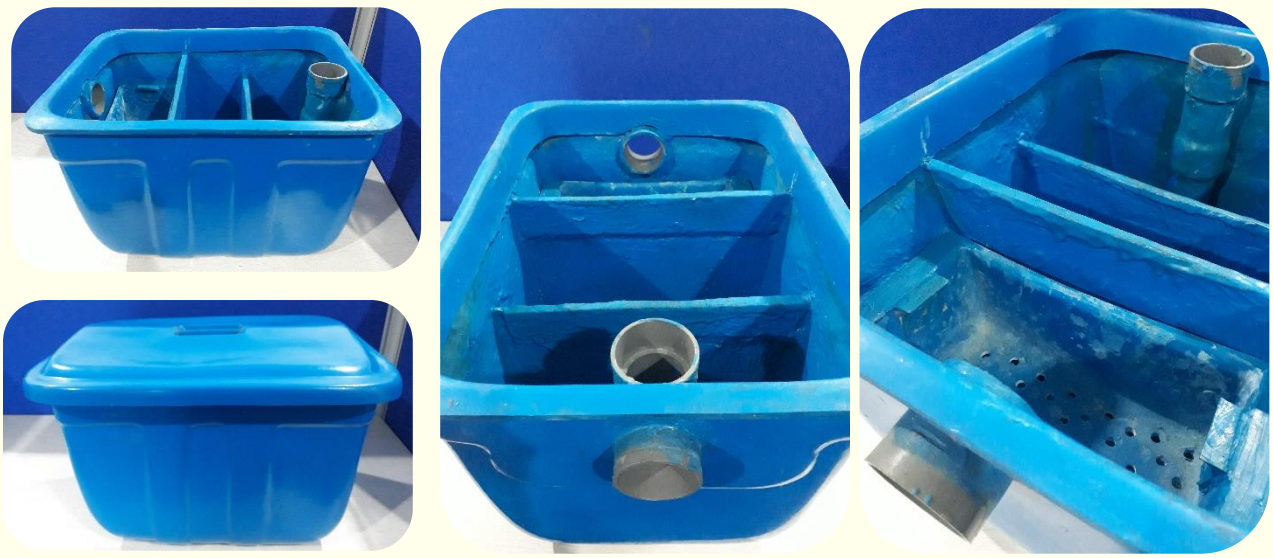
If this grease waste is not handled quickly it will cause:

1. Pipeline will be covered by frozen grease
2. If it gets out into the city drain, it will cause an unpleasant odor (pollution) and can cause disease
3. If it gets into the septic tank, it will interfere with the working process of the septic tank.

One way to handle this grease is to install a Portable Grease Trap (Fat Trap). This Portable Grease Trap is installed under the kitchen sink.

Procedure:

All laundry water from the kitchen through the sink, will flow in through the Grease Trap Portable. Solid waste from the laundry will be filtered on the 2 mm Basket Strainer. After going through the basket, water + grease enters chamber 2, the grease will rise to the surface of the water by gravity, because the specific gravity of grease is lighter than water. Then the water under the grease will come out through the pipe to the city drain. Garbage on the basket and grease on the surface of the water must be cleaned regularly.



Projects References

Industries

- PT. Kefi Wangi - Bogor
- PT. Syngenta Indonesia – Bogor
- Graha Pertamina - Gambir
- Nissin Factory – Semarang
- Unicraft Building – Bekasi
- Metal One – Cikarang
- Sido Muncul Factory – Semarang
- Mayora Jatake – Tangerang
- PT. Danapaint Indonesia – Jakarta
- PT. Kansai paint – Tangerang
- PT. HM. Sampoerna Rungkut – Surabaya
- PT. Nestle Indonesia Gempo DC – Surabaya
- PT. Nilam Widuri – Bogor
- PT. Emory Langgeng Jaya – Semarang
- PT. Biofarma Persero – Bandung
- PT. Anugerah Indofood Barokah – Semarang

Hotel

- Ibis Hotel – Banjarmasin
- Jambuluwuk Hotel – Thamrin
- HA-KA Hotel – Semarang
- Evo Hotel – Riau
- Avenzel Hotel – Cibubur
- Bhuvana Condotel – Bogor
- Ibis Hotel in Sunter dan Harmoni
- Amaris Hotel – Madiun
- Bigland Sentul Hotel & Convention – Bogor
- Dharmahusada Maxone Hotel – Surabaya
- Horison Hotel – Kertajati
- Arus Hotel – Semarang
- Grand Dafam Hotel – Yogyakarta
- Ibis Hotel – Palembang
- Starlet Hotel – Tangerang
- Four Point Hotel – Batam

Apartment dan Residential

- Rusunawa Nagrak – Marunda
- Condovilla – Summarecon Serpong
- Sky Lounge – Makassar
- Mardhika Park – Tambun
- Cynthia Cluster – Summarecon Bandung
- PP Urban Town – Karawang
- *Wisma Atlet* – Kemayoran
- PIK 1 Flat – Cakung
- PIK 2 Flat – Cakung
- Karang Anyar Flat – Jakarta
- Pulo Gebang Flat – Jakarta
- Penjaringan Flat – Jakarta
- Dayana Cluster – Summarecon Bandung
- Magna Cluster – Summarecon Bandung
- Ruby Shophouse – Summarecon Bandung
- Topas Shophouse – Summarecon Bandung
- Teknopolis Office – Summarecon Bandung
- Office of Maritim Tower Indonesia – Jakarta

Oil & Gas

- PT. Pertamina EP SP – Subang
- PT. Rekayasa Industri – ConocoPhillips – Jambi

Fasilitas Umum

- Jakarta International Stadium (JIS) - Jakarta
- Ngurah Rai Airport Parking Lot Area – Bali
- Kendari New Port – Kendari
- Kulon Progo Airport – Yogyakarta
- El Tari Airport – Kupang
- Papua Aquatic Stadion
- KONI Sport Centre – Samarinda
- Building of AGD *Dinas Kesehatan* DKI – Jakarta
- Aquatic Stadion in GBK – Jakarta
- Palembang LRT Station – Palembang

Hospitals

- RS Pelni - Jakarta
- Budi Medika Hospital – Lampung
- Priscilla Hospital – Cilacap
- Regional Public Hospital of Pangandaran – West Java
- Regional Public Hospital of Depok – West Java
- Regional Hospital of Prof. dr. R. D. Kandou – Manado
- Mother and Child Hospital of Brawijaya
- General Hospital of “Kasih Bunda” – Cimahi
- Central Hospital dr. Kariadi Semarang
- UNS Hospital – Solo
- Regional Public Hospital of Asmat – Papua
- Regional Public Hospital Cipete – Jakarta

Schools

- Sampoerna School – Tangerang
- Autralia International School – Bali
- National Library of Indonesia – Jakarta
- Syahkualah University – Aceh
- *Lembaga Sandi Negara Depok dan Sentul*
- Dentistry Faculty of Prof. Dr. Moestopo University – Bintaro
- Gorontalo State University
- ITKJ - Depok

Mall

- Mall Plaza Indonesia
- Bekasi Transpark
- Residential Park Mall – Karawang
- De Entrance Arkadia – Jakarta
- Click Square – Bandung
- Borneo City Mall – Sampit
- Hypermart – Lippo Cikarang
- Indomarco Jogja – Yogyakarta

F&B (food and beverage) & Restaurant

- Hokben – Jakarta, Tangerang, Medan, Depok

Our Partners: Owners, Consultants, Contractors

Owners

Consultants

Contractors

Customer Testimonials

We just wanted to share a short note and let you know that BIOSANT does a really good design and reliable Waste Water Treatment Plant in our Resinda Park Mall - Karawang. We are glad that we decided to work with BIOSANT. We never have any problem since the day one.

We highly recommended BIOSANT if someone needs a better solution for Waste Water Treatment Plant.

Johannes Irawan
CEO Resinda Park Mall – Karawang
PT. Bukit Muria Jaya Estate

BIOSANT offers a complete package solution for wastewater treatment. Detailed, creative, and innovative designs, to be able to provide competitive prices. and most importantly, offer long lifetime products.

I highly recommend BIOSANT as a Wastewater Treatment Plant solution to protect our earth better.

Dr. Ir. Firdaus Ali, M. Sc
Founder & Director
Indonesia Water Institute (IWI)

We are satisfied using BIOSANT services. Our experience in working with Biosant is fast-response, offering competitive on-budget alternatives, best quality, and qualified after-sales service.

Maria Yudi Priyanti
General Manager Technical
PT. Danapaint Indonesia

We have used Biosant's services and products for about 5 years in several of our projects for STP work, with satisfactory quality both in terms of coordination during the execution of work, quality of treatment results, and good after-sales service, so we recommend Biosant as a processing partner. water, one of the best until now. Thank you.

Magdalena Julianti
Executive Director
PT. Summarecon Agung, Tbk.

Our new STP using MBR System is designed and built by Biosant. It's not only to meet our government regulation but also to recycle the effluent water for our cooling tower.

As our commitment to keep the cleanliness, included in the STP itself, can be achieved by Biosant. Biosant also gives great monitoring and feedback during retrofit.

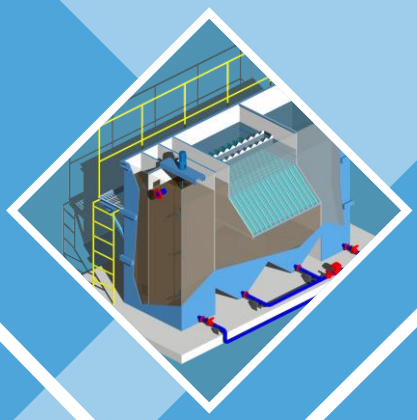
Febry Eddy
General Manager
PT. Plaza Indonesia Realty, Tbk.

Our new Effluent Treatment Plant (ETP) at Syngenta Indonesia site.

They have a good understanding of our industry and the importance of wastewater treatment facilities in supporting our operation.

Biosant had delivered the project well with innovated design, good quality, and good response on their after-sales service.

Nurman Ulum
Plant Manager
PT. Syngenta Indonesia



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