Enviro-Septic® Wastewater Treatment and Dispersal System

Enviro-Septic ® is manufactured in 10 foot lengths, but may easily be cut to any length with a sharp knife in order to work around site limitations or obstacles. It can also be bent up to 90 degrees allowing a variety of useful system shapes such as curved, trapezoidal, L, S, or U-shaped. Enviro-Septic ® 's flexibility allows for more pleasing landscaping possibilities as pipe sections can be installed to match terrain, even sloping sites, reducing the amount of fill required and eliminating unsightly septic mounds. Pipe sections, couplings and end caps are all available as part of the system's components.

Enviro-Septic ® installed in a below-ground seepage bed.
Daily Flow Rate is 2,700 litres

Enviro-Septic ® installed in a below-ground seepage bed.
Daily Flow Rate is 1.080 litres

Type of Installations

The Enviro-Septic ® System can be used for all these types of installation:

- Trench based drain (leach) field
- Sand Lined Trench drain (leach) field
- Above-ground drain (leach) field (a.k.a raised mound)
- Seepage or Area Bed drain (leach) field
- Sloping land using anyone of the above drain (leach) field types.

The pipes have a 30 centimeter diameter and are 3 meters long. Their interior volume can receive up to 220 liters of wastewater and each 3 meter long pipe will treat 126 litres per day of residential strength sewage wastewater.

Enviro-Septic ® System Components

There are 5 main components to the Enviro-Septic ® System and these are:

1. Pre-Tank
2. Distribution to the Enviro-Septic ® pipes
3. Enviro-Septic ® pipes
4. System Sand
5. Air Ventilation Pipeworks.

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Pre-Tank for the Enviro-Septic ® System

The raw sewage leaves the building and enter a 2 compartment Pre-Tank configured the same as a septic tank with a retention time of not less than 2 days and not more than 3 days of the design daily sewage flow. The design daily sewage flow is determined in accordance to regulations. No effluent filter is required.

Distribution to the Enviro-Septic ® Pipes

If the Pre-Tank effluent will enter a Distribution Box or pipe header to distribute the effluent evenly into each row of Enviro-Septic ® pipes. If using a Distribution Box, flow equalizers should be used.

If the effluent needs to flow up to the Enviro-Septic ® pipes, then a pump would used to deliver the effluent to the Distribution Box or header.

Enviro-Septic ® Pipes

Placing the Enviro-Septic ® pipes in a series of rows, they are joined together with a non-mechanical coupling and end caps placed at the end of each row.

System Sand for the Enviro-Septic ® System

Place the Enviro-Septic ® pipes on a 300 mm bed of sand that meets the sand specifications needed for the Enviro-Septic ® pipes, place the system sand between the Enviro-Septic ® pipes and a 100 mm layer of system sand on top. Backfill with appropriate top soil and grass.

Air Ventilation for the Enviro-Septic ® System

Placing an air vent pipe at the end of the rows using a header allow atmospheric air to enter and flow through the Enviro-Septic ® pipes, Distribution Box, Pre-Tank and the building vent stack.

This allows for air to maintain the aerobic treatment, biomat layer in the Enviro-Septic ® pipes and system sand.

Surprisingly, the aerobic air mixture and dilution of the septc tank off gases and the venting system does not create an odour problem.

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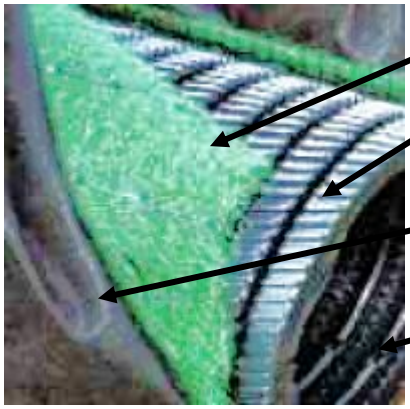
Enviro-Septic® pipe is made from 3 unique component layers:



Random Fibre for attached growth for the biomat.

Ribbed Enviro-Septic ® pipe to allow for air flow through pipe and outside of pipe through to the random fibre and system sand.

Geo-textile Fabric to wrap and hold random fibre in place and allow water and air to pass through unrestricted.

360 degrees around inside of the pipe, holes to allow water and air to pass through

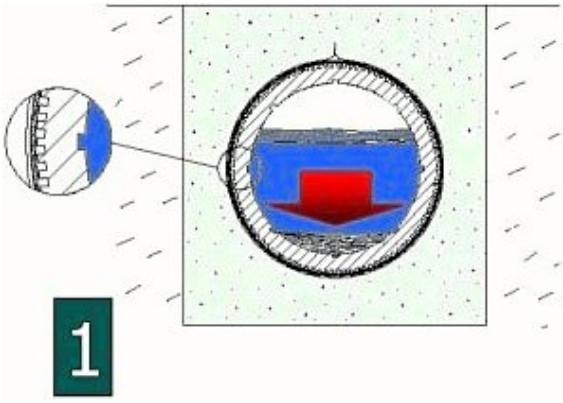
1. A cylinder-shaped pipe, made out of high density polyethylene, with a corrugated design proven to increase the surface of thermal exchange. The pipe is also perforated to let the effluent out. Each of the outer wall ridges is notched, creating a unique airflow system essential to the propagation of the bacteria responsible for the treatment of wastewater.
2. A non-braided polypropylene fiber membrane covers the pipe and facilitates an oxygen supply supporting the biomass.
3. A non-woven, polypropylene geotextile fabric, sewn around the fibrous membrane, keeps the earth particles from migrating into the pipe.

Unlike other leaching systems, effluent that enters Enviro-Septic ® does not directly contact the underlying soil. Instead materials present in the effluent are contained and treated inside the Enviro-Septic pipe, reducing the potential for contamination of soil and groundwater. The system allows the drainage of wastewater into the ground through an infiltration process. By protecting the infiltration surface, the Enviro-Septic ® systems helps protect the environment. Their unique internal design treats wastewater, protecting drainage fields and the water table.

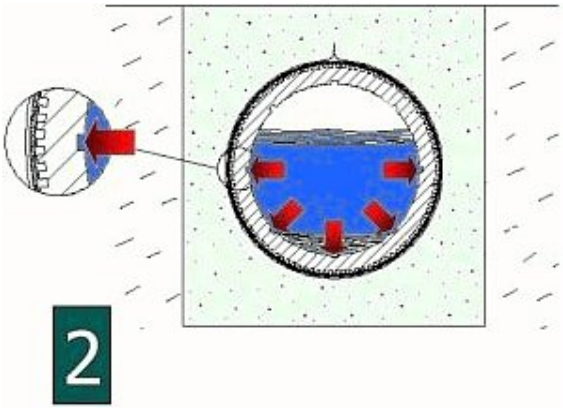
Operating Principles

When they leave a septic tank, the effluents contain suspended material, neutral-solubility fats, as well as other pollutants. The presence of these elements end up causing the clogging of classic leaching fields. The Enviro-Septic ® system facilitates the treatment of pollutants by using the natural contribution of bacteria in a more efficient way. The bacterial activity around the membranes allow for the breaking up of suspended material that went through the septic tank. The combination of air flow and liquid level variations (day/night) into the pipe increase the effectiveness of bacterial activity in the membranes. Over time, these events lead the system to an interior balance, prolonging the lifespan of the pipes and allowing the system to treat the wastewater before it is evacuated into the environment.

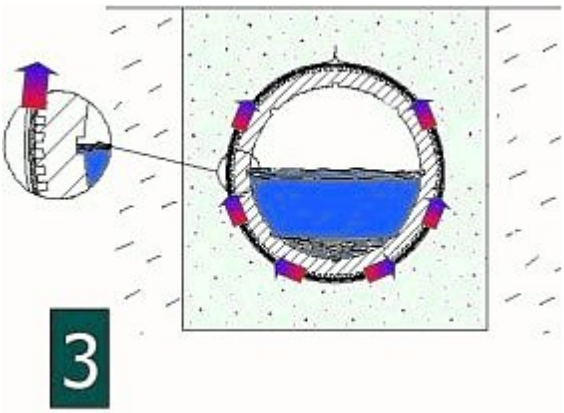
4-Step Process



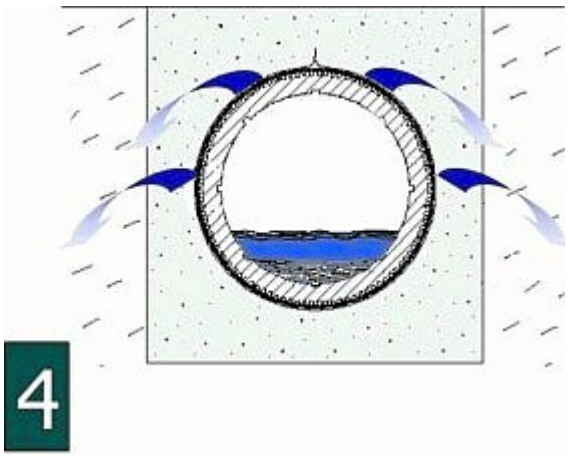
1. As the effluent enters the Enviro-Septic™ pipe, it is cooled down to ground temperature. The ridges and oblique notches facilitate the process while providing an increased surface for thermal exchange when compared to classic systems. The system acts in a way that could resemble that of an underground radiator. The cooling down then promotes the separation of fats and suspended material. The lighter solid particles float up to the surface as scum and the heavier ones sink to the bottom of the pipe to form sludge. These solids are held inside the pipe to prevent the clogging of the reception surface of the soil.



2. The effluent then leaves the pipe through its perforations. They then work their way through the fiber membrane where bacteria has settled to treat an additional amount of suspended solids. The fiber membrane is conditioned by the variation of the liquid level inside the pipe, caused by the peak periods of water use. This aerobic/anaerobic conditioning promotes the propagation of bacteria responsible for the treatment process. This process is similar to the rotting of a wood picket fence. The rotting always starts at ground level where the humidity level change daily and where the bacteria is most active.



3. The effluent then moves through the geotextile membrane, where another layer of bacteria is formed on the inner surface. By capillary action, the geotextile membrane and the surrounding sand gather and distribute the effluents on the pipe circumference, which then facilitates the evacuation of water into the ground. This process can be compared to an oil lamp wick that automatically fuels the lighted tip.



4. The treatment continues as the effluent seeps through the filtering sand surrounding the Enviro-Septic™ pipe. When the water finally reaches the soil, it is almost completely free of contaminants. It then infiltrates the soil much more easily as it is evacuated into the environment.

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Enviro-Septic ® Septic Systems:

- cost less
- last longer
- require less area
- install more quickly
- use recycled plastics
- assist natural processes
- adjust easily to sites and slopes
- use sand instead of crushed stone

For a Quote or More Information, please Contact Us

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