



# TELCOM<sup>®</sup> 2022

**TECHNICAL  
DEPARTMENT**

**PE Tanks**  
**Plants for wastewater and rainwater treatment**  
**Tanks for collecting recyclable oil**  
**Multipurpose Trunks, shipbuilding**  
**Containers for Oil and Wine**

## Reasons for choosing Rotary Moulded Products



**Lightweight and Shatterproof**



**Ecological and Recyclable**



**Resistant to temperature swings**



**Economical: best  
Price-Quality-Duration ratio**



**Unassailable by atmospheric  
agents, by acids  
and detergents.  
Resistant to corrosion and  
immune to molds and lichens.**



**Easy to Install**



**Easy to Store  
and to Enliven**

**Telcom**<sup>®</sup>  
TECNOLOGIE PER L'UOMO

# Telcφm<sup>®</sup>

since 1973

SERBATOI PER ACQUA POTABILE  
**AQUARIUS<sup>®</sup>**  
TANKS

**PLUVIUM**  
RAINWATER COLLECTORS

**eco**  
**AQUARIUS<sup>®</sup>**  
WASTEWATER AND RAINWATER TREATMENT






**OIL-TANK**  
USED OIL CONTAINERS

**Jolly**  
MULTIPURPOSE TRUNKS AND SHIPBUILDING

**Le Giare**  
CONTAINERS FOR WINE AND OIL

# Telecom<sup>®</sup>

for the environment

-  Protects the Environment - Produces no disposable, but long-life and 100% recyclable products
-  Recycles entirely all its waste within the production processes
-  Produces and auto-consumes energy from photovoltaic panels and not derived from hydrocarbons
-  Zero environmental impact in manufacturing of products thanks to rotational technologies, injection and blowing
-  Reduced water and energy consumption thanks to recirculation for cooling systems and the use of LED lamps

**With small and large concrete actions, we are committed to protecting the future of the Environment !**





## THE COMPANY

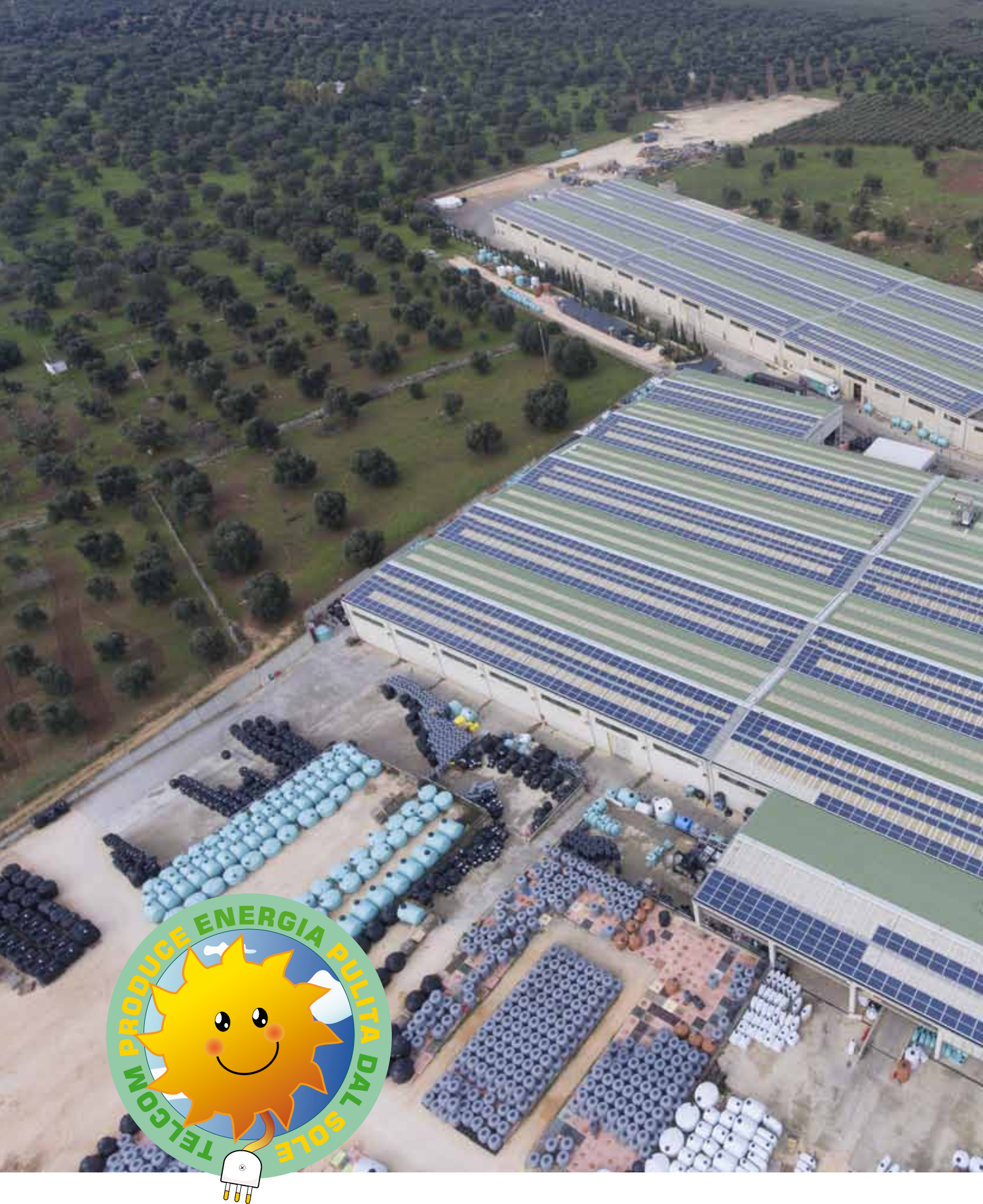
For over 45 years, Telcom SPA has distinguished itself for the development of innovative products that contribute to the improvement of the quality of life of those who use them.

A decisive factor in the worldwide success of the company is obviously the ability to constantly update its products, thanks to the use of cutting-edge technologies and the continuous training and updating of its employees within the Company, and above all thanks to the vertical integration of processes.

All products are manufactured from recyclable materials and with the use of non-toxic raw materials.

Each Telcom product is the result of high reliability and professionalism. Since 2005 Telcom can boast the certification of the Italian Customs Agency for the correctness of its customs operations.

**Telcom SpA,  
certified company:  
Italian Customs Agency**



## TELKOM and the renewable energy

With a surface area covered by solar panels of 14,000 m<sup>2</sup>  
Telcom is able to produce 2,400,000 KW/h yearly thanks to the  
clean energy of the sun.



Our quality has solid basis  
Over 110.000 sqm premises on 3  
factories

12 product lines

Fully integrated production process

Factories in Italy-Romania-Albania

## WAREHOUSE & LOGISTICS

20.000 m<sup>2</sup> of warehouse for finished  
products ready to be delivered  
worldwide.

Simultaneous loading capacity of 18 trucks.  
Organisation and oversight of scheduled  
deliveries.





Suitable for holding food substances

- M.O.C.A. Certification.
- Min. Decree n°.104/73 and its subsequent amendments;
- EU Regulation n°.10/2011 and its related norms:  
UNI 1186-1 : 2003, UNI 1186-4 : 2003, UNI 1186-5 : 2003



The H<sub>2</sub>O tanks line for drinking water are made with mastered and additive polymers in order to resist to U.V. rays. Such tanks, colored deep in the material, are particular through their marine green color with less visual impact and are suitable for installation above the ground with direct exposure to sunlight. In fact, the monolithic structure and the thickness of the H<sub>2</sub>O tanks provide a high mechanical and thermic resistance to temperature jumps between 60°C and +80°C and can even accommodate liquids with peaks (non continuous) between -10°C and +50°C.

The tanks of the H<sub>2</sub>O line are suitable for holding food substances, are 100% recyclable and are guaranteed for the absence of cadmium and against the formation of algae.



Suitable for holding food substances

- M.O.C.A. Certification.
- Min. Decree n°.104/73 and its subsequent amendments;
- EU Regulation n°.10/2011 and its related norms:  
UNI 1186-1 : 2003, UNI 1186-4 : 2003, UNI 1186-5 : 2003

- Sole producer in Italy*
- *the most evolved*
  - *most robust*
  - *best quality/price ratio*
  - *Triple layer*

Triple Layer



The youngest born in the Telcom research laboratories, the ONDA line of tanks are equipped with triple layer walls.. Their particular production, which prevents the use of any glue or chemical agent, guarantees excellent results on resistance and resilience tests. The tests have shown that these super tanks represent the evolution of polyethylene products as sturdiness and physico-mechanical features.

Such tanks built of high density PE are suitable for the containment of food substances, are 100% recyclable and are guaranteed for the absence of cadmium and against the formation of algae.



Suitable for holding food substances

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- Min. Decree n°.104/73 and its subsequent amendments;
- EU Regulation n°.10/2011 and its related norms:  
UNI 1186-1 : 2003, UNI 1186-4 : 2003, UNI 1186-5 : 2003



SERBATOI PER ACQUA POTABILE  
**AQUARIUS**®  
BUNKER

The tanks of the BUNKER line are made with black colored polymers and can be built with virgin raw materials suitable to contain foodstuff.

The monolithic structure and the thickness of the BUNKER line tanks provide a mechanical resistance such as to render such products suitable to earthing and resistant to the variations of temperature between -60°C and +80°C and can contain liquids with peaks (not continuous) in the range of -10°C +50°C They are 100% recyclable and are guaranteed for the absence of cadmium and against the formation of algae.



**AQUARIUS**®  
INDUSTRIA

The INDUSTRIA line tanks are built from polymers in neutral color with additive to resist to U.V. rays. Their particular coloring and their thickness makes them suitable for the holding chemicals other than water. They are 100% recyclable, guaranteed for the absence of cadmium and intended for installation above the ground.

SERBATOI PER ACQUA POTABILE  
AQUARIUS® H<sub>2</sub>O



Suitable for holding food substances  
- M.O.C.A Certification.  
- Min. Decree n°.104/73 and its subsequent amendments;  
- EU Regulation n°.10/2011 and its related norms:  
UNI 1186-1 : 2003, UNI 1186-4 : 2003,  
UNI 1186-5 : 2003



Eco-friendly & Recyclable



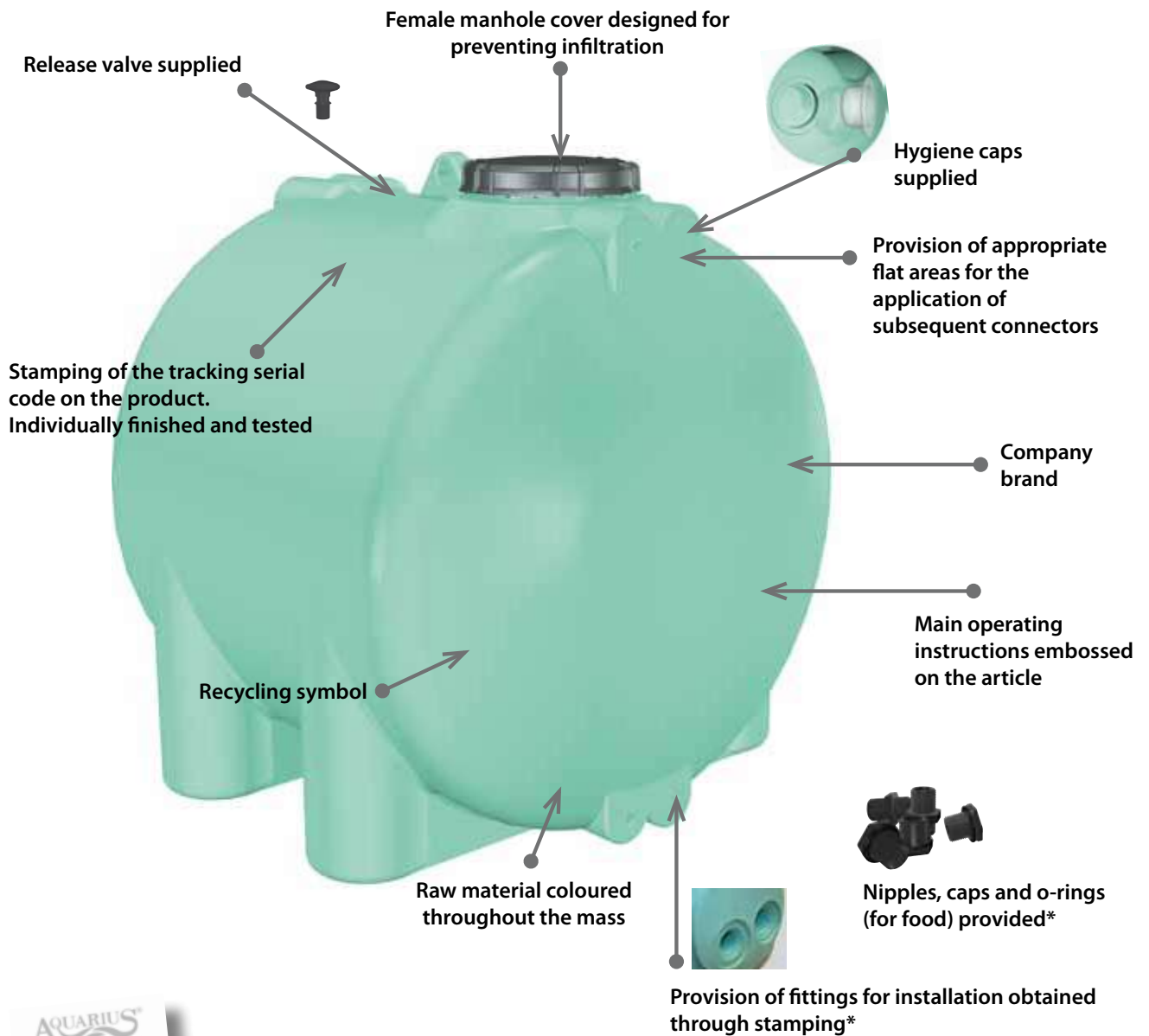
Unassailable by atmospheric agents



Resistant to temperature swings from -60°C to +80°C  
Suitable for containing liquids with peaks (non continuous) even from -10°C to +50°C



100% guaranteed against the formation of algae



"Instructions and Warranty" booklet included with each item

\*only with the tanks up to 2000 litres

Available in the following colours:  
Stone (PT),  
Terracotta (TA);  
on request Black (BL).





Suitable for holding food substances  
- M.O.C.A Certification.  
- Min. Decree n°.104/73 and its subsequent amendments;  
- EU Regulation n°.10/2011 and its related norms:  
UNI 1186-1 : 2003, UNI 1186-4 : 2003,  
UNI 1186-5 : 2003



Eco-friendly & Recyclable



Resistant to temperature swings from -60°C to +80°C  
Suitable for containing liquids with peaks (non continuous) even from -10°C to +50°C



Unassailable by atmospheric agents



100% guaranteed against the formation of algae



"Instructions and Warranty" booklet included with each item





- Equipped with "DOP" (protected designation of origin);
- marked with "CE";
- Sized according to National and Regional standards;
- Net volumes instead of external dimension volumes;
- maximum quality of raw materials;



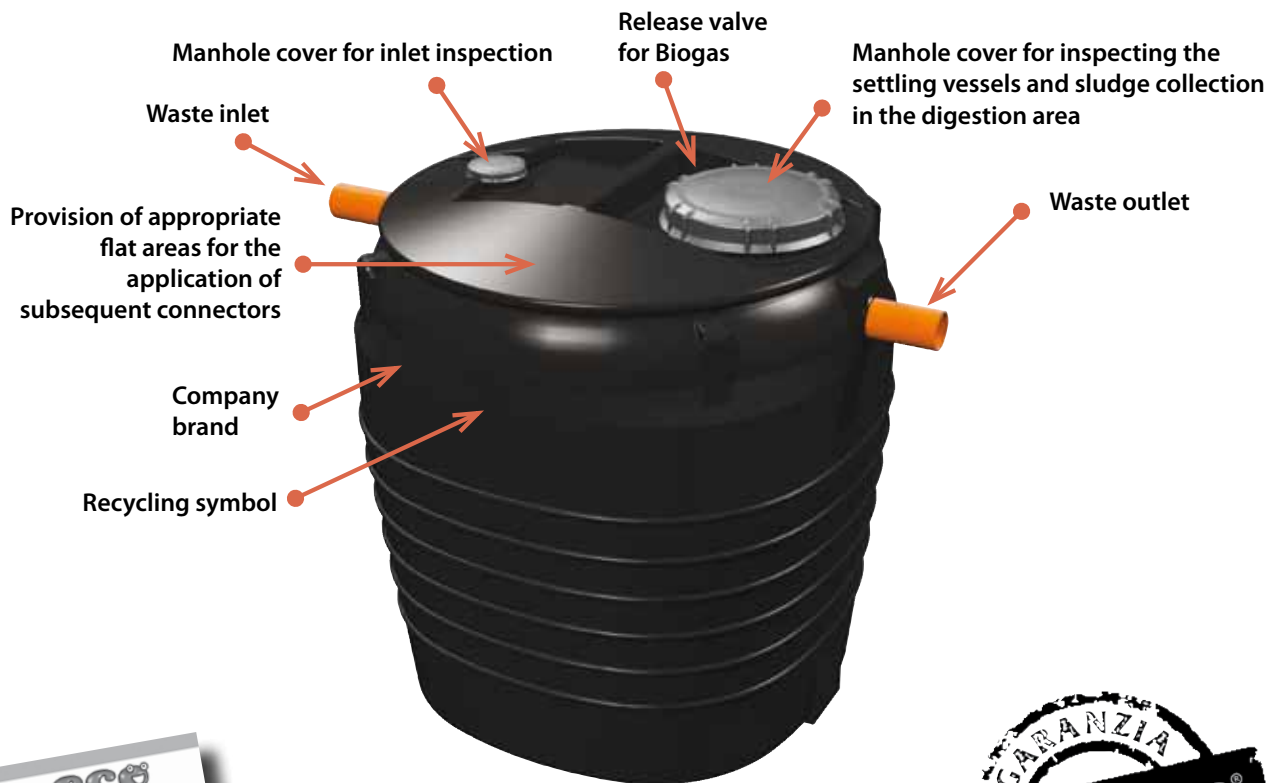
Resistant to temperature swings  
from -60°C to +80°C  
Suitable for containing liquids with peaks  
(non continuous) even from -10°C to +50°C



Unassailable  
by atmospheric  
agents



Eco-friendly  
& Recyclable



"Instructions and Warranty"  
booklet included with each item



DEGREASER



ACTIVATED SLUDGES



PERCOLATOR

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## PLUVIUM





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## OIL-TANK



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## JOLLY



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## Le Giare

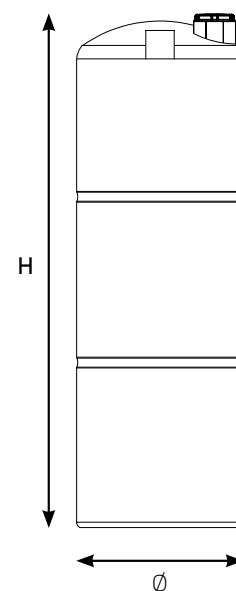


**GUARANTEE 157**


**SALES CONDITIONS 158**

VERTICAL TANK "NSV" 30000

Novelty  
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VERTICAL TANK "NSV"

Item	Capacity (litres)	Dimensions (cm)		Manhole Ø (mm)	Breather	Moulded connectors		
		H	Ø			Discharge	Overflow	Total drain
NSV 30000	30000	734	238	550	 *	-	-	-

Modular tank



\* Preparation by the client.

Legend:  PE cassone connector 2" (male)

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



## HR HIGH STRENGTH MULTIPURPOSE TRUNKS



**Upper cover**

- Solid ribs and deep joints for best fixing of overlapping elements during transport.
- Anti-water and anti-dirt perimeter channel.



Indestructible lever closures equipped with steel elements and eyelet for padlock.



Nylon hinges with stainless steel pin and low profile.

**Body**

- Waterproofing and anti-dirt edge.
- Ribs on the bottom to withstand any load.



Single body handles with the artifact.

Joint holes with drainage channels in the upper part against water and dirt.



Raised feet in the base to allow passage of water and cables and an optimal fit in overlap with other HR trunks of the same size.

**Novelty**

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**HR 60**



Yellow



Oxford green



White dot



**HR 80**

PILAV 70 SINK

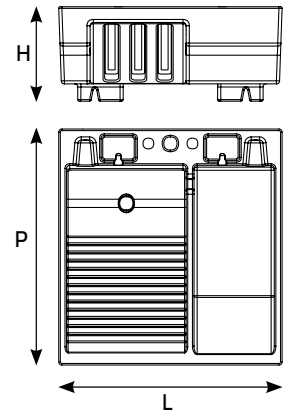
Novelty

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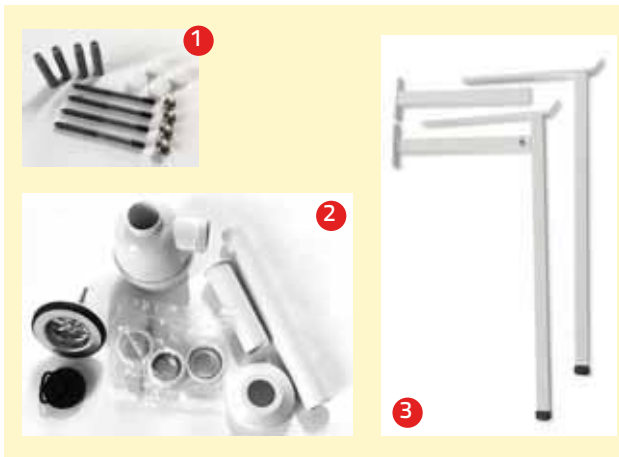
PILAV 70 SINK

Item	Description	Color	Dimensions (cm)		
			L	P	H
PILAV 70	Sink	(PT)	70	75	30
PILAV S 70*	equipped sink	(PT)	70	75	30



\* The S version comes with the following accessories:

1. Specific INOX fixing elements kit for sanitary
2. Drain valve with stopper and siphon complete with gaskets
3. Adjustable metal wall brackets  
(Height from upper edge of tank = 70 cm)



Dimensional volume tolerance  $\pm 1,5\%$   
Capacity tolerance  $\pm 4,6\%$



**OUTDOOR TANKS**



HSV 300

SV 1000

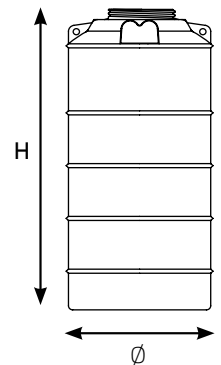
NSV 3000



NPA/NPB

VERTICAL TANK type "NSV", "NPA", "NPB" and "SLENDER"

Item	Capacity (litres)	Dimensions (cm)		Manhole ø (mm)	Breather	Moulded connectors		
		H	ø			Discharge	Overflow	Total drain
NSV 100	100	67	48	320		1" 1/4	1"	1"
NSV 200	200	85	60	320		1" 1/4	1"	1"
NSV 300	300	97	70	320		1" 1/4	1"	1"
HSV 300	300	166	51	320		1" 1/4	1"	1"
NSV 500	500	148	70	320		1" 1/4	1"	1"
NPA 500	500	116	80	420	*	1" 1/4	1" 1/4	1" 1/4
NSV 700	700	199	70	320		1" 1/4	1"	1"
NPA 750	750	168	80	420	*	1" 1/4	1" 1/4	1" 1/4
SV 1000	950	198	81	320		1" 1/4	1"	1"
NPA 1000	1000	221	80	420	*	1" 1/4	1" 1/4	1" 1/4
NSV 1500	1500	182	110	420		1" 1/4	1"	1"
NPB 1500	1500	154	120	420	*	1" 1/4	1" 1/4	1" 1/4
NSV 2000	2000	182	127	420		1" 1/4	1"	1"
NSV 3000	3000	202	147	420		-	-	-
NSV 4000	4000	206	169	420		-	-	-
NSV 5000	5000	189	203	420		-	-	-
NSV 10000	10000	260	238	550		-	-	-
NSV 16000	15400	384	238	550		-	-	-



\* Preparation by the client.

Note: Our NSV vertical tanks with volumes up to 4000 litres are fitted with CENTRAL manhole. At volumes of 5000, 10000 and 16000 litres, the manholes are located in LATERAL position.



Standard color Moulded connectors

Available colors

Color upon request (Without moulded connectors) For gasoline containers see page 128

Each tank is equipped with:

- N. 1 Relief valve
- N. 3 Caps
- N. 3 Nipples
- N. 3 O-Ring

of the diameter equal to the corresponding moulded connectors, if provided.

Connectors and accessories upon request at page 40

Pre fitted connectors Available colors

Each tank is equipped with:

- N. 3 cassone nipple 1" 1/4
- N. 1 relief valve

The 10 Years Guarantee extends for a 10 year period the conditions presented in the WARANTEE sheet at page 157

Legend: Labyrinth Valve 1"

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%

*Novelty*



NSV 20000



NSV 25000

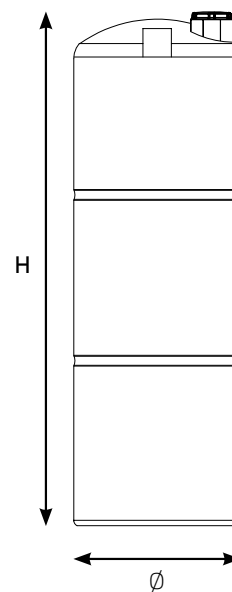


NSV 30000



**VERTICAL TANK type "NSV"**

Item	Capacity (litres)	Dimensions (cm)		Manhole ø (mm)	Breather	Moulded connectors		
		H	ø			Discharge	Overflow	Total drain
NSV 20000	20000	497	238	550	*	-	-	-
NSV 25000	25000	619	238	550	*	-	-	-
<i>Novelty</i> NSV 30000	30000	734	238	550	*	-	-	-



Connectors and accessories upon request at page 40

Modular tank

Sole color H<sub>2</sub>O

\* Preparation by the client.

Legend: PE cassone connector 2" (male)

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%

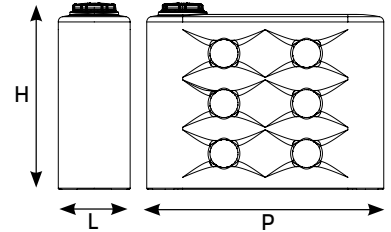


Triple Layer

NPC 500



NSQR 3000



### SQUARED TANKS type "SVQ, SQN2, SQN3, SQB, NPC, NSQN, SQ, NSQ"

Item	Capacity (litres)	Dimensions (cm)			Manhole ø (mm)	Breather	Moulded connectors		
		H	L	P			Discharge	Overflow	Total drain
SVQ 100	100	58	52	52	320	-	-	-	-
SQN2 200	200	72	49	84	320		1" 1/4	1"	1"
SQN2 300	290	70	66	88	320		1" 1/4	1"	1"
SQN3 300	320	93	65	67	320		1" 1/4	1"	1"
SQN2 500	490	90	71	109	320		1" 1/4	1"	1"
SQB 500	500	62	92	122	320		1" 1/4	1"	1"
<b>NPC 500</b>	<b>510</b>	<b>116</b>	<b>68</b>	<b>87</b>	<b>420</b>	*	1" 1/4	1" 1/4	1" 1/4
NSQN 750 R	750	118	66	129	220		1" 1/4	1"	1"
NSQ 1000	1000	142	69	156	320		1" 1/4	1"	1"
SQ 1500	1350	146	77	167	320		1" 1/4	1"	1"
<b>SQVB 2000</b>	<b>2000</b>	<b>186</b>	<b>68</b>	<b>220</b>	<b>320</b>		1" 1/4	1"	1"
NSQR 3000	2850	201	78	258	320		1" 1/4	1"	1"

\* Preparation by the client.



SERBATOI PER ACQUA POTABILE  
**AQUARIUS® H<sub>2</sub>O**

SERBATOI PER ACQUA POTABILE  
**AQUARIUS® Onda Triple Layer**

Standard color Moulded connectors

Available colors

Color upon request (Without moulded connectors)  
For gasoline containers see page 128

Each tank is equipped with:

- N. 1 Relief valve
- N. 3 Caps
- N. 3 Nipples
- N. 3 O-Ring

of the diameter equal to the corresponding moulded connectors, if provided.

Connectors and accessories upon request at page 40

Pre fitted connectors

Available colors

Each tank is equipped with:



- N. 3 cassone nipple 1" 1/4
- N. 1 relief valve



The 10 Years Guarantee extends for a 10 year period the conditions presented in the WARANTEE sheet at page 157

Legend: Labyrinth Valve 1"

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



Standard color  Moulded connectors 

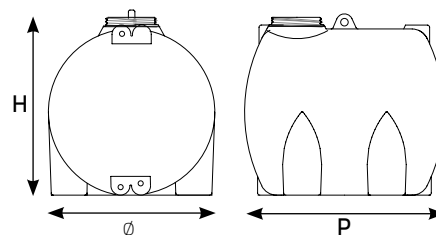
Available colors    
**BL** Color upon request (Without moulded connectors)  
 For gasoline containers see page 128

Each tank is equipped with:










- N. 1 Relief valve
  - N. 3 Caps
  - N. 3 Nipples
  - N. 3 O-Ring
- of the diameter equal to the corresponding moulded connectors, if provided.



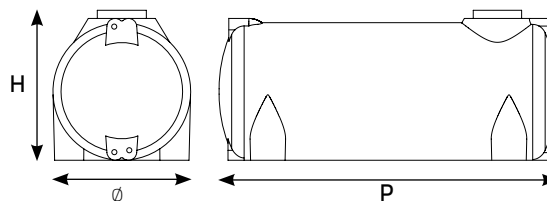
Connectors and accessories upon request at page 40






### HORIZONTAL TANK type "CON"



Item	Capacity (litres)	Dimensions (cm)			Manhole ø (mm)	Breather	Moulded connectors		
		H	L	P			Discharge	Over-flow	Total drain
CON 300	290	82	73	82	320		1" 1/4	1"	1"
CON 500	500	94	87	98	320		1" 1/4	1"	1"
CON 1000	1050	115	106	127	320		1" 1/4	1"	1"
CON 1500	1500	133	125	137	320		1" 1/4	1"	1"
CON 2000	1950	144	136	155	320		1" 1/4	1"	1"
CON 3000	2970	166	160	185	420		-	-	-
CON 5000	4950	186	178	232	420		-	-	-
CON 7500*	7150	217	189	318	550		-	-	-
CON 10000*	10400	255	225	310	550		-	-	-

\* Equipped with torretta CL550



### HORIZONTAL SLIM TANK type "CO"

Item	Capacity (litres)	Dimensions (cm)			Manhole ø (mm)	Breather	Moulded connectors		
		H	L	P			Discharge	Overflow	Total drain
CO 300	300	61	52	160	220		1" 1/4	1"	1"
CO 500	490	72	62	173	320		1" 1/4	1"	1"
CO 1000	1000	91	81	203	320		1" 1/4	1"	1"

Legend:  Labyrinth Valve 1"  Vent connector 2" (male)

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



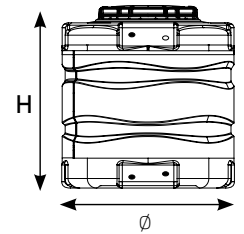
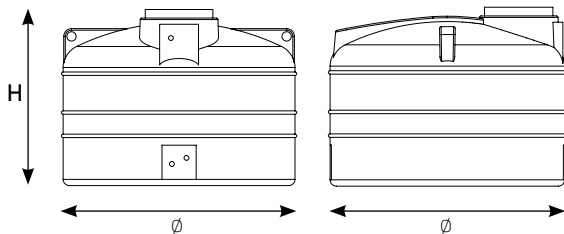
PAN



PN



NPB

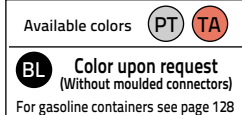
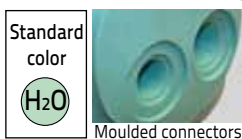


PANETTONE TANK type "PN", "PAN" e "NPB"

Item	Capacity (litres)	Dimensions (cm)		Manhole ø (mm)	Breather	Moulded connectors		
		H	ø			Discharge	Overflow	Total drain
PN 200	200	61	78	220		1" 1/4	1"	1"
PAN 300	310	70	90	220		1" 1/4	1"	1"
PAN 500	490	77	105	320		1" 1/4	1"	1"
NPB 1000	1000	108	120	420		1" 1/4	1" 1/4	1" 1/4
PAN 2000	2050	139	157	420		1" 1/4	1"	1"
PAN 3000	3050	128	194	420		-	-	-
PAN NEW 5000	4950	142	238	420		-	-	-
PAN 7500	7550	198	238	420		-	-	-

Triple Layer

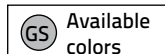
\* Preparation by the client.



Each tank is equipped with:

- N. 1 Relief valve
- N. 3 Caps
- N. 3 Nipples
- N. 3 O-Ring

of the diameter equal to the corresponding moulded connectors, if provided.  
Connectors and accessories upon request at page 40



Each tank is equipped with:

- N. 3 cassone nipple 1" 1/4
- N. 1 relief valve

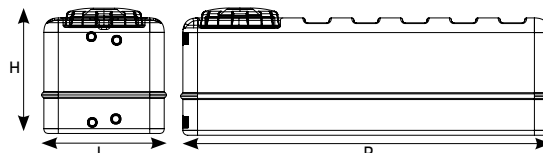


The 10 Years Guarantee extends for a 10 year period the conditions presented in the WARANTEE sheet at page 157

Legend: Labyrinth Valve 1"

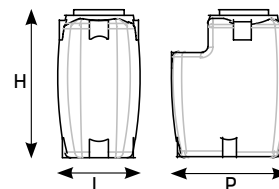
Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%





**ATTIC TANK type "SRS"**

Item	Capacity (litres)	Dimensions (cm)			Manhole ø (mm)	Breather	Moulded connectors		
		H	L	P			Discharge	Overflow	Total drain
SRS 300	300	48	50	150	220		1" 1/4	1"	1"



**TANK FOR SELF-PRIMING PUMP type "SPP"**

Item	Capacity (litres)	Dimensions (cm)			Manhole ø (mm)	Breather
		H	L	P		
SPP 300	300	96	65	93	420	
SPP 500	600	131	69	99	420	
SPP 800	800	170	69	129	420	

Standard color Moulded connectors

Available colors

Color upon request (Without moulded connectors)  
For gasoline containers see page 128

Each tank is equipped with:

- N. 1 Relief valve
- N. 3 Caps
- N. 3 Nipples
- N. 3 O-Ring

of the diameter equal to the corresponding moulded connectors, if provided.

Connectors and accessories upon request at page 40



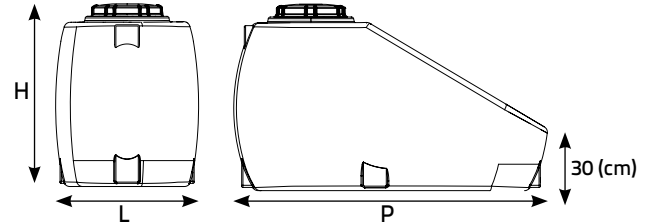
Legend: Labyrinth Valve 1"

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



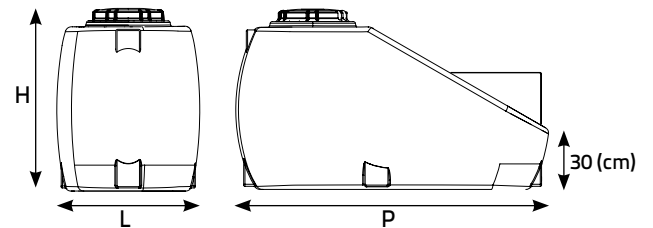
Available colors **PT** **TA**  
**BL** Color upon request  
(Without moulded connectors)  
For gasoline containers see page 128

Each tank is equipped with:  
- N. 1 Relief valve  
- N. 3 Caps  
- N. 3 Nipples  
- N. 3 O-Ring  
of the diameter equal to the corresponding moulded connectors, if provided.  
Connectors and accessories upon request at page 40



CUPBOARD TANK type "SPS R"

Item	Capacity (litres)	Dimensions (cm)			Manhole ø (mm)	Breather	Moulded connectors		
		H	L	P			Discharge	Overflow	Total drain
SPS 500 R	500	91	69	138	320		1" 1/4	1"	1"
SPS 1000 R	950	105	90	180	420		1" 1/4	1"	1"



CUPBOARD TANK type "SPS R ATC"

Item	Capacity (litres)	Dimensions (cm)			Manhole ø (mm)	Breather	Moulded connectors		
		H	L	P			Discharge	Overflow	Total drain
SPS 500 R ATC	500	91	69	138	320		1" 1/4	1"	1"
SPS 1000 R ATC	950	105	90	180	420		1" 1/4	1"	1"

Sole color  
**H2O**

AUTOCLAVE KIT



Item	HP	Accessories
KIT ATC 01	0,7	-
KIT ATC 02	1	-
KIT ATC 03	1,5	-
KIT ATC 04	0,7	con regolatore Easy Press incluso
KIT ATC 05	1	con regolatore Easy Press incluso
KIT ATC 06	1,5	con regolatore Easy Press incluso

Legend: Labyrinth Valve 1"

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



F Model



Moulded connectors

Available colors

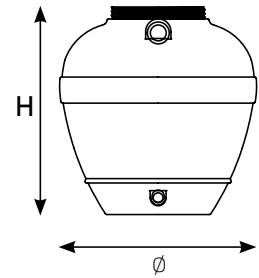


Each tank is equipped with:

- N. 1 Female closing cap
- N. 4 Caps save hygiene
- N. 4 Caps
- N. 4 Nipples
- N. 4 O-Ring



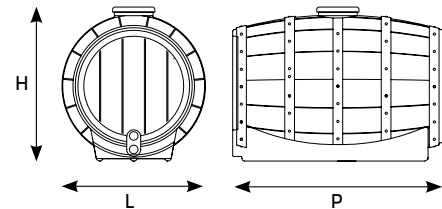
of the diameter equal to the corresponding moulded connectors, if provided.



AMPHORA TANK type 'JUG' & 'SCALLOPED JUG'


Item	Capacity (litres)	Dimensions (cm)		Manhole Ø (mm)	Breather	Moulded connectors		
		H	Ø			Discharge	Overflow	Total drain
ORCIO 200	200	85	73	370	3/4"	1" 1/4	1"	1"
ORCIO 300	300	96	83	370	3/4"	1" 1/4	1"	1"
ORCIO 500	500	111	98	450	-	1" 1/4	-	1"
ORCIO 500 F	500	111	98	450	-	1" 1/4	-	1"
ORCIO 500 OLD	500	111	98	450	3/4"	1" 1/4	1"	1"
ORCIO 1000 R	960	140	116	450	-	1" 1/4	-	1"
ORCIO 1000 R/F	960	140	116	450	-	1" 1/4	-	1"
ORCIO 1000 R OLD	960	140	116	450	3/4"	1" 1/4	1"	1"

**Novelty**  
for water



"BARILE" TANK

Item	Capacity (litres)	Dimensions (cm)			Manhole Ø (mm)	Moulded connectors	
		H	L	P		Discharge	Overflow
BOT 350	350	74	74	105	140	3/4"	3/4"
BOT 550	550	82	82	121	140	3/4"	3/4"

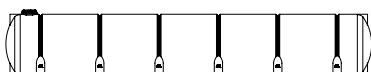
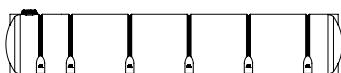
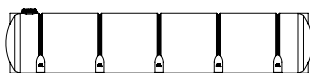
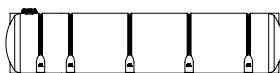
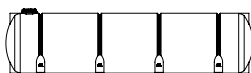
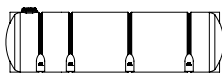
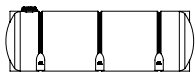
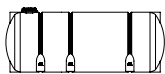
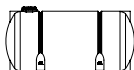
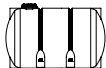
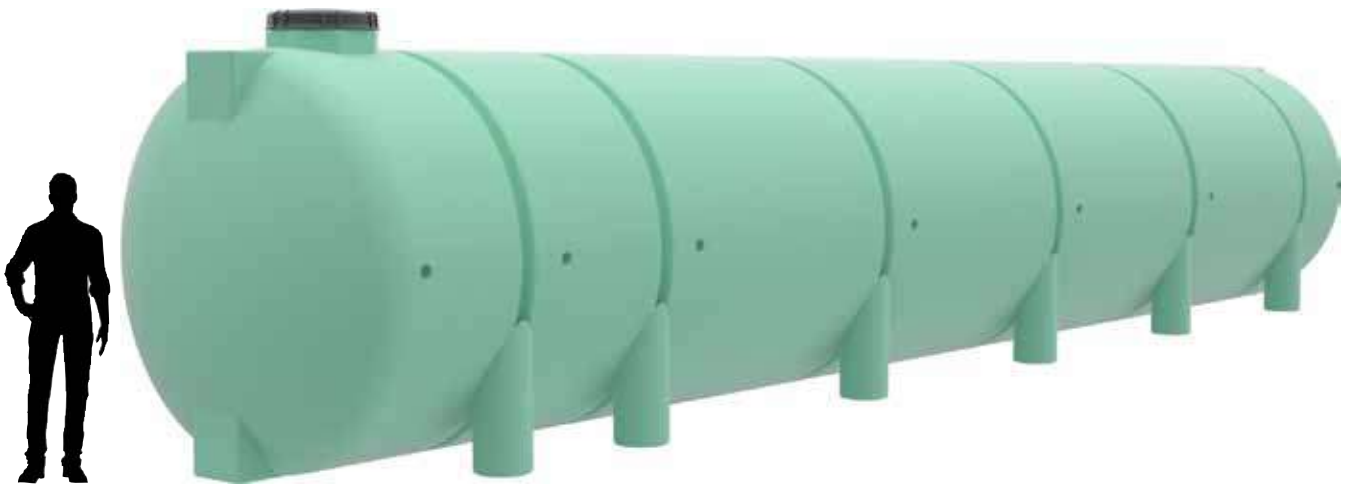
Standard color: 

accessories upon request at page 156

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%

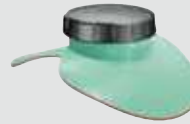
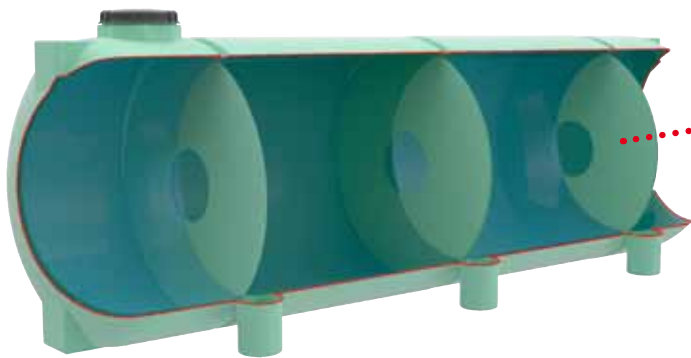
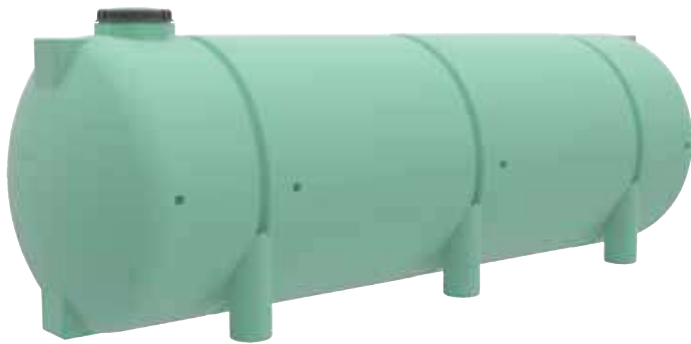
XXLE is a modular tank whose capacity varies from a minimum of 10,000 liters to a maximum of 60,000 liters.

They are composed of monolithic polyethylene modules designed and dimensioned with the help of the F.E.M. analysis to ensure the resistance to hydrostatic load and to self-supporting. Linear polyethylene (PE) is a raw material that has the best characteristics in terms of food use, resistance to organic and inorganic chemicals.



The large volume tanks XXLE are designed to meet the needs of collection and accumulation of water for the most diverse needs such as:

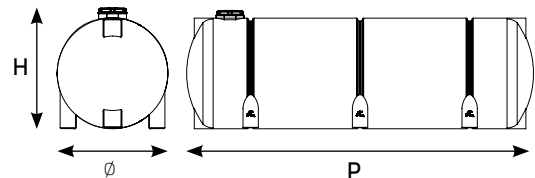
- Storage of water for civil use
- Storage of water for industrial use
- Creation of reserves for fire fighting systems
- Collection of rainwater
- Service tanks in the water and wastewater treatment systems.



**KIT TRLM 550**  
(Additional manhole covers)

On request it is possible to set up XXLE tanks with more than one manhole cover (however not more than one per component module).

equipped with internal reinforcement baffles with light ø 600 mm.



**LARGE VOLUMES TANKS "XXLE"**

Item (food use)	Capacity (litres)	Brea- ther *	Dimensions (cm)			Manhole ø (mm)	No. of legs
			H	ø	P		
XXLE 10000	10000		255	238	275	550	4
XXLE 15000	15000		255	238	394	550	4
XXLE 20000	20000		255	238	510	550	4
XXLE 25000	25000		255	238	630	550	6
XXLE 30000	30000		255	238	746	550	6
XXLE 35000	35000		255	238	865	550	8
XXLE 40000	40000		255	238	982	550	8
XXLE 45000	45000		255	238	1100	550	10
XXLE 50000	50000		255	238	1218	550	10
XXLE 55000	55000		255	238	1336	550	12
XXLE 60000	60000		255	238	1453	550	12

Connectors & accessories  
upon request at pag. 46







\* Preparation by the client.  
\*\* Request quotation according to usage.


Legend: PE cassone connector 2" (male)

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



Standard color  Moulded connectors 

Available colors  

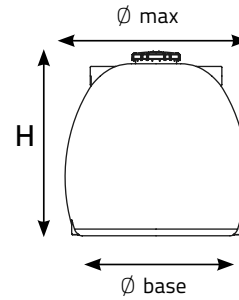
 Color upon request (Without moulded connectors)  
For gasoline containers see page 128

Each tank is equipped with:

- N. 1 Relief valve
- N. 3 Caps
- N. 3 Nipples
- N. 3 O-Ring

of the diameter equal to the corresponding moulded connectors, if provided.

Connectors and accessories upon request at page 40



**DROP SHAPED TANK type "SNS"**

Item	Capacity (litres)	Dimensions (cm)			Manhole w. Breather Ø (mm)	Moulded connectors		
		H	Ø base	Ø max		Discharge	Overflow	Total drain
SNS 500	500	99	85	97	220	1" 1/4	1"	1"

*stackable for a better transport organization*



VCOE 1000




VCOE 500






pile of 4 pieces

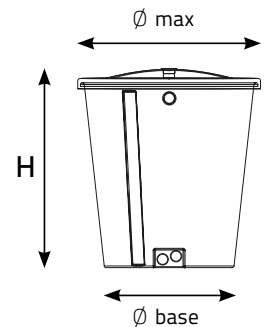
**CONICAL TANK with "VCOE" lid**

Item	Capacity (litres)	Dimensions (cm)		
		H	Ø base	Ø max
VCOE 500	482	100	70	100
VCOE 1000	928	130	85	116


Standard color: 

Available colors  

 Color upon request (Without moulded connectors)  
For gasoline containers see page 128



\* Minimum order 4 pieces. Single item price after verification.

Legend:  Labyrinth Valve 1"

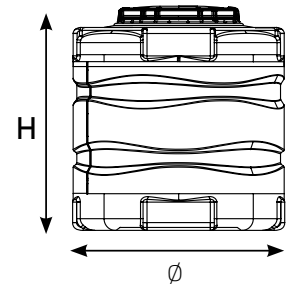
Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%

A large, black, cylindrical underground tank is being installed in a deep trench. The tank is positioned horizontally, with its top surface facing upwards. The trench walls are made of reddish-brown soil. In the foreground, a large, circular opening in the tank's top is visible, showing the interior. A stack of white and black materials, possibly insulation or sealant, is placed on top of the tank near the opening. The background shows more of the trench and some greenery on a hillside.



## UNDERGROUND TANKS

SERBATOI PER ACQUA POTABILE  
**AQUARIUS®** Onda Triple Layer


Connectors and accessories upon request at page 40




**ONDA TANK type "INPA" and "INPB"**

Item (food use)	Capacity (litri)	Dimensions (cm)		Manhole Ø (mm)	Breather	Matching turret
		H	Ø			
INPA 500	500	116	80	420		CL 420
INPB 1000	1000	108	120	420		CL 420

Triple Strato

Standard color:   
For gasoline containers see page 130

Legend:  2" vent connector (male)

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



SERBATOI PER ACQUA POTABILE  
**AQUARIUS®** BUNKER

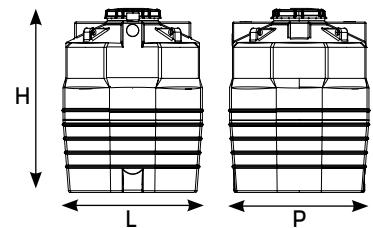
Connectors and accessories upon request at page 40



INVSV 1500 - 6000



INVSV 10000



**VERTICAL BUNKER TANK type "INVSV"**

Item (food use)	Capacity (litri)	Dimensions (cm)			Manhole ø (mm)	Breather	Matching turret
		H	L	P			
INVSV 1500	1360	150	117	117	420		CL 420
INVSV 2000	2265	182	136	136	420		CL 420
INVSV 3000	3107	219	146	146	420		CL 420
INVSV 4000	4200	224	165	165	420		CL 420
INVSV 5000	5110	229	184	184	420		CL 420
INVSV 6000	5983	257	185	185	420		CL 420
INVSV 10000	10000	260	238	238	550	*	CL 550 F

Standard color: **BL**  
For gasoline containers see page 130

\* Preparation by the client.

INVSV 10000, lateral manhole.

Legend: 1" vent connector (female)

PE 2" cassone connector (male)

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



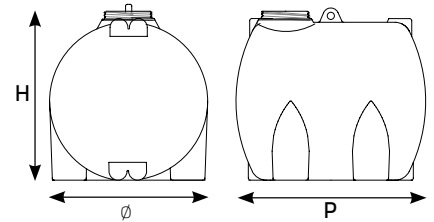
Connectors and accessories upon request at page 40



INCON



INCO 1000



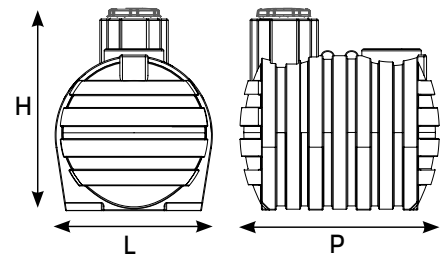
**HORIZONTAL BUNKER TANK type "INCON"**

Item (food use)	Capacity (litri)	Dimensions (cm)			Manhole ø (mm)	Breather	Matching turret
		H	L	P			
INCO 1000	1000	91	81	203	320		CL 320
INCON 2000	1950	144	136	155	320		CL 320
INCON 3000*	2970	193	160	185	420		CL 420
INCON 7500**	7150	217	189	318	550		CL 550

\* Equipped with torretta CL420

\*\* Equipped with torretta CL550

Standard color: **BL**  
For gasoline containers see page 128



**HORIZONTAL BUNKER TANK type "NER"**

Item (food use)	Capacity (litri)	Dimensions (cm)			Manhole ø (mm)	Breather
		H	L	P		
NER 5000	4800	220	175	235	550	
NER 10000	9200	275	229	270	550	

Standard color: **BL**  
For gasoline containers see page 128

Legend: 2" vent connector (male) 1" vent connector (female)

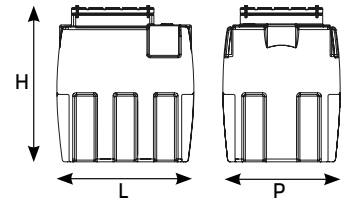
Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%

Connectors and accessories upon request at page 40

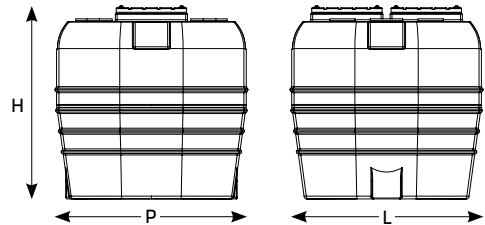
Tank for lifting station ideal to be set up easily, equipped with one or two square manhole covers according to the size of the model.



NSDS 100/200



NSDS 800

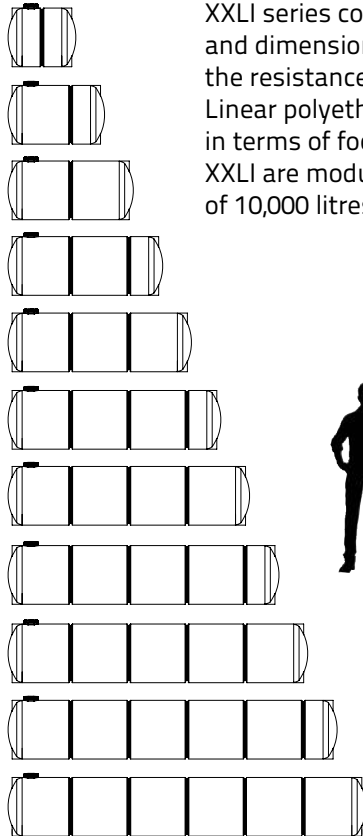


**TANK type "NSDS" for LIFTING STATION**

Item	Capacity (litres)	Dimensions (cm)			Manhole cover with stop pins M10 and gasket (cm)
		H	L	P	
NSDS 100	100	58	45	53	30x30
NSDS 200	200	70	55	65	35x35
NSDS 800	830	103	107	107	2x (35x35)

Standard color: **BL**  
For gasoline containers see page 128

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



XXLI series consist of monolithic polyethylene modules designed and dimensioned with the help of the F.E.M. analysis to ensure the resistance to both inner hydraulic pressures and static of the land. Linear polyethylene (PE) is a raw material that has the best characteristics in terms of food use, resistance to organic and inorganic chemicals. XXLI are modular tanks whose capacity varies from a minimum of 10,000 litres to a maximum of 60,000 litres.

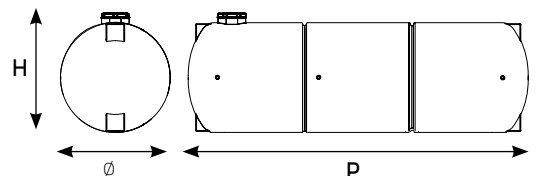


The large volume tanks XXLI are designed to meet the needs of collection and accumulation of water for the most diverse needs such as:

- Storage of water for civil use
- Storage of water for industrial use
- Creation of reserves for fire fighting systems
- Collection of rainwater
- Service tanks in the water and wastewater treatment systems.



equipped with internal reinforcement baffles with light  $\varnothing$  600 mm.



TANK LARGE VOLUMES DA INTERRO "XXLI"

Item	Capacity (litres)	Breather *	Dimensioni (cm)			Manhole $\varnothing$ (mm)	Matching turret
			H	$\varnothing$	P		
XXLI 10000	10000		255	238	275	550	CL 550 F
XXLI 15000	15000		255	238	390	550	CL 550 F
XXLI 20000	20000		255	238	508	550	CL 550 F
XXLI 25000	25000		255	238	627	550	CL 550 F
XXLI 30000	30000		255	238	743	550	CL 550 F
XXLI 35000	35000		255	238	862	550	CL 550 F
XXLI 40000	40000		255	238	979	550	CL 550 F
XXLI 45000	45000		255	238	1098	550	CL 550 F
XXLI 50000	50000		255	238	1215	550	CL 550 F
XXLI 55000	55000		255	238	1334	550	CL 550 F
XXLI 60000	60000		255	238	1450	550	CL 550 F

\* Preparation by the client.  
\*\* Request quotation according to usage.

Legend: PE cassone connector 2" (male)

Connectors & accessories upon request at pag. 40

Standard color: BL  
For gasoline containers see page 128



**KIT TRLM 550**  
(Additional manhole covers)

On request it is possible to set up XXLE tanks with more than one manhole cover (however not more than one per component module).

Dimensional volume tolerance  $\pm 1,5\%$   
Capacity tolerance  $\pm 4,6\%$



The tanks of the **INDUSTRIA** line are made of polymers in neutral color with additives to resist to U.V. rays. Their particular colouring and their thickness makes them suitable for containing chemical products. If used to contain water (including drinking water) or liquid food, the tank must be installed in the shelter of the sun, because the neutral colour could allow the formation of algae. (For these uses we recommend our line of outdoor tanks).

They are 100% recyclable, guaranteed for the absence of cadmium and intended for installation above ground. The following is an indicative table of chemical agents that can be contained in our **INDUSTRIA** tanks:

Vinegar	Ammonium nitrate (sat. sol.)	Glucose	Fluoride copper (2%)
Acetic acid (up to 10%)	Ammonium persulphate (sat. sol.)	Hydroquinone	Copper nitrate (sat.)
Larsenic acid (all conc.)	Ammonium sulphate (sat. sol.)	Hydrogen	Copper sulphate (sat.)
Ascorbic acid (10%)	Carbon dioxide	Ink	Resorcinol
Benzoic acid (all conc.)	Silver nitrate (sol.)	Milk	Brine
Boric acid (all conc.)	Air	Liquids of photographic development	Diazo salts
Hydrobromic acid (50%)	Barium carbonate (sat. sol.)	Lye (10%)	Cider
Carbonic acid	Barium chloride (sat. sol.)	Yeast	Sodium acetate
Hydrogen cyanide	Barium hydrate	Magnesium carbonate	Sodium benzoate (35%)
Citric acid (sat.)	Barium sulphate (sat. sol.)	Magnesium chloride	Sodium bicarbonate
Hydrochloric acid (dry gas)	Barium sulphide (sat. sol.)	Magnesium hydroxide	Sodium bichromate
Hydrochloric acid (all conc.)	Beer	Magnesium nitrate	Sodium bisulphate
Diglycolic acid	Bismuth carbonate (sat. sol.)	Magnesium sulphate	Sodium borate
Fluoboric acid	Borax	Mercury	Sodium bromide
Hydrofluoric acid (10%)	Boron trifluoride	Nickel chloride	Sodium carbonate
Fluosidic acid (30%)	Butanediol (100%)	Nickel nitrate	Sodium cyanide
Formic acid (tutte le conc.)	Butanediol (10%)	Nickel sulphate	Sodium chlorate
Gallic acid	Butanediol (50%)	Nicotine (diluted)	Sodium chloride
Glycolic acid	Coffee	n-Octane	Sodium ferri/ferricyanide
Hypochlorous acid	Calcium bisulphite	Cotton oil	Sodium fluoride
Nitric acid (up to 30%)	Calcium carbonate (sat. sol.)	Corn oil	Sodium hydroxide
Oxalic acid	Calcium chlorate (sat. sol.)	Castor oil (all conc.)	Sodium hypochlorite
Salicylic acid	Calcium chloride (sat. sol.)	Carbon monoxide (all conc.)	Sodium nitrate
Selenic acid	Calcium hydrate (all conc.)	Lead acetate	Sodium sulphate
Sulphidic acid	Calcium hypochlorite	Lead nitrate	Sodium sulphite
Sulphuric acid (up to 50%)	Calcium nitrate (50%)	Pyridine	Sodium sulphide
Sulphurous acid	Calcium oxide (sat. sol.)	Fruit pulp	Liquid soap (all conc.)
Stearic acid (100%)	Calcium sulphate	Potassium bicarbonate	Solutions for photography
Tannic acid	Cola concentrates	Potassium bromide	Solutions for silver plating
Chlorine water (2% sat. sol.)	Dextrin	Potassium carbonate	Solutions for cadmium plating
Seawater	Dextrose	Potassium cyanide	Solutions for nickel plating
Bathing agents	Destrosio (aqueous sat. sol.)	Potassium chlorate	Solutions for gold plating
Amyl alcohol	Dextrose detergents	Potassium chloride	Solutions for brass plating
Butyl alcohol	Diethylene glycol	Potassium chromate (40%)	Solutions for lead plating
Alcohol from coconut oil	Emulsifiers for photography	Potassium dichromate (40%)	Solutions for copper plating
Ethyl alcohol	Hexachlorobenzene	Potassium hexacyanoferrate II	Solutions for tin plating
Ethyl alcohol (35%)	Tertiary hexanol	Potassium hexacyanoferrate III	Solutions for zinc plating
Methyl alcohol (100%)	Iron chloride (ico)	Potassium fluoride	Tin chloride (ico)
Alcool plopalgilio	Chlorophenol (oso)	Potassium hydroxide (conc.)	Tin chloride (oso)
Propyl alcohol	Iron nitrate (ico)	Potassium nitrate	Urea (30%)
Alum (all types)	Iron nitrate (oso)	Potassium perchlorate (10%)	Vanilla
Aluminium chloride (all conc.)	Disodium phosphate	Potassium permanganate (20%)	Wines
Aluminium fluoride (all conc.)	Sodium phosphate (tri)	Potassium persulphate	Whisky
Aluminium sulphate (all conc.)	Fructose	Potassium sulphate (conc.)	Zinc bromide
Starch (saturated solution)	Diesel fuel	Potassium sulphite (conc.)	Zinc carbonate
Anmonia (100% gas)	Glycerin	Potassium sulphide (conc.)	Zinc chloride
Ammonium carbonate	Glycol	Propylene glycol	Zinc oxide
Ammonium chloride (sat. sol.)	Triethylene glycol	Cyanide copper (sat.)	Zinc sulphate
Ammonium fluoride (sat. sol.)	Ethylene glycol	Copper chloride (sat.)	Zinc stearate
Ammonium hydrate (up to 30%)			

The data presented in this table is purely indicative as the resistance of manufactured products to chemical agents is influenced by their shape and conditions of use. Therefore please contact in advance our Technical department.

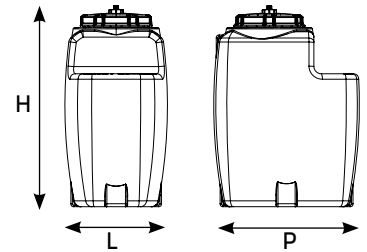
AQUARIUS®  
INDUSTRIA

Connectors and accessories upon request at page 40




Standard color: (NE)

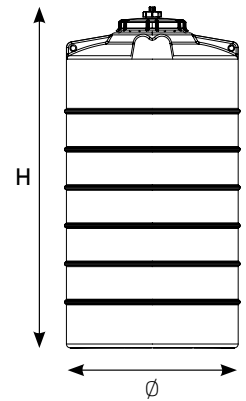


Example of use, pump not provided. Maximum weight of accessories 20 kg.













TANK type "SPPI" for SELF-PRIMING PUMP

Item	Capacity (litres)	Dimensions (cm)			Manhole $\phi$ (mm)	Breather
		H	L	P		
SPPI 300	300	96	65	93	420	
SPPI 600	600	131	69	99	420	
SPPI 800	800	170	69	129	420	



VERTICAL TANK type "CVE"


Item	Capacity (litres)	Dimensions (cm)		Manhole $\phi$ (mm)	Breather
		H	$\phi$		
CVE 100	100	72	48	320	
CVE 200	200	90	60	320	
CVE 500	500	153	70	320	
CVE 1000	1000	178	92	320	
CVE 1500	1500	187	110	420	
CVE 2000	2000	187	127	420	
CVE 3000	3000	207	147	420	
CVE 4000	4000	211	169	420	
CVE 5000	5000	194	203	420	
CVE 10000	10000	265	238	550	

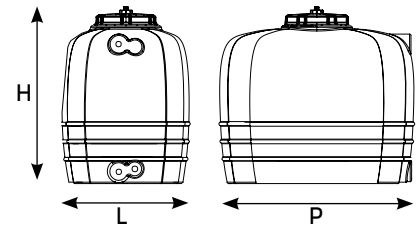
Note: CVE vertical tanks with volumes up to 4000 litres are equipped with CENTRAL manhole cover. At volumes from 5000 liters onwards, manhole covers are arranged in a SIDE position.

Legend:  Industria valve on manhole



Dimensional volume tolerance  $\pm 1,5\%$   
Capacity tolerance  $\pm 4,6\%$

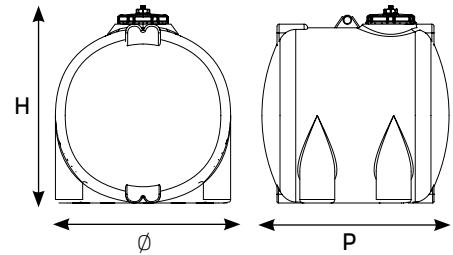
Connectors and accessories upon request at page 40

Standard color: 








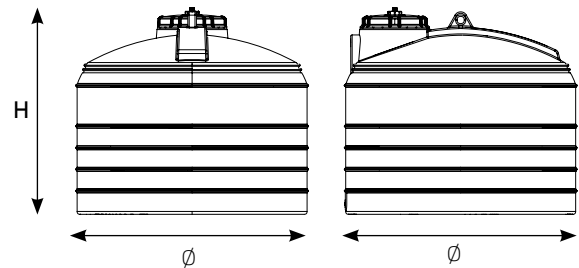
### SQUARE TANK type "CQ"

Item	Capacity (litres)	Dimensions (cm)			Manhole $\varnothing$ (mm)	Breather
		H	L	P		
CQ 200	200	77	49	84	320	
CQ 300	290	75	66	88	320	







### HORIZONTAL TANK type "COR"

Item	Capacity (litres)	Dimensions (cm)			Manhole $\varnothing$ (mm)	Breather
		H	L	P		
COR 500	500	99	87	98	320	
COR 1000	1050	120	106	127	320	
COR 2000	1950	149	136	155	320	
COR 3000	2970	171	160	185	420	
COR 10000	10400	235	225	310	550	



### PANETTONE TANK type "CCI"

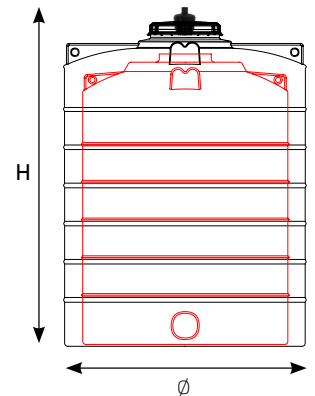
Item	Capacity (litres)	Dimensions (cm)		Manhole $\varnothing$ (mm)	Breather
		H	$\varnothing$		
CCI 2000	2050	144	157	420	
CCI 3000	3050	133	194	420	
CCI 5000	4950	147	238	420	
CCI 7500	7550	203	238	420	

Legend:  Industria valve on manhole

Dimensional volume tolerance  $\pm 1,5\%$   
Capacity tolerance  $\pm 4,6\%$

### OUTDOOR DOUBLE CHAMBER TANKS

Tanks made of polymers in neutral color, suitable for containment of chemical products, providing a safety chamber that guarantees the containment of possible accidental spills.



### DOUBLE CHAMBER VERTICAL TANK type "SVDC"

Item	Capacity ubber basin (litres)	Dimensions (cm) outer basin		Manhole inner basin Ø (mm)	Manhole outer basin Ø (mm)	Breather
		H	Ø			
SVDC 100	100	85	60	320	320	
SVDC 200	200	125	70	320	320	
SVDC 1000	1000	182	110	320	420	
SVDC 2000	2000	202	147	420	420	
SVDC 3000	3000	206	169	420	420	
SVDC 5000	5000	233	238	420	550	

Standard color:

Legend: Industria valve on manhole

Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%

### OUTDOOR e INDOOR DOUBLE



#### PE Connection 100 PN 16 with Flange (nominal diameters)

Item	Description
CA DN 63 I	Flanged connection in PE100 PN16 DN63 FLAT AREA
CA DN 90 I	Flanged connection in PE100 PN16 DN90 FLAT AREA
CA DN 110 I	Flanged connection in PE100 PN16 DN110 FLAT AREA
CA DN63 ZNP I	Flanged connection in PE100 PN16 DN63 NON-FLAT AREA
CA DN90 ZNP I	Flanged connection in PE100 PN16 DN90 NON-FLAT AREA
CA DN110 ZNP I	Flanged connection in PE100 PN16 DN110 NON-FLAT AREA

#### Kit Level for double chamber tank

It allows viewing the level of the liquid in the inner tank.

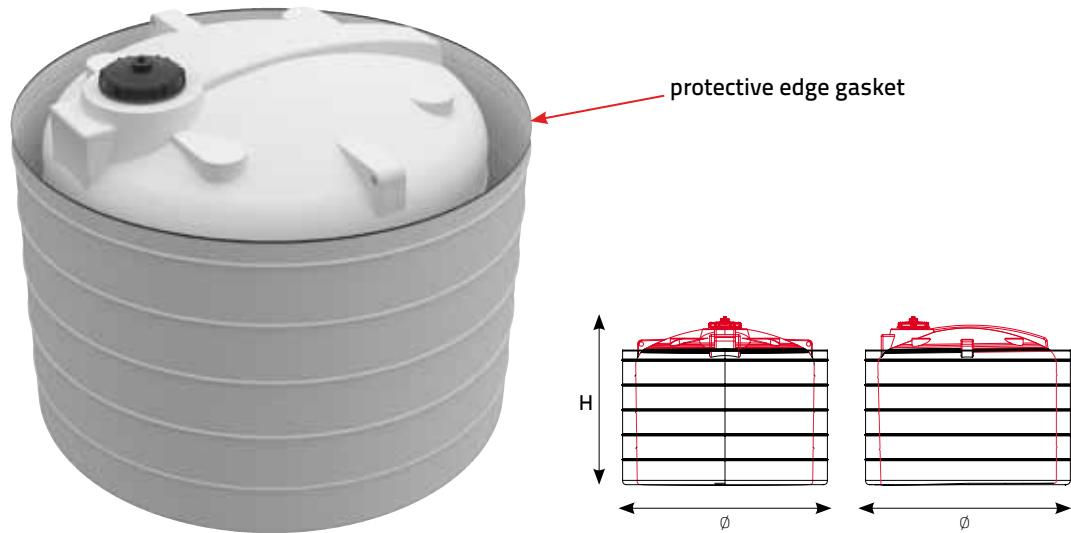
Item	Description
KIT LIV SVDC	Level Kit double chamber tank



## INDOOR DOUBLE CHAMBER TANKS

Tanks made of polymers in neutral colour, suitable for the containment of chemicals, consisting of a safety chamber which ensures the containment of accidental spills.

Model with external under the open sky chamber that therefore shall be installed necessarily indoors.



## DOUBLE CHAMBER VERTICAL OPEN TANK type "SVDCA"

Item	Capacity ubber basin (litres)	Dimensions (cm)		Manhole ø (mm)	Breather
		H inner basin	ø outer basin		
SVDCA 100	100	72	60	320	
SVDCA 200	200	90	70	320	
SVDCA 1000	1000	178	110	320	
SVDCA 2000	2000	182	147	420	
SVDCA 3000	3000	207	169	420	
SVDCA 5000	5000	194	238	420	

Standard color:

Legend: Industria valve on manhole

Dimensional volume tolerance  $\pm 1,5\%$   
Capacity tolerance  $\pm 4,6\%$

## CHAMBER TANK ACCESSORIES



### PE 100 pipe PN 16 (nominal diameters)

Item	Description
TU DN63 ZP I	PE100 pipe PN16 DN63 on FLAT AREA
TU DN90 ZP I	PE100 pipe PN16 DN90 on FLAT AREA
TU DN110 ZP I	PE100 pipe PN16 DN110 on FLAT AREA
TU DN125 ZP I	PE100 pipe PN16 DN125 on FLAT AREA
TU DN160 ZP I	PE100 pipe PN16 DN160 on FLAT AREA
TU DN200 ZP I	PE100 pipe PN16 DN200 on FLAT AREA
TU DN63 ZNP I	PE100 pipe PN16 DN63 on NON-FLAT AREA
TU DN90 ZNP I	PE100 pipe PN16 DN90 on NON-FLAT AREA
TU DN110 ZNP I	PE100 pipe PN16 DN110 on NON-FLAT AREA
TU DN125 ZNP I	PE100 pipe PN16 DN125 on NON-FLAT AREA
TU DN160 ZNP I	PE100 pipe PN16 DN160 on NON-FLAT AREA
TU DN200 ZNP I	PE100 pipe PN16 DN200 on NON-FLAT AREA

Telcom tanks can be set up to meet the specific requirements of the customer, and that must be necessarily agreed with our Technical Department.



**PE Connection 100 PN 16 with Flange (nominal diameters)**

Item	Description
CARTELLA DN63	Flanged connection in PE100 PN16 DN63 FLAT AREA
CARTELLA DN90	Flanged connection in PE100 PN16 DN90 FLAT AREA
CARTELLA DN110	Flanged connection in PE100 PN16 DN110 FLAT AREA
CART DN63 ZNP	Flanged connection in PE100 PN16 DN63 NON-FLAT AREA
CART DN90 ZNP	Flanged connection in PE100 PN16 DN90 NON-FLAT AREA
CART DN110 ZNP	Flanged connection in PE100 PN16 DN110 NON-FLAT AREA

(For other DN please contact our Technical Department)

Not applicable to the following tanks:

NSV from 100 to 5000 litres, PAN from 300 to 3000 litres, for PAN 5000 / 7500 max DN90, PN 200, ONDA series.

Alternatively the appropriate 1" 1/4M and 2" M cassone brass connectors may be employed.



**PE 100 pipe PN 16 (nominal diameters)**

Item	Description
TUBO DN63 ZP	PE100 pipe PN16 DN63 on FLAT AREA
TUBO DN90 ZP	PE100 pipe PN16 DN90 on FLAT AREA
TUBO DN110 ZP	PE100 pipe PN16 DN110 on FLAT AREA
TUBO DN125 ZP	PE100 pipe PN16 DN125 on FLAT AREA
TUBO DN160 ZP	PE100 pipe PN16 DN160 on FLAT AREA
TUBO DN200 ZP	PE100 pipe PN16 DN200 on FLAT AREA
TUBO DN63 ZNP	PE100 pipe PN16 DN63 on NON-FLAT AREA
TUBO DN90 ZNP	PE100 pipe PN16 DN90 on NON-FLAT AREA
TUBO DN110 ZNP	PE100 pipe PN16 DN110 on NON-FLAT AREA
TUBO DN125 ZNP	PE100 pipe PN16 DN125 on NON-FLAT AREA
TUBO DN160 ZNP	PE100 pipe PN16 DN160 on NON-FLAT AREA
TUBO DN200 ZNP	PE100 pipe PN16 DN200 on NON-FLAT AREA

Not applicable to the following tanks:

NSV from 100 to 5000 litres, PAN from 300 to 3000 litres, for PAN 5000 / 7500 max DN90, PN 200, ONDA series.



**BRASS CONNECTOR**

Item	Description
Raccordo in ottone 1" 1/4	cassone brass connector
Raccordo in ottone 2" *	cassone brass connector

\*Not applicable to the following tanks: dal CON 300 al CON 3000



inner threading to the tank

**CASSONE CONNECTOR 2" in PE 100**

Item	Description
Raccordo cassone 2" in PE 100 *	cassone connector 2" in PE 100

\*Not applicable to the following tanks: dal CON 300 al CON 3000



### GASKET Double lip gasket

Item	Description
Guarn. Ø 100	Double lip gasket Ø 100 mm
Guarn. Ø 125	Double lip gasket Ø 125 mm
Guarn. Ø 160	Double lip gasket Ø 160 mm

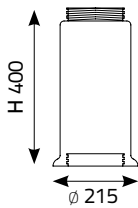


### SCREW CAP

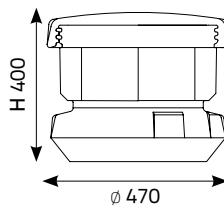
Item	Description
F 220	Screw fitted manhole cover Ø 220
ITF 32	Screw fitted manhole cover Ø 320
ITF 42	Screw fitted manhole cover Ø 420
F 550	Screw fitted manhole cover Ø 550

*Novelty*

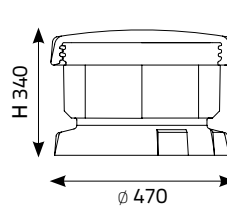
CL 140



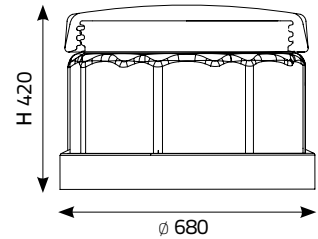
CL 320



CL 420



CL 550 F



CL 140



CL 320



CL 550 F



CL 420

### TURRET CL

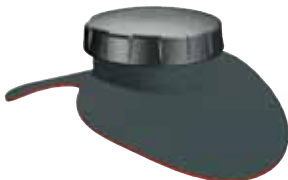
Item	Description
CL 140	Turret for manholes Ø 320
CL 320	Turret for manholes Ø 420
CL 420	Turret for manholes Ø 550
CL 550 F	Torretta per chiusini Ø 550

**Cod.: CL 140** (for manholes Ø 140 mm) - cap not included  
dimensions cm Ø 21,5; H 40;

**Cod.: CL 320** (for manholes Ø 320 mm) - cap included Ø 420  
dimensions cm Ø 47; H 40;

**Cod.: CL 420** (for manholes Ø 420 mm) - cap not included  
dimensions cm Ø 47; H 34;

**Cod.: CL 550 F** (for manholes Ø 550 mm) - cap not included  
dimensions cm Ø 68; H 42;



### Additional MANHOLE COVER

Item	Description
KIT TRLM 550	Additional manhole covers for NER, XXL I e XXLE



### INSTANT CLOSURE HYDRAULIC REGULATOR (Floater)

**Cod.: REGOLATORE 3/4"**

**dimensions: 3/4" connection**

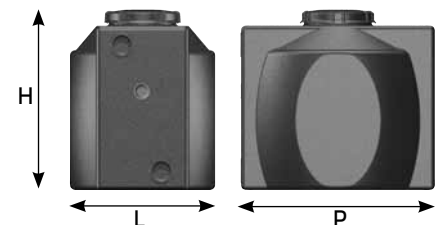
Item	Description
REGOLATORE 3/4"	Instant closure hydraulic regulator, 3/4" connection

## “Aperto” (Open) type expansion vessel for application in heating systems

The expansion vessel allows the water that expands during heating to exit freely without causing damage to the plant. In fact, going from approximately 15°C to approximately 90°C, the volume of the water increases of about 4% and the expansion vessel, with a sufficient capacity, intervenes by compensating this excess volume.

Such systems, defined as open expansion pot systems, are in use in buildings fitted with central heating. Here the expansion of the water is connected to the atmosphere by means of a vent pipe and the volume is compensated in one or more tanks placed at the highest point of the plant, connected to the boiler by means of a pipe upstream of the circulation pump. The height of the expansion vessel consequently determines the hydrostatic flap at the inlet of these pumps. The expansion vessel is connected to the aqueduct by means of a float valve to allow the reinstatement of the evaporated water in the vessel itself or dispersed along the circuit. The minimum water level is determined by the float valve (with the plant cold and off).

The maximum level corresponds to the connection level of the overflow pipe (with the plant at the maximum operating temperature). If the vessel is under-sized, any variation of temperature causes the leakage of the water that must be replenished and therefore properly treated.



### “ESPA” EXPANSION VESSEL

Item	Capacity (litres)	Dimensions (cm)			Manhole Ø (mm)	Moulded connectors	
		H	L	P		Charg/Discharge (threaded)	Predisposition for FLOAT (not threaded)
ESPA 30 R	32	38	30	40	140	3/4"	1/2"

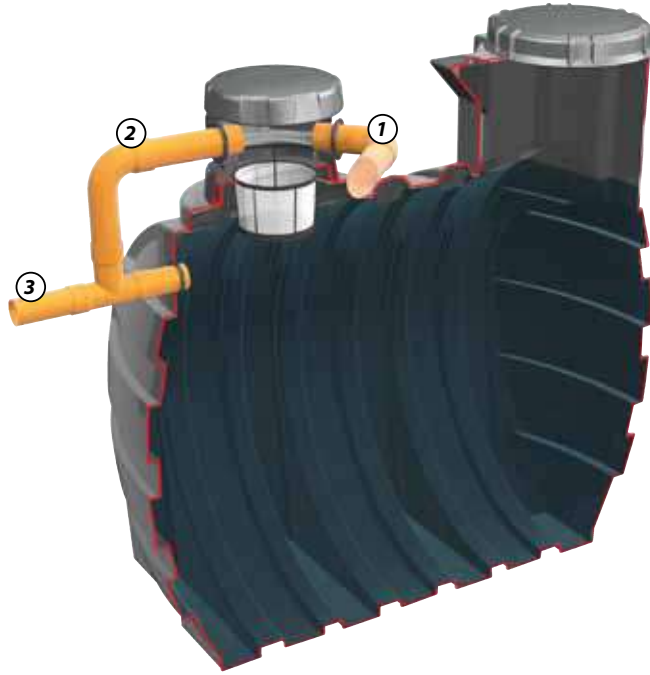
*Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 3%*

RAINWATER COLLECTION  
**PLUVIUM**



# PLUVIUM Systems for collecting rainwater

Fully integrated underground tanks for the collection of rainwater with filter for the interception of coarse solids greater than 1 mm.



**LEGEND:**

- 1) RAINWATER INLET
- 2) OVERFLOW FILTER
- 3) OVERFLOW TANK



**CARATTERISTICHE CESTELLO**  
Filtro con retina in materiale plastico con luce pari a 1 mm. (ø 400xH290)

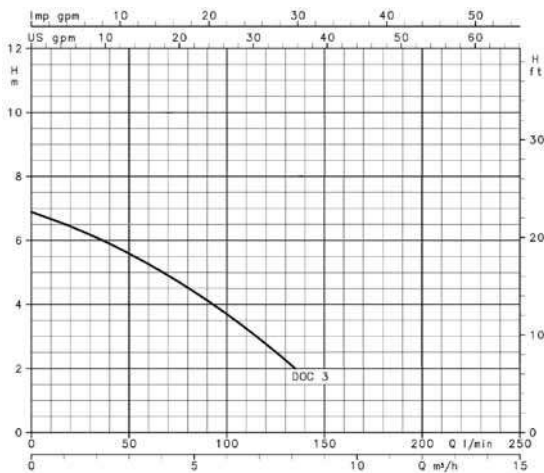
## PLUVIUM CHARACTERISTICS

The PLUVIUM systems, each identified by the capacity of the tank used, essentially provide for:

- provision for the collection of water from the roofs through the piping from individual rainfalls;
- filtration, essential to eliminate foreign bodies (leaves, debris, soil...) collected from leaching;
- the storage in underground tanks, away from sunlight, such as to ensure long term good water conditions by avoiding the development of algae, bacteria and unpleasant odors;
- Upon request, models are available with submersible or external self-priming pumps whose characteristics are shown below.

## CHARACTERISTICS OF PUMPS

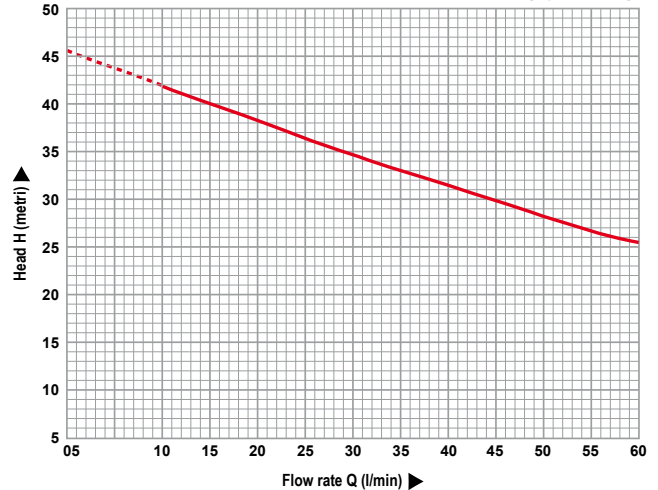
**Series PLS IN (0,25 Kw)**



**Internal pump\***

\*Not suitable for the use of PRESS CONTROL

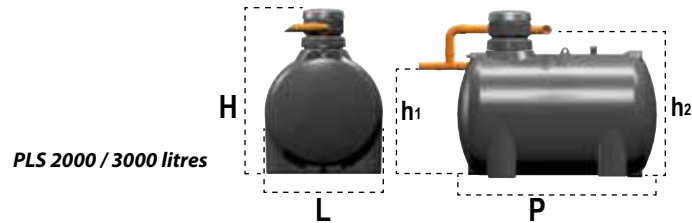
**Series PLS ES (0,75 Kw)**



**External pump**

## PLUVIUM PLS IN GR

Underground tanks fitted with filter for the interception of coarse solids larger than 1 mm.



### PLUVIUM PLANTS from 2000 to 50000 litres (without internal pump)

ITEM <i>WITHOUT PUMP</i>	Suitable for above ground installation*	Dimensions (cm)					Volume (litres)	Filtering unit	Piping (ø mm)	Manhole (ø mm)
		H	L	P	h1 Overflow	h2 Inlet				
PLS 2000 IN GR	SI	184	136	155	118	155	2000	CL 320 F	100	420
PLS 3000 IN GR	SI	200	160	185	139	171	3000	CL 420 F	100	420
PLS 5000 IN GR	NO	220	175	235	149	189	4800	CL 550 F/125	125	550
PLS 10000 IN GR	NO	275	229	270	202	239	9200	CL 550 F/125	125	550
PLS 15000 IN GR	NO	289	238	390	214	257	15000	CL 550 F/160	160	550
PLS 20000 IN GR	NO	289	238	508	214	257	20000	CL 550 F/160	160	550
PLS 25000 IN GR	NO	289	238	627	214	257	25000	CL 550 F/160	160	550
PLS 30000 IN GR	NO	289	238	743	214	257	30000	CL 550 F/160	160	550
PLS 35000 IN GR	NO	289	238	862	214	257	35000	CL 550 F/160	160	550
PLS 40000 IN GR	NO	289	238	979	214	257	40000	CL 550 F/160	160	550
PLS 45000 IN GR	NO	289	238	1098	214	257	45000	CL 550 F/160	160	550
PLS 50000 IN GR	NO	289	238	1215	214	257	50000	CL 550 F/160	160	550

\* For outdoor tanks please contact our Technical Office.

#### LEGEND:

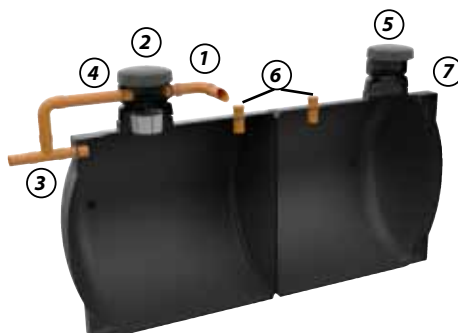
- 1) RAINWATER INLET
  - 2) FILTERING UNIT (filter-supporting structure and bag filter).
  - 3) OVERFLOW tank
  - 4) OVERFLOW FILTERING UNIT
  - 5) INSPECTION MANHOLE
  - 6) MANHOLES for cleaning/suction
  - 7) VENT 2"
- (Already fitted on tanks up to 10000 l.  
For larger volumes is supplied as standard in mounting kits).



PLANT WITHOUT INTERNAL PUMP  
PLS from 5000 to 10000 litres

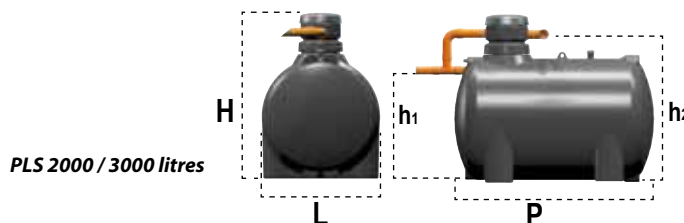


PLANT WITHOUT INTERNAL PUMP  
PLS from 15000 to 50000 litres



## PLUVIUM PLS ES GR

Underground tanks fitted with filter for the interception of coarse solids, and of 1" draught system for the connection to an external pump.



### PLUVIUM PLANTS from 2000 to 50000 litres (without external pump)

ITEM <i>WITHOUT PUMP</i>	Suitable for above ground installation*	Dimensions (cm)					Volume (litres)	Filtering unit	Piping (ø mm)	Manhole (ø mm)
		H	L	P	h1 Overflow	h2 Inlet				
PLS 2000 ES GR	SI	184	136	155	118	155	2000	CL 320 F	100	420
PLS 3000 ES GR	SI	200	160	185	139	171	3000	CL 420 F	100	420
PLS 5000 ES GR	NO	220	175	235	149	189	4800	CL 550 F/125	125	550
PLS 10000 ES GR	NO	275	229	270	202	239	9200	CL 550 F/125	125	550
PLS 15000 ES GR	NO	289	238	390	214	257	15000	CL 550 F/160	160	550
PLS 20000 ES GR	NO	289	238	508	214	257	20000	CL 550 F/160	160	550
PLS 25000 ES GR	NO	289	238	627	214	257	25000	CL 550 F/160	160	550
PLS 30000 ES GR	NO	289	238	743	214	257	30000	CL 550 F/160	160	550
PLS 35000 ES GR	NO	289	238	862	214	257	35000	CL 550 F/160	160	550
PLS 40000 ES GR	NO	289	238	979	214	257	40000	CL 550 F/160	160	550
PLS 45000 ES GR	NO	289	238	1098	214	257	45000	CL 550 F/160	160	550
PLS 50000 ES GR	NO	289	238	1215	214	257	50000	CL 550 F/160	160	550

\* For outdoor tanks please contact our Technical Office.



**PLANT WITHOUT EXTERNAL PUMP**  
PLS from 5000 to 10000 litres



**PLANT WITHOUT EXTERNAL PUMP**  
PLS from 15000 to 50000 litres

#### LEGEND:

- 1) RAINWATER INLET
  - 2) FILTERING UNIT (filter-supporting structure and bag filter).
  - 3) DRAUGHT SYSTEM
  - 4) THREADED CONNECTION 1" for the suction sleeve of the external pump.
  - 5) OVERFLOW TANK
  - 6) OVERFLOW FILTERING UNIT
  - 7) INSPECTION MANHOLE
  - 8) MANHOLES for cleaning/suction
  - 9) VENT 2"
- (Already fitted on tanks up to 10000 l. For larger volumes is supplied as standard in mounting kits).

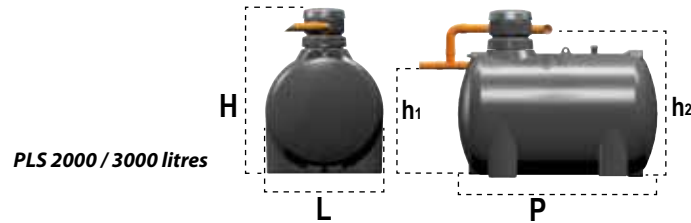




## PLUVIUM PLS IN

Underground tanks fitted with filter for the interception of coarse solids, and of an **internal pump** (features at page 50).

On models starting from 5000 litres it is possible to accessorise the PLUVIUM with a 1 HP pressure pump (installation to be carried out by the client).



### PLUVIUM PLANTS from 2000 to 50000 litres (with internal pump)

ITEM <i>WITH PUMP</i>	Suitable for above ground installation*	Dimensions (cm)					Volume (litres)	Filtering unit	Piping (ø mm)	Manhole (ø mm)
		H	L	P	h1 Overflow	h2 Inlet				
PLS 2000 IN	SI	184	136	155	118	155	2000	CL 320 F	100	420
PLS 3000 IN	SI	200	160	185	139	171	3000	CL 420 F	100	420
PLS 5000 IN	NO	220	175	235	149	189	4800	CL 550 F/125	125	550
PLS 10000 IN	NO	275	229	270	202	239	9200	CL 550 F/125	125	550
PLS 15000 IN	NO	289	238	390	214	257	15000	CL 550 F/160	160	550
PLS 20000 IN	NO	289	238	508	214	257	20000	CL 550 F/160	160	550
PLS 25000 IN	NO	289	238	627	214	257	25000	CL 550 F/160	160	550
PLS 30000 IN	NO	289	238	743	214	257	30000	CL 550 F/160	160	550
PLS 35000 IN	NO	289	238	862	214	257	35000	CL 550 F/160	160	550
PLS 40000 IN	NO	289	238	979	214	257	40000	CL 550 F/160	160	550
PLS 45000 IN	NO	289	238	1098	214	257	45000	CL 550 F/160	160	550
PLS 50000 IN	NO	289	238	1215	214	257	50000	CL 550 F/160	160	550

\* For outdoor tanks please contact our Technical Office.



**PLANT WITH INTERNAL PUMP**  
PLS from 5000 to 10000 litres



**PLANT WITH INTERNAL PUMP**  
PLS from 15000 to 50000 litres



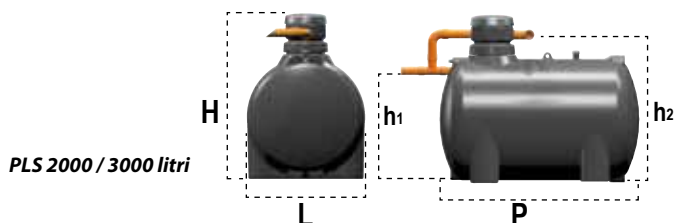
#### LEGEND:

- 1) RAINWATER INLET
  - 2) FILTERING UNIT (filter-supporting structure and bag filter).
  - 3) OVERFLOW TANK
  - 4) OVERFLOW FILTERING UNIT
  - 5) INTERNAL PUMP
  - 6) **THREADED CONNECTION male 1"**
  - 7) INSPECTION MANHOLE
  - 8) MANHOLES for cleaning/suction
  - 9) VENT 2"
- (Already fitted on tanks up to 10000 l.  
For larger volumes is supplied as standard in mounting kits).



## PLUVIUM PLS ES

Underground tanks fitted with filter for the interception of coarse solids, and external pump (features at page 50).



PLS 2000 / 3000 litri

### PLUVIUM PLANTS from 2000 to 50000 litres (with external pump)

ITEM <i>WITH PUMP</i>	Suitable for above ground installation*	Dimensions (cm)					Volume (litres)	Filtering unit	Piping (ø mm)	Manhole (ø mm)
		H	L	P	h1 Overflow	h2 Inlet				
PLS 2000 ES	SI	184	136	155	118	155	2000	CL 320 F	100	420
PLS 3000 ES	SI	200	160	185	139	171	3000	CL 420 F	100	420
PLS 5000 ES	NO	220	175	235	149	189	4800	CL 550 F/125	125	550
PLS 10000 ES	NO	275	229	270	202	239	9200	CL 550 F/125	125	550
PLS 15000 ES	NO	289	238	390	214	257	15000	CL 550 F/160	160	550
PLS 20000 ES	NO	289	238	508	214	257	20000	CL 550 F/160	160	550
PLS 25000 ES	NO	289	238	627	214	257	25000	CL 550 F/160	160	550
PLS 30000 ES	NO	289	238	743	214	257	30000	CL 550 F/160	160	550
PLS 35000 ES	NO	289	238	862	214	257	35000	CL 550 F/160	160	550
PLS 40000 ES	NO	289	238	979	214	257	40000	CL 550 F/160	160	550
PLS 45000 ES	NO	289	238	1098	214	257	45000	CL 550 F/160	160	550
PLS 50000 ES	NO	289	238	1215	214	257	50000	CL 550 F/160	160	550

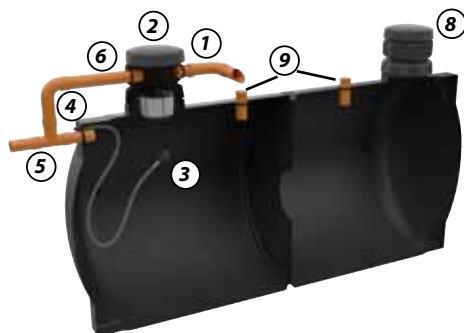
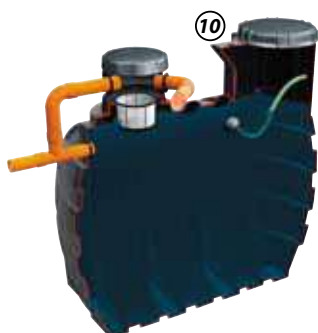
\* For outdoor tanks please contact our Technical Office.



PLANT WITH EXTERNAL PUMP  
PLS from 5000 to 10000 litres



PLANT WITH EXTERNAL PUMP  
PLS from 15000 to 50000 litres



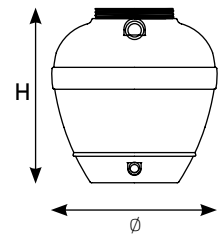
#### LEGEND:

- 1) RAINWATER INLET
- 2) FILTERING UNIT (filter-supporting structure and bag filter).
- 3) DRAUGHT SYSTEM
- 4) THREADED CONNECTION 1" for the suction sleeve of the external pump.
- 5) OVERFLOW TANK
- 6) OVERFLOW FILTERING UNIT
- 7) EXTERNAL PUMP: equipped with Presscontrol
- 8) INSPECTION MANHOLE
- 9) MANHOLES for cleaning/suction
- 10) VENT 2" (Already fitted on tanks up to 10000 l. For larger volumes is supplied as standard in mounting kits).



# PLUVIUM **Systems for collecting rainwater**

Fully integrated **external** tanks for the collection of rainwater with filter for the interception of coarse solids greater than 1 mm.



## ANPHORA TANK type "JUG" PRQ

ITEM	Suitable for above ground installation	Capacity (litres)	Dimensions (cm)		Manhole Ø (mm)	Moulded connectors		
			H	Ø		Loading	Discharge	Total emptying
ORCIO 500 PRQ	SI	500	111	98	450	Ø 80	1" 1/4	1"
ORCIO 1000 R PRQ	SI	1010	140	116	450	Ø 80	1" 1/4	1"

Without tubes and gasket.



### FILTRATION SYSTEM

filtration of impurities  $\geq 1$  mm.

ITEM	DESCRIPTION
CL 320/F	Filtration system for manhole $\varnothing$ 320 mm
CL 420/F	Filtration system for manhole $\varnothing$ 420 mm
CL 550/F 125	Filtration system for manhole $\varnothing$ 550 mm
CL 550/F 160	Filtration system for manhole $\varnothing$ 550 mm

**N.B. : NOT AVAILABLE FOR TANKS MOD. NER 5000 E NER 10000.**



### RAIN WATER REUSE KIT:

Treatment unit consisting of a self-cleaning pre-filter with backwash with 90 micron filtration degree, a successive filtration of 25 micron and a final treatment with activated carbon, able to remove odours and colors from rainwater.

ITEM	DESCRIPTION
KIT RIU. PLS	Rain water reuse kit



### RAIN WATER REUSE KIT WITH WATER PURIFIER:

Treatment unit consisting of a self-cleaning pre-filter with backwash with 90 micron filtration degree, a successive filtration of 25 micron and a final treatment with activated carbon, able to remove odours and colors from rainwater.

To this unit is added a disinfection phase with a UV-lamp for a maximum flow rate of 600 l/h.

ITEM	DESCRIPTION
KIT RIU. PLS D	Rain water reuse kit with WATER PURIFIER

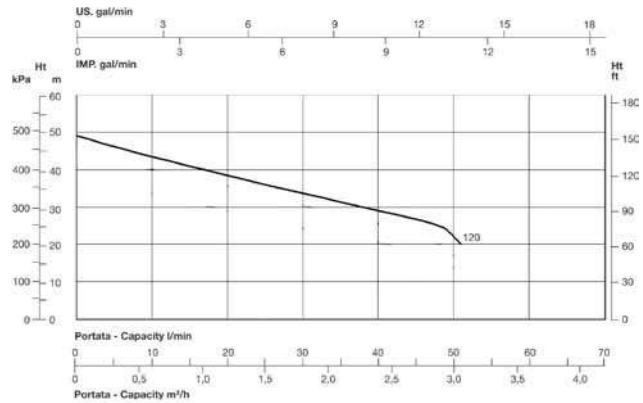
### WATER REPLENISHMENT KIT:

In case of a rainwater recovery tank installation it is necessary to also connect a submerged pump for the pressurisation of the recovered water. If there is a prolonged absence of rain, it is necessary to install a water replenishment system from the pipeline.

In order to exclude pollution and contamination of the public network, European legislation prohibits the abduction/injection of rain water into the aqueduct. For this purpose it is necessary a particular plant called BREAK KIT that excludes in any way the contact between the rainwater and that of the aqueduct.

Water replenishment kit provides:

- E/automatic 1.2 HP pump
- Control unit
- Kit of failure



**Features of the electro-pump**

ITEM	DESCRIPTION
KIT REINTEGRO 1,2 HP	Rain Water Replenishment Kit

### REPLENISHMENT CONTROL UNIT KIT:

The Replenishment Control Unit kit version without electronic pump is available.

The Replenishment Control Unit kit includes:

- Control unit
- Probe
- ½ FF E/valve



ITEM	DESCRIPTION
KIT CENTRALINA	Rain Water Replenishment Control Unit Kit



**PORTABLE EXTERNAL PUMP:**

power 0.75 kW, flow rate up to 60 l/min ( 3.6 m<sup>3</sup>/h),  
prevalence up to 45.4 metres, suction inlet and discharge  
outlet of 1".

ITEM	DESCRIPTION
POMPA ELET. 3	Portable external pump



**INTERNAL SUBMERGED PUMP:**

power kW 0,25, flow rate up 135 l/min (8.1 m<sup>3</sup>/h),  
prevalence up 7 metres, discharge outlet of 1".

ITEM	DESCRIPTION
POMPA ELET. 14	Internal submerged pump

*Not suitable for use with PRESS CONTROL*



**PRESSCONTROL:**

electronic pressure and flow regulating unit.  
Controls the automatic start and stop of the pump, respectively  
at the tap's opening and closing.  
In case of lack of water ensures the automatic shutdown of the  
pump.

max. power 8 A, max. flow 10 m<sup>3</sup>/h, connectors 1" x 1".

ITEM	DESCRIPTION
PRESS CONTROL	Electronic pressure and flow regulating unit



**FLOATING SYSTEM:**

float with a 1" anti-slip flexible hose.  
Fitted with foot valve and filter.

ITEM	DESCRIPTION
SISTEMA DI PESCAGGIO	Floating system



Progettati per rispettare l'ambiente

- *Technical notes* ..... 54
- *Reference standard table* ..... 55
- *Warnings* ..... 56

## TREATMENT OF DOMESTIC WASTE WATER

### PRIMARY TREATMENT

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- *Septic tanks* ..... 65
- *Septic tanks of the Large Plants line* ..... 68
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### SECONDARY TREATMENT

- *Activated sludge* ..... 74
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- *Monoblock activated sludge plants with constant flowrate EQFA..* 77
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## TREATMENT OF EROSION RAINWATERS

- *Sand separators* ..... 97
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## TREATMENT OF WASTE WATERS FROM CARWASH UNITS

- *ECO WASH* ..... 106
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## ACCESSORIES

- *Lifting stations* ..... 114
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- *Wells / Miscellanea* ..... 120
  
- *Instructions for fitting in the soil* ..... 130
- *Guarantee* ..... 157

## TECHNICAL CONSIDERATION FOR PRODUCT SELECTION

**TELCOM Ecology Department** is a valuable support for specialized designers and technicians. The technical solutions proposed for the treatment of domestic wastewater allow the discharge in Public sewage, Surface waters and on the ground in compliance with the values indicated in the tables of Legislative Decree n° 152/06. Such technical solutions always provide a primary treatment and a secondary treatment and the sizing of the items that make up the plant varies depending on the receiving body. However, knowing the wide variety of appropriate treatments proposed by the various bodies, the Ecology Office remains available to take any advice from the competent authorities. The TELCOM products must be selected on the basis of the number of Equivalent Inhabitants (A.E.), which is the parameter that characterizes the treatment plants in homogeneous and comparable terms. Telcom considers an A.E. characterized by a hydraulic load of 200 litres per day and an organic load (BOD<sub>5</sub>) of 60 grams per day. The following is a table to identify the number of equivalent inhabitants for the most common activities. Such table should be indicative, in fact with references to the regional regulations.

*Eng. Sergio de Gioia*

ACTIVITY TYPE	FORMULA FOR CALCULATING THE EQUIVALENT INHABITANTS
RESIDENTIAL HOUSES	= NUMBER of RESIDENTS x 1
RESTAURANTS - TRATTORIA	= NUMBER of DAILY MEALS x 0,25
HOSTELS - HOTELS	= NUMBER of GUESTS x 1,16
BAR	= NUMBER of CLIENTS x 0,06
HOSPITALS	= NUMBER of GUESTS x 3,15
SHOPPING CENTERS	= m <sup>2</sup> of ROOFING x 0,03
OFFICES	= NUMBER of EMPLOYEES x 0,38
SCHOOLS	= NUMBER of STUDENTS x 0,375
CAMPINGS (for tents)	= NUMBER of GUESTS x 1,08
CINEMA - THEATRE	= NUMBER of PLACES TO SEAT x 0,16
AUTOGRILL	= NUMBER of PLACES TO SEAT x 2
BARRACKS	= NUMBER of EMPLOYEES x 1,9

*NOTE TO THE TABLE: The number of A.E. derived from the calcului reported in table takes into account the biggest value between the organic charge and the hydraulic charge on equivalent inhabsnt.*

### DISCHARGE OF SLUDGES, OILS AND FATS

Our products are not equipped with sludge treatment systems, so those produced in excess of the needs of the purification process must be periodically removed from the installation by authorized companies in accordance with the regulations in force at the place of installation.

### REGULATORY FRAMEWORK OF REFERENCE\*

- Legislative Decree n°152/06 and s.m.i.
- D.M. n°. 185 dated 12/06/03
- Decision dated 04 February 1977.
- Decision n°. 1053/03 of Emilia Romagna Region
- Building regulations of Florence City Hall
- guidelines of various regions of the Regional Environmental Protection Agency
- Regional Standards
- Standard UNI EN 12566-1:2002/A1:2004
- Standard UNI EN 12566-3:2005
- Standard UNI EN 12566-3:2009
- Standard UNI EN 1825-1:2005
- Standard DIN 4040
- EEC Directive n°. 91/271 dated 21.05.1991
- EU Regulation 305/11

*\* Norms subject to possible changes or updates.*



**Tables 3 and 4 Annex 5, third part of the Legislative Decree n°. 152/06 and e subsequent modifications and additions for the quality of the discharges**

Sostanze	Unità di Misura	Tabella 3 Prima Colonna Scarico in acque superficiali	Tabella 3 Seconda Colonna Scarico in pubblica fognatura (*)	Tabella 4 Reflui che recapitano sul suolo
pH		5,5 - 9,5	5,5 - 9,5	6-8
Temperatura		(1)	(1)	SAR   10
Colore		Non percettibile con diluizione 1:20	Non percettibile con diluizione 1:40	
Odore		Non deve essere causa di molestie	Non deve essere causa di molestie	
Materiali grossolani		Assenti	assenti	Assenti
Solidi sospesi totali	mg/L	≤ 80 (2)	≤ 200 (2)	25
BOD <sub>5</sub> (come O <sub>2</sub> )	mg/L	≤ 40 (2)	≤ 250 (2)	20
COD (come O <sub>2</sub> )	mg/L	≤ 160 (2)	≤ 500 (2)	100
Alluminio	mg/L	≤ 1	≤ 2,0	1
Arsenico	mg/L	≤ 0,5	≤ 0,5	0,05
Bario	mg/L	≤ 20	-	10
Boro	mg/L	≤ 2	≤ 4	0,5
Cadmio	mg/L	≤ 0,02	≤ 0,02	-
Cromo totale	mg/L	≤ 2	≤ 4	1
Cromo VI	mg/L	≤ 0,2	≤ 0,20	-
Ferro	mg/L	≤ 2	≤ 4	2
Manganese	mg/L	≤ 2	≤ 4	0,2
Mercurio	mg/L	≤ 0,005	≤ 0,005	-
Nichel	mg/L	≤ 2	≤ 4	0,2
Piombo	mg/L	≤ 0,2	≤ 0,3	0,1
Rame	mg/L	≤ 0,1	≤ 0,4	0,1
Selenio	mg/L	≤ 0,03	≤ 0,03	0,002
Stagno	mg/L	≤ 10	-	3
Zinco	mg/L	≤ 0,5	≤ 1,0	0,5
Cianuri totali (come CN)	mg/L	≤ 0,5	≤ 1,0	-
Cloro attivo libero	mg/L	≤ 0,2	≤ 0,3	0,2
Solfuri (come H <sub>2</sub> S)	mg/L	≤ 1	≤ 2	0,5
Solfiti (come SO <sub>3</sub> )	mg/L	≤ 1	≤ 2	0,5
Solfati (come SO <sub>4</sub> )	mg/L	≤ 1000 (3)	≤ 1000 (3)	500
Cloruri	mg/L	≤ 1200 (3)	≤ 1200 (3)	200
Fluoruri	mg/L	≤ 6	≤ 12	1
Fosforo totale (come P)	mg/L	≤ 10 (2)	≤ 10 (2)	2
Azoto ammoniacale (come NH <sub>4</sub> )	mg/L	≤ 15 (2)	≤ 30 (2)	5
Azoto nitroso (come N)	mg/L	≤ 0,6 (2)	≤ 0,6 (2)	-
Azoto nitrico (come N)	mg/L	≤ 20 (2)	≤ 30 (2)	-
Grassi e oli animali/vegetali	mg/L	≤ 20	≤ 40	-
Idrocarburi totali	mg/L	≤ 5	≤ 10	-
Fenoli	mg/L	≤ 0,5	≤ 1	0,1
Aldeidi	mg/L	≤ 1	≤ 2	0,5
Solventi organici aromatici	mg/L	≤ 0,2	≤ 0,4	-
Solventi organici azotati	mg/L	≤ 0,1 (4)	≤ 0,2 (4)	0,01
Tensioattivi totali	mg/L	≤ 2	≤ 4	0,5
Pesticidi fosforati	mg/L	≤ 0,10	≤ 0,10	-
Pesticidi totali (esclusi i fosforati)	mg/L	≤ 0,05 (5)	≤ 0,05 (5)	-
tra cui:				
- aldrin	mg/L	≤ 0,01	≤ 0,01	-
- dieldrin	mg/L	≤ 0,01	≤ 0,01	-
- endrin	mg/L	≤ 0,002	≤ 0,002	-
- isodrin	mg/L	≤ 0,002	≤ 0,002	-
Solventi clorurati	mg/L	≤ 1 (5)	≤ 2 (5)	-
Escherichia coli (4)	UFC/100mL	nota	-	nota
Saggio di tossicità acuta (5)		Il campione non è accettabile quando, dopo 24 ore, il numero degli organismi immobili è uguale o maggiore del 50% del totale.	Il campione non è accettabile quando, dopo 24 ore, il numero degli organismi immobili è uguale o maggiore del 80% del totale.	Il campione non è accettabile quando, dopo 24 ore, il numero degli organismi immobili è uguale o maggiore del 50% del totale.
Azoto totale	mg/L			15
Berillio	mg/L			0,1
Vanadio	mg/L			0,1
Composti organici aromatici totali	mg/L			0,01
Composti organici azotati totali	mg/L			0,01

**Notes attached to Tables 3 and 4 Annex 5 third part of the Legislative Decree n°. 152/06 and s.m.a.:**

(\*) The limits for discharge into the sewerage system are mandatory in the absence of limits set by the environment authority or in the absence of a final treatment plant capable of complying with the emission limits of the final discharge. Different limits set by the managing body shall be brought into line with the requirements of Note 2 of Table 5 on hazardous substances.

1. For watercourses the maximum variation between average temperatures of any section of the watercourse upstream and downstream of the point of entry shall not exceed 3°C. On at least half of any downstream section this variation shall not exceed 1°C. For lakes the temperature of the discharge shall not exceed 30°C while the temperature increase of the receiver body must in no case exceed 3°C more than the 50 metres from the entry point. For artificial channels, the maximum average water temperature of any section must not exceed 35°C, the above condition is subject to the consent of the entity running the channel. For sea and mouth of rivers areas of non-significant water courses, the temperature of the discharge must not exceed 35°C while the temperature increase of the receiver body must in no case exceed 3°C more than the 1000 metres away from the point of entry. In addition, the environmental compatibility of the discharge with the receiving body must be ensured and the formation of thermal barriers at the mouth of the rivers must be avoided.

2. For discharges of urban waste water, the limits given in Table 1 and, for sensitive areas, those in Table 2 shall apply. For industrial waste water discharges into sensitive areas the total phosphorus concentration and total nitrogen concentration shall be 1 and 10 mg/L respectively.

3. These limits shall not apply to discharge into the sea, so that the mouth areas shall be treated in the same way as coastal marine waters, provided that at least half of any section downstream of the discharge is not disturbed by natural variations in the concentration of sulphates or chlorides.

4. When authorising the discharge of the urban waste water treatment plant, the competent authority shall set the most appropriate limit in relation to the environmental and health status of the receiving water body and existing uses. A limit not exceeding 5000 CFU/100 ml is recommended.

5. The toxicity test is mandatory. In addition to the Daphnia magna test, acute toxicity tests may be performed on Ceriodaphnia dubia, Selenastrum capricornutum, bioluminescent bacteria or organisms such as Artemia salina, for discharges of salt water or other organisms among those to be indicated in accordance with point 4 of this Annex. If more than one toxicity test is carried out, the worst result shall be taken into consideration. The positive result of the toxicity test does not lead directly to the application of penalties referred to in Title V, it also determines the obligation to deepen the analytical investigations, the investigation of the causes of toxicity and their removal.

## DOMESTIC WASTE WATERS

**THE EFFLUENT FROM THE PROPOSED INSTALLATION WILL COMPLY WITH THE REGULATORY FRAMEWORK OF REFERENCE, PROVIDED THAT:**

- the data provided are true;
- the assumed design data are identical to the actual situation;
- installation and maintenance are carried out correctly and regularly according to the attached technical manual;
- the effluent produced is domestic in nature or similar to it;
- no bactericides, ammonia, chlorine or any product harmful to the bacterial flora that may compromise the purification action have been introduced into the plant;
- no process water and meteoric water are conveyed to the plant;
- no coarse solid bodies (diapers, plastic bags, etc.) have been introduced into the plant which could damage parts of the plant or cause it to be obstructed;
- no waste water reaches the sewage treatment plant with concentrations above the following limits (in mg/l) for the following substances:

PARAMETER	Discharge TAB. III	Discharge TAB IV	PARAMETER	Discharge TAB. III	Discharge TAB IV
ZINC	0.5	0.5	FLUORINE	6	1
ARSENIC	0.5	0.05	LEAD	0.2	0.1
PHENOLS	0.5	0.1	CHLORIDE	1,200	200
CHROMIUM TOT.	2.0	1.0	COPPER	0.1	0.1
SULPHIDES	1	0.5	SURFACTANTS (NOT BIODEGRADABLE)	2	0.5
NICKEL	2	0.2			

MOREOVER:

- Influent waters with pH values of more than 9.5 and less than 5.5 and with a continuously dissolved quantity of oxygen of less than 2 mg/l are considered dangerous.
- the output nitrogen parameters will comply if the inlet sewage is maintained at a ratio of approx. 10% to BOD<sub>5</sub>;
- the output phosphorus parameters will be compliant if the inlet slurry has a ratio of 5% to BOD<sub>5</sub>;
- the parameters of entering non-biodegradable substances are already in conformity with current legislation, as they are not biologically degraded.
- the ranges of the following substances shall be considered dangerous for the purpose of the nitrification of the slurry:

PARAMETER	RANGE	PARAMETER	RANGE
NICKEL	0.25 - 3.0	COPPER	0.1 - 0.5
CHROMIUM	0.25	ZINC	3

*TELCOM S.p.A. declines all responsibility for the purposes of Title V of Legislative Decree n°. 152/06 and s.m.i. in cases where the present WARNINGS are not respected.*

*TELCOM S.p.A. reserves the right to make changes to improve plant's efficiency and yielding.*

*The guarantee of compliance with the limits imposed in Annex 5 of Legislative Decree n°. 152/06 and its subsequent modifications and updates for the receiving bodies is however subordinate to the efficiency of our plants and therefore to the concentration of pollutants present in the affluent waters into the plant.*



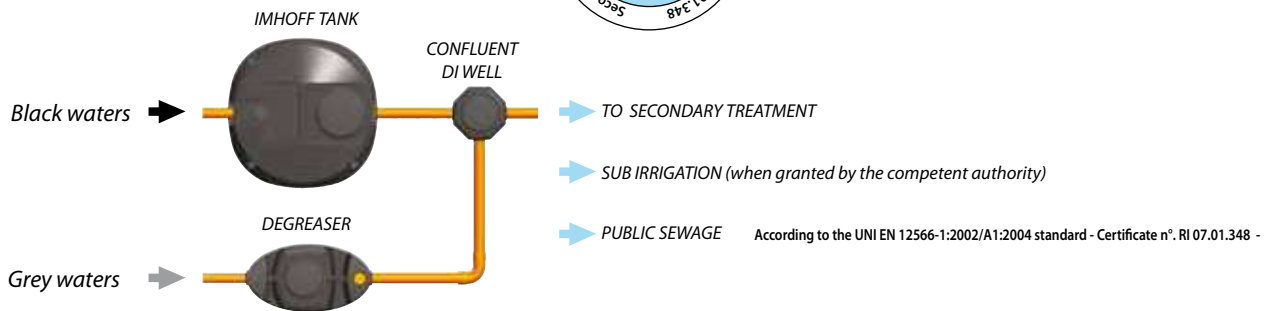
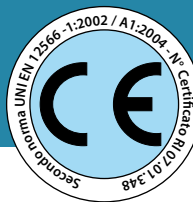
## TREATMENT OF DOMESTIC WASTE WATER

### PRIMARY TREATMENT

Physical forces are predominant in **PRIMARY TREATMENTS**. They are intended to pre-treat the waste water and to remove the coarse elements that could affect the operation of the machinery present in the later stages of the plant.

In these treatments a first roughing of the slurry takes place, in fact a portion of organic load and solids in suspension is removed.

For this very reason they are rarely used alone but always upstream of secondary treatments.



**Novelty**



Turret for manholes  
CL 140



SEPTIC TANK type IMHOFF  
of 4 to 30 A.E.



SEPTIC TANK type IMHOFF  
SLIM for 5 A.E.

## IMHOFF TANKS

The Imhoff type septic tanks are primary anaerobic treatment units, consisting of a lower tank called digester and an upper one called settler. The tributary enters the sedimentation compartment that aims to retain solid bodies and floating material; from here it enters the lower compartment of digestion, through the opening on the bottom of the settler. Digesters and settlers are dimensioned in such a way that in the first one there is a biological stabilization of the sedimented organic substances (fermentation and anaerobic digestion) and that in the second one the necessary zone of calm is created that allows a suitable sedimentation of the solids that are present in the waste water. The mineral substances, the sludge and the floating substances must be periodically removed from the tank.

## TECHNICAL DETAILS

Septic tank type IMHOFF built of recyclable PE (linear polyethylene), consisting of two monobloc compartments. The settler shall have a minimum volume of 40 l/A.E. and the digester a minimum volume of 110 l/A.E. unless otherwise provided locally (see Imhoff CESENA). The product is equipped with a first manhole cover for the inspection of the settler, for the removal of sludge and for the inspection of the outlet pipe, a second manhole cover for the inspection of the inlet pipe and finally a relief valve for the removal of bio-gas. The inlet and outlet pipes are equipped with appropriate external double rubber lip gaskets, to guarantee a perfect tightness.

ITALIAN Region	REGULATIONS
<b>Puglia</b>	Regolam. Regione Puglia n. 26 del Dicembre 2011 e S.m.l. n. 7 del 26 Maggio 2016
<b>Molise</b>	D.G.R. n. 68/2015 - Piano di tutela della acque.
<b>Friuli Venezia Giulia</b>	Linee Guida ARPA - L.g. 40.02 Ed. 2 Rev.1 11/06/2020
<b>Veneto</b>	DCR 107/09
<b>Toscana</b>	DPGR 46R/08
<b>Umbria</b>	DGR 1171/07
<b>Piemonte</b>	Del. Giunta regionale n. 13-9588 del 9 giugno 2003. Criteri ed indirizzi per lo svolgimento dei procedimenti amministrativi di cui all'Art. 2 della Legge Regionale 7 Aprile 2003 N. 6
<b>Lombardia</b>	5 Aprile 2016 n° 2318
<b>Liguria</b>	PTA - Norme di attuazione - linee guida ARPAL del 01/05/15
<b>Emilia Romagna</b>	DGR 1053/03 - Tabella A - Con estrazione fanghi almeno 2 volte l'anno
<b>Lazio</b>	Delibera del 4/2/1977
<b>Abruzzo</b>	PTA
<b>Sardegna</b>	PTA
<b>Sicilia</b>	Delibera del 4/2/1977



**LEGEND**

- 1. WASTE WATER INLET
- 2. BIOGAS RELIEF
- 3. MANHOLE SETTLER INSPECTION & SLUDGE SAMPLING DIGESTION AREA
- 4. SEDIMENTATION AREA
- 5. WASTE WATER EXIT
- 6. DIGESTION AREA
- 7. INLET INSPECTION MANHOLE
- 8. EYE BOLTS

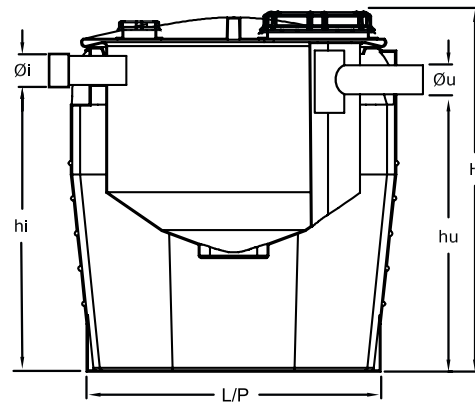
**REGULAR MAINTENANCE**

Proceed generally from one to four times a year with the extraction of the sludge and floating substances from the digester and settler. Ensure that the communication hole between the settler and digester is not occluded.



SEPTIC TANK type IMHOFF  
of 4 to 30 A.E.

Dimensions according to  
resolution dtd 4 february 1977  
with sludge extraction at least twice a year



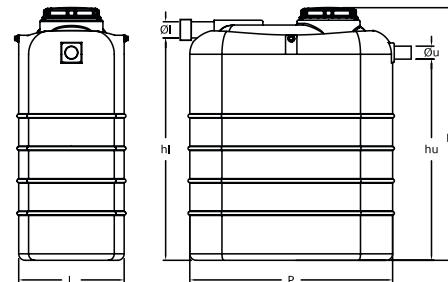
**“STANDARD” IMHOFF TANKS**

Models		Dimensions (cm)					Volumetry at overflow (litres)			Dimensions (mm)			Ø biogas
A.E.	Item	H	L	P	hi	hu	Settler	Digester	Total	Øi Øu	Ø Inlet manhole	Ø manhole	
4	ECO IMO 4 new	111	107	107	86	84	250	440	690	100	140	420	1"
6	ECO IMO 6 new	121	117	117	91	88	250	660	910	100	140	420	1"
10	ECO IMO 10 new	150	136	136	117	114	400	1100	1500	125	140	420	1"
15	ECO IMO 15 new	187	146	146	151	147	600	1650	2250	125	140	420	1"
20	ECO IMO 20 new	189	165	165	155	152	800	2200	3000	125	140	420	1"
25	ECO IMO 25 new	199	184	184	161	157	1000	2750	3750	125**	140	420	1"
30	ECO IMO 30 new	221	185	185	183	180	1200	3300	4500	125**	140	420	1"

\*\* Available upon request with inlet & outlet (Øi & Øu) Ø=160

**SLIM IMHOFF TANKS**

The SLIM type Imhoff tank can be used in all cases where there are problems of encumbrance. The SLIM, in fact, while maintaining the sizing parameters required by current legislation is characterized by a compact shape that allows installation in confined spaces.



**“SLIM” IMHOF TANKS**

Models		Dimensions (cm)					Volumetry at overflow (litres)			Dimensions (mm)			Ø biogas
A.E.	Item	H	L	P	hi	hu	Settler	Digester	Total	Øi Øu	Ø Inlet manhole	Ø manhole	
5	ECO SLIM 5	159	65	125	125	122	250	570	820	100	100	320	1"

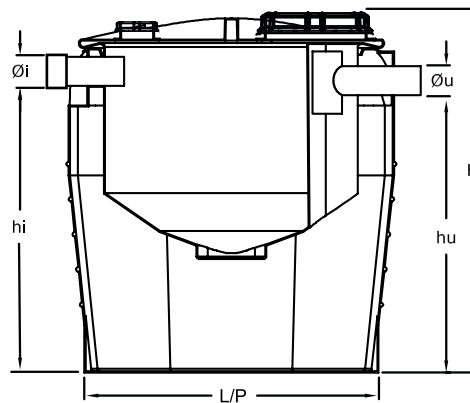


**MARCHE**



SEPTIC TANK type IMHOFF  
of 3 to 24 A.E.

In compliance with the parameters indicated by the administrative resolution nr. 145 of 26 January 2010 with sludge extraction at least twice a year



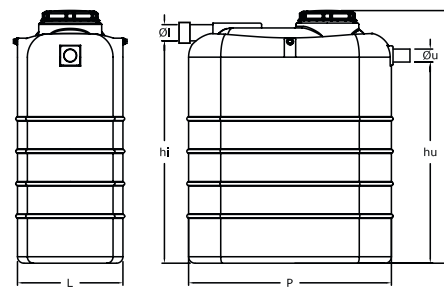
**“STANDARD” IMHOFF TANKS**

Models		Dimensions (cm)					Volumetry at overflow (litres)			Dimensions (mm)			$\varnothing$ biogas	
A.E.	Item	H	L	P	$h_i$	$h_u$	Settler	Digester	Total	$\varnothing i$	$\varnothing u$	$\varnothing$ Inlet manhole		$\varnothing$ manhole
3	ECO IMO 4 new	111	107	107	86	84	250	440	690	100	140	420	420	1"
5	ECO IMO 6 new	121	117	117	91	88	250	660	910	100	140	420	420	1"
8	ECO IMO 10 new	150	136	136	117	114	400	1100	1500	125	140	420	420	1"
12	ECO IMO 15 new	187	146	146	151	147	600	1650	2250	125	140	420	420	1"
16	ECO IMO 20 new	189	165	165	155	152	800	2200	3000	125	140	420	420	1"
20	ECO IMO 25 new	199	184	184	161	157	1000	2750	3750	125**	140	420	420	1"
24	ECO IMO 30 new	221	185	185	183	180	1200	3300	4500	125**	140	420	420	1"

\*\* Available upon request with inlet & outlet ( $\varnothing i$  &  $\varnothing u$ )  $\varnothing=160$

**SLIM IMHOFF TANKS**

The SLIM type Imhoff tank can be used in all cases where there are problems of encumbrance. The SLIM, in fact, while maintaining the sizing parameters required by current legislation is characterized by a compact shape that allows installation in confined spaces.



**“SLIM” IMHOFF TANKS**

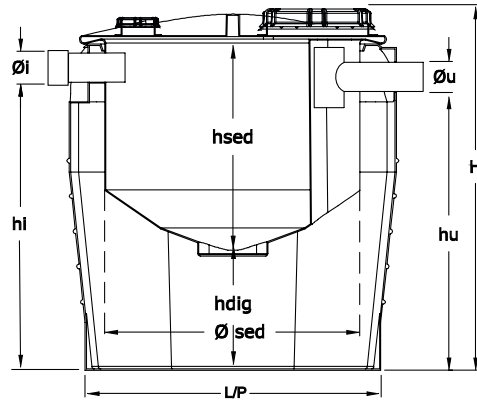
Models		Dimensions (cm)					Volumetry at overflow (litres)			Dimensions (mm)			$\varnothing$ biogas	
A.E.	Item	H	L	P	$h_i$	$h_u$	Settler	Digester	Total	$\varnothing i$	$\varnothing u$	$\varnothing$ Inlet manhole		$\varnothing$ manhole
4	ECO SLIM 5	159	65	125	125	122	250	570	820	100	100	320	320	1"



**Cesena  
Forlì  
Ravenna**



SEPTIC TANK type IMHOFF  
of 3 to 9 A.E.



Mod. CESENA

**IMHOFF TANKS "CESENA"**

Models		Dimensions (cm)					Volumetry at overflow (litres)			Dimensions (mm)			
A.E.	Item	H	L	P	hi	hu	Settler	Digester	Total	Øi Øu	Ø Inlet manhole	Ø manhole	Ø biogas
3	ECO IMO 10 new	150	136	136	117	114	400	1100	1500	125	140	420	1"
4	ECO IMO 15 new	187	146	146	151	147	600	1650	2250	125	140	420	1"
5	ECO IMO 20 new	189	165	165	155	152	800	2200	3000	125	140	420	1"
8	ECO IMO 25 new	199	184	184	161	157	1000	2750	3750	125**	140	420	1"
9	ECO IMO 30 new	221	185	185	183	180	1200	3300	4500	125**	140	420	1"

\*\* Available upon request with inlet & outlet (Øi & Øo) Ø=160

**Generic example of underground preparation**





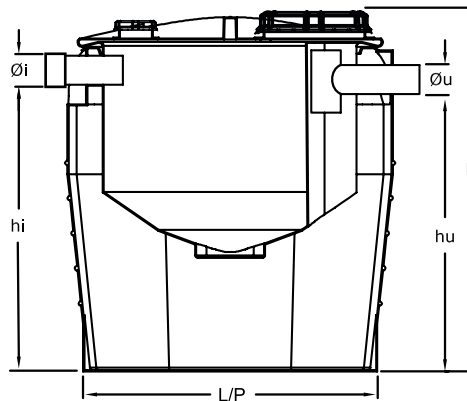


**FRIULI VENEZIA GIULIA**



SEPTIC TANK type IMHOFF  
of 2 to 18 A.E.

ARPA guidelines - L.g. 40.02 Ed. 2 Rev.1 11/06/2020



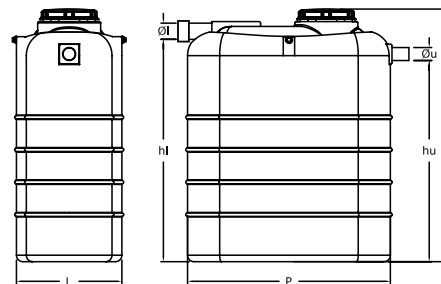
**“STANDARD” IMHOFF TANKS**

Models		Dimensions (cm)					Volumetry at overflow (litres)			Dimensions (mm)			Ø biogas
A.E.	Item	H	L	P	hi	hu	Settler	Digester	Total	Øi Øu	Ø Inlet manhole	Ø manhole	
2	ECO IMO 4 new	111	107	107	86	84	250	440	690	100	140	420	1"
3	ECO IMO 6 new	121	117	117	91	88	250	660	910	100	140	420	1"
6	ECO IMO 10 new	150	136	136	117	114	400	1100	1500	125	140	420	1"
9	ECO IMO 15 new	187	146	146	151	147	600	1650	2250	125	140	420	1"
12	ECO IMO 20 new	189	165	165	155	152	800	2200	3000	125	140	420	1"
15	ECO IMO 25 new	199	184	184	161	157	1000	2750	3750	125**	140	420	1"
18	ECO IMO 30 new	221	185	185	183	180	1200	3300	4500	125**	140	420	1"

\*\* Available upon request with inlet & outlet (Øi & Øo) Ø=160

**SLIM IMHOFF TANKS**

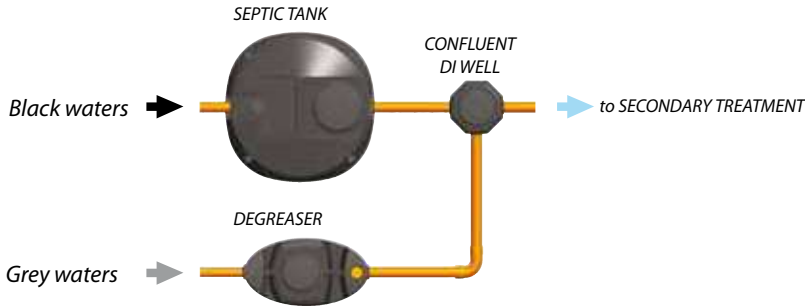
The SLIM type Imhoff tank can be used in all cases where there are problems of encumbrance. The SLIM, in fact, while maintaining the sizing parameters required by current legislation is characterized by a compact shape that allows installation in confined spaces.



**“SLIM” IMHOFF TANKS**

Models		Dimensions (cm)					Volumetry at overflow (litres)			Dimensions (mm)			Ø biogas
A.E.	Item	H	L	P	hi	hu	Settler	Digester	Total	Øi Øu	Ø Inlet manhole	Ø manhole	
3	ECO SLIM 5	159	65	125	125	122	250	570	820	100	100	320	1"





**SEPTIC TANKS**

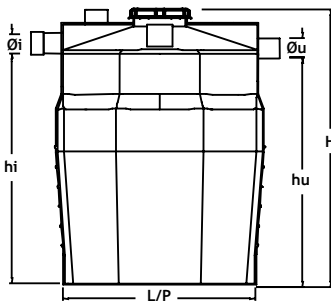
Septic tanks are anaerobic primary treatment units in which a portion of organic material and suspended solids are removed. Septic tanks are defined as such because they generate an anaerobic fermentation that is precisely of "septic" type. Septic tanks are suitable only as accessories to a secondary treatment plant, but may only be used individually only in case of specific authorisations. In fact, the Ministerial Resolution of 4 February 1977 prohibits the installation of individual septic tanks for new installations. The bicameral and tricameral septic tanks carry out a higher primary treatment, as being composed of several compartments, they allow a progressive clarification of the wastewater.



SEPTIC TANK

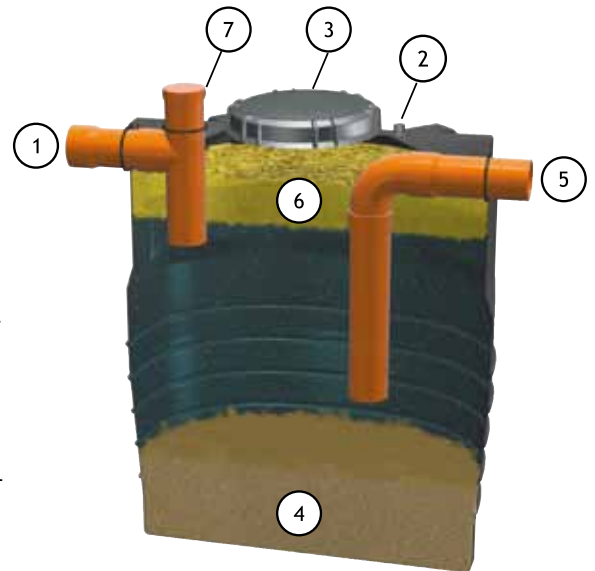
**TECHNICAL DETAILS**

Septic tank in recyclable PE (linear polyethylene), composed of a monobloc compartment and a screw lid for inspection, for the removal of sludge and solids in suspension. There is also a relief valve and a manhole cover for the inspection of the inlet pipe. The inlet and outlet pipes are equipped with appropriate external double rubber lip gaskets, to guarantee a perfect tightness.



**LEGEND:**

- 1 - WASTE WATER INLET
- 2 - BIOGAS VENT
- 3 - MANHOLE
- 4 - SEDIMENTATION
- 5 - WASTE WATER EXIT
- 6 - FLOATING MATERIAL
- 7 - INLET MANHOLE



**Vertical SEPTIC TANKS**

Models		Dimensions (cm)					Volumetry (litres)		Dimensions (mm)			Sedimentation surfaces (m <sup>2</sup> )	Ø biogas
A.E.	Item	H	L	P	hi	hu	Overflow	Total	Øi Øu	Ø Inlet manhole	Ø manhole		
3	ECO VSV 500	116	80	80	91	88	432	500	100	/	420	0,5	1"
6	ECO VSV 1000	108	120	120	78	75	835	1000	100	100	420	1,1	1"
8	ECO VSV 1500	150	117	117	125	121	1243	1360	100	100	420	1,4	1"
14	ECO VSV 2000	182	136	136	158	154	2104	2265	125	125	420	1,8	1"
19	ECO VSV 3000	219	146	146	192	188	2923	3107	125	125	420	2,1	1"
25	ECO VSV 4000	224	165	165	192	188	3800	4200	160	160	420	2,7	1"
31	ECO VSV 5000	229	184	184	197	193	4705	5110	160	160	420	3,4	1"
37	ECO VSV 6000	257	185	185	224	220	5575	5993	160	160	420	3,4	1"
60	ECO VSV 10000	260	238	238	216	212	8928	10000	160	/	550	4,4	2"

## DOUBLE-CHAMBER SEPTIC TANKS

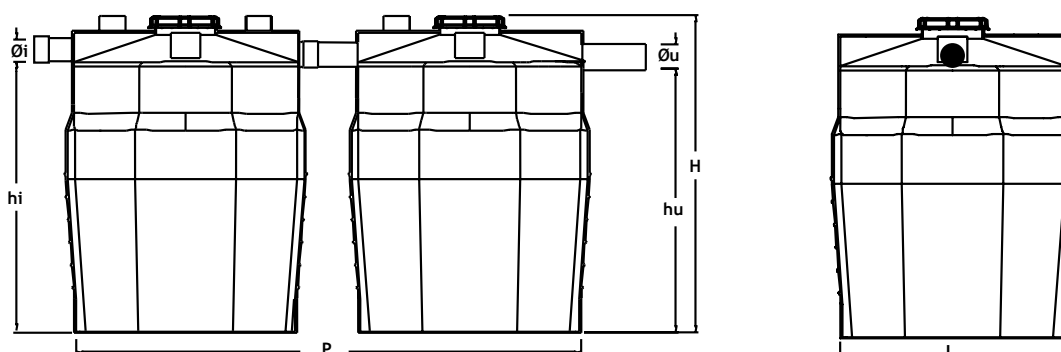
The building regulations of the City of Florence provide precise indications about the sizing of two-chamber septic tanks, ie: must be made up of two watertight rooms with a total capacity of 225 l for A.E., with an absolute minimum of 3000 l. The depth of the liquid in each chamber must be between 1,5 m and 1,7 m. Each chamber shall have a clearance of at least 200 mm between the level of the liquid and the top of the pit. Sewage inlet and outlet pipes shall be at least 100 mm in diameter and at least 300 mm submerged below the level of the liquid.

The communication device between one chamber and the other (saddle) must be made with pipes with a diameter of not less than 100 mm, placed at "H" or at "U" upside down, extended up to the top of the pit and down to submerge at least 300 mm below the liquid level. In addition, they must be equipped with two manhole covers, one for inspection at the communication element between the two chambers and one for sludge removal.



## TECHNICAL DETAILS

The bicamerals have two monobloc compartments in recyclable PE (linear polyethylene) completely watertight, connected by saddles minimum Ø100 mm. Each compartment is equipped with a relief valve, a manhole cover for the inspection of the entrance and a manhole cover for the collection of sludge. The inlet, outlet and connection pipes are equipped with appropriate external double rubber lip gaskets, to guarantee a perfect tightness.



## Double-chamber SEPTIC TANKS

Models		Dimensions (cm)					Volumetry (litres)		Dimensions (mm)			Sedimentation surfaces (m <sup>2</sup> )	Ø biogas	
A.E.	Item	H	L	P	hi	hu	Over-flow	Total	Øi Øu	Ø Inlet manhole	Ø manhole			
	6	ECO VBC 1000	116	80	min ~ 165	91	85	849	1000	100	/	420x2	0,5x2	1"
	11	ECO VBC 2000	108	120	min ~ 245	78	72	1636	2000	100	100	420x2	1,1x2	1"
*	20	ECO VBC 3000	183	117	min ~ 239	157	149	3120	3430	100	100	420x2	1,4x2	1"
*	27	ECO VBC 4000	182	136	min ~ 277	158	150	4100	4530	125	125	420x2	1,8x2	1"
	38	ECO VBC 6000	219	146	min ~ 297	192	184	5724	6214	125	125	420x2	2,1x2	1"
	49	ECO VBC 8000	224	165	min ~ 335	192	184	7438	8400	160	160	420x2	2,7x2	1"
	61	ECO VBC 10000	229	184	min ~ 373	197	189	9212	10220	160	160	420x2	3,4x2	1"
	73	ECO VBC 11000	257	185	min ~ 375	224	216	10950	11986	160	160	420x2	3,4x2	1"
	118	ECO VBC 20000	260	238	min ~ 480	211	203	17683	20000	160	160	550x2	4,4x2	2"

\* In accordance with the building regulations of Florence City Hall

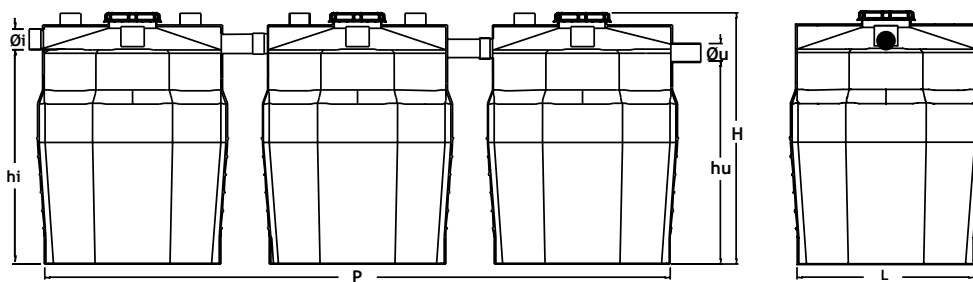


### TRIPLE-CHAMBER SEPTIC TANKS

Other Tuscan municipalities provide information about the sizing and use of tricameral septic tanks, ie: must be composed of three watertight rooms with a total capacity of 200 l for A.E. and with a minimum of 1800 l. The depth of the liquid must be between 1 m and 2 m and the tanks must be connected through "H" saddles with a minimum diameter of 100 mm and drawn in the liquid for 300 mm. In addition, they must be equipped with two manhole covers, one for inspection at the communication element between the two chambers and one for sludge removal.

### TECHNICAL DETAILS

The tricamerals have two monobloc compartments in recyclable PE (linear polyethylene) completely watertight, connected by saddles minimum  $\varnothing 100$  mm. Each compartment is equipped with a relief valve, a manhole cover for the inspection of the entrance and a manhole cover for the collection of sludge. The inlet, outlet and connection pipes are equipped with appropriate external double rubber lip gaskets, to guarantee a perfect tightness.



### Triple-chamber SEPTIC TANKS

Models		Dimensions (cm)					Volumetry (litres)		Dimensions (mm)			Sedimentation surfaces (m <sup>2</sup> )	Ø biogas
A.E.	Item	H	L	P	hi	hu	Over-flow	Total	Øi Øu	Ø Inlet manhole	Ø manhole		
8	ECO VTC 1500	116	80	min ~ 250	91	82	1251	1500	100	/	420x3	0,5x3	1"
16	ECO VTC 3000	108	120	min ~ 370	78	69	2404	3000	100	100	420x3	1,1x3	1"
23	ECO VTC 4000	150	117	min ~ 361	125	113	3486	4080	100	100	420x3	1,4x3	1"
40	ECO VTC 6500	182	136	min ~ 418	158	146	5988	6795	125	125	420x3	1,8x3	1"
56	ECO VTC 9000	219	146	min ~ 448	192	180	8397	9321	125	125	420x3	2,1x3	1"
73	ECO VTC 11500	224	165	min ~ 505	192	180	10920	12600	160	160	420x3	2,7x3	1"
90	ECO VTC 14500	229	184	min ~ 562	197	185	13524	15330	160	160	420x3	3,4x3	1"
175	ECO VTC 30000	260	238	min ~ 725	211	199	26266	30000	160	160	550x3	4,4x3	2"

### REGULAR MAINTENANCE

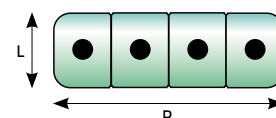
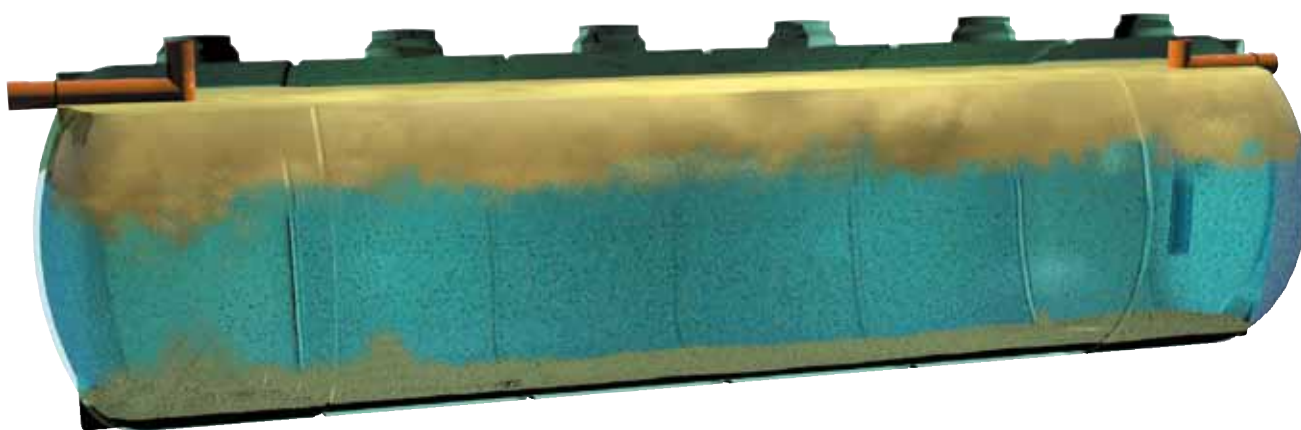
Proceed generally from one to four times a year with the extraction of the sludge and floating substances accumulated in the tank.

## The Grandi Impianti - Big Plants line

The septic tanks TELCOM line G.I. are composed of several compartments to concentrate in the first compartments both the sedimentation of the sludge, creating a suitable zone of calm, both the flotation of the substances that, due to the low relative specific weight, tend to float on the surface. In the following rooms, therefore, a progressive clarification of the waste water.

These compartments are dimensioned in such a way that biological stabilisation of sedimented organic substances (fermentation or anaerobic digestion) is achieved and the ratio between BOD5, nitrogen and phosphorus remains balanced. An excessive sizing of septic tanks, in fact, can cause an imbalance between the ratio of these factors with negative effects on the purification capacity of a possible secondary treatment downstream of them.

TELCOM septic tanks are made of PE (linear polyethylene), a completely recyclable material and have manhole covers for the inspection and collection of sludge, an inlet sewage pipe with its external rubber gasket, a clarified water outlet pipe with its seal and a vent for the removal of bio-gas.

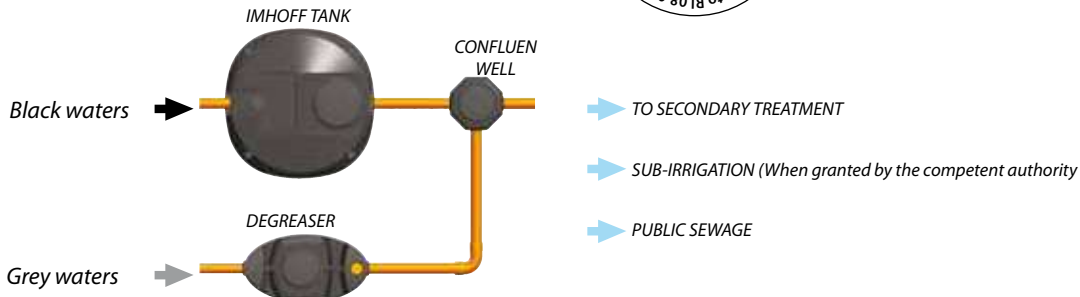


### SEPTIC TANKS Big plants line

A.E.	ITEM	TOTAL VOLUME (litres)	Dimensions (cm)			N. of Manholes ø550	ø Tube IN/OUT (mm)	hi (cm)	hu (cm)
			L	P	H				
67	VS 10000	10000	225	320	243	2	160	204	200
80	VS 12000	12000	225	370	243	2	160	204	200
100	VS 15000	15000	225	452	243	2	160	204	200
113	VS 17000	17000	225	502	243	2	160	204	200
123	VS 18500	18500	225	543	243	2	160	204	200
133	VS 20000	20000	225	584	243	2	160	204	200
167	VS 25000	25000	225	716	243	3	160	204	200
200	VS 30000	30000	225	848	243	4	160	204	200
235	VS 35000	35000	225	980	243	4	160	204	200
265	VS 40000	40000	225	1112	243	5	160	204	200
300	VS 45000	45000	225	1244	243	5	160	204	200
333	VS 50000	50000	225	1376	243	6	160	204	200

### REGULAR MAINTENANCE

Proceed preferably from one to three annual emptyings of Telcom Septic Tanks.



## DEGREASERS

The degreasers are used for carrying out the separation of fats and oils (not emulsified) or sands. In public discharges, the kind of particular uses like restaurants, hotels etc., are always present oils and fats, while the removal of such substances is necessary because they can seriously compromise the working of successive biologic depuration plants. The functioning of degreasers is based on the use of properly equipped stilling tanks in which oils and fats (in general all substances with a lower specific weight than water) are allowed to float and sedimentable materials to precipitate.

The degreasers are dimensionally designed by taking into consideration a working section for the purpose of floating that would not be lower than 0,25 m<sup>2</sup> for every litre per second of entering flow as specified by the DIN 4040 norms.

## TECHNICAL DETAILS

Degreaser in recyclable PE (linear polyethylene), composed of a monobloc compartment. The product is equipped with a relief valve for the removal of biogas, a manhole cover for the inspection of the inlet pipe and a manhole cover for the removal of sludge and grease. The inlet and outlet pipes are equipped with appropriate external double rubber lip gaskets, to guarantee a perfect tightness.

## REGULAR MAINTENANCE

Except for the specific indications of the competent authority, proceed generally from one to four times a year with the cleaning of the tank, providing for the removal of accumulated fats, oils and inert substances.



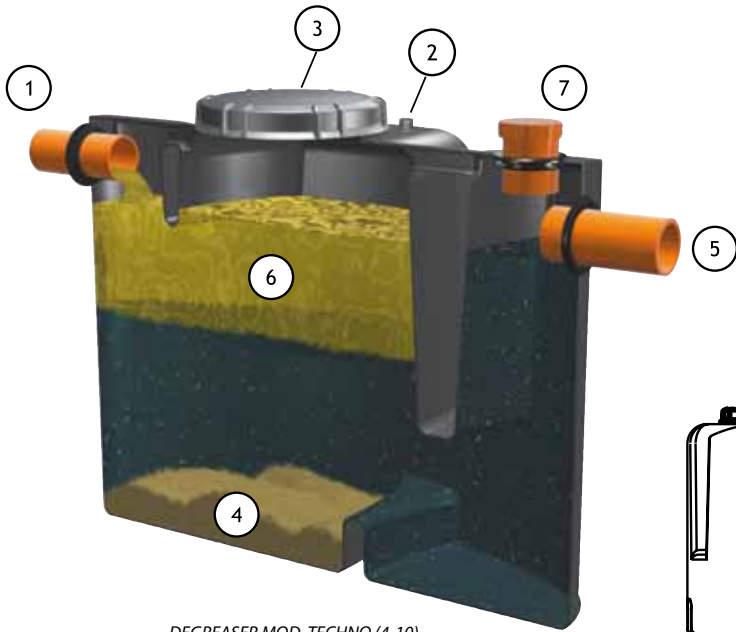
ECO DIS 1/3



DEGREASER MOD. TECHNO



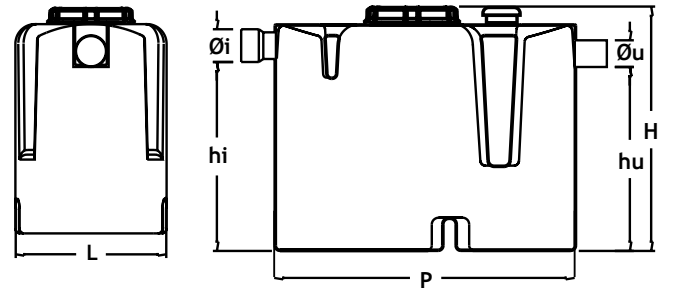
DEGREASER MOD. STANDARD



DEGREASER MOD. TECHNO (4-10)

**LEGEND:**

- 1 - WASTE WATER INLET
- 2 - BIOGAS VENT
- 3 - INSPECTION & SAMPLING MANHOLE
- 4 - SEDIMENTATION AREA
- 5 - WASTE WATER EXIT
- 6 - COLLECTION OF FATS
- 7 - MANHOLE EXIT



**DEGREASERS for residential areas, hotels with restaurant, similar activities (litres 50 per A.E.)**

Models			Dimensions (cm)					Volumetry (litres)		Dimensions (mm)			Ø biogas
A.E.	Place settings	Item	H	L	P	h <sub>i</sub>	h <sub>u</sub>	Overflow	Total	Øi Øu	Ø manhole OUTLET	Ø manhole	
1	3	ECO DIS 1	58	45	53	47	45	80	100	100	/	300x300*	1"
3	9	ECO DIS 3	70	55	65	53	50	150	200	100	/	350x350*	1"
4	12	ECO DIS 4	80	56	101	57	54	200	260	100	100	320	1"
6	18	ECO DIS 6	91	63	114	69	66	320	380	100	100	320	1"
10	30	ECO DIS 10	103	74	135	78	75	500	590	100	100	320	1"

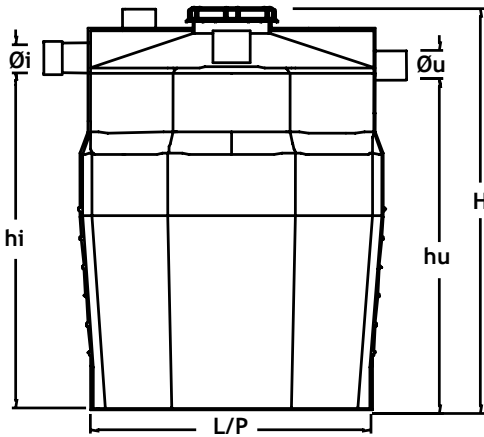
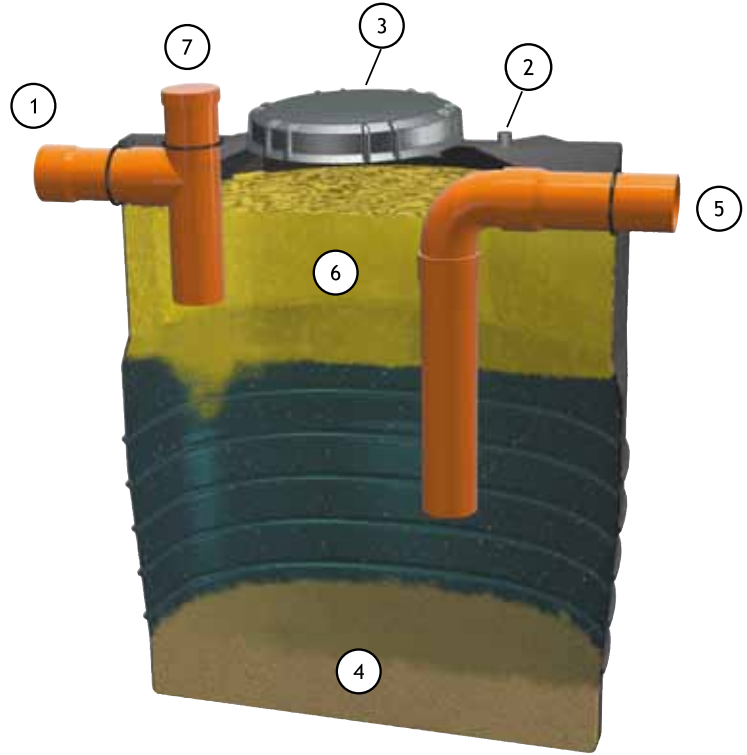
\* Manhole with locking pins M10 and gaskets







DEGREASER MOD. STANDARD



**LEGEND:**

- 1 - WASTE WATER INLET
- 2 - BIOGAS VENT
- 3 - INSPECTION & SAMPLING MANHOLE
- 4 - SEDIMENTATION AREA
- 5 - WASTE WATER EXIT
- 6 - COLLECTION OF FATS
- 7 - INLET MANHOLE

**DEGREASERS for residential areas, hotels with restaurant, similar activities (litres 50 per A.E.)**

Models			Dimensions (cm)						Volumetry (litres)		Dimensions (mm)			Ø biogas
A.E.	Place settings	Item	H	L	P	hi	hu	Overflow	Total	Øi Øu	Ø manhole INLET	Ø manhole		
18	54	ECO DIS 18	108	120	120	79	76	900	1000	100	/	420	1"	
25	75	ECO DIS 30	150	117	117	125	121	1243	1360	100	100	420	1"	
42	126	ECO DIS 40	182	136	136	158	154	2104	2265	125	125	420	1"	
58	174	ECO DIS 60	219	146	146	192	188	2923	3107	125	125	420	1"	
76	228	ECO DIS 80	224	165	165	192	188	3800	4200	125	125	420	1"	
94	282	ECO DIS 100	229	184	184	197	193	4705	5110	125	125	420	1"	
111	333	ECO DIS 110	257	185	185	224	220	5575	5993	125	125	420	1"	

For a larger n° of place settings/A.E. please contact our Technical/Commercial Office.

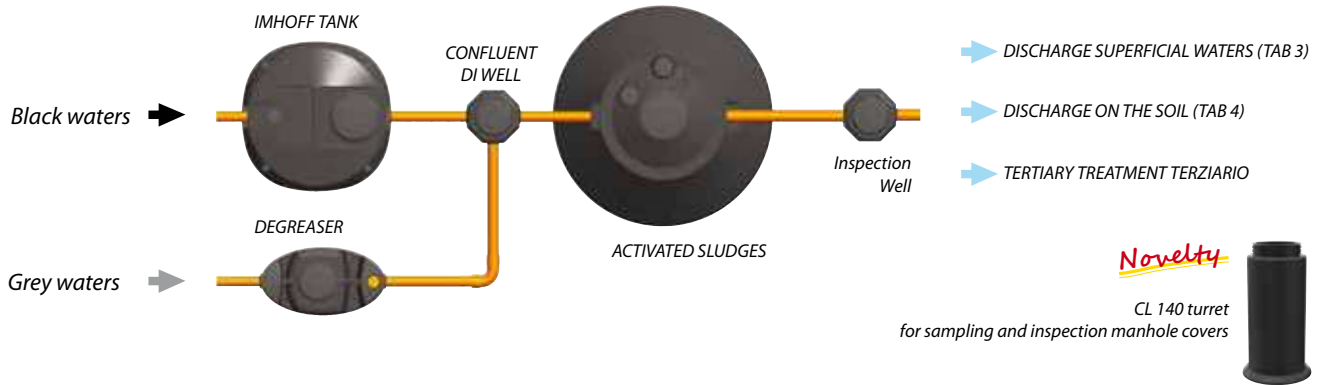


## SECONDARY TREATMENT

The **SECONDARY TREATMENTS** are those dedicated to the removal of biodegradable organic substances. They are generally based on biological processes and are the treatments mainly responsible for the purification of waste water.

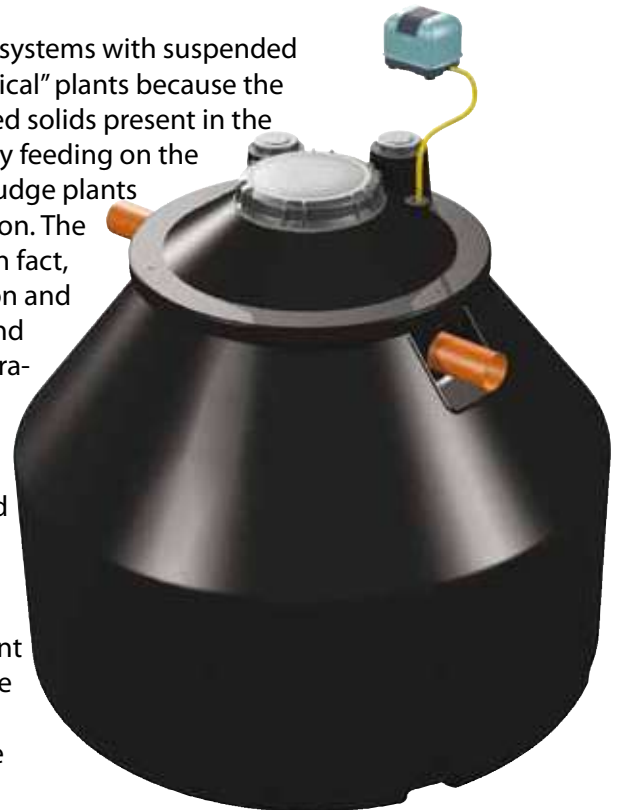
They are divided into:

- **suspended biomass treatments**
- **with biofilm treatments**



## ACTIVATED SLUDGES

Activated sludge plants are biological sewage treatment systems with suspended biomass with prolonged aeration. They are called “biological” plants because the degradation of organic matter and some of the suspended solids present in the sewage takes place through the action of bacteria that, by feeding on the pollutants, are purifying the wastewater. The activated sludge plants consist of two compartments: oxidation and sedimentation. The first is the oxidative phase of the wastewater: the slurry, in fact, is subjected to an intense treatment of artificial ventilation and in an environment so rich in oxygen physical, chemical and especially biological processes are triggered that are degrading the polluting charge. The high microbial concentrations present in the oxidation chamber, responsible for the purification of the wastewater, are guaranteed by the continuous recirculation of the activated sludge collected in the next sedimentation chamber. In it by virtue of a state of stillness, there is the separation and precipitation of the sludge that are then recirculated in the oxidation compartment. The clarified and purified wastewater is sent to the next stage of treatment that the designer may have foreseen. Only sludge produced in excess of the requirements of the purification process (excess sludge) must be periodically removed from the plant.



Plant with ACTIVATED SLUDGES  
from 5 to 25 A.E.

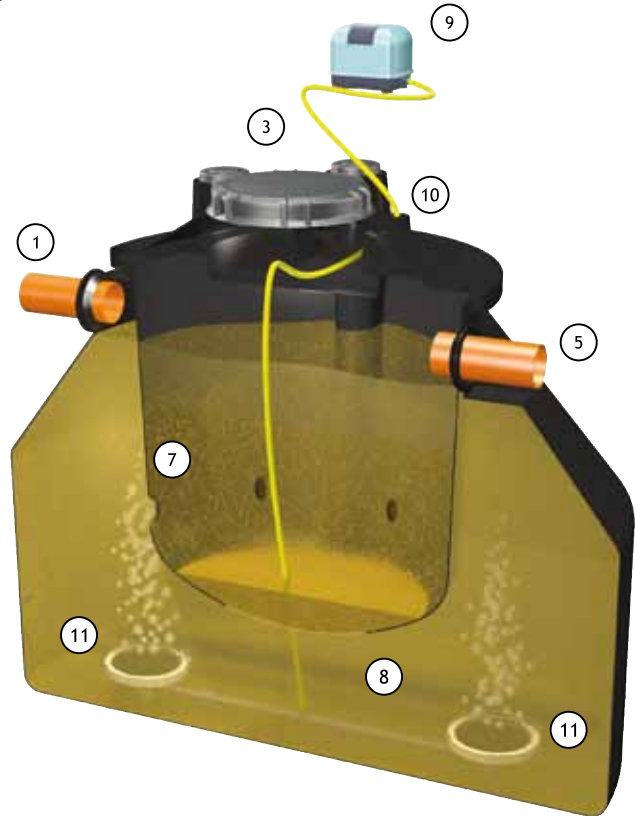
## TECHNICAL DETAILS

Sludge plant active in recyclable PE (linear polyethylene) monoblock, consisting of two compartments and a central manhole cover, a manhole cover for the inspection of the sediment compartment, one for the inspection of the digester and a relief valve for the removal of biogas.

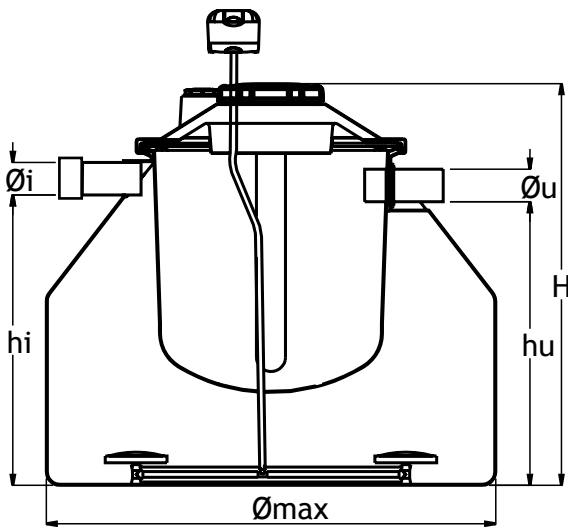
The product is fitted with n°..... diaphragm linear pump of .....W, 230V-50Hz and with n°..... diaphragm diffusers with disk-shaped EPDM microubbles. The inlet and outlet pipes are equipped with appropriate double rubber lip gaskets, to guarantee a perfect tightness.

## REGULAR MAINTENANCE

Unless specifically specified by the competent authority, one to four times a year shall normally be used to extract the excess sludge from the settler. Carefully clean the sludge storage area to ensure that the communication holes in the settler are not blocked. Take care to add the recommended doses of bacterial-enzymatic mixture whenever you perform start-up operations. The linear diaphragm pump must be installed in an adequately ventilated place and in general it is necessary to follow scrupulously the instructions of the manuals for the maintenance of the electromechanical equipment supplied to the product. It must not be operated in the compartment supplied only for transportation purposes).



**Technical Note:** For a correct installation the Activated Sludge plants must be preceded by a Primary Treatment.



**LEGEND:**

- 1 - WASTE WATER INLET
- 2 - BIOGAS VENT
- 3 - INSPECTION MANHOLE  $\phi$  420
- 4 - INSPECTION MANHOLE SETTLER  $\phi$  140
- 5 - WASTE WATER EXIT
- 6 - SLUDGE SAMPLING DIGESTION AREA  $\phi$  140
- 7 - CONNECTION BETWEEN OXIDATION & SEDIMENTATION
- 8 - OXIDATION COMPARTMENT
- 9 - BLOWER PUMP
- 10 - BLOWER TUBE INLET
- 11 - DIFFUSER OF BLOWER UNIT

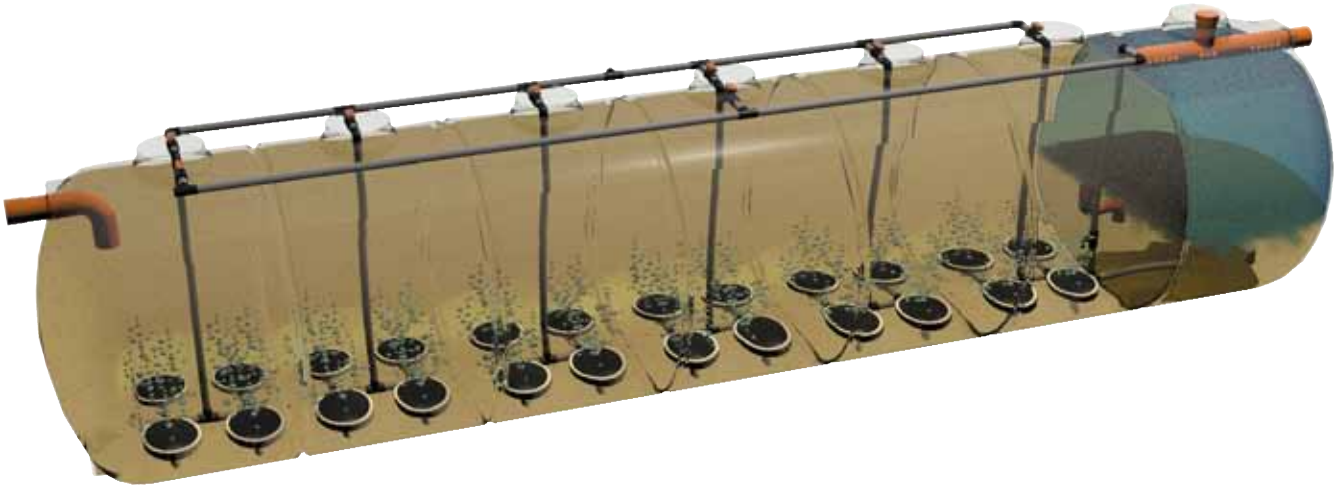
**EFFICIENCY FA**

- Breakdown of solids in suspension: ~ 93,7%
- Breakdown BOD<sub>5</sub>: ~ 79,6%
- Breakdown COD: ~ 83,5%

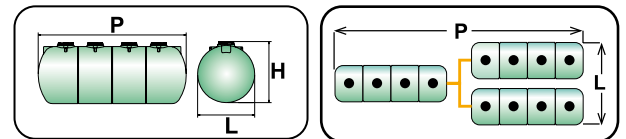
**ACTIVATED SLUDGES PLANT**

Models			Dimensions (cm)				Volumetry at overflow (litres)			Dimensions (mm)			Dimensions (mm)			
A.E. Tab.3	A.E. Tab.4	Item	H	$\phi$ max	hi	hu	Sed.	Oxid.	Total	$\phi$ i	$\phi$ u	$\phi$ sludge sampl.	$\phi$ inspection sediment.	$\phi$ biogas	N. of Diffusors	POWER W
5	-	FA 5	132	118	90	88	170	850	1020	100	140	140	140	1"	2	48
10	5	FA 10	166	164	120	117	340	1700	2040	125	140	140	140	1"	2	50
15	10	FA 15	171	194	125	122	510	2600	3110	125	140	140	140	1"	4	75
20	15	FA 20	184	213	135	132	700	3400	4100	125	140	140	140	1"	4	95
25	20	FA 25	211	217	161	158	900	4300	5200	125	140	140	140	1"	6	143

## Grandi Impianti / Big Plants line



The ACTIVATED SLUDGES PLANTS WITH DIRECT FLOW are fitted with electric-blower and/or diaphragm compressor, upon request may be fitted with electric panel.



### ACTIVATED SLUDGES PLANT WITH DIRECT FLOW - G.I. line

Models	A.E. Tab. 4	Portata media oraria m <sup>3</sup> /h Tab. 4	A.E. Tab. 3	Portata media oraria m <sup>3</sup> /h Tab. 3	Ingombro di massima dell'impianto (Senza accessori) P x L H=2,5 m	Volume TOTALE (litri)	Potenza totale installata (KW)	Tensione (V)
FA 13500	51	0,4	60	0,5	4,11 x 2,5 m	13500	0,24	220
FA 18500	70	0,6	90	0,8	5,43 x 2,5 m	18500	1,55	380
FA 25000	95	0,8	120	1,0	7,16 x 2,5 m	25000	1,55	380
FA 30000	120	1,0	150	1,3	8,48 x 2,5 m	30000	3	380
FA 35000	145	1,2	180	1,5	9,8 x 2,5 m	35000	3	380
FA 40000	170	1,4	200	1,7	11 x 2,5 m	40000	2	380
FA 48500	200	1,7	250	2,1	14 x 2,5 m	48500	2	380
N. 2 FA 30000	250	2,1	300	2,5	8 x 7 m	60000	3	380
N. 2 FA 35000	300	2,5	350	2,9	10 x 7 m	70000	3	380
N. 2 FA 40000	350	2,9	400	3,3	11 x 7 m	80000	3	380
N. 2 FA 48500	400	3,3	500	4,2	14 x 7 m	97000	4	380
N. 4 FA 30000	500	4,2	600	5,0	8 x 15 m	120000	7	380
N. 4 FA 35000	600	5,0	700	5,8	10 x 15 m	140000	7	380
N. 4 FA 40000	700	5,8	800	6,7	11 x 15m	160000	7	380
N. 4 FA 48500	800	6,7	1000	8,3	14 x 15 m	194000	9	380

**WARNING:** in order to comply with the limits provided for the discharge, it is necessary to ensure a constant supply of waste water at all times of the day, the plant is not able to dispose of peak flow rates higher than the average values (m<sup>3</sup>/hour) shown in the table.

## Active Sludge Plants with Constant Flow

The **TELCOM BIOFILM PLANTS** are biological purification systems according to the principle of **ACTIVATED SLUDGES** with prolonged ventilation. The degradation of organic substance and of part of suspended solids present in the sewage takes place through the action of bacteria which, feeding on the polluting substances, purify the wastewater. Artificial ventilation ensures the proliferation of such bacteria which, by associating in colonies, form the "sludge flakes" typical of suspended biomass.

### OPERATION DESCRIPTION

#### Zona A - EQUALIZATION - DENITRIFICATION

This section has the function of equalizing the hydraulic load and making as homogeneous as possible the polluting load of the waste water adduct to the plant. Sudden peak loads (shock loads) would, in fact, have serious consequences on purification efficiency because microorganisms are unlikely to adapt to sudden variations in the environment. In addition, in the same adequately sized compartment, through the recirculation of the aerated mixture and the activated sludge respectively from the oxidation and sedimentation compartment, is activated, in an anoxic environment, the process of denitrification of waste water for the reduction of nitrogen values in its various oxidized forms.

#### Zona B - OXIDATION

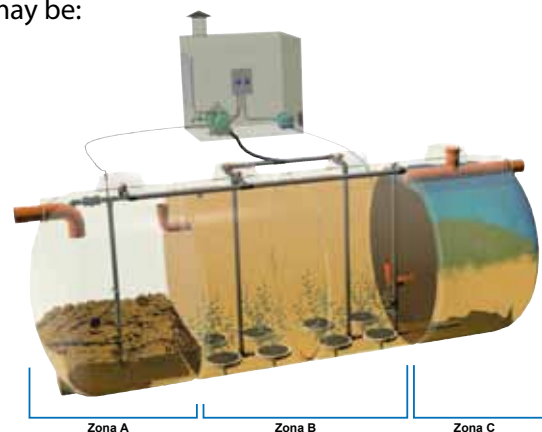
In this compartment occurs the oxidative phase of the waste water. The slurry, in fact, is subjected to an intense treatment of artificial ventilation and in an environment so rich in oxygen are triggered physical, chemical and especially biological processes that degrade the pollutant load. The high microbial concentrations present in the oxidation chamber, responsible for the purification of the wastewater, are made possible by the continuous recirculation of the activated sludge collected in the next sedimentation chamber.

#### Zona C - SEDIMENTATION

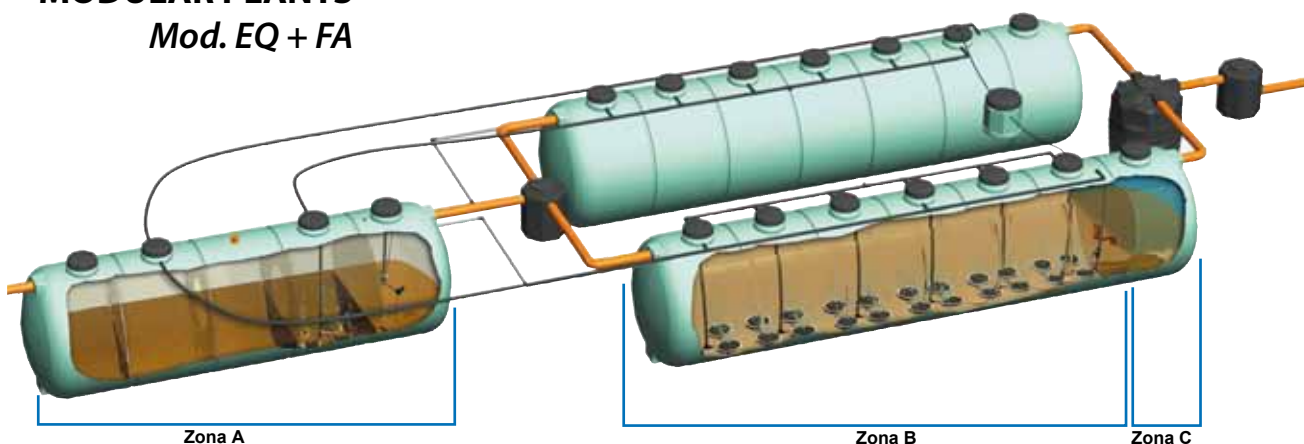
In the sedimentation compartment by virtue of a state of stillness, there is the separation and precipitation of the sludge that are then recirculated, by means of pneumatic extractor (air-lift), in the equalization and oxidation compartment. The clarified and purified wastewater is sent to the next stage of treatment that the designer may have foreseen. Only sludge produced in excess of the requirements of the purification process (overflowing sludge) must be periodically removed from the plant.

Based on the number of equivalent inhabitants, these plants may be:  
**"MONOBLOCK" or "MODULARS"**

#### MONOBLOCK PLANT *Mod. EQFA*



#### MODULAR PLANTS *Mod. EQ + FA*



## ACTIVATED SLUDGES OXIDATION EXTENDED

The EQFA **MONOBLOCK PLANTS** with suspended biomass suitable for the treatment of waste water from the different categories of facilities listed below. These categories have been identified according to the production time of the sewage. In particular, they are considered **16 hours for CATEGORY 1** and **8 hours for CATEGORY 2**.

The EQFA monobloc systems are equipped with electrical panels in accordance with **CE** as well as with any electromechanical equipment necessary for the proper functioning of the system.

### CATEGORY 1

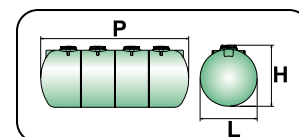
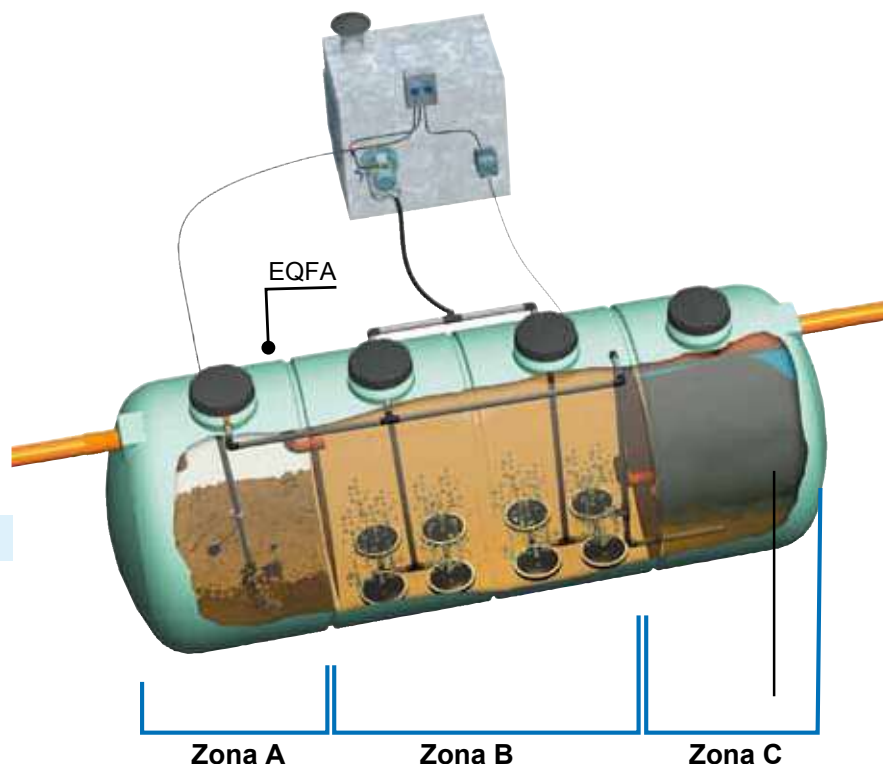
Production time: **16 hours**

- RESIDENTIAL HOUSES
- AIRPORTS
- SHOPPING CENTERS
- LARGE WAREHOUSES
- HOTEL
- BUSINESS ACTIVITIES (STORES)
- BARRACKS
- COLLEGES
- HOSPITALS
- CAMPINGS
- TOURISTIC VILLAGES
- SPORTS CLUB

### CATEGORY 2

Production time: **8 hours**

- BARS
- RESTAURANTS
- CINEMA - THEATRE
- INDUSTRIAL PLANTS
- GAS STATIONS
- DINER
- TRATTORIA
- OFFICES
- SCHOOLS
- PUBLIC PARKS
- SWIMMING POOLS
- HEALTH RESSORTS
- STADIUM



### MONOBLOCK ACTIVATED SLUDGES PLANT WITH CONSTANT FLOW **TABLE 3/4 - CATEGORY 1**

Product features								Design features					
A.E. Tab.3	A.E. Tab.4	ITEM	Volume TOT.	L (cm)	P (cm)	H (cm)	No. Manholes Ø550	Ø IN/OUT (mm)	ZONA A - VOL. TOT. DENITRIFICATION (litres)	ZONA B - VOL. TOT. OXIDATION (litres)	ZONA C - VOL. TOT. SECONDARY SEDIMENTATION (litres)	TOT. installed POWER (KW)	VOLTAGE (V)
60	51	EQFA 18500	18500	225	543	243	4	160	5000	10000	3500	2,45	220
-	70	EQFA 23500 B	23500	225	675	243	5	160	5000	15000	3500	2,55	380
90	-	EQFA 28500	28500	225	807	243	6	160	10000	15000	3500	2,55	380
120	95	EQFA 33500 B	33500	225	939	243	7	160	10000	20000	3500	2,55	380
-	120	EQFA 40000	40000	225	1112	243	8	160	10000	25000	5000	4,05	380
150	-	EQFA 43500 B	43500	225	1203	243	9	160	13500	25000	5000	4,05	380
180	145	EQFA 50000 B	50000	225	1376	243	10	160	15000	30000	5000	4,05	380

### MONOBLOCK ACTIVATED SLUDGES PLANT WITH CONSTANT FLOW **TABLE 3/4 - CATEGORY 2**

Product features								Design features					
A.E. Tab.3	A.E. Tab.4	ITEM	Volume TOT.	L (cm)	P (cm)	H (cm)	No. Manholes Ø550	Ø IN/OUT (mm)	ZONA A - VOL. TOT. DENITRIFICATION (litres)	ZONA B - VOL. TOT. OXIDATION (litres)	ZONA C - VOL. TOT. SECONDARY SEDIMENTATION (litres)	TOT. installed POWER (KW)	VOLTAGE (V)
60	51	EQFA 23500	23500	225	675	243	5	160	10000	10000	3500	2,45	220
-	70	EQFA 28500	28500	225	807	243	6	160	10000	15000	3500	2,55	380
90	-	EQFA 33500	33500	225	939	243	7	160	15000	15000	3500	2,55	380
-	95	EQFA 38500	38500	225	1071	243	8	160	15000	20000	3500	2,55	380
120	-	EQFA 43500	43500	225	1203	243	9	160	20000	20000	3500	2,55	380
-	120	EQFA 50000	50000	225	1376	243	10	160	20000	25000	5000	4,05	380

**NOTE: In case of SEPARATE DISCHARGES please contact our Technical Office. \* Overall maximal dimensions do not include accessories**



## ACTIVATED SLUDGES with EXTENDED OXIDATION

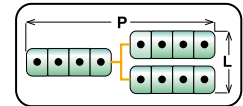
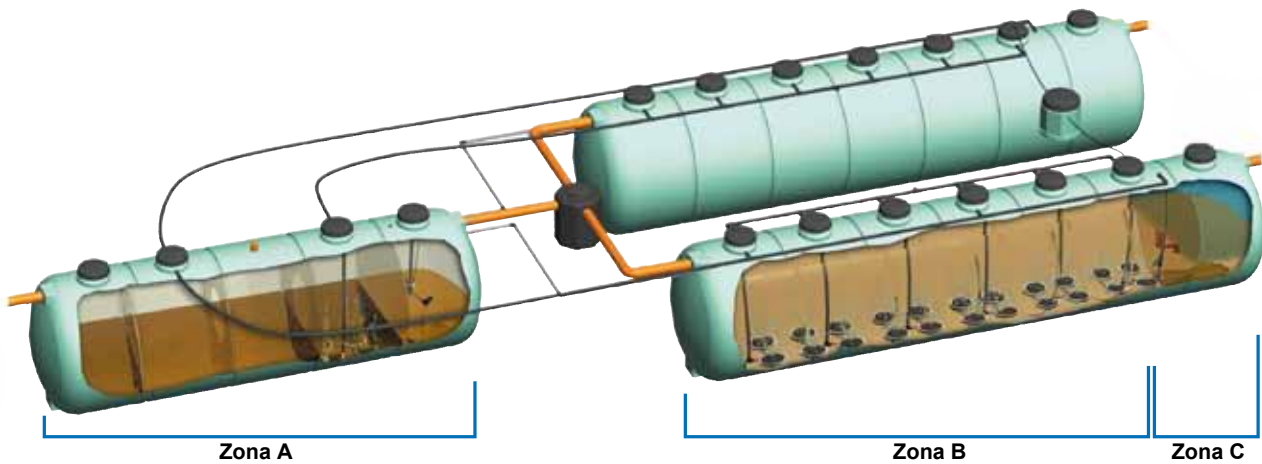
The EQ+FA **MODULAR PLANTS** with suspended biomass suitable for the treatment of waste water from the different categories of facilities listed below. These categories have been identified according to the production time of the sewage. In particular, they are considered **16 hours for CATEGORY 1** and **8 hours for CATEGORY 2**.

The EQ+FA modular systems are equipped with electrical panels in accordance with **CE** as well as with any electromechanical equipment necessary for the proper functioning of the system.

### CATEGORY 1

Production time:  
**16 hours**

- RESIDENTIAL HOUSES
- AIRPORTS
- SHOPPING CENTERS
- LARGE WAREHOUSES
- HOTELS
- BUSINESS ACTIVITIES (STORES)
- BARRACKS
- COLLEGES
- HOSPITALS
- CAMPINGS
- TOURISTIC VILLAGES
- SPORTS CLUB



**MODULAR ACTIVATED SLUDGE PLANTS WITH CONSTANT FLOW TABLE 3 - CATEGORY 1**

Product features			Design features					
A.E.	Equalization Denitrification	Activated sludge plant	Plant's max overall dimensions* (m) P x L H = 2,5 m	Tot. Vol. EQUALIZATION DENITRIFICATION (litres)	Total Volume of OXIDATION (litres)	Total Vol. SECONDARY SEDIMENTATION (litres)	TOT. installed POWER (KW)	VOLTAGE (V)
200	EQ 18500	FA 40000	18 x 2,5	18500	35000	5000	3	380
250	EQ 23500	FA 48500	22 x 2,5	23500	40000	8500	3	380
300	EQ 25000	N. 2 FA 30000	18 x 7	25000	50000	10000	4	380
350	EQ 28500	N. 2 FA 35000	20 x 7	28500	60000	10000	4	380
400	EQ 33500	N. 2 FA 40000	23 x 7	33500	70000	10000	4	380
500	EQ 40000	N. 2 FA 48500	27 x 7	40000	80000	17000	6	380
600	EQ 48500	N. 4 FA 30000	25 x 15	48500	100000	20000	8	380
700	N. 2 EQ 28500	N. 4 FA 35000	21 x 15	57000	120000	20000	8	380
800	N. 2 EQ 30000	N. 4 FA 40000	23 x 15	60000	140000	20000	8	380
1000	N. 2 EQ 40000	N. 4 FA 48500	28 x 15	80000	160000	34000	10	380

**MODULAR ACTIVATED SLUDGE PLANTS WITH CONSTANT FLOW TABLE 4 - CATEGORY 1**

Product features			Design features					
A.E.	Equalization Denitrification	Activated sludge plant	Plant's max overall dimensions* (m) P x L H = 2,5 m	Tot. Vol. EQUALIZATION DENITRIFICATION (litres)	Total Volume of OXIDATION (litres)	Total Vol. SECONDARY SEDIMENTATION (litres)	TOT. installed POWER (KW)	VOLTAGE (V)
170	EQ 15000	FA 40000	21 x 2,5	15000	35000	5000	3	380
200	EQ 18500	FA 48500	26 x 2,5	18500	40000	8500	3	380
250	EQ 23500	N. 2 FA 30000	23 x 7	23500	50000	10000	4	380
300	EQ 25000	N. 2 FA 35000	26 x 7	25000	60000	10000	4	380
350	EQ 28500	N. 2 FA 40000	27 x 7	28500	70000	10000	4	380
400	EQ 33500	N. 2 FA 48500	27 x 7	33500	80000	17000	5	380
500	EQ 40000	N. 4 FA 30000	24 x 15	40000	100000	20000	7	380
600	EQ 48500	N. 4 FA 35000	27 x 15	48500	120000	20000	7	380
700	N. 2 EQ 28500	N. 4 FA 40000	23 x 15	57000	140000	20000	8	380
800	N. 2 EQ 30000	N. 4 FA 48500	25 x 15	60000	160000	34000	10	380

**NOTE:** In case of SEPARATE DISCHARGES please contact our Technical Office. \* Overall maximal dimensions do not include accessories

## ACTIVATED SLUDGES with EXTENDED OXIDATION

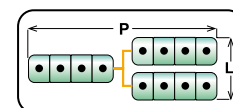
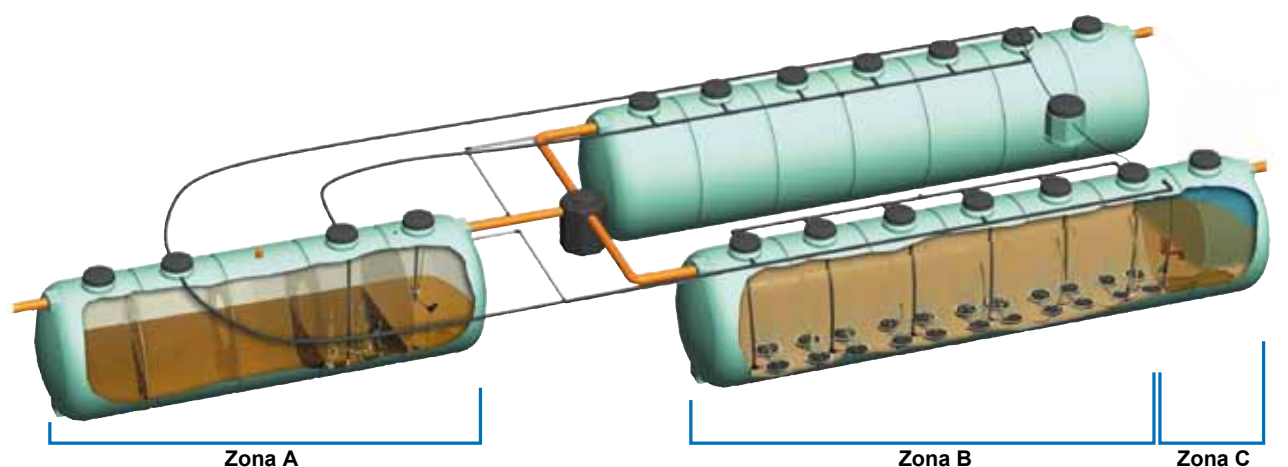
The EQ+FA **MODULAR PLANTS** with suspended biomass suitable for the treatment of waste water from the different categories of facilities listed below. These categories have been identified according to the production time of the sewage. In particular, they are considered **16 hours for CATEGORY 1** and **8 hours for CATEGORY 2**.

The EQ+FA modular systems are equipped with electrical panels in accordance with **CE** as well as with any electromechanical equipment necessary for the proper functioning of the system.

### CATEGORY 2

Production time:  
**8 hours**

- BARS
- RESTAURANTS
- CINEMA - THEATRE
- INDUSTRIAL PLANTS
- GAS STATIONS
- DINER
- TRATTORIA
- OFFICES
- SCHOOLS
- PUBLIC PARKS
- SWIMMING POOLS – HEALTH RESSORTS
- STADIUM



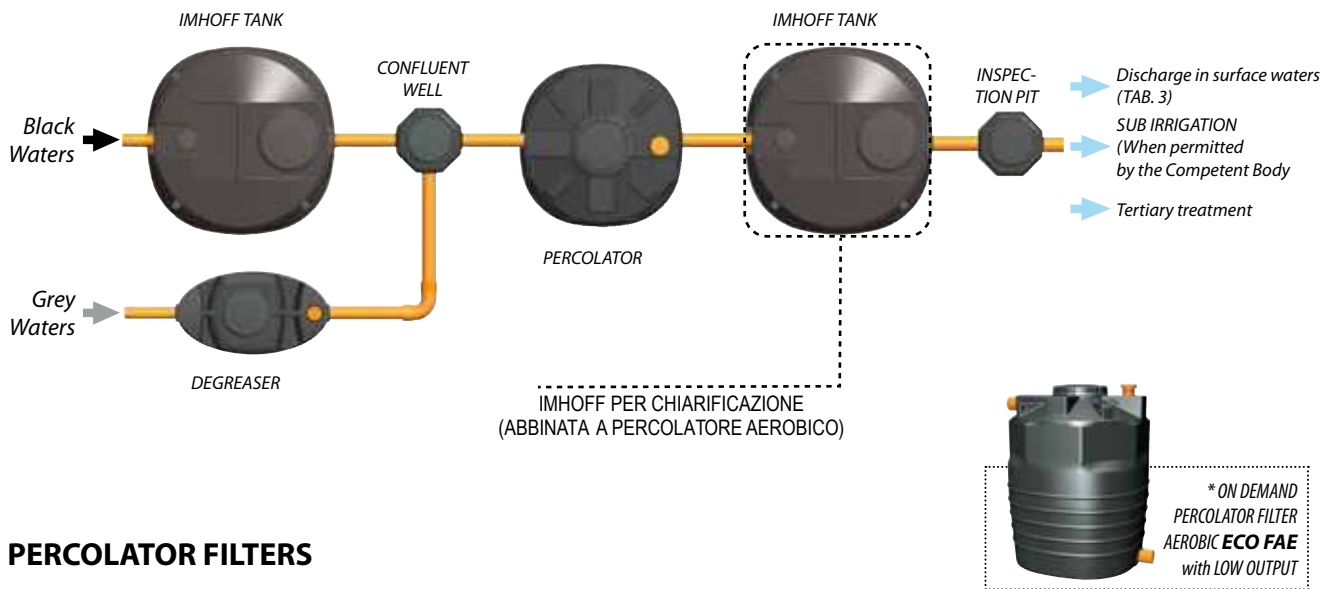
**MODULAR ACTIVATED SLUDGE PLANTS WITH CONSTANT FLOW TABLE 3 - CATEGORY 2**

Product features			Design features					
A.E.	Equalization Denitrification	Activated sludge plant	Plant's max overall dimensions* (m) P x L H = 2,5 m	Tot. Vol. EQUALIZATION DENITRIFICATION (litres)	Total Volume of OXIDATION (litres)	Total Vol. SECONDARY SEDIMENTATION (litres)	TOT. installed POWER (KW)	VOLTAGE (V)
200	EQ 30000	FA 40000	21 x 2,5	30000	35000	5000	3	380
250	EQ 38500	FA 48500	26 x 2,5	38500	40000	8500	3	380
300	EQ 45000	N. 2 FA 30000	23 x 7	45000	50000	10000	4	380
350	EQ 50000	N. 2 FA 35000	26 x 7	50000	60000	10000	4	380
400	N. 2 EQ 30000	N. 2 FA 40000	27 x 7	60000	70000	10000	5	380
500	N. 2 EQ 38500	N. 2 FA 48500	27 x 7	77000	80000	17000	6	380
600	N. 2 EQ 45000	N. 4 FA 30000	24 x 15	90000	100000	20000	8	380
700	N. 2 EQ 50000	N. 4 FA 35000	27 x 15	100000	120000	20000	8	380

**MODULAR ACTIVATED SLUDGE PLANTS WITH CONSTANT FLOW TABLE 4 - CATEGORY 2**

Product features			Design features					
A.E.	Equalization Denitrification	Activated sludge plant	Plant's max overall dimensions* (m) P x L H = 2,5 m	Tot. Vol. EQUALIZATION DENITRIFICATION (litres)	Total Volume of OXIDATION (litres)	Total Vol. SECONDARY SEDIMENTATION (litres)	TOT. installed POWER (KW)	VOLTAGE (V)
170	EQ 28500	FA 40000	22 x 2,5	28500	35000	5000	3	380
200	EQ 30000	FA 48500	23 x 2,5	30000	40000	8500	3	380
250	EQ 38500	N. 2 FA 30000	22 x 7	38500	50000	10000	4	380
300	EQ 45000	N. 2 FA 35000	24 x 7	45000	60000	10000	4	380
350	EQ 50000	N. 2 FA 40000	27 x 7	50000	70000	10000	4	380
400	N. 2 EQ 30000	N. 2 FA 48500	24 x 7	60000	80000	17000	6	380
500	N. 2 EQ 38500	N. 4 FA 30000	23 x 15	77000	100000	20000	8	380
600	N. 2 EQ 45000	N. 4 FA 35000	25 x 15	90000	120000	20000	8	380
700	N. 2 EQ 50000	N. 4 FA 40000	29 x 15	100000	140000	20000	8	380

**NOTE: In case of SEPARATE DISCHARGES please contact our Technical Office. \* Overall maximal dimensions do not include accessories**



## PERCOLATOR FILTERS

Percolator filters are biological secondary treatment systems with adhesive biomass. Inside these plants are placed special filling bodies with a high specific surface on which the bacterial colonies responsible for the purification of the wastewater are developed. ECO FAN percolator filters are anaerobic as the type of bacteria that develops there lives in the absence of oxygen. A correct installation of a percolator filter plant always requires a primary treatment unit upstream.

**Aerobic percolator filters (Mod. ECO FAE) with low output are available upon request.** In case of such systems, a second clarification tank (smaller than the first one) is also required downstream for the examination of the biofilm.

## TECHNICAL DETAILS

Percolator filter plant recyclable PE (linear polyethylene), consisting of a monobloc compartment where polypropylene filling bodies are housed, each of which develops a specific surface of about 0.14 m<sup>2</sup>. The product is equipped with a manhole cover for central inspection and ordinary maintenance. It has inlet and outlet pipes equipped with appropriate double rubber lip gaskets, to guarantee a perfect tightness. Inside it also has piping that ensure a homogeneous distribution and the correct flow of waste water.



ANAEROBIC PERCOLATOR FILTER

### ECOFAN YIELDINGS

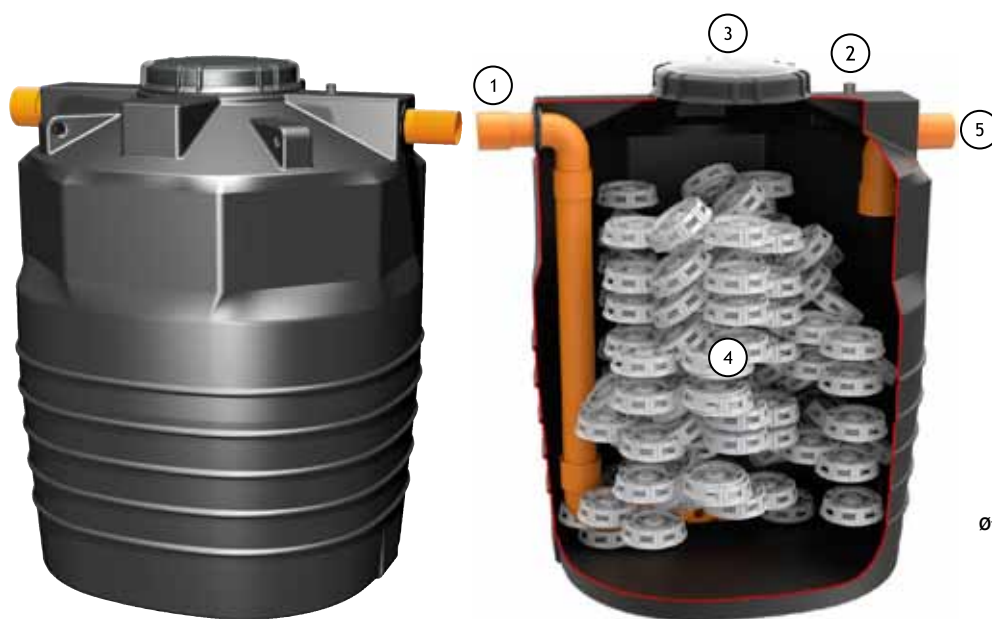
- Breakdown suspended solids ~ 72%
- Breakdown BOD<sub>5</sub>: ~ 69%
- Breakdown COD: ~ 67%



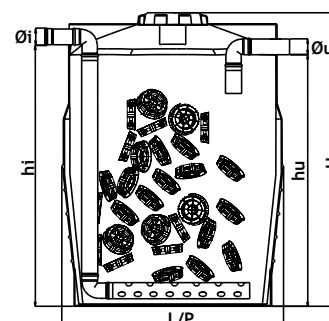
## ANAEROBIC PERCOLATORS



**Recommended for  
discharge in Table 3  
(Italian Reference Table)**



- LEGEND:**
- 1 - WASTE WATER INLET
  - 2 - BIOGAS VENT
  - 3 - INSPECTION MANHOLE
  - 4 - FILLING BODY
  - 5 - WASTE WATER EXIT



## ANAEROBIC PERCOLATORS

A.E. Tab.3	Models Item	Dimensions (cm)						Volumetry (litres)			Dimensions (mm)		S sed (m <sup>2</sup> )	ø biogas
		H	L	P	hi	hu	hr	Overflow	Total	V filter	øi øu	ø manhole		
6	ECO FAN 1500	150	117	117	125	121	140	1243	1360	1345	100	420	0,96	1"
11	ECO FAN 2000	182	136	136	158	154	173	2104	2265	2256	100	420	1,30	1"
15	ECO FAN 3000	219	146	146	192	188	209	2923	3107	3099	125	420	1,48	1"
20	ECO FAN 4000	224	165	165	192	188	214	3800	4200	4117	125	420	1,92	1"
24	ECO FAN 5000	229	184	184	197	193	220	4705	5110	5100	125	420	2,32	1"
29	ECO FAN 6000	257	185	185	224	220	248	5575	5993	5987	125	420	2,41	1"

hr = Height of filtering material

**ANAEROBIC PERCOLATORS  
EMILIA ROMAGNA e UMBRIA**

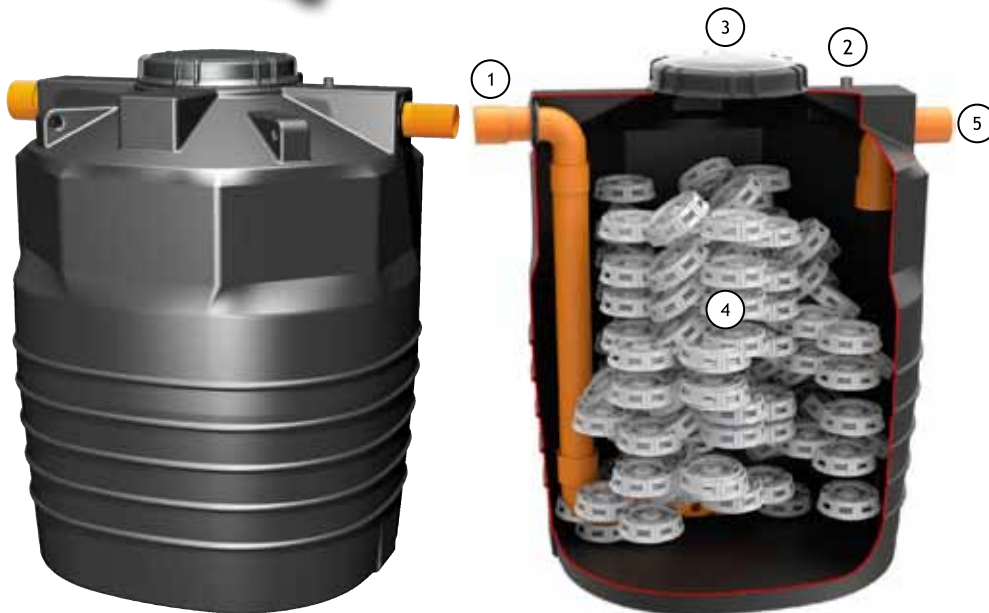


**TECHNICAL SPECIFICATIONS  
for EMILIA ROMAGNA and UMBRIA  
regions**

According to the Regional Decision n°. 1053 of Emilia Romagna, all percolator filter purification plants must be sized according to the formula  $A.E. = S \times H^2$  where S is the surface expressed in  $m^2$  of sedimentation and H corresponds to the height expressed in metres (not inferior to 0.9 e not exceeding 1.5) of the filtering body.

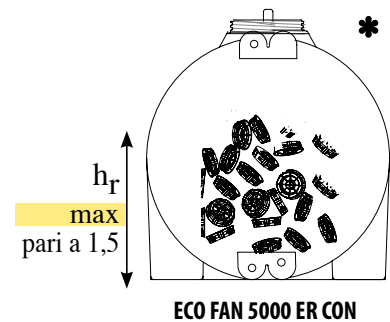
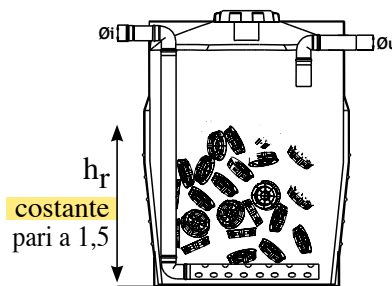


**Recommended for  
discharge in Table 3  
(Italian Reference Table)**



**LEGEND:**

- 1 - WASTE WATER INLET
- 2 - BIOGAS VENT
- 3 - INSPECTION MANHOLE
- 4 - FILLING BODY
- 5 - WASTE WATER EXIT



**ECO FAN 5000 ER CON**

**ANAEROBIC PERCOLATORS - for EMILIA ROMAGNA and UMBRIA regions**

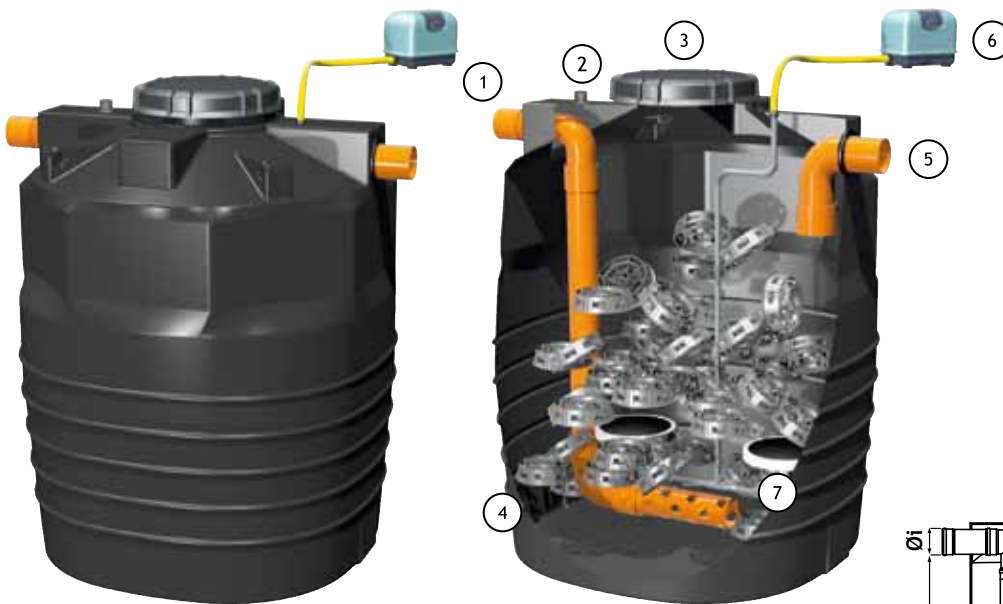
Models		Dimensions (cm)						Volumetry (litres)		Dimensions (mm)		S sed (m <sup>2</sup> )	ø biogas	
A.E. Emilia	Item	H	L	P	hi	hu	hr	V Filter	V Total	øi øu	ø manhole			
	3	ECO FAN 2000 ER	182	136	136	158	154	150	2180	2250	100	420	1,45	1"
	5	ECO FAN 4000 ER	206	169	169	169	165	150	3360	4200	125	420	2,24	1"
*	7	ECO FAN 5000 ER	189	203	203	154	150	150	4850	5100	125	420	3,23	1"
	9	ECO FAN 5000 ER CON	186	178	232	158	155	150	4500	4950	125	550	4,13	1"
	10	ECO FAN 7500 ER	198	238	238	155	151	150	6770	7550	160	420	4,45	1"

A.E. Emilia =  $S_{sed} \cdot (hr)^2$       $S_{sed}$  = Sedimentation surfaces      $hr$  = Height of filtering material



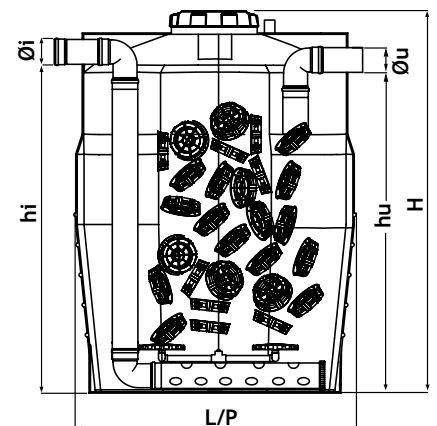
**AEROBIC PERCOLATOR FILTERS  
with FORCED VENTILATION  
(Mod. ECOFAE PLUS)**

In the ECOFAE PLUS plant series, in addition to the well-known cleaning function of the biomass systems, there is the oxidative action of the air injected into the wastewater through a system consisting of a blower pump and diffusers. The increased purification capacity of the PLUS plant (with the same volume as a common aerobic percolator) is applied where it is not possible, due to small spaces, to install systems with larger dimensions.



**AEROBICO PLUS PERCOLATOR FILTER**

- LEGEND:**
- 1 - WASTE WATER INLET
  - 2 - BIOGAS VENT
  - 3 - INSPECTION MANHOLE
  - 4 - FILLING-UP CHAMBERS
  - 5 - WASTE WATER EXIT
  - 6 - EXIT INSPECTION
  - 7 - DIFFUSER



**PLUS AEROBIC PERCOLATORS**

Models			Dimensions (cm)						Volumetry (litres)			Dimensions (mm)		S sed (m <sup>2</sup> )	N° diffus.	Power (W)	Ø biogas
A.E. Tab.3	A.E. Tab.4	Item	H	L	P	hi	hu	hr	Over-flow	Total	V filter	Øi Øu	Ø manhole				
10	6	ECO FAE PLUS 1500	150	117	117	125	121	140	1300	1360	1345	100	420	0,96	2	48	1"
17	10	ECO FAE PLUS 2000	182	136	136	158	154	173	2175	2265	2256	100	420	1,30	2	50	1"
24	17	ECO FAE PLUS 3000	219	146	146	192	188	209	2990	3107	3099	125	420	1,48	4	75	1"
32	24	ECO FAE PLUS 4000	224	165	165	192	188	214	3980	4200	4117	125	420	1,92	4	75	1"
39	32	ECO FAE PLUS 5000	229	184	184	197	193	220	4930	5110	5100	125	420	2,32	4	95	1"
46	39	ECO FAE PLUS 6000	257	185	185	224	220	248	5810	5993	5987	125	420	2,41	6	143	1"

**REGULAR MAINTENANCE**

Generally proceed from one to four times a year, or in any case to the need, to the cleaning of the filling bodies and the distribution organs of the sewage.

Take care to add recommended doses of bacterial-enzymatic mixture whenever you perform start-up operations.

**AEROBIC PERCOLATOR FILTERS  
(Low output)**

**Filters are available on request aerobic percolators (Mod. ECO FAE) with low output.**

In the case of such implants it is necessary the installation of a second tank of clarification (smaller in size of the first) also downstream for the counting of the biofilm.

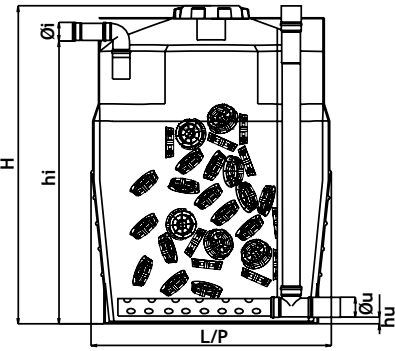


FILTRO PERCOLATORE AEROBICO



**LEGEND:**

- 1 - WASTE WATER INLET
- 2 - BIOGAS VENT
- 3 - INSPECTION MANHOLE
- 4 - FILLING-UP CHAMBERS
- 5 - WASTE WATER EXIT
- 6 - EXIT INSPECTION



**AEROBIC PERCOLATOR FILTERS "ECO FAE"**

Models		Dimensions (cm)						Volumetry (litres)		Dimensions (mm)		S sed (m <sup>2</sup> )	ø biogas
A.E.	Item	H	L	P	hi	hu	hr	V Filter	V Total	øi øu	ø manhole		
6	ECO FAE 1500	150	117	117	125	7	140	1360	1345	100	420	0,96	1"
11	ECO FAE 2000	182	136	136	158	7	173	2265	2256	100	420	1,30	1"
15	ECO FAE 3000	219	146	146	192	7	209	3107	3099	125	420	1,48	1"
20	ECO FAE 4000	224	165	165	192	7	214	4200	4117	125	420	1,92	1"
24	ECO FAE 5000	229	184	184	197	7	220	5110	5100	125	420	2,32	1"
29	ECO FAE 6000	257	185	185	224	7	248	5993	5987	125	420	2,41	1"

hr = filter material height

**TECHNICAL SPECIFICATIONS FOR EMILIA ROMAGNA and UMBRIA REGION**

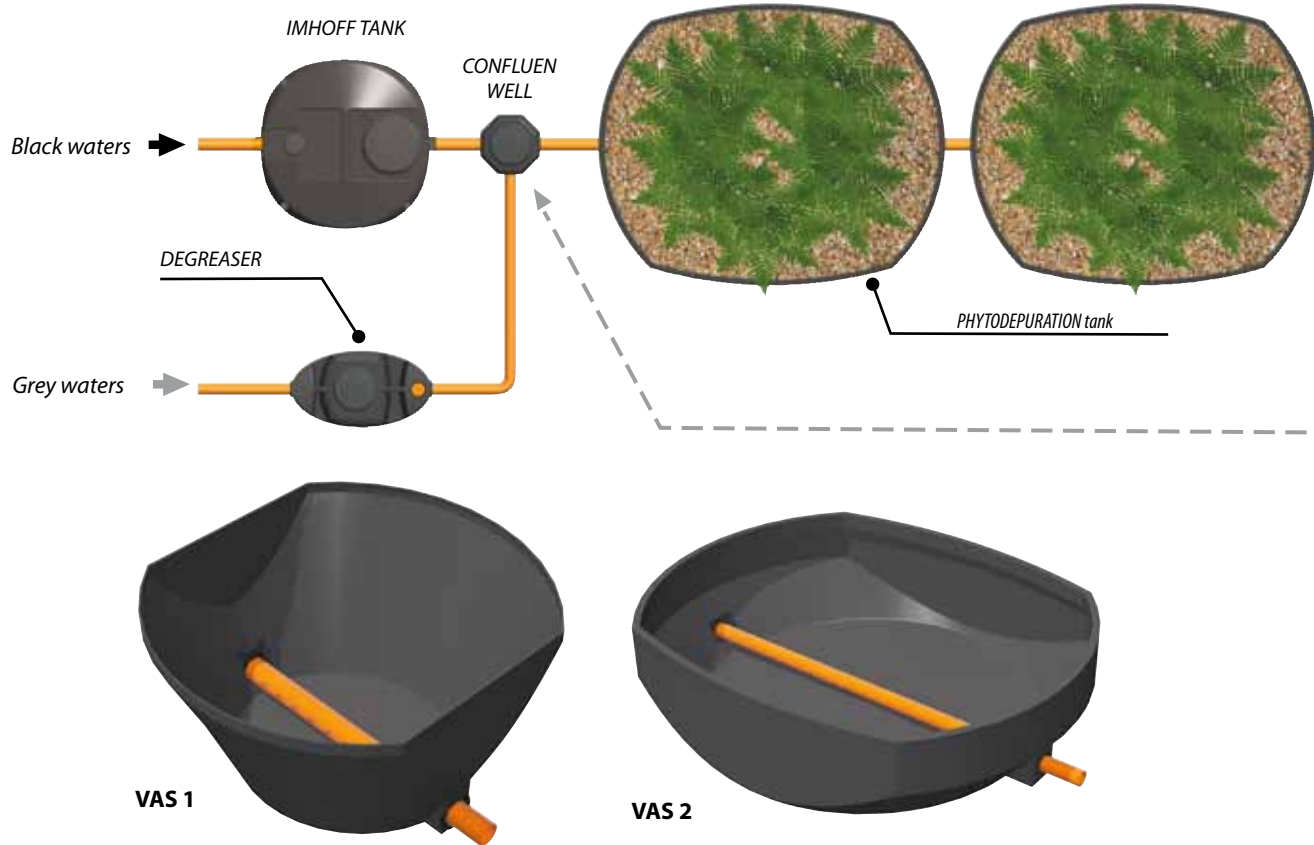
According to the Regional Resolution No. 1053 of Emilia Romagna, all plants of percolating filter purification must be sized according to the formula  $A.E. = S \times H^2$  where S is the sedimentation surface in m<sup>2</sup> and H corresponds at the height in meters (not less than 0.9 and not greater than 1.5) of the filter body.



**AEROBIC PERCOLATORS - According to Emilia Romagna and Umbria Regional Resolution**

Models		Dimensions (cm)						Volumetry (litres)		Dimensions (mm)		S sed (m <sup>2</sup> )	ø biogas
A.E. Emilia	Item	H	L	P	hi	hu	hr	V Filter	V Total	øi øu	ø manhole		
3	ECO FAE 2000 ER	182	136	136	158	7	150	2180	2250	100	420	1,45	1"
5	ECO FAE 4000 ER	206	169	169	169	7	150	3360	4200	125	420	2,24	1"
7	ECO FAE 5000 ER	189	203	203	154	7	150	4850	5100	125	420	3,23	1"
9	ECO FAE 5000 ER CON	186	178	232	158	7	150	4500	4950	125	550	4,13	1"
10	ECO FAE 7500 ER	198	238	238	155	7	150	6770	7550	160	420	4,45	1"

A.E. Emilia =  $S_{sed} \times (hr)^2$      $S_{sed}$  = sedimentation surface     $hr$  = filter material height



## PHYTODEPURATION

Phytodepuration is a natural purification system that allows to refine the pre-treated effluents by triggering both aerobic and anaerobic processes, typical of aquatic environments and wetlands. The depurative effect occurs thanks to the continuous action of digestion and assimilation of the substances contained in the wastewater through the radical apparatuses of bushes, herbs and flowers, constantly lapped in the special trays by the clarified waters.

TELCOM phytodepuration systems are horizontal submerged flow systems and consist of trays that contain inert material (gravel and crushed stone are commonly used) on which the roots of emerging plants develop. The level of the wastewater inside the trays is kept constant thanks to the installation of a level well downstream of the trays and the flow flows horizontally. It is always necessary to provide a primary treatment of the wastewater upstream of the phytodepuration trays. In the case of separate discharges, a degreaser for grey water and an Imhoff tank for black water are generally recommended, while in the case of joint discharges a tricameral tank is preferable.

## TECHNICAL DETAILS

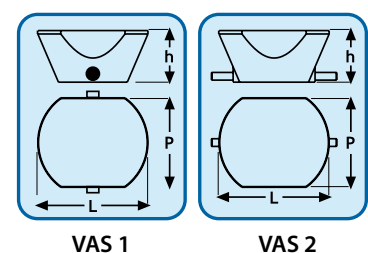
Waterproof trays made of recyclable PE (linear polyethylene), of 2 m<sup>2</sup> and 5 m<sup>2</sup>. They have inlet and outlet pipes equipped with suitable double rubber lip gaskets, to ensure a perfect tightness. Inside the tray there are PVC pipes to ensure a uniform distribution of the wastewater.

## PRODUCT SELECTION

When explicitly indicated by the competent authority as an appropriate treatment, it is advised the use of an area of 5 m<sup>2</sup> per A.E. In case of using for the refining of pre-treated waste water, it is considered as appropriate the use of a surface of 2 m<sup>2</sup> per Equivalent Inhabitant.

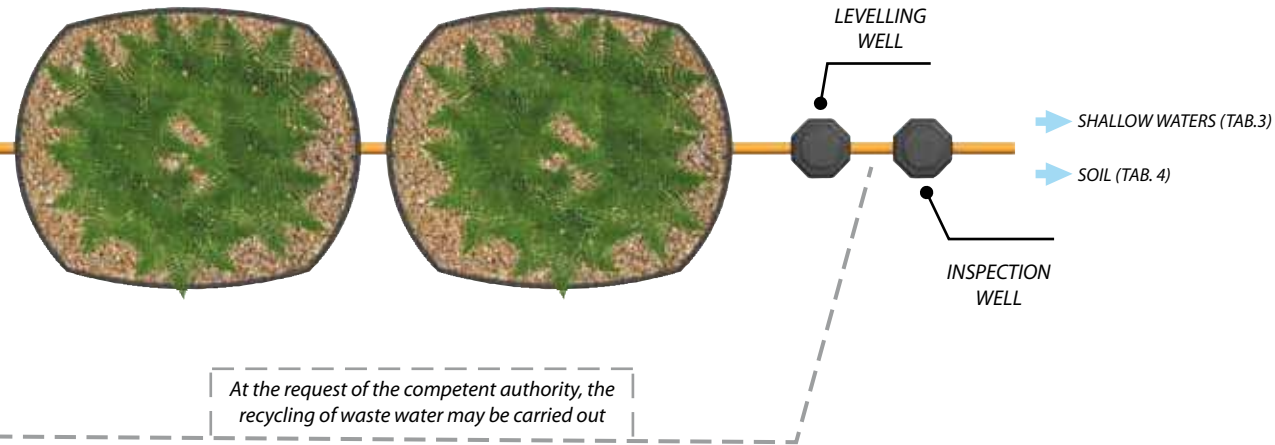
## PHYTODEPURATION tank

ITEM	SURFACE (m <sup>2</sup> )	VOLUME (m <sup>3</sup> )	Dimensions (cm)			ø pipe (mm)
			H	L	P	
VAS 1	2	1	76	160	130	100
VAS 2	5	3	70	280	228	100



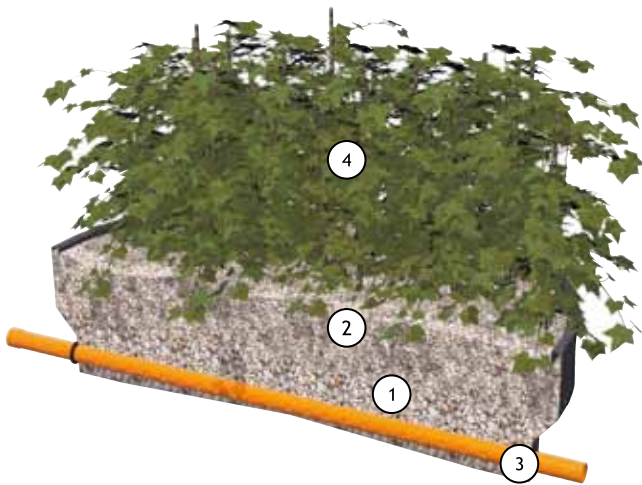
**Note:** Install the trays on surfaces without roughness and ensure a natural outflow of wastewater.



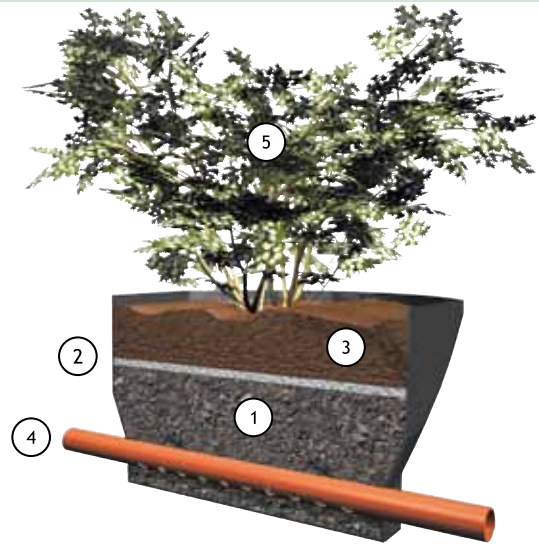


**Filling according to the APAT-ARPAT Guidelines of the TOSCANA Region**

**Filling according to the Decision n° 1053 / 09.06.2003 of EMILIA ROMAGNA Region**

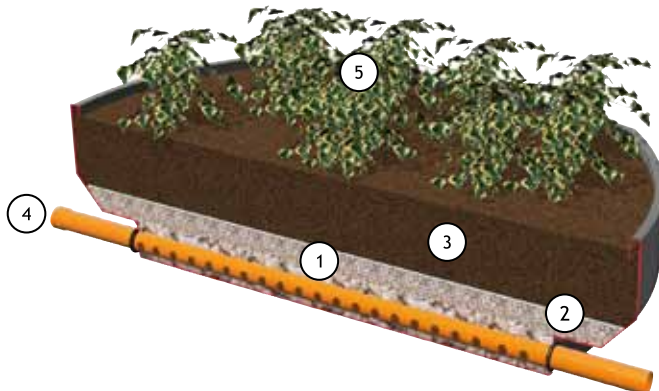


- LEGEND:**
- 1 - CRUSHED STONE (granule dimensions 80/120 mm)
  - 2 - GRAVEL (granule dimensions 4/16 mm)
  - 3 - DRAINING TUBE
  - 4 - PLANT (RECOMMENDED SHRUB OR FLOWER FOR PHYTODEPURATION - see pag.62)



- LEGEND:**
- 1 - GRAVEL and PEBBLE
  - 2 - STRATO DI TNT (non woven fabric)
  - 3 - TOPSOIL
  - 4 - DRAINING TUBE
  - 5 - PLANT (RECOMMENDED SHRUB OR FLOWER FOR PHYTODEPURATION - see pag.62)

**Filling according to the Regional Regulation n°. 7 of 2016 of the APULIA Region**

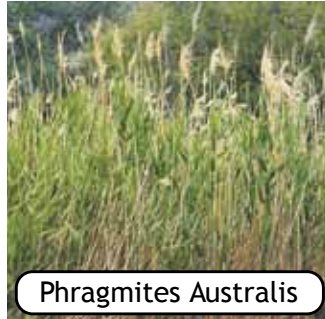


- LEGEND:**
- 1 - 15/20 cm SCREE granules 4/7 cm
  - 2 - 10 cm GRAVEL granules 1/2 cm
  - 3 - 35/50 cm TOPSOIL separated from the subsiding Gravel by a layer of TNT
  - 4 - DRAINING TUBE
  - 5 - PLANT (RECOMMENDED SHRUB OR FLOWER FOR PHYTODEPURATION - see pag.62)

## REGULAR MAINTENANCE

Cleaning of primary treatment plants upstream of phyto-purification trays and sewage distribution organs shall be generally carried out once to four times a year. Periodically check the correct outflow of the effluent.

## PLANTS COMMONLY USED IN PHYTODEPURATION



Phragmites Australis



Aucuba Japonica



Bambù



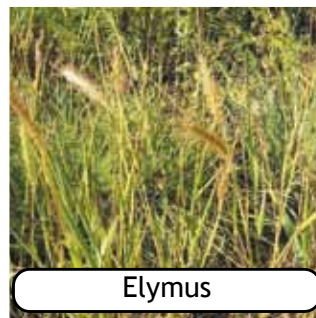
Schoenoplectus Lacustris



Cornus Florida



Cornus Stolonifera



Elymus



Felce



Iris Laevigata



Iris



Kalmia Latifolia



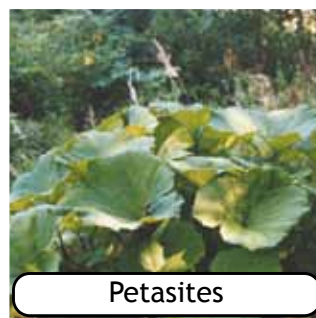
Laurus Cerasus



Lithrum



Nepeta



Petasites



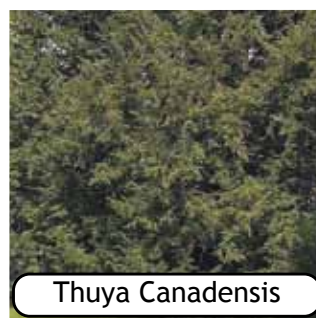
Typha Latifolia



Sambucus Nigra



Spirea Salicifolia



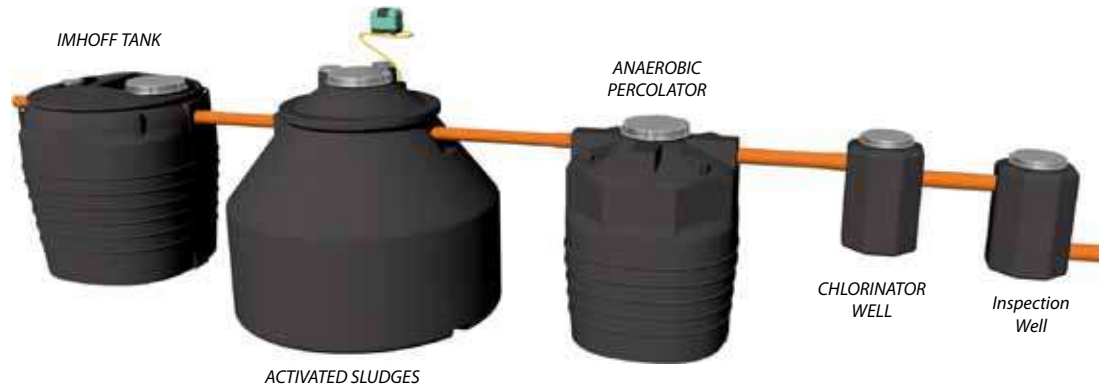
Thuja Canadensis



Cotoneaster Salicifolia

**Plants recommended for the DISCHARGE ON THE SOIL (TAB. 4)**

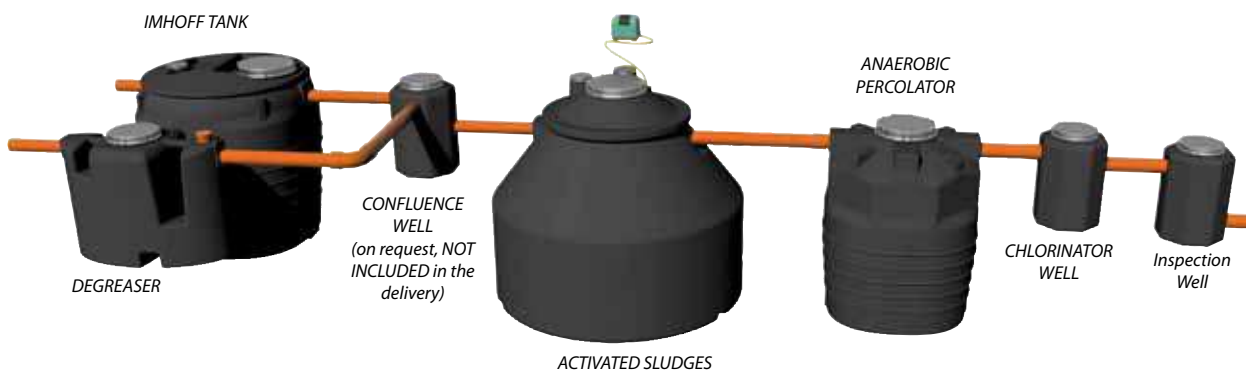
**Joint discharge of grey and black waters**



**TABLE 4 - JOINT DISCHARGES ON SOIL**

ITEM	A.E.	IMHOFF TANK	Activ. sludge	ANAEROBIC PERCOLATOR	CLORINATION WELL	Inspection Well
ECO IRC 5 S PLUS	5	ECO IMO 6 NEW	FA 5	ECO FAN 1500	POZ 100 CLO	POZ 100 G.I.
ECO IRC 10 S PLUS	10	ECO IMO 10 NEW	FA 10	ECO FAN 2000	POZ 100 CLO	
ECO IRC 15 S PLUS	15	ECO IMO 15 NEW	FA 15	ECO FAN 3000	POZ 300 CLO	
ECO IRC 20 S PLUS	20	ECO IMO 20 NEW	FA 20	ECO FAN 4000	POZ 300 CLO	
ECO IRC 25 S PLUS	25	ECO IMO 25 NEW	FA 25	ECO FAN 5000	POZ 300 CLO	
ECO IRC 29 S PLUS	29	ECO IMO 30 NEW	FA 25	ECO FAN 6000	POZ 300 CLO	

**Separate discharge of grey and black waters**



**TABLE 4 - Separate Discharges on the Soil**

ITEM	A.E.	IMHOFF TANK	DEGREASER	Activ. sludge	ANAEROBIC PERCOLATOR	CLORINATION WELL	INSPECTION WELL
ECO IRS 5 S PLUS	5	ECO IMO 4 NEW	ECO DIS 6	FA 5	ECO FAN 1500	POZ 100 CLO	POZ 100 G.I.
ECO IRS 10 S PLUS	10	ECO IMO 6 NEW	ECO DIS 10	FA 10	ECO FAN 2000	POZ 100 CLO	
ECO IRS 15 S PLUS	15	ECO IMO 10 NEW	ECO DIS 18	FA 15	ECO FAN 3000	POZ 300 CLO	
ECO IRS 20 S PLUS	20	ECO IMO 15 NEW	ECO DIS 18	FA 20	ECO FAN 4000	POZ 300 CLO	
ECO IRS 25 S PLUS	25	ECO IMO 20 NEW	ECO DIS 30	FA 25	ECO FAN 5000	POZ 300 CLO	
ECO IRS 29 S PLUS	29	ECO IMO 25 NEW	ECO DIS 30	FA 25	ECO FAN 6000	POZ 300 CLO	

## PLANTS RECOMMENDED WHEN ONLY ACTIVATED SLUDGE PLANTS ARE REQUESTED

### Joint discharge of grey and black waters



**TABLE 3 DISCHARGE IN SUPERFICIAL WATERS**

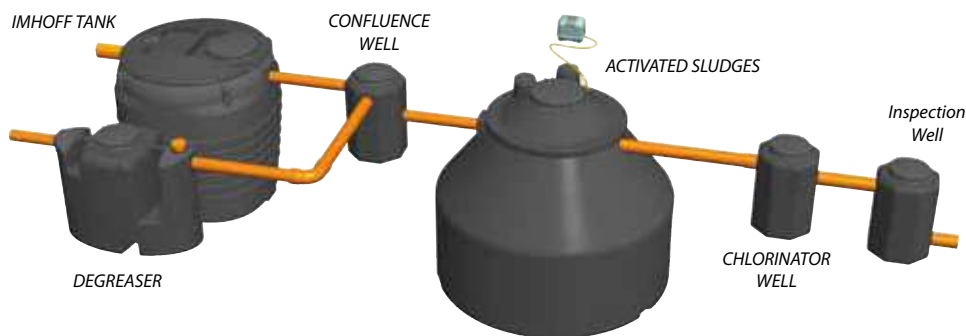
ITEM	A.E.	IMHOFF TANK	Activated Sludge	CHLORINATOR WELL*	INSPECTION WELL
ECO IRC 5 AS	5	ECO IMO 6	FA 5	POZ 100 CLO	POZ 100 G.I.
ECO IRC 10 AS	10	ECO IMO 10	FA 10	POZ 100 CLO	
ECO IRC 15 AS	15	ECO IMO 15	FA 15	POZ 300 CLO	
ECO IRC 20 AS	20	ECO IMO 20	FA 20	POZ 300 CLO	
ECO IRC 25 AS	25	ECO IMO 25	FA 25	POZ 300 CLO	

**TABLE 4 DISCHARGE ON THE SOIL**

ITEM	A.E.	IMHOFF TANK	Activated Sludge	CHLORINATOR WELL*	INSPECTION WELL
ECO IRC 5 S	5	ECO IMO 6	FA 10	POZ 100 CLO	POZ 100 G.I.
ECO IRC 10 S	10	ECO IMO 10	FA 15	POZ 100 CLO	
ECO IRC 15 S	15	ECO IMO 15	FA 20	POZ 300 CLO	
ECO IRC 20 S	20	ECO IMO 20	FA 25	POZ 300 CLO	

\*Abide by the opinion of the competent Body

### Separate discharge of grey and black waters



**TABLE 3 - DISCHARGE IN SUPERFICIAL WATERS**

ITEM	A.E.	IMHOFF TANK	DEGREASER	Activ. sludge	CHLORINATOR WELL	Confluence Well	Inspection Well
ECO IRS 5 AS	5	ECO IMO 4	ECO DIS 4	FA 5	POZ 100 CLO	POZ 100 CO	POZ 100 G.I.
ECO IRS 10 AS	10	ECO IMO 6	ECO DIS 6	FA 10	POZ 100 CLO		
ECO IRS 15 AS	15	ECO IMO 10	ECO DIS 10	FA 15	POZ 300 CLO		
ECO IRS 20 AS	20	ECO IMO 15	ECO DIS 18	FA 20	POZ 300 CLO		
ECO IRS 25 AS	25	ECO IMO 20	ECO DIS 30	FA 25	POZ 300 CLO		

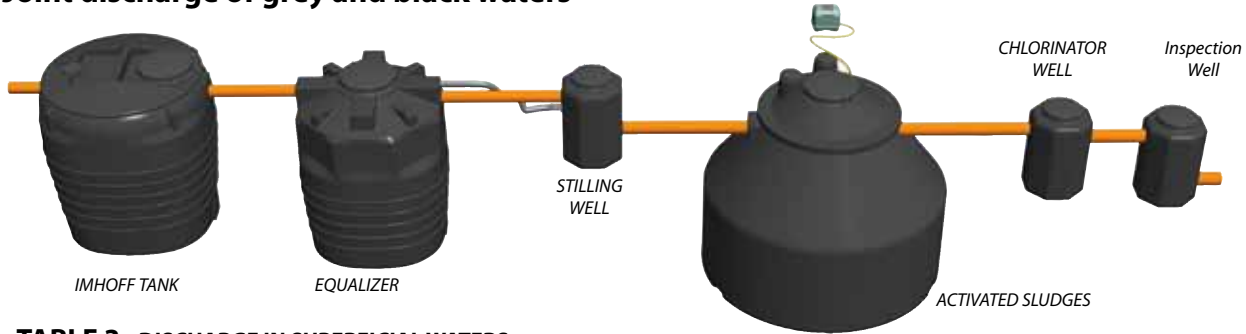
**TABLE 4 - DISCHARGE ON THE SOIL**

ITEM	A.E.	IMHOFF TANK	DEGREASER	Activ. sludge	CHLORINATOR WELL	Confluence Well	Inspection Well
ECO IRS 5 S	5	ECO IMO 4	ECO DIS 6	FA 10	POZ 100 CLO	POZ 100 CO	POZ 100 G.I.
ECO IRS 10 S	10	ECO IMO 6	ECO DIS 10	FA 15	POZ 100 CLO		
ECO IRS 15 S	15	ECO IMO 10	ECO DIS 18	FA 20	POZ 300 CLO		
ECO IRS 20 S	20	ECO IMO 15	ECO DIS 18	FA 25	POZ 300 CLO		

\*Abide by the opinion of the competent Body

**PLANTS RECOMMENDED WHEN ONLY ACTIVATED SLUDGE PLANTS ARE REQUESTED**

**Joint discharge of grey and black waters**



**TABLE 3 - DISCHARGE IN SUPERFICIAL WATERS**

ITEM	A.E.	IMHOFF TANK	EQUALIZER	Activ. sludge	CHLORINATOR WELL	Settling chamber	Inspection Well
ECO ICC 5 AS	5	ECO IMO 6	-	FA 5	POZ 100 CLO	-	POZ 100 G.I.
ECO ICC 10 AS	10	ECO IMO 10	EQ 1500	FA 10	POZ 100 CLO	POZ 100 CA	
ECO ICC 15 AS	15	ECO IMO 15	EQ 2000	FA 15	POZ 300 CLO		
ECO ICC 20 AS	20	ECO IMO 20	EQ 3000	FA 20	POZ 300 CLO		
ECO ICC 25 AS	25	ECO IMO 25	EQ 4000	FA 25	POZ 300 CLO		

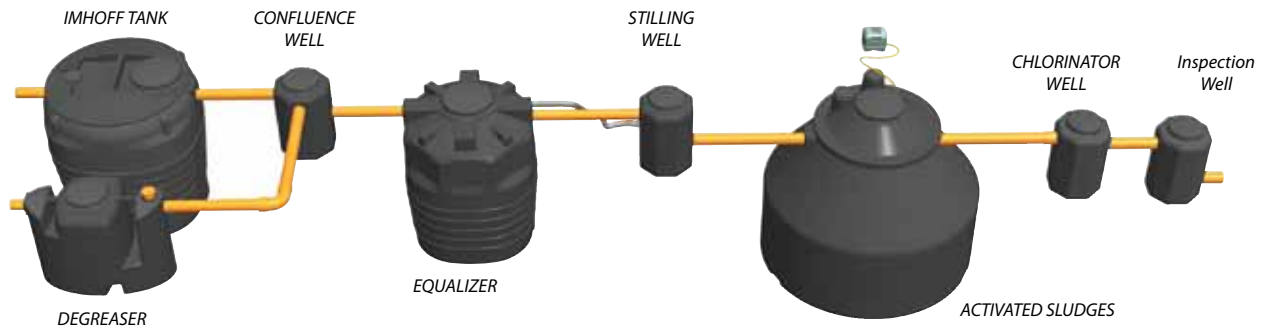
**TABLE 4 - DISCHARGE ON THE SOIL**

*\*Abide by the opinion of the competent Body*

ITEM	A.E.	IMHOFF TANK	EQUALIZER	Activ. sludge	CHLORINATOR WELL	Settling chamber	Inspection Well
ECO ICC 5 S	5	ECO IMO 6	-	FA 10	POZ 100 CLO	-	POZ 100 G.I.
ECO ICC 10 S	10	ECO IMO 10	EQ 1500	FA 15	POZ 100 CLO	POZ 100 CA	
ECO ICC 15 S	15	ECO IMO 15	EQ 2000	FA 20	POZ 300 CLO		
ECO ICC 20 S	20	ECO IMO 20	EQ 3000	FA 25	POZ 300 CLO		

**Separate discharge of grey and black waters**

*\*Abide by the opinion of the competent Body*



**TABLE 3 - DISCHARGE IN SUPERFICIAL WATERS**

ITEM	A.E.	IMHOFF TANK	DEGREASER	EQUALIZER	Activ. sludge	CHLORINATOR WELL	Confluence Well	Settling chamber	Inspection Well
ECO ICS 5 AS	5	ECO IMO 4	ECO DIS 4	-	FA 5	POZ 100 CLO	POZ 100 CO	-	POZ 100 G.I.
ECO ICS 10 AS	10	ECO IMO 6	ECO DIS 6	EQ 1500	FA 10	POZ 100 CLO		POZ 100 CA	
ECO ICS 15 AS	15	ECO IMO 10	ECO DIS 10	EQ 2000	FA 15	POZ 300 CLO			
ECO ICS 20 AS	20	ECO IMO 15	ECO DIS 18	EQ 3000	FA 20	POZ 300 CLO			
ECO ICS 25 AS	25	ECO IMO 20	ECO DIS 30	EQ 4000	FA 25	POZ 300 CLO			

**TABLE 4 - DISCHARGE ON THE SOIL**

*\*Abide by the opinion of the competent Body*

ITEM	A.E.	IMHOFF TANK	DEGREASER	EQUALIZER	Activ. sludge	CHLORINATOR WELL	Confluence Well	Settling chamber	Inspection Well
ECO ICS 5 S	5	ECO IMO 4	ECO DIS 6	-	FA 10	POZ 100 CLO	POZ 100 CO	-	POZ 100 G.I.
ECO ICS 10 S	10	ECO IMO 6	ECO DIS 10	EQ 1500	FA 15	POZ 100 CLO		POZ 100 CA	
ECO ICS 15 S	15	ECO IMO 10	ECO DIS 18	EQ 2000	FA 20	POZ 300 CLO			
ECO ICS 20 S	20	ECO IMO 15	ECO DIS 18	EQ 3000	FA 25	POZ 300 CLO			

*\*Abide by the opinion of the competent Body*

PLANTS RECOMMENDED WHEN ONLY PERCOLATOR FILTERS ARE REQUESTED

Joint discharge of grey and black waters

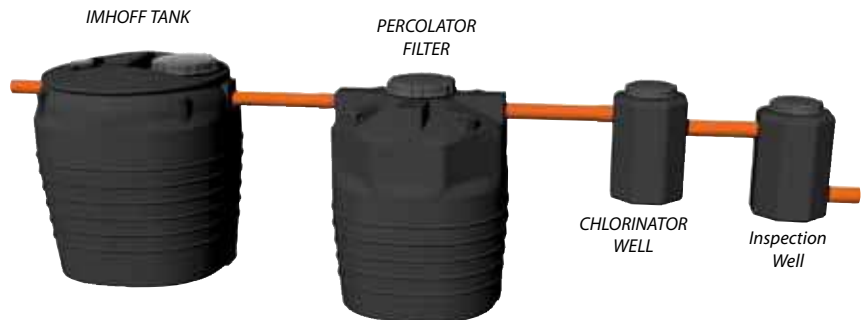


TABLE 3 DI-  
SCHARGE IN SU-  
PERFICIAL WATERS

A.E.	IMHOFF TANK	PERCOLATOR FILTER	CHLORINATOR WELL	Inspection Well
6	ECO IMO 6	ECO FAN 1500	POZ 100 CLO	POZ 100 G.I.
10	ECO IMO 10	ECO FAN 2000	POZ 100 CLO	
15	ECO IMO 15	ECO FAN 3000	POZ 300 CLO	
20	ECO IMO 20	ECO FAN 4000	POZ 300 CLO	
24	ECO IMO 25	ECO FAN 5000	POZ 300 CLO	
29	ECO IMO 30	ECO FAN 6000	POZ 300 CLO	

TABLE 3 - DISCHARGE IN SUPERFICIAL WATERS (Emilia R.-Umbria)

A.E.	IMHOFF TANK	PERCOLATOR FILTER	CHLORINATOR WELL	Inspection Well
3	ECO IMO 4	ECO FAN 2000 ER	POZ 100 CLO	POZ 100 G.I.
5	ECO IMO 6	ECO FAN 4000 ER	POZ 300 CLO	
7	ECO IMO 10	ECO FAN 5000 ER	POZ 300 CLO	
10	ECO IMO 10	ECO FAN 7500 ER	POZ 300 CLO	

Secondo la Delibera Regionale N. 1053 dell'Emilia Romagna, con estrazione fanghi almeno 2 volte l'anno.

TABLE 4 DISCHARGE ON THE SOIL

A.E.	IMHOFF TANK	PERCOLATOR FILTER	CHLORINATOR WELL	Inspection Well
6	ECO IMO 6	ECO FAE PLUS 1500	POZ 100 CLO	POZ 100 G.I.
10	ECO IMO 10	ECO FAE PLUS 2000	POZ 100 CLO	
15	ECO IMO 15	ECO FAE PLUS 3000	POZ 300 CLO	
20	ECO IMO 20	ECO FAE PLUS 4000	POZ 300 CLO	
25	ECO IMO 25	ECO FAE PLUS 5000	POZ 300 CLO	
30	ECO IMO 30	ECO FAE PLUS 6000	POZ 300 CLO	

\*Abide by the opinion of the competent Body

Separate discharge of grey and black waters



TABLE 3 - DISCHARGE IN SUPERFICIAL WATERS

A.E.	IMHOFF TANK	DEGREASER	PERCOLATOR FILTER	CHLORINATOR WELL	Confluence Well	Inspection Well
6	ECO IMO 4	ECO DIS 4	ECO FAN 1500	POZ 100 CLO	POZ 100 CO	POZ 100 G.I.
10	ECO IMO 6	ECO DIS 6	ECO FAN 2000	POZ 100 CLO		
15	ECO IMO 10	ECO DIS 10	ECO FAN 3000	POZ 300 CLO		
20	ECO IMO 15	ECO DIS 18	ECO FAN 4000	POZ 300 CLO		
24	ECO IMO 20	ECO DIS 30	ECO FAN 5000	POZ 300 CLO		
29	ECO IMO 25	ECO DIS 30	ECO FAN 6000	POZ 300 CLO		

TABLE 3 - DISCHARGE IN SUPERFICIAL WATERS (Emilia R.-Umbria)

A.E.	IMHOFF TANK	DEGREASER	PERCOLATOR FILTER	CHLORINATOR WELL	CONFLUENCE WELL	Inspection Well
3	ECO IMO 4	ECO DIS 3	ECO FAN 2000 ER	POZ 100 CLO	POZ 100 CO	POZ 100 G.I.
5	ECO IMO 4	ECO DIS 4	ECO FAN 4000 ER	POZ 300 CLO		
7	ECO IMO 6	ECO DIS 6	ECO FAN 5000 ER	POZ 300 CLO		
10	ECO IMO 10	ECO DIS 10	ECO FAN 7500 ER	POZ 300 CLO		

Secondo la Delibera Regionale N. 1053 dell'Emilia Romagna, con estrazione fanghi almeno 2 volte l'anno.

TABLE 4 DISCHARGE ON THE SOIL

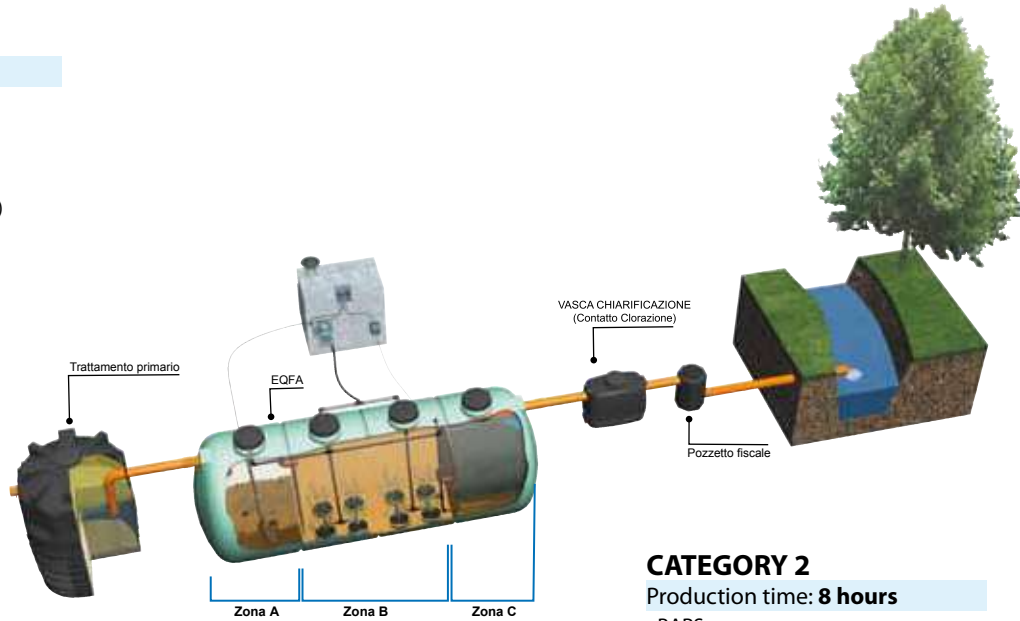
A.E.	IMHOFF TANK	DEGREASER	PERCOLATOR FILTER	CHLORINATOR WELL	Confluence Well	Inspection Well
6	ECO IMO 6	ECO DIS 6	ECO FAE PLUS 1500	POZ 100 CLO	POZ 100 CO	POZ 100 G.I.
10	ECO IMO 10	ECO DIS 10	ECO FAE PLUS 2000	POZ 100 CLO		
15	ECO IMO 15	ECO DIS 18	ECO FAE PLUS 3000	POZ 300 CLO		
20	ECO IMO 20	ECO DIS 18	ECO FAE PLUS 4000	POZ 300 CLO		
25	ECO IMO 25	ECO DIS 30	ECO FAE PLUS 5000	POZ 300 CLO		
30	ECO IMO 30	ECO DIS 30	ECO FAE PLUS 6000	POZ 300 CLO		

\*Abide by the opinion of the competent Body

**CATEGORY 1**

Production time: **16 hours**

- RESIDENTIAL HOUSES
- AIRPORTS
- SHOPPING CENTERS
- LARGE WAREHOUSES
- HOTEL
- BUSINESS ACTIVITIES (STORES)
- BARRACKS
- COLLEGES
- HOSPITALS
- CAMPINGS
- TOURISTIC VILLAGES
- SPORTS CLUB



**CATEGORY 2**

Production time: **8 hours**

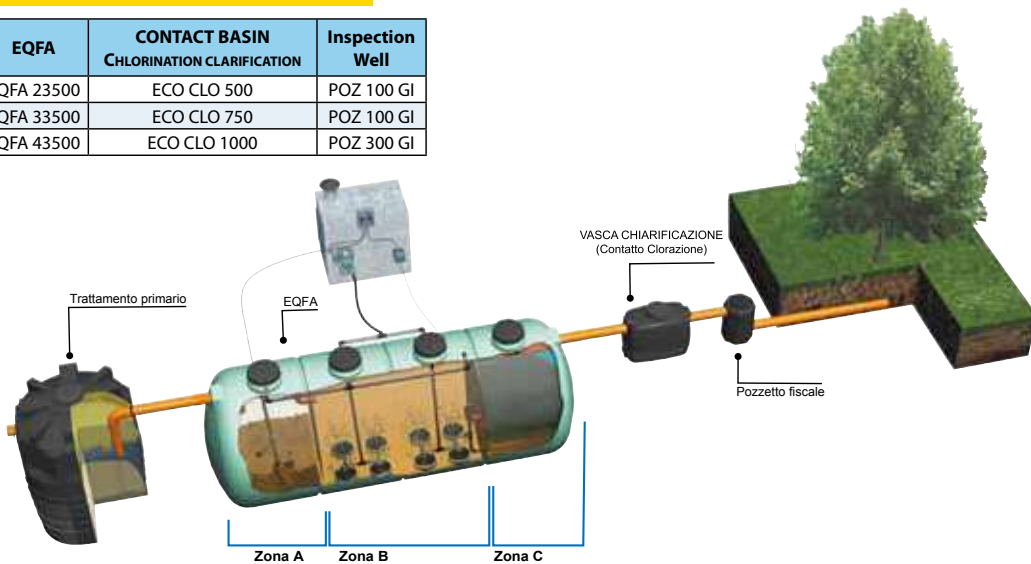
- BARS
- RESTAURANTS
- CINEMA - THEATRE
- INDUSTRIAL PLANTS
- GAS STATIONS
- DINER
- TRATTORIA
- OFFICES
- SCHOOLS
- PUBLIC PARKS
- SWIMMING POOLS - HEALTH RESSORTS
- STADIUM

**TABLE 3 Cat. 2 - DISCHARGE IN SUPERFICIAL WATERS**

A.E.	PRIMARY TREATMENT	EQFA	CONTACT BASIN CHLORINATION CLARIFICATION	Inspection Well
60	ECOVSV 6000	EQFA 18500	ECO CLO 500	POZ 100 GI
90	VS 10000	EQFA 28500	ECO CLO 750	POZ 100 GI
120	VS 12000	EQFA 33500 B	ECO CLO 1000	POZ 300 GI
150	VS 15000	EQFA 43500 B	ECO CLO 1500	POZ 300 GI
180	VS 18500	EQFA 50000 B	ECO CLO 1500	POZ 300 GI

**TABLE 3 Cat. 1 - DISCHARGE IN SUPERFICIAL WATERS**

A.E.	PRIMARY TREATMENT	EQFA	CONTACT BASIN CHLORINATION CLARIFICATION	Inspection Well
60	ECOVSV 6000	EQFA 23500	ECO CLO 500	POZ 100 GI
90	VS 10000	EQFA 33500	ECO CLO 750	POZ 100 GI
120	VS 12000	EQFA 43500	ECO CLO 1000	POZ 300 GI



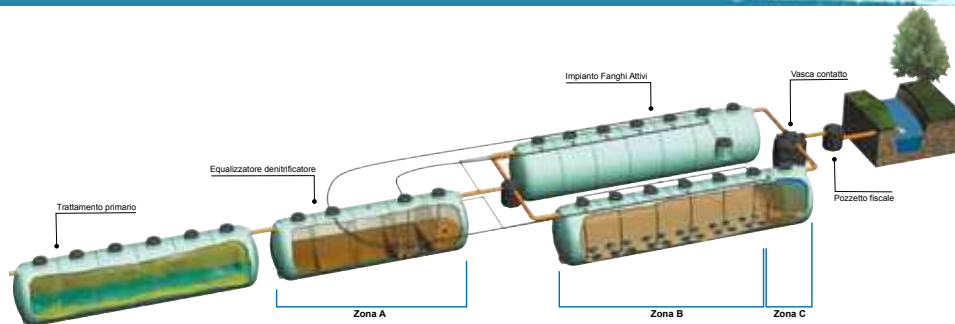
**TABLE 4 Cat. 2 - DISCHARGE ON THE SOIL**

A.E.	PRIMARY TREATMENT	EQFA	CONTACT BASIN CHLORINATION CLARIFICATION	Inspection Well
51	ECOVSV 5000	EQFA 18500	ECO CLO 500	POZ 100 GI
70	ECOVSV 6000	EQFA 23500 B	ECO CLO 750	POZ 100 GI
95	VS 10000	EQFA 33500 B	ECO CLO 1000	POZ 100 GI
120	VS 12000	EQFA 40000	ECO CLO 1500	POZ 300 GI
145	VS 15000	EQFA 50000 B	ECO CLO 1500	POZ 300 GI

**TABLE 4 Cat. 1 - DISCHARGE ON THE SOIL**

A.E.	PRIMARY TREATMENT	EQFA	CONTACT BASIN CHLORINATION CLARIFICATION	Inspection Well
51	ECOVSV 5000	EQFA 23500	ECO CLO 500	POZ 100 GI
70	ECOVSV 6000	EQFA 28500	ECO CLO 750	POZ 100 GI
95	VS 10000	EQFA 38500	ECO CLO 1000	POZ 100 GI
120	VS 12000	EQFA 50000	ECO CLO 1500	POZ 300 GI

# RECOMMENDED PLANTS USAGE OVER the 50 A.E.

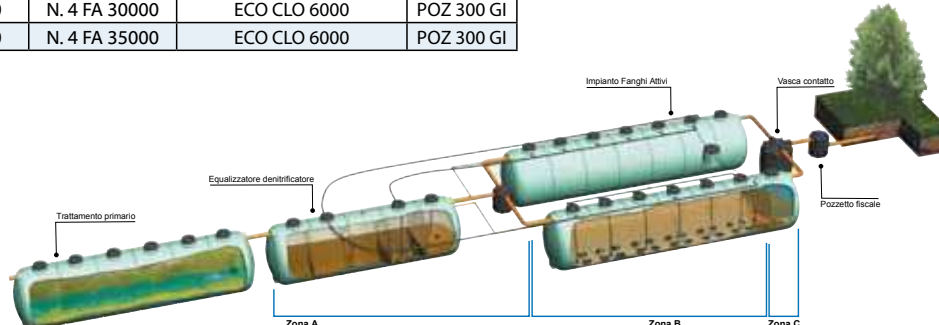


**TABLE 3 Cat. 1  
DISCHARGE IN SU-  
PERFICIAL WATERS**

A.E.	TRATTAMENTO PRIMARIO	Equalizzazione Denitrificazione	Impianto a Fanghi Attivi	VASCA CONTATTO CLORAZIONE CHIARIFICAZIONE	POZZETTO FISCALE
200	VS 20000	EQ 18500	FA 40000	ECO CLO 2000	POZ 300 GI
250	VS 25000	EQ 23500	FA 48500	ECO CLO 2000	POZ 300 GI
300	VS 30000	EQ 25000	N. 2 FA 30000	ECO CLO 2500	POZ 300 GI
350	VS 35000	EQ 28500	N. 2 FA 35000	ECO CLO 2500	POZ 300 GI
400	VS 40000	EQ 33500	N. 2 FA 40000	ECO CLO 4000	POZ 300 GI
500	VS 50000	EQ 40000	N. 2 FA 48500	ECO CLO 4000	POZ 300 GI
600	N. 2 VS 30000	EQ 48500	N. 4 FA 30000	ECO CLO 6000	POZ 300 GI
700	N. 2 VS 35000	N. 2 EQ 28500	N. 4 FA 35000	ECO CLO 6000	POZ 300 GI
800	N. 2 VS 40000	N. 2 EQ 30000	N. 4 FA 40000	ECO CLO 7500	POZ 300 GI
1000	N. 2 VS 50000	N. 2 EQ 40000	N. 4 FA 48500	ECO CLO 10000	POZ 300 GI

**TABLE 3 Cat. 2  
DISCHARGE IN SU-  
PERFICIAL WATERS**

A.E.	TRATTAMENTO PRIMARIO	Equalizzazione Denitrificazione	Impianto a Fanghi Attivi	VASCA CONTATTO CLORAZIONE CHIARIFICAZIONE	POZZETTO FISCALE
200	VS 20000	EQ 30000	FA 40000	ECO CLO 2000	POZ 300 GI
250	VS 25000	EQ 38500	FA 48500	ECO CLO 2000	POZ 300 GI
300	VS 30000	EQ 45000	N. 2 FA 30000	ECO CLO 2500	POZ 300 GI
350	VS 35000	EQ 50000	N. 2 FA 35000	ECO CLO 2500	POZ 300 GI
400	N. 2 VS 20000	N. 2 EQ 30000	N. 2 FA 40000	ECO CLO 4000	POZ 300 GI
500	N. 2 VS 25000	N. 2 EQ 38500	N. 2 FA 48500	ECO CLO 4000	POZ 300 GI
600	N. 2 VS 30000	N. 2 EQ 45000	N. 4 FA 30000	ECO CLO 6000	POZ 300 GI
700	N. 2 VS 35000	N. 2 EQ 50000	N. 4 FA 35000	ECO CLO 6000	POZ 300 GI



**TABLE 4 Cat. 1  
DISCHARGE ON THE SOIL**

A.E.	TRATTAMENTO PRIMARIO	Equalizzazione Denitrificazione	Impianto a Fanghi Attivi	VASCA CONTATTO CLORAZIONE CHIARIFICAZIONE	POZZETTO FISCALE
170	VS 17000	EQ 15000	FA 40000	ECO CLO 1500	POZ 300 GI
200	VS 20000	EQ 18500	FA 48500	ECO CLO 2000	POZ 300 GI
250	VS 25000	EQ 23500	N. 2 FA 30000	ECO CLO 2000	POZ 300 GI
300	VS 30000	EQ 25000	N. 2 FA 35000	ECO CLO 2500	POZ 300 GI
350	VS 35000	EQ 28500	N. 2 FA 40000	ECO CLO 2500	POZ 300 GI
400	VS 40000	EQ 33500	N. 2 FA 48500	ECO CLO 4000	POZ 300 GI
500	VS 50000	EQ 40000	N. 4 FA 30000	ECO CLO 4000	POZ 300 GI
600	N. 2 VS 30000	EQ 48500	N. 4 FA 35000	ECO CLO 6000	POZ 300 GI
700	N. 2 VS 35000	N. 2 EQ 28500	N. 4 FA 40000	ECO CLO 6000	POZ 300 G
800	N. 2 VS 40000	N. 2 EQ 30000	N. 4 FA 48500	ECO CLO 7500	POZ 300 G

A.E.	TRATTAMENTO PRIMARIO	Equalizzazione Denitrificazione	Impianto a Fanghi Attivi	VASCA CONTATTO CLORAZIONE CHIARIFICAZIONE	POZZETTO FISCALE
170	VS 17000	EQ 28500	FA 40000	ECO CLO 1500	POZ 300 GI
200	VS 20000	EQ 30000	FA 48500	ECO CLO 2000	POZ 300 GI
250	VS 25000	EQ 38500	N. 2 FA 30000	ECO CLO 2000	POZ 300 GI
300	VS 30000	EQ 45000	N. 2 FA 35000	ECO CLO 2500	POZ 300 GI
350	VS 35000	EQ 50000	N. 2 FA 40000	ECO CLO 2500	POZ 300 GI
400	VS 40000	N. 2 EQ 30000	N. 2 FA 48500	ECO CLO 4000	POZ 300 GI
500	VS 50000	N. 2 EQ 38500	N. 4 FA 30000	ECO CLO 4000	POZ 300 GI
600	N. 2 VS 30000	N. 2 EQ 45000	N. 4 FA 35000	ECO CLO 6000	POZ 300 GI
700	N. 2 VS 35000	N. 2 EQ 50000	N. 4 FA 40000	ECO CLO 6000	POZ 300 G

**TABLE 4 Cat. 2  
DISCHARGE ON THE SOIL**





# TREATMENT OF EROSION RAINWATERS

## STORMWATER RUN-OFF

- In the service area no work of any kind is carried out, nor are stored dangerous substances referred to in Table 3/A of Annex 5 of the Legislative Decree n°. 152/06 and subsequent modifications and updates;
- The goods possibly placed or handled in the service area must be perfectly packed to prevent the release of pollutants;
- A screening treatment must be carried out upstream of the installation;
- The installation and maintenance of oil separators must be carried out correctly and regularly in accordance with the instructions for installation into the soil that accompany the plant;
- The inert materials present in the adducent waste water must be larger than 0.2 mm and have a specific weight of 0,85 g/cm<sup>3</sup> for the oils;
- The parameters of the incoming metals must already comply with current legislation;
- The affluent pollutants into the plant, that is, non-aemulsified oils and any traces of hydrocarbons, must be the only ones present so as to be eliminated from the intended treatment (non'aemulsionated oils).

## REGULATORY FRAMEWORK OF REFERENCE

- Legislative Decree n°. 152/06 and subsequent modifications and updates
- EEC Directive n°. 91/271 dated 21.05.91
- Standards UNI EN 858/1 and UNI EN 858/2
- Standard DIN 4040
- Guidelines of ARPA (Regional Agency on Prevention and Environment) of various regions

The Legislative Decree n°. 152/06 prohibits the discharge or the direct insertion of meteoric water into groundwater. In compliance with the technical standards, first rainwaters and washing waters must be delivered, in preferential order:

- into the drainage systems
- into the main surface water
- on the ground or in the surface layers of the soil.

## GUARANTEES

The guarantee of compliance with the limits imposed in Annex 5 of the Legislative Decree n°. 152/06 and its subsequent modifications and updates for the various receiver bodies is, however, subordinated to the efficiency of our plants and therefore to the concentration of pollutants present in the plant's abducting waters.

## NOTE TO INSTALLER

The installation of the products will be carried out in such a way as to ensure the periodic extraction of the material present on the surface and sedimented. The location must be outside the buildings and at least 1 m away from the foundation walls. For the earthworks of the product, please carefully follow the instructions in the accompanying manual.

**SAND SEPARATORS**

The sand separators are used to separate sand and sedimentable materials from the runoff rainwater. The operation of the sand separators is based on the use of stilling basins properly equipped in which sedimentable materials are allowed to precipitate. The sand separators shall be sized by taking into account an inert material size greater than 0.2 mm and a retention time of at least 4 minutes

**TECHNICAL DETAILS**

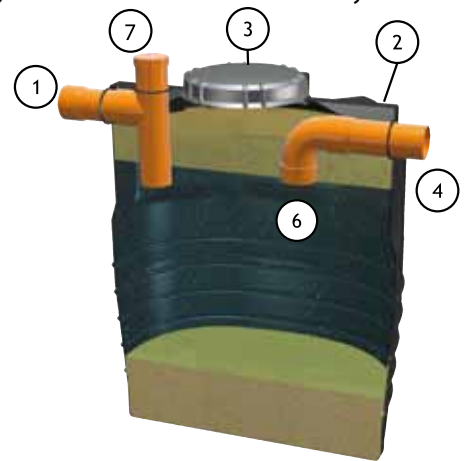
Sand separator built of recyclable PE (linear polyethylene), composed of a monobloc compartment (mod. ECO SED) or a modular one (mod. ECO DEO). The product is equipped with a relief valve, one or more manhole covers for the inspection of the inlet pipe and a manhole cover for the removal of sand. It has inlet and outlet pipes equipped with appropriate double rubber lip gaskets, to guarantee a perfect tightness.

**REGULAR MAINTENANCE**

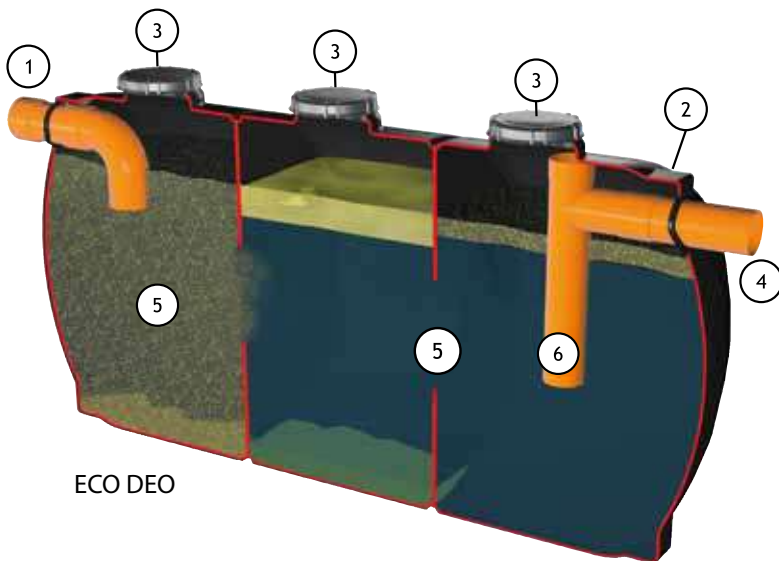
Unless specifically indicated by the competent authority, the tank should normally be cleaned one to four times a year.

**SAND SEPARATORS - Range and Dimensions**

ITEM	CAPACITY (litres)		SURFACE (m <sup>2</sup> ) Flow Coef.70 mm/h	SURFACE (m <sup>2</sup> ) Flow Coef.20 mm/h	FLOW (l/sec.)	DIMENSIONS (cm)					ø IN/OUT (mm)
	Overflow	TOTALE				L	P	H	hi	hu	
ECO SED 1500	1243	1360	250	870	4,86	117	117	150	125	121	125
ECO SED 2000	2104	2265	400	1400	7,78	136	136	182	158	154	125
ECO SED 3000	2923	3107	550	1650	10,69	146	146	219	192	188	125
ECO SED 4000	3800	4200	750	2250	14,58	165	165	224	192	188	160
ECO SED 5000	4705	5110	900	3150	17,50	184	184	229	197	193	160
ECO SED 6000	5575	5993	1000	3500	19,44	185	185	257	224	220	160



ECO SED



ECO DEO

**LEGEND**

- 1 - INLET OF WASTEWATER
- 2 - BIOGAS VENT
- 3 - INSPECTION & SAMPLING MANHOLE
- 4 - EXIT OF TREATED WATER
- 5 - SEPARATION AREA
- 6 - CLARIFIED WATER AREA

**SAND SEPARATORS - Range and Dimensions**

ITEM	CAPACITY (litres)	SURFACE (m <sup>2</sup> ) Flow Coef.70 mm/h	SURFACE (m <sup>2</sup> ) Flow Coef.20 mm/h	FLOW (l/sec.)	L (cm)	P (cm)	H (cm)	ø IN/OUT (mm)	Manholes ø 550
ECO DEO 7000	7200	1200	<b>4200</b>	23,33	225	238	243	250	2
ECO DEO 8500	8500	1500	<b>5200</b>	29,17	225	279	243	250	2
ECO DEO 10000	10000	2000	<b>7000</b>	38,89	225	320	243	315	2
ECO DEO 15000	15000	2700	<b>9500</b>	52,50	225	452	243	315	3
ECO DEO 20000	20000	3500	<b>12200</b>	68,06	225	584	243	315	4
ECO DEO 25000	25000	4300	<b>15000</b>	83,61	225	716	243	315	5
ECO DEO 30000	30000	5200	<b>18200</b>	97,22	225	848	243	315	6
ECO DEO 40000	40000	6800	<b>23800</b>	132,22	238	979	255	400	4
ECO DEO 50000	50000	8400	<b>29400</b>	145,83	238	12150	255	400	5



The **TELCOM oil separators**, made of polyethylene, a completely recyclable material, are to be used when it is necessary to provide separation of mineral oils (not emulsified), not soluble in water, present in water coming from the run-off of squares, before the delivery to the public sewerage system or to the receiving body indicated by the Competent Authority.

Their operating principle is based on the use of stilling tanks equipped with an internal compartment, in which it is possible for the oils to float according to the physical mechanisms of liquid gravimetric separation; the separated substances remain trapped in the internal compartment, while the purified effluents pass to the main basin.

The **ECO DEO** models are oil separators which in EN 858/1 and 858/2 are defined as CLASS II -Gravity separators-.

The **ECO DEO/C** models are equipped with reed valve pack to induce the coalescence process which means "union of more droplets in a single drop".

The **ECO DEO/CF** models are equipped, in addition to the reed valve, also with a polyurethane foam filter for further separation.

These products in UNI EN 858/1 and 858/2 are defined as CLASS I -Coalescent separators- and allow to obtain a higher yield at the same volume. They are recommended in cases where there are particularly restrictive limits.

*Novelty*

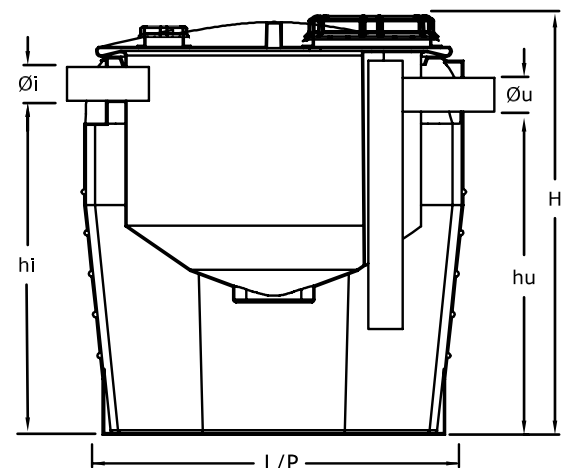


CL 140 turret  
 for manhole maintenance



**LEGEND**

- 1 - INLET OF WASTEWATER
- 2 - BIOGAS VENT
- 3 - INSPECTION & SAMPLING MANHOLE  $\varnothing$  420
- 4 - EXIT OF TREATED WATER
- 5 - SEPARATION AREA
- 6 - CLARIFIED WATER AREA
- 7 - STIFFENING RIBS
- 8 - INLET MANHOLE  $\varnothing$  140
- 9 - REED BLOCK
- 10 - MAINTENANCE MANHOLE (ECO DEO/CF)
- 11 - POLYURETHANE FOAM FILTER



**TECHNICAL NOTE**

For the treatment of water coming from the run-off of large squares the correct installation always requires the presence of a sand trap upstream of the oil separator.

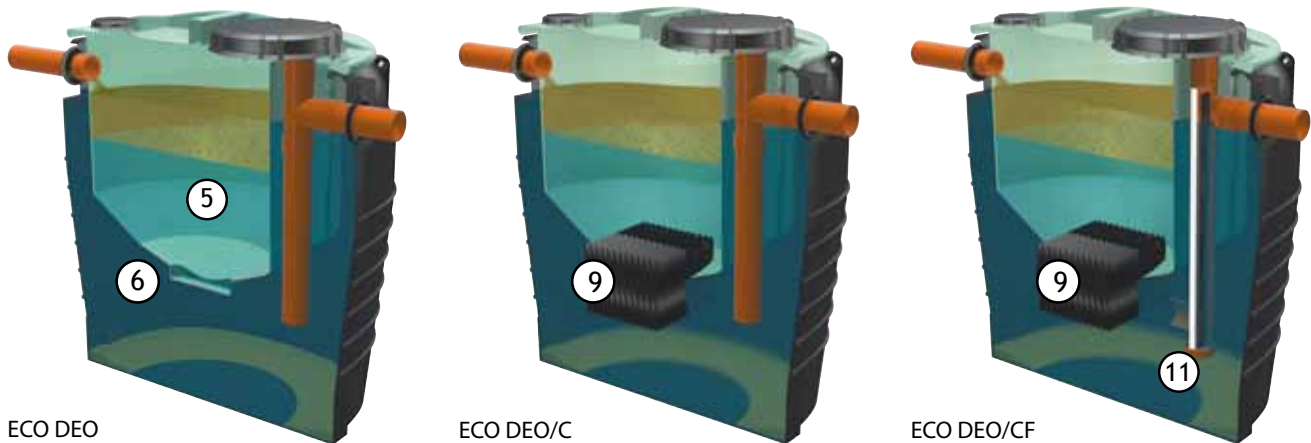
**(See plants in continuous on pag. 102)**

Considering how many variables are involved during a rainy event (intensity and duration of the phenomenon, characteristics of the draining surface, characteristics of the drainage network, hydrocarbons of various different origin and nature), **TELCOM** warns never to disregard an accurate analysis of the areas to be treated and the pluviometric model of the place.

**The oil separators must be chosen according to the average flow rate considering a maximum rainfall coefficient.**

For the treatment of the water coming from the run-off of large squares the **correct installation** always requires the presence of a **sand trap upstream of the oil separator**.

Choosing larger volumes will make it possible to use less frequently the maintenance and extraction of separate oils. This is all truer of **covered squares** therefore no estimated flow rate is available, as the run-off is often linked to the manner and frequency of cleaning of such surfaces.



ECO DEO

ECO DEO/C

ECO DEO/CF

**OIL SEPARATORS - RANGE AND DIMENSIONS**

ITEM	PIAZZALE (m <sup>2</sup> )	FLOW RATE (l/sec.)	Volumetry at overflow (litres)			Dimensions (cm)					ø tubi (mm)	Surfaces (m <sup>2</sup> )	
			Total	Sediment. Oils	Total Oils	L	P	H	hi	hu		Separat. sediment.	Total
ECO DEO 5 NEW ECO DEO 5/C NEW ECO DEO 5/CF NEW	130	2,44	690	250	550	107	107	111	86	84	100	0,6	0,9
ECO DEO 7 NEW ECO DEO 7/C NEW ECO DEO 7/CF NEW	180	3,33	910	250	750	117	117	121	91	88	125	0,71	1,07
ECO DEO 11 NEW ECO DEO 11/C NEW ECO DEO 11/CF NEW	300	5,68	1500	400	1280	136	136	150	117	114	125	0,87	1,45
ECO DEO 17 NEW ECO DEO 17/C NEW ECO DEO 17/CF NEW	430	8,88	2250	600	2000	146	146	187	151	147	125	0,98	1,67
ECO DEO 22 NEW ECO DEO 22C NEW ECO DEO 22/CF NEW	570	11,77	3000	800	2650	165	165	189	155	152	160	1,09	2,14
ECO DEO 28 NEW ECO DEO 28/C NEW ECO DEO 28/CF NEW	700	14,88	3750	1000	3350	184	184	199	159	155	160	1,63	2,66
ECO DEO 33 NEW ECO DEO 33/C NEW ECO DEO 33/CF NEW	950	18,22	4500	1200	4100	185	185	221	183	180	160	1,63	2,69

For the flow rate calculation, an average hourly intensity coefficient of 70 mm/h was considered.  
The oil separators allow a retention time of at least 4 minutes.

**SAND SEPARATORS - OIL SEPARATORS IN CONTINUOUS:** Telcom S.p.A. provides for a process of sand and oil separation as a “continuous treatment” of meteoric water “for draining surfaces intended only for transit, parking or stationing of vehicles, and for the handling and storage of non-hazardous materials”. The operation of Telcom sand-oil separators is based on physical processes based on the reduction of the reflux rate. In fact, guaranteeing a stillness area, being characterized by a specific weight different from that of the water, under the action of the force of gravity, the present substances rise by floating or sediment on the bottom.



**DENOMINATIONS**

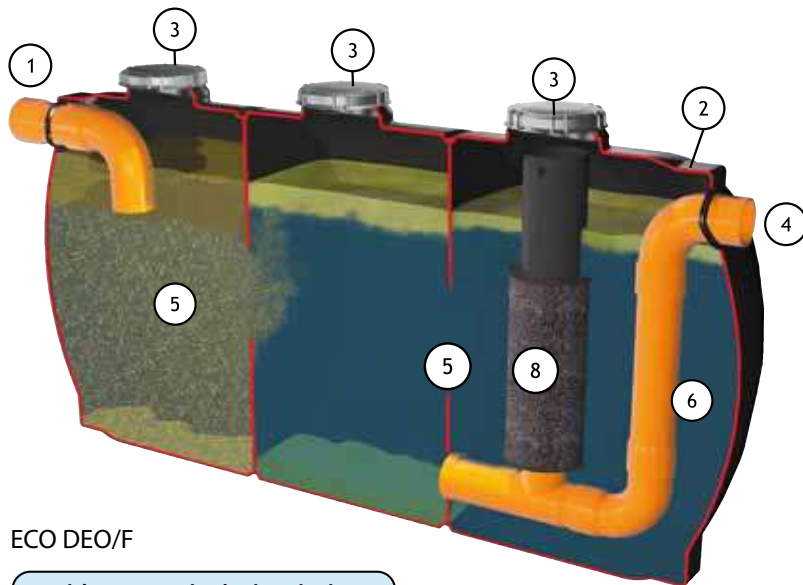
- 1 - INLET OF WASTEWATER
- 2 - BIOGAS VENT
- 3 - INSPECTION & SAMPLING MANHOLE  $\varnothing$  420
- 4 - EXIT OF TREATED WATER
- 5 - SEPARATION AREA
- 6 - CLARIFIED WATER AREA
- 7 - STIFFENING RIBS
- 8 - MANHOLE ENTRY  $\varnothing$  140
- 9 - REED BLOCK
- 10 - MANHOLE FOR MAINTENANCE (ECO DEO/CF)
- 11 - POLYURETHANE FOAM FILTER



**EROSION RAINWATERS TREATMENT PLANTS IN CONTINUOUS (Separate units)**

ITEM	RECEIVER	SURFACE (m <sup>2</sup> ) Port.70 mm/h	SURFACE (m <sup>2</sup> ) Port.20 mm/h	Flow rate (l/sec.)	SAND SEPARATOR		OIL SEPARATOR		VOLUME TOT.	$\varnothing$ IN/OUT (mm)
					Model	Volume (litres)	Model	Volume (litres)		
ECO IC 300/C	Pubblica Fognatura Acque Superficiali	300	1000	5,83	ECO SED 1500	1360	ECO DEO 7/C NEW	910	2270	125
ECO IC 300/CF	Suolo						ECO DEO 7/CF NEW			
ECO IC 500/C	Pubblica Fognatura Acque Superficiali	500	1700	9,72	ECO SED 2000	2265	ECO DEO 11/C NEW	1500	3765	125
ECO IC 500/CF	Suolo						ECO DEO 11/CF NEW			
ECO IC 700/C	Pubblica Fognatura Acque Superficiali	700	2400	13,61	ECO SED 3000	3107	ECO DEO 17/C NEW	2250	5357	125
ECO IC 700/CF	Suolo						ECO DEO 17/CF NEW			
ECO IC 1000/C	Pubblica Fognatura Acque Superficiali	1000	3500	19,44	ECO SED 4000	4200	ECO DEO 22/C NEW	3000	7200	160
ECO IC 1000/CF	Suolo						ECO DEO 22/CF NEW			
ECO IC 1200/C	Pubblica Fognatura Acque Superficiali	1200	4200	23,33	ECO SED 5000	5110	ECO DEO 28/C NEW	3750	8860	160
ECO IC 1200/CF	Suolo						ECO DEO 28/CF NEW			

**SAND SEPARATORS - OIL SEPARATORS IN CONTINUOUS:** Telcom S.p.A. provides for a process of sand and oil separation as a "continuous treatment" of meteoric water "for draining surfaces intended only for transit, parking or stationing of vehicles, and for the handling and storage of non-hazardous materials". The operation of Telcom sand-oil separators is based on physical processes based on the reduction of the reflux rate. In fact, guaranteeing a stillness area, being characterized by a specific weight different from that of the water, under the action of the force of gravity, the present substances rise by floating or sediment on the bottom. This process is favored by the compartmentalization of the manufactured products; in fact, the accumulation of oils and sedimentable substances takes place in the first compartment, while in the subsequent compartments there is a progressive and always greater clarification of the wastewater.



ECO DEO/F

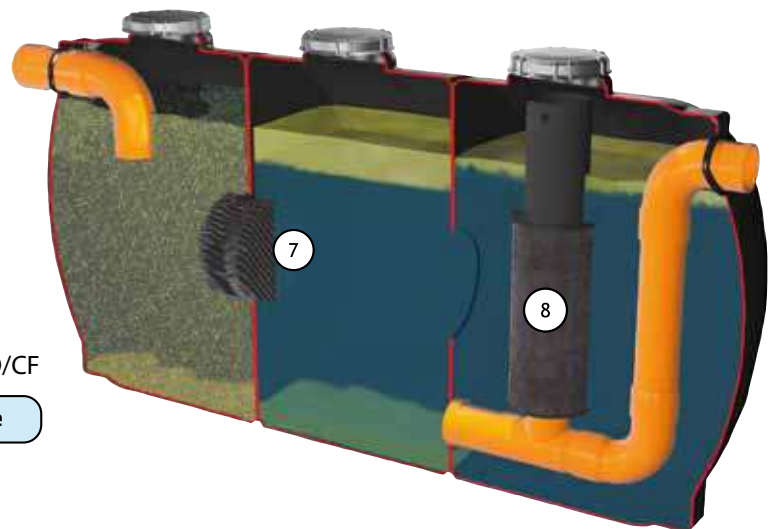
with automatic closing device

**LEGEND**

- 1 - INLET OF WASTEWATER
- 2 - BIOGAS VENT
- 3 - INSPECTION & SAMPLING MANHOLE
- 4 - EXIT OF TREATED WATER
- 5 - SEPARATION AREA
- 6 - CLARIFIED WATER AREA
- 7 - REED BLOCK
- 8 - POLYURETHANE FOAM FILTER

**REED BLOCK**

Technical specifications:  
Dimensions [mm]: 500x500x300  
Exchange surface: 240 m<sup>2</sup>/m<sup>3</sup>



ECO DEO/CF

with automatic closing device

The drawings on this page refer to the 15,000 litres model, are purely indicative and for the sole purpose of illustrating the operation of the product.

- The **ECODEO/F** models are equipped with a polyurethane foam filter for further separation. These products in UNI EN 858/1 and 858/2 are defined as CLASS I - Coalescent separators - and allow to obtain a higher yield at the same volume. They are equipped with a closing device to prevent accidental spillage of oils.
- The **ECODEO/CF** models are equipped with a polyurethane foam filter for further separation. These products in UNI EN 858/1 and 858/2 are defined as CLASS I - Coalescent separators - and allow to obtain a higher yield at the same volume. They are recommended in cases with particularly restrictive limits and are equipped with a closing device to prevent accidental spillage of oils.

**PRODUCT SELECTION:** Considering how many variables are involved during a rainy event (intensity and duration of the phenomenon, characteristics of the drainage surface, drainage network, types of hydrocarbons of different origin and nature) TELCOM advises never to disregard an accurate analysis of the areas to be treated and of the **place's pluviometric model**. The oil separators must be chosen according to the average flow rate considering a maximum precipitation coefficient.

Recommending that you always submit the technical solution to the competent authority for a positive opinion, TELCOM recommends:

- mod. ECO DEO/F for discharge into sewer and surface water;

- mod. ECO DEO/CF for discharge on the soil.



### EROSION RAINWATERS TREATMENT PLANTS IN CONTINUOUS (Single unit)

ITEM	RECEIVER	CAPACITY (litres)	SURFACE (m <sup>2</sup> ) Port.70 mm/h	SURFACE (m <sup>2</sup> ) Port.20 mm/h	FLOW RATE (l/sec.)	L (cm)	P (cm)	H (cm)	∅ IN/OUT (mm)	H IN (cm)	H OUT (cm)	Manholes ∅ 550
ECO DEO 8500/F	Pubblica Fognatura Acque Superficiali	8500	1500	<b>5200</b>	29,17	225	279	243	250	189	185	2
ECO DEO 8500/CF	Suolo											
ECO DEO 10000/F	Pubblica Fognatura Acque Superficiali	10000	2000	<b>7000</b>	38,89	225	320	243	315	185	181	2
ECO DEO 10000/CF	Suolo											
ECO DEO 15000/F	Pubblica Fognatura Acque Superficiali	15000	2700	<b>9500</b>	52,50	225	452	243	315	185	181	3
ECO DEO 15000/CF	Suolo											
ECO DEO 20000/F	Pubblica Fognatura Acque Superficiali	20000	3500	<b>12200</b>	68,06	225	584	243	315	185	181	4
ECO DEO 20000/CF	Suolo											
ECO DEO 25000/F	Pubblica Fognatura Acque Superficiali	25000	4300	<b>15000</b>	83,61	225	716	243	315	185	181	5
ECO DEO 25000/CF	Suolo											
ECO DEO 30000/F	Pubblica Fognatura Acque Superficiali	30000	5000	<b>18200</b>	97,22	225	848	243	315	185	181	6
ECO DEO 30000/CF	Suolo											
ECO DEO 40000/F*	Pubblica Fognatura Acque Superficiali	40000	6800	<b>23800</b>	132,22	238	979	255	400	-	-	4
ECO DEO 40000/CF*	Suolo											
ECO DEO 50000/F*	Pubblica Fognatura Acque Superficiali	50000	7500	<b>29400</b>	145,83	238	12150	255	400	-	-	5
ECO DEO 50000/CF*	Suolo											

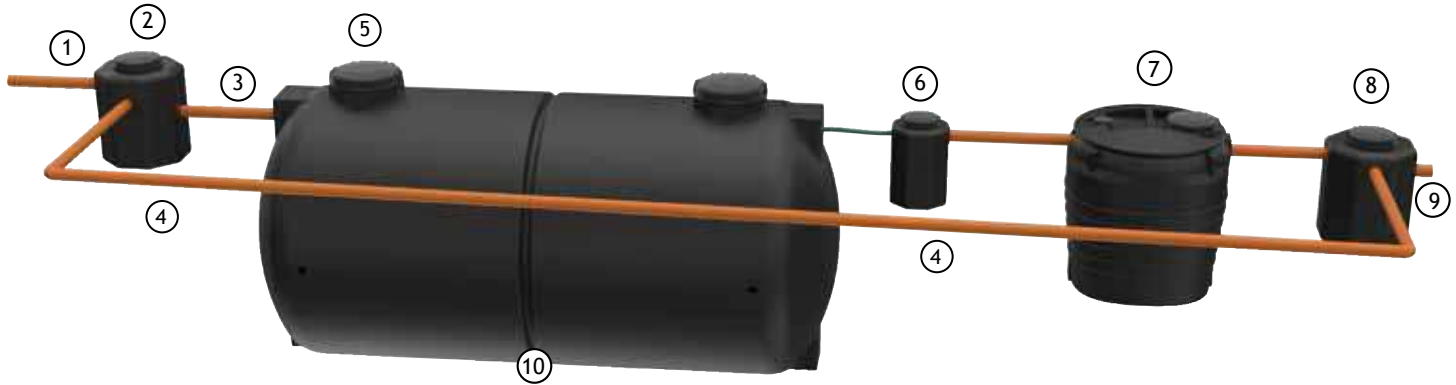
\* Dotato di doppio filtro a coalescenza e doppio dispositivo di chiusura automatico

Note: Retention time guaranteed for at least 4 minutes

The choice of larger volumes will allow the user to use less frequently the maintenance and extraction of the separated oils. This consideration applies even more to covered squares for which there is no estimated flow rate, as the run-off is often linked to the mode and frequency.



The **EARLYRAINING PLANTS** are suitable in cases where the current legislation provides for the separation and accumulation of rainwater from run-off of squares or watertight surfaces.  
The plants consist of the following elements:



**LEGEND**

- |  |                         |
|--|-------------------------|
| 1 - ENTRY OF RAIN WATER                        | 6 - STILLNESS WELL      |
| 2 - SPILLWAY MANHOLE EQUIPPED WITH RAIN SENSOR | 7 - OIL SEPARATION UNIT |
| 3 - INLET FOR FIRST RAIN ACCUMULATED WATERS    | 8 - DERIVATION WELL     |
| 4 - BY-PASS PLANT                              | 9 - PLANT'S EXIT        |
| 5 - INSPECTION & SAMPLING MANHOLE              | 10 - ACCUMULATION       |

- **Spillway well:** in which the first rain water sent to the accumulation tank is separated from the subsequent ones that are sent to the receptor body through the by-pass piping.

- **Accumulation tank:** where the first rain water is collected and treated 48\* hours after the end of the last meteoric event. For the sizing of the first rain tank, were considered the first 5 mm of rain that fall on the equivalent draining waterproof surface.

*\*The time after which the first rain water must be disposed of varies depending on the Regional regulations, so it can be adjusted by a special timer.*

- **Oil separator:** in which the emulsified oils are separated. Without prejudice to always submitting the technical solution to the competent authority, in order to receive a positive opinion, TELCOM recommends:

- mod. **ECO DEO/C** for the discharge in Public sewage and Surface waters;
- mod. **ECO DEO/CF** for the discharge on the soil.

*The automatism of the systems are controlled by an electric panel, included in the supply.*

**TELCOM recommends to never disregard an accurate analysis of the areas to be treated and the pluviometric model of the place** in view of the many variables involved in a rainy event - intensity and duration, characteristics of the drainage surface and drainage network, types of hydrocarbons of different origin and nature.

*We recommend you to contact our Technical Department in cases where:*

- in addition to the oil separation treatment, it would be necessary to also have a sand separation treatment or the removal of particular pollutants with pressure filtration treatments or chemical-physical treatments;
- the competent authority requires the treatment of water subsequent to those of first rain.

**PLANTS FOR WATERS FROM EARLY RAINING**

ITEM	RECEIVER BODY	SURFACE PIAZZALE (m <sup>2</sup> ) (1)	TUBES ø IN/OUT (mm) (3)	Pos. spillway or derivation		WATER ACCUMULATION 1st RAIN		OIL SEPARATOR (4)	OVERALL DIMENSIONS (2)
				Capacity (litres)	Dimensions (cm)	Capacity (litres)	Dimensions (cm)		
ECO IPP 400/C	Pubblica Fognatura Acque Superficiali	400	125	100	L48xP48xH75	2000	L136xP155xH144	ECO DEO 5/C NEW	L136xP406xH144
ECO IPP 400/CF	Suolo							ECO DEO 5/CF NEW	
ECO IPP 600/C	Pubblica Fognatura Acque Superficiali	600	125	100	L48xP48xH75	3000	L160xP185xH166	ECO DEO 5/C NEW	L160xP436xH166
ECO IPP 600/CF	Suolo							ECO DEO 5/CF NEW	
ECO IPP 1000/C	Pubblica Fognatura Acque Superficiali	1000	160	100	L48xP48xH75	5000	L184xP184xH229	ECO DEO 7/C NEW	L178xP512xH186
ECO IPP 1000/CF	Suolo							ECO DEO 7/CF NEW	
ECO IPP 1500/C	Pubblica Fognatura Acque Superficiali	1500	200	100	L48xP48xH75	7500	L189xP318xH201	ECO DEO 7/C NEW	L189xP598xH201
ECO IPP 1500/CF	Suolo							ECO DEO 7/CF NEW	
ECO IPP 2000/C	Pubblica Fognatura Acque Superficiali	2000	200	300	L73xP73xH82	10000	L238xP275xH255	ECO DEO 7/C NEW	L238xP660xH255
ECO IPP 2000/CF	Suolo							ECO DEO 7/CF NEW	
ECO IPP 3000/C	Pubblica Fognatura Acque Superficiali	3000	250	300	L73xP73xH82	15000	L238xP390xH255	ECO DEO 11/C NEW	L238xP792xH255
ECO IPP 3000/CF	Suolo							ECO DEO 11/CF NEW	
ECO IPP 4000/C	Pubblica Fognatura Acque Superficiali	4000	250	300	L73xP73xH82	20000	L238xP508xH255	ECO DEO 17/C NEW	L238xP924xH255
ECO IPP 4000/CF	Suolo							ECO DEO 17/CF NEW	
ECO IPP 5000/C	Pubblica Fognatura Acque Superficiali	5000	315	500	L68xP87xH116	25000	L238xP627xH255	ECO DEO 17/C NEW	L238xP1084xH255
ECO IPP 5000/CF	Suolo							ECO DEO 17/CF NEW	
ECO IPP 6000/C	Pubblica Fognatura Acque Superficiali	6000	315	500	L68xP87xH116	30000	L238xP743xH255	ECO DEO 22/C NEW	L238xP1235xH255
ECO IPP 6000/CF	Suolo							ECO DEO 22/CF NEW	
ECO IPP 7000/C	Pubblica Fognatura Acque Superficiali	7000	315	500	L68xP87xH116	35000	L238xP862xH255	ECO DEO 22/C NEW	L238xP1357xH255
ECO IPP 7000/CF	Suolo							ECO DEO 22/CF NEW	
ECO IPP 8000/C	Pubblica Fognatura Acque Superficiali	8000	315	500	L68xP87xH116	40000	L238xP979xH255	ECO DEO 22/C NEW	L238xP1478xH255
ECO IPP 8000/CF	Suolo							ECO DEO 22/CF NEW	
ECO IPP 9000/C	Pubblica Fognatura Acque Superficiali	9000	315	500	L68xP87xH116	45000	L238xP1098xH255	ECO DEO 22/C NEW	L238xP1611xH255
ECO IPP 9000/CF	Suolo							ECO DEO 22/CF NEW	
ECO IPP 10000/C	Pubblica Fognatura Acque Superficiali	10000	315	500	L68xP87xH116	50000	L238xP1215xH255	ECO DEO 22/C NEW	L238xP1741xH255
ECO IPP 10000/CF	Suolo							ECO DEO 22/CF NEW	

(1) Extension assessed by assuming an inflow coefficient of 1 (corresponding to watertight draining surfaces).

(2) The overall dimensions refer to the sum of the dimensions of the individual items.

The dimensions of the excavation will be determined during the installation taking into account the spaces between various items and the positioning that you decide to give them. For the correct earthwork conditions please refer to the instructions in the Technical Manual.

(3) Check the suitability of the pipe diameter to the intended flow rate.

(4) In order to reduce the frequency of cleaning the oil separator, Telcom S.p.A. remains available for sizing a larger volume oil separator.

Note: For larger surfaces please contact our Technical Office or our Sales Network.



## **TREATMENT OF WASTE WATERS RESULTING FROM CARWASH UNITS**

## WASTE WATERS FROM CARWASH UNITS

- The car wash provides for the exclusive treatment of the external bodywork with a mandatory ban on washing of the engine compartment;
- It is advisable to provide one or more settling wells immediately after the grated drains for the collection of washing water;
- the data provided, which are the precondition of the sizing operation, must be true;
- the assumed design data are identical to the actual situation;
- the parameters of the water inlet are within the ranges indicated in the accompanying technical manual;
- installation and maintenance are carried out correctly according to the attached technical manual;
- no bactericides, ammonia, chlorine or any product harmful to the bacterial flora that may compromise its purification action are introduced into the plant;
- no rainwater is conveyed to the plant;
- no coarse solids are introduced into the plant which could damage parts of the plant or cause obstructions;
- the parameters of the incoming metals are already in compliance with current legislation.

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### REGULATORY FRAMEWORK OF REFERENCE

- Legislative Decree n°. 152/06 and s.m.i.
- EEC Directive n°. 91/271 from 21.05.91
- ARPA guidelines of various regions

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### NOTES TO THE INSTALLER

The installation of the products will be carried out in such a way as to ensure the periodic extraction of the material present on the surface and sedimented. The location must be outside the buildings and at least 1 m away from the foundation walls. For the earthworks of the product, please carefully follow the instructions in the accompanying manual.



## DESCRIPTION OF THE PROCESS

The TELCOM purification plant for water from car washes includes the following treatment phases:

- 1. SAND SEPARATION PHASE:** sand separator with vertical flow in which gravimetric separation of sedimentable solids is carried out.
- 2. OIL SEPARATION PHASE:** oil separator whose operation is based on the use of stilling basins with an internal compartment in which the separate substances remain trapped. The de-oiler is equipped with a lamellar bundle filter to induce the coalescence process.
- 3. PHASE OF BIOLOGICAL TREATMENT WITH BIOFILM:** Forced Aeration Percolator Filter whose working principle is essentially based on the biological oxidation process with biofilm. Inside these percolator filters are special high specific surface filling bodies on which the aerobic type bacterial flora has the possibility remain and trigger the purification process guaranteed by the oxidative action of the air injected into the wastewater through a system consisting of a blowing pump and diffusers.
- 4. CLARIFICATION PHASE:** clarification tank equipped with an internal compartment to ensure clarification of the wastewater.
- 5. INSPECTION PHASE:** Inspection well for wastewater collection. According to the depurative requirements and the type of the drain, it is planned to install a group of refinement under pressure described below.
- 6. REFINING UNIT Mod. GDA S:** stainless steel electric pump - PVC-PN10 and galvanized pipes for loading and unloading the filter - Activated Carbon Filter (290-430 litres) entirely made of hot-dip galvanized sheet metal and painted with epoxy powders, complete with valves and fittings - Manual backwash system of the filtering columns - Pallettable base made of hot galvanized sheet metal and painted with epoxy powders - Flow meter and regulator valve - Electric control panel, protection and control. Voltage: 220 V single-phase - Installed power: 1,0 kW.
- 6. REFINING UNIT Mod. GDA SCA:** stainless steel electric pump - PVC-PN10 and galvanized pipes for loading and unloading the filter - Quartz Sand Filter and Activated Carbon Filter ( 2 x 290-430 litres) entirely made of hot-dip galvanized sheet metal and painted with epoxy powders, complete with valves and fittings - Manual backwash system of the filtering columns - Pallettable base made of hot galvanized sheet metal and painted with epoxy powders - Flow meter and regulator valve - Electric control panel, protection and control. Voltage: 220 V single-phase - Installed power: 1,5 kW.

**ECO WASH**

ITEM	Hourly flow rate [litres/h]	Daily n° of cars	RECEIVER	TOTAL VOLUME [litres]	Refining unit (put of the soil)	Ø IN/OUT
ECO WASH 100	100	10	Public sewage	5130	-	125
ECO WASH AS 100			Surface Waters		GDA S	
ECO WASH SR 100			Soil - Reuse		GDA SCA	
ECO WASH 300	300	30	Public sewage	8125	-	125
ECO WASH AS 300			Surface Waters		GDA S	
ECO WASH SR 300			Soil - Reuse		GDA SCA	
ECO WASH 600	600	60	Public sewage	11715	-	125
ECO WASH AS 600			Surface Waters		GDA S	
ECO WASH SR 600			Soil - Reuse		GDA SCA	
ECO WASH 1200	1200	120	Public sewage	16060	-	125
ECO WASH AS 1200			Surface Waters		GDA S	
ECO WASH SR 1200			Soil - Reuse		GDA SCA	
ECO WASH 2000	2000	200	Public sewage	21893	-	160
ECO WASH AS 2000			Surface Waters		GDA S	
ECO WASH SR 2000			Soil - Reuse		GDA SCA	

*For the correct earthing conditions see the instructions contained in the Technical Manual.  
 Also available for external installation (with prior authorization by the competent entity).*

**STANDARD COMPOSITION**



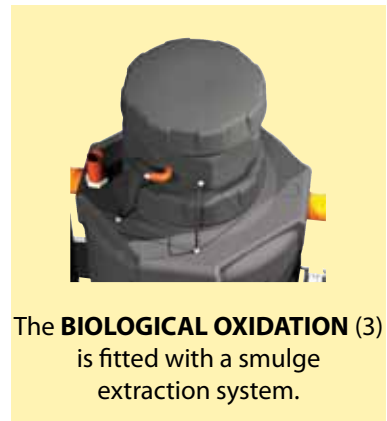
ITEM	SAND SEPARATOR		OIL SEPARATOR		PERCOLATOR FILTER FORCED VENTILATION		CLARIFICATION BASIN		INSPECTION WELL	
	Mod.	Vol.(lit.)	Mod.	Vol.(lit.)	Mod.	Vol.(lit.)	Mod.	Vol.(lit.)	Mod.	Vol.(lit.)
ECO WASH 100	ECOVSV 1500	1360	ECODEO 11/C	1500	ECOFAE 1500 PLUS	1360	ECOIMO 6F	910	POZ 300 G.I.	300
ECO WASH 300	ECOVSV 2000	2265	ECODEO 17/C	2250	ECOFAE 1500 PLUS	1360	ECOIMO 15F	2250	POZ 300 G.I.	300
ECO WASH 600	ECOVSV 4000	4200	ECODEO 22/C	3000	ECOFAE 2000 PLUS	2265	ECOIMO 15F	2250	POZ 300 G.I.	300
ECO WASH 1200	ECOVSV 5000	5110	ECODEO 28/C	3750	ECOFAE 4000 PLUS	4200	ECOIMO 20F	3000	POZ 300 G.I.	300
ECO WASH 2000	ECOVBC 8000	8400	ECODEO 33/C	4500	ECOFAE 6000 PLUS	5993	ECOIMO 20F	3000	POZ 300 G.I.	300

Depuration plant for carwash units with installation out of the soil consisting of the following depurative deployment:

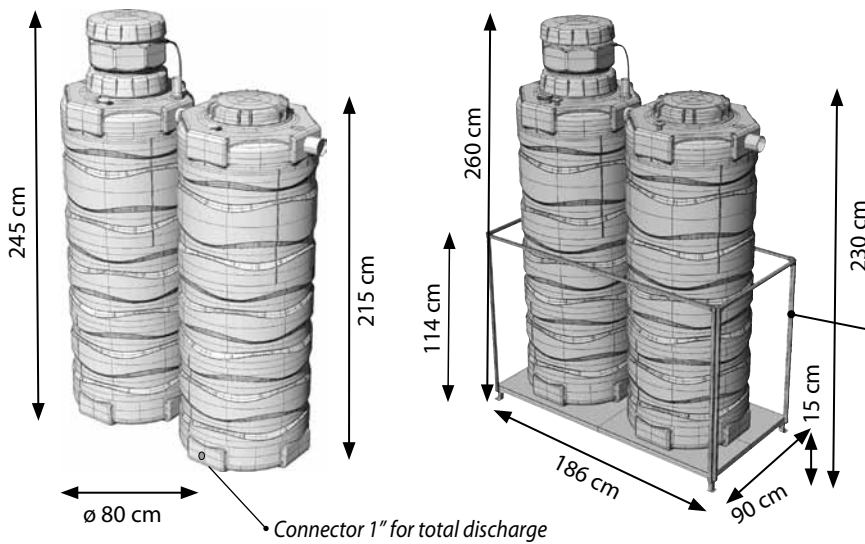


- 1 - SAND SEPARATION
- 2 - OIL SEPARATION
- 3 - BIOLOGICAL OXIDATION WITH SMUDGE EXTRACTION
- 4 - CLARIFICATION (with a 1" connector for total discharge)

The plant is equipped with a Diapheagm Blower and an Electric Panel.



The **BIOLOGICAL OXIDATION (3)** is fitted with a smudge extraction system.



The **ECO WASH FT SKID** model is supplied with a modular skid (consisting of two compartments L186xP90xH114) for accomodating articles, the plan has a 15 cm deviation so that it can be moved.

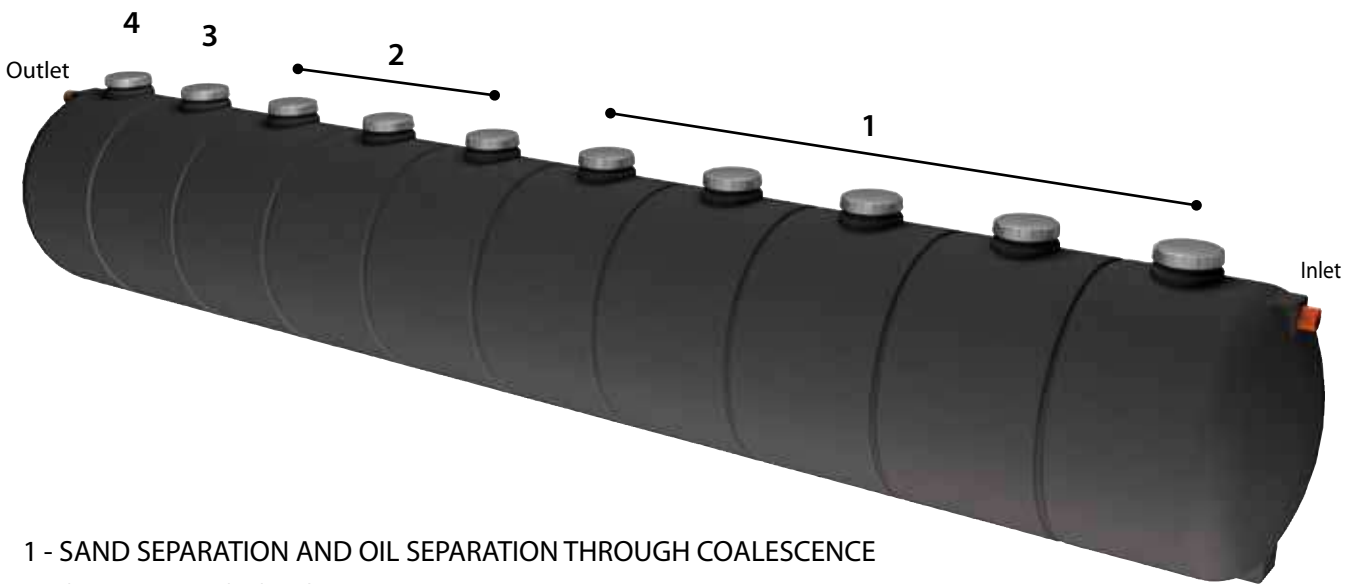
**ECO WASH FT**

ITEM	Hourly flowrate [litres/h]	Number of daily cars	RECEIVER	TOTAL VOLUME [litres]	REFINING UNIT (out of the soil)	ø IN	ø OUT	POWER Kw
ECO WASH FT	70	10*	Public sewage	4000	-	1"1/2	100	0,48
ECO WASH AS FT**			Surface waters		GDA S			
ECO WASH SR FT**			Soil - Reuse		GDA SCA			
ECO WASH FT SKID	70	10*	Public sewage	4000	-	1"1/2	100	0,48
ECO WASH AS FT SKID**			Surface waters		GDA S			
ECO WASH SR FT SKID**			Soil - Reuse		GDA SCA			

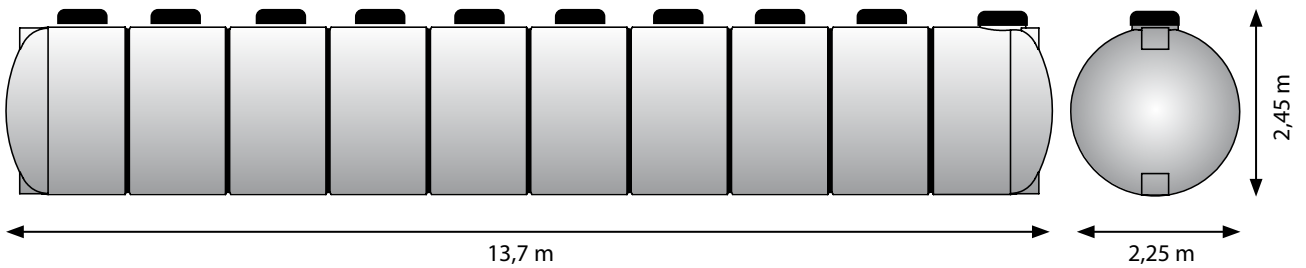
\* consumption dedicated to cars 70 litres

\*\* Relay well supplied on request

**MONOBLOCK multicompartment biological depuration plant built with PE modules appropriately organized to create the following compartments:**



- 1 - SAND SEPARATION AND OIL SEPARATION THROUGH COALESCENCE
- 2 - OXIDATIVE BIOLOGICAL TREATMENT  
**FITTED WITH SMUDGE EXTRACTION SYSTEM**
- 3 - CLARIFICATION
- 4 - SECONDARY OXIDATION



**ECO WASH 6000 (Monoblock)**

ITEM	Hourly flow rate [litres/h]	Daily n°. of cars	RECEIVER	TOTAL VOLUME [litres]	Overall max. dimensions*	Refining unit (put of the soil)	ø IN/OUT	POWER Kw
ECO WASH 6000	4000/6000	400/600	Public sewage	50000	13,76x2,25xH2,45	-	160	1,6
ECO WASH AS 6000			Surface Waters			GDA S		
ECO WASH SR 6000			Soil - Reuse			GDA SCA		





**ELETTRIC PANEL**

ITEM	DESCRIPTION
QE COM	For activating and timing the membrane compressor



**INLET COMPRESSOR for outdoors**

- Cod. **VANO COMP (VCM 550)**  
dimensioni [cm] L=68, P=68, H=60

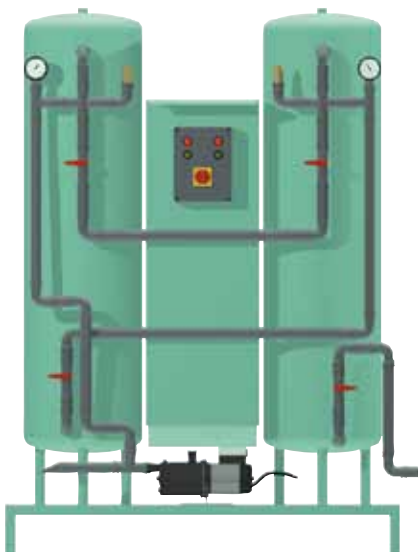
ITEM	DESCRIPTION
VCM 550	Inlet Compressor For Outdoors



**MIX for SURFACTANTS**

ITEM	DESCRIPTION
NOTENS	Surfactants molecule degrader (5 litres)

**REFINING UNIT**



**Mod. GDA S:** stainless steel electric pump - PVC-PN10 and galvanized filter loading and unloading pipes - Activated Carbon Filter (290-430 litres) entirely in hot galvanized metal sheet and epoxy-powder painted, complete with valves and fittings - Manual backwash system of the filtering columns - Pallettisable frame built of hot galvanized metal sheet and epoxy-powder painted - Flow meter and flow control valve - Electric control panel, protection and control. Voltage: 220 V single phase - Installed power: 1,0 kW.

**Mod. GDA SCA:** stainless steel electric pump - PVC-PN10 and galvanized filter loading and unloading pipes - Quartz Sand Filter and Activated Carbon Filter ( 2 x 290-430 litres) entirely in hot galvanized metal sheet and epoxy-powder painted, complete with valves and fittings - Manual backwash system of the filtering columns - Pallettisable frame built of hot galvanized metal sheet and epoxy-powder painted - Flow meter and flow control valve - Electric control panel, protection and control - Voltage: 220 V single phase - Installed power: 1,5 kW.





## ACCESSORIES

## LIFTING STATIONS

Lifting stations are units for sorting water that cannot be disposed of by gravity. They are suitable for the collection, lifting and subsequent delivery in sewerage or in a sewage treatment plant for rainwater or wastewater. The tanks are made of recyclable polyethylene, inside which are housed one or two pumps suitable for raising the collected water. The supplied pumps, suitable for continuous and heavy use, are recommended for the drainage of waste water, sewage, muddy, ground and surface waters; they are appropriate for lifting of liquids in which are present solid bodies in suspension with the dimension of up to 50 mm.

## TECHNICAL DETAILS

Lifting station in recyclable PE (linear polyethylene), consisting of a monobloc compartment, a manhole for inspection, maintenance and cleaning and n° ... centrifugal submersible electric pumps with vortex impeller, equipped with float for automatic operation. Each station is equipped with a hole with a double lip gasket for the inlet and a threaded connector for the outlet, respectively prepared for the connection of a PVC pipe and a supply pipe on which, on request, a check valve can be installed. The pumps are connected to a nylon wire to facilitate extraction operations. On the top of the lifting stations is installed a vent for the removal of biogas.

## PRODUCT SELECTION

The selection of lifting stations needs to be assisted by a specialized technician. The dimensioning shall be assessed on the basis of the amount of liquid to be lifted in the unit of time and the height to which it shall be carried, taking into account any localised and distributed load losses present on the delivery pipe.

## REGULAR MAINTENANCE

The maintenance of the lifting stations comes to a few simple operations:

- Carry out a regular cleaning of the tank to remove any solid residues;
- Periodically check seals to avoid leakages;
- For the maintenance of the pump please follow carefully the relevant attached manual.

## Systems with the capacity from 100 to 1000 litres

For larger capacity please contact Our Technical Office



100 SS



200 SS



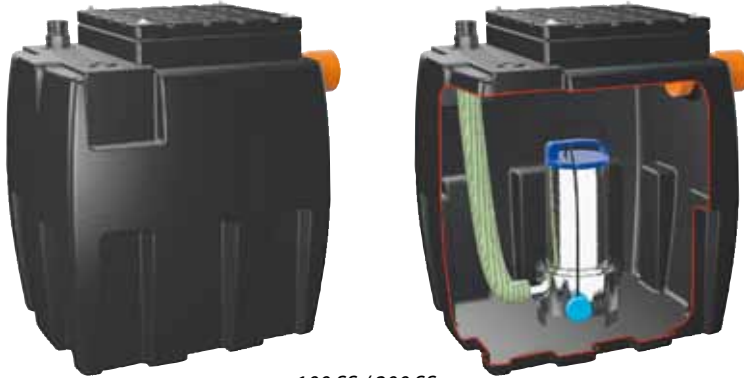
500 SS



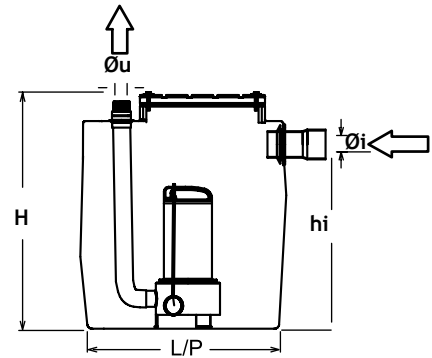
800 SS



1000 SS



100 SS / 200 SS



ITEM	VOLUME (lt)	Dimensions (cm)			Dimensions MANHOLE (mm)	Inlet		Outlet ø <sup>***</sup>	PUMP			Electric Panel (not included)
		H	L	P		ø <sup>i*</sup> (mm)	h <sup>i**</sup> (cm)		Pumps	Power		
								KW		HP		
100 ss 60	100	58	45	53	300x300	100	43	1" 1/2	N°1 for waste water	0,55	0,75	QE 1xM
200 ss 60	200	73	64	55	350x350	100	54	1" 1/2	N°1 for waste water	0,55	0,75	QE 1xM
200 ss 75	200	73	64	55	350x350	100	54	2"	N°1 for waste water	0,75	1	QE 1xM
200 ss TR	200	73	64	55	350x350	100	54	1" 1/2	N°1 GRINDER PUMP	1,1	1,5	QE 1xM

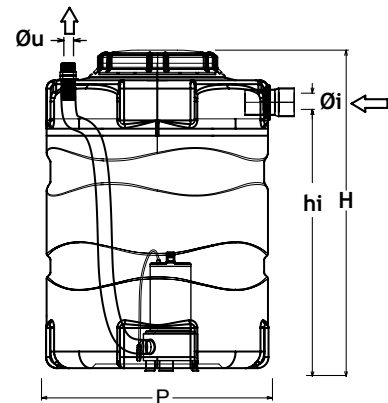
\* Hole with rubber gasket to allow connection of the inlet pipe.

\*\* Overflow height.

\*\*\* Threaded coupling for pipe coupling.



500 SS



ITEM	VOLUME (lt)	Dimensions (cm)		Dimensions CHIUSINO (mm)	Inlet		Outlet ø <sup>***</sup>	PYMP			Electric Panel (not included)
		H	ø		ø <sup>i*</sup> (mm)	h <sup>i**</sup> (cm)		Pumps	Power		
							KW		HP		
500 ss 60	500	110	80	420	100	92	1" 1/2	N°1 for waste water	0,55	0,75	QE 1xM
500 ss 2x60	500	110	80	420	100	92	1" 1/2	N°2 for waste water	2x0,55	2x0,75	QE 2xM
500 ss TR	500	110	80	420	100	92	1" 1/2	N°1 GRINDER PUMP	1,1	1,5	QE 1xM
500 ss 2xTR	500	110	80	420	100	92	1" 1/2	N°2 GRINDER PUMP	2x1,1	2x1,5	QE 2xM

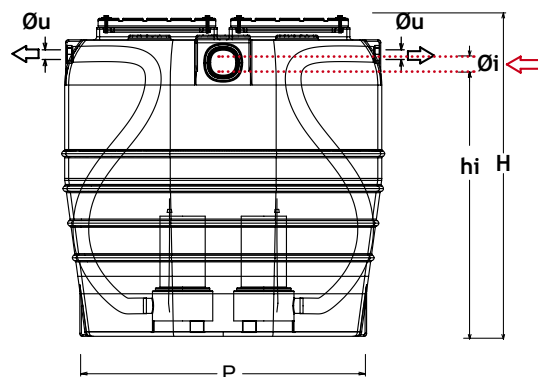
\* Hole with rubber gasket to allow connection of the inlet pipe.

\*\* Overflow height.

\*\*\* Threaded coupling for pipe coupling.



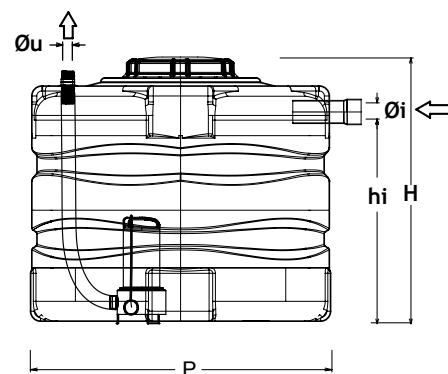
800 SS



ITEM	VOLUME (lt)	Dimensions (cm)		Dimensions MANHOLE (mm)	Inlet		Outlet	PUMP			Electric Panel (not included)
		H	Ø		Øi*(mm)	hi**(cm)		Øu***	Pumps	Power	
									KW	HP	
800 ss 2x60	830	103	107	2x(350x350)	100	86	1" 1/2	N°2 for waste water	2x0,55	2x0,75	QE 2xM
800 ss 2x75	830	103	107	2x(350x350)	100	86	2"	N°2 for waste water	2x0,75	2x1	QE 2xM
800 ss 2x110	830	103	107	2x(350x350)	100	86	2"	N°2 for waste water	2x1,1	2x1,5	QE 2xM
800 ss 2x150	830	103	107	2x(350x350)	100	86	2"	N°2 for waste water	2x1,5	2x2	QE 2xT
800 ss 2xTR	830	103	107	2x(350x350)	100	86	1" 1/2	N°2 GRINDER PUMP	2x1,1	2x1,5	QE 2xM



1000 SS



ITEM	VOLUME (lt)	Dimensions (cm)		Dimensions MANHOLE (mm)	Inlet		Outlet	PUMP			Electric Panel (not included)
		H	Ø		Øi*(mm)	hi**(cm)		Øu***	Pumps	Power	
									KW	HP	
1000 ss 60	1000	102	120	420	100	59	1" 1/2	N°1 for waste water	0,55	0,75	QE 1xM
1000 ss 75	1000	102	120	420	100	59	2"	N°1 for waste water	0,75	1	QE 1xM
1000 ss 2x60	1000	102	120	420	100	59	1" 1/2	N°2 for waste water	2x0,55	2x0,75	QE 2xM
1000 ss 2x75	1000	102	120	420	100	59	2"	N°2 for waste water	2x0,75	2x1	QE 2xM
1000 ss 110	1000	102	120	420	100	59	2"	N°1 for waste water	1,1	1,5	QE 1xM
1000 ss 150	1000	102	120	420	100	59	2"	N°1 for waste water	1,5	2	QE 1xT
1000 ss 2x110	1000	102	120	420	100	59	2"	N°2 for waste water	2x1,1	2x1,5	QE 2xM
1000 ss 2x150	1000	102	120	420	100	59	2"	N°2 for waste water	2x1,5	2x2	QE 2xT
1000 ss TR	1000	102	120	420	100	59	1" 1/2	N°1 GRINDER PUMP	1,1	1,5	QE 1xM
1000 ss 2xTR	1000	102	120	420	100	59	1" 1/2	N°2 GRINDER PUMP	2x1,1	2x1,5	QE 2xM

\* Hole with rubber gasket to allow connection of the inlet pipe.

\*\* Overflow height.

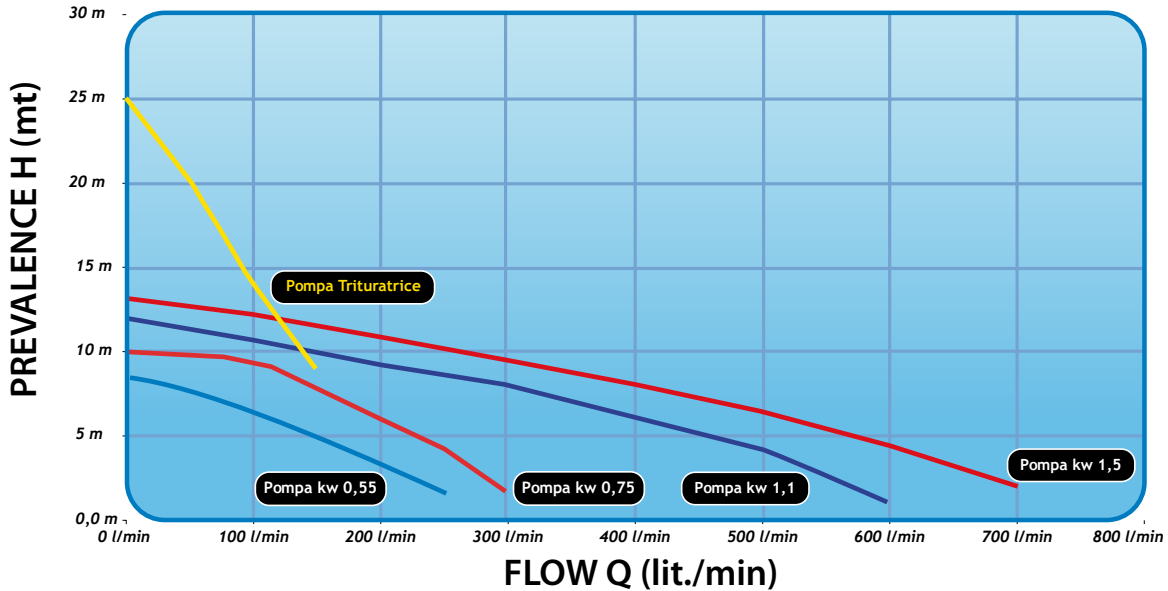
\*\*\* Threaded coupling for pipe coupling.

## CHARACTERISTICS OF THE PUMPS

### OPERATION LOGIC OF LIFTING STATIONS WITH 2 PUMPS

During normal operation the pumps are activated alternately at each start.  
Activation of an emergency float activates the rescue function by starting both pumps.

### PERFORMANCE CURVES with n = 2850 1/min



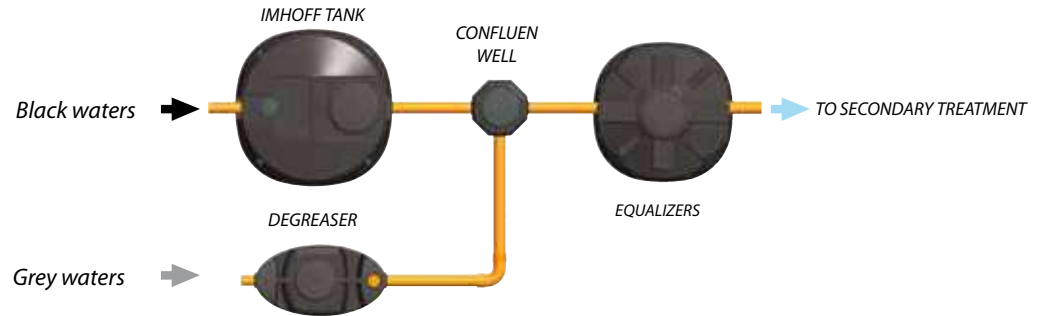
## ELECTRIC PUMPS (pumps for sewage water)

TYPE	Power		V	Performance data													
	kW	HP		0 l/min	80 l/min	100 l/min	150 l/min	175 l/min	200 l/min	225 l/min	260 l/min	300 l/min	350 l/min	400 l/min	450 l/min	500 l/min	600 l/min
Pump for sewage water	0,55	0,75	220	0 l/min	80 l/min	100 l/min	150 l/min	175 l/min	200 l/min	225 l/min	260 l/min						
				9,1 m	7,1 m	6,6 m	5,1 m	4,4 m	3,7 m	3,0 m	2,0 m						
Pump for sewage water	0,75	1	220	0 l/min	80 l/min	100 l/min	150 l/min	175 l/min	200 l/min	225 l/min	260 l/min	300 l/min	400 l/min				
				7,7 m	7,3 m	7,1 m	6,7 m	6,5 m	6,2 m	5,9 m	5,4 m	4,8 m	3,1 m				
Pump for sewage water	1,1	1,5	220	0 l/min	50 l/min	100 l/min	150 l/min	200 l/min	250 l/min	300 l/min	350 l/min	400 l/min	450 l/min	500 l/min			
				10,6 m	10,1 m	9,6 m	9,1 m	8,6 m	8,0 m	7,4 m	6,6 m	5,8 m	4,8 m	3,7 m			
Pump for sewage water	1,5	2	380	0 l/min	50 l/min	100 l/min	150 l/min	200 l/min	250 l/min	300 l/min	350 l/min	400 l/min	450 l/min	500 l/min	600 l/min		
				13,1 m	12,5 m	12,0 m	11,5 m	11,0 m	10,5 m	9,9 m	9,3 m	8,5 m	7,7 m	6,6 m	4,0 m		
Grinder pump	1,1	1,5	220	0 l/min	15 l/min	30 l/min	40 l/min	50 l/min	60 l/min	70 l/min	80 l/min	90 l/min	100 l/min	110 l/min			
				25,0 m	23,5 m	21,7 m	20,5 m	19,3 m	18,0 m	16,6 m	15,2 m	13,5 m	11,7 m	9,5 m			

## ACCESSORIES FOR LIFTING STATIONS

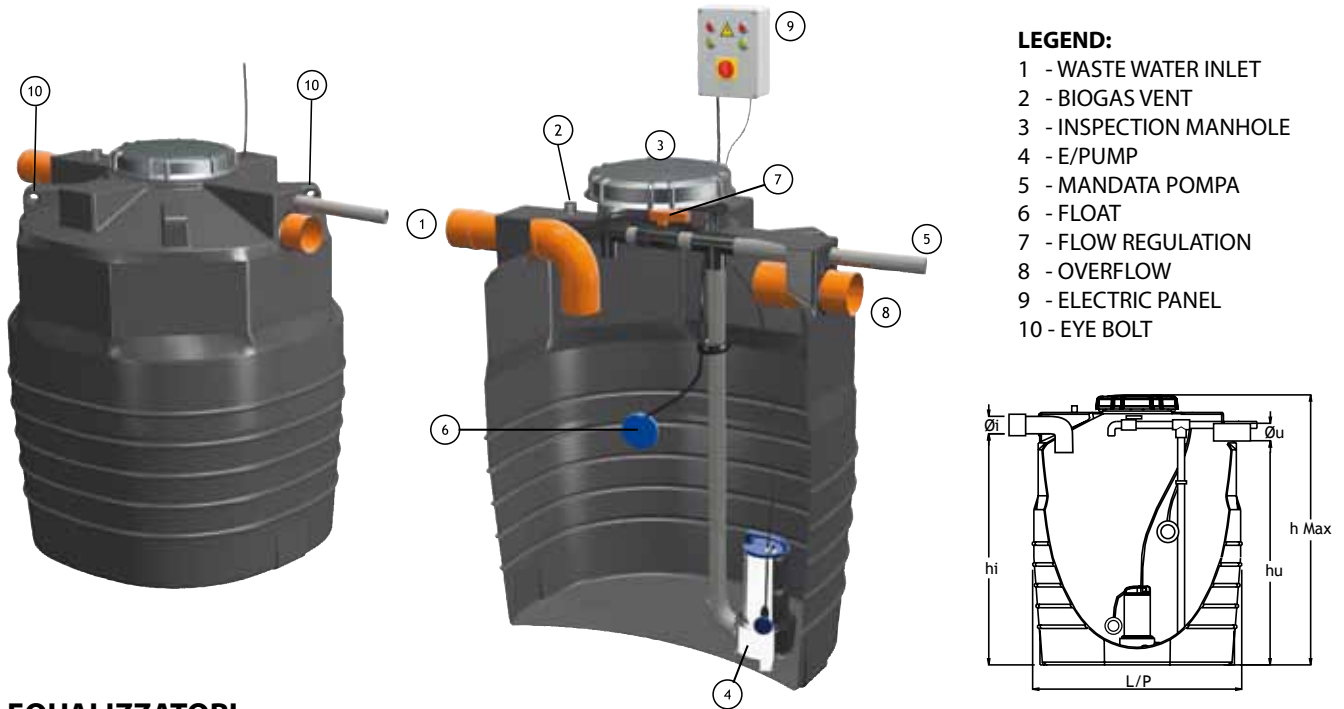
ITEM	DESCRIPTION
VALVOLA RITEGNO 1" 1/2	Cast iron ball check valve 1" 1/2
VALVOLA RITEGNO 2"	Cast iron ball check valve from 2"
QE ss 1xM	Electric panel for starting and stopping a HP 0.75 - 1 - 1.5 pump
QE ss 1xT	Electric panel for starting and stopping a HP 2 pump
QE ss 2xM	Electric panel for starting and stopping of two HP 0.75 - 1 - 1.5 pumps with emergency and alternating operation
QE ss 2xT	Electric panel for starting and stopping of two HP 2 pumps with emergency and alternating operation





The equalizer has the function of equalizing the hydraulic load and make as homogeneous as possible the polluting load of the waste water adduct to the plant. Sudden peak loads would, in fact, have serious consequences on purification efficiency as micro-organisms are unlikely to adapt to sudden variations in the environment. The equalization compartment is recommended in all applications but becomes indispensable in cases where the variability of the flow rate, and as a result of the pollutant load, is particularly high (see commercial activities, offices, bars, restaurants, etc.).

- Telcom equalizers are dimensioned considering a production time equal to:
- 8 hours per business activities
  - 16 hours for residential or similar activities



- LEGEND:**
- 1 - WASTE WATER INLET
  - 2 - BIOGAS VENT
  - 3 - INSPECTION MANHOLE
  - 4 - E/PUMP
  - 5 - MANDATA POMPA
  - 6 - FLOAT
  - 7 - FLOW REGULATION
  - 8 - OVERFLOW
  - 9 - ELECTRIC PANEL
  - 10 - EYE BOLT

**EQUALIZZATORI**

A.E. Business Activities	A.E. Residential or the kind	ITEM	Dimensions (cm)					Volume at overflow (litres)	Dimensions (mm)		
			H	L	P	hi	hu		øi øu	ø manhole	ø biogas
8	15	EQ 1500	150	117	117	125	121	1243	125	420	2"
15	30	EQ 2000	182	136	136	158	154	2104	125	420	2"
20	40	EQ 3000	219	146	146	192	188	2923	125	420	2"
25	55	EQ 4000	224	165	165	192	188	3800	125	420	2"
30	70	EQ 5000	229	184	184	197	193	4705	125	420	2"
40	80	EQ 6000	257	185	185	224	220	5575	125	420	2"

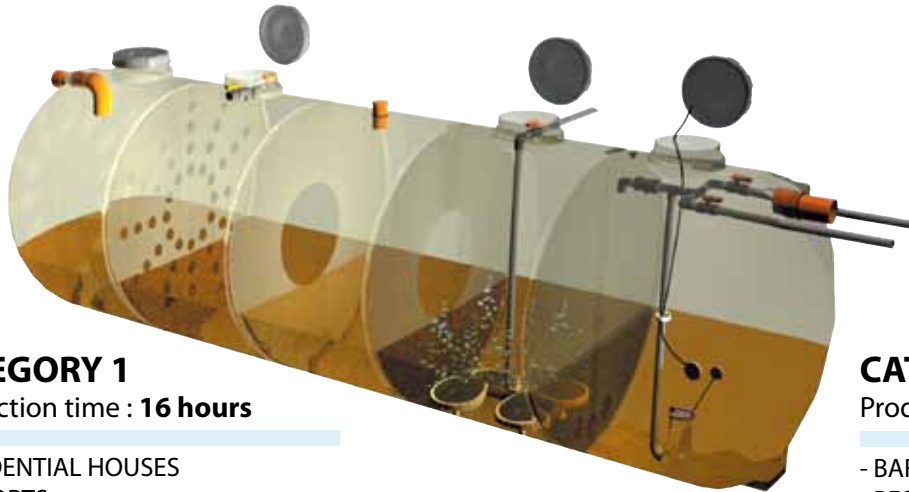
**TECHNICAL DETAILS**

Recyclable PE equalizer (linear polyethylene), consisting of a monobloc compartment. The product is equipped with a lifting pump of 0.55 kW 220V - 50hz, a level float, an IP55 electric panel and a screw lid for central inspection and possible maintenance. The inlet and outlet pipes are equipped with appropriate rubber double lip gasket, to guarantee a perfect tightness.

**REGULAR MAINTENANCE**

Check the correct operation of the floats, generally at least once a year clean the tank and follow the instructions of the manuals for the maintenance of the electromechanical equipment supplied to the product.





**CATEGORY 1**

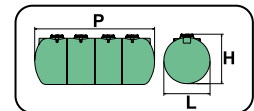
Production time : **16 hours**

- RESIDENTIAL HOUSES
- AIRPORTS
- SHOPPING CENTERS
- LARGE WAREHOUSES
- HOTEL
- BUSINESS ACTIVITIES (STORES)
- BARRACKS
- COLLEGES
- HOSPITALS
- CAMPINGS
- TOURISTIC VILLAGES
- SPORTS CLUB

**CATEGORY 2**

Production time : **8 hours**

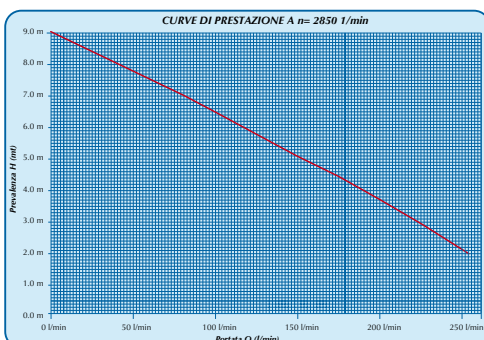
- BARS
- RESTAURANTS
- CINEMA - THEATRE
- INDUSTRIAL PLANTS
- GAS STATIONS
- DINER
- TRATTORIA
- OFFICES
- SCHOOLS
- PUBLIC PARKS
- SWIMMING POOLS – HEALTH  
RESSORTS
- STADIUM



**G.I. line EQUALIZERS**

ITEM	A.E. Tab. 4 Cat. 1	A.E. Tab. 4 Cat. 2	A.E. Tab. 3 Cat. 1	A.E. Tab. 3 Cat. 2	TOTAL VOLUME (litres)	Dimensions (cm)		
						L	P	H
EQ 15000	170	-	-	-	15000	225	452	243
EQ 18500	200	-	200	-	18500	225	543	243
EQ 23500	250	-	250	-	23500	225	675	243
EQ 25000	300	-	300	-	25000	225	716	243
EQ 28500	350	170	350	-	28500	225	807	243
EQ 30000	-	200	-	200	30000	225	848	243
EQ 33500	400	-	400	-	33500	225	939	243
EQ 38500	-	250	-	250	38500	225	1071	243
EQ 40000	500	-	500	-	40000	225	1112	243
EQ 45000	-	300	-	300	45000	225	1244	243
EQ 48500	600	-	600	-	48500	225	1295	243
EQ 50000	-	350	-	350	50000	225	1376	243

**E / LIFTING PUMP**



TYPE	Power		V	Performance data							
	kW	HP		0 l/min	80 l/min	100 l/min	150 l/min	175 l/min	200 l/min	225 l/min	260 l/min
Pump for sewage water	0,55	0,75	220	9,1 m	7,1 m	6,6 m	5,1 m	4,4 m	3,7 m	3,0 m	2,0 m

## WELLS

A monolithic eight-sided manhole has been built for the installation needs, which finds its use in the realization of the different solutions proposed. Its particular shape allows the easy 45 degrees or multiple connections. Considering the specific installation needs (slope, input/output rates, etc.) the installation of the wells shall be carried out by the installer.



POZ 300 GR

POZ 100 GR

### RAW WELL

- Code: **POZ 100GR** - Manhole Ø320 mm dimensions [cm]: 48x48x75H capacity 100 litres
- Code: **POZ 300GR** - Manhole Ø420 mm dimensions [cm]: 73x73x82H capacity 300 litres

ITEM	DESCRIPTION
POZ 100 GR	Raw Well
POZ 300 GR	Raw Well



### INSPECTION WELL

- Code: **POZ 100 GI** - Manhole Ø320 mm dimensions [cm]: 48x48x75H capacity 100 litres
- Code: **POZ 300 GI** - Manhole Ø420 mm dimensions [cm]: 73x73x82H capacity 300 litres

ITEM	DESCRIPTION	ø 100 mm	ø 125 mm	ø 160 mm	ø 200 mm	ø 250 mm	ø 315 mm
POZ 100 GI	Pozzetto Fiscale				/	/	/
POZ 300 GI	Pozzetto Fiscale	/	/				



### BY-PASS SECURITY WELL

- Code: **POZ 100 BP** - Manhole Ø320 mm dimensions [cm]: 48x48x75H (capacity 100 litres)
- Code: **POZ 300 BP** - Manhole Ø420 mm dimensions [cm]: 73x73x82H (capacity 300 litres)

ITEM	DESCRIPTION	ø 100 mm	ø 125 mm	ø 160 mm	ø 200 mm	ø 250 mm	ø 315 mm
POZ 100 BP	Pozzetto Bypass Sicurezza				/	/	/
POZ 300 BP 250	Pozzetto Bypass Sicurezza	/	/	/	/		/
POZ 300 BP 315	Pozzetto Bypass Sicurezza	/	/	/	/	/	



### CONTACT WELL

- Code: **ECO CLO 100** - Manhole Ø320 mm dimensions [cm]: 48x48x75H (capacity 100 litres)
- Code: **ECO CLO 300** - Manhole Ø420 mm dimensions [cm]: 73x73x82H (capacity 300 litres)

ITEM	DESCRIPTION
ECO CLO 100	Contact Well
ECO CLO 300	Contact Well



**LEVELLING WELL**

- Code: **POZ 100 LI** - Manhole Ø320 mm dimensions [cm]: 48x48x75H (capacity 100 litres)
- Code: **POZ 300 LI** - Manhole Ø420 mm dimensions [cm]: 73x73x82H (capacity 300 litres)

ITEM	DESCRIPTION	ø 100 mm
POZ 100 LI	Levelling Well	
POZ 300 LI	Levelling Well	



**CONFLUENCE WELL**

- Code: **POZ 100 CO** - Manhole Ø320 mm dimensions [cm]: 48x48x75H (capacity 100 litres)
- Code: **POZ 300 CO** - Manhole Ø420 mm dimensions [cm]: 73x73x82H (capacity 300 litres)

ITEM	DESCRIPTION	ø 100 mm	ø 125 mm	ø 160 mm
POZ 100 CO	Confluence Well			
POZ 300 CO	Confluence Well	a richiesta		



**JUNCTION WELL**

- Code: **POZ 100 RI** - Manhole Ø320 mm dimensions [cm]: 48x48x75H (capacity 100 litres)
- Code: **POZ 300 RI** - Manhole Ø420 mm dimensions [cm]: 73x73x82H (capacity 300 litres)

ITEM	DESCRIPTION	ø 100 mm	ø 125 mm	ø 160 mm
POZ 100 RI	Junction Well			
POZ 300 RI	Junction Well	a richiesta		



**SETTLING WELL**

- Code: **POZ 100 CA** - Manhole Ø320 mm dimensions [cm]: 48x48x75H (capacity 100 litres)
- Code: **POZ 300 CA** - Manhole Ø420 mm dimensioni [cm]: 73x73x82H (capacity 300 litres)

ITEM	DESCRIPTION	ø 100 mm	ø 125 mm
POZ 100 CA	Settling Well		
POZ 300 CA	Settling Well		/



**CHLORINATION WELL**

- Code: **POZ 100 CLO** - Manhole Ø320 mm dimensions [cm]: 48x48x75H (capacity 100 litres)
- Code: **POZ 300 CLO** - Manhole Ø420 mm dimensions [cm]: 73x73x82H (capacity 300 litres)

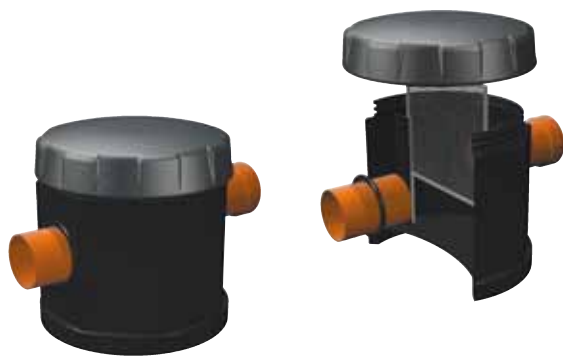
ITEM	DESCRIPTION	ø 100 mm	ø 125 mm
POZ 100 CLO	Chlorination Well		
POZ 300 CLO	Chlorination Well	/	



**FOIL FILTER MANHOLE**

- Code: **POZ 100 PLS** - Manhole Ø320 mm  
dimensions [cm]: 48x48x111H  
capacity 100 litres
- Code: **POZ 300 PLS** - Manhole Ø420 mm  
dimensions [cm]: 73x73x108H  
capacity 300 litres

ITEM	DESCRIPTION	ø 100 mm
POZ 100 PLS	Foil Filter Manhole	
POZ 300 PLS	Foil Filter Manhole	



**GRILL WELL**

- Code: **POZ 550 GR**  
dimensions [cm] L=68, P=68, H=60  
manhole: ø 550 mm  
diameter Øi/Øu: 160 mm  
capacity ~ 140 litres

ITEM	DESCRIPTION	ø 160 mm
POZ 550 GR	Grill Well	

Altri diametri a richiesta



**OUTFLOW WELL**

The outflow well is recommended for all cases where it is necessary to ensure proper outflow of the waste water. It bases its operation on physical principles and has no electrical equipment. Depending on its use, it can have "high" or "low" inlet piping.

- Code: **PDC 300**  
dimensions [cm] L=88, P=66, H=70  
capacity 300 litres  
manhole ø 320 mm  
diameter Øi/Øu: 100 mm

ITEM	DESCRIPTION	ø 100 mm
PDC 300	Outflow Well	



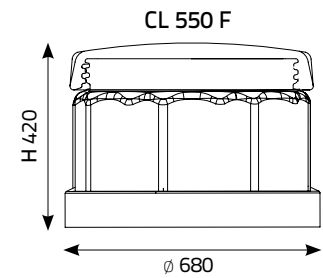
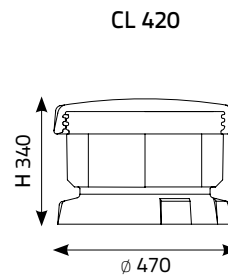
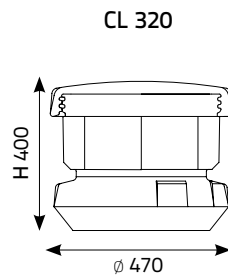
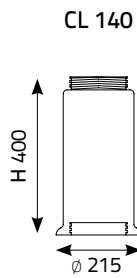


### CONTACT BASIN CHLORINATION-CLARIFICATION

ITEM	Total VOLUME (litres)
ECO CLO 100	100
ECO CLO 300	300
ECO CLO 500	500
ECO CLO 750	750
ECO CLO 1000	1000
ECO CLO 1500	1500

ITEM	Total VOLUME (litres)
ECO CLO 2000	2000
ECO CLO 2500	2500
ECO CLO 4000	4000
ECO CLO 6000	6000
ECO CLO 7500	7500
ECO CLO 10000	10000

*Novelty*



CL 140



CL 320



CL 550 F



CL 420

### TURRET CL

ITEM	DESCRIPTION
CL 140	Turret for manholes ø 140
CL 320	Turret for manholes ø 320
CL 420	Turret for manholes ø 420
CL 550 F	Turret for manholes ø 550

**Cod.: CL 140** (for manholes ø 140 mm) - cap not included  
dimensions cm ø 21,5; H 40;

**Cod.: CL 320** (for manholes ø 320 mm) - cap included ø 420  
dimensions cm ø 47; H 40;

**Cod.: CL 420** (for manholes ø 420 mm) - cap not included  
dimensions cm ø 47; H 34;

**Cod.: CL 550 F** (for manholes ø 550 mm) - cap not included  
dimensions cm ø 68; H 42;



### INLET COMPRESSOR for outdoors

- Code: **VANO COMP (VCM 550)**  
dimensions [cm] L=68, P=68, H=60

ITEM	DESCRIPTION
VCM 550	INLET COMPRESSOR for outdoors

### DIAPHRAGM LINEAR COMPRESSOR

Low noise and Low consumption



ITEM	DESCRIPTION
COMPR. DS 40 L	Linear compressor EL 60 N - 48 W
COMPR. DS 80 L	Linear compressor JDK-S 80 - 50 W
COMPR. DS 120 L	Linear compressor JDK-S 100 - 75 W
COMPR. DS 160 L	Linear compressor JDK-S 120 - 95 W



### GASKET

Double lip gasket

ITEM	DESCRIPTION
Guarn. ø 100	Double lip gasket
Guarn. ø 125	Double lip gasket
Guarn. ø 160	Double lip gasket
Guarn. ø 200	Double lip gasket
Guarn. ø 250	Double lip gasket
Guarn. ø 315	Double lip gasket



### DEGRADER MIX

ITEM	DESCRIPTION
NO TENS	Degrader Mix of tensioactive molecole (5 litres)



### BACTERIAL-ENZYMATIC MIX

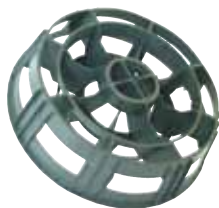
Appropriately designed triggering or restarting the bacterial activities in biological depuration systems biological of waste waters.

ITEM	DESCRIPTION
BIOACTIVE	Bacterial-Enzymatic Mix (blister 10 comp)



### CHLORINE TABLET

ITEM	DESCRIPTION
TRICL 90/200 BL	Chlorine tablet of 200 gr.



### FILL-UP CHAMBER

In Polypropylene isotactic Ø 200

Built expressly for high/medium loaded percolator beds.

ITEM	DESCRIPTION
CRP 19	Fill-up chamber for Percolator Filters (Price expressed on m <sup>3</sup> )



### DIFFUSER

ITEM	DESCRIPTION
DIFF. DIEP. D260	Diffuser



**SIPHONED WELL (STREET DISCHARGE)**  
Usable for collecting and conveying street rain water.

- Code: **POTAC 62**  
dimensions [cm] L=62, P=40, H=47  
capacity 70 litres - exit Ø 110 mm.  
Suited for grided manhole.  
Upper opening cm. 20x30

ITEM	DESCRIPTION
POTAC 62 (exit ø 110)	Siphoned Well



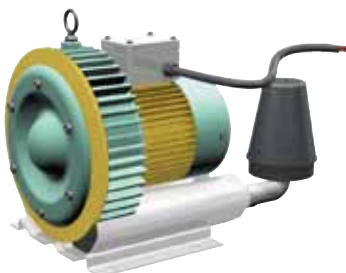
**CHECK VALVE**  
- with 1 1/2" and 2" connector

ITEM	DESCRIPTION
VALVOLA RITEGNO 1" 1/2	Cast iron ball check vakve 1" 1/2
VALVOLA RITEGNO 2"	Cast iron ball check vakve 2"



**LIFTING ELECTRIC PUMP**

ITEM	DESCRIPTION
POMPA ELET. 6	Submerged pump for sewage water 0,75 HP 220V
POMPA ELET. 7	Submerged pump for sewage water 1 HP 220V
POMPA ELET. 8	Submerged pump for sewage water 1,5 HP 220V
POMPA ELET. 9	Submerged pump for sewage water 2 HP 380V
POMPA ELET. 13	Grinder pump 1,5 HP 220V
POMPA ELET. 14	Submerged pump for clear water 0,33 HP 220V



**E/FAN**  
Fitted with suction silencer  
and on delivery line and safety valve

*Price to be assessed on the basis of necessary features.*



### ELECTRIC PANELS

Electric panel with electronic circuit for controlling a single-phase or three-phase pump:

- Code: **QE SS 1xM** for items with 0.55 KW pump
- Code: **QE SS 1xM** for items with 0.75 KW pump
- Code: **QE SS 1xM** for items with 1.1 KW pump
- Code: **QE SS 1xT** for items with 1.5 KW (T) pump

Electric panel with electronic circuit for controlling two single-phase or three-phase pumps with alternating and rescue operation:

- Code: **QE SS 2xM** for items with 0.55 KW pumps
- Code: **QE SS 2xM** for items with 0.75 KW pumps
- Code: **QE SS 2xM** for items with 1.1 KW pumps
- Code: **QE SS 2xT** for items with 1.5 KW (T) pumps

Electric panel with electronic circuit for **timed** controlling of a single-phase pump:

- Code: **QE FITO** for items with single-phase pump

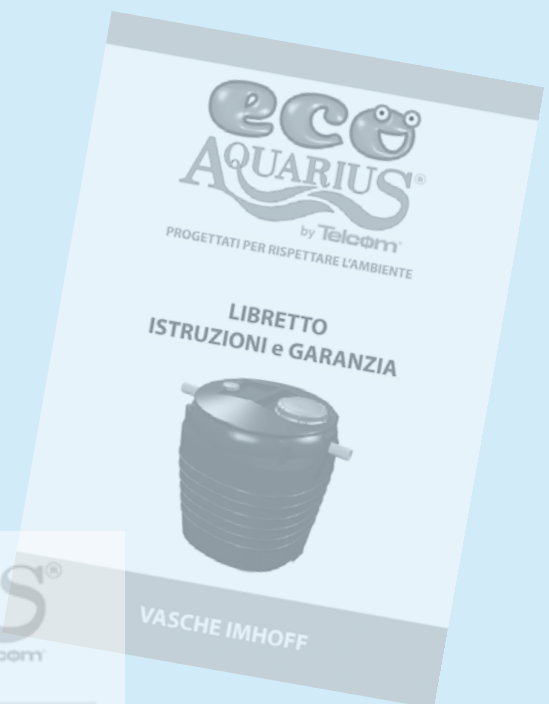
Electric panel with electronic circuit for **timed** controlling of one or two diaphragm compressors:

- Code: **QE COM**

ITEM	DESCRIPTION
QE COM	Electric panel for control & timing of diaphragm compressor
QE FITO	Electric panel for starting a single-phase pump with timer
QE ss 1xM	Electric panel for starting & stopping of a HP 0.75 - 1 - 1.5 pump
QE ss 1xT	Electric panel for starting & stopping of a HP 2 pump
QE ss 2xM	Electric panel for starting & stopping of two HP 0.75 - 1 - 1.5 pumps with alternating and rescue operation
QE ss 2xT	Electric panel for starting & stopping of two HP 2 pumps with alternating and rescue operation



# TECHNICAL INFORMATION and INSTRUCTIONS





- Suitable for holding food substances
  - Ministerial Decree n°. 104/73 with its subsequent modifications;
  - **EU Regulation n°. 10/2011 and its pertaining norms**
  - **UNI 1186-1 : 2003, UNI 1186-4 : 2003, UNI 1186-5 : 2003**
  - **Certification for Materials and Objects in Contact with Food**

100% guaranteed against the formation of algae



- Resistant to temperature swings from -60°C to +80°C
- Suitable for containing liquids with peaks (non continuous) even from -10°C to +50°C

Fitted with hygiene protection caps



- Unassailable by atmospheric agents

Eco-friendly & Recyclable



- Made of high density nontoxic polyethylene
- Suitable for the containment of liquids at atmospheric pressure (tanks for first collection)
- Suitable for the containment of diesel oil, **preferably tanks of BLACK color, but in any case equipped with brass fittings and appropriate gaskets** (for this use the provisions of the Fire Department and the competent authorities, according to the laws in force must be respected).
- Resistant to UV rays.
- Corrosion-resistant and resistant to moulds and lichens.
- Easily washable with any household detergent.
- Virtually insensitive to aging.

Proprieties of Polyethylene	M.U.	Value	ASTM Method	ONDA tank series	
				Value	Method
Melt Flow Index (190° C   2.16 kg)	g/10'	4 ÷ 9	D 1238	0,25	ISO 1133
Density (23° C)	g/cm <sup>3</sup>	0,935 ÷ 0,940	D 1505	0,954	ISO 1183
Melting point	°C	126 ÷ 128	DSC	135	Internal
Brittleness temperature	°C	<-70	D 746	<-60	ASTMD 746
Softening point Vicat (1 kg oil50° C/min)	°C	113 ÷ 117	D 1525	125	ISO 306/A
Proof stress / Yield strength	MPa	17 ÷ 19	D 638	27	ISO 527
Breaking load	MPa	16 ÷ 21	D 638	30	ISO 527
Elongation to failure	%	800 ÷ 900	D 638	>600	ISO 527
Modulus of elasticity	MPa	600 ÷ 690	D 790	1200	ISO 178
Hardness Shore D		55 ÷ 60	D 2240	64	ISO 868/A
Resistance to surfactants (ESCR)	h	200 ÷ 400	D 1693 (B)	>60	ASTM D 1693 (B)

## WARNING / DISCLAIMER

- All installation and underground operations must be carried out in compliance with the Legislative Decree n° . 81/80 and subsequent amendments and additions;
- In all handling operations use lifting and transportation means suitable for the weight of the product;
- Outdoor tanks may be fitted into the earth only according to the modalities indicated in the Instruction and Warranty Booklet;
- Tanks designed to be fitted into the ground may be placed above ground, except for the NER and XXLI models and all their fixture and fittings (for this reason please contact always our Technical Department before proceeding);
- Do not use tanks to contain liquids that are not compatible with Polyethylene.

## INSTALLATION PLACE

Before choosing the model of our tank make sure that the path and the place where it must be installed is wide enough and that there is a flat base, solid and free of roughness to support the weight of the full tank. The tank shall rest fully on the base, shall also be level, avoiding installation near heat sources. The walls of the tank must not be placed on any masonry or object, they must be at least 20 cm apart. Specifically for the series Snake the feet, empty tank, are at a height of 20 mm from the ground and no height or thickness shall be placed below them. Always consult a technician about the resistance of the structures to the loads you are going to install.

## INSTALLATION

When connecting the rigid network pipes to our fittings (or the extra fittings mounted by you or by us or welded according to your indications) remember that it is essential to interpose flexible pipes of at least twice the diameter of the coupling or expansion joints, in order to avoid that the couplings be subjected to stress, bending and tensioning due to the continuous loading and unloading of the tank fluid. This could in fact produce imperceptible and slight bending of the walls that would cause damage to the joints if you do not use the precautions mentioned above. To achieve a perfect seal between the thread of the fitting and that of the hose, interpose a few layers of teflon tape (PTFE) in the right amount without excessive force during tightening. Finally, screw the manhole cover onto the tank without tightening and ensure that the relief valve is working (or the vent system), which serves to maintain constant pressure inside the tank. In case of accidental breakage of the fitting, proceed as indicated in the 'Instruction and Warranty Booklet' (in case of mounting a box connector). However, in all installation or repair operations use the assistance of a specialised operator who carries out the work and takes all necessary safety measures.

## TRANSPORTATION

During transport never slam the tank against edges or blunt bodies because, although very resistant to impact, it may incur damages even if not immediately visible. It is also recommended to anchor the tanks using canvas bands harnessing the body of the tank. However, never move the tank when it is full.

## MOVING TANKS AND LARGE VOLUME INSTALLATIONS (organized by the buyer)

For tanks with capacities of up to 20,000 litres, that means products having weights less than 900 kg and lengths less than 6 meters, the handling can be carried out with a forklift equipped with forks or other lifting system, provided that it is possible to secure the slings that will surround the product. In this case the loading on the equipment can also take place laterally. For tanks of higher volume, it is necessary to use a means of lifting suitable with respect to the weight and overall dimensions of the products, both for loading and unloading (for example, for a 50,000 litres tank, a means of lifting with a capacity of 5,000 kg is required). In the latter case, the truck must be loaded from above. During loading and transport take care not to hit the tank with sharp edges or blunt objects. Although extremely shock-resistant, by virtue of its own inertia it may incur damages not visible to the naked eye. In addition, during transport it is essential to anchor the product by harnessing it with canvas bands.



For the handling of large tanks XXLE and XXLI textile slings are necessary which, for safety reasons, must have a capacity exceeding 4,500 kg.

A correct installation procedure is essential for the success of the fitting into the ground. **In any case, it is necessary to avail of the competent technician to advise on the most appropriate choices in relation to the particularities of the terrain, follow all phases of the operation and issue the due written report on what was carried out.**

**This document shall be kept together with the traceability code attached to the tank.**

**Without such documents the warranty offered by Telcom S.p.A. ceases.**

ATTENTION: If the tank has to be placed in the presence of shallow aquifer or landslide soils, clay, on slopes, in positions affected by channeling of rainwater, shores etc. proceed as specified at chapter on "INSTALLATION UNDER HARSH CONDITIONS".

Make the excavation taking into account that, in addition to the tank's dimensions, a distance of 30 cm beyond the overall dimensions must be calculated on each side, as shown in picture 1.

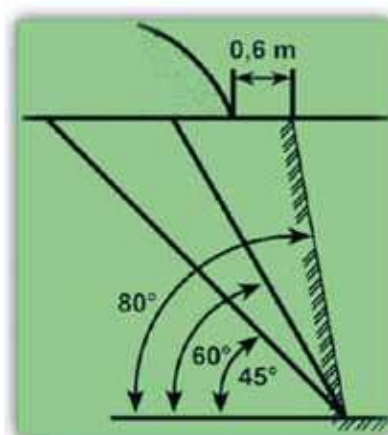
The bottom of the excavation must provide for a perfect drainage to prevent it from causing stagnation and accumulation of water.

For carrying out the excavation, observe the following practical rules: (see picture below)

- A: **for land not bearing** (soft soil) consider that the excavation angle cannot be higher than 45 degrees
- B: **for medium-hardness soils** do not exceed the 60 degrees
- C: **for excavations in rock** it can arrive up to 80 degrees.

In the upper part, a free zone of about 60 cm of width must be left around the excavation in order to avoid the landslide of soil and to allow the movement of the operators during the earthwork.

Check that the product does not come into contact with any roots that may damage it.



Representation of the excavation angle for the different types of soil

## PROCEDURE FOR THE FITTING IN THE SOIL:

1. Make the excavation with the dimensions suggested in picture 1.

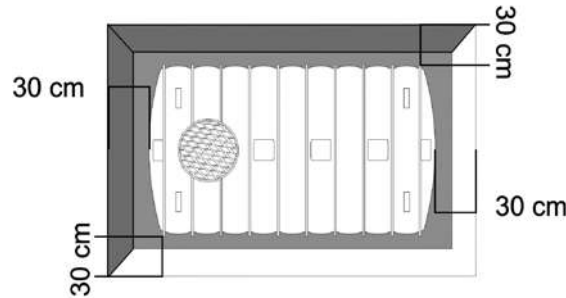


Fig. 1

2. Create a bed of 15 to 20 cm of non-recycled sand, with at least one drainage tube inside. Carefully level the base thus created, taking care to eliminate any possible roughness. Ensure that the storage area does not collapse under the weight of the full tank.

3. After having established the integrity of the tank, move it empty (Picture 2), using the appropriate eye-bolts, if any, or using a breech to pass through the grooves of the product.

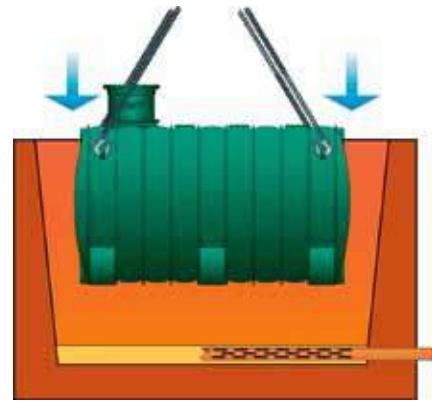


Fig. 2

4. The tank and any extension well shall be perfectly levelled. Make all hydraulic connections with the rest of the plant and verify the absence of leaks before continuing with the underground work.

5. Fill the tank for about 20-30 cm with water and fill the empty space between the tank and the excavation wall with thin sand (P.S. max 1,5 kg/dm<sup>3</sup>), up to the water level, with layers of about 20-30 cm at a time, taking care to **compact them perfectly, using a wooden stake (Picture 3) or other appropriate means**. Avoid discharging the thin sand in large quantities, because this could create accumulations able to deform the tank, while it could generate voids in other areas.

**It is essential to try to compact to the maximum every single layer that is added.**

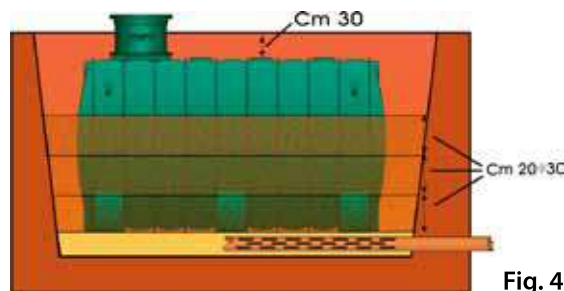


Fig. 3

*Note - Excellent results when fitting into the soil can be achieved with the use of lightened concrete to be used instead of sand. Also in this case proceed to pour in successive layers that shall be levelled, taking care not to exceed, at each layer, a thickness of 20-30 cm and avoiding to discharge excessive quantities in a jet, to avoid both damaging the tank as well as localised and consequent accumulations of voids in contiguous areas. The different layers must be injected allowing the cement **to consolidate** and create a seal for the next layer.*

**6.** Proceed with the soil work in successive layers, each time matching the level of the layer with that of the water inside the tank, until it will be completely filled.

**7.** We recommend filling the upper part of the hole, till the beginning of the dome's extension, if present, with non-recycled sand, completing the last stage of the earthing with vegetal soil, taking care not to exceed the maximum depth of 30 cm of the earthworks, as shown in Picture 4. (~ 50 cm for the NER and PLS series).



**8.** Leave the underground tank for at least two days full of water with the manhole cover screwed on to allow a better settling. **Before use, especially in the presence of hydraulic pumps, ensure that an adequate vent system has been created, able to prevent the creation of vacuum, making the air to flow constantly during the emptying of the tank.**

## INSTALLATIONS UNDER SEVERE CONDITIONS

*If the tank has to be placed in muddy, clayey soils, on slopes, in positions subject to the channeling of rainwater, shores etc., it is necessary to resort to a competent technician who knows the morphological and hydrogeological characteristics of the installation area and who would define the most appropriate actions to be taken.*

- In case a shallow aquifer is present and its rise may be expected, it is necessary to prevent the water from reaching the product. A geotechnical report prepared by a specialist technician is advised, who calculates the thrust of the water and which makes the consequent sizing of the base slab and the walls pareti di rinfranco in cls.

*(the procedures for the fitting underground remain those indicated from point 1 to point 8 at PROCEDURES)*

- Even in case of installations on slants or in the vicinity of slopes, the tank must be confined with reinforced concrete walls, the sizing of which must be carried out by a competent technician.

*(the procedures for the fitting underground remain those indicated from point 1 to point 8 at PROCEDURES)*

• In case of earthing on muddy, clayey, marshy soils, or in any case that do not allow deep drainage, it is necessary to ensure that the rain water does not exert pressure on the product and that it can in-stead drain. It is therefore necessary to resort to the advice of a competent technician who calcula-tes the soil's level of thrust and who can calculate the size of a spandrel. Therefore it shall be proce-eded with the lateral reinforcement of the tank and cover the bottom of the excavation with washed gravel of 20/30 mm and provide a drainage system. A possible solution is shown in picture 5, which represents the implementation of a water collection system through a drainage well. The collected water can be disposed of by means of a sewage pump capable of draining the bottom of the well.

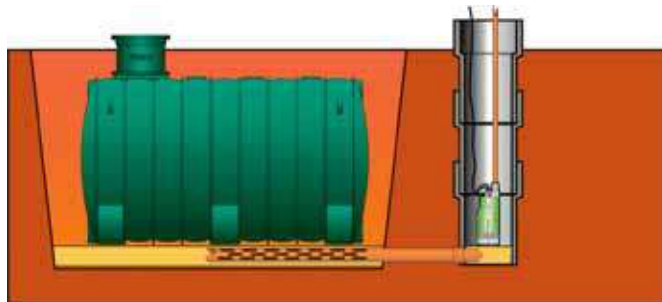


Fig. 5

**Nota bene:**

For INSM, XXLI, NER and PLS series (except PLS 2000 and PLS 3000) use the tank only as underground fitting. The above ground use is not allowed and does, in any case, forfeit the product's warranty. Under normal conditions of use, the tank must be filled to the maximum till its mouth, avoiding filling its extension (dome), if it is present.

The above points relate to the underground works of a single tank. For several tanks (placed in series or in parallel) perform separate excavations at least one meter apart from each other, otherwise provide a load-bearing wall of at least 20 cm (picture 6).

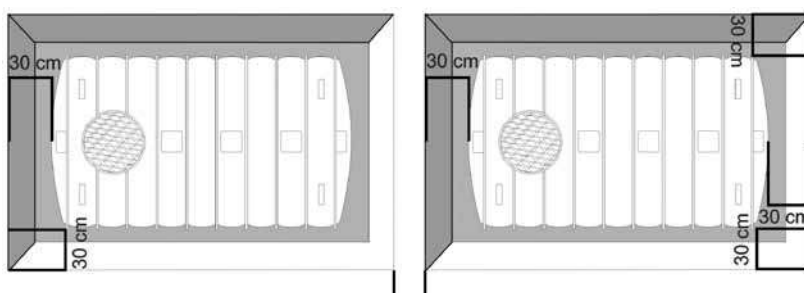


Fig. 6

During installation it is recommended to close the excavation as soon as possible, as sudden torrential rains or exceptional events could create water stagnations and cause irreversible damage to the tank.

The underground works area will be accessible to pedestrians, while the transit of vehicles up to 2 metres of distance from the excavation will be prohibited. The area can be made suitable for vehicles or trucks only with the construction of appropriate structures, which must be calculated by a competent technician. These structures or any other construction or product (walls, manholes etc.) must not be placed on the tank.

## ADVICE ON SANITISING STORAGE TANKS WATER DEDICATED TO HUMAN CONSUMPTION

Several products can be used for cleaning and sanitizing drinking water storage tanks, but the most common ones are chlorine-based. The UNI EN 805 standard 'Requirements for water supply systems', provides for sodium hypochlorite among the chemicals for the disinfection of water distribution systems, with a maximum concentration of 50 mg/l (50 ppm). Sodium hypochlorite is a liquid and clear antimicrobial compound, while the commercial product that is normally used for chlorination of water is a solution of sodium hypochlorite to 12-13%.

**It is important to emphasize that whatever product you are using, it must be compatible with the water intended for human consumption.**

The actions to be taken are the following:

1. Discharge the tank through the bottom valve after closing the inlet valve;
2. Eliminate any solid residues deposited on the bottom;
3. Refill the tank with water and simultaneously pour the disinfectant until a maximum concentration of about 50 mg/l is attained;
4. Keep the tank in this condition for about 8 - 10 hours;
5. Operate the autoclave to drain the tank by passing water into the internal pipes, keeping the taps open;
6. Fill the tank again by opening the inlet valve by running the water for about 30 minutes keeping the taps open in order to remove the excess chlorine.

**N.B. The exiting water from the sanitized tank shall have a residual chlorine concentration of maximum 0.2 mg/l.**

Chlorine Concentration In Solution	0,5%	1%	5%	15%	Millilitres to inject for 1m <sup>3</sup> of water
Residual chlorine (mg/l)					
0,2	40	20	4	1,33	
0,5	100	50	10	3,33	
1,0	200	100	20	6,66	
1,5	300	150	30	9,99	
2,0	400	200	40	13,32	
3,0	600	300	60	19,98	



# OIL-TANIK



**Workshops - Gas Stations - Ecological Islands...**



**Workshops - Gas Stations - Ecological Islands...**



**Canteens - Restaurants - Chip Shops...**

# SOL 250 and SOL 500 BLACK

## TECHNICAL FEATURES

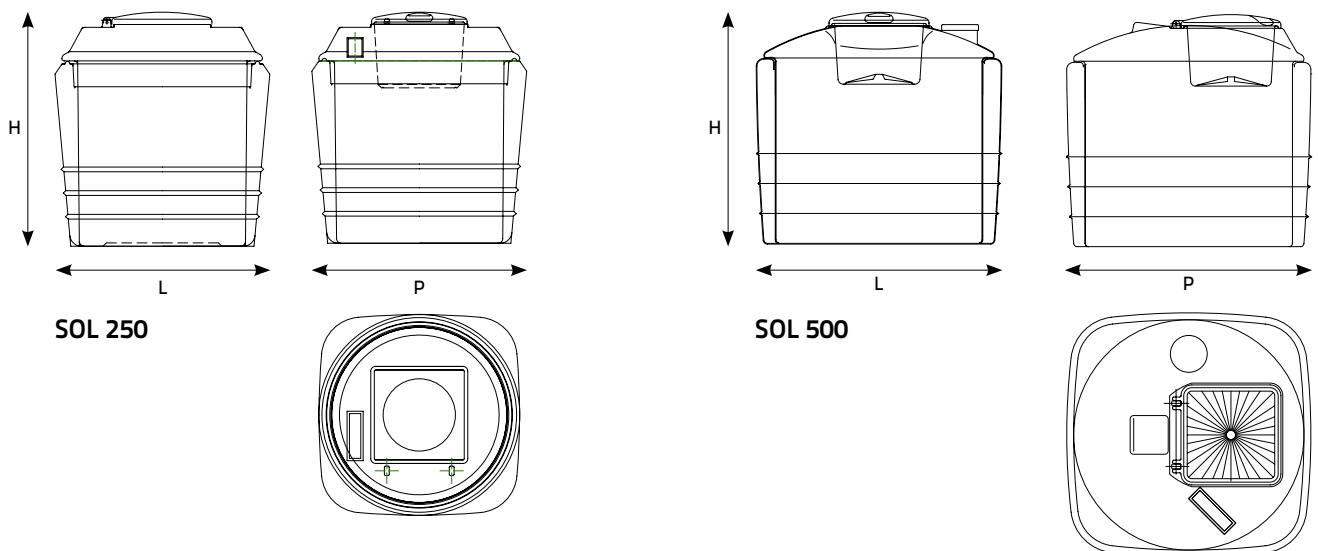
High density linear polyethylene tank, made with black coloured polymers in the material's mass. Composed of an inner collection compartment and an outer containment tank. Great mechanical resistance, resistance to frost and to the sun from -60°C to +80°C. Equipped with level indicator and a safety observing slit that permits verifying at any time the integrity of the inner container. It is equipped with filter basket with removable grid that allows easy and immediate access to the sampling of substances from the container.

The use of OIL TANK for the collection of exhausted oils ensures an ideal respect for the environment. (also suitable for "emulsions" and "antifreeze liquid").

It is 100% recyclable.

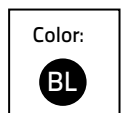
## CERTIFICATIONS

- Compliant with the Decree n°. 392/96



## TANKS suited for EXHAUSTED OIL SOL BLACK

ITEM	Capacity of inner chamber (litres)	Dimensions max (cm)			LxP Base (mm)	Lid (mm)	Effective dimensions of absorbing filters
		H	L	P			
SOL250 BLACK	250	92	88	88	80x80	44x47	38x38xH18
SOL500 BLACK	500	106	110	107	89x89	44x47	38x38xH18



Dimensions with a ±1.5% tolerance, the volumes have a tolerance of ± 4,6%.

# SOL 250 and SOL 500 H<sub>2</sub>O

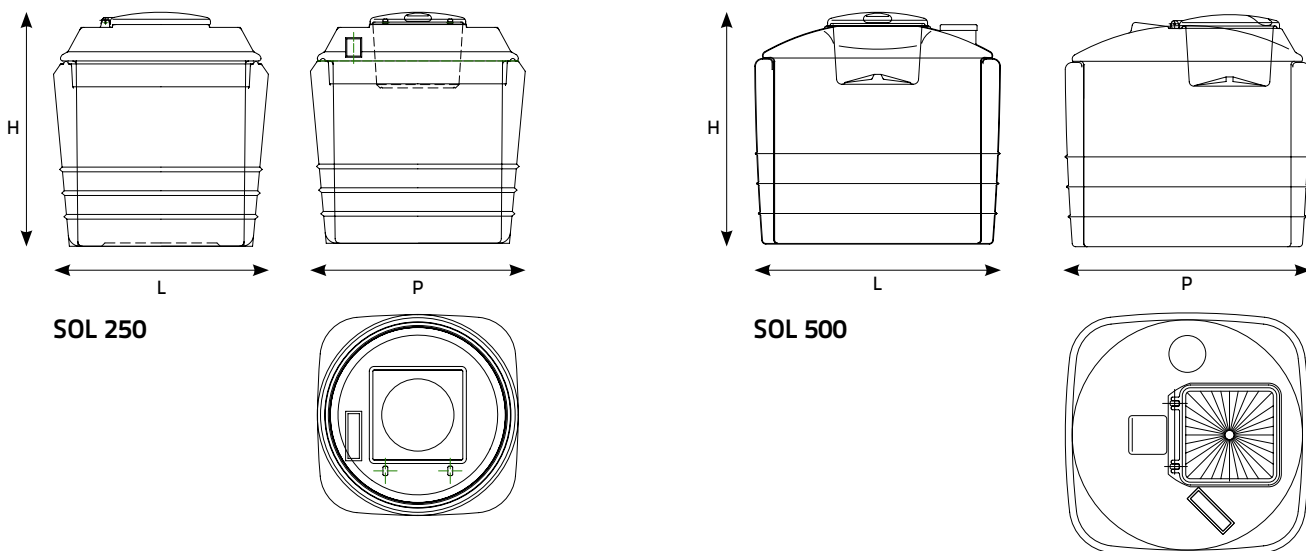
## TECHNICAL FEATURES

High density linear polyethylene tank made with green colour polymers. Consisting of an inner collection chamber for the collection and an outer containment chamber. Great mechanical sturdiness, resistant to frost and to sun heat from -60°C to +80°C. Fitted with a level indicator and a safety peephole that allows checking at any time the inner container's integrity. It is equipped with a strainer basket with a removable screen that allows an easy and immediate access to the collection of substances in the container.

The use of OIL TANK for collecting "emulsions" and "antifreeze liquid" ensures an ideal protection of the environment. It is 100% recyclable.

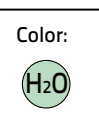
## CERTIFICATIONS

- Compliant with the Decree n°. 392/96



## ANTIFREEZE LIQUID TANKS SOL H<sub>2</sub>O

ITEM	Capacity of inner chamber (litres)	Dimensions max (cm)			LxP Base (mm)	Lid (mm)	Effective dimensions of absorbing filters
		H	L	P			
SOL250 H <sub>2</sub> O	250	92	88	88	80x80	44x47	38x38xH18
SOL500 H <sub>2</sub> O	500	106	110	107	89x89	44x47	38x38xH18



Dimensions with a ±1.5% tolerance, the volumes have a tolerance of ± 4,6%.

## SOL 250 and SOL 500 THE V

### TECHNICAL FEATURES

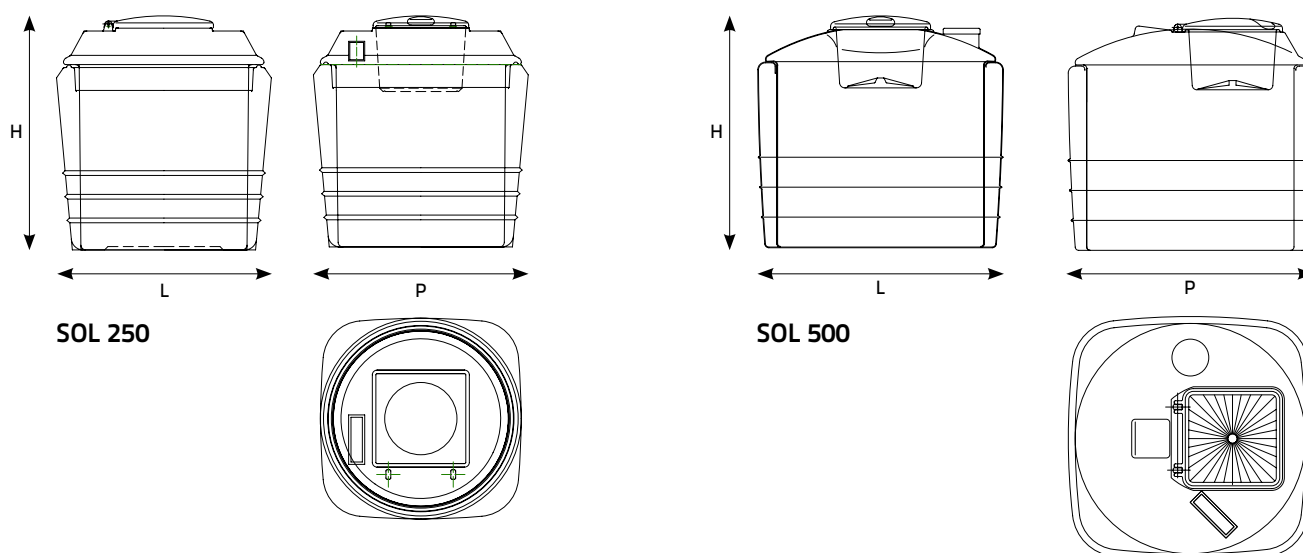
High density linear polyethylene tank, made with green the coloured polymers. Composed of an inner collection compartment and an outer containment tank. Great mechanical resistance, resistance to frost and to the sun from -60°C to +80°C. Equipped with level indicator and a safety observing slit that permits verifying at any time the integrity of the inner container. It is equipped with filter basket with removable grid that allows easy and immediate access to the sampling of substances from the container.

The use of OIL TANK for the collection of vegetable oils ensures an ideal respect for the environment. (also suitable for "emulsions" and "antifreeze liquid").

It is 100% recyclable.

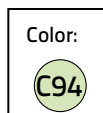
### CERTIFICATIONS

- Compliant with the Decree n°. 392/96



### TANKS suited for VEGETAL OIL SOL THE V

ITEM	Capacity of inner chamber (litres)	Dimensions max (cm)			LxP Base (mm)	Lid (mm)	Effective dimensions of absorbing filters
		H	L	P			
SOL250 THE V	250	92	88	88	80x80	44x47	38x38xH18
SOL500 THE V	500	106	110	107	89x89	44x47	38x38xH18



Dimensions with a  $\pm 1.5\%$  tolerance, the volumes have a tolerance of  $\pm 4,6\%$ .

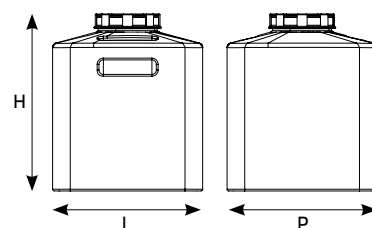
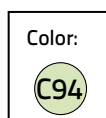
## CONTAINER FOR PLANT OIL

High density linear polyethylene tank, made with green colour polymers. Great mechanical sturdiness, resistant to frost and to sun heat from -60°C to +80°C.  
Ideal for collect and handling small quantities of oil.  
It is 100% recyclable.



## CONTAINER FOR PLANT OIL type BOQN

ITEM	Litres	L	P	H	Moulded connectors
BOQN 30 THE V	30	34	34	40	1/2"
BOQN 55 THE V	55	34	34	61	1/2"



## CPF 100 OIL FILTER HOLDER



## CPF 100 OIL FILTER HOLDER

ITEM	V Volume totale (litri)	V° Volume liquido scolo (litri)	Dimensions (cm)		
			H total	ø base	ø max
CPF 100	100	26	81	41	53



Dimensional volume tolerance ± 1,5%  
Capacity tolerance ± 4,6%



### SOL BLACK

Designed for the collection of spent mineral oils in service stations, workshops, industry etc.



### SOL H<sub>2</sub>O

Intended for the collection of antifreeze liquid and other emulsions in service stations, workshops, industries etc.



### SOL THE V

For collecting vegetable oil used in restaurants, canteens, condominiums, ecological islands etc.

#### DECLARATION OF CONFORMITY

TELCOM S.p.A., certifies that the SOL series, produced and marketed by our company, was designed following the indications specified in the **Legislative Decree n°. 392/96** and its subsequent modifications, containing provisions on the collection, preservation and storage of used oils, in particular those designed to prevent soil contamination by accidental spills.

Therefore TELCOM S.p.A. guarantees the correct operation, declining all responsibility in case of incorrect implementation and use. (Tank NOT suitable to be buried).





## **MULTIUSE TRUNKS**

## **SHIPBUILDING**

# Super MULTIUSE TRUNKS

Designed to protect against shocks, dust, weathering and tampering.  
 Designed for easy handling, transport and stackability.  
 Made with special super-resins, recyclable and non-toxic, suitable for food (colours black and PT), resistant to frost and to sun heat (-60°C + 80°C), acid-resistant, resistant to moulds and lichens, washable with common detergents. Wide range of sizes and colours to meet countless work needs, hobbies, sports, home: tools, equipment, fragile items, food, seasonal clothing, duvets and blankets, on boats, on camping, relocations, underwater equipment, wood for the fireplace, toys etc.



## Baule 45

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE 45 BL	Multiuse trunk	45	45	35	Black	Black	20	32
BAULE 45 GS	Multiuse trunk	45	45	35	Grey	Grey	20	32
BAULE 45 BLU/GI	Multiuse trunk	45	45	35	Blue	Yellow	20	32
BAULE 45 BLU/RO	Multiuse trunk	45	45	35	Blue	Red	20	32





## Robust containers for transport and storage with the maximal safety and practicality



### Baule 60 Disponibili fino ad Aprile 2022

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE 60 BL	Multiuse trunk	60	40	44	Black	Black	16	23
BAULE 60 GS	Multiuse trunk	60	40	44	Grey	Grey	16	23
BAULE 60 BLU/GI	Multiuse trunk	60	40	44	Blue	Yellow	16	23
BAULE 60 BLU/RO	Multiuse trunk	60	40	44	Blue	Red	16	23



### Baule 80 Disponibili fino ad Aprile 2022

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE 80 BL	Multiuse trunk	80	40	44	Black	Black	12	12
BAULE 80 GS	Multiuse trunk	80	40	44	Grey	Grey	12	12
BAULE 80 BLU/GI	Multiuse trunk	80	40	44	Blue	Yellow	12	12
BAULE 80 BLU/RO	Multiuse trunk	80	40	44	Blue	Red	12	12





## Baule Old 60 available until April 2022

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE OLD 60 BL	Multiuse trunk	60	40	44	Black	Black	16	23
BAULE OLD 60 GS	Multiuse trunk	60	40	44	Grey	Grey	16	23



## Baule Old 80 available until April 2022

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE OLD 80 BL	Multiuse trunk	80	40	44	Black	Black	12	12
BAULE OLD 80 GS	Multiuse trunk	80	40	44	Grey	Grey	12	12



**Novelty**

available from April 2022



## Baule HR 60

CODE	DESCRIPTION	DIMENSIONS			COLOUR	PIECES ON PALLET	
		L	P	H		euro-pallet	110x130
BAULE HR 60 GI	Multiuse trunk	60	40	46	YELLOW	16	23
BAULE HR 60 OG	Multiuse trunk	60	40	46	OXFORD GREEN	16	23
BAULE HR 60 PT	Multiuse trunk	60	40	46	WHITE DOT	16	23

**Novelty**

available from April 2022



## Baule HR 80

CODE	DESCRIPTION	DIMENSIONS			COLOUR	PIECES ON PALLET	
		L	P	H		euro-pallet	110x130
BAULE HR 80 GI	Multiuse trunk	80	40	46	YELLOW	12	12
BAULE HR 80 OG	Multiuse trunk	80	40	46	OXFORD GREEN	12	12
BAULE HR 80 PT	Multiuse trunk	80	40	46	WHITE DOT	12	12



PT color suitable for containing food





## Baule 100 Slim

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE SLIM 100 GS	Multiuse trunk	100	40	53	Grey	Grey	8	11



## Baule 100/B Large

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE LARGE 100/B GS	Multiuse trunk	100	60	45	Grey	Grey	4	8





## Baule 110 Maxi

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE MAXI 110 GS	Multiuse trunk	110	55	64	Grey	Grey	3	6



## Baule Coffer 110

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE COFFER 110 GS	Multiuse trunk	110	52	55	Grey	Grey	4	8





## Baule 125 Large

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BAULE 125 BLU M./A.	Move trunk	125	62	62	Blue	Orange	3	3
BAULE 125 BLU MIRTILLO	Move trunk	125	62	62	Blue	Blue	3	3





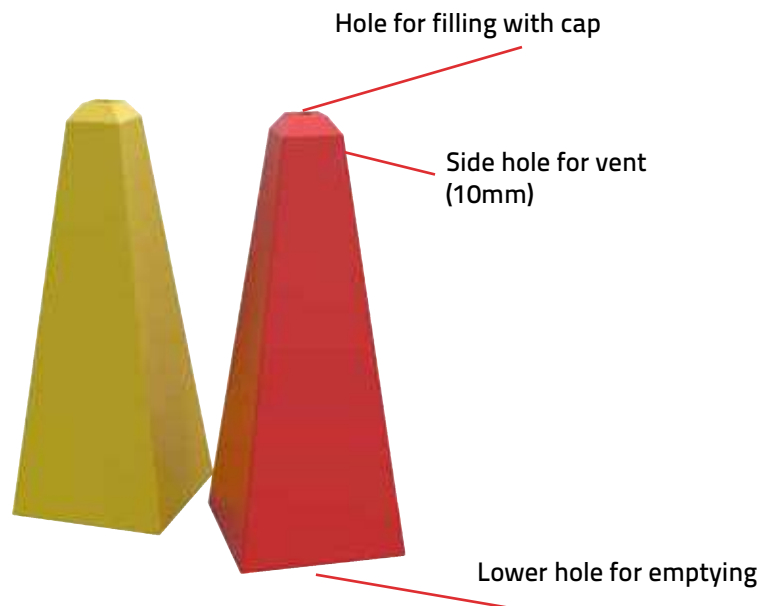
## Baule della Nonna

CODE	DESCRIPTION	DIMENSIONS			COLOUR		PIECES ON PALLET	
		L	P	H	Base	Lid	euro-pallet	110x130
BADN 100 PS	Old style trunk	100	55	65	dark speckled		3	6



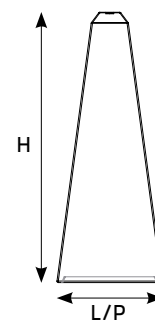
## PSP 100 PYRAMIDAL DELIMITER

The PSP100 Pyramidal Delimiter is useful to signal and delimit transit limits or encumbrance and routes in areas of manoeuvring of motor vehicles and industrial and private vehicles. Stable, Light and Weatherproof, it is equipped with a 1" connector for the filling with water or sand.



### PSP 100 PYRAMIDAL DELIMITER

Item	Col.	Ballast (litres)	Dimensions (cm)		
			L	P	H
PSP 100 GIALLO		30	40	40	100
PSP 100 ROSSO		30	40	40	100



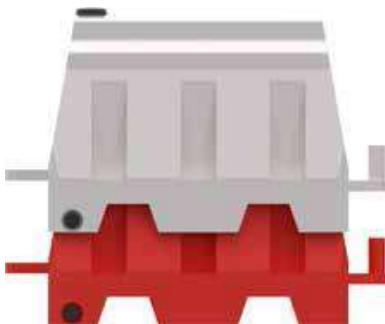


## "NEW JERSEY" type LANE DIVIDER

"Linkable" modular divider and, where appropriate, ballastable with liquids or sandy materials. Useful in the indication of lane limits or in the separation between multiple lanes in construction sites, parking lots and public events, as a barrier in cases of access and walkability control.

Easy to transport when empty, each divider is equipped with a 20-litre safety "overflow hole". It is also equipped with a "total emptying" cap for a quick recovery of the same from the areas of use.

Weatherproof, warm and frost resistant (-40°C.+60°C).



*Lightweight, sturdy and stackable to facilitate transport*

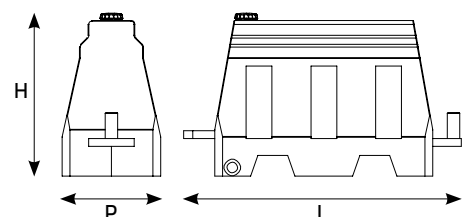


*Equipped with a fill level indicator and overflow hole (overflow) to 20 liters*

### "NEW JERSEY" type LANE DIVIDER NJ 100

Item	Col.	Dimensions (cm)			Max weight Kg.
		L	P	H	
NJ 100 BIANCO		107	38	60	55
NJ 100 ROSSO		107	38	60	55

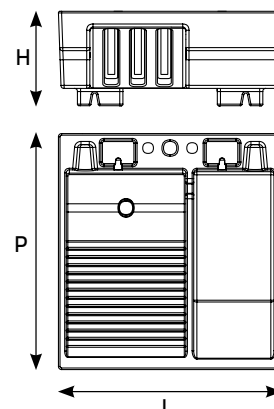
Optional color



Dimensional volume tolerance  $\pm 1,5\%$   
Capacity tolerance  $\pm 4,6\%$

## PILAV 70 SINK

Novelty



### PILAV 70 SINK

Item	Description	Color	Dimensions (cm)		
			L	P	H
PILAV 70	Sink	(PT)	70	75	30
PILAV S 70*	equipped sink	(PT)	70	75	30

\* The S version comes with the following accessories:

1. Specific INOX fixing elements kit for sanitary
2. Drain valve with stopper and siphon complete with gaskets
3. Adjustable metal wall brackets  
(Height from upper edge of tank = 70 cm)



Dimensional volume tolerance  $\pm 1,5\%$   
Capacity tolerance  $\pm 4,6\%$



# Le Giare

Quality containers for  
oil and wine

Quality **Telcom**<sup>®</sup>



*The quality of our products is ensured by the following:*

- Use of “virgin” raw materials of the best quality.
- Suitability of our containers for use in foodstuffs.
- No alteration of taste or odour.
- D.M.104/73 with its subsequent modifications;
- EU Regulation n°.10/2011 and its related normatives:  
UNI 1186-1 : 2003, UNI 1186-4 : 2003, UNI 1186-5 : 2003
- MOCA (materials and objects in contact with foodstuff) certification.

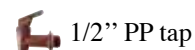
# Barile

*The traditional forms  
proposed with modern  
materials & technologies.*



The **BARRELS** accomodating volumes up to 50 litres are delivered packed in cardboard with dedicated graphics and fitted with serial polypropylene taps for foodstuff.

CODE	Litres	Ø	H	L	Moulded connectors		Standard accessories
					N.º	Mes.	
BOT 5	5	17	22	26	1	1/2"	
BOT 10	10	23	26	33	1	1/2"	
BOT 30	30	32	37	47	1	1/2"	
BOT 50	50	38	44	56	1	1/2"	
BOT 100	100	47	53	70	2	3/4"	/
BOT 150	150	55	60	82	2	3/4"	/
BOT 200	200	62	65	90	2	3/4"	/
BOT 350	350	74	74	105	2	3/4"	/
BOT 550	550	82	82	121	2	3/4"	/



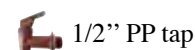
# Capasa



## The AMPHORAE

with volumes up to 55 litres, delivered in cardboard boxes with dedicated graphics and fitted with serial polypropylene taps for foodstuff.

CODE	Litres	Ø	H	L	Moulded connectors		Standard accessories
					N.º	Mes.	
CPN 5	5	33	25	12	1/2"		
CPN 10	10	45	31	15	1/2"		
CPN 33	33	58	38	23	1/2"		
CPN 55	55	77	44	24	1/2"		
CPN 100	100	93	54	30	3/4"	/	



## Botticella



*The KEGS containers are stackable to make optimum use of space.*



CODE	Litres	L	P	H	Moulded connectors
BOQN 30	30	34	34	40	1/2"
BOQN 55	55	34	34	61	1/2"

## Damigiana



*The DEMIJOHN container is stackable to make optimum use of space.*



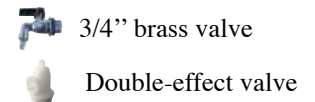
CODE	Litres	L	P	H
DMGA	55	44	44	50

## Vertical Tank



Flat surfaces for the positioning of fittings and valves.

ARTICOLO	Litri	Ø	H	Accessori di serie
NSV 100 TE	100	48	67	
NSV 200 TE	200	60	85	
NSV 300 TE	300	70	97	



## Accessories



1/2" PolyPropylene valve  
Code: RUBINET. 1/2" PP.



3/4" Brass Valve  
Code: RUB. 3/4



Double-effect PE valve  
Code: VAL.A DOPP.EF.

CODE	Description
RUBINET. 1/2" PP.	Polypropylene valve
RUB. 1/2"	Brass valve
RUB. 3/4"	Enological brass valve
TAPPO 90	Plug ø 90
TAPPO 140	Plug ø 140
TAPPO 1"	Plug
TAPPO 3/4"	Plug
VAL. A DOPP.EF.	Double-effect PE valve

NOTE: The data and images given in this publication are indicative. TELCOM reserves the right to make any changes or improvements to its articles without notice. The overall dimensions are expressed in centimeters with a tolerance of 1.5%, the capacities have a tolerance of 4.6% of ± 4.6%

This warranty, attached to the Instruction Manual or Technical Manual that Telcom S.p.A. provides with the purchase of its products, is intended to be additional and not substitute for any other right enjoyed by the consumer / buyer of the product, without prejudice to the rights of the latter under the Legislative Decree n°. 24 .02.2002, which has implemented in Italy the Directive 1999/44/EC on the guarantees for consumer goods.

1) With this Warranty, Telcom S.p.A. guarantees the product for any material or manufacturing defects for the duration of 24 months from the initial date of purchase.

Every container manufactured by Telcom S.p.A. is tested. However it may be damaged during storage or transport, for which the responsibility must be established from time to time: this is why Telcom S.p.A. advises the consumer/buyer of the container to verify its integrity before its installation and use.

2) In the event of material or manufacturing defects occurring during the warranty period (at the initial date of purchase), Telcom S.p.A. will repair or (at the discretion of Telcom S.p.A.) replace the product or its defective components in the terms and conditions below, without any charge for the costs of labor or spare parts, provided that the guaranteed part arrives at the Telcom S.p.A. plant at the consumer's expense.

3) Telcom S.p.A. declines all liability for loss or damage relating to products, services, including economic or intangible losses - the price paid for the product - loss of profits, income, data, enjoyment or use of the product or of other associated products - indirect loss or damage, or caused to third parties due to the defect found, be it incidental or consequential. This applies to losses and damages in the framework of any legal theory, including negligence and other unlawful acts, breach of contract, explicit or implied warranties and strict liability.

4) The warranty interventions will be carried out only if the defective product will be presented within the terms provided by the law along with the sales invoice or with the tax receipt in original.

5) Telcom S.p.A. reserves the right to refuse warranty in the absence of these documents.

6) This warranty will lapse if the model undergoes unauthorized construction changes and/or the model indication or the serial number on the product has been modified, deleted, removed or made unreadable.

7) This warranty does not cover the costs and risks associated with transporting your product to Telcom S.p.A.

8) The guarantee operates on the condition that the maintenance of the product is carried out in accordance with the instructions attached to the product and is carried out by specialised technical staff and no changes and/or repairs are made to the products without the written authorisation or is not compliant with the attached instructions;

The guarantee operates on the condition that the defective product is preserved by the Customer in that state as long as necessary to allow Telcom S.p.A. to carry out the necessary checks on defects/vices detected.

***The following are excluded from this Warranty:***

***a) regular maintenance and repair interventions or replacement of parts due to wear and tear;***

***b) damages or defects due to the application, use or improper treatment of the product for purposes other than normal ones, namely that indicated in the attached instruction booklet or technical manual;***

***c) damage from the improper use of the product, whereas improper use means:***

***• incorrect installation or use of the product for purposes other than those specified or failure to comply with the instructions of Telcom S.p.A. on installation and use;***

***• unproper product maintenance, non compliant to Telcom S.p.A.'s instructions on correct maintenance;***

***• installation or use of the product does not comply with the technical or safety standards in force in the country in which the product is installed or used, as well as with the rules for burial contained in the instructions booklet.***

***d) Product defects due to unforeseen and unforeseeable events (unforeseen circumstances and/or force majeure, extraordinary atmospheric events) that exclude the traceability of such defects to the production/manufacturing process of the product.***

## 1 • Subject matter and field of application

1.1. These general terms and conditions define the terms of sale between Telcom S.p.A. and its Customers.

1.2. Purchases by e-mail, telephone, fax or post also imply the acceptance of these General Conditions of Sale, which can be read directly on the website [www.telcomitalia.eu](http://www.telcomitalia.eu). The sending or delivery of any purchase order by the Purchaser to Telcom S.p.A. implies the full and unreserved acceptance by the Purchaser of the general terms and conditions of sale of our Company, even if not signed by them.

1.3. These General Terms and Conditions of Sale shall prevail over any other terms or contractual conditions contained elsewhere, over any other rules contained in commercial customs or practices, and over rules arising from practices developed between the parties, subject to express exceptions accepted in writing by Telcom S.p.A. or expressly indicated in the order confirmation issued by Telcom S.p.A. (hereinafter the "Order Confirmation").

## 2 • Orders

2.1. The Sales Agreement shall be deemed to have been concluded, becoming binding on the parties, when the Order Confirmation of our Company reaches the Purchaser (by e-mail, fax, mail, by hand). The Order Confirmation sent by Telcom S.p.A. defines and reports all the conditions and the final and binding contents of the Contract, replacing, in full, the Order sent by the Buyer. In particular, with reference to the orders made to the staff/agent of Telcom S.p.A., there shall be reserved the period of 7 working days from when the order arrives at the headquarters of the company to confirm and accept or, on the contrary, cancel and refuse the order. In any case, if within the aforesaid period of 7 working days the order is not expressly cancelled and rejected in writing by Telcom S.p.A., it shall be deemed accepted and confirmed.

2.2. When sending the first Order Confirmation, Telcom S.p.A. will send the Customer these General Conditions of Sale that the Customer must return duly signed.

2.3. The Customer declares itself informed on the fact that, even in the absence of return of the General Conditions of Sale stamped and signed for acceptance, any supply of goods performed by Telcom S.p.A. is however regulated and subject to the content of these General Conditions of Sale.

## 3 • Modification of orders

3.1. Orders already received and approved cannot be modified or cancelled without the written consent of Telcom S.p.A. Any costs already incurred and arising from the cancellation or modification of the order, will be borne by the Customer.

## 4 • Prices

4.1. The prices are set exclusively for the supply referred to in this contract and refer to the costs in force at the time of its conclusion. Any increase in costs before delivery will produce a proportional increase, even if part of the delivery has been delivered.

4.2. All prices are in Euro and exclusive of VAT.

4.3. Prices may vary at any time without Telcom S.p.A. being obliged to give any advance notice.

4.4. The Customer shall also bear any costs for duties, customs and anything else or for failure to make an appointment with the courier.

## 5 • Shipping/Product Collection - Complaints

5.1. Upon receipt/collection of the product, the Customer will verify the integrity of the packages and the quantitative and qualitative correspondence with what is indicated in the accompanying document. The customer is required to check the goods on arrival. The verification shall cover any possible damage, missing goods, defects or apparent defects or non-conformity of the products delivered to the order and the transport document and the quality, quantity, size and type of the items received.

The verification shall also include the packaging condition.

Any damages, deficiencies or tampering to the packaging and their content, discrepancies and/or deformities, must be immediately reported and for this purpose will be the Customer's care, to describe them analytically on the transport document, assuming, in default, as seen and liked, the product under consideration.

5.2. In any case, whatever the terms of delivery agreed by the parties, the risks pass to the Buyer at the latest with the delivery to the first carrier.

5.3. Any complaints relating to the condition of the packaging, quantity, number or external characteristics of the Products (vices and apparent defects) must be indicated in detail and notified to Telcom S.p.A. by registered letter RR or by pec / certified electronic mail, under penalty of forfeiture, within 7 days from the date of receipt of the Products. Any possible claims relating to defects not detectable by a diligent check at the time of receipt (apparent and hidden defects) must be indicated in detail and notified to Telcom S.p.A. by registered letter RR or pec / certified electronic mail, under penalty of forfeiture, within 7 days from the date of noticing the defect and in any case no later than 12 months from delivery. The denunciation of vices and/or defects shall be considered valid and timely only if carried out within the aforementioned period and only if made in writing; telephone or verbal complaints will not be accepted.

5.4. Complaints shall not entitle the customer to suspend payment of the invoice relating to the contested goods.

## 6 • Delivery conditions

6.1. Delivery time, where specified, shall not be understood as peremptory and essential, nor as binding in any way for Telcom S.p.A. Unforeseeable circumstances or force majeure, strikes, closings, lack of raw materials, the restrictions by the central or local Public Authorities or any other reason that leads to a delay in delivery, will not give the buyer a right to claim any sum or compensation, and neither interests or rebates on the agreed price.

6.2. Any possible delay in delivery does not give the right to cancellation or termination.

6.3. Any possible requests to modify the indicated delivery terms will be accepted only if previously agreed in writing.

## 7 • Technical features and data

7.1. Technical features and data - weights, measurements, surfaces, shapes, dimensions, colours and other data - are indicative and non-binding.

## 8 • Right of withdrawal and suspension of execution

8.1. In the event of payment delays by the Customer, Telcom S.p.A. reserves the right to suspend the deliveries, with immediate effect, even without notice, and/or to terminate any ongoing contracts, even if different from those to which the delayed or non-payment refers to. And this without any right on the part of the customer to indemnity or compensation of any kind.

8.2. Telcom S.p.A. also reserves the right to withdraw and/or suspend the execution whenever it is found complains against the Customer, also from third parties, and/or other signs of insolvency.

8.3. In the event of a change in the assets of the buyer, Telcom S.p.A. reserves the right to request from it the issuance of guarantees, including bank guarantees, even after the completion of the order, it being understood that, in default, Telcom S.p.A. has the right to suspend the delivery.



## 9 • Penalty clause

9.1. It is agreed that in the event of default of the buyer's obligation (including refusal to pick up or accept the delivery of the goods), the sums paid as down payment at the time of conclusion of the contract are retained by Telcom S.p.A. as a penalty, without prejudice to the possibility of claiming compensation for further damages.

## 10 • Payments - Unpaid - Interest - Forfeiture of the term benefit

10.1. The exact method of payment, as well as the payment terms, will be agreed from time to time at the time of each individual order made.

10.2. The customer will not be able to waive the obligation to pay the payments in particular months such as August or December. Each deadline should therefore be respected without the possibility of postponement.

10.3. The failure to pay within the set terms, which must be considered binding and cannot be extended or derogated, will also give to Telcom S.p.A. the right to demand, in a single settlement, the remaining amount still due with forfeiture of any time-limit benefit.

10.4. In the event that payment is deferred in several instalments of each invoice, the non-payment of even one instalment makes it immediately due by Telcom S.p.A. the entire credit, the Customer being immediately considered as forfeited from the benefit of the term.

10.5. In case of late payment by the Customer, the Supplier, pursuant to art. 4 of Legislative Decree n° 231/2002, as amended by Legislative Decree n° 192/2012, without the need for the formal notice, from the day following the expiry of the deadline for payment, shall be entitled to claim the interests at the average of the current reference base rate during the delay period, as determined by the European Central Bank, augmented with 8 points.

## 11 • Retention of title

11.1. In the event that payment is deferred in several instalments of each invoice, the goods are intended as sold under a reserved domain agreement pursuant to art. 1523 and subsequent of the Civil Code and, therefore, the goods sold/purchased shall remain the property of Telcom S.p.A. until the time of full payment of the price.

## 12 • Guarantee

12.1. All products of Telcom S.p.A. are tested in our factory. Our products are guaranteed for 2 years against construction defects, provided that the standards indicated in the installation, use and maintenance documents, in the catalogue, instruction booklet and on the labels on the products are respected.

12.2. The guarantee provided by Telcom S.p.A. shall lapse and the company shall be relieved of all liability in the following cases:

- failure to comply with the installation and/or maintenance instructions as described in the above documentation;
- the product is modified, disassembled, tampered with;
- improper use of the product or failure to comply with the rules of use of the product contained in the aforementioned documentation and in the catalogue;
- maintenance has not been carried out as indicated in the instruction manual;
- the product has been overloaded with respect to its specified capacity or has been employed for uses not in accordance with the manufacturer's specified intended usage.

12.3. In addition, Telcom S.p.A. shall not be held liable for vices, defects and/or damages that result, directly or indirectly, in the following cases:

- storage of products unprotected or prolonged or otherwise incorrect;
- negligence, incorrect assembly, installation, maintenance and usage as well as the usage of products not in accordance with the technical specifications in the catalogue and in the instruction manual;
- modifications or transformations made to products or parts thereof carried out by the customer or by third parties in general.

Moreover, Telcom S.p.A. shall not be held liable for any damage that may directly or indirectly incur to persons or property as a result of incorrect installation, use and maintenance by the customer or third parties of the products sold.

## 13 • Place of jurisdiction for disputes

13.1. For any dispute relating to or in connection with the contracts to which these General Terms and Conditions apply, the parties to the contract expressly agree that the Court of Brindisi has exclusive jurisdiction. Purchases carried out by e-mail, telephone, fax or post also imply acceptance of these General Conditions of Sale, which can be read directly on the website [www.telcomitalia.eu](http://www.telcomitalia.eu).

## 14 • Processing of Personal Data pursuant to European Regulation N° 679/2016.

Telcom S.p.A. hereby informs you that your personal data will be used by the company as Data Controller, in compliance with the principles of protection of personal data set for by the European Regulation n° 679/2016.

The processing of your personal data will be carried out for purposes related to and instrumental to the commercial and administrative processing of the same. The data will be treated mainly with manual, electronic and computer tools. The processed data will be stored on paper, and any other type of suitable media in compliance with the measures provided for by G.D.P.R. n° 679/2016. The data required for contractual and accounting purposes are kept for the time necessary to carry out the commercial and accounting relationship. In accordance with European Regulation n° 679/2016 (the so-called G.D.P.R.) and the national legislation, the interested party may, in the manner and within the limits provided by the current legislation, exercise the following rights: request confirmation of the existence of personal data concerning him; the right of access; knowing its origin; receiving intelligible communication from them; have information about the logic, the methods and the purposes of the processing; request the updating, rectification, integration, cancellation, transformation into anonymous form, the blocking of data processed in violation of the law, including those no longer necessary for the pursuit of the purposes for which they were collected; the right of limitation and/or opposition to the processing of data concerning him; right of revocation; right to data portability; in cases of consent-based processing, receive their data provided to the controller, in a structured and readable form by a data processor and in a format commonly used by an electronic device; the right to lodge a complaint with the Supervisory Authority.



**Telcom**<sup>®</sup>  
TECNOLOGIE PER L'UOMO

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*The overall dimensions are expressed in centimeters with a tolerance of 1.5%, the capacities have a tolerance of 4.6%.*

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*The tanks and the modular installations are produced under licence - Patent application number PI2005A00084*

## TELCOM BRANDS

SERBATOI PER ACQUA POTABILE  
**AQUARIUS**<sup>®</sup>

TANKS

**PLUVIUM**

RAINWATER COLLECTORS

**eco**<sup>®</sup>  
**AQUARIUS**<sup>®</sup>

WASTEWATER AND RAINWATER TREATMENT

**OIL-TANK**

USED OIL CONTAINERS

**Jolly**

MULTIPURPOSE TRUNKS AND SHIPBUILDING

**Le Giare**

CONTAINERS FOR WINE AND OIL

**vasar**<sup>®</sup>  
ITALIAN GARDEN DESIGN  
OUTDOOR POTS

**Abruzzo**  
**Vasi**

TERRACOTTA OUTDOOR POTS

**modum**<sup>®</sup>  
ITALIAN COMFORTABLE FASHION

OUTDOOR AND INDOOR FURNITURE

**MUSEUM**

COLUMNS, STATUES, LOWRELIEVES

**Buddy**  
by Telcom

DOG-HOUSES AND PET ACCESSORIES



**Telcom**<sup>®</sup>  
TECNOLOGIE PER L'UOMO

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