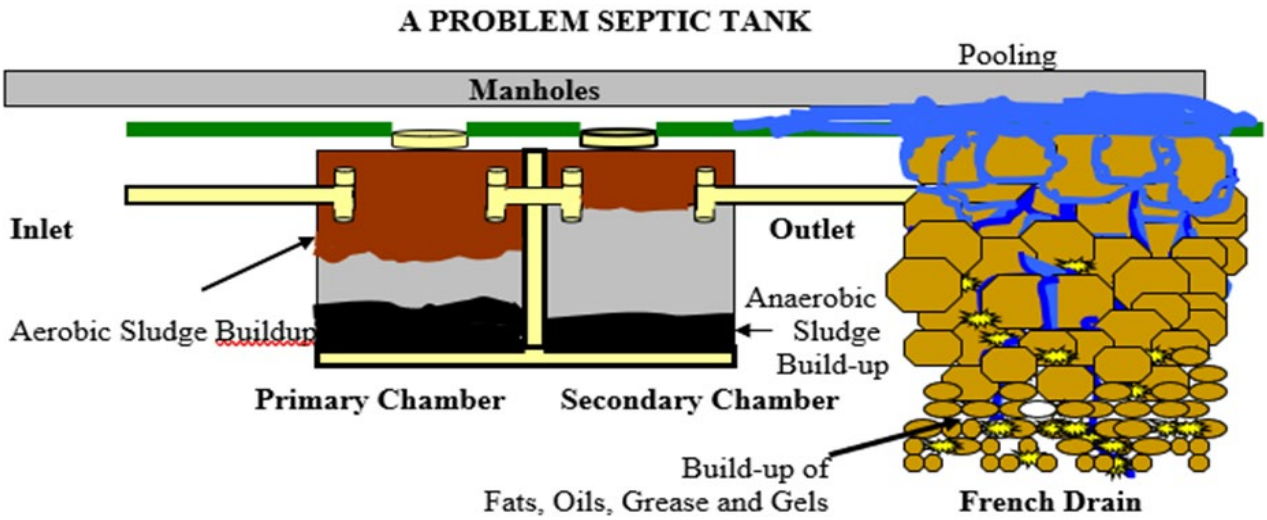
Pitking One | Fatking Two | LooKing Three



The Septic Tank is a concrete tank that receives waste from toilets, bathrooms, and kitchens. The tank has two chambers, the primary or solids chamber and the secondary or liquid chamber. There is a French drain or soakaway into which the liquid from the secondary chamber flows. The soakaway is the final treatment of the effluent and will vary in size depending on the size of the tank and amount of people the system is designed for.

The Primary Chamber

In the primary chamber, the solids in the raw sewage are settled out while the liquids flow to the secondary chamber. The solids are then broken down by the biomass of bacteria in the primary chamber to a liquid form. The conditions are mostly anaerobic and thus anaerobic bacteria thrive in this system.

The Secondary Chamber

Liquid that flow from the primary chamber to the secondary chamber still contains some solid material that settles out of suspension. The liquid is further treated by bacteria in the secondary chamber to "clean" water. This flows out of the septic tank via an outlet pipe.

The Soakaway or French Drain

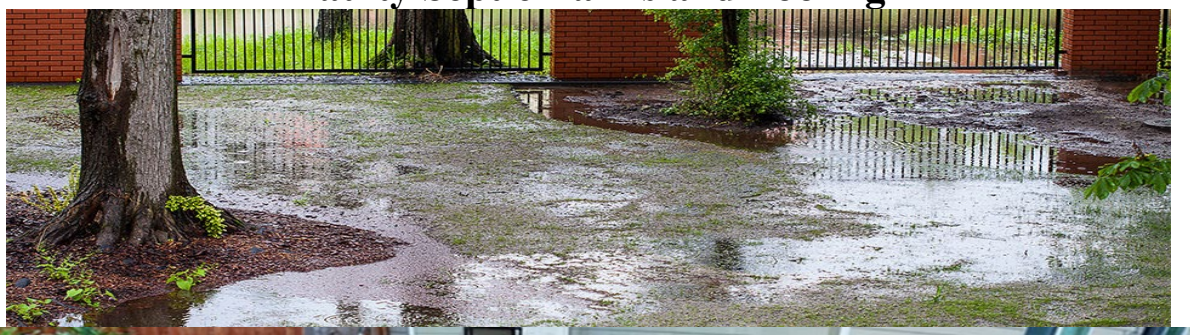
The clean water from the septic tank then flows to what is known as a soakaway or French drain. The soakaway is a trench which is filled with rocks and usually covered with a corrugated

iron cover. The effluent from the septic tank filters through this bed of rocks where the bacteria have established themselves. If there are any solid particles in this effluent this will settle on the rocks where it will be broken down further by the bacteria before percolating into the soil to the ground water table. Therefore, providing a final biodegradation process and polishing of the effluent.

The reasons for a Septic Tank being congested are: -

- the use of harsh cleaning chemicals and disinfectants kill off the natural biomass
- fats, oil, and grease biodegrade slowly and as they float and flow through the system to the soakaway where they settle on the rocks, clogging the soil. This prevents percolation and as the effluent can no longer seep away the soakaway begins to fill up and effluent will begin to pool on the surface of the soakaway.
- the tank may be overloaded, it is receiving more effluent than it was designed for and therefore the retention time in the tank is too short for complete biodegradation as the bacteria do not have enough time to assimilate the food. As the solids are not completely broken down, they build up in the secondary chamber and the soakaway.
- the inflow of effluent is erratic i.e. holiday homes, in and out seasons etc. The biomass is relative to the incoming food and this controls how well the biodegradation process works and how large the natural biomass is. Without steady conditions or if there are sudden changes in the environment or loading the biomass is not developed or maintained correctly. When bacteria are starved or are old their metabolic rate is lowered, because of the lowered demand for food, the organisms are not capable of maximum food utilisation and struggle when the system is again loaded. Therefore, their efficiency per unit volume in biodegrading the new excess load is lowered.
- in many instances vacuum tankers are employed to suck out the effluent from a tank when it is overloaded. In sucking out the liquids, the existing biomass is removed, and the tank is left with a sludge of old and inadequate bacteria which will not be able to breakdown the fresh incoming effluent fast enough. Once bacteria are full, they need time to convert this food in the cell, they synthesise and oxidise the soluble food. Due to the metabolism of old bacteria being low, this results in a slow population growth rate. It can take up to 3 months to re-establish a viable and strong biomass. In the interim solids build up in the system.
- Insufficient biological activity to break down the incoming effluent
- An anaerobic and aerobic sludge build up begins to develop
- The solid effluent builds up in the Primary and Secondary Chamber reducing the capacity of the tank this reduces the retention time in the tank (time required to break down the suspended solids)
- Fats, Oil and Grease FOG begin to accumulate in the French Drain reducing the capability of the liquid to percolate into the ground
- The liquid effluent builds up and pooling appears on the surface of the ground
- There will be a malodorous odour present

Faulty Septic Tanks and Pooling






How Pitking, Fatking & LooKing work in the Septic Tank: -

- the products are a combination of specially selected bacteria designed to breakdown sewage. The product has a high concentration of bacteria i.e. one billion bacteria per gram. So by applying these bacteria to a tank that is overloaded or congested they will rapidly convert the solids to water and carbon dioxide due to the large amounts of nutrients available to them.
- due to the bacteria in the product being aerobic, anaerobic, and facultative anaerobic they adapt quickly to their environment and thrive in the tank and soakaway.
- through applying a shock dose of bacteria, the schedule allows for maximum conversion of food to energy and reproduction, the population of bacteria in optimum conditions will reproduce as frequently as every twenty minutes.
- the solids and fats in the primary and secondary chambers will be broken down and the soakaway will be decongested allowing percolation to continue. The final quality of the effluent is improved as the E.*coli* die off in a healthy environment when they can no longer compete for food, the levels of suspended solids, B.O.D. and C.O.D. are lowered, therefore Pitking and Fatking will prevent contamination of the ground water.
- once the anaerobic sludge begins to biodegrade, the malodorous odour will disappear. This can be expected within the first 72 hours.

A maintenance programme should be implemented once the system is brought under control and the solids are broken down by placing LooKing into the cisterns of the toilets depending on how many toilets there are and how many people. This will ensure a continual introduction of new, strong, and hungry bacteria that will maintain a well-balanced biological activity and

prevent any further build up. The LooKing last approximately 30 days and will prevent the septic tank from ever having to be sucked out again

A WORKING SEPTIC TANK