



One piece PE tanks,
seamless,
for wastewater depuration
and for sludge storage

Tec nical Handbook



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This technical handbook collects and describes the latest **ISEA**, products, coming from research and development in waste water treatments spanning the last 10 years.

Its history has enabled it to achieve a position of leadership in the European market of prefabricated plants made of rotomoulded PE. Moreover, the certificate of Quality Assurance issued by the Lloyd's Register gives the company added prestige.

This handbook is specifically designed to fulfil all users needs, giving clear and complete explanations .

In addition to plant technical data, in fact, three sections are provided in each product paper:

- ENGINEERING SECTION:
where all information for technical specifications can be found
- INSTALLER SECTION:
where information and drawings for a correct, efficient and simple installation can be found.
Indications on maintenance are also included.
- USER SECTION:
where information on routine operations can be found.



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**HYDROCARBON
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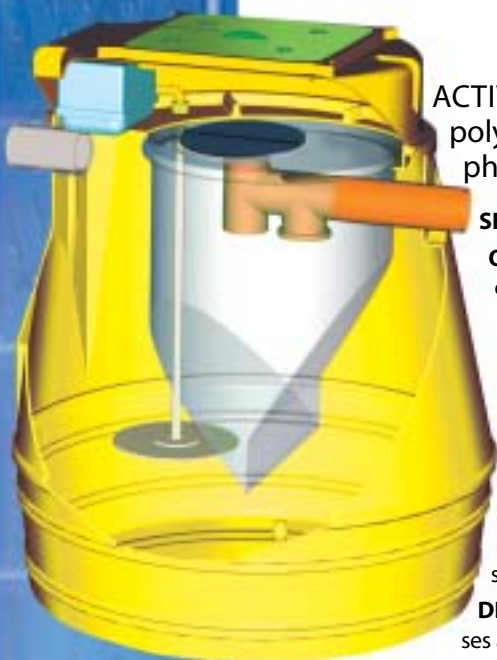
**GRIDS, FLOW PARTITIONERS,
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**INSTALLATION
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ACTIVATED SLUDGE PLANT, **SUPER PLUS**, entirely made of polyethylene, in one piece, seamless, composed of the following phases:

SEWAGE INLET through a polypropylene pipe section.

OXIDATION of the incoming sewage. An air-blower is positioned in a special compartment inside the plant and it feeds air to the waste water.

It works continuously and it is absolutely silent. Air allows aerobic micro-organisms to perform organic material removal.

AIR DIFFUSION by means of epdm uncloggable membrane diffusers, delivering fine bubbles.

SETTLING of solids carried by the flow from the oxidation. This phase is performed in a partition of the plant volume, where stillness and appropriate retention time are granted.

SLUDGE DIGESTION at the bottom of the oxidation tank where settled solids are stored.

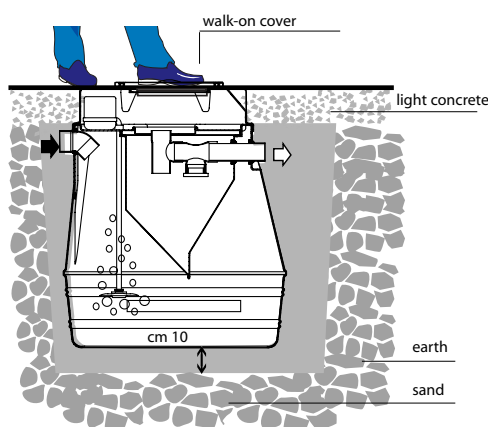
DISINFECTION of the oxidised and clarified flow. A chlorine tablet continuously releases active reactant to the outlet flowing on top of it.



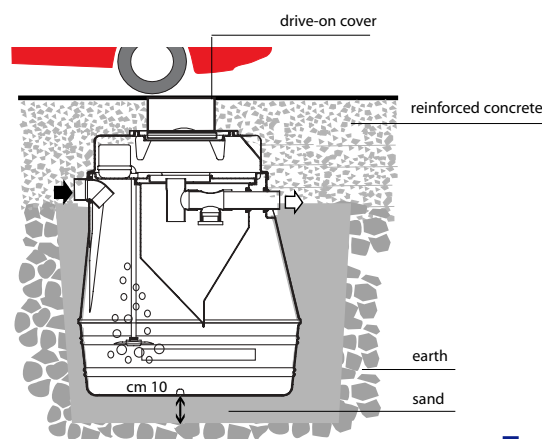
Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5mm, dampen the sand and level it. Lay the plant down. Connect **SUPER PLUS**'s outlet pipe to an inspection chamber by means of a Ø..... pipe. Connect the general discharge pipes to the **SUPER**'s inlet pipe by means of a polypropylene or PVC pipe having Ø..... Fill the tank with clean water and proceed with dampened sand filling

of the gaps around it. Finish with a 5 cm thick light concrete casting (or with a 25 cm thick reinforced concrete in case of car passage on top of the plant). Always install a siphon in front of the plant, in order to avoid odour to go back inside the house. In case there is no venting column, it is necessary to connect a PVC Ø 2" pipe to the auxiliary venting connection foreseen on the plant. This pipe has to go as far up as the house roof.

WALK-ON SOLUTION



DRIVE-ON SOLUTION

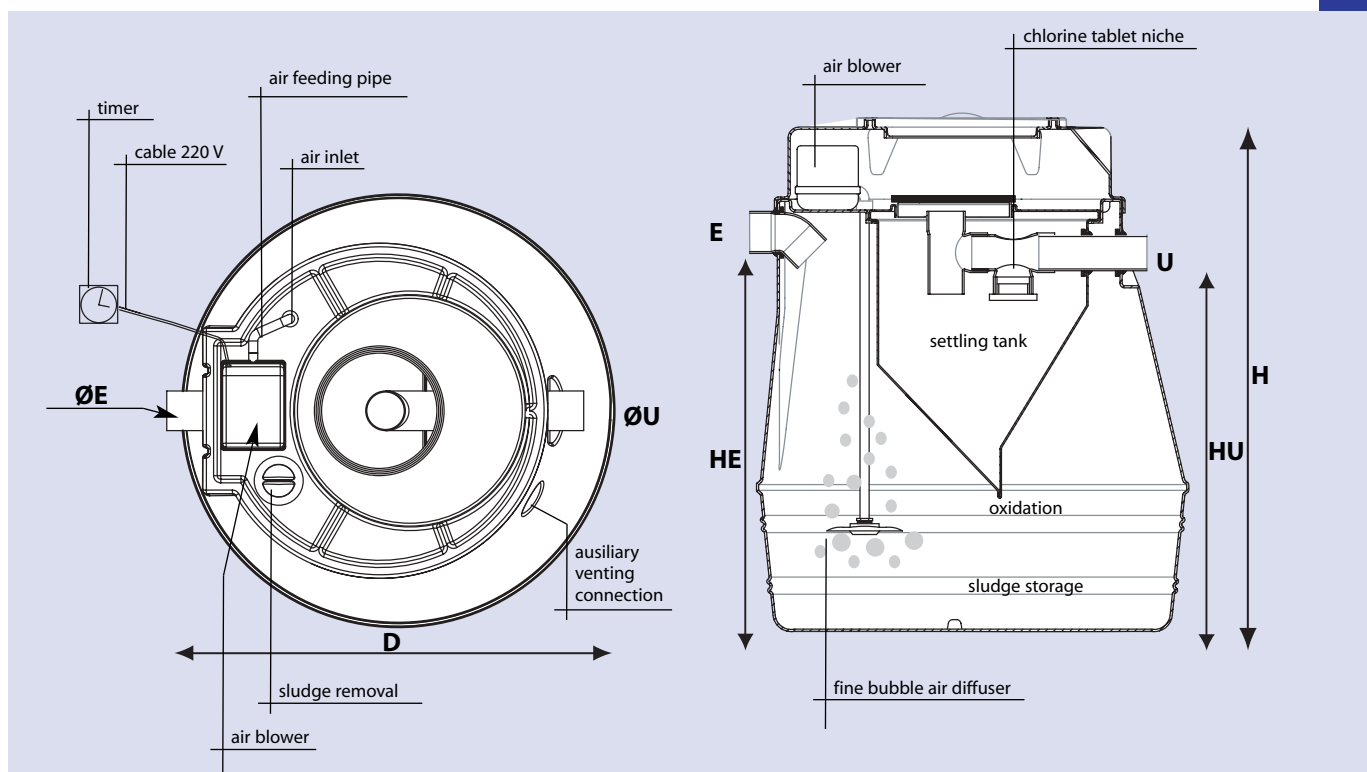


To obtain further information please read the installation use and maintenance booklet attached to the plant.



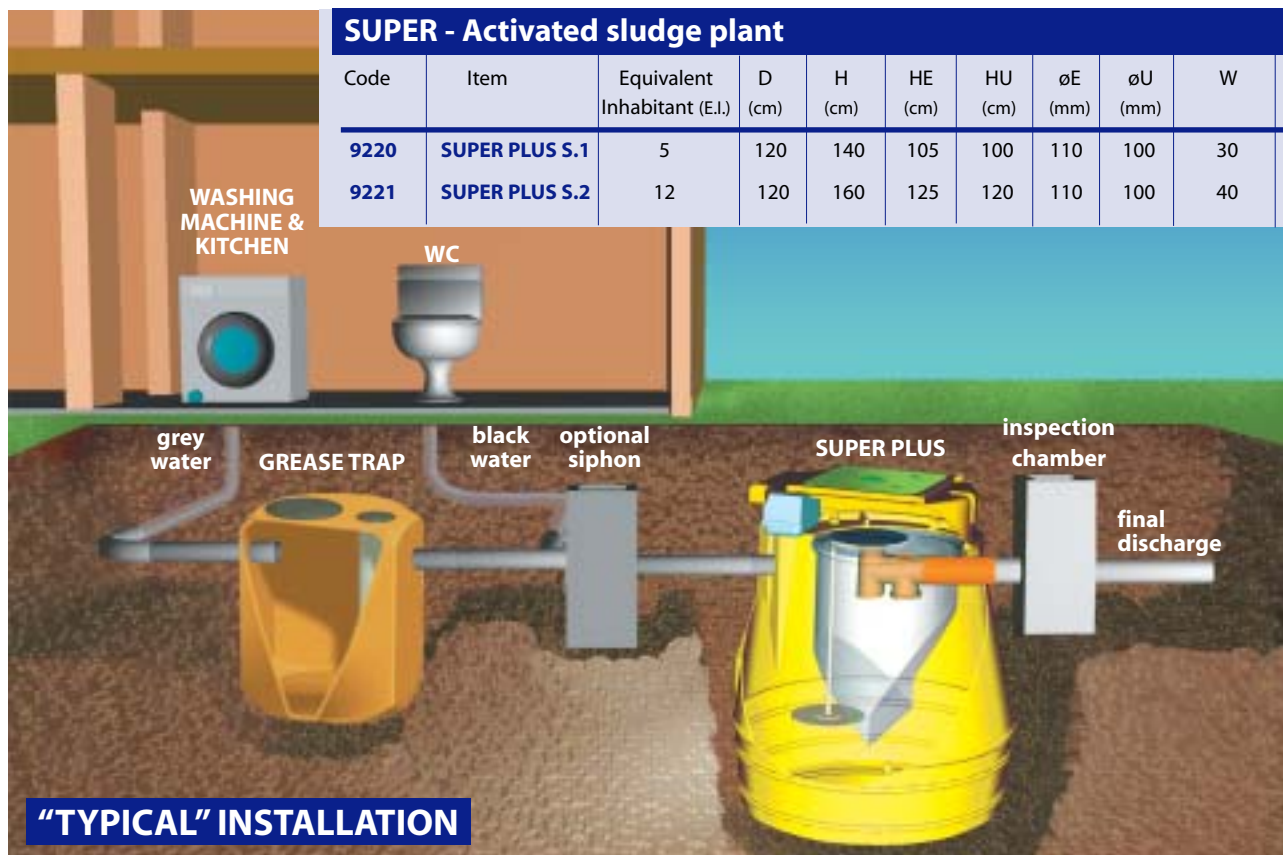
Activated sludge plant **SUPER PLUS** treats waste water from civil dwellings. It is installed between the sewage pipe coming from the house and final discharge. It performs sewage depuration and allows to discharge it in superficial water body. Following installation, air blower and diffuser have to be periodically checked. A bacterial tablet may be dosed in the oxidation volume in order to accelerate plant start up. Make sure

there is no sludge stagnation in the settling tank or anaerobic processes may occur. Insert the chlorine tablet in its proper position (it needs to be replaced every 3 months). Excess sludge must be removed from the plant every 6 months, contacting specialised companies. Make sure a venting column exists. If it does not, place a siphon before the plant or create a venting column.



SUPER - Activated sludge plant

Code	Item	Equivalent Inhabitant (E.I.)	D (cm)	H (cm)	HE (cm)	HU (cm)	øE (mm)	øU (mm)	W	Weight (Kg)
9220	SUPER PLUS S.1	5	120	140	105	100	110	100	30	58
9221	SUPER PLUS S.2	12	120	160	125	120	110	100	40	63



"TYPICAL" INSTALLATION



ACCESSORIES

manual cleaning grid

grease trap sand trap

denitrification basin

equalisation basin

bacterial tablets

chlorine tablets

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

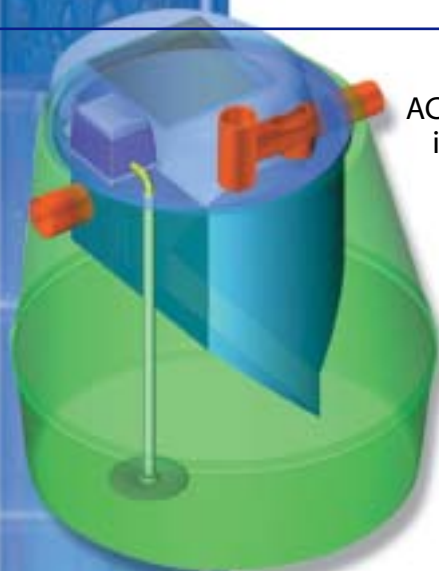
Isea guarantees

the system achieves discharge water standards as per:

IN ITALY: D. L.vo 152/99

IN EUROPE Cee 271/91

Electro-mechanical devices for 12 months from delivery.



ACTIVATED SLUDGE PLANT, **SUPER**, entirely made of polyethylene, in one piece, seamless, composed of the following phases:

SEWAGE INLET through a polypropylene or PVC pipe section.

OXIDATION of the incoming sewage. An air-blower is positioned in a special compartment inside the plant and it feeds air to the waste water.

It works continuously and it is absolutely silent. Air allows aerobic micro-organisms to perform organic material removal.

AIR DIFFUSION by means of epdm uncloggable diffusers, delivering fine bubbles.

SETTLING of solids carried by the flow from the oxidation. This phase is performed in a partition of the plant volume, where stillness and appropriate retention time are granted.

DISINFECTION of the oxidised and clarified flow. A chlorine tablet continuously releases active reactant to the outlet flowing on top of it.

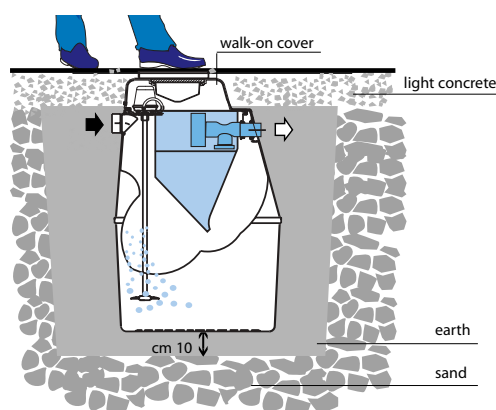


Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5mm, dampen the sand and level it. Lay the plant down. Connect SUPER's outlet pipe to an inspection chamber by means of a Ø..... pipe. Connect the general discharge pipes to the SUPER's inlet pipe by means of a polypropylene or PVC pipe having Ø..... Fill the tank with clean water and

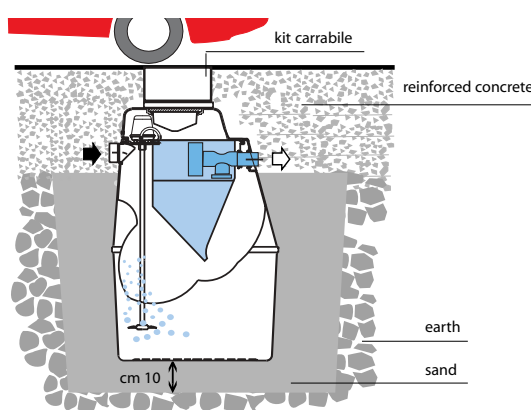
proceed with dampened sand filling of the gaps around it. Finish with a 5 cm thick light concrete casting (or with reinforced concrete in case of car passage on top of the plant). Make sure that covers are always inspectionable. In case a venting column has not been created, install a siphon before the plant. Connect the system to 220 Volts power line.



WALK-ON SOLUTION



DRIVE-ON SOLUTION

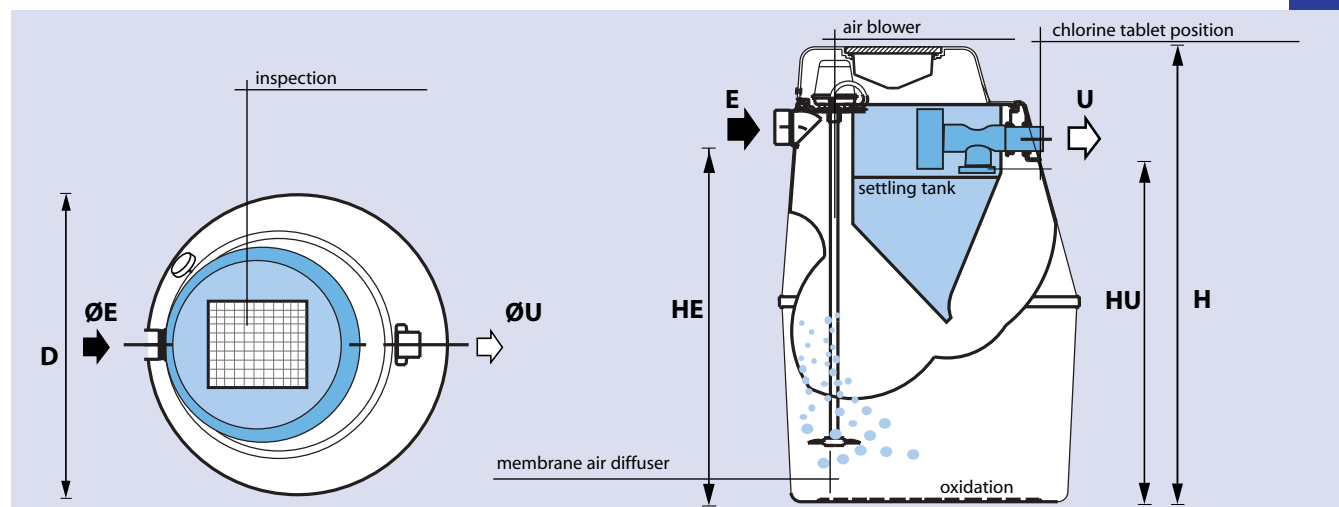


Activated sludge plant SUPER treats waste water from civil dwellings. It is installed between the sewage pipe coming from the house and final discharge. It performs sewage depuration and allows to discharge it in superficial water body. Following installation, air blower and diffuser have to be periodically checked. A bacterial tablet may be dosed in the oxidation volume in order to accelerate plant start up. Make sure

there is no sludge stagnation in the settling tank or anaerobic processes may occur. Insert the chlorine tablet in its proper position (it needs to be replaced every 3 months). Excess sludge must be removed from the plant every 6 months, contacting specialised companies. Make sure a venting column exists. If it does not, place a siphon before the plant or create a venting column.



The company has the right to technically modify the system without giving notice.



SUPER - Activated sludge plant

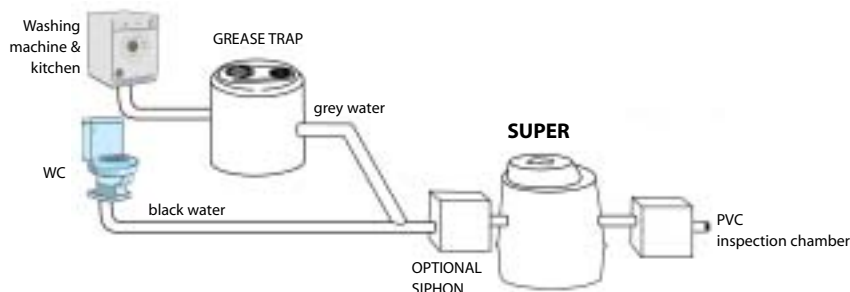
Code	Item	Equivalent Inhabitant (E.I.)	D (m)	H (m)	HE (cm)	HU (cm)	S sed (m ²)	V sed (m ³)	V ox (m ³)	øE (mm)	øU (mm)	Weight (kg)	Watt
9110	SUPER S.A.1	5	1.2	1.4	105	100	0.43	0.18	1.3	110	100	60	47
9111	SUPER S.A.2	12	1.2	1.6	125	120	0.43	0.23	1.5	110	100	70	64
9112	SUPER S.A.3	18	1.2	1.8	145	140	0.43	0.31	1.7	125	100	75	86
9113	SUPER S.A.4	25	1.6	2.3	175	170	1.2	1.0	3.0	140	140	150	120

DESIGN DATA

EQUIVALENT INHABITANTS	N.	5	12	18	25
SPECIFIC WATER CONSUMPTION	l./E.I. d.	200	200	200	200
DAILY FLOW RATE	m ³ /d.	1	2.4	3.6	5.0
PEAK FACTOR	C _p	5	5	5	5
PEAK FLOW RATE	m ³ /h	0.2	0.5	0.75	1.41
ORGANIC LOAD	g. BOD ₅ /E.I. d.	60	60	60	60
DAILY ORGANIC LOAD	kg. BOD ₅ /d.	0.3	0.7	1	1.5
ORGANIC LOAD CONCENTRATION	mg. BOD ₅ /l.	240	240	240	240

EQUIVALENT INHABITANTS	N.	5	12	18	25
ACTUAL OXIDATION RETENTION TIME	h	30	16	12	20
SLUDGE LOAD	kg. BOD ₅ /kg.ssm a m ³	0.1	0.1	0.1	0.1
SLUDGE CONCENTRATION	kg.ssm a/m ³	5	5	5	5
VOLUMETRIC LOAD	kg. BOD ₅ /m ³ d.	0.5	0.5	0.5	0.5
SETTLING VELOCITY	m ³ /m ² h.	1.4	1.4	1.4	1.4
RETENTION TIME IN SETTLING TANK	h.	4.5	2.5	2.5	4.5

"TYPICAL" INSTALLATION



ACCESSORIES

manual cleaning grid

grease trap

timer

inspection manholes

bacterial tablets

chlorine tablets

drive-on kit

denitrification phase

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

the system achieves discharge water standards as per:

IN ITALY: D. L.vo 152/99

IN EUROPE Cee 271/91

Electro-mechanical devices for 12 months from delivery.

BAYGAR

Compact

ENGINEER (SPECIFICATIONS)



ACTIVATED SLUDGE PLANT, **COMPACT**, entirely made of polyethylene, in one piece, seamless, composed of the following phases:

SEWAGE INLET: through a polypropylene or PVC pipe section:

OXIDATION: of the incoming sewage. An air-blower is positioned outside the plant and it feeds air to the waste water. It works continuously and it is absolutely silent. Air allows aerobic micro-organisms to perform organic material removal.

AIR DIFFUSION: by means of epdm uncloggable diffusers, delivering fine bubbles.

SETTLING: of solids carried by the flow from the oxidation. This phase is performed in a partition of the plant volume, where stillness and appropriate retention time are granted.

DISINFECTION: of the oxidised and clarified flow. A chlorine tablet continuously releases active reactant to the outlet flowing on top of it.

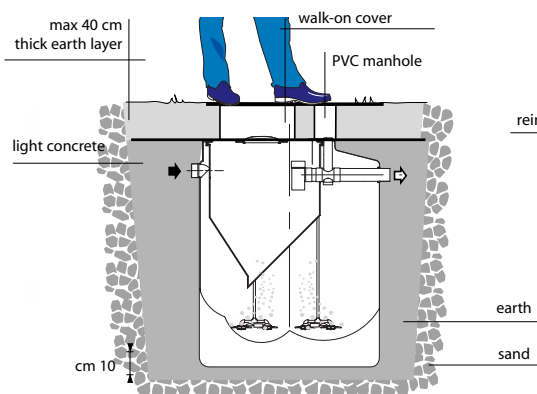
INSTALLER



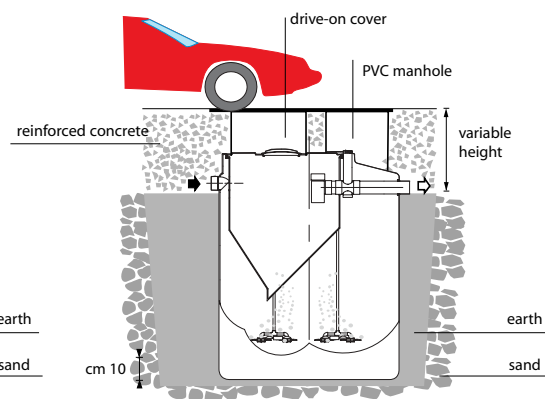
Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm, dampen the sand and level it. Lay the plant down. Connect COMPACT's outlet pipe to an inspection chamber by means of a Ø..... pipe. Connect the general discharge pipes to the COMPACT's inlet pipe by means of a polypropylene or PVC pipe having Ø..... Fill the tank with clean water and proceed with dampened sand filling of the gaps around it. Connect the air blower to the tank by means of the PE pipe. This needs to be inserted in the prepared

joints. Locate the air blower in a dry and aerated place higher than the outlet pipe. Finish with a 5 cm thick light concrete casting and with a max 40 cm thick layer of earth above (or with reinforced concrete in case of car passage on top of the plant). Make sure that covers are always inspectionable. In case a venting column has not been created, install a siphon before the plant and connect a pipe to the auxiliary venting connection foreseen on the plant. Connect the system to 220 Volts power line by plugging the plug in a socket. Functioning may be regulated by a timer.

WALK-ON SOLUTION



DRIVE-ON SOLUTION

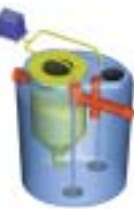


USER

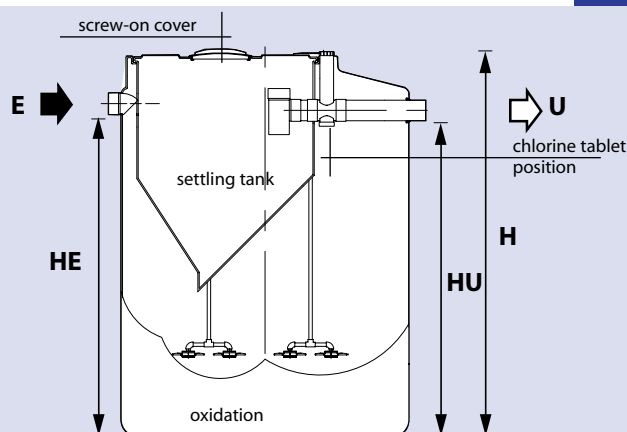
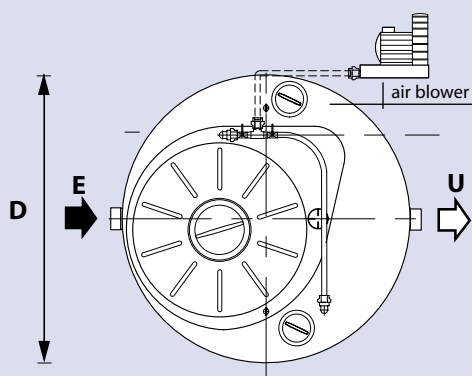


Activated sludge plant COMPACT treats waste water from civil dwellings. It is installed between the sewage pipe coming from the house and final discharge. It performs sewage depuration and allows to discharge it in superficial water body. Following installation, air blower and diffuser have to be periodically checked. A bacterial tablet may be dosed in the oxidation volume in order to accelerate plant start up. Make sure

there is no sludge stagnation in the settling tank or anaerobic processes may occur. Insert the chlorine tablet in its proper position (it needs to be replaced every 3 months). Excess sludge must be removed from the plant every 6 months, contacting specialised companies. Make sure a venting column exists. If it does not, place a siphon before the plant or create a venting column.



The company has the right to technically modify the system without giving notice.



COMPACT - Activated sludge plant

Code	Item	Equivalent Inhabitant (E.I.)	D (m)	H tot (m)	HE (cm)	HU (cm)	S sed (m ²)	V sed (m ³)	V ox (m ³)	øE (mm)	øU (mm)	Weight (kg)	Watt
8015	F.A.5	32	2.15	2.15	173	168	1.1	1.3	4.7	140	140	200	130
8016	F.A.6	45	2.15	2.60	217	212	1.1	1.7	6.7	160	160	250	1100
8017	F.A.7	60	2.15	2.60	217	212	1.1	1.7	6.7	160	160	250	1500
8018	F.A.8	70	2.15	3.00	251	246	1.1	1.7	8.3	160	160	300	1500

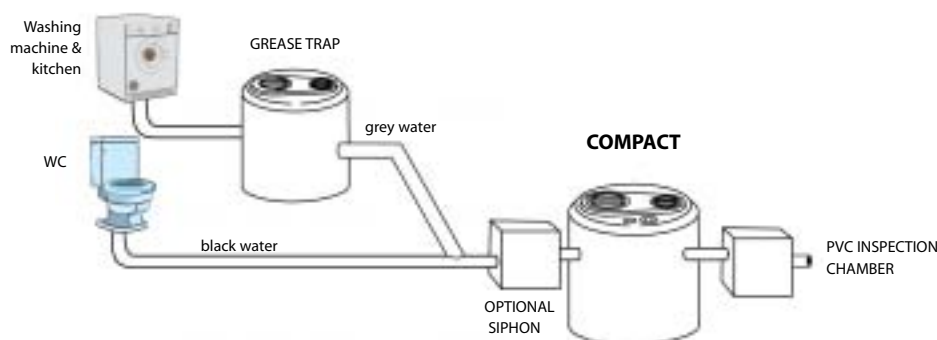
DESIGN DATA

EQUIVALENT INHABITANTS	N.	32	45	60	70
SPECIFIC WATER CONSUMPTION	l./E.I. d.	200	200	200	200
DAILY FLOW RATE	m ³ /d.	6	9	12	14
PEAK FACTOR	Cp	5	5	5	5
PEAK FLOW RATE	m ³ /h	1.2	1.8	2.5	2.9
ORGANIC LOAD	g. BOD ₅ /E.I. d.	60	60	60	60
DAILY ORGANIC LOAD	kg. BOD ₅ /d.	1.8	2.7	3.6	4.2
ORGANIC LOAD CONCENTRATION	mg. BOD ₅ /l.	240	240	240	240

PROCESS DATA

EQUIVALENT INHABITANTS	N.	32	45	60	70
ACTUAL OXIDATION RETENTION TIME	h	23	20	15	13
SLUDGE LOAD	kg. BOD ₅ /kg. ssma m ³	0.1	0.1	0.1	0.1
SLUDGE CONCENTRATION	kg. ssma/m ³	5	5	5	5
VOLUMETRIC LOAD	kg. BOD ₅ /m ³ d.	0.5	0.5	0.5	0.5
SETTLING VELOCITY	m ³ /m ² h.	1.4	1.4	1.4	1.4
RETENTION TIME IN SETTLING TANK	h.	4.5	4.5	4.5	4.5

"TYPICAL" INSTALLATION



ACCESSORI

control panel
manual cleaning grid

grease trap

timer

bacterial tablets

chlorine tablets

inspection manholes

denitrification phase

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

the system achieves discharge water standards as per:

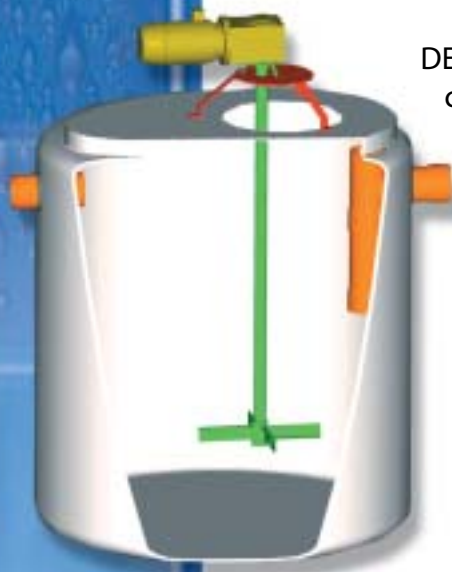
IN ITALY: D. L.vo 152/99

IN EUROPE Cee 271/91

Electro-mechanical devices for 12 months from delivery.

Denitrification basin

ENGINEER (SPECIFICATIONS)



DENITRIFICATION BASIN, entirely made of polyethylene, composed of the following phases:

SEWAGE INLET through a PVC pipe section

DENITIFICATION PROCESS taking place in anoxic conditions by slowly stirring sewage with a mixer. This allows gaseous N_2 to form and escape from liquid flow, thus reducing N content in final discharge.

INSTALLER



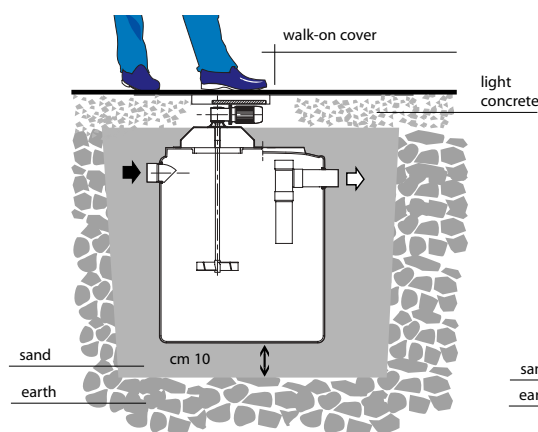
Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm, dampen the sand and level it. Lay the plant down. Connect the inlet pipe to the pipe section entering the basin. Connect the pipe section exiting the basin to the outlet pipe.

Fill the tank with clear water and proceed with dampened sand filling of the gaps around it.

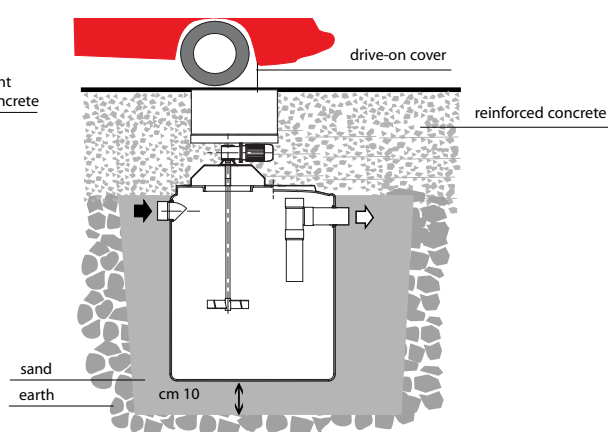
Finish with a 5 cm thick light concrete casting or with a reinforced concrete slab in case of car passage on top of the plant.

Make sure that covers are inspectionable by installing a 60x60 cm manhole where the mixer engine will also be located. Connect the engine to the control panel provided and be sure a 220 or 380 Volt power line is available.

WALK-ON SOLUTION



DRIVE-ON SOLUTION



USER



A *denitrification basin* is located before or after a biological activated sludge process in order to further reduce N content in outlet. This allows to discharge water in soil by means of perforated pipes.

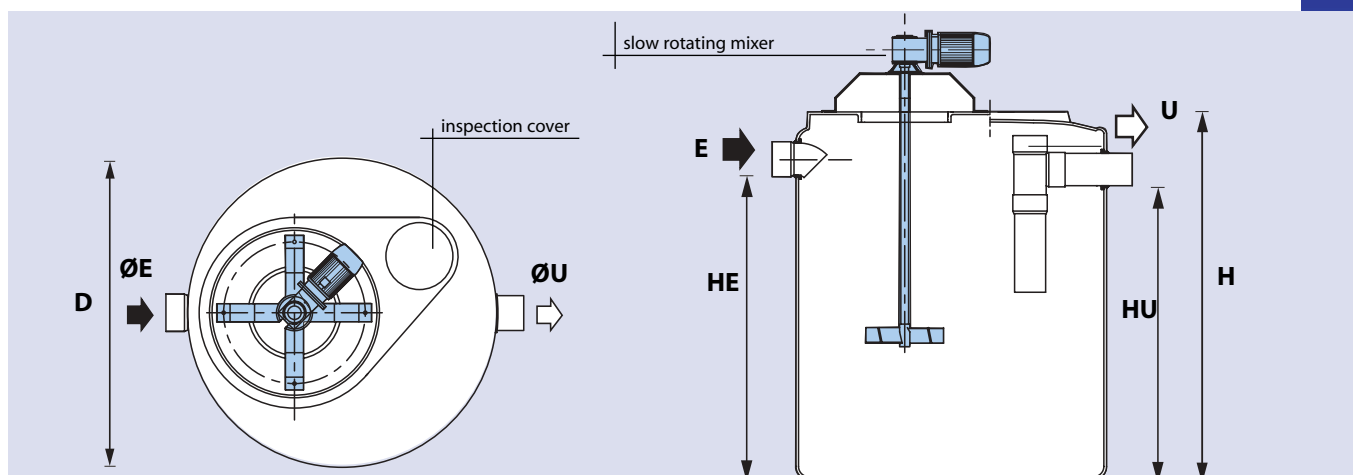
Once installation has been completed, make sure the mixer is working properly and that the engine support is firmly mounted on the tank. Check timer regulation by opening the control panel provided.

When sludge removal is performed in the activated sludge tank, the denitrification basin should also be completely emptied. It then needs to be filled with clean water. Once a year make sure the electromechanical devices are working properly.



Manufactured with recyclable material

The company has the right to technically modify the system without giving notice.



DENITRIFICATION BASIN - Post-denitrification

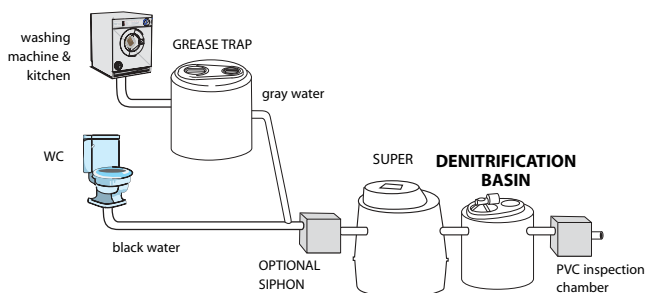
Code	Item	Equivalent inhabitants (E.I.)	D (m)	H (m)	HE (cm)	HU (cm)	Watt (kw)	øE (mm)	øU (mm)	Weight (kg)	Voltage (V)
9910	DEN 400	5	0.79	0.8	65	60	0.19	100	100	35	220
9911	DEN 800	12	0.79	1.2	100	95	0.19	100	100	45	220
9912	DEN 1000	18	1.1	1.2	95	92	0.26	100	100	58	220
9913	DEN 1500	25	1.2	1.4	108	103	0.26	140	140	70	220

DENITRIFICATION BASIN - Pre-denitrification

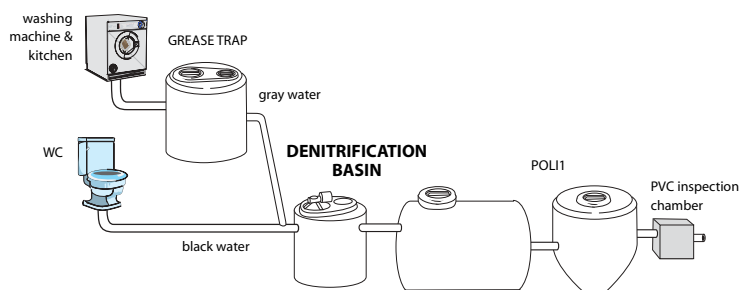
Code	Item	Equivalent inhabitants (E.I.)	D (m)	H (m)	HE (cm)	HU (cm)	Watt (kw)	øE (mm)	øU (mm)	Weight (kg)	Voltage (V)
9914	DEN 2000	32	1.2	1.95	X ¹	X ²	0.37	140	140	80	220/380
9915	DEN 3000	50	1.47	2.00	X ¹	X ²	0.56	160	160	95	220/380
9916	DEN 6000	80/100	2.15	2.15	X ¹	X ²	0.75	200	200	220	380

X¹ X² = Heights are determined according to the specific design.

Post-denitrification



Pre-denitrification



REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

the system achieves discharge water standards as per:

IN ITALY: D. L.vo 152/99

IN EUROPE Cee 271/91

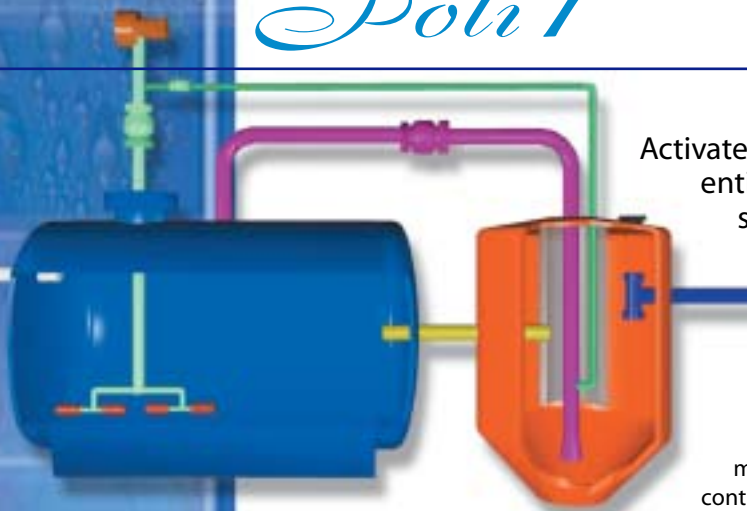
Electro-mechanical devices for 12 months from delivery.

BAYGAR

Poli 1

ENGINEER (SPECIFICATIONS)

With air blower



Activated sludge plant, total oxidation, **POLI 1**, entirely made of polyethylene, in one piece, seamless, consisting of two modules:

A first one, OXIDATION, where a thorough aeration of the incoming sewage takes place. An external air blower provides air.

A second one, SETTLING, which is realised in a conical basin, equipped with an air lift device. This device is used to recycle sludge in the oxidation module by regulating its valve. The system is complete of control panel in a PVC shell. Some accessories are available:

- Grid with manual cleaning
- Grease trap
- Outlet disinfection phase

Power consumption varies from 1.1 to 3 kW. Tension may be 220 or 380 Volts for smaller systems, 380 Volts for larger ones.

INSTALLER

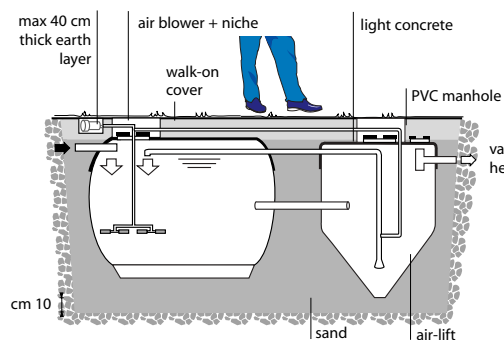


Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5mm, dampen the sand and level it. Lay the plant down. Fill both tanks with clean water and proceed with dampened sand filling of the gaps around it. Build a 5 cm thick light concrete casting on top of it, finish with a 40 cm thick earth layer on top.

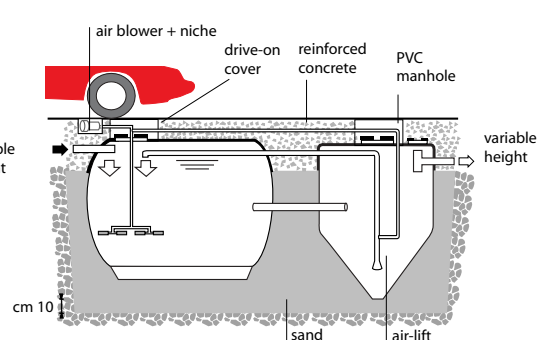
If cars are to pass on it, provide a reinforced concrete slab on top of the plant. Always make sure that all covers are inspectionable by putting manholes on top of them. Connect the air blower with its control panel. The air blower needs to be positioned in a dry and aerated place.



WALK-ON SOLUTION



DRIVE-ON SOLUTION



USER

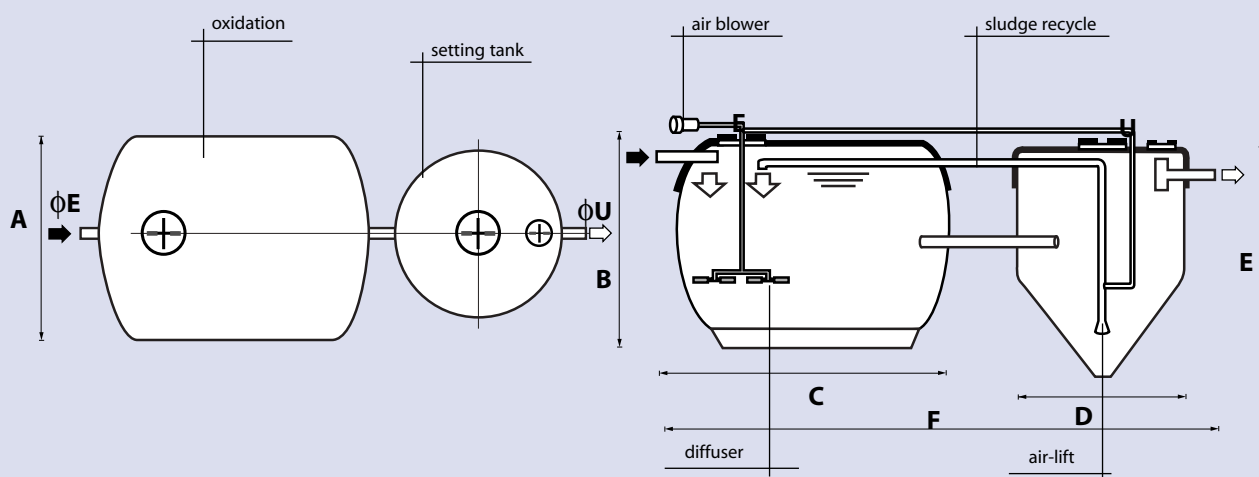


Activated sludge plant POLI 1 treats waste water from civil dwellings. It is installed between the sewage pipe coming from the house and final discharge. It performs sewage depuration and allows to discharge it in superficial water body. Following installation, air blower and diffuser have to be periodically checked. Make sure there no excess foam in the oxidation tank. A bacterial tablet may be dosed in the oxidation volume in

order to accelerate plant start up. Make sure there is no sludge stagnation in the settling tank or anaerobic processes may occur. Excess sludge must be removed from the plant every 6 months, contacting specialised companies. Make sure a venting column exists. If it does not, place a siphon before the plant or create a venting column.



The company has the right to technically modify the system without giving notice.



POLI1 AIR BLOWER- Activated sludge plant

Code	Item	Equivalent Inhabitant (E.I.)	A (cm)	F (cm)	G (cm)	B (cm)	C (cm)	D (cm)	E (cm)	Vsed (m ³)	Vox (m ³)	φE (mm)	φU (mm)	Kw
9022	A.E. 50 (220V)	50	180	450	180	195	240	160	180	2.5	5	160	160	1.1
9022/1	A.E. 50 (380V)	50	180	450	180	195	240	160	180	2.5	5	160	160	1.1
9023	A.E. 100 (380V)	100	240	520	245	245	300	160	240	4	10	200	200	1.5
9024*	A.E. 150 (380V)	150	470	520	245	245	300	160	240	6.5	15	200	200	3
9025*	A.E. 200 (380V)	200	530	520	245	245	300	160	240	8	20	200	200	3

* The plants consist of two parallel lines.

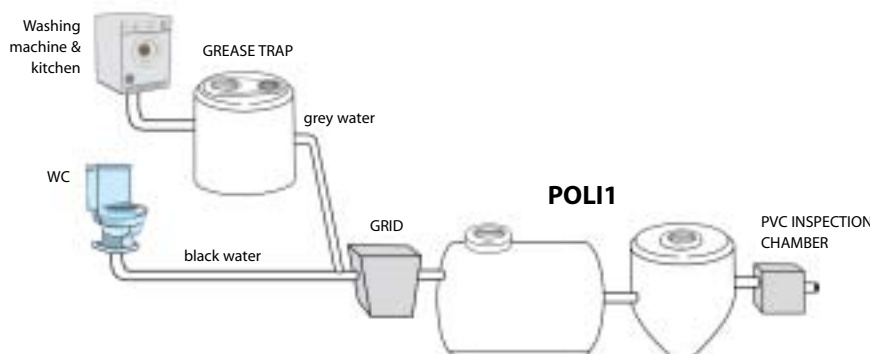
DESIGN DATA

EQUIVALENT INHABITANTS	N.	50	100	150	200
SPECIFIC WATER CONSUMPTION	l./E.I. d.	200	200	200	200
DAILY FLOW RATE	m ³ /d.	10	20	30	40
PEAK FACTOR	Cp	7	7	7	7
PEAK FLOW RATE	m ³ /h	3	6	9	12
ORGANIC LOAD	g. BOD ₅ /E.I. d.	60	60	60	60
DAILY ORGANIC LOAD	kg. BOD ₅ /d.	3	6	9	12
ORGANIC LOAD CONCENTRATION	mg. BOD ₅ /l.	240	240	240	240

PROCESS DATA

EQUIVALENT INHABITANTS	N.	50	100	150	200
ACTUAL OXIDATION RETENTION TIME	h	12	12	12	12
SLUDGE LOAD	kg. BOD ₅ /kg.ssma m ³	0.1	0.1	0.1	0.1
SLUDGE CONCENTRATION	kg.ssma/m ³	5	5	5	5
VOLUMETRIC LOAD	kg. BOD ₅ /m ³ d.	0.5	0.5	0.5	0.5
SETTLING VELOCITY	m ³ /m ² h.	1.2	1.2	1.2	1.2
RETENTION TIME IN SETTLING TANK	h.	4.5	4.5	4.5	4.5

"TYPICAL" INSTALLATION



ACCESSORIES

- grease trap
- manual cleaning grid
- flow partitioner
- disinfection phase
- disinfection phase with dosing pump
- by-pass pipe
- inspection chamber
- denitrification phase

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

the system achieves discharge water standards as per:

IN ITALY: D. L.vo 152/99

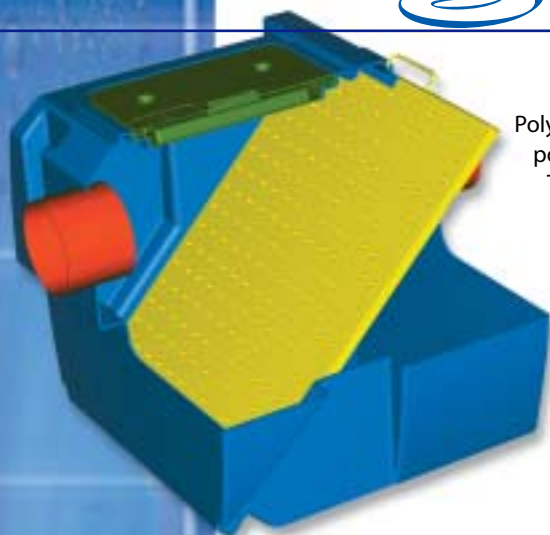
IN EUROPE Cee 271/91

Electro-mechanical devices for 12 months from delivery.

BAYGAR

Static grid

ENGINEER (SPECIFICATIONS)



Polyethylene basin complete of central cover with seal, slides for grid positioning, zinc steel grid with 20 mm spacing between bars. The system is prepared with inlet and outlet pipes $\varnothing = 125$ mm

INSTALLER

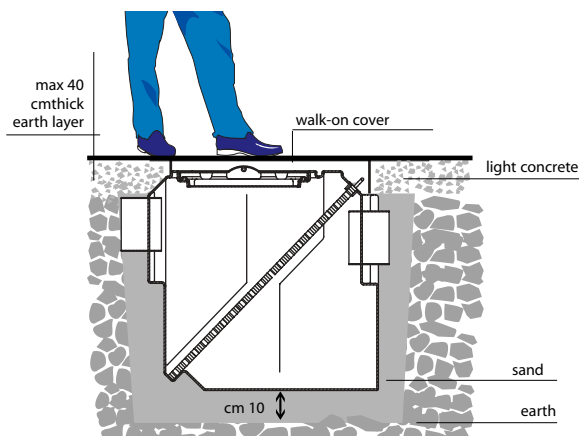


Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm, dampen the sand and level it. Lay the grid down and fill it with clean water. Connect

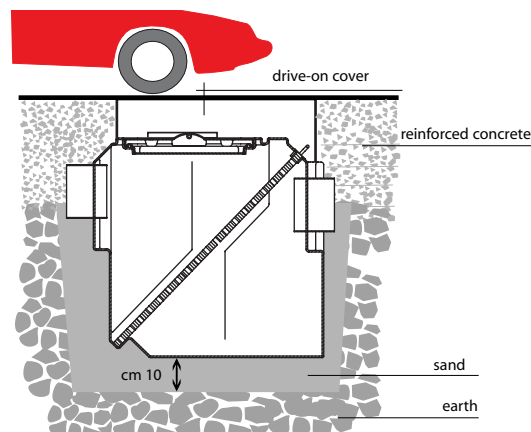
inlet and outlet pipes, and proceed with dampened sand filling of the gaps around it. Finish installation as per the following illustrations:



WALK-ON SOLUTION



DRIVE-ON SOLUTION

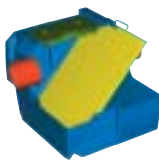


USER

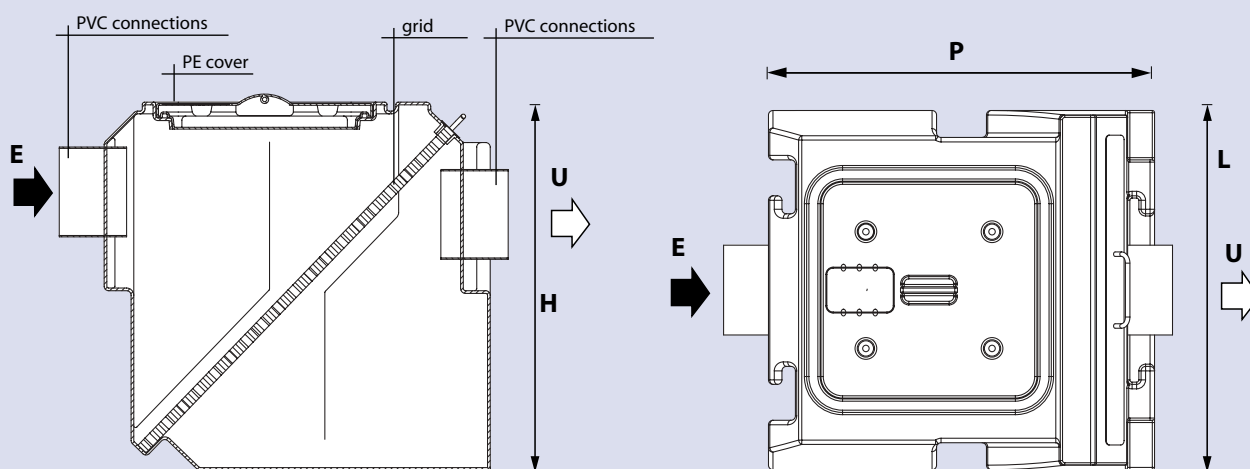


Check that installation has been carried out following the abovementioned instructions. Periodically make sure that no larger body is clogging inlet or outlet.

This can be done by removing the cover. Separated solids need to be periodically removed. Once a year the system has to be completely cleaned.



The company has the right to technically modify the system without giving notice.



STATIC GRID

Code	Item Equivalent Inhabitant (E.I.)	Volume (litres)	LxP (mm)	H (cm)	(Cover) (mm)
3501	TIPO 500	480	80x86	82.5	480x480

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees
removal of solids larger than 20 mm.

Country

Subirrigation plant with absorbent polyethylene trays, **COUNTRY**, consisting of:

Biological Imhoff tank on the black water line, made of pe.

Grease trap on the gray water line, made of pe.

Initial pe manhole, $\square$ 35,5 cm h=80/120 cm, with cover, where pre-treated water arrives.

N..... Absorbent trays, made of pe, with their peculiar truncated pyramidal shape, each of them 120 cm wide, 160 cm long, 55 cm high non-woven fabric, seals $\varnothing$ 100 and $\varnothing$ 110, polypropylene pipes to connect all trays provided.

Final pe manhole, $\square$ 35,5 cm h=80/120 cm, with cover, with an overflow pipe excess rain water discharge.

ENGINEER (SPECIFICATIONS)

INSTALLER

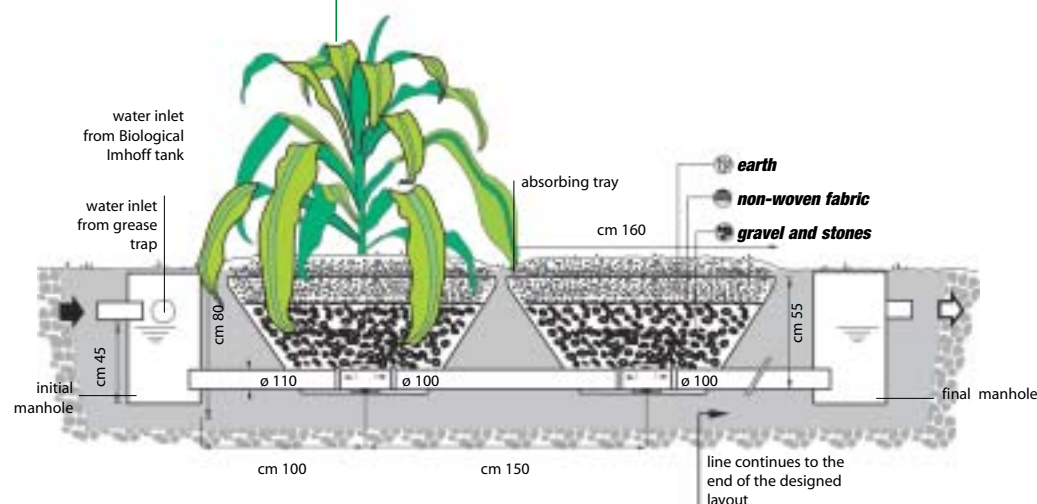


Install biological Imhoff tank and grease trap as described in their specific technical papers. Outlet pipes from biological Imhoff tank and grease trap are to be connected to an inspection chamber, then to the initial manhole. Absorbent trays are water tight in order to avoid pollution of the underlying water table. Trays are to be

installed so to have their bottom no deeper than 60/80 cm from ground level. They need to be filled with different layers:

- first 10-15 cm thick stones layer
- second 30 cm thick gravel layer
- third 20-30 cm thick earth layer

Suggested plant allocation

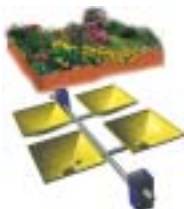


USER



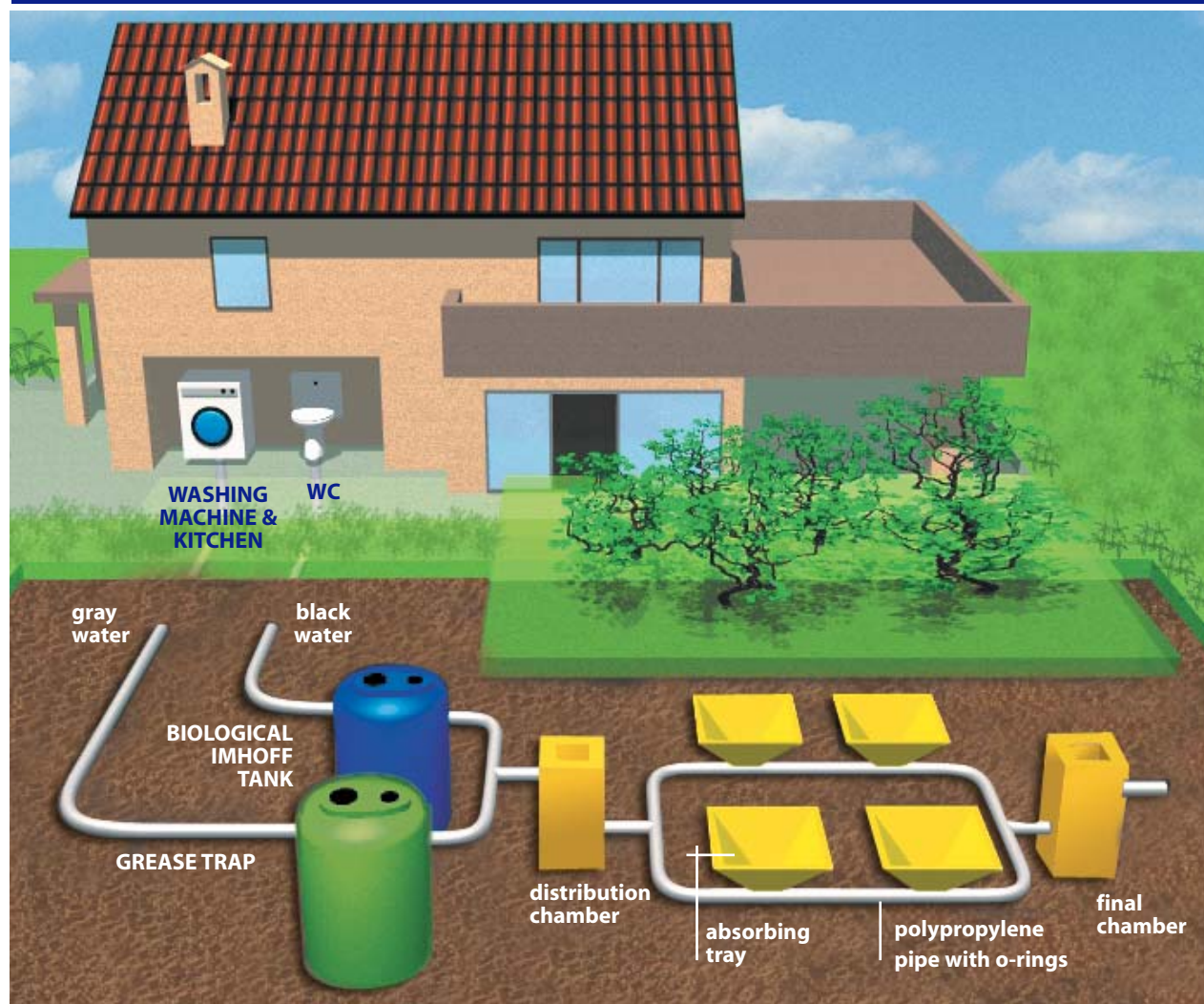
Verify that installation has been carried out correctly. Plant evergreen plants with a developed enough root apparatus (a list is given herein). The absorbent tray system is based on the earth capability to evapo-transpire water, but also on the plant capability to evapo-transpire

it and to use up nutrients which are contained in the water flow. Biological Imhoff tank and grease trap periodical cleaning is necessary in order to keep an high performance of the system. Pe products are guaranteed for 10 years against corrosion.



The company has the right to technically modify the system without giving notice.

TYPICAL INSTALLATION



Suggested vegetation

plants

<i>Aucuba Japonica</i>	<i>Cotoneaster Salicifolia</i>
<i>Bambù</i>	<i>Kalmia Latifolia</i>
<i>Calycantus Florindus</i>	<i>Laurus Cerasus</i>
<i>Cornus Alba</i>	<i>Rhamnus Frangula</i>
<i>Cornus Florida</i>	<i>Spirdea Salicifolia</i>
<i>Cornus Stolonifera</i>	

flowers

<i>Auruncus Sylvester</i>	<i>Iris Kaempferi</i>
<i>Astilbe</i>	<i>Lythrum Officinalis</i>
<i>Elymus Arenarius</i>	<i>Nepeta Musini</i>
<i>Felci</i>	<i>Petasites officinalis</i>
<i>Iris Pseudoacorus</i>	

ACCESSORIES: Pumping station with manholes



There are several layouts that your designer will be able to propose.

Included: connecting PP pipes, seals, non-woven fabric, manholes

Not included: digging, embankment, plants and inert filling material (stones, gravel etc)

A proper number of plants needs to be planted per tray. Be advised by your nursery manager

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

the system achieves discharge water standards as per:

IN ITALY: D. L.vo 152/99

IN EUROPE Cee 271/91



Anapackage

High outlet version

ENGINEER (SPECIFICATIONS)



Polyethylene **ANAPACKAGE** trickling filter based treatment plant is composed of:

GREASE TRAP, made of PE. It is meant to be put on the grey water line.

BIOLOGICAL IMHOFF TANK, made of PE. It is meant to be put on the black water line.

TRICKLING FILTER, made of PE. The tank is filled with polypropylene elements. Water proceeding from the above mentioned pre-treatments enters the system and its content in organic matter gets mineralised.

INSPECTION CHAMBER, made of PVC. It is installed in order to allow water sampling.

INSTALLER

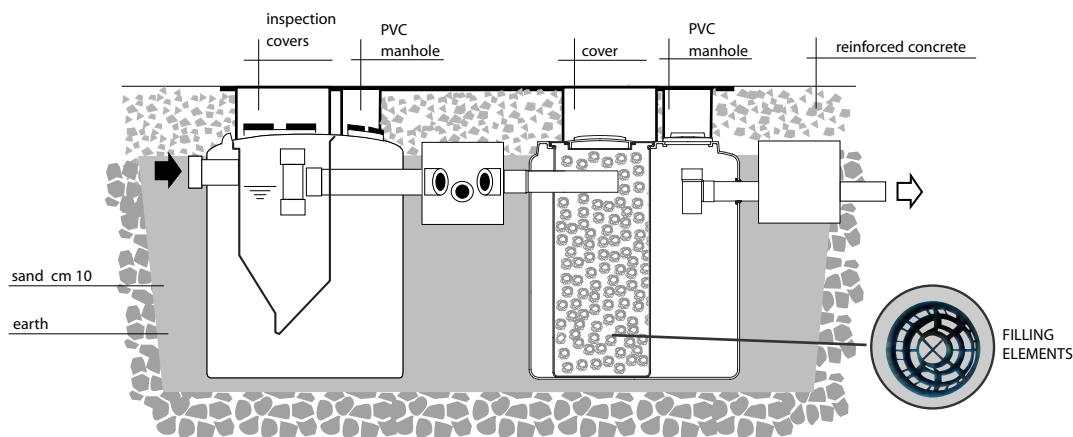


Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm, dampen the sand and level it. Connect the black water pipe to the biological Imhoff tank. Connect the grey water pipe to the grease trap. Fill the tanks with clean water to start the process. Proceed with dampened sand filling of the gaps around it. Finish with a 5 cm thick light concrete casting and a 40 cm thick earth layer on top (or with reinforced concrete in case of car passage on top of the plant). Make sure that covers are always inspectionable.

OPERATIONAL CHARACTERISTICS

The grease trap is meant to remove oils and greases from the water flow and enable a better performance for the trickling filter. The biological Imhoff tank, instead, separates suspended solids from the water flow and "digest" them. The trickling filter transforms pollutants into settlable sludge. It is designed on the basis of net volume:

$V_n = \text{organic load/volumetric load}$.

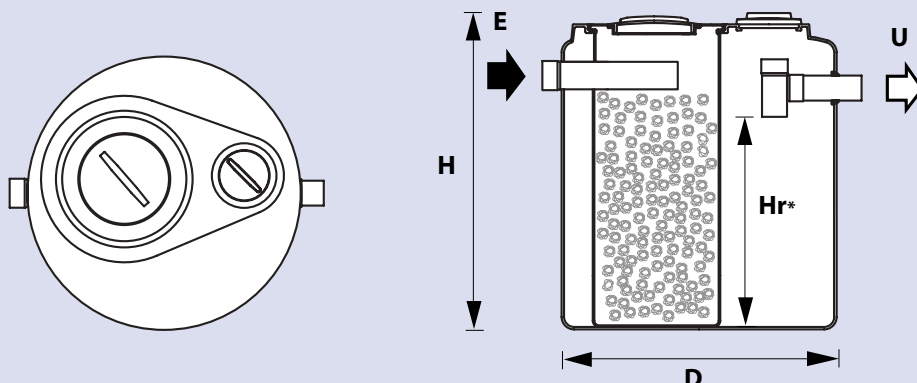


USER



Verify that installation has been correctly carried out. Periodically remove excess sludge from biological Imhoff tank. Periodically control that the filling material level in trickling filter remains the same. Micro-organisms take more than 40 days

to reach their standard performance level. If water flux is interrupted, micro-organisms activity is stopped. It will take another 40 days to restart the process. It is advisable to clean the trickling filter once a year.



ANAPACKAGE - Anaerobic trickling filter

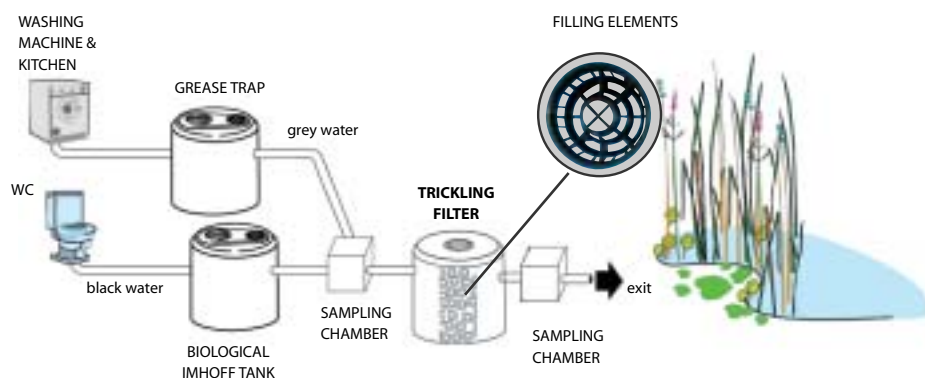
Code	Item	Equivalent Inhabitat (E.I.)	D (cm)	H (cm)	Surface (m ²)	Hr* (cm)	Weight (Kg)
7001/A	500	5	80	120	0.50	90	36
7002/A	1000	10	110	122	0.95	90	45
7003/A	1500	15	120	140	1.13	110	78
7004/A	2000	25	120	195	1.13	165	110
7005/A	3000	35	147	200	1.70	165	155
7006/A	4000	50	147	245	1.70	210	175
7008/A	6000	70	215	215	3.47	170	260
7009/A	8000	80	215	260	3.47	210	320
7010/A	10000	100	215	300	3.47	245	400

COMPLETE SYSTEM - Anaerobic trickling filter

Code	Item	Equivalent Inhabitat (E.I.)	TRICKLING FILTER	BIOLOGICAL IMHOFF TANK	GREASE TRAP
7011-1/A	500	5	500/A	AE 1/10	400
7011/A	1000	10	1000/A	1500	1000
7012/A	1500	15	1500/A	2000	1000
7013/A	2000	25	2000/A	4000	1000
7014/A	3000	35	3000/A	6000	2000
7015/A	4000	50	4000/A	6000	2000
7017/A	6000	70	6000/A	8000	3000
7018/A	8000	80	8000/A	10000	4000
7019/A	10000	100	10000/A	10000	4000

Hr* = Filling height

"TYPICAL" INSTALLATION



ACCESSORIES

PVC manholes

venting pipe

filling elements recharge

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

Suspended solids removal efficiency $\geq 90\%$

BOD5 removal efficiency $\geq 85\%$

Settable solids removal efficiency $\geq 70\%$

Clarifying

Package

Low outlet version

ENGINEER (SPECIFICATIONS)



Polyethylene **PACKAGE** trickling filter based treatment plant is composed of:

GREASE TRAP, made of PE. It is meant to be put on the grey water line.

TWO BIOLOGICAL IMHOFF TANKS, made of PE.

TRICKLING FILTER, made of PE. Equipped with a venting pipe which allows air in the filter thus speeding up bacterial growth. Biological Imhoff tank is in front of the trickling filter and decreases organic load entering the filter itself. Polypropylene filling elements are support for the bacterial film that is in charge of transforming pollutants in settlable sludge. This sludge is removed in the following biological Imhoff tank.

INSPECTION CHAMBER, made of PVC. It is installed in order to allow water sampling.

INSTALLER

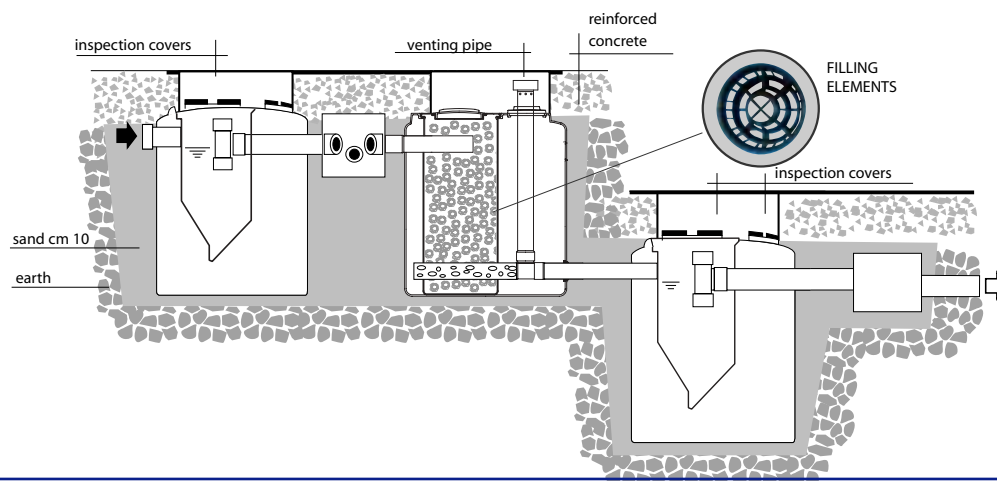


Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm, dampen the sand and level it. Connect the black water pipe to the biological Imhoff tank. Connect the grey water pipe to the grease trap. Fill the tanks with clean water to start the process. Proceed with dampened sand filling of the gaps around it. Finish with a 5 cm thick light concrete casting and a 40 cm thick earth layer on top (or with reinforced concrete in case of car passage on top of the plant). Make sure that covers are always inspectionable.

OPERATIONAL CHARACTERISTICS

The grease trap is meant to remove oils and greases from the water flow and enable a better performance for the trickling filter. The biological Imhoff tank, instead, separates suspended solids from the water flow and "digest" them. The trickling filter transforms pollutants into settlable sludge. It is designed on the basis of net volume:

$V_n = \text{organic load/volumetric load}$

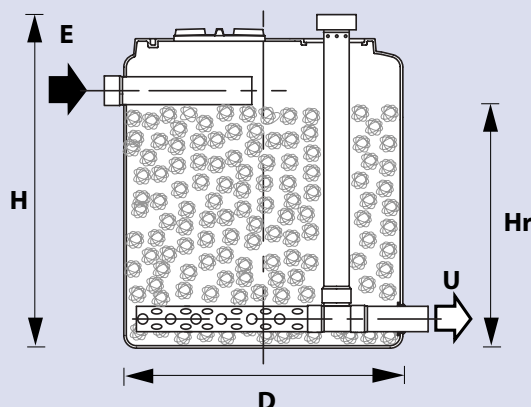
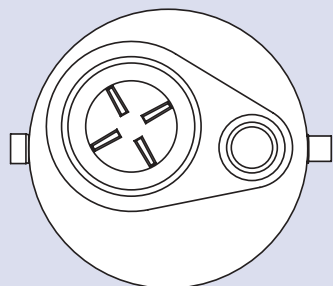


USER



Verify that installation has been correctly carried out. Periodically remove excess sludge from biological Imhoff tank. Periodically control that the filling material level in trickling filter remains the same. Micro-organisms take more than 40

days to reach their standard performance level. If water flux is interrupted, micro-organisms activity is stopped. It will take another 40 days to restart the process. It is advisable to clean the trickling filter once a year.



PACKAGE - Aerobic trickling filter

Code	Item	Equivalent Inhabitant (E.I.)	D (cm)	H (cm)	Sur. (m ²)	Vr* (m ³)	Hr* (cm)	øTf* (mm)	Weight (Kg)
FILTRO PERCOLATORE									
7001/B	TIPO 500	5	80	120	0.50	0.35	90	100	30
7002/B	TIPO 1000	10	110	122	0.95	0.70	90	100	45
7003/B	TIPO 1500	15	120	140	1.13	1.05	110	125	52
7004/B	TIPO 2000	25	120	195	1.13	1.75	165	140	80
7005/B	TIPO 3000	35	147	200	1.70	2.45	165	140	110
7006/B	TIPO 4000	50	147	245	1.70	3.50	210	160	155
7008/B	TIPO 6000	70	215	215	3.47	4.90	170	200	265
7009/B	TIPO 8000	80	215	260	3.47	5.60	210	200	320
7010/B	TIPO 10000	100	215	300	3.47	7.00	245	200	400

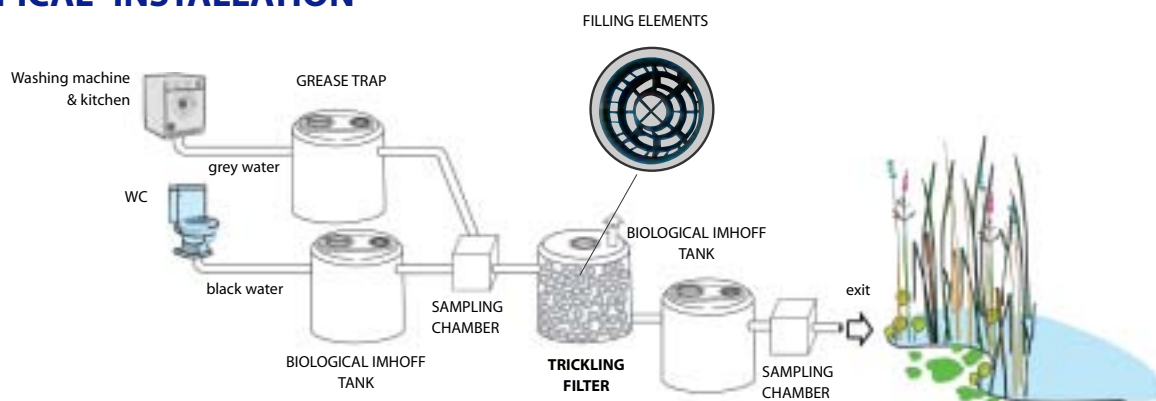
COMPLETE SYSTEM

Aerobic trickling filter

Code	Item	E.I.	TRICKLING FILTER	BIOLOGICAL IMHOFF	GREASE TRAP
7011-1/B	500	5	500/A	n° 2 AE 1/10	400
7011/B	1000	10	1000/A	n° 2 1500	1000
7012/B	1500	15	1500/A	n° 2 2000	1000
7013/B	2000	25	2000/A	n° 2 4000	1000
7014/B	3000	35	3000/A	n° 2 6000	2000
7015/B	4000	50	4000/A	n° 2 6000	2000
7017/B	6000	70	6000/A	n° 2 8000	3000
7018/B	8000	80	8000/A	n° 2 10000	4000
7019/B	10000	100	10000/A	n° 2 10000	4000

Vr* = Filled volume øTf* = perforated pipe diameter Hr* = Filling height.

"TYPICAL" INSTALLATION



ACCESSORIES

PVC manholes
venting pipe extension
filling elements recharge

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

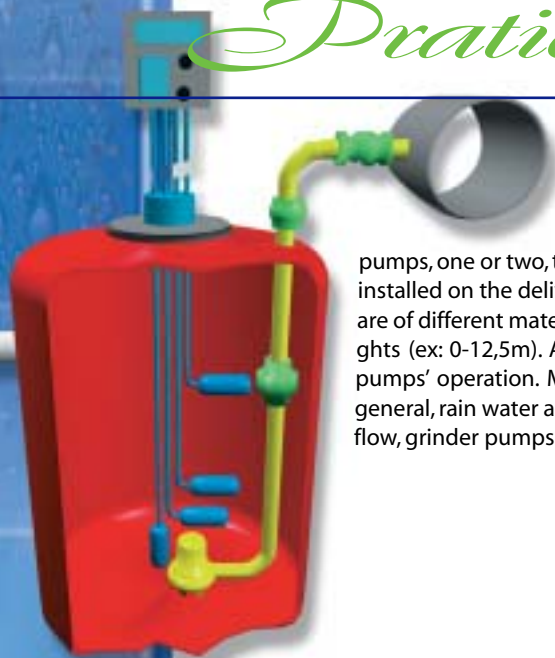
Isea guarantees:

Suspended solids removal efficiency $\geq 90\%$

BOD5 removal efficiency $\geq 85\%$

Settable solids removal efficiency $\geq 70\%$

Clarification



Pumping station **PRATICA**, made of PE.

One-piece tank with screw-on cover to control it and to install pumps, one or two, that can have an alternate or parallel operation. Clapets and valves are installed on the delivery pipes. Pumping station may be accessorised with floaters. Pumps are of different materials and may lift a wide range of flows (ex: 0-38 mc/h) to different heights (ex: 0-12,5m). A control panel is included in models from 1000l on to regulate the pumps' operation. Machinery is adequate to work with black water and used water in general, rain water and parking wash out. In case larger bodies are brought about with the flow, grinder pumps may be installed.

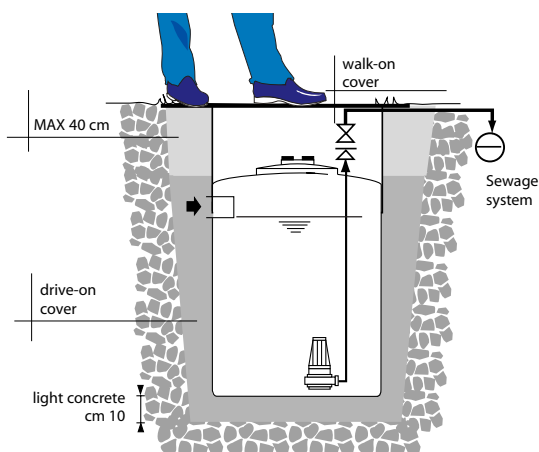


Dig a hole of appropriate dimensions and line a 10 cm thick light concrete layer at the bottom, level it. Lay the plant down. Fill it with clean water and fill the gaps around it with light concrete. Finish with a 5 cm thick light concrete casting and a 40 cm thick earth layer on top (or with

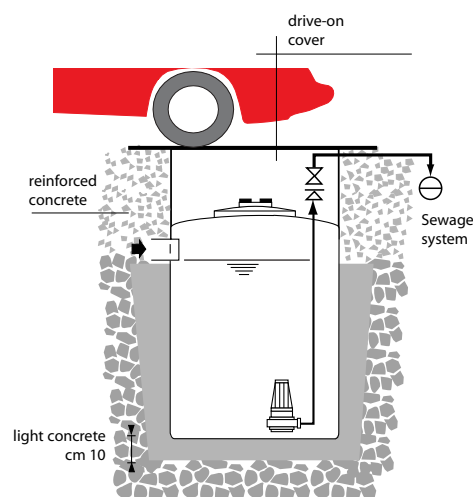
reinforced concrete in case of car passage on top of the plant). Make sure that covers are always inspectionable. **In case of superficial water table it is compulsory to create a water tight concrete chamber around the tank.** Isea is always available to supervise plant installation.



WALK-ON SOLUTION



DRIVE-ON SOLUTION



Verify that installation has been correctly carried out. Check that pumps work correctly. Clean the plant at least once a year. Pumping stations are to be used where it is necessary to quickly dispose of white and **black water passed through a grid.**

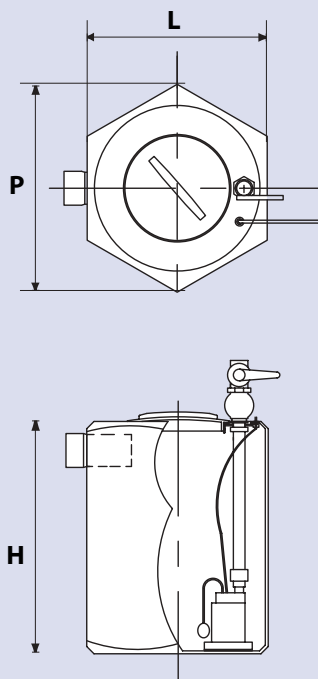
Pumps are in submersed free installation. They need to be taken out once a year to check that the impeller is working correctly. Also check electrical components in the panel.



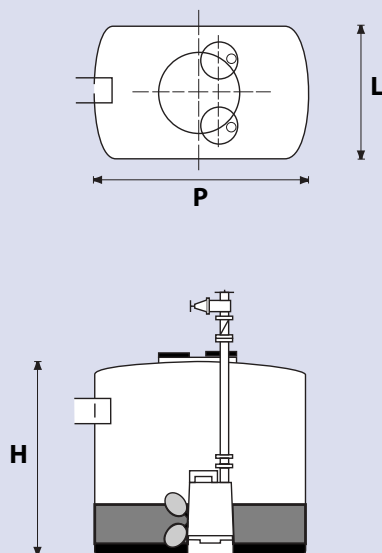
Manufactured
with recyclable
material

The company
has the right to
technically
modify the
system without
giving notice.

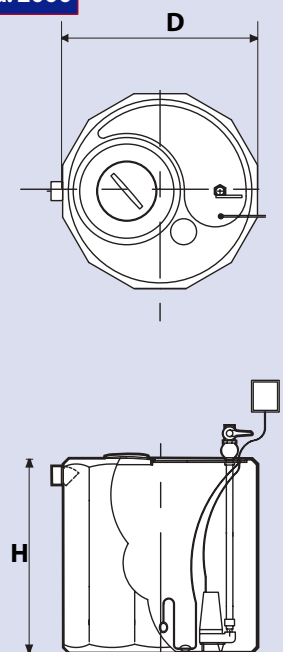
Mod. 250



Mod. 500



**Mod. 400
Mod. 1000
Mod. 2000**



PUMPING STATION

Code	Item	Ø or. LxP (cm)	H (cm)	Type of water	Height (m)	Rate (m³/h)	Kw	Tension (volt)
4010	250K A	60x68	80	grey	1-6	0-5.4	0.23	220
4011	250K B	60x68	80	black	1-8	0-12	0.60	220
4012/1	400K A1	80	80	grey	1-6	0-5.4	0.23	220
4013/1	400K B1	80	80	black	1-8	0-12	0.60	220
4014/1	400K B2	80	80	black	1-8	0-24	2x0.60	220
4012	500K A1	78x100	95	grey	1-6	0-5.4	0.23	220
4013	500K B1	78x100	95	black	1-8	0-12	0.60	220
4014	500K B2	78x100	95	black	1-8	0-24	2x0.60	220
4112	1000K B1	120	120	black	1-11	0-19	0.9	220
4112/1	1000K B1	120	120	black	1-10	0-14	0.88	380
4113	1000K B2	120	120	black	1-11	0-38	2x0.9	220
4113/1	1000K B2	120	160	black	1-10	0-38	2x0.88	380
4112/2	2000K B1	120	160	black	1-11	0-19	0.9	220
4112/3	2000K B1	120	160	black	1-10	0-14	0.88	380
4113/2	2000K B2	120	160	black	1-11	0-38	2x0.9	220
4113/3	2000K B2	120	160	black	1-10	0-28	2x0.88	380



ACCESSORIES

acoustic/optical alarms
grinder pumps

pump support

basket-grid

coupling for fix installation

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

Electro-mechanical devices for 12 months from delivery.



Pratica Grinder type



Pumping station **PRATICA Roto-type** which grinder pumps, made of PE.

One-piece tank with screw-on cover to control it and to install pumps, one or two, that can have an alternate or parallel operation. Clapets and valves are installed on the delivery pipes. Pumping station may be accessorised with floaters. Pumps are made of cast iron and may lift a wide range of flows (ex: 0-14,4 mc/h) to different heights (ex: 2-20m). A control panel is included in models from 1000l on to regulate the pumps' operation. Machinery is adequate to work with black water and used water in general, rain water and parking wash out. In case larger bodies are brought about with the flow, grinder pumps may be installed.

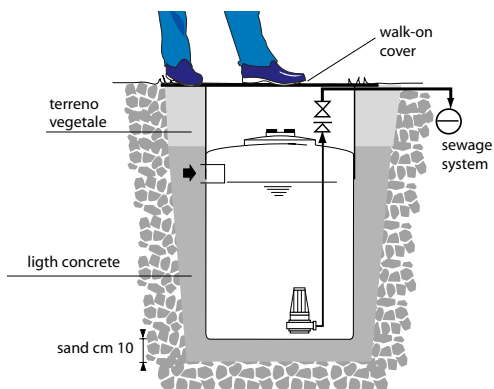


Dig a hole of appropriate dimensions and line a 10 cm thick light concrete layer at the bottom, level it. Lay the plant down. Fill it with clean water and fill the gaps around it with light concrete. Finish with a 5 cm thick light concrete casting and a 40 cm thick earth layer on top (or with reinforced concrete in case of car passage on top

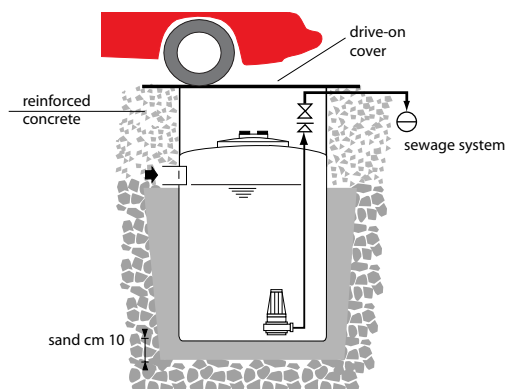
of the plant). Make sure that covers are always inspectionable. **In case of superficial water table it is compulsory to create a water tight concrete chamber around the tank.** Isea is always available to supervise plant installation.



WALK-ON SOLUTION



DRIVE-ON SOLUTION



Verify that installation has been correctly carried out. Check that pumps work correctly. Clean the plant at least once a year. Pumping stations are to be used where it is necessary to quickly dispose of white and **black water**.

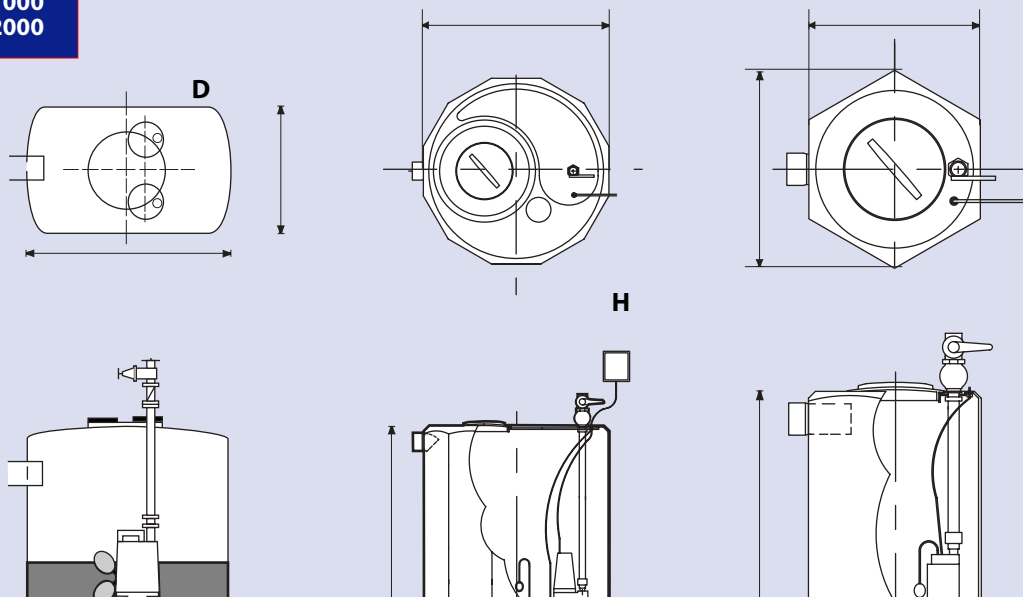
Pumps are in submersed free installation. They need to be taken out once a year to check that the impeller is working correctly. Also check electrical components in the panel.



The company has the right to technically modify the system without giving notice.



Mod. 400
Mod. 1000
Mod. 2000

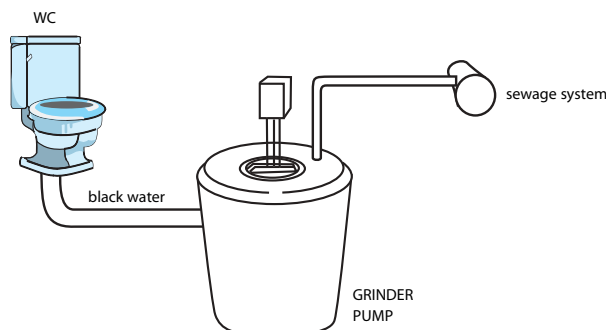


PRATICA GRINDER TYPE - Pumping station with grinder pumps

Code	Item	D (cm)	H (cm)	Type of water	Height (m)	Rate (m ³ /h)	Watt (kw)	V (volt)
4220	400 RI	80	80	black	2-20	0.4-7.2	1.4	220
4220/1	400 RI	80	80	black	2-20	0.4-7.2	1.3	380
4221	1000 RI	120	120	black	2-20	0.4-7.2	1.4	220
4221/1	1000 RI	120	120	black	2-20	0.4-7.2	1.3	380
4222	1000 R2	120	120	black	2-20	0.4-14.4	1.4	220
4222/1	1000 R2	120	120	black	2-20	0.4-14.4	1.3	380
4223	2000 RI	120	160	black	2-20	0.4-7.2	1.4	220
4223/1	2000 RI	120	160	black	2-20	0.4-7.2	1.3	380
4224	2000 R2	120	160	black	2-20	0.4-14.4	1.4	220
4224/1	2000 R2	120	160	black	2-20	0.4-14.4	1.3	380

R2= the system is equipped whit two pumps

"TYPICAL" INSTALLATION



ACCESSORIES

acoustic/optical alarms

delivery pipes

basket-grid

cupling for fix installation

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

Electro-mechanical devices for 12 months from delivery.



GREASE TRAP, entirely made of polyethylene, with screw-on cover both for inspection and for grease, floating material, sand and inert material removal.

Complete of polypropylene inlet pipe section Ø....., PVC outlet pipe Ø..... with neoprene gasket, T pipe with inspection cover.

This system is particularly suitable for kitchen and canteen sewage. It may treat flows of..... l/s. Entirely made of recyclable material. It is used as pre-treatment for sewage rich in floating material, such as water from canteen and kitchen.

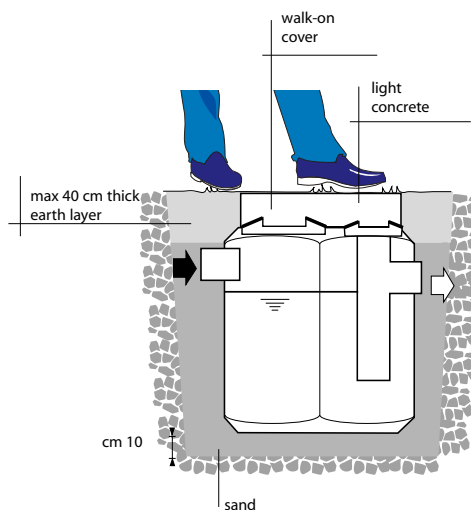


Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, dampen the sand and level it. Lay the tank down. Fill it with clean water connect the discharge pipe to

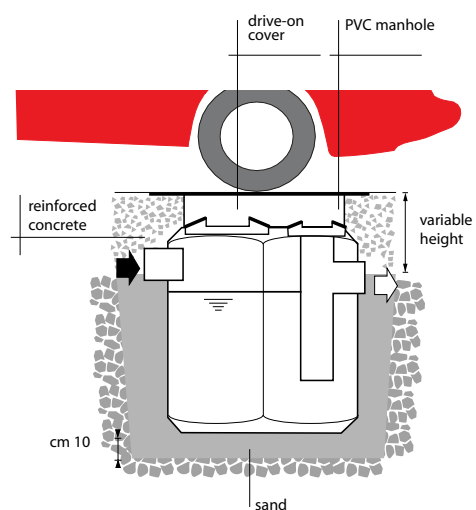
the grease trap inlet pipe in order to start the process. Proceed with dampened sand filling of the gaps as shown in the drawing.



WALK-ON SOLUTION



DRIVE-ON SOLUTION



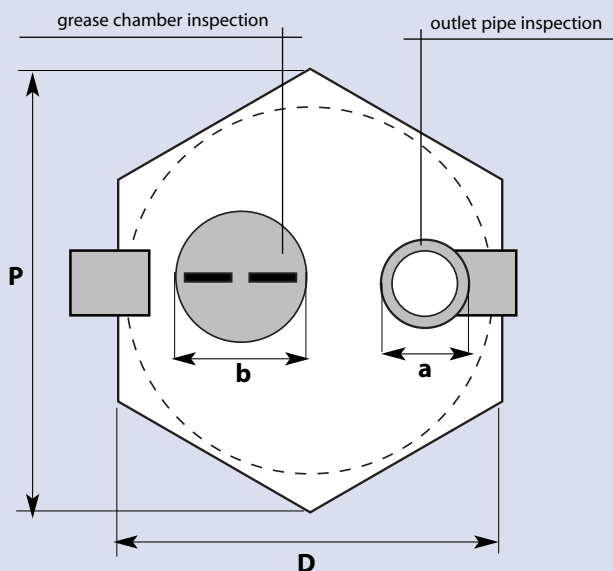
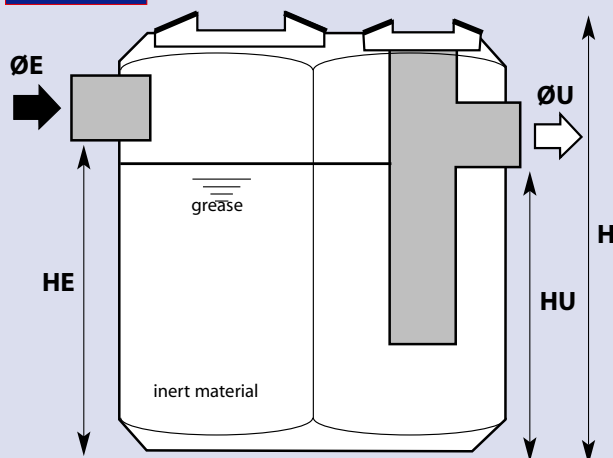
Verify that installation has been correctly carried out. Periodically verify that no larger body obstructs sewage inlet or outlet by opening the screw-on covers and checking through them. Periodically check that settled sand does not obstruct the outlet pipe.

Once a month it should be checked that grease level is not lower than the outlet pipe bottom. Periodically remove floating material by calling specialised companies. A special bacterial solution may be dosed in order to improve the system removal efficiency and decrease maintenance operations.

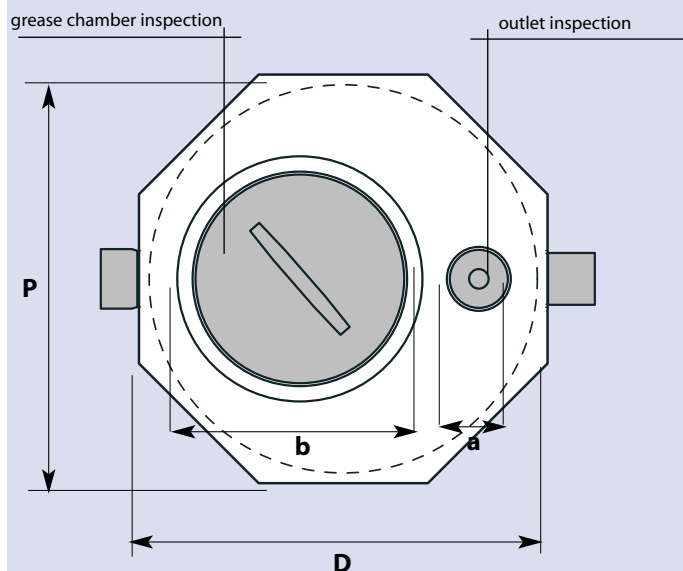
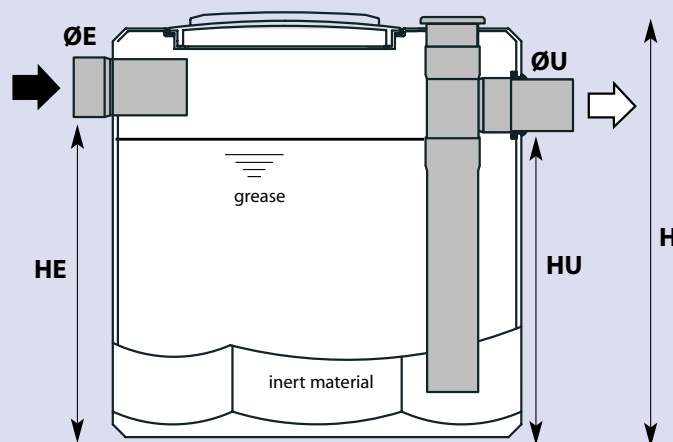


The company has the right to technically modify the system without giving notice.

**Mod. 125
Mod. 250
Mod. 350**



**Mod. 400
Mod. 800**



FAMILY 125-250-350

Code	Item	E.I.	D/LxP (cm)	H (cm)	a (mm)	b (mm)	V grease (m³)	Vr.i* (m³)	øE (m³)	øU (mm)	Q (l/sec)	HE (cm)	HU (cm)
0513	"FAMILY" 125	5	60x68	62	100	200	0.05	0.05	110	100	0.1	43	40
0514	"FAMILY" 250	10	60x68	82	100	200	0.1	0.1	110	100	0.15	63	60
0515	"FAMILY" 350	15	60x68	100	100	200	0.15	0.15	110	100	0.3	83	80

FAMILY 400-800

Code	Item	E.I.	D/LxP (cm)	H (cm)	a (mm)	b (mm)	V grease (m³)	Vr.i* (m³)	øE (m³)	øU (mm)	Q (l/sec)	HE (cm)	HU (cm)
0511/1	"FAMILY" 400	20	80	80	100	400	0.15	0.20	110	100	0.5	62	58
0511/2	"FAMILY" 800	25	80	120	100	400	0.25	0.50	110	100	0.8	102	97



ACCESSORIES

special bacterial solution

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

ISEA guarantees the system achieves:

floating material removal >90%

discharge water standards as per:

IN ITALY: D. lgs 152/99

IN EUROPE Cee 271/91

DESIGNED FOLLOWING DIN 4040 PRESCRIPTIONS

BAYGAR

Grease trap Sand trap

ENGINEER (SPECIFICATIONS)



GREASE TRAP, entirely made of polyethylene, with screw-on cover both for inspection and for grease, floating material, sand and inert material removal.

Complete of polypropylene inlet pipe section Ø....., PVC outlet pipe Ø..... with neoprene gasket, T pipe with inspection cover.

This system is particularly suitable for kitchen and canteen sewage. It may treat flows of..... l/s. Entirely made of recyclable material. It is used as pre-treatment for sewage rich in floating material, such as water from canteen and kitchen, or it is used as sand trap on mixed sewage, before getting in an activated sludge plant.

INSTALLER

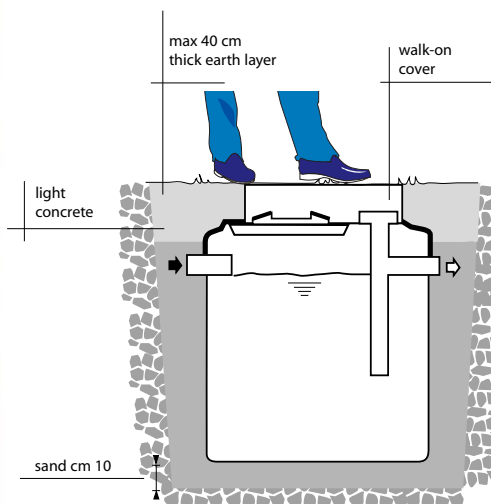


Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, dampen the sand and level it. Lay the tank down. Fill it with clean water connect the discharge pipe to the grease trap inlet pipe in order to start the process.

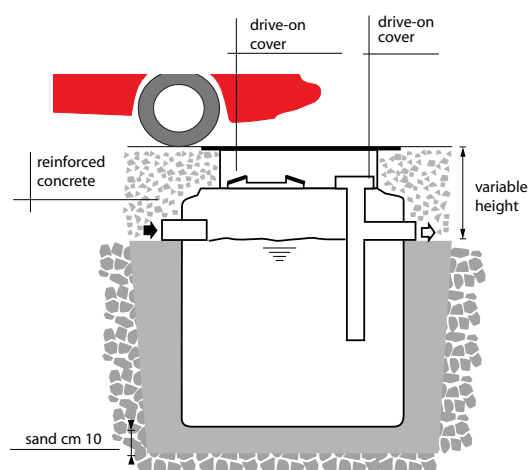
Proceed with dampened sand filling of the gaps as shown in the drawing.



WALK-ON SOLUTION



DRIVE-ON SOLUTION



USER

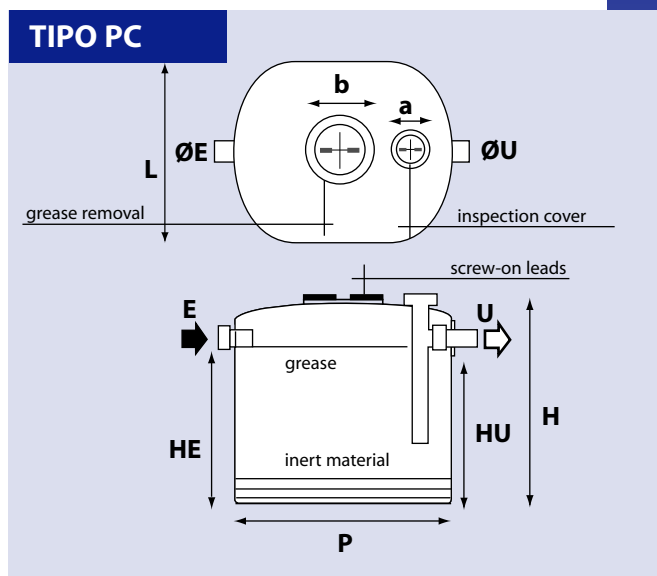
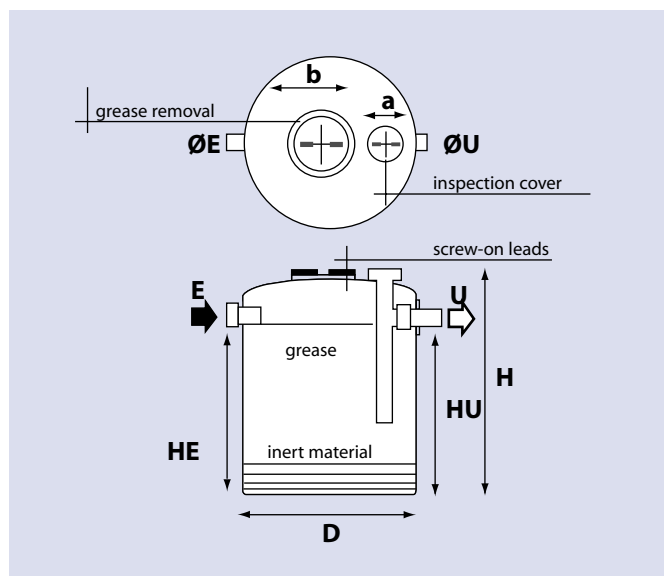


Verify that installation has been correctly carried out. Periodically verify that no larger body obstructs sewage inlet or outlet by opening the screw-on covers and checking through them. Periodically check that settled sand does not obstruct the outlet pipe.

Once a month it should be checked that grease level is not lower than the outlet pipe bottom. Periodically remove floating material by calling specialised companies. A special bacterial solution may be dosed in order to improve the system removal efficiency and decrease maintenance operations.



The company has the right to technically modify the system without giving notice.



GREASE TRAPS / SAND TRAPS

Code	Item	E.I.	Seats	Ø opp. LxP (cm)	H (cm)	a (mm)	b (mm)	V grease (m³)	Vr.i.* (m³)	ØE (mm)	ØU (mm)	Q (l/sec)	Weight (Kg)	HE (cm)	HU (cm)
0511	PC A1	20	50	78x100	95	100	310	0.25	0.25	110	100	0.5	20	73	70
0512	PC A2	30	100	78x128	123	200	310	0.5	0.4	110	100	1.0	40	99	96
0411	1000	30	100	110	122	200	310	0.5	0.4	110	100	1.0	40	95	92
0411/1	1500	50	200	120	140	200	310	0.7	0.6	125	125	1.5	53	115	110
0412	2000	80	300	120	195	200	310	0.9	0.8	140	140	2.0	75	170	165
0413	3000	100	400	147	200	200	310	1.3	1.1	140	140	2.5	100	170	165
0414	4000	150	600	147	245	200	400	1.7	1.5	160	160	3.5	120	215	210
0416	6000	200	900	215	215	200	400	2.9	2.7	160	160	5.0	180	173	168
0417	8000	250	1000	215	260	200	400	3.7	3.4	160	160	7.0	200	217	212
0418	10000	300	1100	215	300	200	400	4.5	4.0	200	200	10	265	251	246
0419	15000	400	1500	225	440	200	400	7.0	5.0	200	200	15	405	400	394

* Total inert material volume

Main parameter for system design is hydraulic retention time ($Tr=V/Q$). This is fixed in order to have lighter substances separation. Retention time is different, according to sewage type or its grease content.

Other parameters need to be checked. These are: effective surface ($Se=Q/V$) and the net volume ($Vu=cxQ$) for the grease collection.



ACCESSORIES

special bacterial solution

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

ISEA guarantees the system achieves:

Floating material removal >90%

Discharge water standards as per:

IN ITALY: D. lgs 152/99

IN EUROPE Cee 271/91

DESIGNED FOLLOWING DIN 4040 PRESCRIPTIONS

BAYGAR

Septic tank

ENGINEER (SPECIFICATIONS)



SEPTIC TANK made of PE, one piece and seamless, with screw-on cover for inspection and sludge removal. Equipped with a polypropylene inlet pipe section and a PVC outlet pipe section with neoprene gasket. T pipe in the inlet, 90° curve in the outlet. The system may be used for equivalent inhabitants (E.I.) with a per capita daily water consumption ranging from 100 to 400 l.

INSTALLER

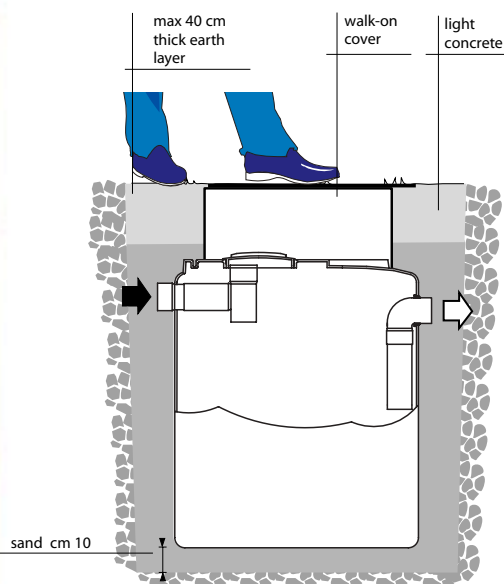


Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm, dampen the sand and level it. Lay the plant down. Connect the septic tank's outlet pipe to an inspection chamber by means of a Ø..... pipe. Connect the general discharge pipes to the septic tank's inlet pipe by means of a

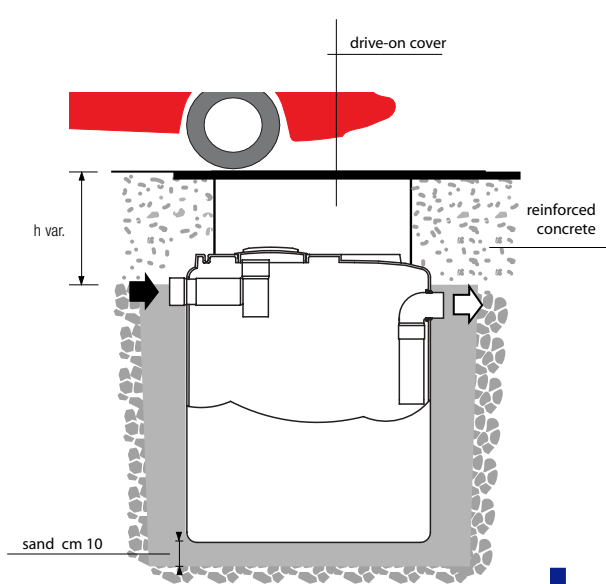
polypropylene or PVC pipe having Ø..... Fill the tank with clean water and proceed with dampened sand filling of the gaps around it. Finish with a 5 cm thick light concrete casting (or with reinforced concrete in case of car passage on top of the plant). Make sure that covers are always inspectionable.



WALK-ON SOLUTION



DRIVE-ON SOLUTION

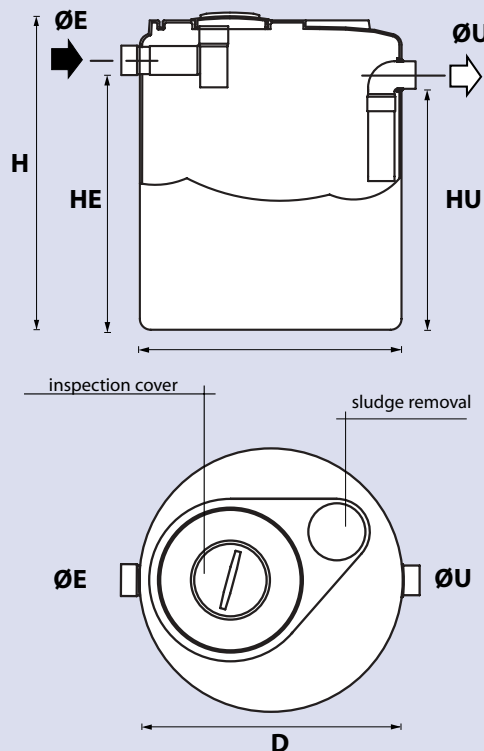


USER

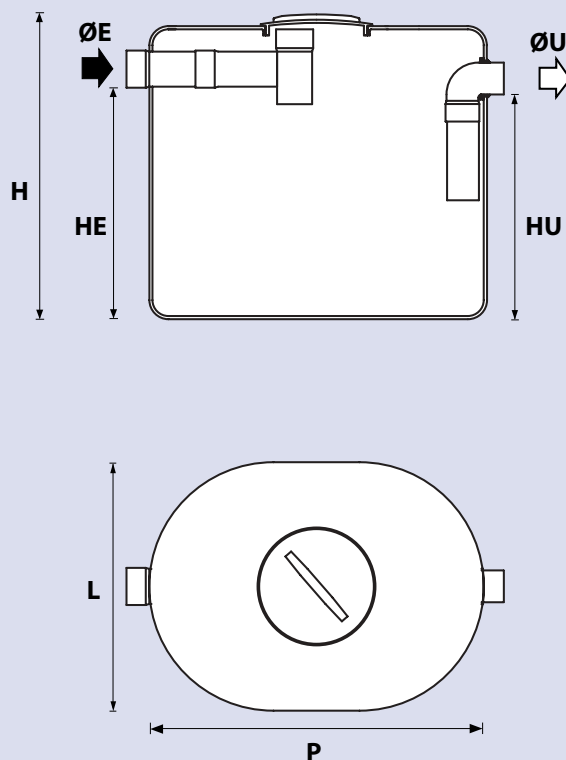


Verify that installation has been correctly carried out. Periodically remove excess sludge and grease from the tank. Periodically control that there are no obstructions in inlet or outlet. Periodically

control that sludge and floating materials do not reach the outlet curve bottom, or they will be washed out the system. Always contact specialised companies for cleaning operations.



TYPE PC



SEPTIC TANK

Code	Item	Equivalent Inhabitant (E.I.)	Ø opp. L x P (cm)	H (cm)	S sed (m ²)	V (m ³)	Ø E (mm)	Ø U (mm)	Weight (kg)	HE (cm)	HU (cm)
0311/1	400	4	80	80	0.4	0.4	110	100	20	62	58
0311	PC AE5	5	78x100	95	0.6	0.5	110	100	25	73	70
0311/2	800	8	80	120	0.7	0.8	110	100	29	102	97
0312	PC AE10	10	78x128	123	0.8	1.0	125	125	41	99	96
0302	1000	10	110	122	0.9	1.0	110	100	44	95	92
0303	1500	15	120	140	1.3	1.5	125	125	55	115	110
0304	2000	20	120	195	1.3	2.0	140	140	77	170	165
0305	3000	25	147	200	1.3	3.0	140	140	103	170	165
0306	4000	30	147	245	2.0	4.0	160	160	122	215	210
0308	6000	45	215	215	3.0	6.0	160	160	180	173	168
0309	8000	70	215	260	3.0	8.0	160	160	200	217	212
0310	10000	100	215	300	4.0	10.0	200	200	265	251	246
0310/1	15000	150	225	440	4.0	15.0	200	200	405	400	394

DESCRIPTION

Main design parameter is net volume ($V_u = Q \times T_r$), which is obtained considering increasing retention time for decreasing dimensions. Also the rate between net volume and horizontal surface has been considered ($r = S/V_u$). An increase in the rate means easier separation for solids and lower level differences when flow varies. Sludge storage volume ($V_f = Q_s \times n$) is controlled by multiplying the daily per capita amount of suspended solids and the number of users.

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

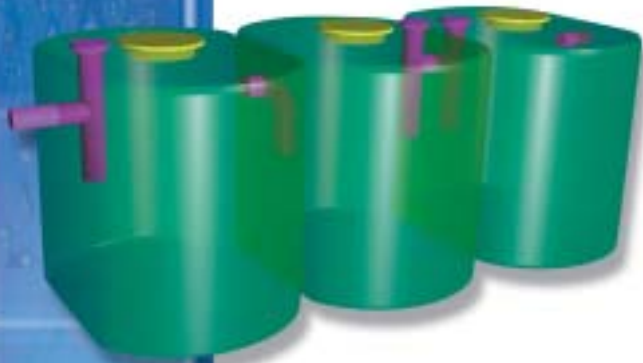
ISEA guarantees

Floating material removal efficiency > 90 %

Settable substances removal efficiency > 70 %

Three-chambered septic tank

ENGINEER (SPECIFICATIONS)



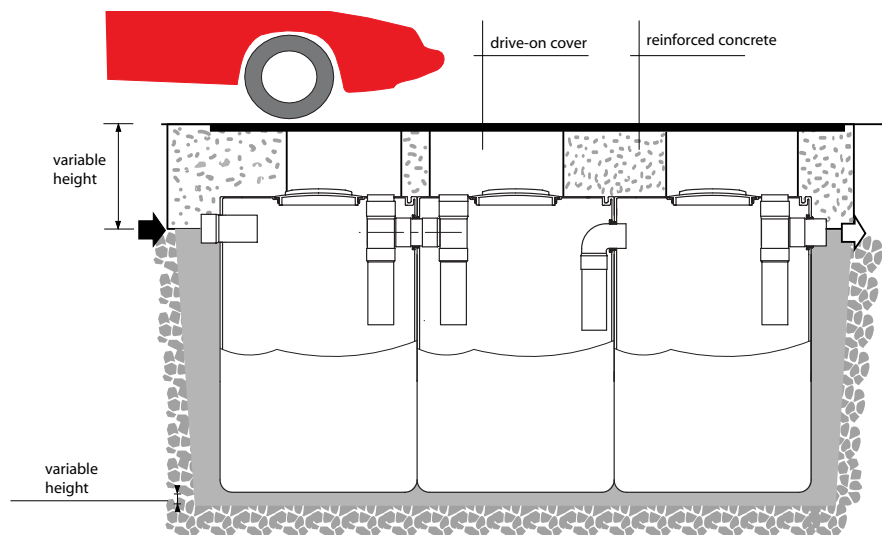
THREE CHAMBERED SEPTIC TANK made of PE, one piece and seamless, with screw-on cover for inspection and sludge removal. Equipped with a polypropylene inlet pipe section and a PVC outlet pipe section with neoprene gasket. T pipe in the inlet, 90° curve in the outlet. The system may be used for..... equivalent inhabitants (E.I.) with a per capita daily water consumption ranging from 100 to 400 l.

INSTALLER



Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom grain size 0-5 mm, dampen the sand and level it. Lay the plant down. Connect the septic tank's outlet pipe to an inspection chamber by means of a Ø pipe. Connect the general discharge pipes to the septic tank's inlet pipe by means of a

polypropylene or PVC pipe having Ø..... . Fill the tank with clean water and proceed with dampened sand filling of the gaps around it. Finish with a 5 cm thick light concrete casting (or with reinforced concrete in case of car passage on top of the plant). Make sure that covers are always inspectionable.

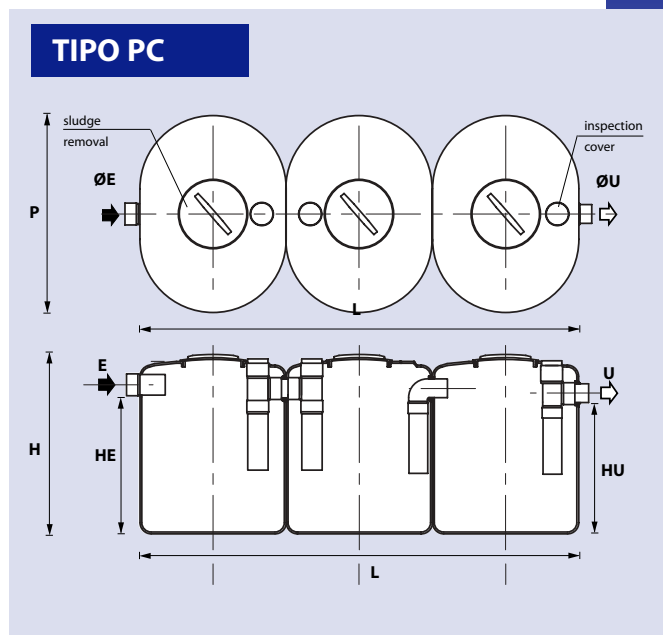
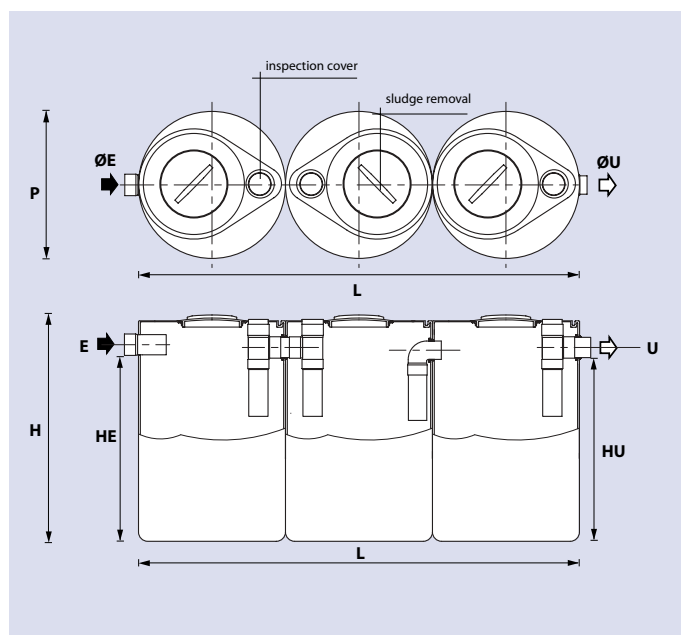


USER



Verify that installation has been correctly carried out. Periodically remove excess sludge and grease from the tank. Periodically control that there are no obstructions in inlet or outlet. Periodically

control that sludge and floating materials do not reach the outlet curve bottom, or they will be washed out the system. Always contact specialised companies for cleaning operations.



NOTICE: Three-chambered septic tank is also available as two-chambered septic tank; it is possible to have single tanks of different volumes.

THREE CHAMBER SEPTIC TANK

Code	Item	Equivalent Inhabitant (E.I.)	P (cm)	L (cm)	H (cm)	He (cm)	Hu (cm)	S sed (m ²)	V tot. (m ³)	Ø E (mm)	Ø U (mm)	Weight (kg)
0213	"PC" 1	5	100	250	95	62	58	0.86	1.65	110	100	75
0213/1	400	4	80	250	80	73	70	0.7	1.2	110	100	65
0213/2	800	6	80	250	120	102	97	0.7	1.8	110	100	87
0214	"PC" 2	10	128	258	123	99	96	0.9	3.0	110	100	125
0313	1000	10	110	330	122	95	92	0.9	3.0	110	100	135
0313/1	1500	15	120	400	140	115	110	1.1	4.5	125	125	170
0314	2000	20	120	400	195	170	165	1.3	6.0	125	125	230
0315	3000	30	147	500	200	170	165	1.3	9.0	125	125	315
0316	4000	40	147	500	245	215	210	2.0	12.0	140	140	370
0317	6000	60	215	650	215	173	168	3.0	18.0	140	140	550
0318	8000	80	215	650	260	217	212	3.0	24.0	160	160	620
0319	10000	100	215	650	300	251	246	4.0	30.0	160	160	810

DESCRIPTION

Main design parameter is net volume ($V_u = Q \times T_r$), which is obtained considering increasing retention time for decreasing dimensions. Also the rate between net volume and horizontal surface has been considered ($r = S/V_u$). An increase in the rate means easier separation for solids and lower level differences when flow varies. Sludge storage volume ($V_f = Q_s \times n$) is controlled by multiplying the daily per capita amount of suspended solids and the number of users.

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

ISEA guarantees

Floating material removal efficiency > 90 %

Settable substances removal efficiency > 70 %

Biological Imhoff tank

ENGINEER (SPECIFICATIONS)



BIOLOGICAL IMHOFF TANK made of PE, one piece and seamless, with screw-on covers for inspection of the central compartment and of the main one, and for sludge removal. Equipped with a polypropylene inlet pipe section and a PVC outlet pipe section with neoprene gasket. T pipe in the inlet, 90° curve in the outlet. The system may be used for..... equivalent inhabitants (E.I.) with a per capita daily water consumption ranging from 100 to 400 l. It is advisable to use it only for black water treatment in order to remove settable organic matter with an appropriate retention time. It is possible to foresee a venting pipe.

INSTALLER

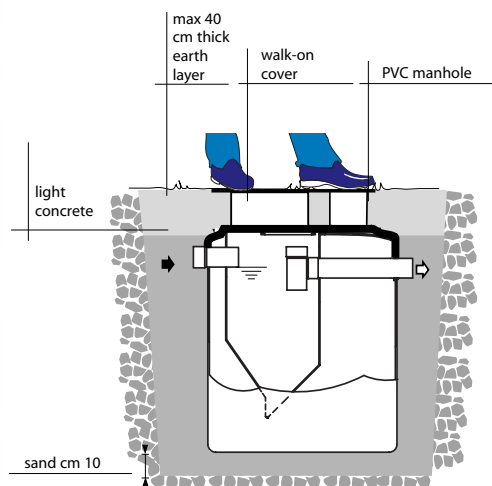


Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5mm, dampen the sand and level it. Lay the plant down. Connect the septic tank's outlet pipe to an inspection chamber by means of a Ø..... pipe. Connect the general discharge pipes to the septic tank's inlet pipe by means of a

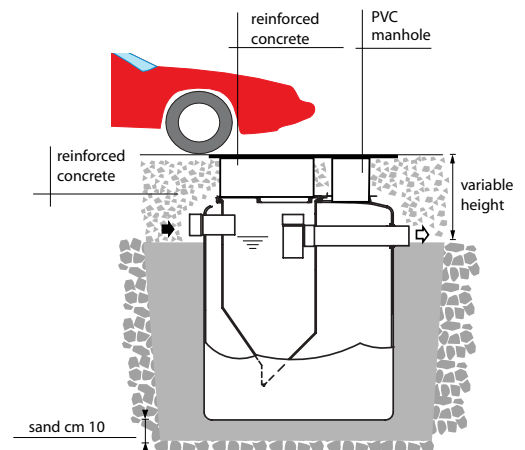
polypropylene or PVC pipe having Ø..... Fill the tank with clean water and proceed with dampened sand filling of the gaps around it. Finish with a 5 cm thick light concrete casting (or with reinforced concrete in case of car passage on top of the plant). Make sure that covers are always inspectionable.



WALK-ON SOLUTION



DRIVE-ON SOLUTION

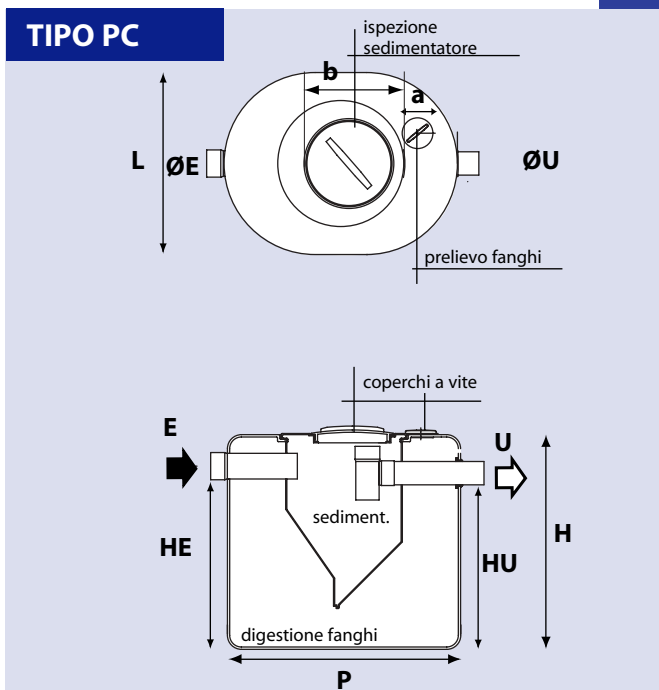
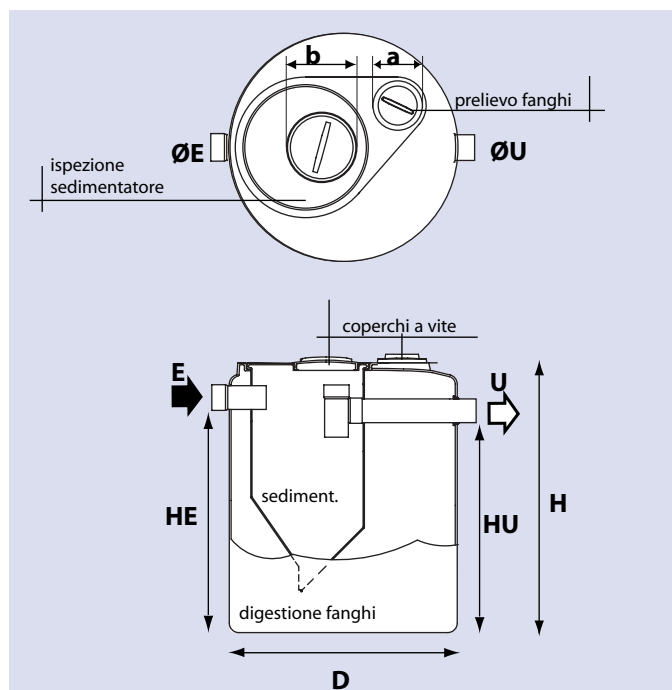


USER



Verify that installation has been correctly carried out. Periodically remove excess sludge and grease from the tank. Periodically control that there are no obstructions in inlet or outlet. Periodically

control that sludge does not reach the settling tank bottom, or it will be washed out the system. Always contact specialised companies for cleaning operations.



BIOLOGICA IMHOFF

Code	Item	Equivalent Inhabitant (E.I.)	Ø LxP (cm)	H (cm)	a (mm)	b (mm)	S sed (m ²)	V sed (m ³)	V dig. (m ³)	ØE (mm)	ØU (mm)	Weight (Kg)	HE (cm)	HU (cm)
0211	"PC" A1	3	78x100	95	125	310	0.2	0.1	0.4	110	100	28	73	70
0211/1	400	3	80	80	125	310	0.2	0.1	0.4	110	100	28	62	58
0211/2	800	4	80	120	125	310	0.2	0.1	0.7	110	100	33	102	97
0212	"PC" A2	5	78x128	123	200	310	0.2	0.1	0.9	125	125	48	99	96
0111	AE 1/10	5	110	122	200	310	0.28	0.15	0.9	110	100	37	95	92
0111/1	1500	10	120	140	200	310	0.28	0.15	1.4	125	125	64	115	110
0112	2000	15	120	195	200	310	0.28	0.3	1.6	125	125	94	170	165
0113	3000	20	147	200	200	310	0.44	0.6	2.2	125	125	133	170	165
0114	4000	25	147	245	200	300	0.44	0.6	3.3	140	140	145	215	210
0115	6000	50	215	215	200	400	1.13	1.1	5.0	140	140	200	173	168
0116	8000	70	215	260	200	400	1.13	1.1	7.0	160	160	240	217	212
0117	10000	100	215	300	200	400	1.13	1.3	8.7	160	160	290	251	246
0117/1	15000	150	225	440	200	400	1.13	1.86	13.5	200	200	442	400	394

Main design parameter for the settling compartment is retention time ($Tr = V/Q$) that is determined on the basis of different working conditions based on experience, and therefore values are different. Another parameter connected to the above mentioned, is hydraulic load, referred to the horizontal surface of the settling tank ($C.I. = Q/S$). In the digestion compartment, the population served is the parameter considered. The volume is verified on the basis of the solids produced per capita, which is a more constant parameter than flow.

SPECIAL ITEMS: BIOLOGICAL IMHOFF TANK WITH CHLORINATION, BIOLOGICAL IMHOFF TANK PLUS I, BIOLOGICAL IMHOFF TANK PLUS II, BIOLOGICAL IMHOFF TANK PLUS III



ACCESSORIES

venting pipe

tablet based chlorination

bacterial feeding solution

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

Settable substances removal efficiency > 90 %

BOD₅ removal efficiency ~ 40%

Organic part of the sludge removal ≈ 50%

the system achieves discharge water standards as per:

IN ITALY: D. lgs 152/99

IN EUROPE Cee 271/91

BAYGAR

Rain

ENGINEER (SPECIFICATIONS)



RAIN WATER TREATMENT, CONSISTING OF THE FOLLOWING PHASES:

FLOW PARTITIONER - , which is meant to separate the first 15 minutes of rain water from the rest, which does not need to be treated and must be collected to the final discharge through a by-pass pipe.

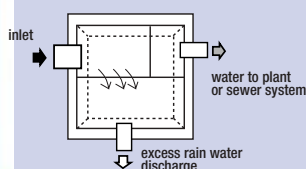
STORAGE TANK where the first rainwater arrives and where inert material settles and floating material floats. Water is stopped in this tank for 24-48 hours. At the bottom of the tank a pump is installed, power of about 0,3 kW, 220 Volts. This pump is in charge for water feeding to the following phase.

STATIC OIL TRAP , where the physical separation takes place. Floating material is stored in the central basin.

FINAL FILTER where emulsion oil is removed from the flow. A gravity filter with oil-absorbent material inside, or a pressurised filter with sand and activated carbon, especially if metals are present in traces.

OPTIONAL

Fibreglass flow partitioner for rain water



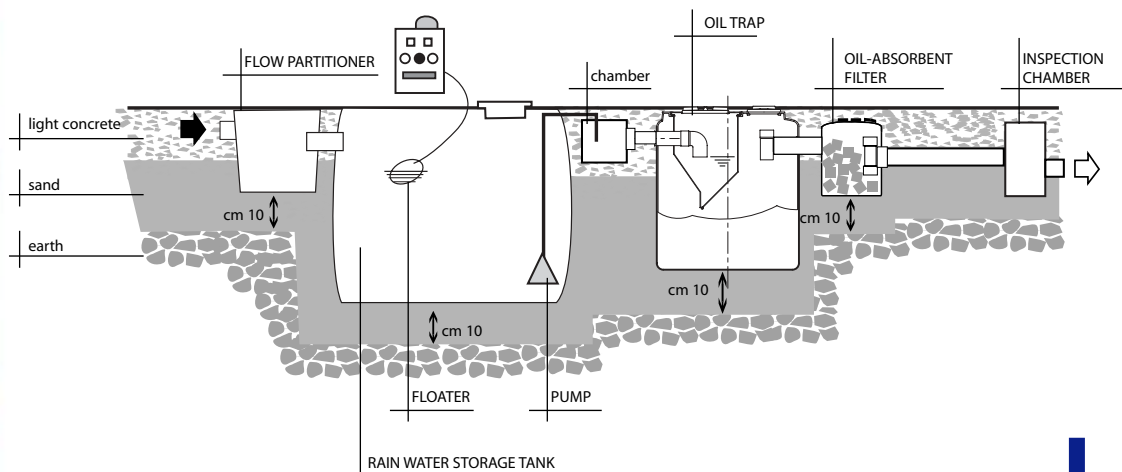
Flow partitioner, made of fibreglass, with internal walls, to be used to receive water coming from surfaces up to 5000 m2, before discharging in sewage system, in order to prevent its failure. Excess water are discharged in terrain or in superficial water body, therefore this water must be as per law standards. me al D. L.vo n° 152/99 .

INSTALLER



Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm, dampen the sand and level it. Lay the plant down. Fill the tank with clean water after having connected the tanks hydraulically and proceed with dampened sand filling of the gaps around them. Finish with a 5 cm thick light con-

crete casting (or with a 25 cm thick reinforced concrete slab in case of car passage on top of the plant). Make sure that covers are always inspectionable. Connect pump to the electrical panel. If the water table is superficial, a concrete water-tight chamber has to be built all around.



USER



Rain water treatment plant treats water coming from paved surfaces. It removes pollutants and allows the water to be discharged to final destination as per specified law standards. After installation check that all electro-mechanical devices work properly (pump, floater and panel) at least once a year. Remove inert material from storage

tank at least once a year. Check floating material in the oil trap every two months and clean it when necessary. Control the oil-absorbent filter every two months and change the internal material when exhaust. Backwash is necessary once a week if a pressurised filter is used instead.



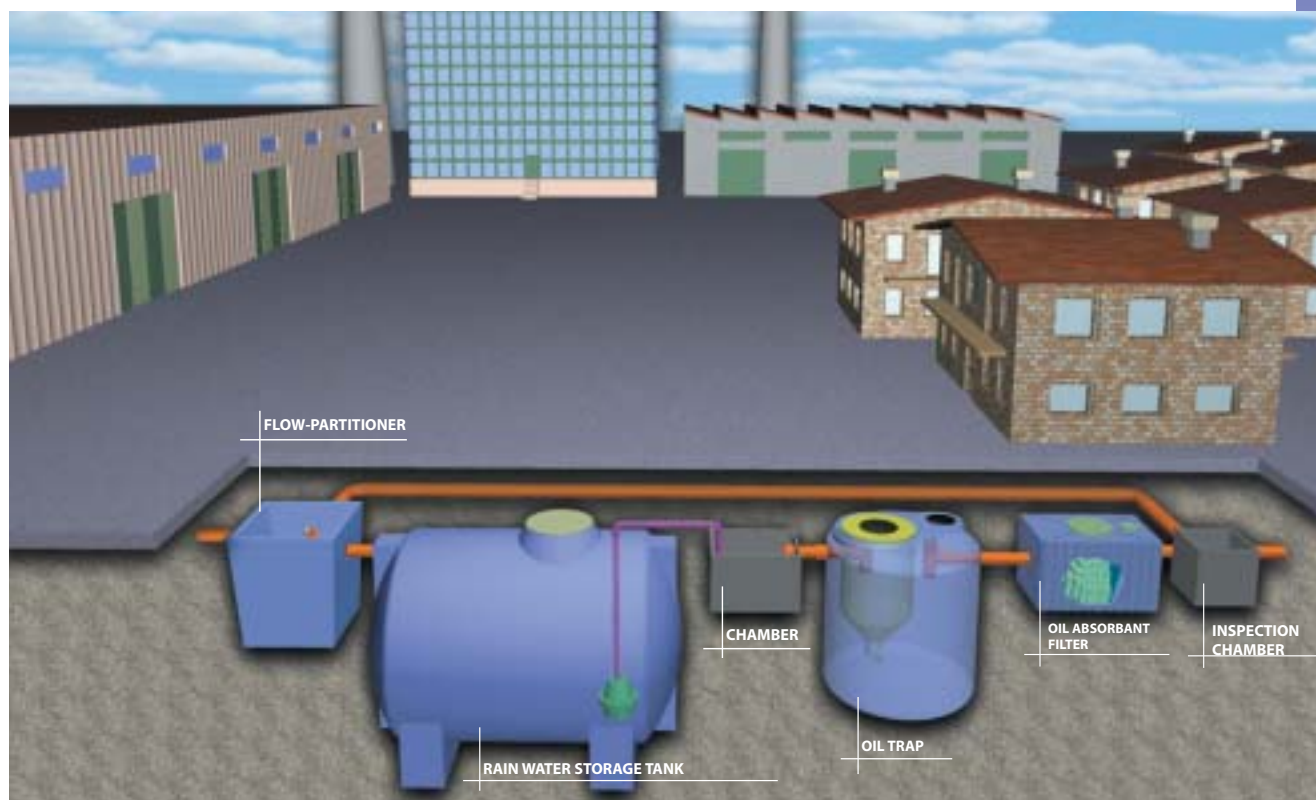
COMPLETE PLANT - Rain water treatment

Code	Item	Surface (m ²)	COMPLETE PLANT			
			FLOW PARTITIONER (lt)	STORAGE (lt)	OIL TRAP (lt)	FILTER (lt)
0901	RAIN 5	500	500	3500	1500	250
0902	RAIN 10	1000	500	5000	2000	250
0903	RAIN 15	1500	500	10000	3000	250
0904	RAIN 20	2000	500	10000	4000	500
0905	RAIN 50	5000	500	25000	6000	500
0906	RAIN 100	10000	1000	50000	6000	500

Lombardia region law n 62 19/20 27/05/85 Volume of first rain water

Surface (m ²)	Rain height (mm)	*Rain volume (m ³)	*first rain flow 15' (lt/s)	Surface (m ²)	Rain height (mm)	*Rain volume (m ³)	*first rain flow 15' (lt/s)
500	5	2,5	3	5000	5	25,0	28
750	5	3,8	4	6000	5	30,0	33
1000	5	5,0	6	7000	5	35,0	39
1500	5	7,5	8	8000	5	40,0	44
2000	5	10,0	11	9000	5	45,0	50
3000	5	15,0	17	10000	5	50,0	56
4000	5	20,0	22				

* Collection coefficient for paved surfaces = 1



Customised plants available



ACCESSORIES

automatic management and
motorised valves
pressurised filter
sand trap
grease trap
oil trap

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees

the system achieves discharge water standards as per:

IN ITALY: Lombardia region law 62 art. 19/20 27/05/89

electro-mechanical devices for 12 months from delivery.

Oil trap

ENGINEER (SPECIFICATIONS)



The **OIL TRAP**, entirely made of PE, one piece with one screw-on cover to check the system and to remove oils, hydrocarbons and floating materials.

A second screw-on cover is meant to remove sand and inert material

Inlet pipe made of PVC, Ø....., PVC outlet pipe Ø..... with neoprene external gasket, T pipe.

The oil trap can treat water containing mineral oils and greases (ex: car repair shops etc.).

INSTALLER



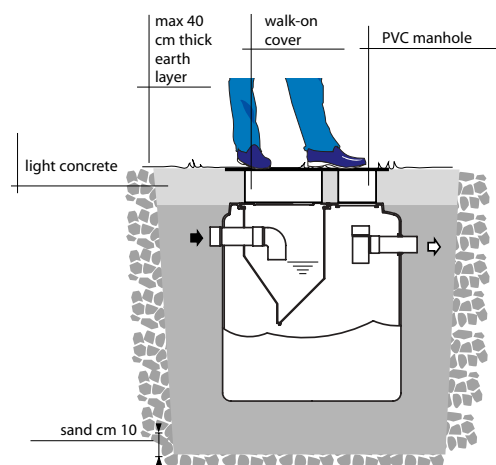
Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm. Dampen the sand and level it. Lay the plant down and connect the outlet pipe to an inspection chamber by means of a PVC pipe Ø..... . Fill the tank with clean water. Connect

the inlet pipe to the system collecting waste water. In this way the depuration process will be started.

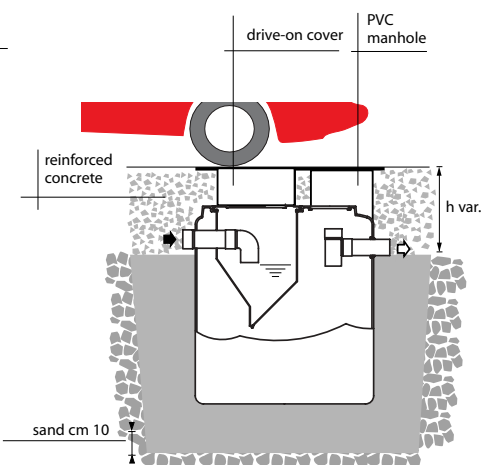
Fill the gaps around the plant with dampened sand. Finish as shown in the drawing.



WALK-ON SOLUTION



DRIVE-ON SOLUTION



USER



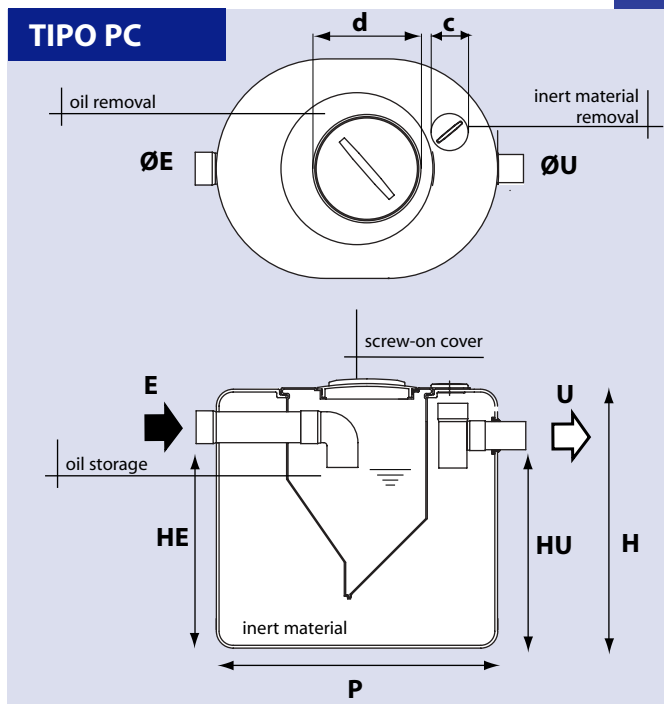
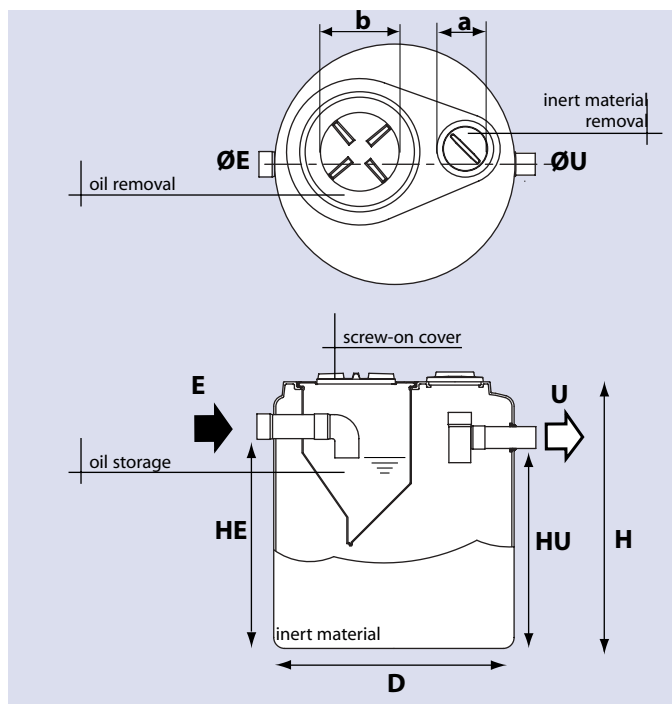
Verify that installation has been correctly carried out. Periodically verify that no larger body obstructs sewage inlet or outlet by opening the screw-on covers and checking through them. Periodically check that settled sand level does not pass the settling tank bottom. This can be

done by checking through the smallest opening. Periodically verify that oils, hydrocarbons and floating material have not completely filled the central basin.

Periodically remove the above mentioned substances by calling specialised companies.



The company has the right to technically modify the system without giving notice.



DESCRIPTION

In case of sewer system, final discharge, the oil trap is designed as follows: $NG = [(Q_r) + (Q_s) \times (FQ_s)] \times (F_d)$

Where

Q_r = rain water on paved surfaces Q_s = polluted water coming, for example from car repair shops. The flow is determined on the basis of cleaning machines FQ_s = density factor, ranging from 1 to 3, according to the specific weight of the pollutant minimum volume for sand storage is - 650 lt for flows up to 3 lt/s - 2500 lt for flows up to 10 lt/s - to be determined on the basis of specific coefficient for flows higher than 10 lt/s.

OIL TRAP

Code	Item	Area (m ²)	Ø opp LxP (cm)	H (cm)	a (mm)	b (mm)	S sed (m ²)	V sed (m ³)	Vr.i. (m ³)	ØE (mm)	ØU (mm)	Q (l/sec)	Weight (Kg)	HE (cm)	HU (cm)
0711/1	400	50	80	80	125	310	0,2	0.09	0.3	110	100	0.2	24	62	58
0711/2	800	100	80	120	125	310	0,2	0.09	0.7	110	100	0.5	29	102	97
0611	D 25	200	110	122	200	310	0,28	0.15	0.9	110	100	1.0	40	95	92
0611/1	1500	300	120	140	200	310	0,28	0.15	1.4	110	100	1.5	53	115	110
0612	2000	400	120	195	200	310	0,28	0.26	1.6	125	125	3.0	75	170	165
0613	3000	500	147	200	200	310	0,44	0.6	2.2	125	125	4.5	100	170	165
0614	4000	600	147	245	200	310	0,44	0.6	3.3	125	125	6.0	120	215	210
0615	6000	1000	215	215	200	400	1.13	1.1	5.2	140	140	10	200	173	168
0616	8000	2000	215	260	200	400	1.13	1.1	7.2	140	140	15	235	217	212
0617	10000	3000	215	300	200	400	1.13	1.3	9.0	160	160	20	300	251	246
0618	15000	4500	225	440	200	400	1.13	1.86	13.5	200	200	30	405	400	394

OIL TRAP - Type "PC"

Code	Item	Area (m ²)	P (cm)	L (cm)	H (cm)	c (mm)	d (mm)	S sed (mm)	V sed (m ³)	Vr.i. (m ³)	ØE (mm)	ØU (mm)	Q (l/sec)	Weight (Kg)	HE (cm)	HU (cm)
0713	"PC"B1	100	100	78	95	125	310	0.2	0.5	0.5	110	100	0.5	20	73	70
0714	"PC"B2	200	128	78	123	200	310	0.2	1.0	1.0	110	100	1.0	40	99	96

It is possible to equip the oil trap with an automatic oil discharge and complete the system with an oil absorbent chamber.



ACCESSORIES

automatic oil discharge

additional oil storage

oil absorbent chamber

coalescent filter

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

ISEA guarantees

Floating material removal >90%

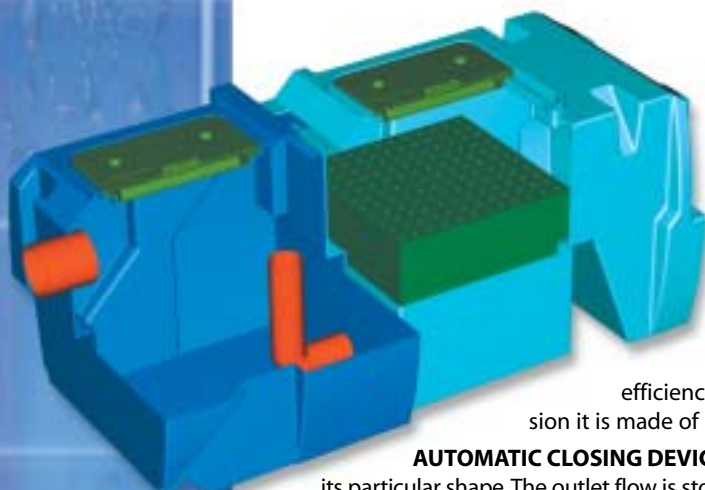
Outlet qualitative standards as per:

INITALY D.lgs 152/99

IN RUROPE Cee 271/91

Designed following DIN 1999 prescriptions

BAYGAR



OIL AND HYDROCARBONS SEPARATOR MADE OF PE, consisting of two distinct and coupled chambers where sand trap, coalescent filter and automatic closing device are to be found.

It is meant to treat rain water from paved surfaces and water from auto repair shops.

SEWAGE INLET, with a T pipe to break the inlet flow

SAND TRAP It is the first chamber and it is meant for heavier materials sedimentation.

COALESCENT FILTER. It can improve the floating process efficiency by enabling smaller oil particles separation, in standard version it is made of plastic

AUTOMATIC CLOSING DEVICE It is meant to automatically close the outlet pipe thanks to its particular shape. The outlet flow is stopped when the oil and hydrocarbons storage chamber is full.

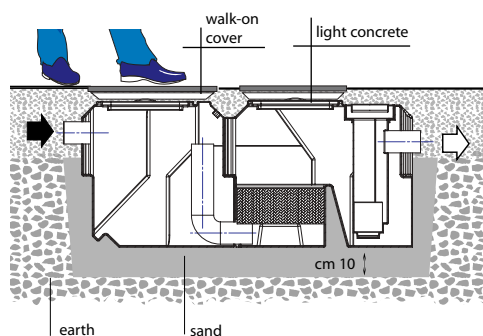
HYDROCARBONS STORAGE VOLUME It is a space where oil and hydrocarbons are collected until cleaning is performed.



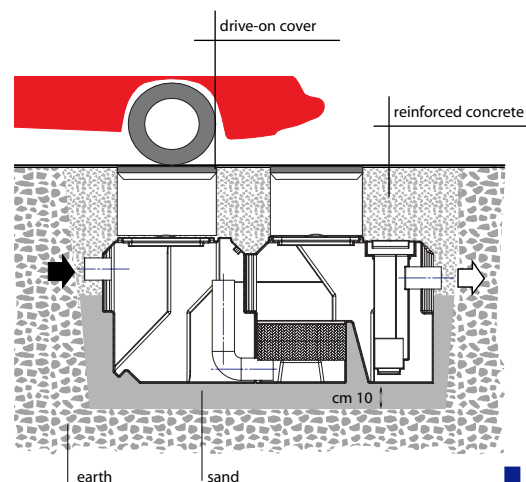
Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm, dampen the sand and level it. Connect the outlet pipe to an inspection chamber with a PVC Ø..... pipe. Connect the waste water collecting system to the inlet pipe by means of a PVC Ø..... pipe. Fill OTTO with clean water in order to correctly start the process. Use damp-

ned sand to fill the gaps around the tank. Build a 5 cm thick light concrete shell on top of the tank, or a reinforced concrete one, in case of drive-on surfaces. Do not forget walk-on and drive-on manholes for inspection. In standard version it is possible to cover the tank with no more than 50 cm thick earth layer.

WALK-ON SOLUTION

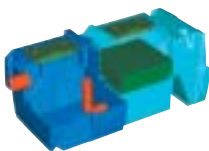


DRIVE-ON SOLUTION

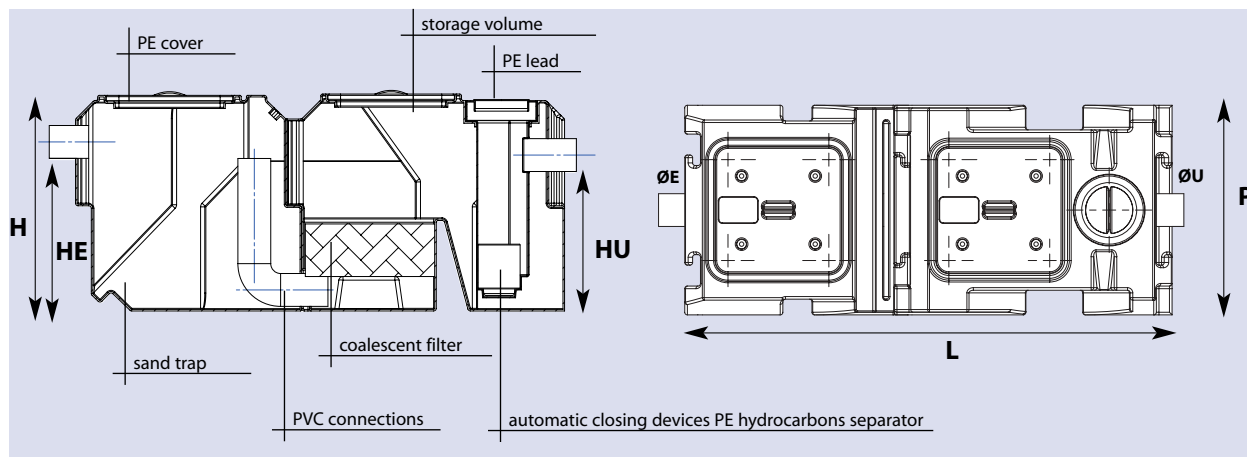


Particularly indicated for rain water coming from parkings and mechanical workshops, OTTO is installed between the waste water collecting system and the final discharge to prevent pollution. After installing the plant, verify it under the hydraulic point of view by allowing inlet in.

Periodically get a sample of the outlet analysed and evaluate if a cleaning of the system is necessary. Also periodically clean the sand trap. Clean the coalescent filter with pressurised water. All removed materials must be dealt with by specialised companies.



The company has the right to technically modify the system without giving notice.



OTTO - Separatore di idrocarburi in polietilene

Code	Item	Rate (l/sec.)	L (mm)	P (mm)	H (mm)	HE (mm)	HU (mm)	ØE (mm)	ØU (mm)	Weight (kg)
0811	OTTO 015	1.5	1850	800	825	580	530	125	125	55
0812	OTTO 030	3.0	2100	800	825	580	530	125	125	75



ACCESSORIES

manual grid

grease trap

sand trap

oil absorbant material

different coalescent filters

drive-on kit

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

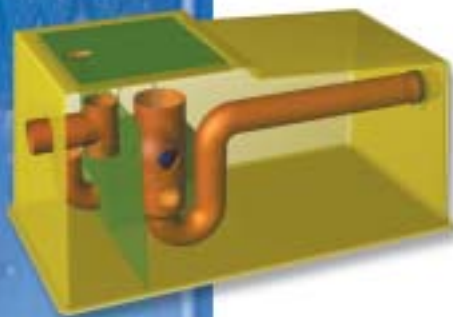
Isea guarantees

that each OTTO respects DIN 1999 PRESCRIPTIONS.

Isea guarantees

polyethylene for a period of 10 years.





OTTO IS AN OIL AND HYDROCARBONS SEPARATOR WITH SAND TRAP, coalescent filter and automatic closing device. It is meant to be mainly used for rain water from parkings, from petrol stations, from mechanical workshops etc. In deeper detail it consists of:

SEWAGE INLET, with a T pipe to break the inlet flow

SAND TRAP It is the first chamber and it is meant for heavier materials sedimentation.

COALESCENT FILTER. It can improve the floating process efficiency by enabling smaller oil particles separation, in standard version it is made of plastic

AUTOMATIC CLOSING DEVICE It is meant to automatically close the outlet pipe thanks to its particular shape. The outlet flow is stopped when the oil and hydrocarbons storage chamber is full.

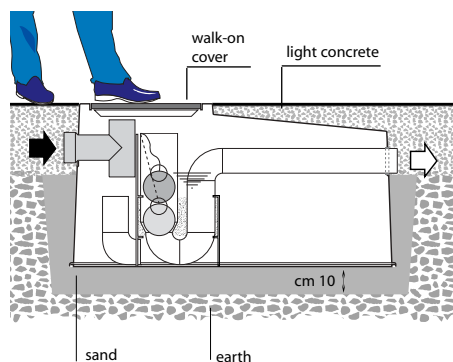
HYDROCARBONS STORAGE VOLUME It is a space where oil and hydrocarbons are collected until cleaning is performed.



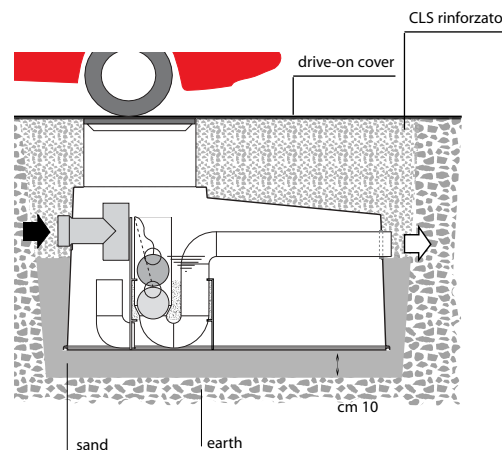
Dig a hole of appropriate dimensions and line a 10 cm thick sand layer at the bottom, grain size 0-5 mm, dampen the sand and level it. Connect the outlet pipe to an inspection chamber with a PVC Ø..... pipe. Connect the waste water collecting system to the inlet pipe by means of a PVC Ø..... pipe. Fill OTTO with clean water in order to correctly start the process. Use damp-

ned sand to fill the gaps around the tank. Build a 5 cm thick light concrete shell on top of the tank, or a reinforced concrete one, in case of drive-on surfaces. Do not forget walk-on and drive-on manholes for inspection. In standard version it is possible to cover the tank with no more than 50 cm thick earth layer.

WALK-ON SOLUTION



DRIVE-ON SOLUTION

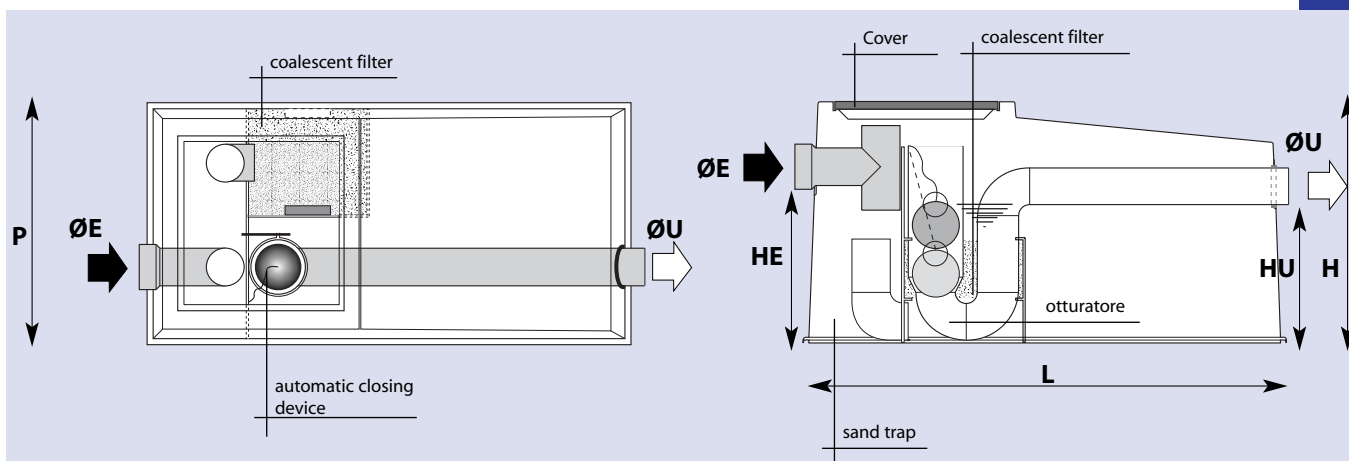


Particularly indicated for rain water coming from parkings and mechanical workshops, OTTO is installed between the waste water collecting system and the final discharge to prevent pollution. After installing the plant, verify it under the hydraulic point of view by allowing inlet in.

Periodically get a sample of the outlet analysed and evaluate if a cleaning of the system is necessary. Also periodically clean the sand trap. Clean the coalescent filter with pressurised water. All removed materials must be dealt with by specialised companies.



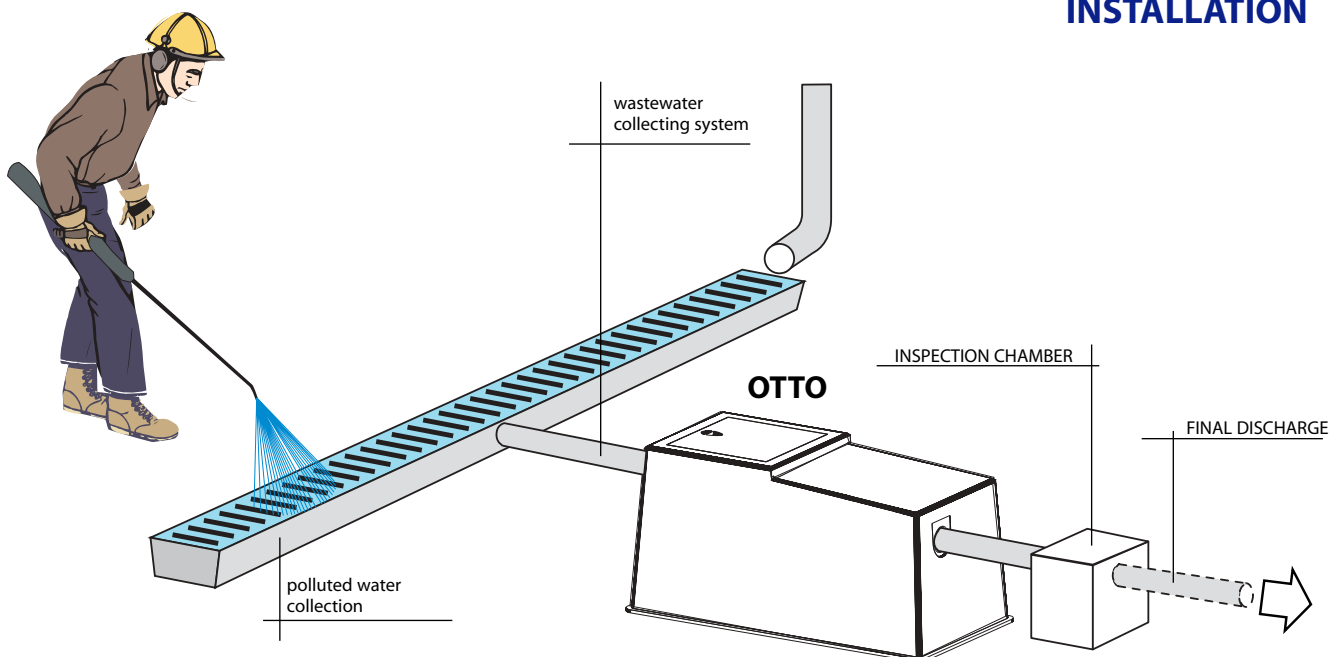
The company has the right to technically modify the system without giving notice.



OTTO - Hydrocarbons separator with sand trap, coalescent filter and automatic closing device.

Code	Item	Flow (l/sec.)	L (mm)	P (mm)	H (mm)	HE (mm)	HU (mm)	øE (mm)	øU (mm)	Weight (kg)
0813	OTTO 045	4.5	2100	800	1000	770	720	125	140	115
0814	OTTO 060	6.0	2100	800	1200	970	920	140	140	135

"TYPICAL" INSTALLATION



ACCESSORIES

manual grid

grease trap

sand trap

oil absorbant material

different coalescent filters

drive-on kit

REMOVAL EFFICIENCY AND TREATMENT GUARANTY

Isea guarantees that each OTTO respects DIN 1999 PRESCRIPTIONS.

Isea guarantees polyester fibreglass for a period of 10 years.

Tanks for water, liquids and chemicals storage

TALL



Vertical self-standing cylindrical tanks, with central cover, with small plane surfaces for accessory equipment installation. Ideal for alimentary and chemical products, they can be installed directly on plane surfaces without particular cautions.

TALL

Code	Item	Volume (litres)	D (cm)	H (cm)	Cover (Ø mm)
------	------	--------------------	-----------	-----------	-----------------

TALL LIGHT

2507	TL 150	120	60	62	200
2508	TL 250	220	60	82	200
2509	TL 350	325	60	100	200

TALL MEDIUM for construction and industry

2009	TM 400	400	79	80	300
2011	TM 800	800	79	120	300
2012	TM 1000	1000	110	120	300
2016	TM 1500	1500	120	140	300
2017	TM 2000	2000	120	195	400
2019	TM 3000	3000	147	200	400
2020	TM 4000	4000	147	245	400
2022	TM 6000	6000	215	215	400
2023	TM 8000	8000	215	260	400
2024	TM 10000	10000	215	300	400

TALL STRONG with enhanced thickness

2120	TS 15000	15000	225	440	600
2121	TS 20000	20000	250	480	600
2122	TS 25000	25000	250	590	600
2123	TS 33000	33000	245	714	600



Vertical cylindrical tank, with fully opening resting lead.

JAR BIG

Code	Item	Volume (litres)	D (cm)	H (cm)	Cover (Ø mm)
------	------	--------------------	-----------	-----------	-----------------

2310	JB 100	100	50	65	560
2311	JB 200	200	50	119	560



JAR BIG

Double walled tank, vertical and self-standing , with plane bottom, rounded top part, thought for exhausted oil recovery in mechanical workshops. Internal tank directly in contact with oil, external tank used for safety. Filter drainage and level indicator included it. May be laid down directly on flat surfaces.

OIL BOX

Code	Item	Volume (litres)	D (cm)	H (cm)
------	------	--------------------	-----------	-----------

3399	300D	260	80	120
3401	600D	500	101	133
3403	1200D	1200	120	165



OIL BOX



The company has the right to technically modify the system without giving notice.

Cylindrical horizontal tank to be used as storage.

L=Long C=Short

TANK



TANK

Code	Item	Volume (litres)	L (cm)	P (cm)	H (cm)	Cover (Ø mm)
2209	TANK 300	300	62	105	72	200
2210	TANK 500	510	75	125	83	300
2216	TANK 750	750	90	135	100	300
2211	TANK 1000	1050	95	155	105	400
2212	TANK 1500	1510	110	175	120	400
2213	TANK 2000L	2030	110	230	120	400
2217	TANK 2000C	2020	125	170	135	400
2214	TANK 3500	3320	140	240	150	400
2215	TANK 5000	5200	180	240	195	400
2219	TANK 8000	8100	200	265	210	400

TANK-R



TANK-R

Code	Item	Volume (litres)	L (cm)	P (cm)	H (cm)	Cover (Ø mm)
2217/1	TANK 3500 R	3000	140	245	170	400
2215/1	TANK 5000 R	5000	192	245	222	400
2218	TANK 12500 R	12600	240	300	245	500x500

SOFT



Elliptical tank for liquid storage

SOFT

Code	Item	Volume (litres)	L (cm)	P (cm)	H (cm)	Cover (Ø mm)
2610	SOFT 500	555	78	100	95	300
2611	SOFT 1000	1010	78	128	123	200

HARD



Prismatic horizontal tank

HARD

Code	Item	Volume (litres)	L (cm)	P (cm)	H (cm)	Cover (Ø mm)
3107	HARD 60	65	39	54	32	125
3108	HARD 90	95	39	72	34	125
3109	HARD 120	125	49	88	30	125
3110	HARD 250	250	62	82	62	300
3111	HARD 500	500	70	100	80	300

STATIC GRID



STATIC GRID

Manually cleaned, made of fibreglass

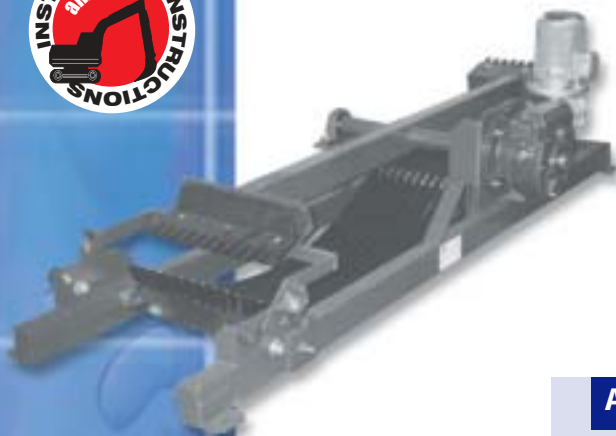
It consists of a fibreglass tank with cover. A zirconized iron bar grid is inserted in it. Space between bars is of about 25 mm. Inlet and outlet pipe sections of appropriate diameter are included. It is possible to have a AISI 304 inox version.

It is necessary to clean the system once a month at least, in order to grant the correct performance.

STATIC GRID

Code	Item	L (cm)	P (cm)	H (cm)
0914/2	GS 800	102	102	128

ARC GRID



ARC GRID

Entirely made of steel

It consists of a frame on which a water-tight engine is fixed. The engine moves a rotating arm that cleans the bars. Bars are made of steel, curved. The arm cleans the bars by collecting the separated material and delivering it to a special tank. A small control panel for the engine is included. Once a week it is necessary to clean the tank.

ARC GRID

Code	Item	L (cm)	P (cm)	H (cm)
2403	GA 30	30	250	70
2404	GA 40	40	250	70
2405	GA 50	50	250	70



The company has the right to technically modify the system without giving notice.

FLOW PARTITIONER



FLOW PARTITIONER

There are two types. A first one consist of a fibreglass tank, with inlet, outlet and by-pass PVC pipe sections. The second one consists of a PE tank with inlet +, outlet and by-pass PVC pipes. Pipes are positioned at such heights to grant correct flow subdivision. Pipe position varies on the basis of the desired outlet flows.

FLOW PARTITIONER

Code	Item	L (cm)	P (cm)	H (cm)	Material
0950	RS 500	80	86	82.5	Polyethylene

FLOW PARTITIONER

Code	Item	L (cm)	P (cm)	H (cm)	Material
0951	RS 800	102	102	128	Fibreglass

OIL ABSORBENT CHAMBER

Made of PE

With an oil absorbent cushion inside. It consists of a PE chamber with PVC inlet and outlet pipe sections and an absorbent pillow suitable for emulsions removal. The pillow needs to be changed at least once every three months.



OIL ABSORBENT CHAMBER

Code	Item	L (cm)	P (cm)	H (cm)
0922/1	250	62	82	62
0922/2	500	70	100	80

OIL ABSORBENT CHAMBER

Installation instructions

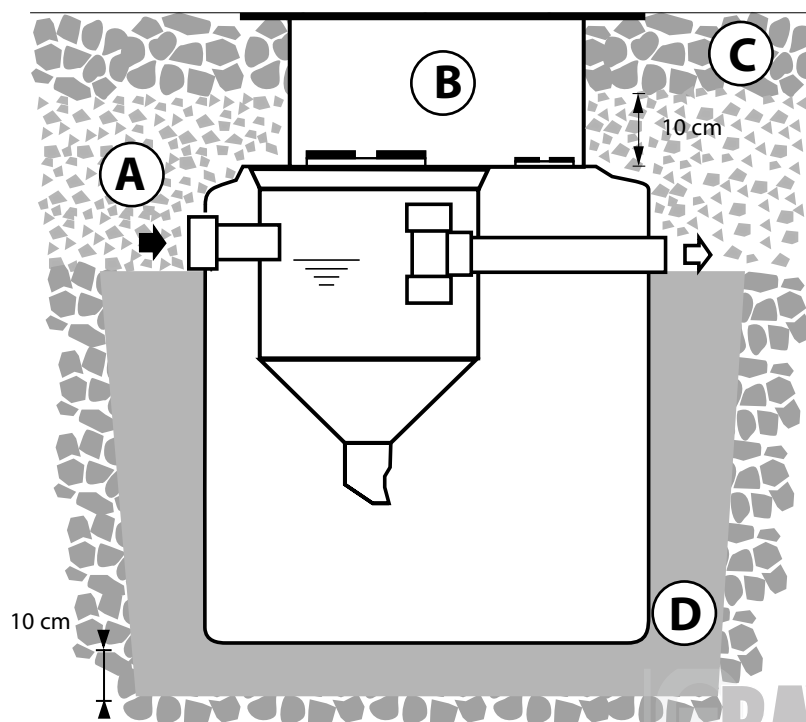


HORIZONTAL AND VERTICAL TANKS

- Dig a hole of appropriate dimensions.
- Dimensions for the hole should be the tanks external plus 20 cm per side.
- Line a 10 cm thick sand layer at the bottom, dampen the sand and level it. Lay the plant down.
- Lay the tank so that a 20 cm thick gap is left all around.
- Fill the tank with water to one third of its height.
- Proceed with dampened sand filling of the gaps around it, reach the same height as the water inside the tank.
- Fill the tank with water half of its height.
- Proceed with dampened sand filling of the gaps around it, reach the same height as the water inside the tank.
- Make necessary hydraulic connections.
- Complete tank filling with water.
- Prepare a mixture of light clay and concrete, thoroughly mixed and dampened in order to compact it.
- Make a kind of dome, 5 cm thick, on top of the tanks and with an electro-welded net in it.
- Finish to fill the hole with the above described mixture and let it solidify.
- Finish with a earth layer so to level the ground above the tank.
- In case an earth layer thicker than 50 cm should cover the tank, a proper concrete slab should be dimensioned and built.
- In case a drive-on installation is required, build a 25 cm thick slab with an electro welded net and drive-on manholes and covers.
- In case groundwater is found when digging, fill the gaps around the tanks with light concrete, making sure the overall system is water tight.
- In case tanks are used as fire water storage, always use light concrete for gaps filling, after filling the tank with water.

KEY:

- A - light clay and concrete
- B - manhole
- C - earth
- D - sand





HORIZONTAL AND VERTICAL TANKS

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