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LIGHT LIQUID SEPARATOR

ECODEPUR[®] DEPUROIL[®] EE

OIL SEPARATOR

ECODEPUR® DEPUROIL® EE

ECODEPUR® DEPUROIL® EE Oil Separators are designed to separate mineral oils from oily wastewater, for underground installation, with subsequent pumping of the treated effluent.

They were designed and defined in accordance with European Standard EN 858-1:2002, presenting CE Marking, in compliance with the legal requirement that arises from the entry into force of Regulation (EU) No. 305/2011 of the European Parliament, for Construction Products.

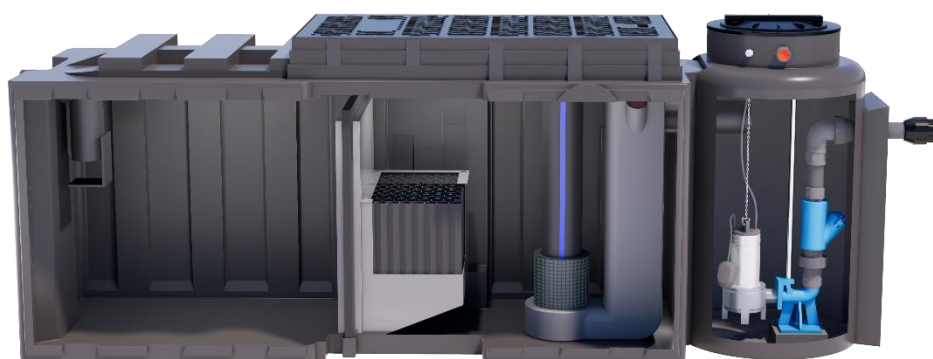
ECODEPUR® DEPUROIL® Oil Separators are Class 1 in accordance with standard EN858, featuring a double coalescent filter and automatic closure device. They allow obtaining a final effluent with an oil concentration lower than 5 mg/l, under the test conditions of the aforementioned standard.

The raw material used (polyethylene) was tested by an independent entity (Laboratório Nacional de Engenharia Civil – LNEC), in line with the requirements of Standard EN 858-1:2002, guaranteeing high mechanical resistance and corrosion protection.

ADVANTAGES





- CE Marking according EN 858-1;
- High treatment levels (double filtration system);
- The possibility of pumping the treated effluent allows raising the drainage network level, subsequently reducing the depth and volume of excavation.
- Automatic closure device (massive anti-miscalibration system);
- Built-in sample collection device;
- Protective cover for internal components in PE;
- Underground instalation;
- Possibility to incorporate a by-pass and an oil alarm sistem directly within the equipment structure;
- High storage capacity for separated products;
- High mechanical resistance and corrosion protection;
- Light and easy to install and maintain;
- Totally watertight.



APPLICATION

Water contaminated with oils interferes with the domestic wastewater drainage systems and creates a negative impact on the natural receptor environment (water and soil).

DISCHARGE INTO SEWER NETWORK	DISCHARGE INTO NATURAL ENVIRONMENT (water and soil)	
<ul style="list-style-type: none"> The hydrocarbons constitute a major source of contamination of sewage networks and treatment of domestic wastewater; In addition to the risk associated with serious malfunctioning of treatment facilities caused by these substances (particularly in terms of inhibition of biological degradation processes), they also contaminate sludge process as well as the effluent discharged. 	<p>Main impacts:</p> <ul style="list-style-type: none"> Chemical toxicity with consequent lethal effects or deterioration of cellular functions; Chemical toxicity with consequent lethal effects, sub-lethal effects or deterioration of cellular functions; Ecological changes, particularly regarding the loss of representative organisms in a community and the proliferation of so-called opportunistic species within the affected habitats; Indirect effects such as loss of habitat, leading to the elimination of species of high ecological importance. 	

To comply with current legislation, light liquid separator should be installed in places where oily wastewaters are produced, namely:

- Service stations (including private supply post and cooperative);
- Fuel storage and distributions areas;
- Vehicle workshops;
- Scrap yards;
- Washing areas;
- Car Parks;

CONFORMITY WITH THE EN 858-1

Light Liquid Separators - Part 1: Principles of design, performance and testing, marking and quality control

Light Liquid separators must have CE marking according to legal requirements that come from the European Parliament Regulation (EU) N° 305/2011, about the construction products. Each separator must be accompanied by the respective **performance statement** with the following information:

PRODUCT: Light Liquid Separators

APPLICATION: Separate light liquids from wastewater to protect sewage systems and surface water

ESSENTIAL CHARACTERISTICS	REQUIREMENT WITH THE STANDARD EN 858-1	PERFORMANCE
FIRE REACTION	6.2.8	F
LIQUID TIGHTNESS	6.3.2	Pass
EFFECTIVENESS	4, 6.3.1, 6.3.3 to 6.3.8, 6.5	Pass
LOAD BEARING CAPACITY	6.4	Pass
DURABILITY	6.2	Pass

At the same time the manufacturer must ensure an **internal quality control**, for example, a quality management system according to ISO 9001 for devices' production.

MAIN CHARACTERISTICS

EUROPEAN STANDARD	EN 858-1
EQUIPMENT IDENTIFICATION	Light Liquid Separator
BRAND	ECODEPUR®
TYPE	DEPUROIL®
CLASS EN 858-1	1 (<5,0 mg "Mineral Oils"/l ⁽¹⁾)
COALESCENT CELL	Double (Lamellar/Fibrillar) ⁽²⁾
AUTOMATIC CLOSURE DEVICE	Included (system always calibrated)
FIRE REACTION CLASS	F
MATERIAL	Polyethylene
SLUDGE TRAP	Included
SAMPLE COLLECTION BOX	Included
VENTILATION OUTLET	Included
COVER	Polyethylene
SUBMERSIBLE PUMP	Included with minimum level protection
ELECTRICAL PANEL	Direct start with thermal protection

Technical Note I: In accordance with European Standard EN 858-1: 2002, point 6.6.1, access covers must comply with the EN124 Standard featuring the inscription "SEPARATOR" and the respective Load Class. ECODEPUR® DEPUROIL® Oil-Water Separator includes protective cover(s) in Polyethylene, and **the customer must purchase the access cover(s) in accordance with Standard EN 124 and "SEPARATOR" marking, being the customer's responsibility to put it into the installation phase.** **Technical Note II:** In accordance with European Standard EN 858-1: 2002, point 6.5.4, separation equipment must be equipped with an automatic alarm device, and the installation of this equipment without this device is subject to approval by the competent local authorities.

OPERATION

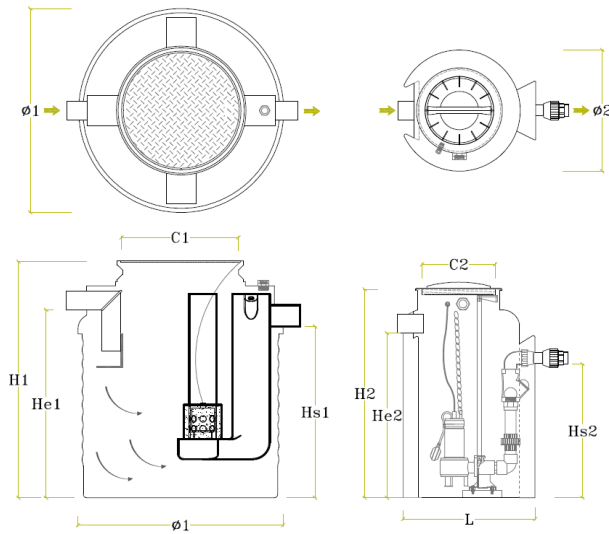
The oil separator allow the entry of non-chemically emulsified oily waters containing hydrocarbons (Eg. Oil and Petro) with densities between 0,85 and 0,95. Heavier materials (sludge, sand, etc) settle into the Pre-Sludge Trap compartment and are trapped there. This compartment also holds hydrocarbons that easily float. Only water and substances lighter than water, namely the oil particles intended for separation, pass through to the separation zone.

To optimise this process, separators are fitted with a coalescing filter, which traps the smallest oil particles, causing them to agglomerate into larger particles and consequently giving them enough upward force to propel them towards the surface. In this chamber, the hydrocarbons will accumulate on the surface, while the clean water will sink to equipment bottom.

The oil separator is equipped with an automatic closure devise (massive anti-miscalibration system), which prevents the escape of oils once the maximum retention capacity of the equipment has been reached, thus preventing contamination of the environment. The pump or pumps are pre-installed in the pumping chamber and are controlled by a set of four level floats, or, if it is a single pump, only one start/stop float.

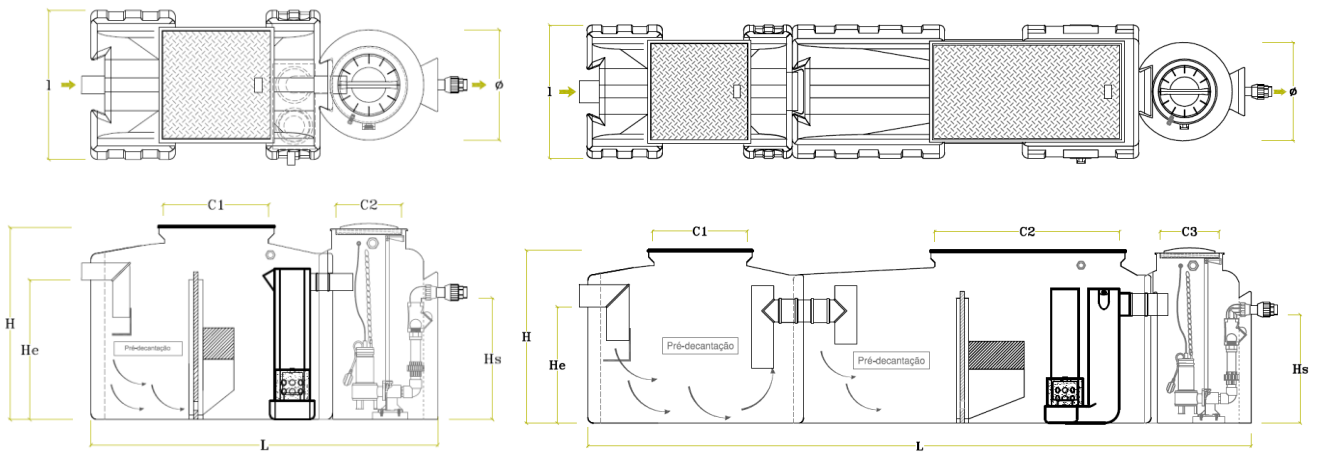
DIMENSIONS

- OPTIONS**
- OIL ALARM SYSTEM
 - CAST IRON COVER
 - ABSORPTION AND BIOLOGICAL DETERIORATION OF HYDROCARBONS
 - OILSKIMMER



TYPE	NS (l/s)	VOLUME TOTAL (l)	H1 (mm)	Ø1 (mm)	H1 (mm)	Hs1 (mm)	C1 (mm)	Ø PIPE (mm)	WEIGHT (kg)
DEPUROIL® EE NS 1,5	1,5	1.258	1.400	1.200	1.080	1.030	740	110	65

TYPE	VOLUME TOTAL (l)	H2 (mm)	Ø2 (mm)	H2 (mm)	Hs2 (mm)	C2 (mm)	Ø INLET PIPE (mm)	Ø OUTLET PIPE (mm)
ELEVATION CHAMBER	500	1.215	710	955	795	400	110	2"



ECODEPUR® DEPUROIL® EE NS3

ECODEPUR® DEPUROIL® EE NS8

TYPE	NS (l/s)	VOLUME (l)	L (mm)	I (mm)	H (mm)	He (mm)	Hs (mm)	C1 (mm)	C2 (mm)	C3 (mm)	Ø INLET PIPE (mm)	Ø OUTLET PIPE (mm)
DEPUROIL® EE NS 3	3,0	1.360 + 500	2.325	960	1.230	930	795	750 X 750	400	-	110	2"
DEPUROIL® EE NS 6	6,0	2.410 + 500	3.345	960	1.230	915	795	750 X 1.415	400	-	125	2"
DEPUROIL® EE NS 8	8,0	3.770 + 500	4.835	960	1.230	880	795	750 X 750	750 X 1.415	400	160	2"
DEPUROIL® EE NS 10/12	10,0 12,0	4.820 + 1.360	6.560	960	1.230	880	795	750 X 1.415	750 X 750	-	160	3"
DEPUROIL® EE NS 15	15	6.180 + 1.360	8.040	960	1.230	840	795	750 X 1.415	750 X 750	-	200	3"

*The pictures and dimensions can be changed without notice.
The dimensions indicated have a tolerance of ± 2%.*

Oil separators with higher treatment capacity are available – Information upon request

CONTAMINANT STORAGE CAPACITY

TYPE	VOLUME PRE-SLUDGE TRAP (L)	OIL COLLECTION VOLUME (L)
DEPUROIL® EE NS 1,5	450	760
DEPUROIL® EE NS 3	452	940
DEPUROIL® EE NS 6	830	1.640
DEPUROIL® EE NS 8	1.030	2.500
DEPUROIL® EE NS 10/12	1.820	3.160
DEPUROIL® EE NS 15	1.740	4.050

INSTALLATION

USAGE LIMITATIONS

Oil separators should only be installed in drainage systems where the "liquid light" need to be separated from the effluent and retained within the separator. They must not be installed in drainage lines containing sewage or domestic waste water.

The rainwater drainage areas unlikely to be contaminated with hydrocarbons (Ex. roofs or grassy areas) should not be discharged into the hydrocarbons separator.

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INSTALLATION

Installation of Oil Separators should follow the recommendations for **Installation for PE Reactors / Tanks of (<10.000L)**, which are provided with the Product Catalog.

Simultaneously, one should take into account the following considerations:

1. The filling of the tank should be done with clean water, through the inlet pipe and simultaneously performing the landfill in successive layers. When the water level reaches outlet tube, pull the nylon string attached to the float and verify that it remains floating.
2. The protective covers supplied with the equipment are built in linear polyethylene, with the customer's responsibility to purchase additional access covers according to EN124 standard and with the inscription "SEPARATOR" according to EN858 standard. The installation of access covers should be carried out to the surface, respecting the areas consistent with the assigned class. (Ex: Cast Iron Cover, Class B125 - riding, pedestrian areas and comparable areas, car parks and parking silos for light vehicles);
3. Upstream the separator should be provided a Sludge Traps, in order to increase the solids storage capacity of the system and avoiding potential fouling phenomena downstream. It is recommended to install a solid decanter, an appropriate and tested equipment, to avoid potential contamination of the surrounding environment.
4. The Sludge Traps must be dimensioned according to the section 4.4 of EN 858- Part 2. In automatic car wash areas (Ex: machine rolls and pressure machines) should be placed a solids decanter with a minimum of 5000 liters capacity, according to the said paragraph 4.4 of the standard EN 858- Part 2.
5. Optionally, a ECODEPUR® Lamellar decanter can be installed, Model DEKTECH having a function optimized by reducing the hydraulic load applied by a pack of lamellae (lamellar decantation) and the development of processes of "discrete settling" of solids and flotation of light substances. It is recommended to use the ECODEPUR® lamellar decanter DEKTECK where it is desired to increase the effectiveness of the treatment system, as well as the level of accumulation of contaminated products.
6. Should not be allowed to separate hydrocarbons spilled to the outside by the pipe or the access covers. The hydrocarbon separator must be installed so that the upper level of the manhole (ground level) is higher than the surface level of the water line to drain out. This measure will prevent the oil accumulated on the surface from escaping to the outside. In general this level is the highest level of the gutter or drain the drainage network.
7. Place the pumps inside the reservoir and connect them and the floats to the electrical panel according to the diagram (terminal block);
8. Ensure power supply to the control panel.
9. As a good practice, a vent should be installed on the equipment.

In case of any doubt should always contact the technical services ECODEPUR - Tecnologias de Protecção Ambiental, Lda.

MAINTENANCE

ECODEPUR® DEPUROIL® EE Oil Separator do not need special care from a structural point of view, due to the high resistance and corrosion protection of the material from which they are made.

As a result, only the following items need to be checked, at least every three months:

- **Oil layer thickness**

Oils will accumulate in the water layer and must be removed whenever they reach a thickness of 10 cm (this can be checked manually by probing the surface with a stick, or with an Oil alarm system).

- **Deposits in the base**

Sludge and sand will accumulate in the first chamber bottom (a higher or lower quantity, depending on the characteristics of the sludge trap installed upstream the separator). These must be removed whenever they reach a thickness of 20 to 30 cm. The thickness of this sludge layer can be checked manually by prodding the sludge with a stick, or automatically using a sludge alarm system.

- **Oleophilic coalescing filters**

Whenever oils are cleaned out of the separator, the coalescing filters must be washed out. This procedure is carried out simply by using a cold pressure water jet, with the water remaining in the equipment after this process channelled to the end destination along with the remaining residue removed. This procedure must also be carried out if there is any reduction in the hydrocarbon separator drainage capacity (clogged filters).

After discharge, the separator should be refilled with clean water, pull the chain attached to the float, and check if it floats freely on the water's surface.

- **Automatic Closure device**

The buoyancy conditions (if it floats free, if it is stuck or if it sinks) of the float must be checked

The float must be cleaned of debris, mud or oil accumulated on the surface.

- **Alarm system**

The operation of the alarm device must be tested.

- **Sampling boxes**

The drainage channel must be cleaned.

PUMP MAINTENANCE (According to Supplier)

"The pump does not require ordinary maintenance. Cleaning of the suction screen or impeller may be necessary. To access the impeller on screen models, unscrew the screws that hold it in place."

WARRANTY

Five (5) years, covering any manufacturing defects.

Two (2) Years, against possible manufacturing defects of the electromechanical equipment that makes up the Lifting Chamber

ECODEPUR® will be responsible for introducing corrective measures aimed at correct equipment operation, if necessary.

ECODEPUR® will not be responsible if there are clear indications of poor installation, misuse (including the use of stable emulsions) or poor maintenance, or if it is shown that the equipment was overloaded, based on the terms stipulated in Standard EN 858.

CONTACTS

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WATER AND WASTEWATER TECHNOLOGIES

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