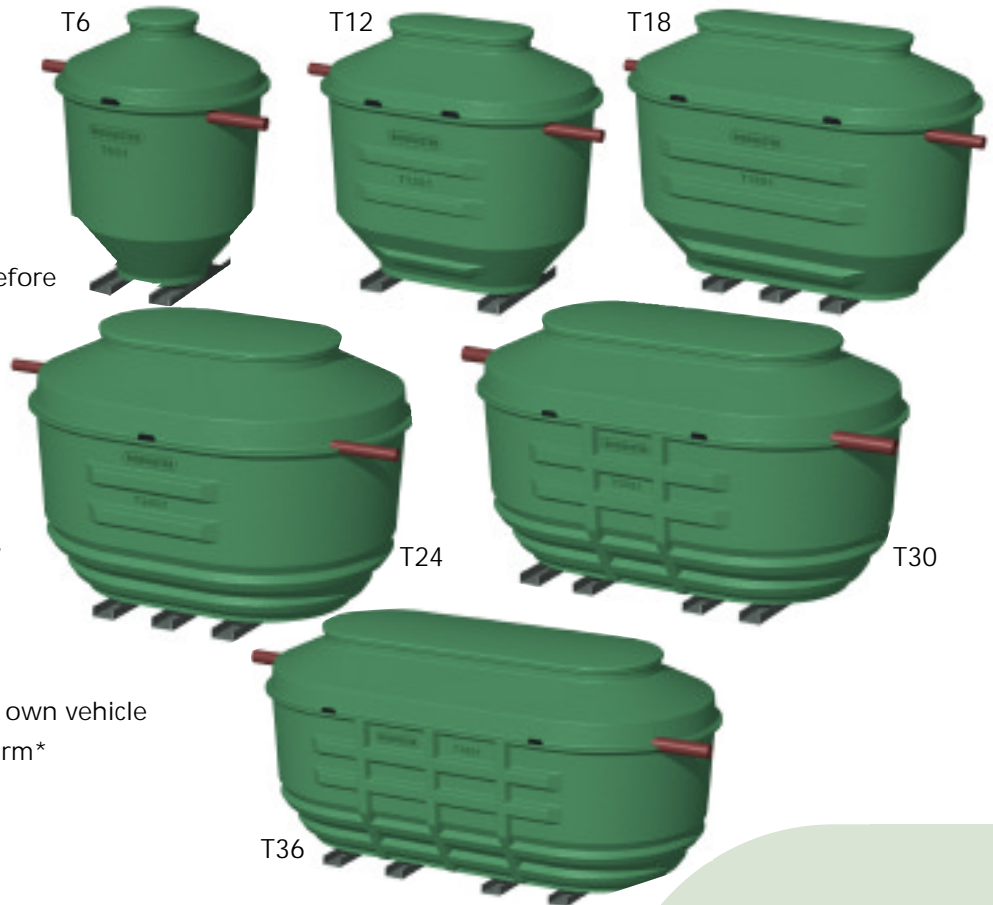


Our BIODIGESTER units have been designed by a specialist GRP engineers to support the tank contents when in the ground, therefore no concrete backfill is required [unless you are using concrete to anchor your BIODIGESTER in wet ground].

The units are manufactured in robust GRP in a factory regulated to the highest international quality control standards, using the latest GRP manufacturing technology.

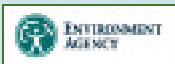
BIODIGESTERS are delivered by our own vehicle fitted with a hydraulic offloading arm*
*except T30 and T36.



Environmental Regulations

Consent to Discharge

If you wish to build a new building where no mains drains are available, it is very likely that you will need to apply for a "Consent to Discharge". This is a legal document which will usually lay down measurable parameters for the effluent quality from your sewage treatment plant. They are issued by:



• ENGLAND & WALES
Environment Agency



• SCOTLAND
Scottish
Environmental
Protection Agency



• NORTHERN
IRELAND
Department of
Environment
Northern Ireland

Building Regulations

relevant to a BIODIGESTER sewage treatment plant:

The Building Regulations 2000
Drainage and Waste Disposal 2002 edition
Part H-H2
Package Sewage treatment Works
Clause 1.56 states "packaged treatment works should be type tested in accordance with BS7781 or other wise tested by a notified body". The relevant standard will be the new European Standard BE/EN 12566-3. This is to be published in May 2003. This standard requires that a manufacturer's plant should be type tested to that standard. However the testing regime is to be over 2 years, and no approved body is yet available to carry out this testing.

The Building Regulations allow for an alternative approach to certification clause 1.74. Therefore Burnham Environmental Services Ltd has submitted test samples of numerous existing plants to an independent laboratory for analysis. These test reports are incorporated in a technical file available to relevant authorities.

Useful Tips

- It is better to wait for the delivery of your BIODIGESTER before you excavate the hole. In areas of high water table you will find the hole full of water the next morning! You may also find that the sides collapse overnight.
- The T6 BIODIGESTER excavation can be done with a 1 1/2 ton mini digger. Deeper inlets and anything larger should be done with a 3 ton machine or larger.
- The "Consent to Discharge" may take up to 4 months.
- If you install the air blower in a dusty environment then this may clog up the air filter.

Siting your BIODIGESTER

Building Regulations state that septic tanks should not be sited less than 7m from the house; however they state that the discharge of a sewage treatment plant should not be less than 10m from the house. There is a wide range of interpretation of this regulation by various building control officers. As most sewage treatment plants do not smell there is no reason they cannot be installed closer but this will depend upon the Building Control Officer - in normal circumstances the 7m rule applies.

As most road tankers used for emptying sewage systems have a suction hose of 50m maximum you must ensure that the plant is sited within this distance. Remember these are heavy trucks.

Also remember that if the access point is higher than the plant they may have problems with suction - the maximum height differential is about 5 meters.

If you are dispersing the treated effluent via a soakaway you must have enough space and gradient to build this. If you don't have enough space down gradient you may be able to pump the effluent to another part of your land where there is enough space or gradient. If you are discharging to a pond or stream, make sure you position the outlet above the highest flood level; otherwise you may flood your BIODIGESTER.

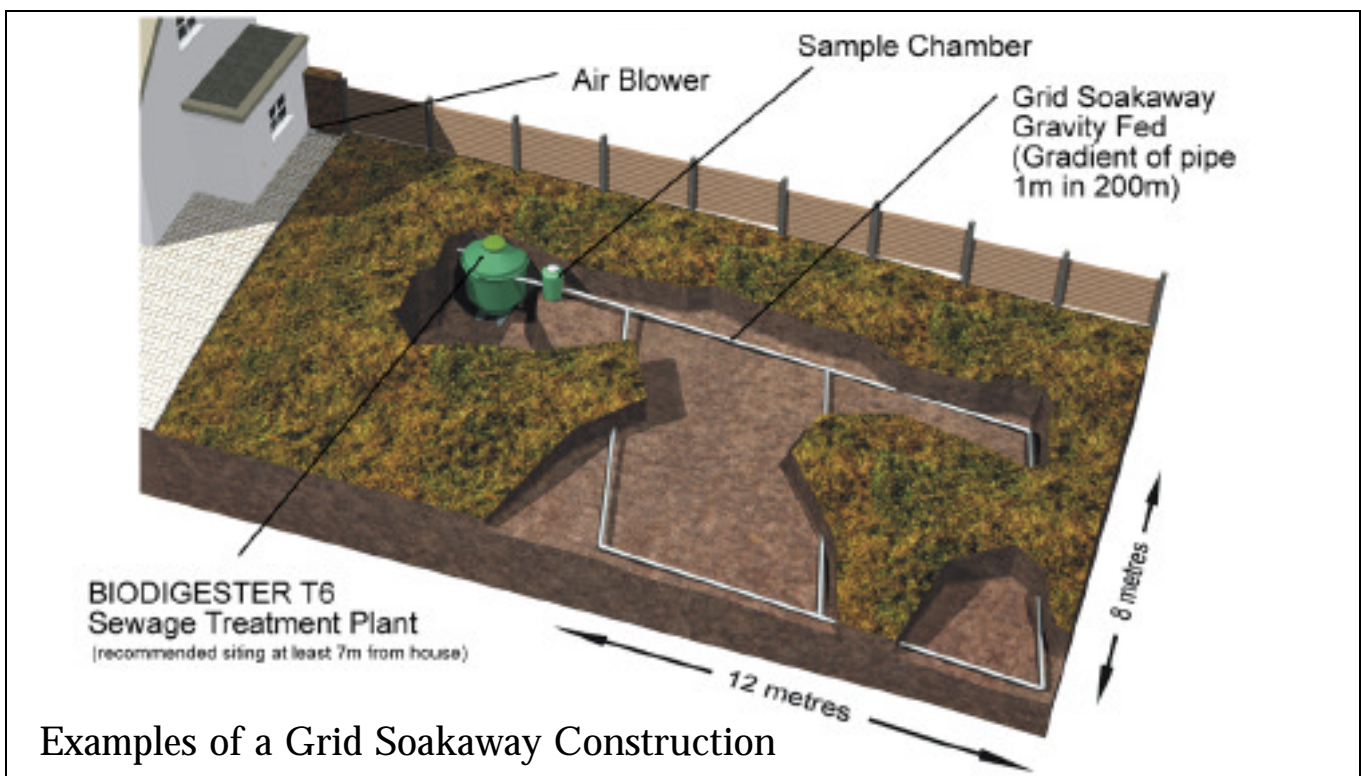
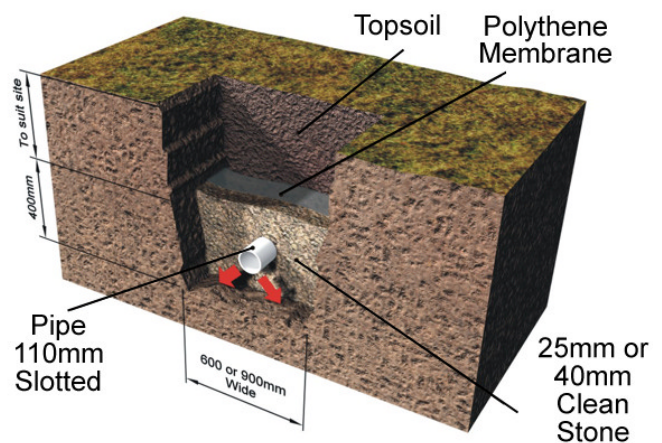
Soakaway installation

Subject to the relevant authority's permission, the treated effluent can be discharged to a watercourse, ditch or soakaway. Discharging to a watercourse is the cheapest and simplest method, but may not always be practical, in which case you will need to construct a soakaway.

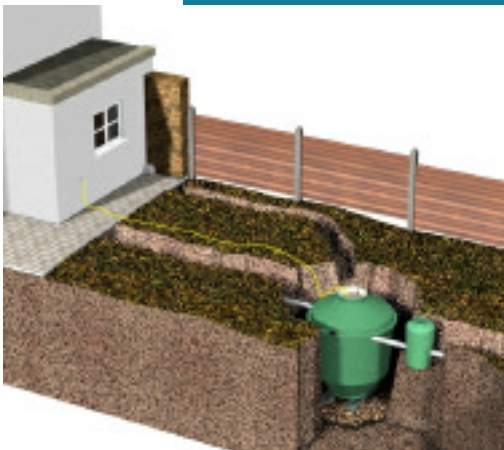
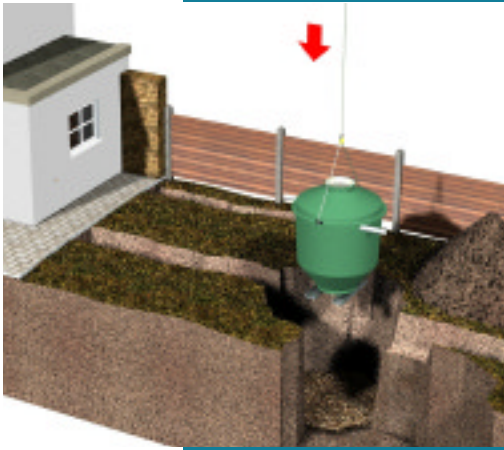
If you do this you will need to carry out a porosity test. The length of the soakaway is dependent on your own situation - our website www.biodigester.co.uk contains details on how to make the calculations, or contact us direct.

Building Regulations also require the addition of a sample chamber between the treatment plant and the soakaway.

Soakaway profile

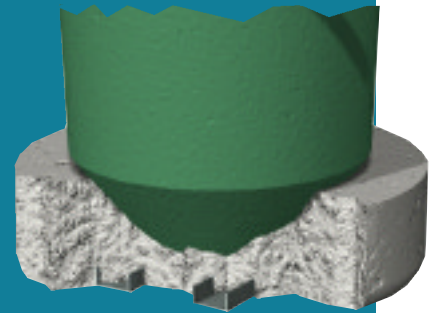


Examples of a Grid Soakaway Construction



Summary installation

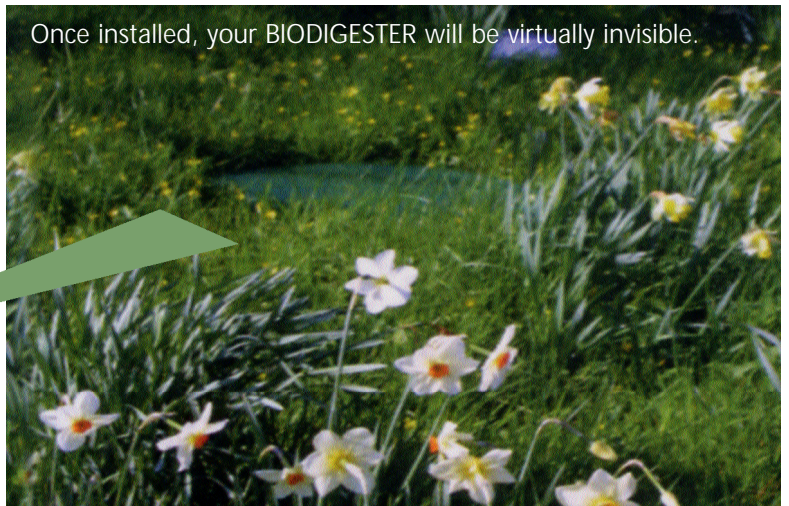
1. Excavate a hole 300mm larger and 200mm deeper than the relevant unit.
2. Check the water table. If there is any chance of the water rising above the base of the unit then the Wet Ground method must be used (see point 6 below).
3. Install 200mm base of sand, gravel, scalplings or concrete.
4. Place BIODIGESTER onto base, work ribs into base and check levels.
5. Fill the BIODIGESTER with water.
6. Wet Ground: If you have a high water table the Wet Ground anchors must be covered with at least 250mm of concrete. For details of the minimum quantity in each case, refer to the appropriate datasheet.
7. Backfill with gravel or concrete as preferred.



Electrical installation

The air blower is normally mounted within 10m of the unit. It can be mounted further away - please contact us for details. The electrical supply to the air blower should have an RCD at source. A 3 core cable is required. Where it is underground it should be armoured. Remember the size of cable is also dependant on the distance required. Where an effluent pumping station is incorporated or added, a separate power supply with a separate RCD is required. Four core rather than three core cable is required. If a high level alarm is to be included, a further separate supply and RCD are required using a five core cable.

Once installed, your BIODIGESTER will be virtually invisible.



For larger rural sewage treatment, please contact us.



Frequently Asked Questions

What is "Consent to Discharge" ?

It is a legal document that is issued by:

- ENGLAND & WALES: Environment Agency
- SCOTLAND: Scottish Environmental Protection Agency
- NORTHERN IRELAND: Department of Environment Northern Ireland

Each authority may lay down specific measurable parameters which you will have to satisfy to enable you to discharge the treated sewage effluent from your premises into a watercourse, soakaway or sub irrigation system. In some areas 'Consent to Discharge' is not required.

Why do I have to have "Consent to Discharge" ?

In England and Wales 'Consent to Discharge' is a legal requirement under the Water Resources Act 1991. (Schedule 10) (As amended by the Environment Act 1995). However legislation and interpretation of the legislation alters from area to area. In some areas 'Consent to Discharge' is not required. Always consult the appropriate regulatory authority.

How long does it take to get 'Consent to Discharge'?

The maximum period normally allowed is 4 months. We can undertake the application if you buy a BIODIGESTER.

Do I always need a "Consent to Discharge" ?

Not always. It is wise to check with the Environment Agency or other regulatory authority. In some areas consent is not required for new projects. In most areas 'Consent to Discharge' is not required if you are replacing an existing system.

How does a BIODIGESTER work?

Air is blown into the BIODIGESTER by an electrically powered compressor mounted normally within 10 metres of the sewage treatment plant. The air is diffused from the bottom of the central chamber. This increased oxygen supply accelerates the activity of the naturally occurring micro-organisms which degrade the sewage to a clear effluent and a non toxic sludge. The plastic media is used to provide a high surface area for the micro-organisms to adhere to and also, as it is mobile, to facilitate rapid degradation of solid matter. The diffused air also operates as an 'Air Lift' which recirculates solids from the outer 'Settlement Chamber' to the inner 'Treatment Chamber'. This recirculation also ensures that both chambers remain aerobic. The process runs continuously 24 hours a day. The plant is designed to confirm to the requirements of BS6297:1983.

What is the difference between a septic tank, cess pit and a Package sewage treatment plant?

There is often a serious lack of understanding of the different systems available. There are significant differences in the range of applications and a wide variety of types, makes and arrangements of most of them. The following should help to clarify the situation.

There are three common types of holding or treatment system in use.

● Cesspits or Cesspools

Do not provide any treatment at all, they are simply a holding tank which must be emptied by tanker on a regular basis. They are large structures, unsuitable for domestic use due to operating costs and they are the least favoured option under present regulations. You may come across the term cesspit used to describe what is actually a septic tank.

● Septic tanks

Provide minimum treatment and must now discharge to a soakaway only. These are generally only used for smaller domestic developments and are nowadays less acceptable to the planners.

● Biological treatment plants ie BIODIGESTERS

Provide a much higher level of treatment than septic tanks and may discharge to a water course, provided a Consent to Discharge is in place. Modern packaged plants are the officially preferred option at present.

● Soakaways

..or sub-irrigation systems for dispersal into the ground. These are constructed in different ways according to location but the preferred method is now a system of interlinked trenches. Design of a new soakaway is subject to the results of porosity or percolation tests.

● Package Sewage Treatment Plants Discharges to a water course may be direct or in-direct. Indirect refers to a soakaway or tertiary reed bed with an overflow to a watercourse. Systems such as this are now commonly used and are referred to as 'Partial' or 'Seasonal'.

● Reed beds, constructed wetlands, mounds

These are often used where the ground conditions and water table are unsuitable for traditional methods of effluent dispersal. They can take up large areas of ground and may be expensive to build.

How long does it take to work?

About six weeks from start up. You can accelerate this by seeding the unit with the sludge from an operational aerobic sewage treatment system.

Does BES install BIODIGESTERS?

In some areas we have independent contractors who specialise in installing sewage disposal systems. More contractors are required. Please ask for details.

I have a pond on my land, can I discharge the treated effluent into it?

The answer is dependent on the size of the pond, size of the discharge and whether there is a flow through the pond. 'Consent to Discharge' may be required. Please consult BES.

Can I use a sink garbage grinder?

Yes but it will decrease the capacity by 35% and increase the emptying frequency.

Can I use normal household cleaning chemicals?

All normal products can be used in sensible quantities. The system works by accelerating the natural sewage degradation process. Some chemicals used are designed to destroy micro-organisms so, overuse of bleach or antibacterial cleaners may upset the process. Avoid allowing significant quantities of grease to enter the system. Where there is a commercial kitchen (Hotels, Pubs etc) a grease trap must be fitted to the kitchen drainage only.

What is population equivalent?

Population Equivalent relates to non domestic sewage treatment plant applications. For example an office with 30 workers is equivalent to 10 domestic residents, ie the PE is 10. This becomes more complicated for Pubs/Hotels etc. Please refer to our website for specific details.

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