ecodepur®

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PACKAGE WASTEWATER TREATMENT PLANT ECODEPUR®

SEQUENCING BATCH REACTOR (SBR)

Populations from 50 to 2.000 inhabitants equivalent

grupohenriques

Management System ISO 9001:2015 ISO 14001:2015 TÜVRheinland CERTIFIED www.tuv.com ID 9105055166

PRODUTO FABRICADO NA UNIÃO EUROPEIA

apesb associação portuguesa de engenharia sanitária e ambiental

ANQIP

APDA

ecodepur®
tecnologias de protecção ambiental

With over 20 years of existence, **ECODEPUR®** has invested in new technologies and increased its production capacity, allowing it to constantly develop, optimize and innovate its solutions.

Focused on better serving its customers, with solutions designed and built taking into account the specific typologies and quality requirements of each project, **ECODEPUR®** is committed to compact and modular technologies with widely tested and validated performances.

ECODEPUR® TECHNOLOGIES

- Systems designed and built based on the specific nature of each application (customised design/construction) so as to safeguard environmental quality and comply with the applicable legal and regulatory framework;
- CE marking whenever applicable (existence of a harmonised European standard in force) and/or reference standards;
- High performance and durability of the systems manufactured (5-year guarantee on most products);
- Excellent value for money;
- Absence of unpleasant odours if adequately ventilated;
- Low visual impact (reactor made for underground installation);
- Negligible noises and vibrations;
- Simple and fast to be installed;
- Simple to maintain and operate.

APLICATION

- Small population clusters;
- Condominiums;
- Tourist complexes;
- Service Stations;
- Restaurants;
- Construction sites;
- Schools;
- Athletic complexes;
- Camping;
- Military facilities;
- Petroleum and gas exploration field;
- Domestic-like wastewater from industrial unities.

RELIABILITY

ECODEPUR® has been in the market for over 20 years, with a wealth of experience in the field of wastewater treatment and reuse.

ECODEPUR®'s guiding principle is customer satisfaction and trust.

Quality and Environmental Management System certified by TÜV Rheinland Portugal, in accordance with EN ISO 9001 and 14001, respectively.

SEQUENCING BATCH REACTOR (SBR)

The **domestic wastewater treatment systems ECODEPUR® SBR** (Package WWTP) are characterized by secondary / biological treatment carried out with activated sludge process, in an **ECODEPUR® SBR** Reactor (Sequencing Batch Reactor). The SBR typology is especially advantageous for small systems (<2.000 equivalent inhabitants) as it absorbs in an effective way the disturbances introduced in the secondary settling tank, by the elevated peak flows characteristic of small populations.

Discharge Requirements

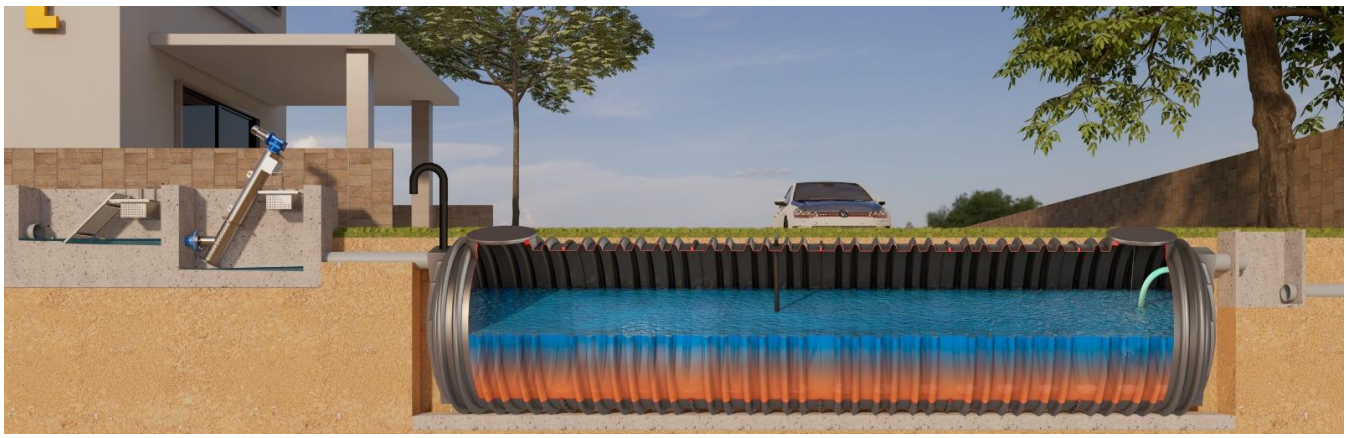
DIRECTIVE n. º 91/271/EEC of the European Council

Parameter	Concentration	Minimum Percentage of Reduction
Biochemical oxygen demand (BOD5 at 20ºC) without nitrification	25 mg/l O2	70-90
Chemical oxygen demand (COD)	125 mg/l O2	75
Total suspended solids	35 mg/l	90

Possibility of incorporating additional treatment steps for the elimination of nitrogenous and/or phosphate compounds in order to comply with Table 2 of Annex I of Directive 91/271/EEC of the European Council

DIRECTIVE n. º 91/271/EEC of the European Council

Parameters	Method	Concentration	Minimum Percentage of Reduction
Total Phosphorus	Luxurious uptake (Sequence Anaerobiosis – Aerobiosis) Chemical precipitation	2 mg/l	80
Total Nitrogen	Nitrification/Denitrification (Sequence Anaerobiosis – Aerobiosis)	15 mg/l	70-80



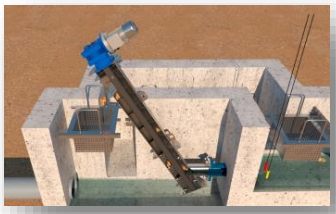
PRELIMINARY TREATMENT

Preliminary treatment consists of a sequence of operations designed to remove coarse solids, sand, grease and sometimes also to equalise flow rates and pollutant loads.

The aim of this stage is to protect subsequent treatment units and processes, as well as to prevent blockages in hydraulic circuits and contamination of water and sludge, thus enabling the treatment line to be more efficient.

The unit operations that can be combined at the preliminary treatment level are: screening, equalisation, sand, oil and grease removal.

These equipment are typically used as pre-treatment systems to facilitate operation/maintenance and reduce the cleaning periodicity of compact Wastewater Treatment Plants, industrial water pre-treatment, hotels, car washes, among others.



SCREW SCREEN

The ECODEPUR® ECO-TR/TRX/TCR SCREW SCREEN are equipment designed to remove, transport and compact/dewater solids (≥ 5 mm) from effluent.

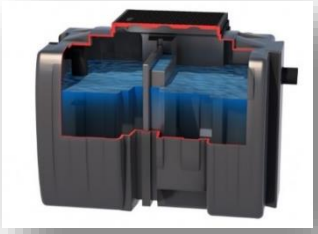
ECODEPUR® SCREW SCREEN ECO-TR
With transport, without compaction, for channel installation.

ECODEPUR® SCREW SCREEN ECO-TRX
With transport, without compaction, pre-installed in a AISI 304 precast channel.

ECODEPUR® SCREW SCREEN ECO-TCR
With transport and compaction, for channel installation. It allows solids dewatering of up to 40%.

COMBINED PRETREATMENT UNIT ECODEPUR® UCP-TDD

The ECODEPUR® UCP-TDD is a compact equipment for the preliminary treatment of domestic wastewater which allows the removal of solids (> 5 mm), sand and grease in the same module.



GREASE SEPARATOR, ECODEPUR® GORTECH®

Appropriated to separate greases and oils of vegetable and animal origin from wastewater.

Flow Measurement

ELECTROMAGNETICS FLOW METER

Electromagnetic flow meters, ECODEPUR® EM range allow the measurement of water flow in pipes under pressure.

ULTRASONIC FLOW METER

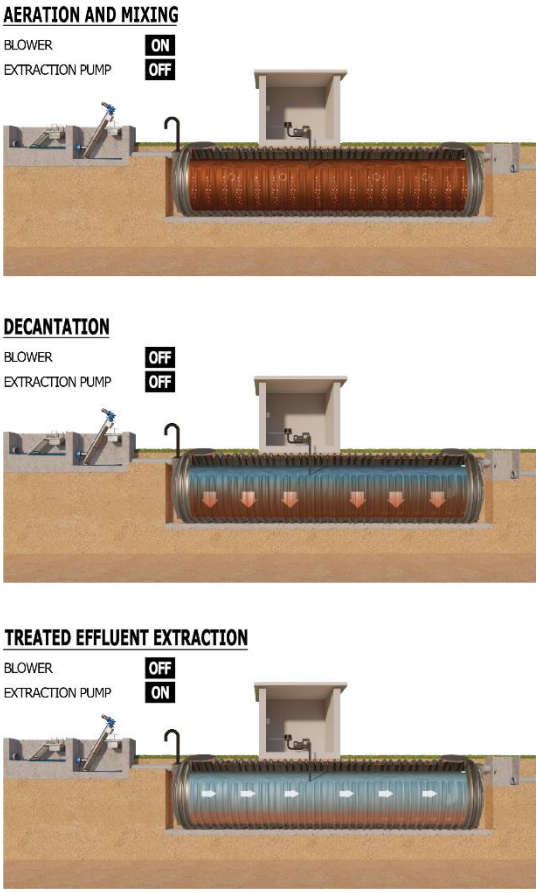
The ECODEPUR® ultrasonic flow meter, to be installed in a Parshall flume 2", is an equipment used to measure liquids flows in open channels.

BIOLOGICAL TREATMENT

Characteristics

- Designed to comply with the applicable legal and regulatory framework in the destination country, according to instructions given by the customer;
- High mechanical resistance and corrosion protection;
- Treatment by activated sludge with low load / extended aeration regimes (total oxidation);
- Cyclical functioning – BATCH system (SBR = Sequencing Batch Reactor);
- Aeration and mixing secured by a single component in high profit conditions;
- Absence of unpleasant odours, if adequately ventilated;
- Low visual impact;
- Automatic functioning;
- Negligible noises and vibrations;
- Simple and fast to be installed;
- Simple to maintain and operate.

Functioning



PE Warranty 5 YEARS

Dimensions

MODEL	MATERIAL	TOTAL VOLUME (m^3)	HEIGHT (mm)	DIAMETER (mm)	LENGTH (mm)
SBR VT10 (*)	PE	10	2.265	2.190	3.440
SBR VT15 (*)	PE	15	2.265	2.190	4.980
SBR VT20 (*)	PE	20	2.265	2.190	6.520
SBR VT25	PE	25	2.265	2.190	8.060
SBR VT30	PE	30	2.265	2.190	9.600
SBR VT35	PE	35	2.265	2.190	11.140
SBR VT40	PE	40	2.265	2.190	12.680
SBR VT45	PE	45	2.265	2.190	14.220
SBR VT50	PE	50	3.050	2.980	8.520
SBR VT60	PE	60	3.050	2.980	10.060
SBR VT70	PE	70	3.050	2.980	11.600
SBR VT80	PE	80	3.050	2.980	13.140
SBR VT90	PE	90	3.050	2.980	14.680
SBR VT100	PE	100	3.050	2.980	16.220
SBR VT110	PE	110	3.050	2.980	17.760
SBR VT120	PE	120	3.050	2.980	19.300

The images and dimensions presented may be changed without prior notice.

(*) Also available as the AQUADEPUR® (CE EN 16566-3) models, for 150 l/inhab.day and 60 g/inhab.day.
Populations up to 2.000 Equivalent Inhabitants (Modular Solutions).
Reactors available with unitary volumes between 10 and 120 m^3.

TERTIARY TREATMENT

Production of Water for Reuse

Year after year, the demand for drinking water continues to increase and the market for water reuse technology has grown steadily. In response to this demand, **ECODEPUR®** has developed a standard product line of tertiary treatment systems, offering a range of specific treatments for conditioning treated water according to the required quality and end use of the water.

These systems can be added to existing (secondary) wastewater treatment plants, providing high-quality water for reuse applications.

ECODEPUR® systems combine mechanical filtration with disinfection in order to boost purification efficiency and minimise operating costs. Tertiary treatment systems allow the effluent produced to be of irrigation quality.

The selected system can be potentially complemented by membrane separation processes, depending on the specific quality to be achieved.

Parameter	Concentration (*)
Biochemical Oxygen Demand (BOD5) without nitrification	25 mg/ l O2
Total Suspended Solids (TSS)	35 mg/l
Escherichia coli	< 100 UFC/100 ml
Ammonia (**)	10 mg/l N

(**) Although the Ammonia parameter is optional, the proposed treatment system includes total nitrification in order to minimize occurrences of bad odours.

SLUDGE TREATMENT

Waste Sludge Concentration Tank

The Waste Sludge Concentration Tank makes it possible to increase the concentration of solid matter by gravitational difference. The solids will settle at the bottom of the tank, while the liquid component will return to the biological treatment, at the head of the SBR reactor.

The sludge extraction from the SBR is automatic, carried out by a submersible pump installed inside the tank and automatically activated by the control panel supplied with the treatment system.

The cylindrical construction of the sludge tank and the existence of internal septa optimise the retention time, preventing the occurrence of dead zones and hydraulic short circuits. This combined effect allows concentrations of up to 3% solids to be achieved, which corresponds to a volume reduction of more than 10 times that extracted from the reactor. The concentrated sludge must be removed from the bottom of the tank for appropriate final treatment.

Sludge Filtration and Dehydration Module

The filtration / dehydration process through bags can be divided in two phases:

- Sludge filtration, which can obtain sludge with 15 to 30% solids content in about 1 - 2 days
- After 2 days, the bag can be removed from the equipment, sealed and be let outdoors for further dehydration.

Due to the bags' hydrophobic characteristics, the sludge undergoes continuous natural dehydration. The water can be extracted to the desired percentage of solids, simply by increasing or decreasing the residence time outdoors.

As an example, with a two months storage, a solids percentage around 70 - 80% can be reached, being possible to go even further to 95%.

The bags with dehydrated sludge act as robust containers, allowing their manipulation and transportation in na easy, simple and clean manner.

WATER AND WASTEWATER TECHNOLOGIES

For detailed information, visit our website
www.ecodepur.eu or contact our technical assistance.

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