

BIOCAPS

**SECONDARY TREATMENT SYSTEM
WITH ROCK WOOL**
EFFICIENCY AND SUSTAINABILITY



Starplast®

WHY BIOCAPS

BIOCAPS is a compact secondary treatment unit designed to be installed downstream of a two-chamber septic tank. It consists of a series of rock wool filters arranged in sequence, providing advanced wastewater treatment so that the effluent meets the requirements for discharge according to Table 4 (soil), without the use of electrical energy.

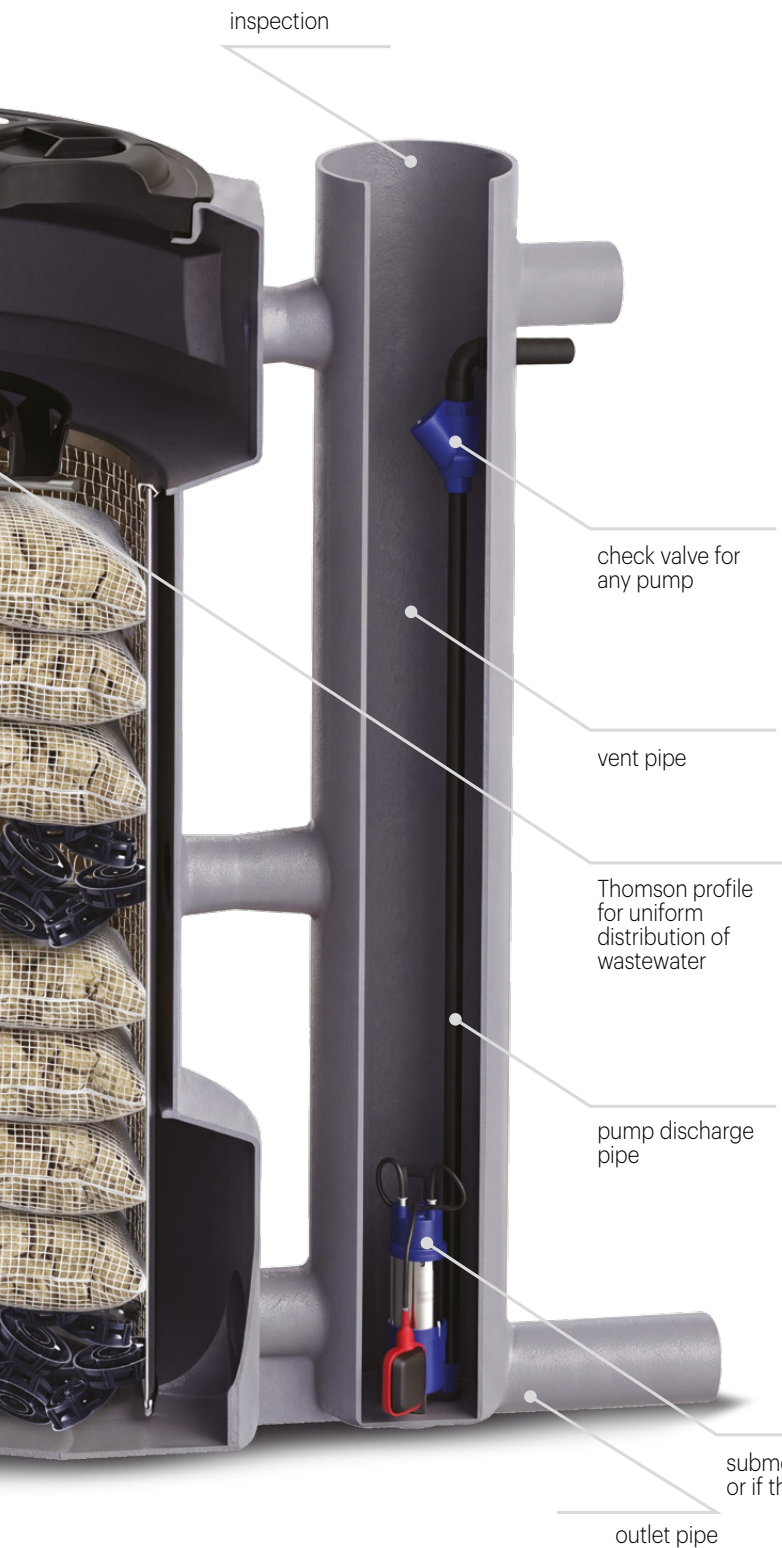
The system stands out for its ease of cleaning and filter replacement, thanks to a new extraction system that simplifies maintenance and overcomes the functional limitations and rigidity of traditional solutions.



UNIC

FILTER EXTRACTION CAPSULE, ONE OF A KIND

designed for simple and sustainable management: it allows quick filter replacement without complex operations, reducing waste and costs. It requires no routine maintenance and, thanks to high-performance natural rock wool, ensures long-lasting performance over time.



BIOCAPS

ADVANTAGES

DISCHARGE TO SOIL

with a system currently undergoing UNI EN 12566-3 certification

NO ELECTRICITY CONSUMPTION WHATSOEVER

POLLUTANT REMOVAL

COD: 90,3%
BOD: 94,3%
NH4-N : 56,5%
Ptot : 43,5%
SS: 93,3%

VOLUME REDUCTION

Thanks to the use of rock wool, the system differs from traditional aerobic and anaerobic filters, which require significantly larger volumes to achieve the results listed above.

SECONDARY TREATMENT IMMEDIATELY AVAILABLE

Unlike other secondary treatment systems, this BIOFILTER does not require extended activation times for the biological treatment system, achieving the stated treatment efficiency immediately.

EASY MAINTENANCE

The system requires no routine maintenance (only cleaning of the sludge filter located at the outlet of the second septic tank). In any case, the rock wool has a limited lifespan and needs to be replaced every 5-10 years depending on usage.

BIOCAPS It is the only one of its kind that offers this easy replacement at an extremely low cost.



WHERE TO INSTALL IT

BIOCAPS It is particularly effective for treating domestic wastewater from vacation homes or isolated homes not connected to a public sewer system. It is especially suitable for properties with highly intermittent wastewater flow, or where there is no electrical connection to power the treatment unit, yet where extremely high levels of pollutant removal are still desired.

HOW IT WORKS

The wastewater at the outlet is sent to a primary treatment system consisting of a two-chamber septic tank. Here, settleable solids and floating substances (oils and fats) are completely removed.

The second septic tank, located in the outlet pipe, features a removable and easily washable filter brush that ensures only the soluble portion of the wastewater enters the **BIOCAPS**, thereby preventing filter clogging.

After passing through the primary treatment stage, the wastewater enters the **BIOCAPS**.

Here, the wastewater is directed through a Thomson-type distribution system, which ensures that it is distributed evenly across the entire filter surface, ensuring that every part of the filter is exposed to the wastewater flow and thus preventing preferential flow paths.

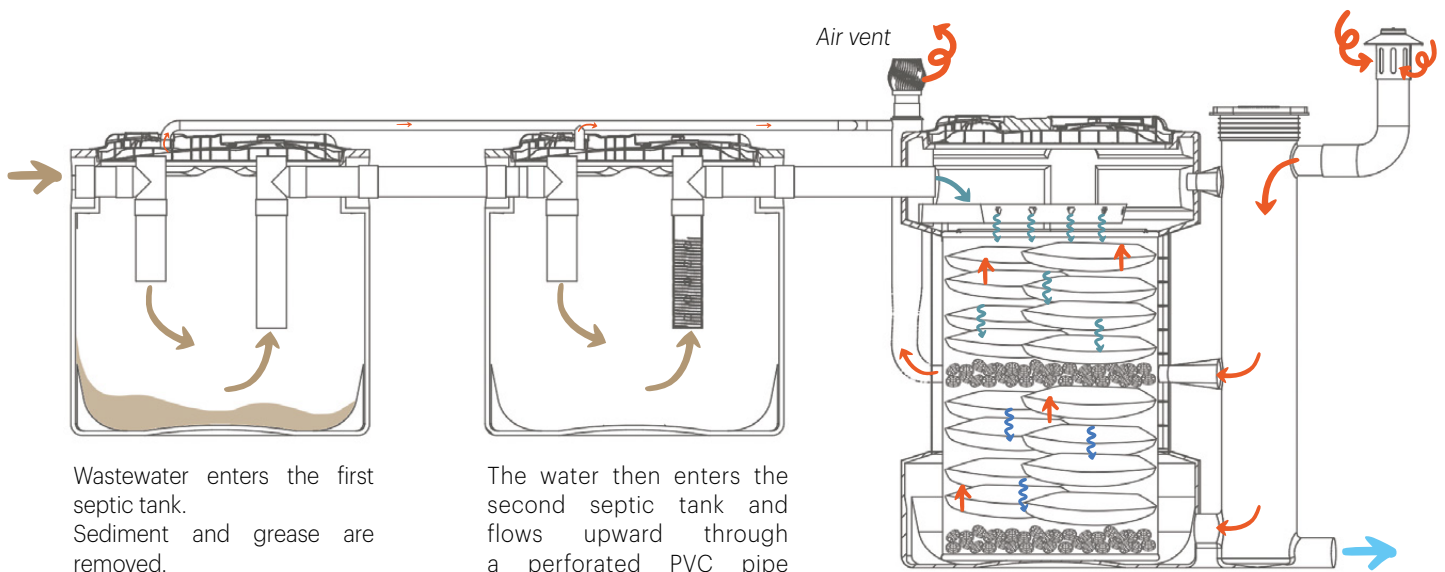
The water then passes through three layers of rock wool in cubes of varying sizes. Intercalated within the filter layers are two layers of plastic packing material connected to aeration pipes, ensuring that the rock wool is constantly exposed to an air flow, thus making the system fully aerobic.

Forced air intake occurs due to the vertical movement of the wastewater, making the use of a blower unnecessary and thus creating a treatment process completely free of electricity consumption. Once it has passed through the filtration system, the air flow is directed via the septic tank vent pipe above the roof of the house, thereby preventing the risk of unpleasant odors.

The rock wool through which the wastewater flows interacts with the wastewater in both physical and biological ways. From a physical standpoint, the rock wool reacts immediately with the wastewater, ensuring that purification is immediately effective even if the treatment system is not fed wastewater for an extended period (e.g., vacation homes).

The system therefore does not need to be replenished with powdered bacteria to restore it to a steady state.

From a biological standpoint, when the system is used continuously, the rock wool ensures that a high concentration of bacterial flora takes hold on its surface (due to its high specific surface area), resulting in high purification efficiency with very little excess sludge formation.



Wastewater enters the first septic tank. Sediment and grease are removed.

The water then enters the second septic tank and flows upward through a perforated PVC pipe equipped with a filter brush that prevents additional solids from entering the secondary treatment system.

The wastewater enters the BIOCAPS tank, passes through the Thomson profile, which distributes it evenly across the rock wool filter system. The water exits the system completely purified.

BIOCAPS

EXHAUST

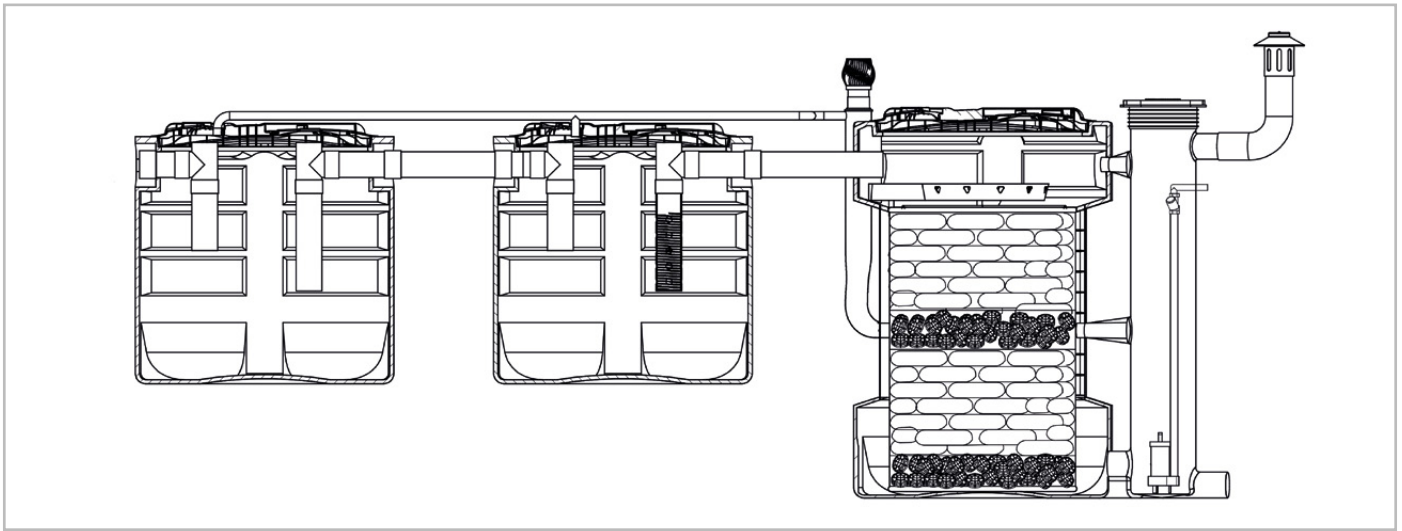


T4
ground

SPECIFICATION
ITEM



TECHNICAL DRAWING



TECHNICAL SPECIFICATIONS


MODELS WITHOUT A PUMP

model	A.E. n.	DOUBLE-CHAMBER SEPTIC TANK					BIOCAPS				pump
		model	vol.	Lu x La x h	he/hu	Ø pipe	vol. filter	Ø x h	he/hu	Ø tubo	power
			litri	mm	cm	mm	litri	mm	cm	mm	kW
BIOCAPS 5	3-5	SET C 1200 SB	2.360	310 x 130 x 128	108/106	125	1.100	1250 x 1900	166/25,2	125	-
BIOCAPS 10	8-10	SET CX 2100 SB	4.200	350 x 150 x 160	137/135	125	2.200	1950 x 2240	198/25,2	125	-

MODELLI SENZA MODELS WITH SUBMERSIBLE PUMPS

model	A.E. n.	DOUBLE-CHAMBER SEPTIC TANK					BIOCAPS				pump
		modello	vol.	Lu x La x h	he/hu	Ø pipe	vol. filter	Ø x h	he/hu	Ø tubo	power
			litri	mm	cm	mm	litri	mm	cm	mm	kW
BIOCAPS 5 WP	3-5	SET C 1200 SB	2.360	310 x 130 x 128	108/106	125	1.100	1250 x 1900	166/25,2	125	0,5
BIOCAPS 10 WP	8-10	SET CX 2100 SB	4.200	350 x 150 x 160	137/135	125	2.200	1950 x 2240	198/25,2	125	0,5



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