

Precast Septic Tanks

General

Septic Tanks in General

Septic tanks and cess pools are designed in accordance with BS6297 and should be of watertight construction so that they permit neither ingress of ground water or egress of sewage to the ground. They should be placed in a suitable position, minimum 15 meters from dwelling with access provided to allow tank emptying vehicle to operate within suction capability as it is advisable to empty septic tanks twice per year. Cesspools and septic tanks should be adequately ventilated and access to rod the horizontal inlet pipe should be provided. Calculation of the total capacity of a septic tank should be made on the basis of the number of persons to be served. The following formula is recommended for general use, where desludging is carried out at not more than 12 monthly intervals.

$C = (180P + 2000)$ where C is the capacity of the tank in litres, with a min of 2720 litres
P is the design population with a minimum of four persons

Therefore the capacity of tank for four persons = $4 \times 180 + 2000 = 2720$ litres (598 Gallon)
Therefore the capacity of tank for six persons = $6 \times 180 + 2000 = 3080$ litres (675 Gallon)

Note: Design populations is the no of persons permanently using the dwelling.
Capacity may be different for Sewage Treatment Plant.

A septic tank will perform two main functions

1. Settlement Tank

Contains the crude sewage (solids) which should be emptied at least once per year (desludged), allow the more refined liquid sewage to pass through for filtering.

2. Filtering

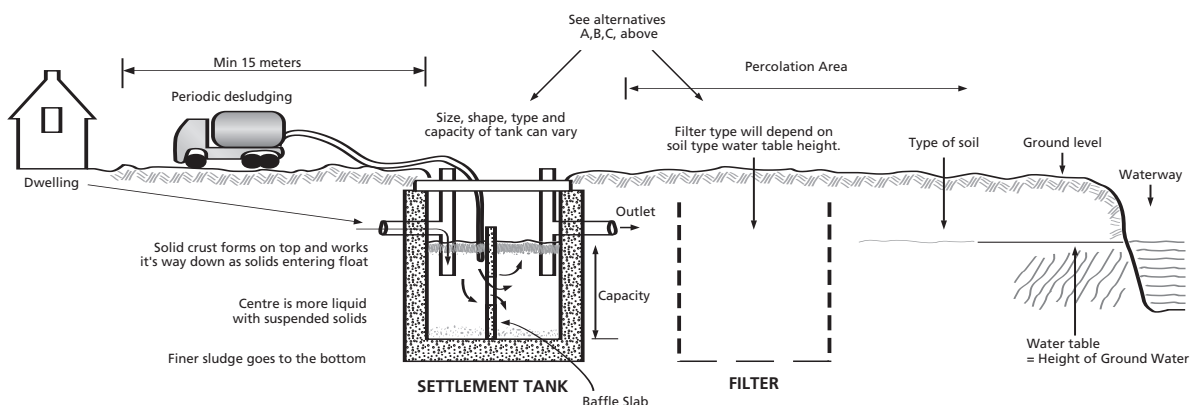
The prime function of a filter is to separate the remaining solids from the more refined liquids and to introduce air (oxygen) to feed the bacteria which in turn will further purify the liquid before entering a stream or waterway.

Depending on the type of soil surrounding a septic tank outlet, height of water table (ground water level) and position of surrounding lakes or waterways, advice should be sought from your local authority as to which type of filter is required.

Generally

- A** If low water table and where ground is rock, gravel or chalk there may be no separate filter required other than liquid dispersed into shallow gravel filled herring bone trenches with porous pipe. (Percolation Area)
- B** If low water table but ground is not as above then a stone filled (media) filter bed may be used, provided air ventilation is allowed to flow freely through stones.
- C** Introduce air to liquid effluent by means of a compressor which may all be contained within the same specially designed tank. (Small Sewage Treatment Plant) as per new European regulations which specify Quality liquid should be at tank outlet.

Where water table or out fall drain is higher then outlet pipe and gravity flow is not possible, a submersable pump would be required to empty septic tank.



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Date: 1/12/03

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Precast Septic Tanks

(1800 square sections)

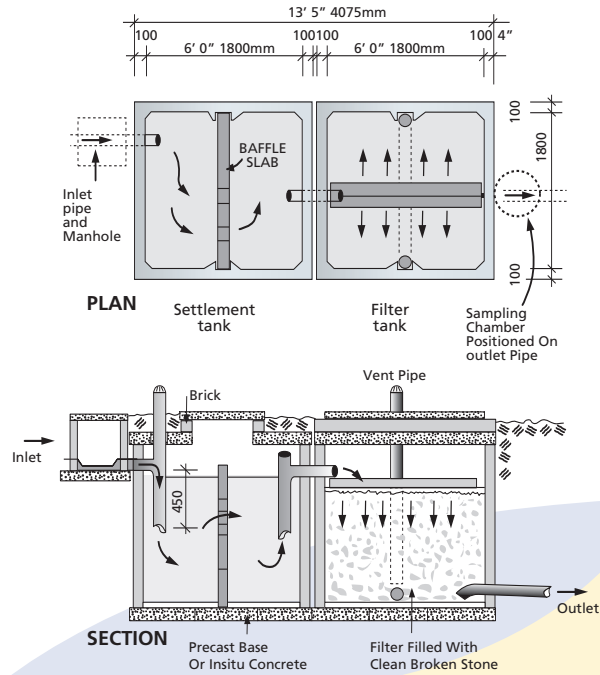
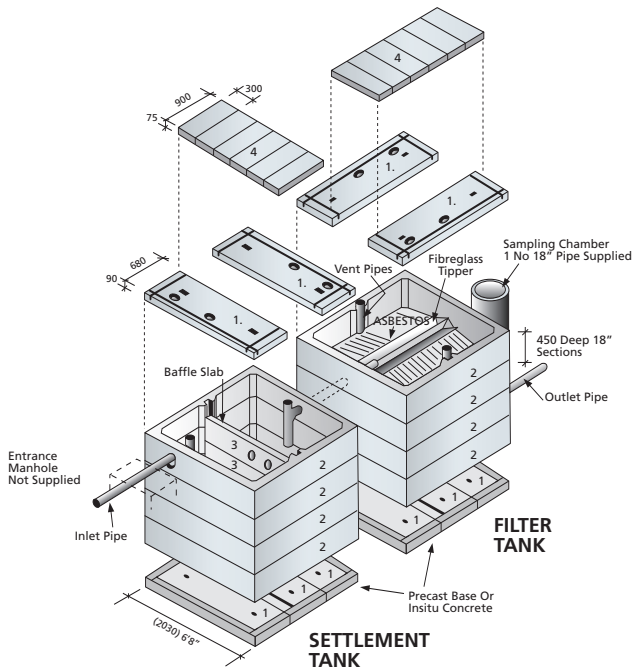


Table 1 To determine parts required to construct a precast septic tank.	1800 Square Settlement Tank					Filter Tank					Note: 3 No. brick (not supplied) will be required to fill gap between large lids and underside of smaller lids. 1 or 2 course of brick can also be built along edge of larger lids for small lids to rest, this allows top soil to be put over large lids leaving only smaller lids exposed. (see section above)
	No Required	Part No	Description	Dimensions in mm	Approx Weight	No Required	Part No	Description	Dimensions in mm		
* Insitu base as an alternative	3*	1	Base (coverslab)	2030 x 680 x 90	300 kgs	3*	1	Base (coverslab)	2030 x 680 x 90		
	3 or 4•	2	1800 Square Section	1800 x 1800 internal x 450 Deep	784 kgs	4	2	1800 Square Section	1800 x 1800 internal x 450 Deep		
• 1800 x 1800 x 450 deep section gives a capacity of approx 1500 litres 329 gall	3 or 4•	3	Baffle Slab	1790 x 400 x 90	150 kgs	1	-	Fibreglass tipper	To suit section		
	2	1	(Base) Coverslab	2030 x 680 x 90	300 kgs	2	1	(Base) Coverslab	2030 x 680 x 90		
	6	4	Lids	900 x 300 x 75	45 kgs	6	4	Lids	900 x 300 x 75		

Fitting Instructions

1. Dig hole to required size and depth allowing working room. This will vary depending on type of ground.
2. Either use precast bases or insitu concrete making sure they are placed level. As an alternative blocks can be placed level in each corner for precast sections to rest on and pour insitu concrete floor later allowing concrete to undermine the walls of the sections.
3. Using the lifting holes provided, sling each section into place, bedding each with 3:1 sand/cement as required between sections.
4. Slide baffle slabs into position, making sure knockout holes are furthest away from inlet pipe, break out knock holes on second baffle from top.
5. Place all pipes, tipper, stones and asbestos.
6. Place lids making sure they are turned correct way for knock out holes.
7. Grout around all pipes and lifting holes with 3:1 sand/cement mortar.
8. Backfilling, if done immediately after placing should be on either side to avoid pressure which may push septic tank out of place.

Note: Although each section is identical with knock out holes, it is important to turn them the correct way so knockout holes are in the proper position for pipes.

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