

Sepcon BAF Sewage Treatment System

Sepcon
SEWAGE TREATMENT SYSTEMS



CE

OWNERS MANUAL

VERSION 2 July 21
OM/WEB/SR0721

Disclaimer

The property owner is responsible for adhering to this owner's manual. Sepcon accepts no liability in the event of a failure resulting from not adhering to this manual

Information about the documentation.

1.1 About this documentation

- Read this documentation before initial operation or use. This is prerequisite for safe, trouble-free handling and use of this product.
- Always observe safety instructions and warnings in this documentation and on the product.
- Keep these operating instructions and warnings in this documentation in an accessible place near the product and make sure these operating instructions are furnished to any new operator or owner.

1.2 Explanation of symbols used

Warnings alert persons to hazards that occur when using this product or operating near the product

DANGER

DANGER!

- Draws attention to imminent danger that will lead to serious personal injury or a fatality.
-

WARNING

WARNING!

- Draws attention to a potential treat of danger that can lead to serious personal injury or a fatality.
-

CAUTION

CAUTION!

- Draws attention to a potentially dangerous situation that could lead to a slight personal injury or significant damage to the equipment or other property.
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1.3 Warning Notices

	<p>➤ DO NOT ENTER!</p> <p>Never open any lid that contains this symbol unless professionally trained to do so.</p>
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1.4 Product Information

Sepcon BAF systems are designed to treat typical domestic wastewater effluent as tested and certified by EN12566-3. The product should be operated in accordance with this documentation and untrained persons should never enter the system.

Product Information Identification:

SEPCON BAF T: 01 6287300	
TANK BATCH ID:	
CHECKED BEFORE DISPATCH:	
SERIAL NUMBER:	
DATE INSTALLED:	
DESIGN PE:	
ALWAYS OPERATE IN ACCORDANCE WITH THE OWNERS MANUAL	
 EN 12566-3	

1.4 Declaration of conformity

We declare that the product described here complies with the applicable directives and standards. A copy of the declaration of performance can be found within this documentation.

The technical documentation is sourced here:

Sepcon | Moyglare Road | Newtown | Kilcock | Co. Kildare

1.5 Safety Precautions

- Ensure that all the information contained in this manual is always adhered to. Treated wastewater is not suitable for human consumption.
- It is important that the Sepcon BAF system is fenced with a provision for a secure maintenance access gate to prevent accidental access. (this is the responsibility of the owner)
- Manhole lids are rated to 125kg and are for pedestrian use only. **Never drop lids and always replace cracked or damaged lids immediately.**
- Never enter a Sepcon BAF system, unless fully qualified and equipped to do so.
- Never disconnect the power to the air pump, it is imperative that it is running 24 hours a day, every day.
- Naked flames shall not be used in the vicinity of the tank due to the danger of combustion.
- The manhole covers shall never be left off an unattended tank.
- Sewage and sewage effluent can carry micro-organisms and gases harmful to human health. Any person carrying out work on the system must be appropriately trained. Suitable protective clothing: including gloves, goggles should always be worn. Always remove contaminated clothing and protective equipment after working with sewage treatment plants. Wash hands and face prior to eating, drinking or smoking.
- If the audible alarm sounds, we recommend that you contact Sepcon or a suitability qualified firm immediately and reduce the inflow from the dwelling to the system until an engineer arrives.

1.3 Electrical & Maintenance

- All electrical work to be carried out by competent persons using suitable materials for the application.
 - Do not open the tank cover without firstly isolating the mains power.
 - Electrical work must be carried out strictly to the manufacturer's instructions and to the relevant national rules for electrical installations. An electrical diagram of the control panel is available from Sepcon.
 - When working with machinery / electrical equipment, proximity of water shall be noted. Electrical equipment shall not be wet when working with it.
 - There is potential danger when de-sludging and therefore this shall never be done alone or by an unqualified person.
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2.1 Installation - Site Preparation & Excavation Guidance

This guidance is provided in a separate document which is attached to the invoice which is sent to the purchaser prior to delivery taking place. If you require site preparation and excavation guidance information, please contact Sepcon.

2.2 After installation of the tank into the ground

- The delivery driver will normally stay on site to commission the system internals by installing the final components and electronic controls such as pump connections. They will also leave enough SWA Cable to reach the nearest building. **(25metres maximum)** The placement into the ground and connection of the SWA power cable is the responsibility of the client.

⚠ WARNING

<p>The Sepcon BAF must be connected to the mains by a suitability qualified electrical contractor. In accordance with electrical regulations, Sepcon cannot connect the power cable between the building and the tank.</p>

- Please make sure that the final finished ground level is at least 50mm (2inches) **below** the top of the risers to prevent excess vegetation growth around the lids and to prevent flooding of the electronic controls in exceptionally wet weather. If in doubt have your engineer on-site to confirm the finished ground level. Any risers supplied & installed later will be charged separately.
 - Backfill around the Sepcon BAF with suitable material with no large boulders or rocks greater than 50mm in diameter.
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2.3 After the delivery driver leaves the site

- We recommend an inspection chamber (AJ) be fitted just before the Sepcon BAF tank.
 - If water is showing in the base of the excavation, we recommend you fill the tank 50%. To ensure stability.
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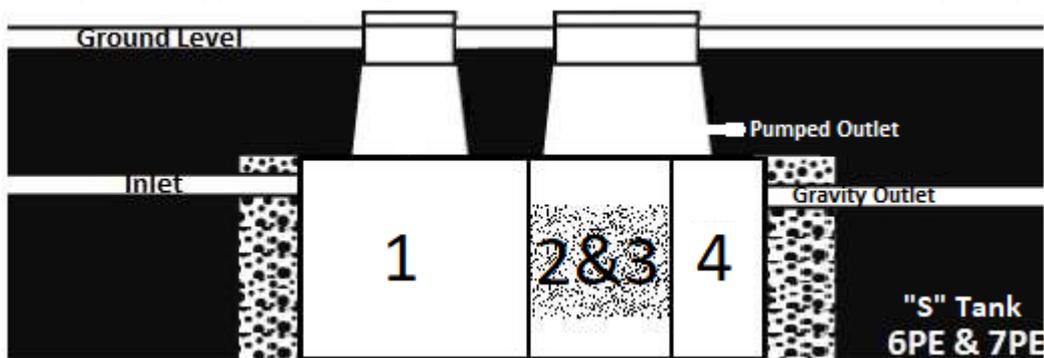
2.4 Before moving into the building or allowing a load to enter the Sepcon BAF

Please call Sepcon 1 week before moving in OR allowing a loading of wastewater to enter the Sepcon BAF - they will need to ask you to make a few basic checks to ensure the system has not been disturbed since installation and is ready to operate. We may require the system Serial Number which can be found under the green box hood.

⚠ WARNING

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none">1. The Sepcon BAF <u>must be securely fenced off</u> to ensure children, pets, livestock, or machinery cannot gain access the tank(s). This is the responsibility of the property owner.2. Always ensure the tank is powered and the air pump is running prior to putting any device or apparatus in the dwelling which is connected to the sewer into use. |
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3.1 System Typical Configuration (cross section) – NOTE: May vary depending on model.



1. Primary Chamber
2. Aeration (treatment) chamber 1
3. Aeration (treatment) chamber 2
4. Final settlement chamber

3.2 Manhole Risers

- Sepcon provides risers on the day of installing the tank into the ground, to a level approved by the groundwork's contractor / landscaper / client.
- The maximum height of risers to be installed on a standard production model is 1 meter in total. If any additional risers are installed this shall be at the owner's risk and the delivery driver, distributor or manufacturer shall not be liable for any issues that may arise.
- Sepcon also offer a special order 'Deep BAF' system that are suitable for handling risers up to 2 meters. Clients should specify a requirement for a deep BAF system when ordering and expect a lead time of up to 5 weeks from ordering. **Clients should also ensure a "Deep BAF" is clearly noted on the invoice prior to taking delivery.**
- Sepcon cannot guarantee the water tightness of any tank that is proposed to be or has been installed in areas which have high water tables. A high-water table shall be defined as ground water which can exceed the height of the proposed inlet pipe from the dwelling.
- It is important that all manhole risers are above the surrounding landscape by a minimum on 50mm. The elevation shall ensure that the tank cannot intake surface water during extreme weather periods such as flooding.

⚠ CAUTION

Sepcon cannot guarantee the water tightness of any tank that is proposed to be or has been installed in areas which have high water tables. A high-water table shall be defined as ground water which can exceed the height of the proposed inlet pipe from the dwelling.

Note: Under no circumstances should the manhole covers finish below ground level as per the illustration below:



Additional risers can be purchased from Sepcon for your BAF system. If manholes are less than 50mm above ground level after landscaping your property you should install additional risers.

4.1 Maintenance

⚠ WARNING

Any maintenance carried out inside the tank represents a confined space. Therefore, the maintenance person must be suitably trained to work in confined spaces. Sewage and sewage effluent can carry micro-organisms and gases harmful to human health. Any person carrying out maintenance on the system must be appropriately trained. Suitable protection equipment including coveralls, gloves and goggles should always be worn. Always remove contaminated clothing and protective equipment after completion of work. Wash hands and face and disinfect prior to eating, drinking or smoking.

A certain amount of maintenance is required on an ongoing basis to ensure that the system is working correctly. This is the responsibility of the owner.

4.2 Regular Maintenance (Every 30 Days)

The vent between the blower housing and the riser guarantees a fresh supply of air to the air blower. The vent under the desludging cover allows gas to escape and stops the tank from becoming pressurised. All vents should be checked to make sure they are not blocked or obscured. Ensure the air blower is working by listening for a gentle hum when standing beside the plant. Inspect pipework for blockages if necessary.

4.3 Annual Maintenance

⚠ CAUTION

The Sepcon BAF System requires a maintenance visit by a suitability qualified person **annually** to ensure all aspects of the system are operating optimally and worn or faulty parts are replaced. Failure by the owner to maintain the Sepcon BAF System could result in a system failure which could ultimately cause pollution.

Contact Sepcon on 01-6287300 or contact a suitability qualified and insured person to arrange a service visit. The system should also be checked thoroughly and dipped for sludge on a regular basis. This does not require entering the system. If in doubt consult suitability qualified person or contact Sepcon. The system must be desludged if the sludge level is more than 500mm deep in the primary chamber. The primary chamber is illustrated in section 3.1. For larger systems over 7PE – consult the system drawing for the location of the primary chamber(s). If you do not have a drawing, this can be provided by request.

During routine servicing, the service technician will perform a series of checks and procedures:

Annual Checks

- The air-diffuser is monitored to check for sufficient dispersion of air.
- The sludge return system is functioning correctly.
- The covers and locks are in place and in good condition.
- General appearance and condition of the treatment plant is good.

Annual Maintenance Procedures

- Test the blower pressure and condition.
- Replace the blower filter.
- Test the warning alarm.
- Tests the pump and float-switch (If applicable).
- Clear the vents of any blockages.
- The sludge return is checked and flushed if required and pressure calibrated.
- The sludge level in the primary chamber is measured.
- The diffuser manifold is adjusted if required (if applicable).

4.3 Overhaul Maintenance

Over time, components within the Sepcon BAF system will wear out and system performance will slowly deteriorate. Maintaining the Sepcon BAF system in accordance with this manual will delay the requirement to overhaul the system. Overhauling is typically completed every 10 to 15 years for a well-maintained system. Components which will require overhauling include, replacement of diffusers, bio-media, sludge return, air blower, outlet pump, alarm float and control panel. More periodic replacement of some mechanical components such as the air blower and outlet pump may be required at shorter than quoted intervals.

4.4 De-sludging (emptying the solid waste from chamber 1 the primary chamber as per section 3.1)

⚠ CAUTION

- There is the potential danger of falling into the tank during desludging when manholes
- may be open – take all necessary safety precautions when desludging.
- The system must be desludged if the sludge level is more than 500mm deep in the primary chamber or every 2 years – **Whichever comes first.**
- The de-sludging of the Sepcon BAF system is the sole responsibility of the owner.
- De-sludging should never be carried out alone or by untrained persons.
- Do not allow equipment or machinery to drive over any manholes. Always maintain a distance of at least 3 meters away from the covers on the Sepcon BAF wastewater treatment plant with any vehicles or plant machinery.
- The access cover should never be left open and unattended.

De-sludging is a critical part of the successful operation of the Sepcon BAF waste water treatment system and is the sole responsibility of the owner. Only competent approved personnel should carry out desludging.

Desludging Procedure:

1. Remove the de-sludging access cover(s)
 2. Empty the Sepcon BAF plant chamber 1 using the vacuum tanker. Ensure the solids are removed with the liquid.
 3. Care must be taken not to damage the plant with the hose of the vacuum tanker.
 4. Replace the de-sludging access cover securely.
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5.1 Operating and Design Conditions

- The manufacturer's installation, operation and maintenance instructions outlined in this manual must always be followed to ensure the Sepcon BAF system operates as designed. Any variations to these guidelines could result in the unit not performing to its full potential and the discharge may not meet the required standards. The property owner has a legal responsibility to ensure that the system does not cause pollution, a health hazard or nuisance. The Sepcon BAF system is one part of the overall wastewater treatment system, which includes many components (plumbing, ventilation, plant and polishing filter. Each component must function correctly for the overall system to work which is the responsibility of the owner.
- Percolations, drains and the emptying of primary chamber remains the sole responsibility of the property owner. Damage to the installation due to the influx of harsh chemicals or surface/ ground water or the backing up of soak ways, percolation areas or drains is not covered by the manufacturer or the distributor.
- The start-up period from when the system is brought into operation to peak performance is generally 120 days. The system should be loaded in a range between 50% and 85% for this period and a quantity of activated sludge may also be required depending on circumstances to build bacteria if performance is not in line with expectations after the start-up period at the owner's expense.
- The standard discharge pump supplied to a "Pumped" Sepcon BAF system provided a flow of 135 Litres per minute and a head of 2 metres. Larger discharge pumps may be fitted at the request of the customer. **The customer is solely responsible for ensuring the discharge pump is adequate for feeding the polishing filter.**

5.2 To ensure the continuance of the plant performance the user must take certain precautions including the following:

- The loading to the plant should never exceed the design capabilities and be reasonably spaced throughout a 24-hour period.
 - High volume discharges such, as those from swimming pools and Jacuzzi's must never enter the Sepcon BAF system.
 - Surface water must not enter the Sepcon BAF system.
 - The use of kitchen grinders should be avoided if possible. (if using a kitchen food grinder desludging should be completed every 6 months)
 - Non-standard domestic applications such as commercial cooking and cleaning is not suitable for the Sepcon BAF.
 - Connecting granny flats, self-contained apartments, mobile homes, log cabins or extra bedrooms will significantly increase the loading on the Sepcon BAF. Any additional loadings should never exceed the design population of the plant in accordance with the EPA code of practice and/or building regulations.
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5.3 Do not allow the following chemicals to enter the Sepcon BAF System including but not limited to:

- Water softener regenerate
 - Disinfectants and Bleach
 - Strong Acids and Alkalis, or Photographic Chemicals
 - Oil, Fats or Grease
 - Petrol, Diesel or Pesticides
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5.4 Do not allow any of the following to enter the Sepcon BAF System:

- Large quantities of milk, alcohol or food (in excess of 1 litres per week per 6 household resident)
- Bleaches or cleaners
- Baby wipes, cosmetic and cleaning wipes
- "Flushable" wipes
- Sanitary towels
- Tampons
- Kitchen paper
- Cotton buds
- Nappies
- Medication
- Any other none-degradable material

⚠ CAUTION

"Flushable" wet wipes are not suitable for use in the Sepcon BAF system. Although "flushable" wet wipes may be approved by third party organisations to not cause a potential sewer pipe blockage, such wipes can cause blockages within the Sepcon BAF and can also reduce the final effluent quality.

⚠ CAUTION

Sepcon shall not be liable for any damage or loss, including consequential loss, caused by the failure of any plumbing equipment or failure caused by the inclusion of prohibited material or actions, as listed in sections 5.1 to 5.3

6.1 Design Specifications

If others size the Sepcon BAF System, we will supply to these specifications. In this case, the responsibility lies with others in relation to the maximum flow/liters per day, the plant capacity and retention times. Similarly, if we size the plant by providing a site-specific report and a greater load is placed on the plant by the addition of extra houses, bedrooms, schools, offices, crèche's or by any other means, Sepcon are not responsible for the plant in terms of overloading or quality of effluent as the retention times may be compromised.

⚠ CAUTION

<p>The air pump should run 24 hours a day. Never fit a timeclock or make any modifications without written approval from the manufacturer as this may cause the Sepcon BAF to malfunction.</p>

6.2. Intermittent Use & Decommissioning

Should the Sepcon BAF System be used intermittently or if extended periods of non-use are expected (for more than 30 days), it is recommended that the Sepcon BAF System remain **powered on and in operation**. The contents of the plant should not be allowed to go septic or stagnant due to non-use or under loading, this can occur when the Sepcon BAF System is operated below 35% of the maximum design loading for more than 30 days. Upon bringing the system back to normal operation after a period of under loading; activated sludge may need to be imported by a licensed contractor in order to restart the treatment process at the owner's expense.

If the system is to be decommissioned for an extended period (more than 90 days) or permanently, Sepcon can provide this service – contact 01 6287300 for a quotation or employ a suitably qualified contractor.

6.3 Access to the Sepcon BAF System

The tank structure or lids are not suitable for any vehicular traffic. All vehicles and machinery should always keep at least 3 meters from any tank lid. We also strongly recommend fencing off the area around the Sepcon BAF System to prevent livestock herds, pets, or children from accessing the tank. Unnecessary human traffic around the plant should be avoided.

7.1 Troubleshooting

Properly installed, operated and maintained Sepcon BAF systems will give many years of trouble-free service. All Sepcon BAF systems come fitted with an alarm, which will alert to irregularities in the plant. If a blower or pump stops working a buzzer will sound to indicate there is a problem with the plant. The buzzer can be muted until the problem gets fixed. Once the problem is fixed, the alarm will reset automatically, and the mute switch must be turned off.

⚠ CAUTION

<p>We strongly recommend that all works to the Sepcon BAF are carried out by a trained professional. Some of the solutions provided below may only be suitable to be actioned and resolved by a trained professional. If in doubt contact a trained professional or Sepcon who can conduct a site visit and assess and resolve the issue.</p>

7.2 Troubleshooting System Operation

Symptom	Possible Causes	Solution
The alarm buzzer is sounding but the blower and discharge pump is working.	Air return pipe to the air sensor on the side of the control panel is not connected properly.	Check that the blue air pipe connecting into the control panel is connected properly. If no issue is identified, then the air blower may be malfunctioning and may need to be replaced.
	Electrical fault.	Get a suitability trained person to assess the fault and have it resolved.
	The electrical control panel is damp or wet.	Get a suitability trained person to assess the fault and have it resolved.
Discharge pump runs intermittently.	Float on pump stuck.	Ensure the pump is set so the float is free for contacting the chamber walls.
	Damaged or faulty float.	Get a suitability trained person to assess the fault and have it resolved.
Blower runs intermittently.	Electrical fault.	Get a suitability trained person to assess the fault and have it resolved.
	Blower worn out.	Get a suitability trained person to assess the fault and have it resolved.
	Overload switch tripped.	Reset the overload switch in the control panel. If problem persists, get a suitability trained person to assess the fault and have it resolved.
	Hot and sunny weather	Protect the green blower box from direct sunlight and ensure the vents are not blocked.
Blower or discharge pump not working.	Tripped out in house / garage.	Reset the trip switch in garage / house. If problem persists, get a suitability trained person to assess the fault and have it resolved.
	Not connected to mains.	Get a suitability trained person to make the connections.
Tripping mains fuse in house / garage.	The electrical control panel is damp or wet.	Get a suitability trained person to assess the fault and have it resolved.
	The air blower is damp or wet.	Get a suitability trained person to assess the fault and have it resolved.
	Damaged cable.	Get a suitability trained person to assess the fault and have it resolved.
Overflow from the sludge return vent pipe inside the Sepcon BAF	High airflow into the sludge return.	Adjust the flow value inside the green box to lower the air flow to a level that prevents overflow or get a suitability trained person to assess the issue and have it resolved.

7.3 Troubleshooting Odors

Please Note: Before taking any corrective action, always positively identify the real source of the odour. Check if the smell is coming from another outside source such as a storm drain. All Sepcon BAF systems vent gases through the side vent on the green box and back through soil pipe and out roof vents. Improperly installed roof vents can cause odour problems. Traps in drains prevent any odours from entering the home. To function, they must contain water and be sealed correctly.

Symptom	Possible Causes	Solution
Effluent / sewage odours directly outside the house or inside the house.	Pipe connections to sinks, toilets or drains not connected correctly or underused.	Inspect all under sink traps and U bends, ensure no traps go dry from lack of use. If problem persists have a suitability trained person conduct a smoke test.
	Soil stack / air vent pipe not fitted correctly.	Ensure the soil stacks / vents are not located adjacent to regularly opened windows. Ensure they are downwind of windows and openings and not near any ventilation vents.
	Pipework damaged, cracked or blocked.	Get a suitability trained person to assess the fault and have it resolved.
	Soil stacks / air vents not fitted to each end of pipework around / inside dwelling.	Get a suitability trained person to assess the fault and have it resolved.
Strong effluent / sewage odours in the tank vicinity.	Blocked pipework to the Sepcon BAF tank.	Inspect manholes around the dwelling, check for blockages.
	Chemical kill of bacteria in the Sepcon BAF tank.	Ensure the Sepcon BAF is operating correctly. If not and resolved and symptoms persist for more than 7 days have a suitability trained and licensed contractor remove all liquid from the Sepcon BAF system and reseed the system with 70% water and 30% activated sludge into the primary chamber.
	Lack of maintenance – poorly operating system	Get a suitability trained person to assess the fault and have it resolved.
	Imbalance of loading from dwelling.	Ensure that the loading to the Sepcon BAF system is in line with typical household operations. Ensure washing and cleaning products are used in proportion to the number of persons inhabiting the dwelling. If not and resolved and symptoms persist for more than 7 days have a suitability trained and licensed contractor remove all liquid from the Sepcon BAF system and reseed the system with 70% water and 30% activated sludge into the primary chamber.
	Overloading of the Sepcon BAF system.	Reduce the population in the dwelling too or less than the design loading. Have the Sepcon BAF desludged by a licensed contractor.
	Underloading / lack of use of Sepcon BAF system	Ensure the Sepcon BAF is not loaded less than 35% of the design population for more than 30 days.