USED WATER TREATMENT

# On-site Sanitation > 20 IE

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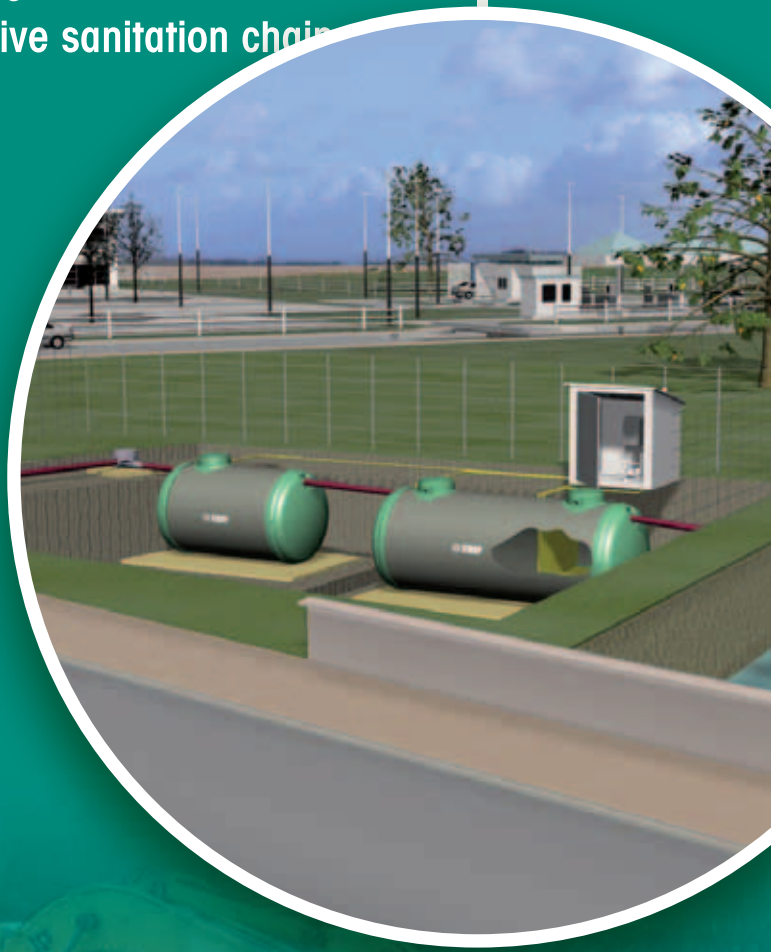
- Water Treatment Plant with activated sludge
- Tanks and decanters
- Facilities for collective sanitation chai
- Filtrapur



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**Based on 35 years of experience, SIMOP positions itself as the market leader with its wide range and level of expertise in prefabricated solutions for the building and public works.**

## Principle of filament winding

SIMOP's many products are made of polyester which ensures high strength (high fiber content from 60 to 70% and optimum fiber arrangement facing the direction of the effort). This material also ensures a high resistance to corrosion. The manufacturing process used is the circumferential and helical filament winding. The method includes depositing the fibers of polyester (roving wires) previously impregnated on a mandrel having a rotational movement. The manufacturing system is fully automated and allows us to control all production parameters (thickness, length ...) to ensure a finished product of the highest quality.
**The filament winding tanks gives excellent mechanical strength and consistency of the thickness of the tank.**

## Rotomoulding

Simop has 35 years of experience in the manufacture of rotational molding.
Our industrial equipment allows us to manufacture the larger single parts in Europe (35 m3).
This ensures easy implementation and maintenance, perfect sealing of our devices and has the advantage of being recyclable.

## An engineering performance

The SIMOP engineering department impregnated with a strong spirit of innovation, is constantly at the forefront of new techniques and technologies. The intensity of its research and development allows him to continually develop existing products and regularly launch onto the market reliable and permanent solutions helping to improve environment.

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# SUMMARY



A catalog On-site Sanitation < 20 IE is at your disposal.


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## On-site Sanitation Definition

It is about all sanitation system for collection, pre treatment, treatment, infiltration or discharge of domestic wastewater of the buildings not connected to the public sewage.

On-site Sanitation superior to 20 IE is for a houses group and / or several buildings (greater than 1.2 kg BOD5 /day and less than 120 kg BOD5 /day.

## Inhabitant equivalent (IE) Definition

Unit of measure for evaluating treatment capacity. This unit of measurement is based on the amount of pollution emitted per person per day.

1 IE equals 60 g of BOD5/day : 21.6 kgs of BOD5/year and approximately 150l of water.

The oxygen biochemical demand or BOD is the oxygen consumption of micro-organisms existing to assimilate organic substances present existing. This value is measured over a period of five days (that explains the nam of BOD5).

# Legislation

## Standards*

•XP DTU 64.1 P1-1 : technical specification requirements.

• XP DTU 64.1 P1-2 : general criteria for selection of materials.

• NF EN 12-566 : wastewater treatment small facilities up to 50 main rooms.

- NF EN 12-566-1 : prefabricated septic tanks.

- NF EN 12-566-3 : domestic wastewater treatment plant, ready for use and/or assembled on site.

## Regulations*

- Order dated June 22 2007 concerning collection, transport and treatment of wastewater from urban sanitation as well as monitoring of their operation and their effectiveness, and on-site sanitation facilities receiving a gross load of organic pollution superior to 1.2 kg/day of BOD5.

- Act dated December 30 2006 on Water and Aquatic Environments. (LEMA)

- Decree n ° 2006-503 dated May 2 2006 on the collection and wastewater treatment referred to in Articles L. 2224-8 and L. 2224-10 of the General Code of Local Authorities.

**• Other texts**

- Code of Construction and Housing.

- General Code of Local Authorities (Part 1).

- General Code of Local Authorities (Part 2).

- Code of Public Health.

These and others are available at the following addresses:

***• Norms***

http://www.boutique.afnor.fr
http://www.afnor.fr

***• Others***

http://www.cstb.fr
http://www.ifaa.fr

***• Laws and regulations***

http://www.legifrance.gouv.fr

http://aida.ineris.fr (click on the thematic or chronological summary)

** List of the main normative and regulatory references.*

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# On-site Sanitation superior to 20 IE

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Each sizing requires a comprehensive and specific survey. Information is provided as an indication, for more information, please refer to the selection guide on our website www.simop.com, selection guide section.

## Rough guide for the calculation of wastewater treatment facilities

| | CHOOSING A CHAIN | | |
|---|---|---|---|
| | all-water tank with sand filter | decanter disgester with sand filter | chains with activated sludge |
| | Chain 1 on page 4 | Chain 2 on page 5 | Chain 3 on page 6 |
| MAIN ADVANTAGES | Energy autonomy | | small footprint |
| | Reduced maintenance | | high purification efficiency |
| | Simple Installation | dedicated to large capacity systems | Discharge to superficial water environment(a) |

(a) Permanent stream.

| CHAINS | | | | |
|---|---|---|---|---|
| Designation | AVERAGE RATE * liters/day | Chain 1 page 4 | Chain 2 page 5 | Chain 3 page 6 |
| **Main cases** | | | | |
| Permanent user | 150 | x | x | Chain accepted if population connected from 51 to 400 IE |
| School (boarding school), barracks, nursing home | 150 | x | x | |
| School (half board) or similar | 75 | x | x | |
| School (externship) or similar | 50 | x | x | |
| Hospitals, clinics ... (including nursing) | 400 à 500 | x | x | |
| Plant personnel per 8 h | 75 | x | x | |
| Office staff, store | 75 | x | x | |
| occasional user | 7.5 | x | x | |
| Hotel restaurant, guesthouse (per room) | 300 | x | x | not recommended if prolonged closure time |
| Hotel, guesthouse (no restaurant, per room) | 150 | x | x | |
| Campsite | 115 à 300 | x | x | Not recommended |
| **Restaurants (standard NF EN 1825-2) - Compulsory grease separator at the exit of the kitchen** | | | | |
| Restaurant without preparation | 5 l/meal | | Necessary study | |
| Restaurant with preparation | 50 l/meal | | | |
| **Other cases (unregulated - indicative values)** | | | | |
| Laundry, self-service | 120 l/day | Necessary study | | |
| Swimming-pool | 25 l/day | | | |

*150 liters / day = 1 IE (Inhabitant Equivalent)

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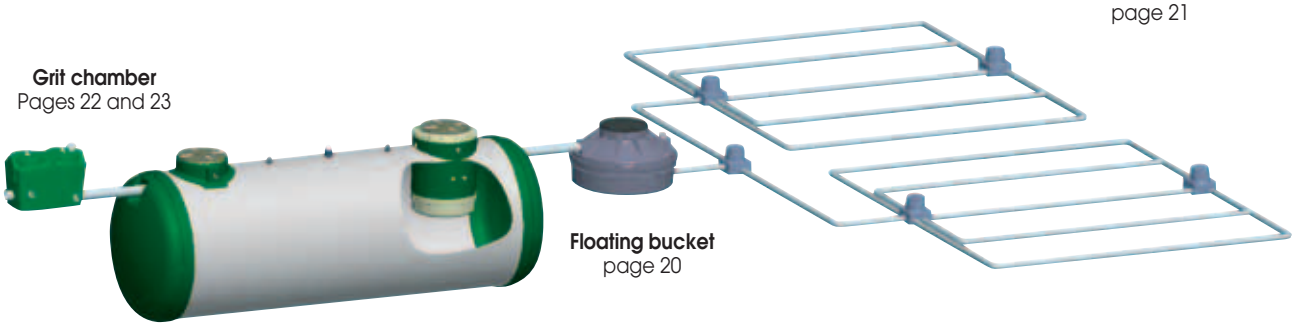
# CHAIN ALL WATER TANK WITH SAND FILTER




## ADVANTAGES

- Proven technology
- Zero energy cost
- Discharge by infiltration
- Small footprint (tank)

## Features

extrapolated basic chain of on-site sanitation.

Pre treatment is made by a all-water tank where the residence time is in the order of:

- 3 days up to 70 IE (10m3/day);
- 2 days for a greater population connected.

Treatment is provided by one or more sand filters with a vertical structure modeled in accordance with standard XP DTU 64.1.

On this chain :

1 - A grease separator must be installed upstream from the all-water tank if the effluents come from a restaurant, a cafeteria or a hotel.

2 - The all-water tank must be equipped with either a lamellar integrated prefilter or independent prefilter with pozzolan, to avoid the risk of clogging of the filter.

3 - A homogeneous operation of the all-water tank is possible thanks to the installation of a grit chamber upstream.

4 - A better water distribution at the tank's outlet must be provided by a floating bucket for a good operation of the sand filter chain.

**NOTE :** *For each study, please lets us know spot height for inlet and outlet level to determine whether the installation of a pumping station is needed in the chain.*

## Sizing

All-water tank : the volume of the all-water tank is calculated as the volume of water discharged (IE x 150) multiplied by a correction factor (residence time) of between 2 and 3 depending on the treated flow rate.

- Sand filter : the reference surface used for the sizing of a sand filter is 3 m2 per IE. Value given as an indication to be confirmed by an engineering department.
- Volume of the floating bucket = (VF+VD) / 2

*VF = water volume contained in the spreading system of the filter half pipe.*

*VD = diurnal volume (volume of water discharged in 10 hours).*

- Silt storage / non incorporated pre filter : their volume represents 5 to 10% of the volume of the all-water tank.

## Maintenance

- The drainage of the all-water tank should be adjusted according to the height of sludge which must not exceed 50% of the volume.
- For a better management of your drainings, we offer sludge level alarm (contact us).

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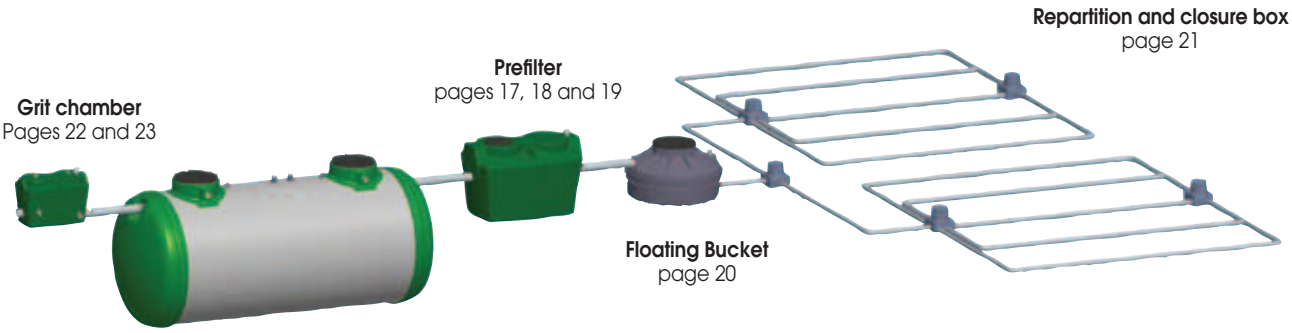
# CHAIN DECANTER DIGESTER WITH SAND FILTER




## ADVANTAGES

- Proven technology
- Zero energy cost
- Discharge by infiltration
- Small footprint (tank)

## Features

A decanter can be a pre treatment before further treatment or constitute a single treatment.

The importance of this chain is directly related to the operation of the decanter digester. Indeed, the physical separation of settling and digestion zones reduces sedimented sludge allowing to the decanter digester to be 2 to 3 times compacter than a all-water tank for the same treated flow.

Treatment is provided by one or more sand filters with a vertical structure modeled in accordance with standard XP DTU 64.1

On this chain :

1 - A grease separator must be installed upstream from the decanter digester if the effluents come from a restaurant, a cafeteria or a hotel.

2 - The decanter digester must be equipped with an independent prefilter with pozzolan to avoid the risk of clogging of the filter.

3 - A homogeneous operation of the decanter digester is possible thanks to the installation of a grit chamber upstream.

4 - A better water distribution at the outlet of the decanter digester must be provided by a floating bucket for a good operation of the sand filter chain.

**NOTE :** *For each study, please lets us know spot height for inlet and outlet level to determine whether the installation of a pumping station is needed in the chain.*

## Sizing

- Decanter digester (DD) : The volume is calculated as the volume of water discharged (EH x 150) multiplied by a factor between 1.2 and 1.5 according to the sizing principles of water agencies.
- Sand filter : the reference surface used for the sizing of a sand filter is 3 m2 per IE. Value given as an indication to be confirmed by an engineering department.
- Volume of the floating bucket = (VF+VD) / 2

*VF = water volume contained in the spreading system of the filter half pipe.*

*VD = diurnal volume (volume of water discharged in 10 hours).*

- Silt storage / non incorporated pre filter : for a quick sizing, their volume equal to 20% of the volume of the DD.

## Maintenance

The decanter digester must be drained once a year.

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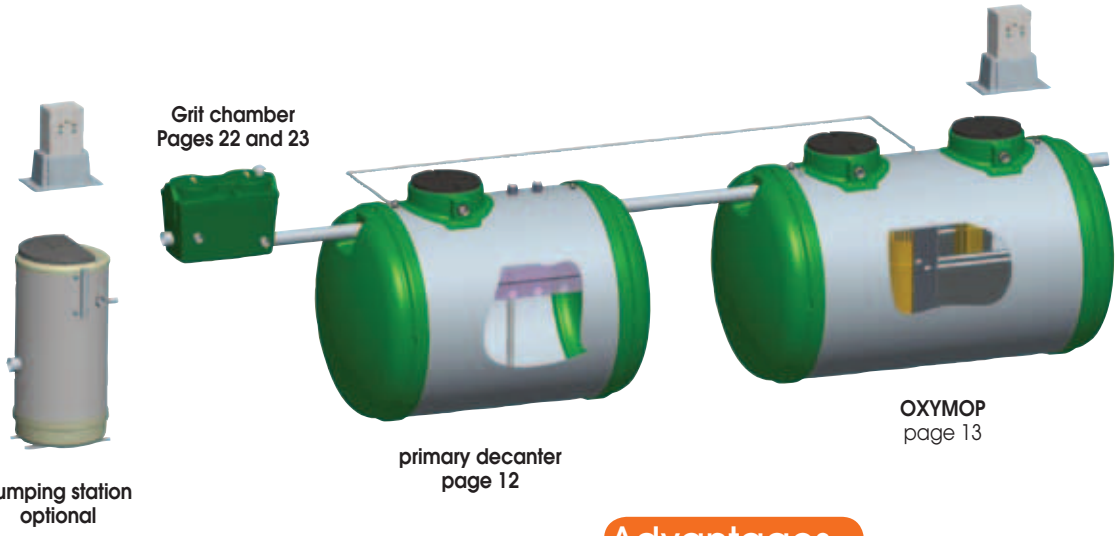
# ACTIVATED SLUDGE CHAIN WITH DISCHARGE INTO SUPERFICIAL WATER ENVIRONMENT




## Advantages

- Small footprint
- Absolute landscaping integration (100% buried)
- No noise
- Modular and expandable later
- Proven technology of activated sludge
- Perfect control of the sludge volumes to be drained thanks to the primary decanter
- Rejection quality in accordance with the Ministerial Order of June 22, 2007
- Easy maintenance thanks to a simple and robust design designed for the user
- Maintenance provided by licensed firms throughout France

## Features

This chain is designed on the model of urban wastewater treatment plants, and consists of :

- a primary settling (pre treatment)
- aeration / activation (treatment) (contact bacteria/water provided by diffusion through aero-ejector of fine air bubbles)
- a clarification based on the lamellar settling (finishing),
- elimination of the excess sludge (storage in the digester).

It is characterized by a very low load operation where the volume of the aeration tank is the daily volume of effluents (extended aeration principle).

Consisting of two tanks, this chain is sufficient in itself.

Like any water treatment plant with activated sludge, this type of chain must operate with a supply of effluents as regular as possible (one-off variations accepted more or less 25% of the average load).

**NOTE :** *For each study, please lets us know spot height for inlet and outlet level to determine whether the installation of a pumping station is needed in the chain.*

## Sizing

Primary decanter (Ref. : DP3/6321/...) : the volume of the primary clarifier is the number of inhabitant equivalent multiplied by 150.

OXYMOP (Ref. : OXY3/6334...) : the volume of Oxymop is the number of inhabitant equivalent multiplied by 200 to 300.

## Maintenance

- The primary clarifier must be drained once a year.
- Oxymop must be drained once a year to 2/3 of its volume.
- Maintenance contract required for maintenance and adjustments of the electromechanical parts.

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# CHAIN FIXED CULTURE WITH DISCHARGE INTO SUPERFICIAL WATER ENVIRONMENT

**primary decanter**
page 12

**Filtrapur**
pages 14 et 15

**Pumping station**
optional

## ADVANTAGES

- Small footprint
- Rejection quality in accordance with the Ministerial Order of June 22, 2007
- Absolute landscaping integration
- Supports load variations
- Easy Maintenance
- Proven technology of fixed cultures
- No noise

## Features

This chain is designed on the model of urban wastewater treatment plants, and consists of :

- a primary settling (pre treatment)
- a bacterial massive (treatment) (contact bacteria/water provided by spray on the bacterial support).
- clarification based on a vertical settling.

Consisting of two or 3 tanks according to the models, this chain is sufficient in itself.

**NOTE :** *For each study, please lets us know spot height for inlet and outlet level to determine whether the installation of a pumping station is needed in the chain.*

## Sizing

The sizing of the chain is made according to the population connected and rejection levels expected.

## Maintenance

From commissioning, a maintenance contract must be signed with a specialist certified by the Simop company.

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# TREATMENT CHAIN FOR GREY WATER

Storage tanks for greywater

Storage tanks for treated water

GRISIMOP
page 16

## Features

This treatment chain and reuse of grey water from showers consists of:

- a grey water reservoir ;
- a reservoir of treated and disinfected water ;
- a filtration unit ;
- a pressure equipment ;
- a UV disinfection equipment ;
- a chlorination equipment.

Treated water is reused mainly for watering gardens (excluding overhead) and for toilets.

Note : *This type of chain requires the establishment of two networks of wastewater recovery (one for grey water and one for black water).*

## Sizing

All parts of the chain is sized based on the volume of grey water which can be generated (showers, sinks,...).

Each sizing requires a special study.

## ADVANTAGES

- Saving of 40 to 50% drinking water depending on the installation type
- Discreet and easy Installation
- Low power consumption
- Do not generate residues
- Easy maintenance

## Maintenance

- Check the float systems in the tanks monthly
- Check the operation of the UV lamp
- Check the operation of the pumping systems
- Renew the filter material every year

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# MONOBLOC ALL WATER TANKS
# POLYETHYLENE (PE) FROM 12 TO 20 M3

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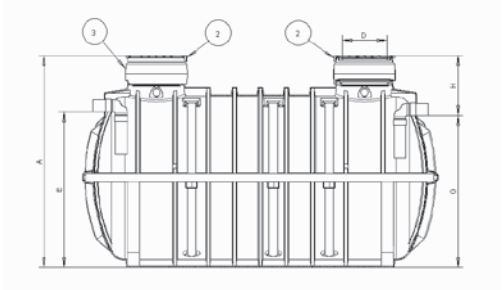
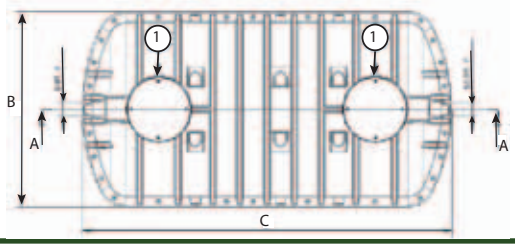
6308






**1 - Vent pipes Ø 100.**
**2 - Screw-dawn covers**
**OPTION**
- **Screw-dawn extension shaft Ref. RH2/6030.**
- **Anchoring strap Ref. CA3/FX24/01.**

## Definition

A monobloc all-water tank in polyethylene not equipped with a pre filter is a device to retain settling matters in domestic wastewater : blackwater (toilets,...) and greywater (bathrooms, kitchens, laundries,...). A complete water treatment system incldes an all-water tank, an independent pre filter located downstream from the tank and a waste disposal system (sand filter, zeolite filter,...)

## Operation

Wastewater is collected in the all-water tank. The decantable suspended matters form a deposit and ferment. Their volume gradually decreases and is stabilized. Grease on the surface is trapped and hydrolyzed. They create a «hat» which increases in volume and stabilizes.

## Maintainance

Pits polyethylene are resistant to corrosion and require no special maintenance. According to the ministerial order of 07/09/09, it is necessary to perform an oil change when the volume of sludge reaches 50% of the volume of water in the pit. Before draining, ensure that the water level in the piezometer is not greater than 1 m. Otherwise, it is necessary to postpone the drain or fold the cloth. Avoid drain during rainy periods and after each draining, and it is imperative to immediately fill the tank with clean water until it overflows through the outlet pipe.

## Sizing

Two criteria are taken into account in the capacities of the all-water tanks SIMOP :

- The sludge storage volume
- The inlet flow rate

Thanks to these criteria, SIMOP offers an all-water tank fit for each case taking into account the permanent use or not of the community habitat. On the sizing basis of 150 liters of water per day and per inhabitant, our all-water tanks can be used as follows :

| Useful Volume | Maximum number of permanent users | Prefilter Volume |
|---|---|---|
| 12 m³ | 26 | 0.6 m³ |
| 15 m³ | 33 | 0.75 m³ |
| 17 m³ | 37 | 0.85 m³ |
| 20 m³ | 44 | 1 m³ |

The volume of the independent pre filter should equal minimum 5% the volume of the tank. To choose the volume of the all-water tank for a non-permanent use, please refer to our research department.

| Reference | Dimensions in mm | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | Ø B | C | Ø D | E | Ø F | G | H | Useful Volume (m³) |
| FTE2/6308/10 | 2840 | 2490 | 3378 | 600 | 2085 | 160 | 2035 | 805 | 10 |
| FTE2/6308/12 | 2840 | 2490 | 3928 | 600 | 2085 | 160 | 2035 | 805 | 12 |
| FTE2/6308/15 | 2840 | 2490 | 4782 | 600 | 2085 | 160 | 2035 | 805 | 15 |
| FTE2/6308/17 | 2840 | 2490 | 5332 | 600 | 2085 | 160 | 2035 | 805 | 17 |
| FTE2/6308/20 | 2840 | 2490 | 6232 | 600 | 2085 | 160 | 2035 | 805 | 20 |
| RH2/6030 | **Screw-dawn covers** 300 mm | | | | | | | | |
| CA3/FX24/01 | Anchoring strap to click for an installation on ground with a water table | | | | | | | | |

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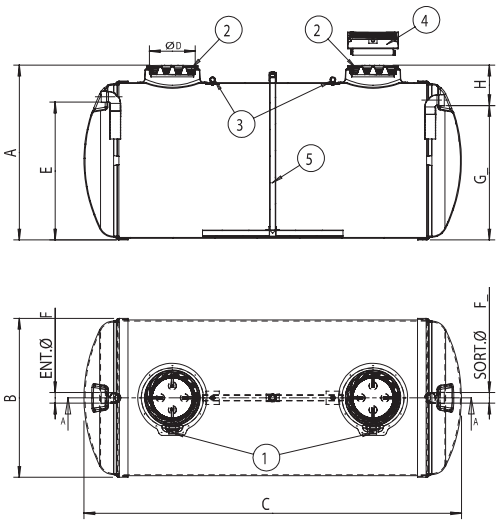
# HORIZONTAL ALL-WATER TANKS from 10 to 60 m3 POLYESTER

**6313**




## Use

Receives all the waters of the house except rainwater and pools.

## Definition

- Pre treatment device designed to collect and liquefy partially pollutant matters in untreated water and designed to retain solid matters and floating waste.
- Provide an independent pre filter for the tanks from 10 to 20 m3.

**1 - Aeration Ø 100.**
**2 - Screw-on cover.**
**3 - Handling rings.**
**OPTIONS**
**4 - Screw-on extension shaft Ref. RH602.**
**5 - Extraction device ND80 Ref. OD3/1924.**
**• Anchoring strap Ref. CA3/FX24/01.**

## Installation

- The installation of the tank must be in accordance with the instructions P050 or P053 (see pages 19 and 20).
- On hydromorphous ground or in the presence of groundwater, groundwater should not exceed the outlet water level.

## Maintenance

The drainage of the all-water tank should be adjusted according to the height of sludge which must not exceed 50% of the useful volume. For a better management of your drainings, we offer sludge level alarm (contact us).

| Reference | Dimensions in mm | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | Ø B | C | Ø D | E | Ø F | G | H | useful Volume (m³) | Nb of frames |
| FTE3/6313/1610 | 1890 | 1645 | 6130 | 600 | 1360 | 160 | 1310 | 580 | 10 | 1 |
| FTE3/6313/1612 | 1890 | 1645 | 7180 | 600 | 1360 | 160 | 1310 | 580 | 12 | 1 |
| FTE3/6313/1915 | 2190 | 1945 | 6180 | 600 | 1360 | 160 | 1630 | 580 | 15 | 1 |
| FTE3/6313/1917 | 2190 | 1945 | 6950 | 600 | 1360 | 160 | 1630 | 580 | 17 | 2 |
| FTE3/6313/20 | 2615 | 2380 | 5650 | 600 | 2010 | 160 | 2010 | 605 | 20 | 2 |
| FTE3/6313/25* | 2615 | 2380 | 7050 | 600 | 2010 | 160 | 2010 | 605 | 25 | 2 |
| FTE3/6313/30* | 2615 | 2380 | 8300 | 600 | 2010 | 160 | 2010 | 605 | 30 | 2 |
| FTE3/6313/35* | 2615 | 2380 | 9610 | 600 | 2010 | 160 | 2010 | 605 | 35 | 2 |
| FTE3/6313/40* | 2615 | 2380 | 10930 | 600 | 2010 | 160 | 2010 | 605 | 40 | 2 |
| FTE3/6313/45* | 2615 | 2380 | 12250 | 600 | 2010 | 160 | 2010 | 605 | 45 | 2 |
| FTE3/6313/50* | 2615 | 2380 | 13570 | 600 | 2010 | 160 | 2010 | 605 | 50 | 2 |
| FTE3/6313/55* | 2615 | 2380 | 14880 | 600 | 2010 | 160 | 2010 | 605 | 55 | 2 |
| FTE3/6313/60* | 2615 | 2380 | 16200 | 600 | 2010 | 160 | 2010 | 605 | 60 | 2 |
| DEC3/102 | Incorporated pre filter for tank from 25 m3 to 35 m3 | | | | | | | | | |
| DEC3/103 | Incorporated pre filter for tank from 40 m3 to 60 m3 | | | | | | | | | |
| RH 602 | Screw-on extension shaft, height 250 mm (1/per manhole) | | | | | | | | | |
| OD3/1924 | Extraction device ND80 | | | | | | | | | |
| CA3/FX24/01 | Anchoring strap to click for an installation on ground with a water table | | | | | | | | | |

The CE marking only applies on tanks with a capacity less than or equal to 20 m3 (up to 50 IE).

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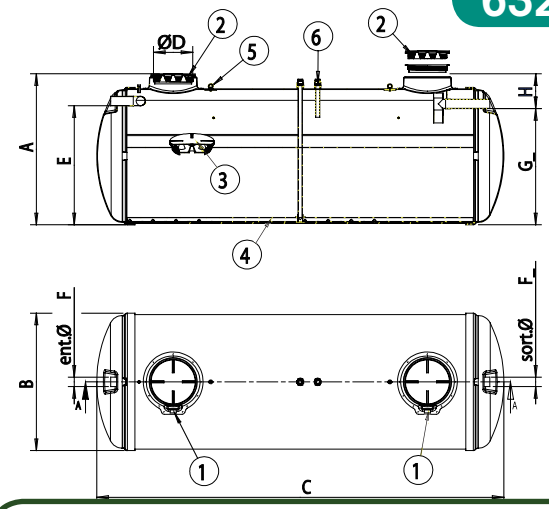
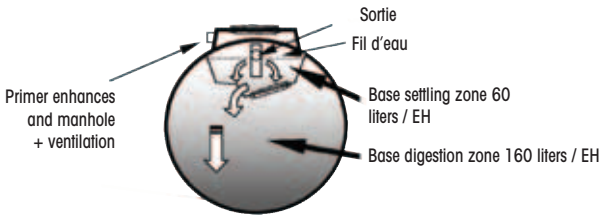
# DECANTERS DIGESTERS POLYESTER

**6320**




**1 - Vent pipe Ø 100.**
**2 - Cover.**
**3 - Access hatch to the digester.**
**5 - Lifting rings.**
**OPTIONS**
**4 - Extraction device ND80.**
**6 - Extraction device of the floatings.**
**• Anchoring strap Ref. CA3/FX24/01.**

## Use

Receives all the waters of the dwelling except rain water and swimming pools.

## Technical Definition

- Work pretreatment for the collection, storage and sedimentation of suspended solids contained in domestic wastewater (sewage and waste).
- Provide an independent pre downstream.

## Installation

- The installation of the tank must be in accordance with the instructions P050 or P053 (see pages 19 and 20).
- On hydromorphous ground or in the presence of groundwater, groundwater should not exceed the outlet water level.

## Maintenance

Annual drainage of sludge and more frequently of the floatings.

| Reference | Dimensions en mm | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | Ø B | C | Ø D | E | Ø F | G | H | Useful volume (m³) | Nb of frames |
| DD3/6320/08 | 2615 | 2380 | 2480 | 600 | 2060 | 160 | 2010 | 605 | 8 | 1 |
| DD3/6320/10 | 2615 | 2380 | 3020 | 600 | 2060 | 160 | 2010 | 605 | 10 | 1 |
| DD3/6320/12 | 2615 | 2380 | 3550 | 600 | 2060 | 160 | 2010 | 605 | 12 | 1 |
| DD3/6320/15 | 2615 | 2380 | 4340 | 600 | 2060 | 160 | 2010 | 605 | 15 | 2 |
| DD3/6320/17 | 2615 | 2380 | 4860 | 600 | 2060 | 160 | 2010 | 605 | 17 | 2 |
| DD3/6320/20 | 2615 | 2380 | 5650 | 600 | 2060 | 160 | 2010 | 605 | 20 | 2 |
| DD3/6320/25 | 2615 | 2380 | 7050 | 600 | 2060 | 160 | 2010 | 605 | 25 | 2 |
| DD3/6320/30 | 2615 | 2380 | 8300 | 600 | 2060 | 160 | 2010 | 605 | 30 | 2 |
| DD3/6320/35 | 2615 | 2380 | 9610 | 600 | 2060 | 160 | 2010 | 605 | 35 | 2 |
| DD3/6320/40 | 2615 | 2380 | 10930 | 600 | 2060 | 160 | 2010 | 605 | 40 | 2 |
| DD3/6320/45 | 2615 | 2380 | 12250 | 600 | 2060 | 160 | 2010 | 605 | 45 | 2 |
| DD3/6320/50 | 2615 | 2380 | 13570 | 600 | 2060 | 160 | 2010 | 605 | 50 | 2 |
| DD3/6320/55 | 2615 | 2380 | 14880 | 600 | 2060 | 160 | 2010 | 605 | 55 | 2 |
| DD3/6320/60 | 2615 | 2380 | 16200 | 600 | 2060 | 160 | 2010 | 605 | 60 | 2 |
| RH 602 | Screw-on extension shaft, height 250 mm (1/per manhole) | | | | | | | | | |
| OD3/1906 | Extraction device ND80 | | | | | | | | | |
| CA3/FX24/01 | Anchoring strap to click for an installation on ground with a water table | | | | | | | | | |

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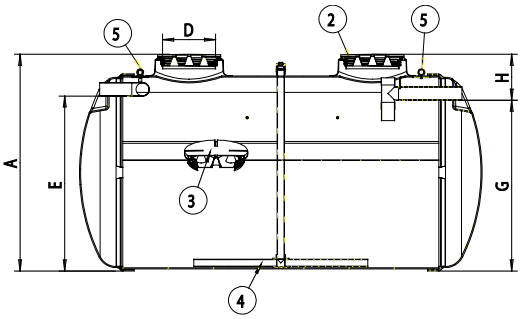
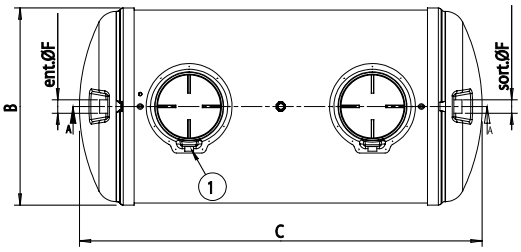
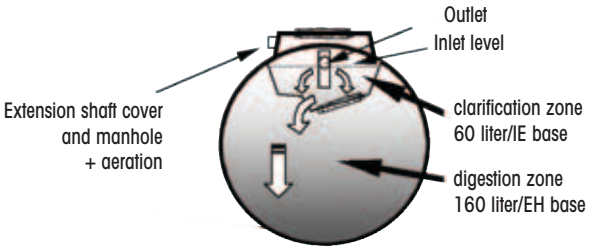
# PRIMARY DECANTERS 8 to 30 m3 FOR OXYMOP POLYESTER

6321




**1 - Aeration Ø 100.**
**2 - Screw-on covers.**
**3 - Access hatch to the digester.**
**4 - Extraction device ND80 with symmetric conection.**
**5 - Lifting ring.**
**OPTION**
- **Screw-on extension shaft Ref. RH602.**
- **Anchoring strap Ref. CA3/FX24/01.**

## Use

Designed for the collect, the sedimentation and the storage of the suspended solids (TSS) contained in domestic wastewater (soils water and household waste water).

## Definition

Upstream from an OXYMOP, the decanter is composed by two different compartments :

- A lengthwise clarification compartment enables the gravitational sedimentation of the suspended solids. The decanted suspended solids enter the inferior compartment thanks to some holes located in the decanter basis.
- Access to a digester compartment where sludge collected are stored and are compacted. Their digestion is realized in the non-aerated zone (anaerobic).

## Installation

- The installation of the tank must be in accordance with the instructions P050 or P053 (see pages 19 and 20).
- On hydromorphous ground or in the presence of groundwater, groundwater should not exceed the outlet water level.

## Maintenance

- Biannual drainage of sludge and more frequently of the floatings. A trap located in the clarification compartment leaves access to the digester compartment.

| Reference | Dimensions in mm | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | Ø B | C | Ø D | E | Ø F | G | H | Volume use($m^3$) | Nb frames |
| DP3/6321/08 | 2615 | 2380 | 2480 | 600 | 2110 | 160 | 2060 | 555 | 08 | 1 |
| DP3/6321/12 | 2615 | 2380 | 3550 | 600 | 2110 | 160 | 2060 | 555 | 12 | 1 |
| DP3/6321/17 | 2615 | 2380 | 4860 | 600 | 2110 | 160 | 2060 | 555 | 17 | 2 |
| DP3/6321/20 | 2615 | 2380 | 5650 | 600 | 2110 | 160 | 2060 | 555 | 20 | 2 |
| DP3/6321/25 | 2615 | 2380 | 7050 | 600 | 2110 | 160 | 2060 | 555 | 25 | 2 |
| DP3/6321/30 | 2615 | 2380 | 8300 | 600 | 2110 | 160 | 2060 | 555 | 30 | 2 |
| RH602 | Screw-on extension shaft, 250 mm | | | | | | | | | |
| CA3/FX24/01 | Anchoring strap to click for an installation on ground with a water table | | | | | | | | | |

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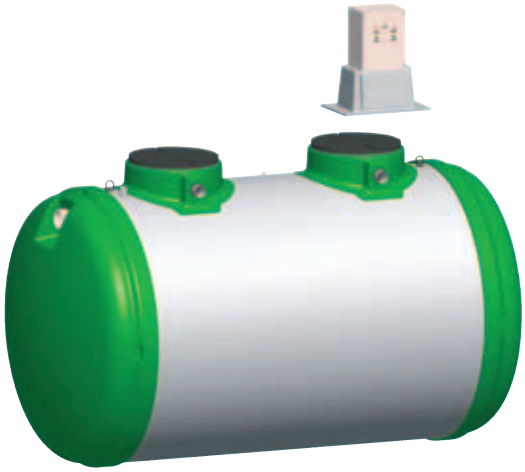
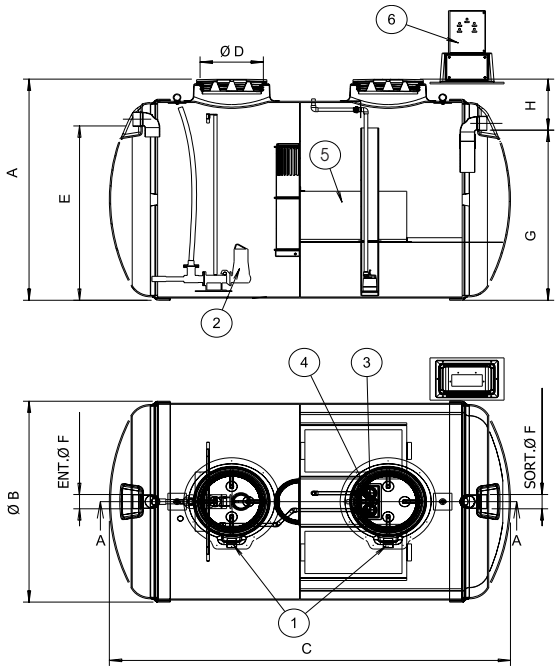
# OXYMOP 50-400 IE POLYESTER

**6334**






## Use

Treatment of domestic waste from 51 to 200 users.

## Technical Definition

• Water treatment plants with activated sludge developed in GRP tanks. They are composed by an aeration basin followed by a clarifier.
• A primary clarifier is needed upstream, see technical sheet 6321.

NOTE : Each project is subject to a specific study. For this, it is indispensable to know spot height for inlet and outlet level of the chain.

## Installation

• The installation of the tank must be in accordance with the instructions P050 or P053 (see pages 19 and 20).
• On hydromorphous ground or in the presence of groundwater, groundwater should not exceed the outlet water level
• Inoculate with biomass.
• A company authorized by SIMOP makes connections, testing and commissioning.

**1 - Aeration.**
**2 - Aerator.**
**3 - Sludge recirculation pump.**
**4 - Sludge disposal pump.**
**5 - lamellar decanter.**
**6 - Standard electrical box.**
**OPTIONS**
• **Screw-on extension shaft Ref. RH602.**
• **Anchoring strap Ref. CA3/FX24/01.**

## Maintenance

• Drainage of the primary clarifier once a year.
• Drainage of the Oxymop once a year to 2/3 of its volume.
• Maintenance contract required for maintenance and adjustments of the electromechanics

| Reference | | Dimensions in mm | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IE * mini/maxi | A | Ø B | C | Ø D | E | Ø F | G | H | Useful Volume ($m^3$) | Nb Frames | Weight kg | Primary decanter in $m^3$ |
| OXY3/6334/20 | 50/80 | 2615 | 2380 | 5650 | 600 | 2060 | 160 | 2010 | 605 | 20 | 2 | 1600 | 12 |
| OXY3/6334/25 | 81/110 | 2615 | 2380 | 7050 | 600 | 2060 | 160 | 2010 | 605 | 25 | 2 | 1900 | 17 |
| OXY3/6334/30 | 111/140 | 2615 | 2380 | 8300 | 600 | 2060 | 160 | 2010 | 605 | 30 | 2 | 2200 | 20 |
| OXY3/6334/35 | 141/175 | 2615 | 2380 | 9610 | 600 | 2060 | 160 | 2010 | 605 | 35 | 2 | 2500 | 25 |
| OXY3/6334/40 | 176/200 | 2615 | 2380 | 10930 | 600 | 2060 | 160 | 2010 | 605 | 40 | 2 | 2800 | 30 |
| RH602 | Screw-on extension shaft, 250 mm | | | | | | | | | | | | |
| CA3/FX24/01 | Anchoring strap to click for an installation on ground with a water table | | | | | | | | | | | | |

* Beyond 200 EH module, same combination of OXY3/6934 to achieve the desired capacity.

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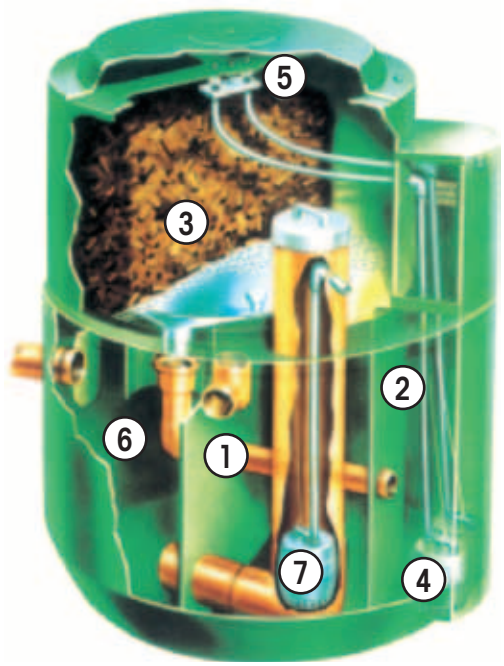
# COMPACT and BIOLOGICAL
## WATER-TREATMENT PLANT FILTRAPUR
CAPACITY FROM 50 TO 300 IE AND MORE

6344




**Type FC2N to FC6N**
**- Monobloc**
**- With clarifier / digester integrated**
**- Up to 50 Inhabitant Equivalents**

## Use

Water treatment plants FILTRAPUR® are designed to clean wastewater from tourist areas (hotels, campsites, holiday resorts...) of variable population or not and generally any group of isolated houses.

Depending on the sizing, it can provide up to 95% removal of organic carbon matter and meet nitrifaction. Very compact units FILTRAPUR ® can be easily integrated into the environment and have no odor nuisance.

Note :
- Models FC2N to FC6N do not require settling/digestion tanks contrary to the models FC7N to FC23N.
- Units FC20N to FC23N are double sets.
- The models can be adapted to the demand for higher discharge requirements.

## Selection Table

| Model of FILTRAPUR® | Reinforced Treatment | Standard Treatment |
|---|---|---|
| | Rejection Level (25/30/15)* | Rejection Level (25/30/50)* |
| | Inhabitant equivalents connected | |
| FC7 | 52 | 65 |
| FC9 | 68 | 85 |
| FC10 | 88 | 110 |
| FC11 | 104 130 | |
| FC12 | 120 | 150 |
| FC20 | 136 | 170 |
| FC21 | 176 | 220 |
| FC22 | 208 | 260 |
| FC23 | 240 | 300 |

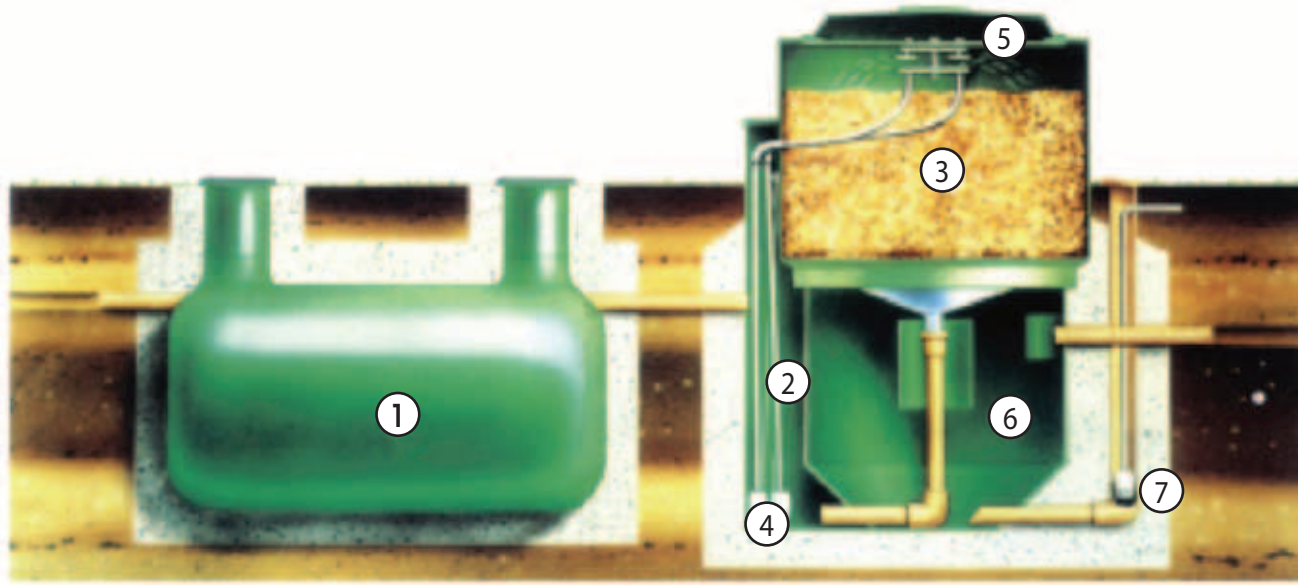
* : (BOD5, SS, TKN in mgl).

## Operation

- Waste water is introduced into the primary clarification compartment (1) where solid matter are removed by gravity. Clarified water is then blended with recycled water by passage through a second compartment (2) and then pumped (4) on the biological unit.
- Pumped water is distributed on the filter material by regular spraying (5) then percolates through it to be purified by micro-organisms which grow in the bacterial filter. (3) A part of the purified water is returned to the pumping compartment (2) to ensure a permanent recirculation on the bacteria filter.
- The other part undergoes a final settling in the clarification compartment (6). The latest settleable solids are eliminated before discharge of the treated water. At regular intervals, a recirculation pump (7) returns the treated effluent into the primary clarification compartment placed at the top. This ensures a regular load on the purification unit.
- Models FILTRAPUR ® FC2N FC6N to have an integrated primary clarification chamber, which simplifies the installation of the unit. For larger sizes, FC7N to FC23N, it is necessary to provide a clarification/digestion device before the biological plant.

# COMPACT and BIOLOGICAL
## WATER-TREATMENT PLANT FILTRAPUR
CAPACITY FROM 50 TO 300 IE AND MORE

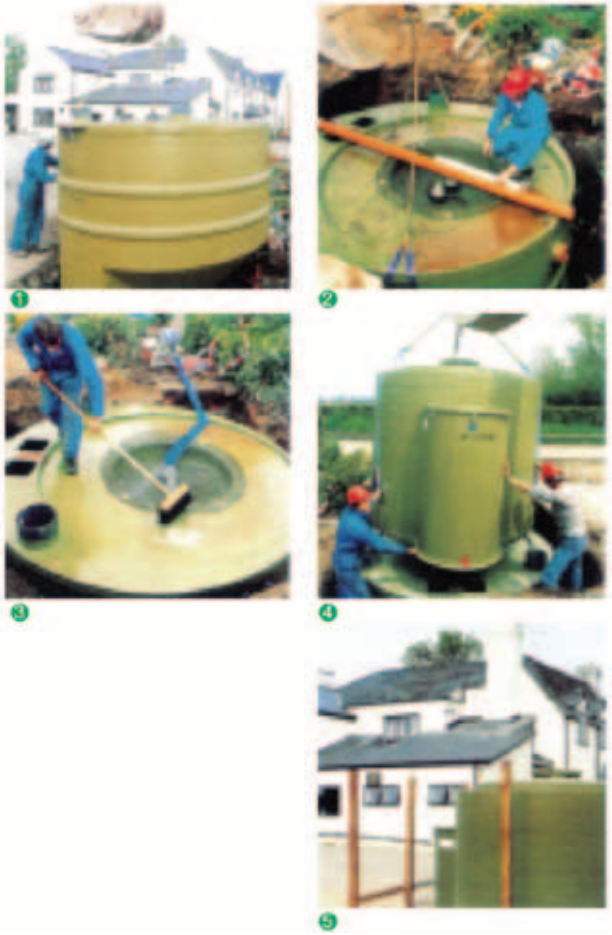
**6344**




**FC7N to FC23N type**
**- With clarifier / digester at the head**
**- From 65 to 300 Inhabitant Equivalents**

## Installation

Quick and easy installation :
1 - Installation of the lower compartment on a concrete bed.
2 - Install on a level and calibrate.
3 - Ballasting by filling with water before sealing or infilling.
4 - Installing the biological floor.



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# GRISIMOP
## GREY WATER TREATMENT

**6070**

## ADVANTAGES

- This greywater recovery system saves from 40% to 50% drinking water (depending on the installation type).
- Easy and discreet installation.
- Low power consumption.
- Quick amortization.
- Do not generate waste.
- Easy maintenance...

## Definition

GRISIMOP is a treatment plant reusing greywater from showers and sinks. After filtration and disinfection, greywater is reused mainly for watering gardens (excluding spray irrigation) and for toilets. This greywater treatment system has been designed for domestic and industrial applications.

**Applications** :
- Housing - apartments, buildings...
- Tourism - camp sites, hotels...
- Leasure - sports halls, swimming pools...

This greywater reuse system saves 40% of the consumption of drinking water. In some types of applications, we can even reduce water consumption by 50%.

**The GRISIMOP consists of** :
- a tank for greywater coming from showers, sinks (not included and to be determined according to the context) ;
- a greywater tank filtered and disinfected (not included to be determined according to the context) ;
- a filtration unit ;
- a pumping unit ;
- UV disinfection equipment ;
- chlorination equipment .

## Maintenance

Maintenance as well as system maintenance depends mainly on the nature of greywater and the destination of the treated water. The maintenance of this system is easy and requires no special qualifications. The main interventions of maintenance are :
- Check the operation of the float in the treated water reservoir every month
- Check the operation of the UV lamp and change it if necessary.
- Check the operation of the different pumping systems.
- Renovate the filtering material every year.

## Operation

The design of water storage tanks is carried from the volume of greywater which can be generated (shower, sinks,...) or according to treated water needs depending onapplications.

Greywater is stored in a first tank, they are then sent to the filter device via the pump «filtration».

The filtration device consists of a sand filter of small particle size so as to retain suspended solids in water. This filter is automatically washed with treated water every 7 days when the pressure becomes too important (clogging). The maximum pressure filtration is 2.5 Kg/cm2 (35.5 PSI).

Then, the filtered water passes through the UV device which destroys pathogenic micro-organisms by oxidizing them. The UV lamp has a service life of 8000 hours (12 months).

Once the UV lamp stops functioning, the filtration system is locked to prevent any contamination. In this case the connection to the drinking water system is automatically performed.

Once filtered and disinfected, water is stored in a second reservoir.

The system filters and disinfects the water accumulated in the tank several times a day as needed.

Then, the treated water is sent to the network by an impulse pump when a pressure drop is observed. Water tanks have an overflow system in case of overfilling

| Références | | GR6070/02 | GR6070/06 | GR6070/10 |
|---|---|---|---|---|
| Maximum treated volume ($m^3$/day) | | 48 | 144 | 240 |
| Dimensions of the compact equipment (mm) | Length | 700 | 700 | 700 |
| | Height | 1250 | 1250 | 1250 |
| | Width | 680 | 600 | 600 |
| Dimensions of the filtration equipment (mm) | Diameter | Included in the compact equipment | 500 | 900 |
| | Height | | 700 | 1145 |

**Option** : DOSCOL, coloring jigger

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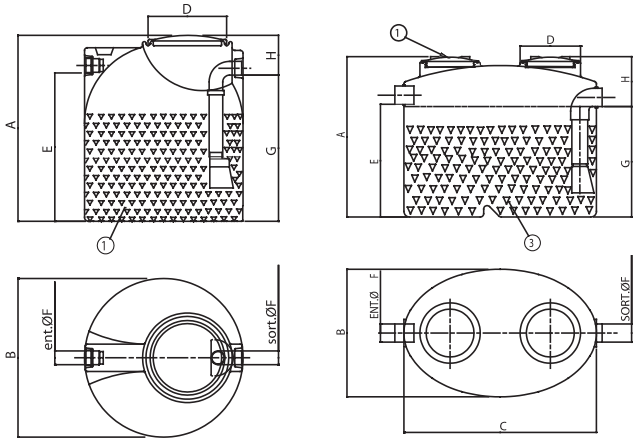
# PRE-FILTERS POLYETHYLENE

**6365**




**1 - Screw-on cover**
**OPTION**
**2 - Pozzolan.**

## Use

To retain suspended solids.

## Definition

- The polyethylene pre-filter is used for retaining suspended solids.
- It is placed downstream of a liquefier (all-water tank, decanter digester) upstream of an underground spreading system or drained filter bed.

## Maintenance

The device made of PE is corrosion resistant and requires no maintenance.

- Check monthly the filter materials. Aspirate the supernatant at least once a year.
- On average, the filter material is changed every 2 years.

## Installation

- The device will be buried outside a building and must be installed on a perfect level. It must be buried outside of a place of passing vehicles.
- The cover must reach the natural ground level and will always remain accessible for maintenance. The bottom of the hole must be perfectly flat and covered with 10 cm of sand. Backfill with sand, never stone or gravel.
- The device is filled with pozzolan or other filter material with a regular granulation between 40 and 50 mm. This is done before or at the same time as the infilling.
- If the cover can not reach the ground level, a concrete slab must be poured resting on stable ground in order to withstand the strains imposed.

| Reference | Dimensions in mm | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | Ø B | C | Ø D | E | Ø F | G | H | useful volume (litrers) | pozzolan Ref. PZO1 (Nb of bags) |
| DEC2/0801 | 1130 | 1119 | 1694 | 400 | 760 | 160 | 740 | 390 | 800 | 13 |
| DEC2/1001 | 1350 | 1160 | – | 500 | 1090 | 160 | 1070 | 280 | 1000 | 16 |
| DEC2/2001 | 1500 | 1550 | – | 500 | 1240 | 160 | 1190 | 310 | 2000 | 33 |
| DEC2/3001 | 1500 | 1930 | – | 500 | 1250 | 160 | 1200 | 300 | 3000 | 50 |
| DEC2/4001 | 1840 | 1930 | – | 500 | 1590 | 160 | 1540 | 300 | 4000 | 66 |
| DEC2/5001 | 1840 | 2400 | – | 500 | 1480 | 160 | 1430 | 410 | 5000 | 83 |
| DEC2/6001 | 2010 | 2400 | – | 500 | 1660 | 160 | 1610 | 400 | 6000 | 100 |
| RH 2601 | Extension shaft to be laid down for DEC2/0801 | | | | | | | | | |
| RH 500 | Extension shaft to be laid down | | | | | | | | | |

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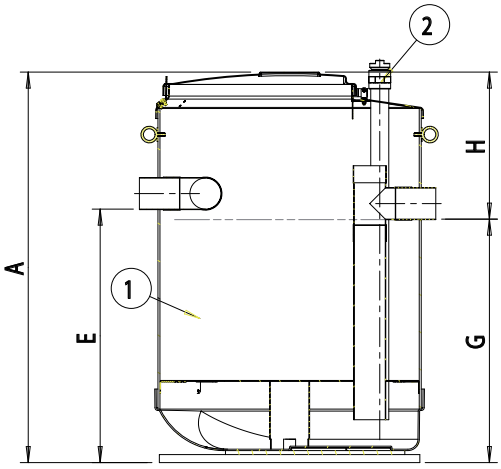
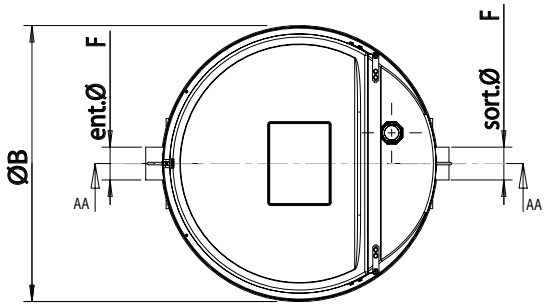
# PREFILTERS WITH FLOOR AND CLEANING COLUMN
## FOR FILTER MATERIAL IN POZZOLAN
## POLYESTER

**6367**




**1 - filter material (not supplied).**
**2 - Cleaning Column.**

## Use
To retain suspended solids..

## Definition
- The prefilter also known as clogging indicator, must be installed after an all-water tank or decanter digester to prevent premature clogging of downstream facilities (spreading systems, filter beds...).
- The prefilter has a fuse role. It is operational after filling with pozzolan (independent supply - see sheet 6095), which traps suspended solids.

## Installation
- The device will be buried outside a building and must be installed on a perfect level. It must be buried outside of a place of passing vehicles.
- The cover must reach the natural ground level and will always remain accessible for maintenance. The bottom of the hole must be perfectly flat and covered with 10 cm of sand. Backfill with sand after filling with water of the device. The implementation of the filter material is made after infilling.
- Inlets and outlets must be ventilated.
- the pre-filter must be filled done with pozzolan, mineral filter material, heavy (regular granulometry between 20 and 40 mm).

## Maintenance
- Check the filter materials. Aspirate the supernatant at least once a year.
- Make a partial cleaning by backwashing with water from the cleaning column. If clogging persists, check if the all-water tank or decanter digester should not be drained.
- On average, the filter material is changed every 2 years.

| Reference | Basic equipment | | | | | | Obligatory Option | |
|---|---|---|---|---|---|---|---|---|
| | A | B | E | F | G | H | Pozzolan volume (liters) | pozzolan Ref. PZ01 (Nb of bags) |
| DEC3/6367/10 | 1950 | 1335 | 1265 | 160 | 1215 | 735 | 1000 | 17 |
| DEC3/6367/15 | 1955 | 1635 | 1260 | 160 | 1210 | 745 | 1500 | 25 |
| DEC3/6367/20 | 2155 | 1635 | 1460 | 160 | 1410 | 745 | 2000 | 34 |
| DEC3/6367/25 | 2095 | 1938 | 1360 | 160 | 1310 | 785 | 2500 | 42 |
| DEC3/6367/30 | 2295 | 1938 | 1560 | 160 | 1510 | 785 | 3000 | 51 |
| DEC3/6367/40 | 2380 | 2340 | 1660 | 160 | 1610 | 770 | 4000 | 68 |
| DEC3/6367/50 | 2580 | 2340 | 1860 | 160 | 1810 | 770 | 5000 | 85 |
| DEC3/6367/60 | 2830 | 2340 | 2110 | 160 | 2060 | 770 | 6000 | 102 |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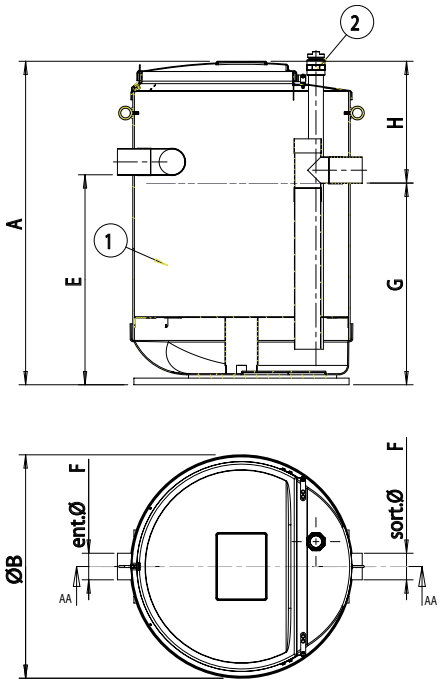
# PREFILTERS WITH FLOOR
## FOR FILTER MATERIAL IN ROTPROOF HDPE CELLS
## POLYESTER

**6368**

## USE
To retain suspended solids.

## Technical Definition
- The prefilter also known as clogging indicator, must be installed after an all-water tank or decanter digester to prevent premature clogging of downstream facilities (spreading systems, filter beds...).
- The prefilter has a fuse role. It is delivered with the filter material. Suspended solids are trapped by the filter material contained in the prefilter.
- Cells ETC 200 in HDPE, synthetic, rotproof and stable material, have comparable efficacy to pozzolan for a lower weight (300 m²/m3 specific surface, porosity of 90%, density 70 kg/m3). These spheres are delivered inside a string bag of a net volume of about 500 liters, a weight of 35 kg. Greater ease in handling during maintenance operations because they require no hoist.

## Installation
- The device will be buried outside a building and must be installed on a perfect level. It must be buried outside of a place of passing vehicles.
- The cover must reach the natural ground level and will always remain accessible for maintenance. The bottom of the hole must be perfectly flat and covered with 10 cm of sand. Backfill using sand or gravel. Fill the device with clean water up before carry out lateral backfill.
- Inlets and outlets must be ventilated.




**1 - Filter material. Ref. ETC200.**
**OPTIONS**
**2 - Cleaning column from 1000 to 4000 L, Ref. KOD3/DEC10A40 and 5000-6000 L, Ref. KOD3/DEC50A60.**
- **Support. No. KREL4-089-017.**
- **Bracket 150 kg. Ref. KREL4-089-15.**

## Maintenance
- Aspirate the supernatant at least once a year.
- Remove the string bags then wash to the water jet and replace them after drainage of the prefilter.
- If the option «cleaning column» was ordered, the filter material can be cleaned by backwashing with clean water.

| Reference | Dimensions in mm | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | Ø B | E | Ø F | G | H | Material volume (liters) |
| DEC3/6368/10 | 1950 | 1335 | 1265 | 160 | 1215 | 735 | 1000 |
| DEC3/6368/15 | 1955 | 1635 | 1260 | 160 | 1210 | 745 | 1500 |
| DEC3/6368/20 | 2155 | 1635 | 1460 | 160 | 1410 | 745 | 2000 |
| DEC3/6368/25 | 2095 | 1938 | 1360 | 160 | 1310 | 785 | 2500 |
| DEC3/6368/30 | 2295 | 1938 | 1560 | 160 | 1510 | 785 | 3000 |
| DEC3/6368/40 | 2380 | 2340 | 1660 | 160 | 1610 | 770 | 4000 |
| DEC3/6368/50 | 2580 | 2340 | 1860 | 160 | 1810 | 770 | 5000 |
| DEC3/6368/60 | 2830 | 2340 | 2110 | 160 | 2110 | 770 | 6000 |
| KREL4-089-017 | Support 150 kg | | | | | | |
| KREL4-089-15 | Bracket 150 kg | | | | | | |

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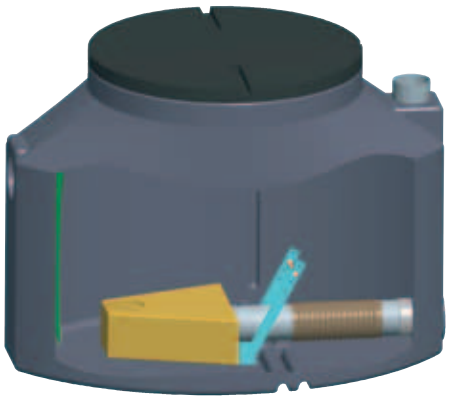
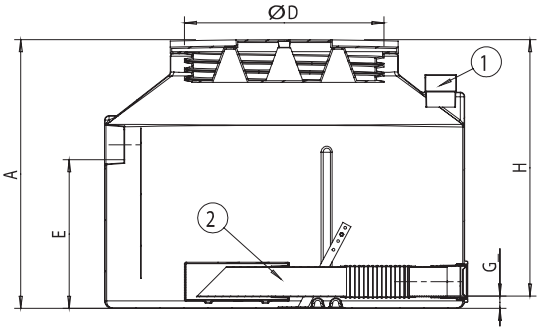
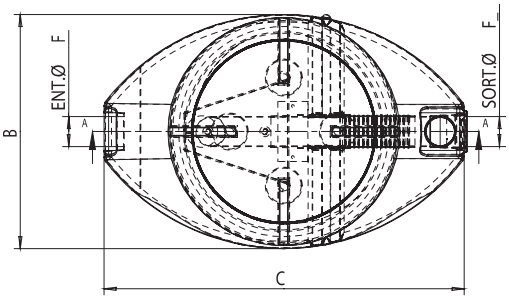
# FLOATING BUCKET POLYETHYLENE

**6376**






## Use

Allows a homogeneous supply by batches of the spreading system or filtration unit.

## Definition

- Equipment of pretreated domestic wastewater allowing sequential supply of a waste disposal system.
- Downstream from a primary treatment unit such as all-water tank or decanter digester.

## Installation

The device must be buried as close as possible to the pretreatment unit.

- The bottom of the excavation must be perfectly flat and covered with at least 10 cm of sand.
- The embankment is made using washed sand, never stone, gravel or earth.
- Prior to backfilling, fill the tank with clean water up to the maximum level before fillign of the float.
- If vehicles drive over the area less than 3 meters away, a concrete slab must be poured resting on stable ground to withstand the strains imposed without taking support on the device.
- The cover must remain accessible for maintenance. In the presence of water table or damp ground, please consult our engineering department.

**1 - Aeration.**
**2 - Calibrated float.**
**OPTION**
- **Screw-on extension shaft height 250 mm. Ref. RH602.**

## Maintenance

- Clean the float and the bottom of the tank once a year.
- Check the condition of the fuse which is a wearing part.

| Reference | Dimensions in mm | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number EH | A | B | C | Ø D | E | Ø F | G | H | batches volume (liters) |
| AF2/6376/0200 | 15-30 | 895 | 780 | 1200 | 600 | 495 | 100 | 50 | 845 | 200 |
| AF2/6376/0400 | 35-50 | 1095 | 780 | 1200 | 600 | 695 | 100 | 50 | 1045 | 400 |
| AF2/6376/0600 | 55-70 | 960 | – | 1710 | 600 | 570 | 160 | 50 | 910 | 600 |
| AF2/6376/0800 | 75-90 | 960 | – | 1710 | 600 | 570 | 160 | 50 | 910 | 800 |
| AF2/6376/1000 | 95-130 | 1030 | – | 1710 | 600 | 640 | 160 | 50 | 980 | 1000 |
| AF2/6376/1500 | 135-180 | 1290 | – | 1710 | 600 | 900 | 160 | 50 | 1240 | 1500 |
| AF2/6376/2000 | 185-200 | 1385 | – | 1930 | 600 | 1000 | 160 | 50 | 1335 | 2000 |
| RH 602 | Screw-on extension shaft, height 250 mm | | | | | | | | | |

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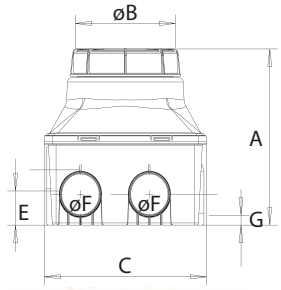
# CONNECTING BOXES
## POLYETHYLENE

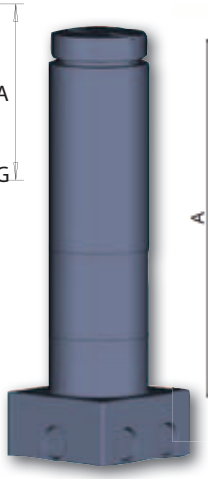
**6060**

## Use
Downstream or upstream from the filter.

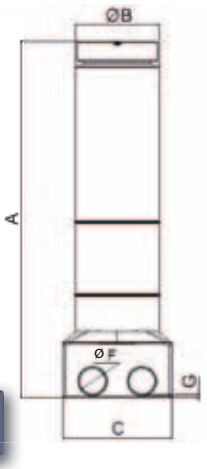
## Definition
- Used for a better transit of the effluent in accordance with standard XP DTU 64.1.
- Facilitates the maintenance of the pipes and effluent samples.
- Impermeable to parasite water
- Insensitive to H2S.




**Repartition and closure box**
**REP2/04/04**

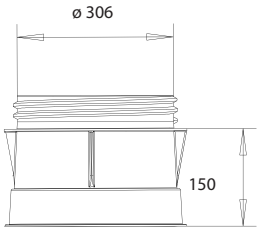


**Collecting box**
**REC2/02/13**



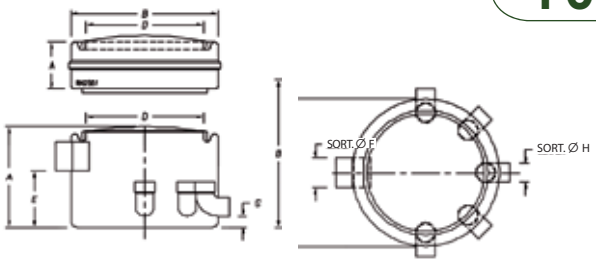

| Reference | Dimensions in mm | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | E | Ø F | G |
| REP2/04/04 | 420 | 306 | 400 | 50 | 100 | 10 |
| REC2/02/13 | 1300 | 306 | 400 | 10 | 100 | 10 |
| RH2/03/15 | Screw-on extension shafts in polypropylene Ø 306 - useful height150 mm | | | | | |
| RH2/02/30 | Screw-on extension shafts in polypropylene Ø 306 - useful height 300 mm | | | | | |

**Extension shaft**
RH2/03/15




# EFFLUENT DISTRIBUTOR
# POLYETHYLENE

**6369**




## Use
Ensures an equal distribution of effluent.

## Definition
An effluent distributor is a device used for ensuring an equal distribution of the effluents in the spreading systems or before tanks or decanters laid in parallel.

## Installation
- Meet requirements of the standard XP DTU 64.1.
- For the installation of distributors (excavation and installation), the main points to observe are :

- The realization of a bed of 0.10 m thick.
- The flatness of the manhole after installation.
- The surface filling with sand.
- Accessibility and visibility of manholes.

## Maintenance
- Periodically clean the unit with water.
- Reminder : the device is delivered with a shutter which will be used to lock an outlet to make easier self-cleaning or maintenance.

| Reference | Dimensions in mm | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | Ø B | Ø D | E | Ø F | G | Ø H |
| REP2/500 | 580 | 790 | 630 | 300 | 160 | 60 | 100 |
| RH2301 | 250 | 790 | 630 | | | | |

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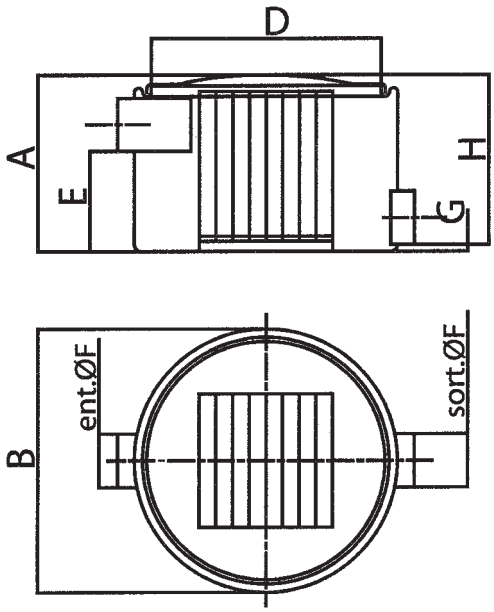
# GRIT CHAMBERS
POLYETHYLENE

6360




## Use
Protects a waste water treatment plant by collecting the objects larger than 50 mm.

## Definition
A grit chamber is used to separate and discharge bulky materials in the effluent which may affect the operation of the installation. We offer DG2 with a high density polyethylene tank equipped with a rake basket (galvanized round bar). The spacing between the bars is 50 mm.

## Installation
The device will be installed outside a building and will be laid perfectly level.
- It will be buried in a zone protected from vehicles passing. The cover should be level with the finished ground and remain accessible for maintenance. The bottom of the excavation must be covered with 10 cm of sand. The embankment is made using sand, never stone or gravel
- Using extension shafts is not recommended for easy handling of the basket.

## Maintenance
- Eliminate all matter refused by screening which will be removed with household waste.
- Rinse the device with clean water.

| Reference | Dimensions in mm | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | A | B | Ø D | E | Ø F | G | H | Total volume (liters) |
| DG2/6360/02 | 500 | 790 | 740 | 300 | 160 | 20 | 480 | 200 |

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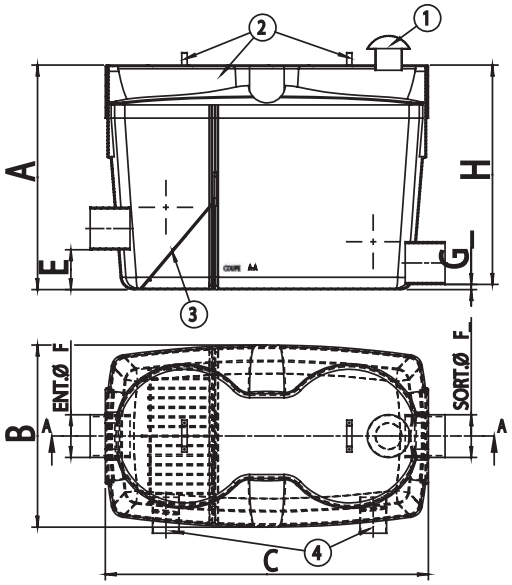
# GRIT CHAMBERS
# POLYCOMPOSITE

**6362**




## Use

Protects a waste water treatment plant by collecting the objects larger than 30 mm.

## Definition

The DG3 in polycomposite is equipped with a stainless steel inclined grid with bars spaced enough to retain only large objects. The grit chamber is equipped with an overflow. The spacing between the bars is 30 mm.

**1 - Aeration ND 100.**
**2 - Removable cover with handles.**
**3 - Stainless steel inclined grid.**
**4 - Bypass ND100.**
**OPTIONS**
- **Rake basket. Ref. SPI044.**

## Installation

- The device will be installed outside a building and will be laid perfectly level.
- It will be buried in a zone protected from vehicles passing. The cover should be level with the finished ground and remain accessible for maintenance. The bottom of the excavation must be covered with 10 cm of smoothed cement-treated. The embankment is made with lean concrete containing 200 kg/m3.
- Connect the bypass using a PVC pipe ND 100.

## Maintenance

- Eliminate all matter refused by screening which will be removed with household waste. The optional rake basket is highly recommended for an easier operation.
- Rinse the device with clean water.

| Reference | Dimensions in mm | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | A | B | C | E | Ø F | G | H | Total volume (liters) |
| DG3/6362/02 | 845 | 685 | 1215 | 150 | 160 | 20 | 825 | 200 |
| SPI 044 | Stainless steel rake basket | | | | | | | |

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# INSTALLATION SHEET HORIZONTAL BURIED TANKS (OUTSIDE STORAGE TANKS) IN POLYESTER

## HORIZONTAL, STABILIZED, NON-FLOODED GROUNDS (GROUND WITH NO WATER TABLE)

P050

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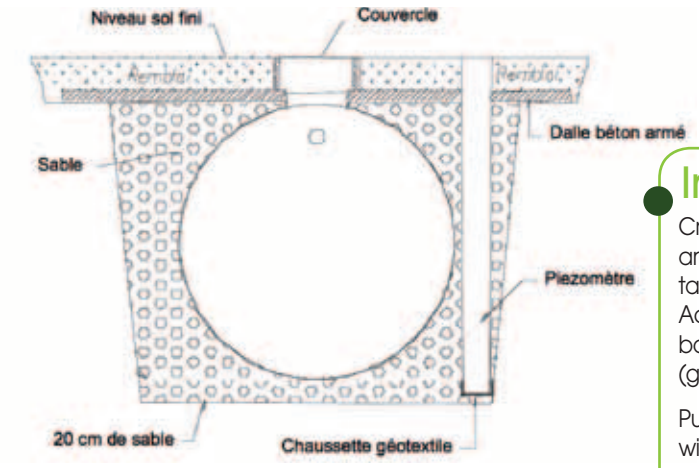



## Handling

The tanks must be handled using chain slings to hang on the hoist rings on top of the ring-like and with a hoist (not lift with forks) adapted to the volume of the tank.

- Chain slings must be provided by the installation company.
- Expect the accessibility of transport suitable for location (possible accessibility of tractor-trailers or heavy loads).

NOTA : For tanks over 6 meters long, it is recommended to use a spreader (not supplied) suitable for lifting the tank and according to the weight of this tank.

## Terracing

Dig a separate hole for each tank.
The walls mus allow a space of about 50 cm around the tank. The bottom of the sloping which creates a barricade of earth must be at least 4 m around the tank.

## Installing the tank

Create a bed using a 20 cm thick layer of sand, erected and completely leveled in all directions. Then position the tank on a level and connect the inlet and outlet piping. According to the topography, carry out a drainage in the bottom of the search with disposal by gravity to an outfall (gap, stream).

Put in place the piezometer Ø 315 mm minimum which will be closed at this lower end by a geotextile sock (this geotextile sock is used to control the water level around the tank during the drainings).

1st phase : use 50 cm sand all around the tank .

2nd phase : Fill the tank of 50 cm water.

Phase 3 : Repeat phases 1 and 2 until the manholes' level. a hydraulic clamping by water logging is recommended ; in case of migration risk of the fine particles between the backfill and the environment, it is necessary to place an anti-contaminant geotextile between the backfill and the environment. Top soil can be used for the upper level of fill at a maximum height of 50 cm above the upper cone of the tank. (Use polyethylene or GRP extension shafts to position the tank cover at the final level of the ground).

Special precautions :

A self-supporting armoured concrete slab is to be laid just above the tank's upper cone once the lateral backfil has been completed and the tank filled. This slab must rest on stable ground which must be non-turned in the following cases :

1/ If there is backfill in excess of 50 cm above the tank's upper cone.

2/ If there is occasional overload due to vehicles driving less than 4 m away from the edge of the hole.

3 / If extension shafts in concrete are to be used.

4 / If there are overload due to extreme climatic conditions.

## Drainage

Before carrying out draining, ensure that there is no water in the piezometer.

If water is present, carry out draining later or empty water contained in the piezometer using a pumping station during the drainage and until the device is filled with water.

Then, inform the contractor about these operations to carry out the next drainings.

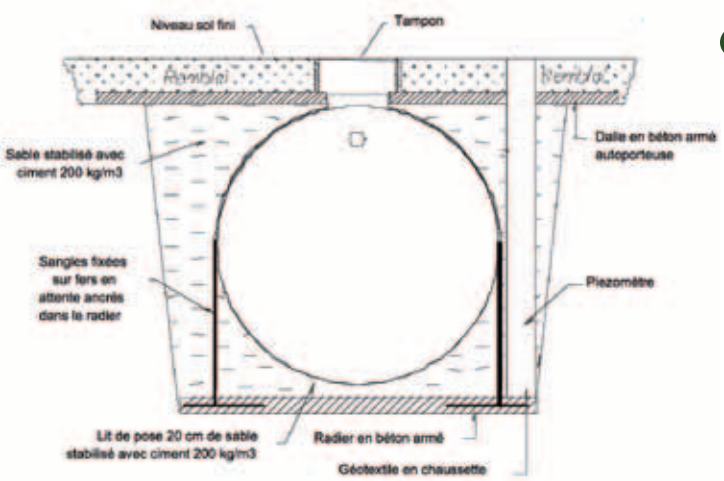
**Caution** : The installation instructions above only applies on horizontal, stabilized, non-flooded grounds and ground with no water table.

# INSTALLATION SHEET POLYESTER TANK

TECHNICAL SHEETS 6009, 6323, 6405 AND 6313

ON CLAY AND/OR HYDROMORPHOUS SOILS
(PRESENCE OF GROUNDWATER)

**P053**




## Handling

The tanks must be handled using chain slings to hang on the hoist rings on top of the ring-like and with a hoist (not lift with forks) adapted to the volume of the tank.

- Chain slings must be provided by the installation company.

- Expect the accessibility of transport suitable for location (possible accessibility of tractor-trailers or heavy loads).

NOTA : For tanks over 6 meters long, it is recommended to use a spreader (not supplied) suitable for lifting the tank and according to the weight of this tank.

## Terracing

Beware : the altimetric positioning of the tank must be calculated in such a way that the level of the ground water is not above that of the tank's upper cone.
Dig a separate hole for each tank and if necessary, push down the ground water until after backfilling work for the device has been carried out.
The walls must allow a space of about 50 cm around the tank. The bottom of the sloping which creates a barricade of earth must be at least 4 m around the tank.

## Installing the tank

Pour a reinforced concrete slab with a side implantation of Tor irons forming a loop, these irons will be used to fasten anchoring straps to counteract buoyancy.

On the concrete slab, Create a bed using stabilized sand with cement 200kg/m3 compacted to 20 cm high, erected and completely leveled in all directions. Then position the tank on a level and connect the inlet and outlet piping. Put in place the piezometer Ø 315 mm minimum which will be closed at this lower end by a geotextile sock (this geotextile sock is used to control the water level around the tank during the drainings).

Carrying out the lateral backfill :
1st phase : use 50 cm stabilized sand with cement 200kg/m3 all around the tank.
2nd phase : Fill the tank of 50 cm water.
Phase 3 : Repeat phases 1 and 2 until the manholes' level.
Notwithstanding lateral backfill : in the case of implantation on non-clay, without steep and stabilized ground, it is possible to replace stabilized sand with cement 200 kg/m3 by sand (no backfill with earth or other) .
Carrying out superior backfill :
Possibility of backfilling with topsoil on a maximum height of 50 cm above the upper cone of the tank (Use polyethylene or GRP extension shafts to position the tank covers at the final level of the ground).

### Special precautions

A self-supporting armoured concrete slab is to be laid just above the tank's upper cone once the lateral backfil has been completed and the tank filled. This slab must rest on stable ground which must be non-turned in the following cases :

1/ If there is backfill in excess of 50 cm above the tank's upper cone.

2/ If there is occasional overload due to vehicles driving less than 4 m away from the edge of the hole.

3 / If extension shafts in concrete are to be used.

4 / If there are overload due to extreme climatic conditions.

Note : Provide manhole compatible with any moving load.

## Drainage

Complete drainage in the end of the summer with cleaning and suction of the deposits from the bottom of the tank before filling up device in winter.

# Glossary

**AEROBIC**
Refers to a process performed in the presence of oxygen.

**ANAEROBIC**
Refers to a process that does not require oxygen.

**ON-SITE SANITATION**
Sanitation performing collect, pretreatment, treatment, infiltration or discharge of domestic wastewater buildings not connected to public sewer (see Decree dated May 6th 1996 on technical requirements, art.1).

**GREASE TANK OR GREASE TRAP**
Device used for grease separation by flotation.

**SLUDGE**
Settled matter which settles to the bottom of the all-water tank.

**ACTIVATED SLUDGE**
Treatment process based on the activity of bacteria flowing freely in especially oxygenated conditions.

**BOD5**
Biochemical Oxygen Demand in 5 days (measure of the biodegradable pollution).

**CHAIN DEFINITION**
Procedure to choose the adapted on-site sanitation chain (type, size ...), according to the constraints of the studied plot (soil, slope, available area,...).

**GREYWATER**
Water from bathrooms, kitchens, laundries, sinks,...

**RAIN WATER**
Water from roofs and impervious surfaces. Rainwater should never be allowed in either the all-water tank or in the treatment system.

**DOMESTIC WASTEWATER**
Mixture of soils water and grey water.

**SOILS WATER**
Water from the toilets.

**EFFLUENT**
Wastewater coming from the house or all-water tank.

**SPREADING SYSTEM**
System collecting pretreated water (from the all-water tank for example) allowing their purification by percolation into the ground or into a massive of filtered material restored.

**UNDERGROUND SPREADING**
System using ground as cleaner system and receiving environment.

**TREATMENT**
Comprehensive treatment of domestic effluents which kill most of pollution before discharge to environement.

**STUDY OF SOIL**
It determines the nature of the soil, particularly on the basis of the original material, depth, observed textures, permeability and potential logging appreciations, in order to evaluate the ability of the soil to purge and evacuate domestic wastewater.

**OUTFALL**
Receiving environment of treated water.

**GEOGRID**
Fabric with large mesh (from 500 microns up to about 1 mm for on-site sanitation) installed between two layers of granular material.

**GEOTEXTILE**
Nonwoven material, permeable to water and air, insensitive to the action of bacteria or fungi, used for separating layers of materials of different particle sizes.

**HYDROMORPHOUS**
Refers to a waterlogged area, either permanently or at certain times of the year.

**INFILTRATION - PERCOLATION**
Treatment process which consists in filtering the contaminated water through a visible sand body.

**SUSPENDED SOLIDS**
Organic or mineral particulate materials recoverable by filtration or centrifugation.

**MIDWATER SURFACE**
Natural or built environment where treated water of drained systems is discharged (ex streams).

**WATER TABLE**
Groundwater capable of supplying springs or wells.

**PEDOLOGY**
Soil science.

**PERMEABILITY**
Characteristic value of the ability of a soil to infiltrate water.

**HIGH AERATION**
Pipe which leads to the roof of the house, above the inhabited rooms, used for the ventilation of the all-water tank or septic tank.

# NOTE

# NOTE



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