

## SEPTIC TANK:

A septic tank is an underwater sedimentation tank used for waste water treatment through the process of biological decomposition and drainage. A septic tank makes use of natural processes & proven technology to treat wastewater from household plumbing produced by bathrooms, kitchen drains, and laundry.

A septic tank system has a relatively simple design. It is an underground watertight container (mostly rectangular or round) made of fiber glass, plastic or concrete. The Compartments in a septic tank and normally a T-shaped outlet prevent the sludge and scum from leaving the tank and travelling into the drain field area. Septic tank systems are a type of simple onsite sewage facility and only provide a basic treatment.

For homes that have poor drainage or are not connected to the mains sewage network septic tanks allow a safe disposal of wastewater.

They work by collecting the excreta and wastewater in one big underground tank, they are predominantly used in rural areas. Septic tanks are installed underground normally 50 meters away from the household. They are usually made up of two chambers or compartments and one tank that receives wastewater from an inlet pipe.

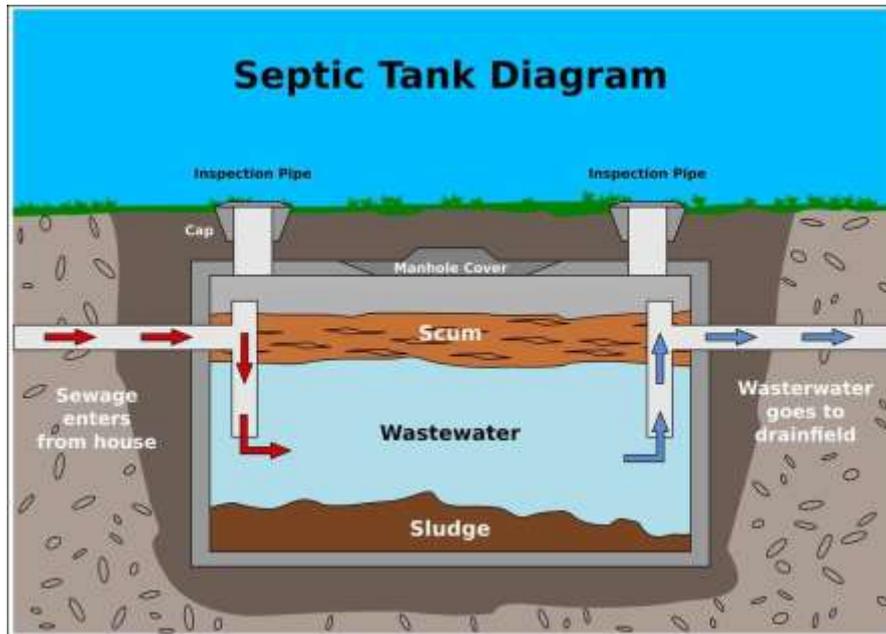
For those that live in cities and towns septic tanks are not needed as waste water will be transported and dealt with their sewage system. A local water company will maintain & manage this. A septic system will allow any house to use water facilities as normal.

However, there are additional precautions that need to be adhered to. Regular maintenance of the septic tank will also be required. Home owners with a septic tank have an additional duty to ensure their tank does not impact the local environment. For example, If the drain field is overloaded with too much liquid, it can flood, causing sewage to flow to the ground surface or create backups in toilets and sinks.

### How Does a Septic Tank Work?

A septic tank will digest organic matter and separate float able matter (e.g., oils and grease) and solids from the wastewater. A septic tank will be connected with two pipes (for inlet and outlet). The inlet pipe is used to transport the water waste from the house and collect it in the septic tank. It is kept here long enough so that the solid and liquid waste is separated from each other.

The second pipe is the outlet pipe. It can also call the drain field. This pipe moves out the pre-processed wastewater from the septic tank and spreads it evenly in the soil and watercourses.



When waste water has been collected after a while it will begin to, separate into 3 layers. (as shown in the image above) The top layer is oils and grease and floats above all the waste. This commonly referred to as "scum". The middle layer contains wastewater along with waste particles.

The third and bottom layer consists of particles that are heavier than water and form a layer of sludge. Bacteria inside the tank does it's best to break down the solid waste, which then allows liquids to separate and drain away easily.

What is left at the bottom of the tank is what needs to be periodically removed as part of general maintenance. This is one of the reasons why a septic tank is only a basic form of sewage treatment.

### **The Step-by-step Process of How a Septic Tank Works**

1. Water from your kitchen, bathroom etc runs through one main drainage pipe leading to your septic tank.
2. Underground the septic tank starts the process of holding the waste water. It needs to hold this long enough so the solids settle down to the bottom, while oil and grease floats to the top.
3. After this process the liquid wastewater (effluent) will then be able to exit the tank into the drain field.
4. This wastewater is discharged through pipes on to porous surfaces. These allow wastewater to filter though the soil.
5. The soil accepts, treats, and disperses wastewater as it percolates through the soil, ultimately discharging to groundwater.
6. Finally, the wastewater percolates into the soil, naturally removing harmful coliform bacteria, viruses and nutrients.