

BIOLOGICAL SEPTIC TANKS



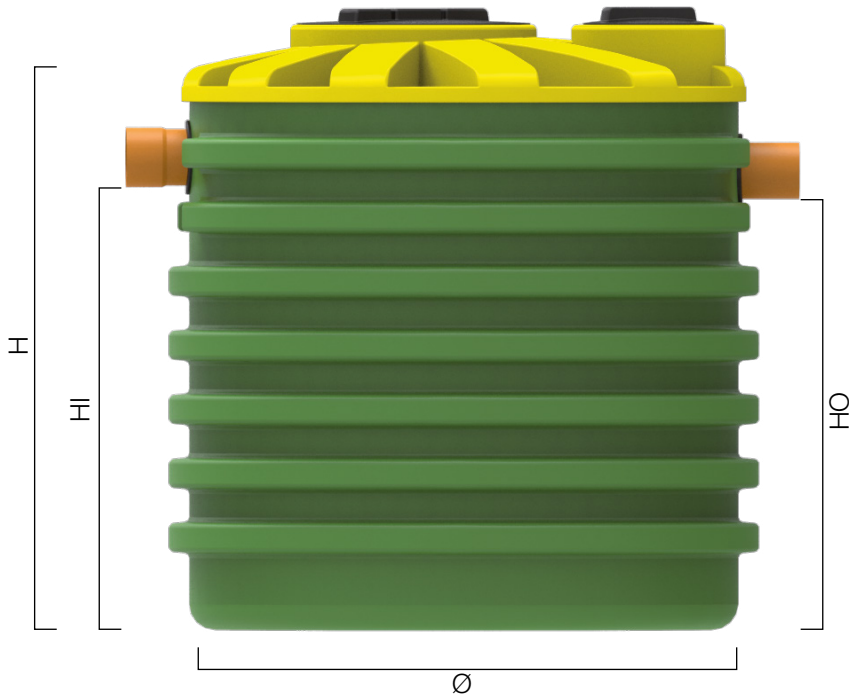
- 1 STILLING AREA**
area in which the incoming effluent slows down, allowing sludge to settle and any lighter substances to separate.
- 2 SLUDGE**
the separated sludge accumulates on the bottom of the tank, and undergoes anaerobic digestion by the bacterial flora.

CE

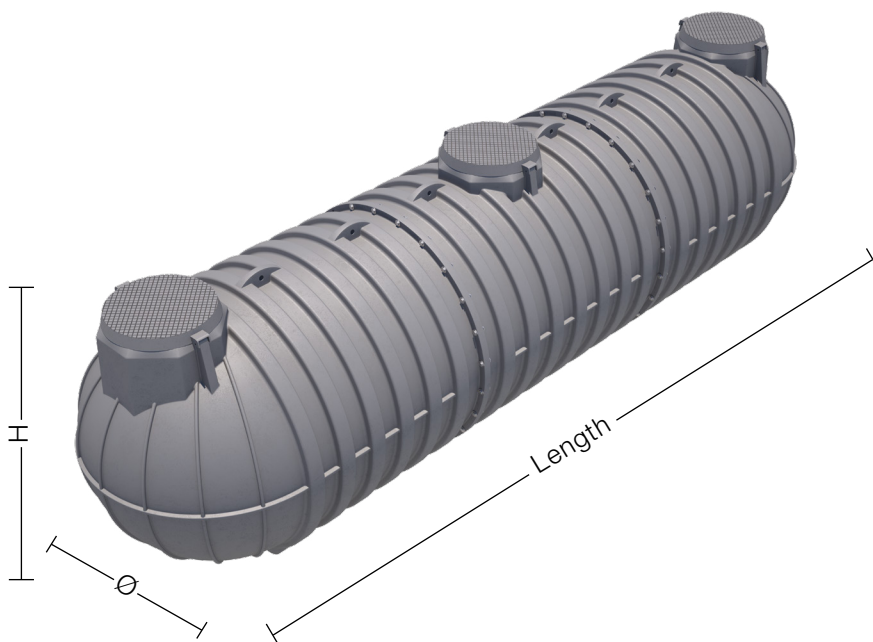
INSTALLATION DIAGRAM



BIOLOGICAL SEPTIC TANKS



BIOLOGICAL SEPTIC TANKS MODULAR



MODEL

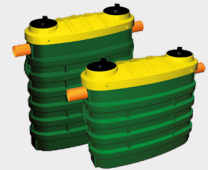
SMOOTH



CORRUGATED



ELIPSE



MODULAR



SEPTIC TANKS 2 CHAMBERS

Item	Mod.	Length mm	Width mm	Ø mm	H mm	HI mm	HO mm	Ø I/O mm	Covers 1	Covers 2	Extension 1 (optional)	Extensions 2 (optional)	Useful Vol. l	PE.
SEB500X2		-	-	790	790	620	600	110	CC400	CC140	PP45	-	610	4
NSEB700X2		-	-	1050	1030	760	740	110	CC400	CC200	PP45	PP30	1172	8
NSEB1000X2		-	-	1150	1220	880	860	110	CC400	CC200	PP45	PP30	1700	14
NSEB1200X2		1900	708	-	1630	1250	1230	110	CC300	CC300	PP35	PP35	2400	18
NSEB1250X2		-	-	1050	1650	1370	1350	110	CC400	CC200	PP45	PP30	2306	18
NSEB1500X2		-	-	1150	1720	1360	1340	110	CC400	CC200	PP45	PP30	2536	22
NSEB1700X2		1900	708	-	2140	1760	1740	110	CC300	CC300	PP35	PP35	3550	26
NSEB2100X2		-	-	1350	1975	1540	1520	110	CC400	CC300	PP45	PP35	3900	30
NSEB2600X2		-	-	1710	1450	1000	980	125	CC400	CC300	PP45	PP35	4122	32
NSEB3200X2		-	-	1710	1725	1240	1220	125	CC400	CC300	PP45	PP35	5050	40
NSEB3800X2		-	-	1710	1955	1525	1505	125	CC400	CC300	PP45	PP35	6350	48
NSEB4600X2		-	-	1710	2225	1745	1725	125	CC400	CC300	PP45	PP35	7670	60
NSEB5400X2		-	-	1950	2250	1700	1680	125	CC400	CC400	PP45	PP45	9156	72
NSEB6400X2		-	-	1950	2530	2000	1980	125	CC400	CC400	PP45	PP45	10586	84
NSEB7000X2		-	-	2250	2367	1850	1830	160	CC400	CC400	PP45	PP45	13868	110
NSEB9000X2		-	-	2250	2625	2070	2050	160	CC400	CC400	PP45	PP45	15646	140

SEPTIC TANKS 3 CHAMBERS

Item	Mod.	Length mm	Width mm	Ø mm	H mm	HI mm	HO mm	Ø I/O mm	Covers 1	Covers 2	Extension 1 (optional)	Extensions 2 (optional)	Useful Vol. l	PE.
SET500X3		-	-	790	790	620	600	110	CC400	CC140	PP45	-	915	6
NSET700X3		-	-	1050	1030	760	740	110	CC400	CC200	PP45	PP30	1761	12
NSET1000X3		-	-	1150	1220	880	860	110	CC400	CC200	PP45	PP30	2550	21
NSET1200X3		1900	708	-	1630	1250	1230	110	CC300	CC300	PP35	PP35	3600	27
NSET1250X3		-	-	1050	1650	1370	1350	110	CC400	CC200	PP45	PP30	3459	27
NSET1500X3		-	-	1150	1720	1360	1340	110	CC400	CC200	PP45	PP30	3804	33
NSET1700X3		1900	708	-	2140	1760	1740	110	CC300	CC300	PP35	PP35	5325	39
NSET2100X3		-	-	1350	1975	1540	1520	110	CC400	CC300	PP45	PP35	5550	45
NSET2600X3		-	-	1710	1450	1000	980	125	CC400	CC300	PP45	PP35	6183	48
NSET3200X3		-	-	1710	1725	1240	1220	125	CC400	CC300	PP45	PP35	7575	60
NSET3800X3		-	-	1710	1955	1525	1505	125	CC400	CC300	PP45	PP35	9525	72
NSET4600X3		-	-	1710	2225	1745	1725	125	CC400	CC300	PP45	PP35	11505	90
NSET5400X3		-	-	1950	2250	1700	1680	125	CC400	CC400	PP45	PP45	13734	108
NSET6400X3		-	-	1950	2530	2000	1980	125	CC400	CC400	PP45	PP45	15879	126
NSET7000X3		-	-	2250	2367	1850	1830	160	CC400	CC400	PP45	PP45	20802	165
NSET9000X3		-	-	2250	2625	2070	2050	160	CC400	CC400	PP45	PP45	23619	210

TECHNICAL SECTION - SEPTIC TANKS

TECHNICAL CHARACTERISTICS

Septic tanks constitute a reliable device for the primary treatment of sewage. The treatment systems are passive, extremely stable, simple and inexpensive. They are used, above all, for treating domestic sewage from small communities. The configuration of the tank forces the sewage to pass through the liquid mass contained in it. The slowing down of the flow allows sedimentable solids and substances of specific weight less than that of the water to separate. Furthermore, an anaerobic fermentation process is triggered with the resulting **solubilisation and synthesis of part of the suspended solids**. In this way, the effluent leaving the tank is conditioned, i.e. it has a limited concentration of solids, transformed for the most part into dissolved and colloidal solids.

Septic tanks are nothing more than **stilling tanks** in which the following processes take place:

- **separation** of sedimentable solids, coarse material, sands/grits, oils and greases present in the sewage;
- reduction of a fraction of the accumulated organic substances by **decomposition**;
- accumulation and prolonged **storage** of the separated materials.

Compartmentation, i.e. the division of the system into chambers, significantly influences the efficiency of the treatment process. With this configuration, a large part of the suspended solids accumulate in the first compartment and only pass to the next chamber with great difficulty. Compartmentation is particularly effective when high levels of treatment are to be reached, particularly in terms of reducing suspended solids. Septic tanks are sized to achieve a high purification performance and to obtain liquefaction of the sludge, reducing its formation and thus minimising disposal costs. **The septic tanks are certified under standard UNI EN 12566-1** (excluded modular, 2-chambers and 3-chambers septic tanks).

USE AND MAINTENANCE

An excessive accumulation of putrescible material at the bottom of the tank can cause **uncontrolled anaerobic digestion** phenomena, leading to an over-production of biogas and the development of malodorous emissions. Furthermore, the reduction in the volume available in the digestion compartment and the excessive production of gas bubbles will cause the settled material to rise, thus causing **deterioration** in the quality of the treated effluent.

For this reason, according to the loads feeding the tank, between 1 and 4 inspections a year are to be carried out, with removal of the sludge if necessary. It is sometimes recommended not to remove all the deposited sludge, but to **leave approximately 1/10 of the sludge** that has deposited in the tank; this accelerates re-start of the processes. The use of the Rototec Bio-activator is highly recommended to trigger the biological processes more quickly, thus limiting the number of sludge removal operations and reducing the risk of bad smells.

MANAGEMENT

WHAT TO DO	WHEN	HOW
Inspect the septic tank	From 1 to 4 times a year	Unscrew the inspection covers and check the level of sediments
Remove the settled sludge, clean the interior and the inlet and outlet pipes	Every 6 / 12 months	Contact a licensed waste disposal company

N.B. the frequency of operations will depend on the incoming organic load.

PROHIBITIONS

- **do not use toxic and/or poisonous substances** (bleach, solvents, insecticides, disinfectant substances, aggressive detergents), always use biodegradable products;
- **NEVER** flush paper tissues, kitchen towel, paper napkins or other materials except toilet paper down the toilet;
- **NEVER** allow rainwater to enter the system.

WARNINGS

- make sure that drains have a siphon;
- check that the pipes slope sufficiently (approximately 1% - 2%);
- connect the biogas vent pipe (**see underground installation**);
- after emptying, fill the tank again with **clean water**;
- in the event of a maintenance operation of any kind, always comply with the **safety regulations** regarding operations within enclosed wastewater treatment areas and with the general technical procedures applicable.
- make sure that drains have a siphon;

BIOLOGICAL SEPTIC TANKS



- 1 STILLING AREA**
area in which the incoming effluent slows down, allowing sludge to settle and any lighter substances to separate.
- 2 SLUDGE**
the separated sludge accumulates on the bottom of the tank, and undergoes anaerobic digestion by the bacterial flora.

CE

INSTALLATION DIAGRAM



SPECIFICATIONS

TECHNICAL CHARACTERISTICS

Septic tanks constitute a reliable device for the primary treatment of sewage. The treatment systems are passive, extremely stable, simple and inexpensive. They are used, above all, for treating domestic sewage from small communities. The configuration of the tank forces the sewage to pass through the liquid mass contained in it. The slowing down of the flow allows sedimentable solids and substances of specific weight less than that of the water to separate. Furthermore, an anaerobic fermentation process is triggered with the resulting solubilisation and synthesis of part of the suspended solids. In this way, the effluent leaving the tank is conditioned, i.e. it has a limited concentration of solids, transformed for the most part into dissolved and colloidal solids.

USE

Primary treatment of domestic sewage or similar from toilets.

DAILY HYDRAULIC LOAD: 200 l/PE

Please note: it is possible to size the treatment plant according to different daily hydraulic loads

PRODUCT CERTIFICATION

Rototec biological septic tanks are CE marked and have been designed, tested and certified under standard UNI EN 12566-1 "Small wastewater treatment systems for up to 50 PT. Part 1: Prefabricated septic tanks" (excluded modular, 2-chambers and 3-chambers septic tanks).

The septic tanks have been verified and tested at Rototec and by a third party certifying body, and have been found to comply with the necessary requirements.

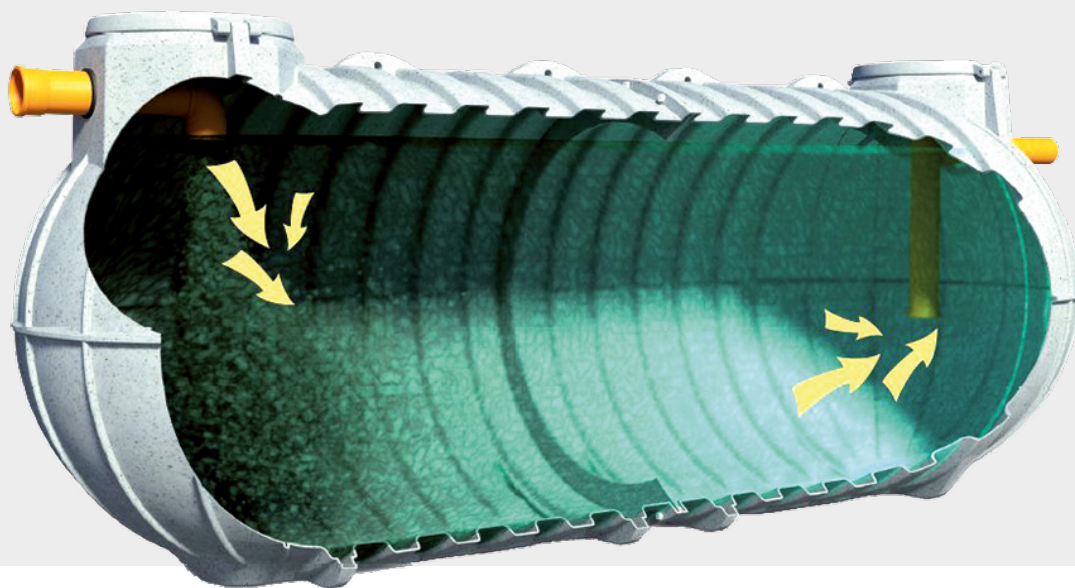
- Hydraulic efficiency
- Watertightness
- Nominal capacity
- Structural behaviour
- Design requirements



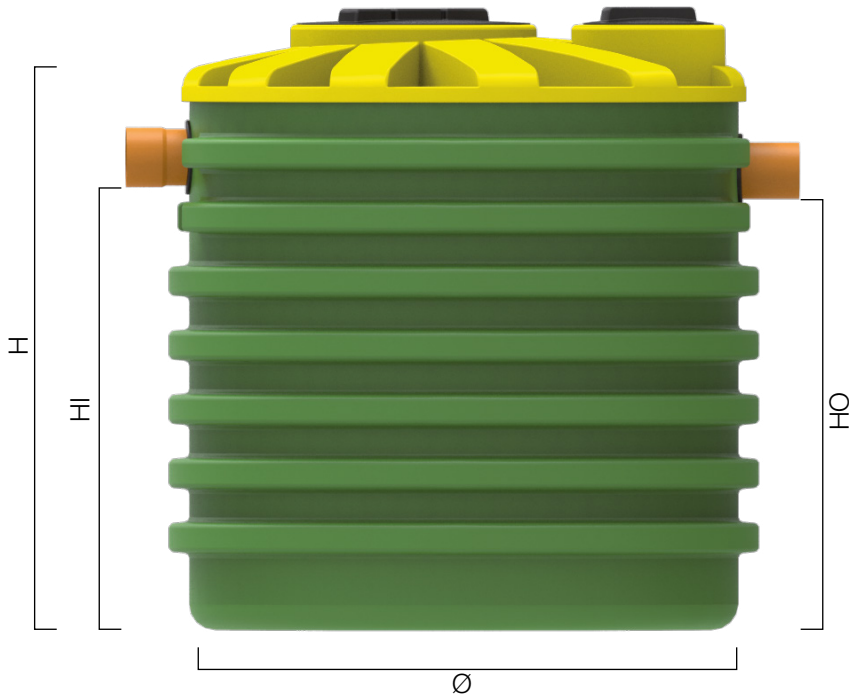
CERTIFIED
UNI EN 12566-1



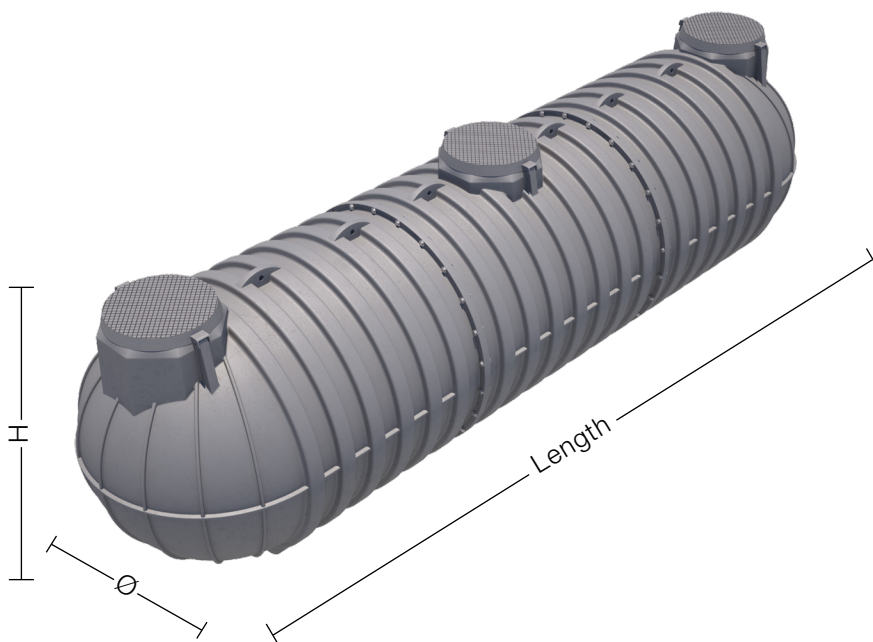
BIOLOGICAL TANKS - MODULAR



BIOLOGICAL SEPTIC TANKS



BIOLOGICAL SEPTIC TANKS MODULAR



MODEL

SMOOTH



CORRUGATED
































ELIPSE



MODULAR



SEPTIC TANKS - SINGLE CHAMBER

Item	Mod.	Length mm	Width mm	Ø mm	H mm	HI mm	HO mm	Ø I/O mm	Cover 1	Cover 2	Extension 1 (optional)	Extension 2 (optional)	Useful volume l	PE.
SE500		-	-	790	790	620	600	110	CC400	CC140	PP45	-	305	2
NSE700		-	-	1050	1030	760	740	110	CC400	CC200	PP45	PP30	586	4
NSE1000		-	-	1150	1220	880	860	110	CC400	CC200	PP45	PP30	850	7
NSE1200		1900	708	-	1630	1250	1230	110	CC300	CC300	PP35	PP35	1200	9
NSE1250		-	-	1050	1650	1370	1350	110	CC400	CC200	PP45	PP30	1153	9
NSE1500		-	-	1150	1720	1360	1340	110	CC400	CC200	PP45	PP30	1268	11
NSE1700		1900	708	-	2140	1760	1740	110	CC300	CC300	PP35	PP35	1775	13
NSE2100		-	-	1350	1975	1540	1520	110	CC400	CC300	PP45	PP35	1950	15
NSE2600		-	-	1710	1450	1000	980	125	CC400	CC300	PP45	PP35	2061	16
NSE3200		-	-	1710	1725	1240	1220	125	CC400	CC300	PP45	PP35	2525	20
NSE3800		-	-	1710	1955	1525	1505	125	CC400	CC300	PP45	PP35	3175	24
NSE4600		-	-	1710	2225	1745	1725	125	CC400	CC300	PP45	PP35	3835	30
NSE5400		-	-	1950	2250	1700	1680	125	CC400	CC400	PP45	PP45	4578	36
NSE6400		-	-	1950	2530	2000	1980	125	CC400	CC400	PP45	PP45	5293	42
NSE7000		-	-	2250	2367	1850	1830	160	CC400	CC400	PP45	PP45	6934	55
NSE9000		-	-	2250	2625	2070	2050	160	CC400	CC400	PP45	PP45	7823	70
ITSE11000		4420	-	2100	2200	1870	1850	160	TAP800	-	PP77	-	10135	100
ITSE13000		5010	-	2100	2200	1870	1850	160	TAP800	-	PP77	-	12105	120
ITSE15000		5620	-	2100	2200	1870	1850	160	TAP800	-	PP77	-	14150	140
ITSE18000		6680	-	2100	2200	1870	1850	160	TAP800	-	PP77	-	16900	165
ITSE20000		7270	-	2100	2200	1850	1830	200	TAP800	-	PP77	-	18610	185
ITSE22000		7880	-	2100	2200	1850	1830	200	TAP800	-	PP77	-	20700	200
ITSE25000		8940	-	2100	2200	1850	1830	200	TAP800	-	PP77	-	22800	225
ITSE28000		9530	-	2100	2200	1850	1830	200	TAP800	-	PP77	-	25200	250
ITSE30000		10140	-	2100	2200	1820	1800	250	TAP800	-	PP77	-	27250	270
ITSE33000		11200	-	2100	2200	1820	1800	250	TAP800	-	PP77	-	29540	290
ITSE35000		11790	-	2100	2200	1820	1800	250	TAP800	-	PP77	-	31710	310
ITSE36000		12400	-	2100	2200	1820	1800	250	TAP800	-	PP77	-	33800	330
ITSE40000		13460	-	2100	2200	1820	1800	250	TAP800	-	PP77	-	36180	360

PE. = population equivalent: Ø = diameter; H = height; HI = inlet pipe height; HO = outlet pipe height; ØI/O = inlet/outlet pipe diameter.

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