MOYNE SHIRE COUNCIL

FACTSHEET 8: SEPTIC TANK AND SAND FILTER SYSTEMS

If secondary treatment of wastewater is required, a septic tank in combination with a sand filter can be an effective option. In a sand filter effluent percolates through the filter and is collected for disposal. Sand filters capture suspended solids and provide an aerobic environment which encourages friendly bacteria that digest waste and reduce pollution.

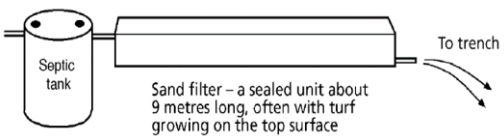
Sand Filters

Effluent treated in this way is more easily absorbed in the soil than effluent directly coming from a septic tank.

Effluent treated in a sand filter may be suitable for sub-surface irrigation of landscaped areas or for discharge to soil absorption trenches.

Technical specifications

- Minimum septic tank capacity required is 3200 litres.
- Sand filter systems are restricted to treating domestic type sewage with design flows less than 5000 litres per day.
- Filter sand should be supplied by an approved supplier and conform with the requirements of 'Code of Practice for Small Wastewater Treatment Plants and CA 1.3/03 in relation to particle size and consistency (contain less than %5 clay and fine silt, has an effective size between 0.25 and 0.60 mm, has a uniformity co-efficient less than 4).
- A copy of the Sieve Analysis test is to be provided after installation occurs.
- In determining wastewater flows based on number of bedrooms, a study/rumpus may be included if of significant size.
- Disposal of Effluent shall be in accordance with Pressure Compensating Sub-Surface Irrigation requirements.
- All effluent must also be retained on-site.
- Installation of kitchen disposal units will increase the Sand Filter capacity by 33% to the specified value.
- Imperative that no more than 250-300 mm of good quality topsoil is placed on top of the Sand Filter. This soil must be mounded with high quality organic loam to shed stormwater and support vegetative growth. Backfilling with clay is not permitted as it is likely to 'seal' the system and give rise to anaerobic conditions.
- Plumbing work is to be kept as close to ground level as possible otherwise an extra pump well will need to be installed prior to the sand filter. This will add extra upfront costs as well as additional maintenance and associated repair costs.



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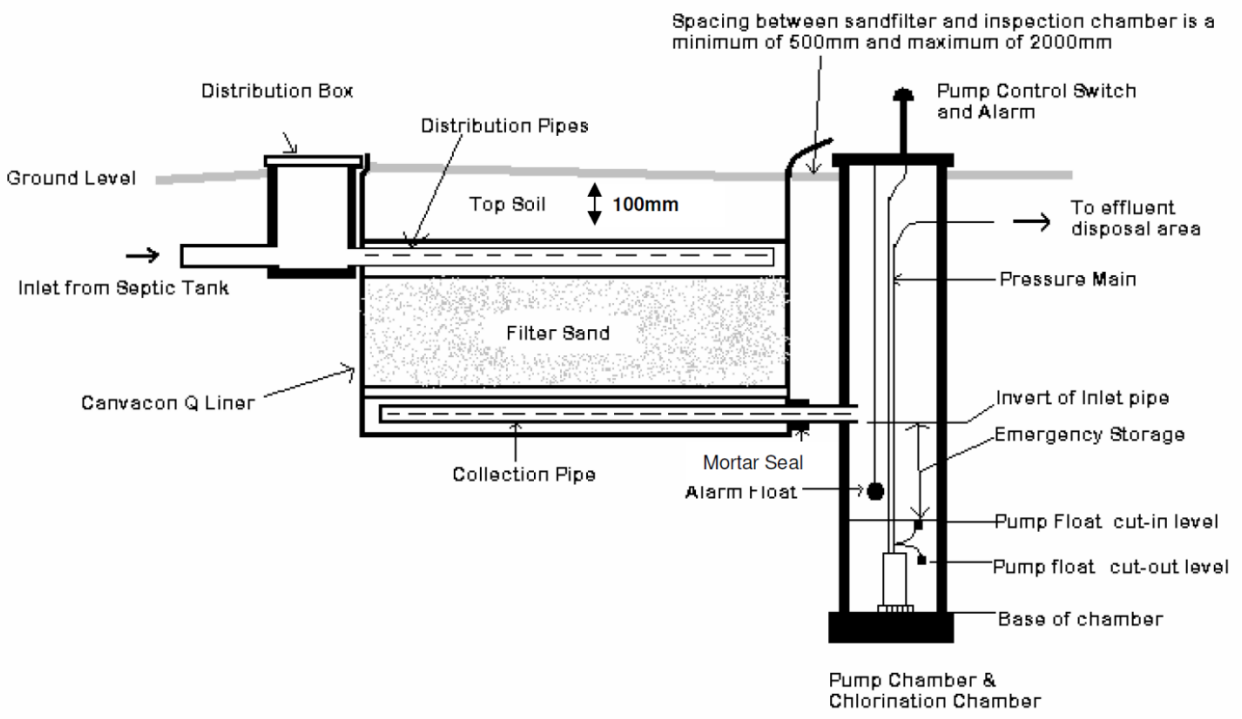
SAND FILTER CONSTRUCTION SPECIFICATIONS

Based on EPA Certificate of Approval N. 1.3/03 and Section 7 of EPA Publication No. 500 – Code of Practice for Small Wastewater Treatment Plants



Construction Specifications		Filter Sand Specifications
Liner	Canvacon required if water table is close to surface	Use clean washed sand complying with these requirements. For sand filters loaded at less than 50L/sq metre/day sand: ▪ Must contain less than 5% of clay and fine silt by volume ▪ Must have an effective size between 0.25 and 0.60mm ▪ Must have a uniformity coefficient less than 4
Distribution box	Minimum internal width 250 mm	
Distribution pipes	Slotted 90 mm plastic pipe (Complying with AS 2439)	
Inlet from Septic	100 mm Sewer Grade Plastic Pipe (Complying with AS 1260)	
Collection Pipe	100 mm Sewer Grade Slotted Pipe (Complying with AS 2439)	
Pump chamber	▪ Minimum internal diameter 750 mm ▪ Base of Chamber 1000 mm below sand filter outlet invert	
Alarm Float	100 mm above cut in	
Pressure Main	Minimum 40 mm diameter	
Alarm	An alarm or light indicating a pump failure must be fitted to the pump well or within the building being services by the septic system	

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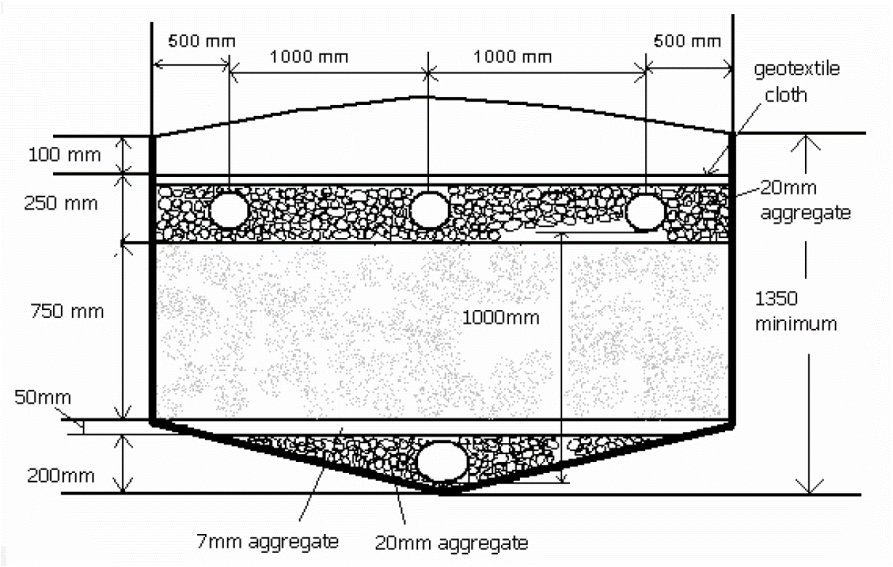
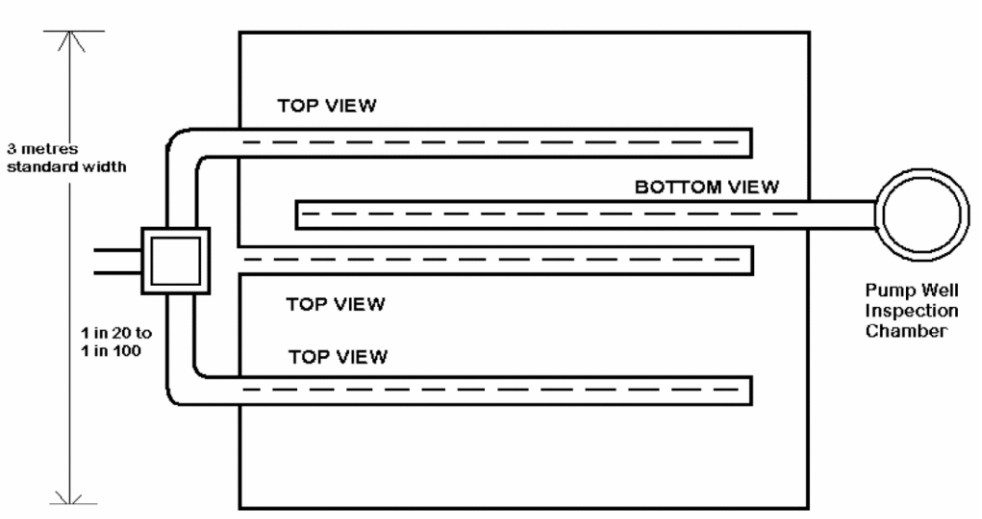
CROSS SECTION OF SAND FILTER



TOP VIEW OF SAND FILTER



SAND FILTER SIZING (square metres)

DWELLING SIZE	1 Bedroom House	2 Bedroom House	3 Bedroom House	4 Bedroom House	5 Bedroom House
Standard fixtures	8 m	11 m	15 m	18 m	22 m
Full water-reduction facilities	6 m	9 m	12 m	15 m	18 m

Information Guide adapted from existing EHPA & Golden Plains Shire Council resources. Moyne Shire Council acknowledges these sources.

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