

# EPSOM sand filtration

## Wastewater Treatment System



Uses **MINIMAL** power

The **LIFESTYLE** choice

**SAVE** around **\$2,200**  
every four years in costs!



## **PASSIVE** aerobic process



**BENEFITS**  
economical  
powerful  
reliable

Are you looking for a cost-effective treatment system? Is lifestyle important to you?

Then choose the **EPSOM** system!

The **EPSOM** uses **less than 10 min** of power per day. It does not use an electrical blower. Instead, air is provided **NATURALLY** within the sand bed. This **SAVES YOU MONEY!**

The **EPSOM** has been approved for only **ONE SERVICE** per year! This **SAVES YOU MONEY!**

[www.smartsewagesolutions.com.au](http://www.smartsewagesolutions.com.au)

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## The Epsom Process

Epsom Sand filtration system works on the principles of primary settling plus secondary treatment. The treatment process is then followed by disposal through the irrigation method.

### Primary Settling

All of the wastewater from your house flows first into the 'septic' zone. This is where solids are settled out and the micro-organisms carry out the initial part of the purification process.

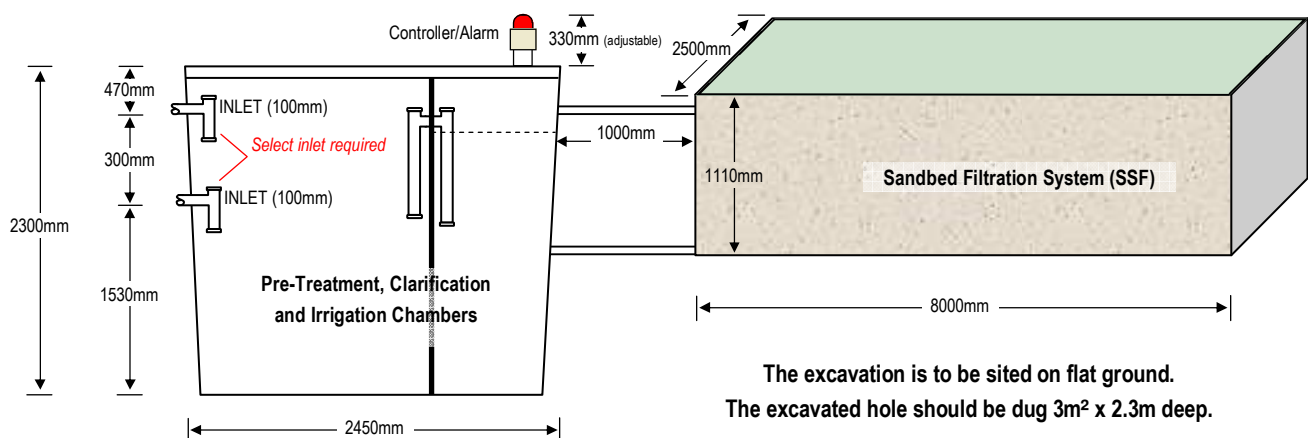
Once the organic impurities have been absorbed within the anaerobic culture of micro-organisms, the water then passes to the secondary sedimentation zone.

### The Percolation Process

The partially purified water is then pumped over to the sandbed for intense filtration. This is achieved through layers of coarse sand, aggregate and geomac filter fabric. When the water has completed the percolation process, it is gravity-fed to the final chamber inside the tank.

### Re-use of treated water

Once the treated water reaches a certain level in the final chamber, the system's submersible pump will start automatically to deliver the water to the designated irrigation disposal area.



NOT TO SCALE

## Smart Sewage Solutions

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# EPSOM sand filtration Wastewater Treatment System



Uses **MINIMAL** power

**PASSIVE** aerobic process

The EPSOM is an extremely **energy efficient** system. If you look at a comparison with any other aerated system over four years, an owner of an EPSOM system would expect a savings of around \$2200:

\$300 a year saving in electricity costs through not having to run a blower;

\$100 a year in service costs (only one service per year as opposed to up to 4 services per year for the other systems);

\$600 in pump-out costs over 4 years (due to the large 7200 litre primary tank to provide optimal operation as opposed to competitors' 3600 litre primary).

- The **Epsom** treatment system is a Sand Filtration wastewater treatment system that also reduces nutrients & phosphates.
- It requires servicing only once per year.
- There is no mechanical blower using electricity - so the **Epsom COSTS YOU LESS** over the longer term !

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## The Epsom Sandbed Filtration system

To summarise the benefits of the Epsom, there are 2 stages to its treatment process that are of particular importance when you consider how important "lifestyle" is to most of us:

### 1. The physical separation of solids & liquids in the waste

There are a couple of reasons here that the Epsom is ideal. For instance, it has a 7200 litre primary tank (as opposed to most 10 person systems having approx 3500 litres) - this means a higher dilution ratio of the waste from the house. The number of bathrooms and toilets in an average home today suggests that the waste will be delivered to the treatment system in high volumes for relatively short bursts. But due to the Epsom's larger primary tank, the effects of shock loading on the bacteria will be minimised.

Further, the bacteria will digest the solid matter in the waste and process it into "sludge" (the average accumulation of sludge is between 50-80 litres per person per year). With a smaller system, the result of all that accumulation is that within a few years the system will lose its dilution ability, increasing the toxicity of the wastewater and killing more of the bacteria, which in turn increases your maintenance costs. Sludge levels need to be less than one-third of the volume of the system so it will also mean more frequent de-sludging (currently approx \$400).

### 2. Supply air to the bacteria

In very simple terms, the aerobic part of the treatment process involves the same bacteria being exposed to dissolved oxygen to break down the brown dirty water into clean safe water for the irrigation area.

In a "mechanical" system (where an electric blower is used to supply the oxygen at 80 litres per minute) your lifestyle will be impacted because the blower is rated to a certain volume of oxygen over a 24 hr period (so as not to over-aerate the system). With a few extra family or friends during the holidays etc it does not take a lot for the mechanical 8-10 person system to reach its maximum capacity per hour, especially in terms of pH, the effects of dairy products on the bacteria and the volume of oxygen needed to break down the waste efficiently. On the other hand, the Epsom has a massive passive supply of oxygen naturally existing in the sand bed, which is rated for up to 20 persons (ideal for larger families, holidays and for entertainers).

## The LIFESTYLE choice

It is good to know that with **rising electricity prices**, *the Epsom only uses low 230 watt pumps to run for a few minutes a day* rather than constantly 24/7 for aerators.

Also, the high number of fixtures and possibly occupants in our average homes could mean that the medium to long term maintenance costs may be considerably higher with a "mechanical" system than with the Epsom.

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