



ECO-FRIENDLY WATER & WASTEWATER TREATMENT



## SF8 Wastewater Treatment System

Treatment Units  
suitable for:

- ~ Hotels / Schools
- ~ Football Clubs
- ~ Golf Courses
- ~ Convalescent Homes
- ~ Single Houses
- ~ Small Communities
- ~ Caravan Parks
- ~ Public Houses / Commercial Units



# Features and benefits of the SF8 Biotech Range

## SF8 Biotech System Description

### Biotech Treatment System and Sand Polishing Modules

SF8 Biotech Treatment System is a new generation water treatment system with sand polishing modules designed to treat domestic and other biodegradable sewage waste in a simple and compact way. The main vessel is divided internally by bulkheads which make up the various chambers used for the treatment process. The treatment plant comprises of a Primary Settlement Chamber, a media Treatment Chamber and a Final Settlement Chamber that is followed by Sand Polishing Modules.

### Primary Settlement Chamber

The Primary Settlement Chamber is where the raw sewage is introduced to the system. It is within this chamber that the sewage is separated. All the gross solids settle to the bottom of the vessel, while the fluids pass over into the treatment section of the vessel.

The Primary Settlement Chamber will require de-sludging in accordance with the systems maintenance schedule.

Between the Primary Settlement Chamber and the Treatment Chamber there is an effluent filter installed. This allows further filtration of the solids by 50% and offers over 122 linear feet of 1/16<sup>th</sup> inch filter slots which significantly extends time between cleanings. It has flow control ball that shuts off the flow of effluent when the filter is removed for cleaning and has its own gas deflector ball which deflects solids away.

### Treatment Chamber

After the initial separation of the influent, the liquid passes into the the treatment chamber. It is within this chamber that the treatment of the sewage takes place.

The chamber contains an inert plastic media that is designed to promote the growth of bacteria. This media has a surface area of 1m<sup>3</sup> and is in turn fed with a constant stream of air. This is done via an air blower and air diffuser which accelerates bacterial growth. The air blower has an output of 180litre/min and the air diffuser has an output of 300litre/min. These compressors operate on a constant cycle and are economical in use and easy to maintain. It is the bacterial action within the chamber which digests and reduces the waste material, thereby reducing Biological Oxygen Demand and Total Suspended Solids.

### Final Settlement Chamber

Like the Treatment Chamber, the Final Settlement Chamber features a sludge return system. This feature allows any sediment captured in both the Treatment Chamber and Final Chamber to be returned back to the Primary Settlement Chamber to be removed by de-sludging at the appropriate time.

In this chamber there is a recycle pump that recycles the water via a computer controller which can be programmed at a ratio of 2:1 For example: 2 gallons of water back to the Primary Chamber and 1 gallon to the outlet of the tank. Total nitrogen is reduced substantially and cost effectively.

The effluent from the Final Chamber of the the treatment tank is pumped through a Pressure Effluent Filter and is then dispersed evenly through the Sand Polishing Modules. The outlet pump has two float switches, on and off, pumping small batches of water via a Simtech Pressure Effluent Filter. This Pressure Effluent Filter has a 60 micron filter sock. In the event of a pump failure there is an alarm float switch that will have a 12 hour back-up from when the alarm comes on.

Table 1: Biotech SF8 Wastewater Treatment System - basic information

Treatment Capacity	2955 Litres - 780 Gallons
Primary Treatment Zone 1690L	1690 Litres - 446 Gallons
Secondary Treatment Zone	735 Litres - 194 Gallons
Final Settlement Zone	530 Litres - 140 Gallons
Design Population	8 PE
Overall Width	1535 MM - 60 Inches
Overall Length	2388 MM - 94 Inches
Total Height	1750 MM - 68 Inches
Weight (including parts)	390 KG - 859 LB
Design Flow Rate	1400 Litres/day - 369 Gallons
BOD Load	48 KG - 105 LB
Inlet invert to base	1280 MM - 50 Inches
Outlet invert to base	1180 MM - 46 Inches
Ground level to inlet invert level	450 MM - 18 Inches
Ground level to Outlet invert level	550 MM - 22 Inches
Air blower motor rating	47 Watts (minimum)
De-sludge period	18 Mths
Thickness	5 MM - 0.196 Inches
Retention time (design case)	50 Hrs

*On larger tank information please contact the office*

### European Specification

Table 2: Minimum Separation Distance (m).

Dwelling served	7"	7 <sup>3</sup>
Adjacent dwelling	7"	7 <sup>3</sup>
Wall	3"	3
Road	4"	4
Site Boundary	3"	3
Potable Water source	10	30-100 <sup>2</sup>
Water course	10	10
Lake	50	50

For US retail as per Engineering drawings



# The Finishing Touch

## Intermittent Sand Filter

Where high groundwater, poor soil or other site constraints rule out a conventional septic system, Intermittent Sand Filters (ISF) are an ideal solution. The system is tucked neatly under ground, hidden from the home owners sight, and can be planted with reeds, flowers or covered with bark mulch to blend into the landscaping.

With a long history of superior treatment, Intermittent Sand Filters from Biotech out perform aerobic treatment plants.

Pre-engineered Intermittent Sand Filter kits from Biotech use high quality reliable components, meaning no more need for shopping around trying to piece together parts.

**Engineers:**

Can appreciate the advance level of waste water treatment from our sand filters with typical Biological Oxygen Demand and Total Suspended Solids of less then 5mg/L.

**Contractors and Installers:**

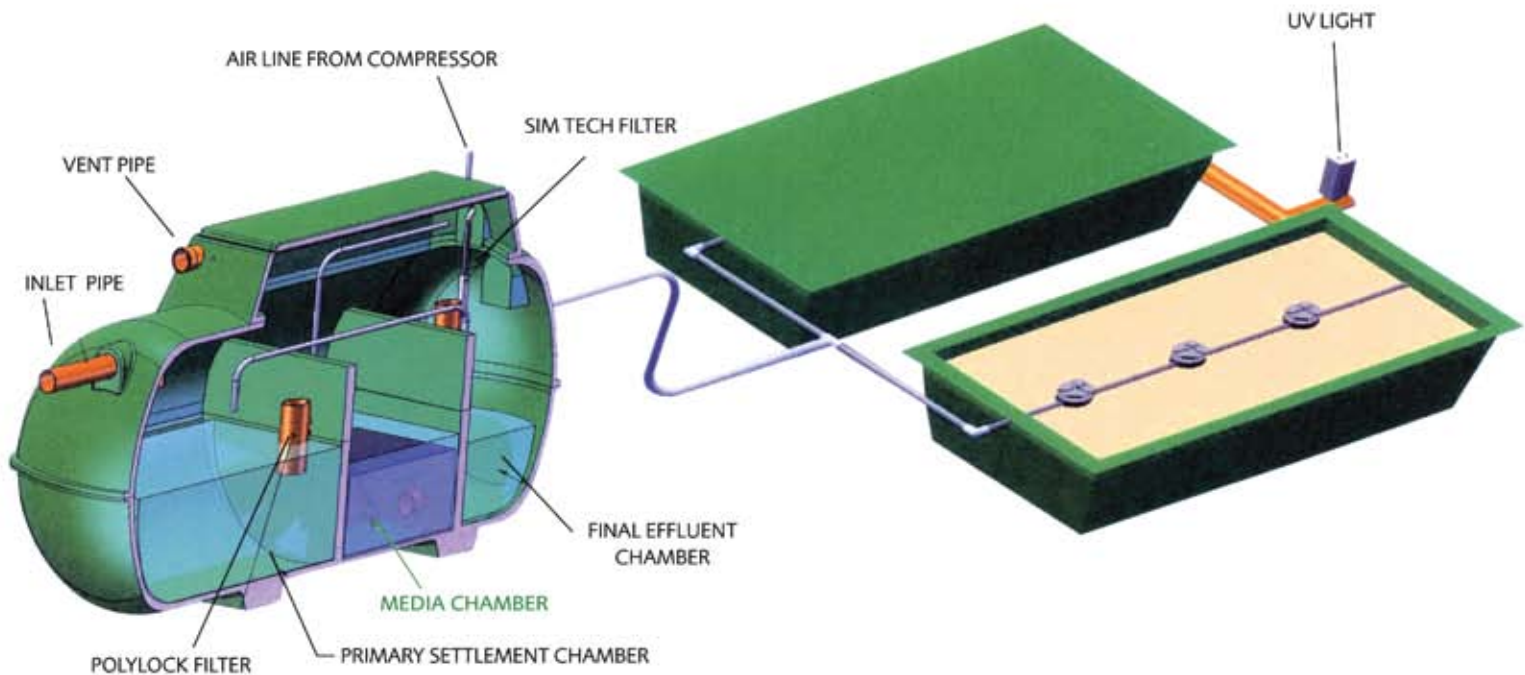
Can appreciate the easy installation.


**Home owners:**

Can appreciate the discreet visual appearance, reduced system maintenance and low operating costs.

Now you can safeguard your family and enjoy your garden too. Biotech Intermittent Sand Filter designs fit nearly all garden layouts. You can get Biotech expertise delivered direct to your door, with easy to follow installation instructions. Biotech Intermittent Sand Filters deliver consistent effluent quality, even when faced with system fluctuations and stresses. Every Biotech Intermittent Sand Filter kit is engineered for long life. Biotech quality pumps are designed for long life duty. No routing, racking, tiling or replacement of the sand is required.

Biotech Systems include a 12 month warranty on all parts and labour for their package treatment systems. Service and maintenance agreements are available on request.





Biochemical Oxygen Demand (BOD)	
BOD Influent (mg/L)	= 327
CBOD Effluent (mg/L)	= 3
CBOD Removal Percent	= 97%
Total Suspended Solids	
TSS Influent (mg/L)	= 345
TSS Effluent (mg/L)	= 4
TSS Removal Percent	= 95%
Total Nitrogen	
Total N Removal Percent	= 70%
Total PTOT	= 78%
Turbidity	> 2mg/L
Faecal Coliform	> 1

**Before & After**

## UV Light

Faecal coliform counts in the home aerobic treatment effluent typically range from 800 - 20,000 per 100ml. The ultraviolet light unit is designed to disinfect the effluent from home aerobic treatment units. There are no adverse effects from over exposing the effluent to germicidal ultraviolet light because ultraviolet light does not form by-products in contrast to chlorination and other chemical disinfection methods.



Under the above conditions, the faecal coliform reduction by the use of an Ultraviolet light unit exceeds 99.9%



## PRODUCTS

- ~ 6-400 pop Sewage Treatment Plants
- ~ Septic Tanks
- ~ Cesspools and Storage Tanks
- ~ Package and Pump Stations
- ~ Grease Traps
- ~ Bypass Separators - Class 1
- ~ Aquatherm Piping Systems
- ~ Storm Attenuation Tanks
- ~ Chemzyme
- ~ Britmet Roofing Systems
- ~ Sand and Reed Filter Beds

...and more



Rain Harvesting Tank



Agricultural Tank



Aquatherm Piping



Britmet Roofing Systems



70-400 Person Tank



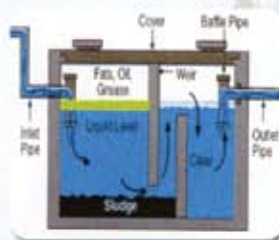
Filtration Tank  
Internal Diagram



Treatment Unit With  
Sand Filters



Water Purification Systems



Grease Traps



Enzymes

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