



What you should know about Sewage Treatment options – *or the dummies guide!*

The Building Regulations require foul water drainage to be connected to a public sewer or where this is not practicable to one of the following;

- Cesspool
- Septic Tank
- Package Sewage Treatment Plant

The above options all have advantages and disadvantages.

CESSPOOLS

A cesspool is a sewage holding tank with no outlet.

Sewage flows in and is stored, when the tank is full the waste is tankered away.

Cesspools are usually installed:

- where the ground is unsuitable for the waste to soakaway to ground
- Sensitive sites e.g. SSSI's and sites close to drinking water supplies

Advantages

+ Low installation & maintenance cost

Disadvantages

- No treatment of sewage
- Require regular emptying

SEPTIC TANKS

A septic tank is a multi-chambered tank with an outlet.

The 'primary tank' facilitates 'primary treatment' - the separation of liquids and solids by gravity - to take place. Raw sewage flows into the tank and the heavy solids, 'sludge', sink to the bottom, lighter solids, grease and oils or 'scum' float to the surface. Some of the sludge is degraded by naturally occurring anaerobic (without oxygen) bacteria. The liquid effluent flows via gravity out of the tank and discharges to land by soakaway.

Some older septic tanks still discharge directly to watercourses. However this practice is becoming less common due to more stringent consent standards.

Septic tank can be installed:

- for use by single domestic house or in small developments.
- Where there is sufficient porosity in the ground to allow for soakaway

Advantages

+ Relatively low installation cost

+ Some treatment

Disadvantages

- Require emptying on an annual basis
- Can only discharge where ground has sufficient porosity

SEWAGE TREATMENT PLANT

A sewage treatment plant is a more sophisticated unit than a septic tank. Different types of sewage treatment plant exist but they all generally follow the same principles. Sewage treatment plants create an environment which facilitates the growth of bacteria. This breaks down sewage into non-polluting end products.

Treatment plants differ from septic tanks in that primary treatment of the raw sewage takes place followed by a secondary treatment.

The unit comprises of a small electrically driven packaged plant, usually all contained in one housing. The sewage is first settled to remove the solids and then biologically treated through a filter bed, by rotating discs, or through air injection, with a final settlement stage to remove the fine solids. Sewage treatment plants create an environment which facilitates the growth of bacteria. This



breaks down sewage into non-polluting end products.

results in a higher quality effluent being produced – about 95% clean - which can (subject to Environment Agency Consent to Discharge) be discharged directly to a watercourse. Sewage treatment plants are suitable for most sites from single domestic house up to 1000pe and subject to Environment Agency approval i.e. whether they will grant you consent to discharge to land or to watercourse.

Advantages

- + Sewage treated to higher standard
- + Suitable for larger developments

Disadvantages

- Require electricity supply
- Require regular maintenance to ensure efficient operation

CONSENT TO DISCHARGE

Is in effect a licence which allows you to discharge treated sewage subject to consent limits to either ground or surface water.

You need a 'Consent to Discharge' if you intend to discharge anything other than clean, uncontaminated water to surface water or groundwater.

You need to obtain this discharge consent from your Environmental Regulator. Failure to do so may result in an 'enforcement action'.

To apply for a Consent to Discharge it is advisable to contact your local Environment Agency office, they will then give you an indication as to what level of treatment is required and this will help you form the decision as to what treatment system is suitable for your site.

You will then have to complete a 'Consent to Discharge Application Form' and pay an application fee. The amount of fee is dependant upon the amount of sewage you propose to discharge. Please note that completion of an application form and payment of the fee doesn't constitute permission to discharge.

The Environment Agency specify that a discharge has to meet certain discharge standards or 'consent limits'.

These are either 'descriptive' or 'numeric'.

- A descriptive consent limit means that as long as the effluent looks clear and doesn't appear to have a detrimental effect on the environment then it is clear enough to discharge.
- A numeric consent limit is where the Environment Agency specify figures in milligrams per litres for the following parameters which are permitted in the discharge effluent:
 - Biochemical Oxygen Demand (BOD)
 - Suspended Solids (SS)
 - Ammonia (NH3)

All installation procedures should be carried out observing the requirements of the relevant legislation. The two regulatory bodies who must be contacted are the local authority building control and the environment agency. These regulatory institutions will give guidance as to where a treatment plant and discharge point or soakaway can be sited.

Planning permission.

At the discretion of the local authority, in some areas of the country a treatment plant may need planning permission. If the plant is being installed as part of a new build project then permission should be part of the main approval.

You should consult the local authority prior to conversion of an existing septic tank or cess pit though generally specific planning permission is not required.