



# **Installation & Maintenance Handbook**

A Member of



BRITISH WATER





# Marsh Sewage Treatment

## Introduction.

Our products are manufactured to the UK's and European's highest standards and to the Quality standards, ISO 9001:2000. Marsh Industries Limited, occupies a unique position in the field of reinforced plastics, having the technical expertise and experience gained from over 30 years in the Construction Industry in the United Kingdom.

The experience places Marsh Industries in a position to offer an advanced range of superior products and systems to meet the requirements of its customers

- Our product range can be put into service immediately as its pre-commissioned, once the installation instructions have been fully complied with.
- They should be checked once the electrical connection is completed, to ensure that it is running correctly.
- For sewage plants you should hear a hum from the blower and there will be bubbles of air coming up through the water.
- If the electrical connections are not completed correctly, the system will not run and a critical failure may result.
- Always refer to the electrical drawings in this handbook and supplied with the system.
- In the case of systems not being wired up correctly, warranties will be null & void.

## Sewage & Septic Tank Ranges Only

### Please Do.

- Ensure that all of the information contained in the handbook is adhered to at all times.
- The end user (not the purchaser) of the plant is responsible for the operation and maintenance of the system and its discharge either direct to a watercourse or through a percolation area.
- It is important that the product is operated under the conditions for which it is designed. Any variation in these conditions could lead to the unit not performing to its full potential and the discharge may not meet the required standards.
- Ensure that the system has been installed correctly, in accordance with the manufacturers specifications.
- Ensure that the air blower has been wired up, by a competent electrician.
- Pre-Commissioned plant: Once it is put into use (plumbed to the house and electrical wiring completed) it is now up and running. Check that there is a hum from the blower and that there are bubbles rising from the middle chamber.
- Maintain the system in accordance with section this handbook.
- Servicing is mechanical only, and does not include de-sludging (emptying of the system). You must desludge the system in accordance with the guidelines laid down in this handbook.
- Soak ways, drains and the emptying of primary tanks remain the responsibility of the client and damage to the installation due to the influx of surface water or the backing up of soak ways or drains is not covered by this service agreement.

# Marsh Sewage Treatment



- Phone Marsh Industries if you have any technical queries regarding the maintenance and servicing of your system.

## **Please Don't.**

- Alter in any way, any part of the system or internal parts supplied with the system.
- Open the plant cover without firstly isolating the mains power.
- Marsh Industries Limited shall not be liable for any damage or loss, including consequential loss, caused by the failure of any plumbing equipment or failure caused by the inclusion of gross solids, (e.g. – disposable diapers or sanitary towels etc) in the waste water treatment unit.
- To ensure the continuance of the systems performance, the user has to take certain precautions including the following:
  - The design loading of the plant should not be exceeded.
  - High volume discharges such, as those from swimming pools and Jacuzzi's must never enter the system.
  - Surface water must not enter the system.
  - Do not allow large quantities of chemicals to enter the system including:
    - ~ Water softener regenerate.
    - ~ Disinfectants.
    - ~ Strong Acids and Alkalis.
    - ~ Oil or Grease.
    - ~ Pesticides.
    - ~ Photographic Chemicals.

## **For Guidance Only Locating the Septic Tanks & Sewage Plant**

Minimum distances for locating Sewage Plant are set out below. These are minimum distances only; the unit should in fact be located as far away as is practically possible. However, when locating the unit, consideration should be given to allow adequate access for the vacuum tanker. The unit should be located not nearer than 7m from any other dwelling as set out in the wastewater treatment manual. Guidelines of minimum distances for locating the sewage plant are set out in the table below.

	<b>Any dwelling</b>	<b>Watercourse or stream</b>	<b>Spring or well</b>	<b>Lake</b>	<b>Site boundary</b>	<b>Road</b>	<b>Slope, break or cuts</b>
<b>The Plant</b>	<b>7m</b>	<b>10m</b>	<b>30m</b>	<b>50m</b>	<b>3m</b>	<b>4m</b>	<b>4m</b>
<b>Percolation area</b>	<b>10m</b>	<b>10m</b>	<b>30m</b>	<b>50m</b>	<b>3m</b>	<b>4m</b>	<b>4m</b>

*Minimum separation distances in metres*



## **IMPORTANT**

### **PRE INSTALLATION ADVICE NOTE**

**DO NOT FILL THE TANK MORE THAN 1/3 FULL BEFORE POURING CONCRETE OR BACKFILLING.**

**OVERFILLING MAY AFFECT THE STRUCTURE OF THE TANK IN ITS UNSUPPORTED STATE.**

**PLEASE REFER TO THE INSTALLATION GUIDE**

**FOR ADVICE CALL MARSH 01933 654582.**

**THE WARRANTY MAY BE VOIDED IF THE TANK IS OVERFILLED.**

**Where inverts are over 750mm in depth a full concrete surround should be undertaken. In wet conditions a full concrete surround and base must be undertaken.**



## Marsh Ensign & Uni:Gem Installation Detail

**The Installation & Electrical Connections Must Be Undertaken By Fully Qualified Personnel. Under The Guidance of the Health & Safety at Work Act.**

Select a suitable location for the sewage plant (s). This will be normally at a ground level lower than the properties being drained and allow for the falls in site drainage. Check that no other structure – or special access – is required over the selected spot. Check that no underground cable, pipe or service duct, lies underneath.

In normal to good ground conditions the plant requires a 150mm Concrete Base with a 150mm pea-shingle surround to the top of tank. Excavate the minimum opening in the ground to receive the plant and pipe work to be used. This opening should be 150mm wider and deeper than the sewage plant in normal/good ground conditions. The sides of the excavation should be battened for stability. Fill with clean water to overcome the effect of buoyancy as you pour the pea-shingle surround consolidating around the base of the plant. Place further pea-shingle as before, at least 150mm thick around the chambers or shafts.

In areas of high water, shifting running sand or water logged sites a polyethylene membrane must be fitted between a 250mm hard core base and the concrete. A dewatering pump must be used to control any ground water present until the concrete backfill is set. In wet or high water table sites/ground conditions the plant requires a 250mm Concrete Base with a 250mm concrete surround to the top of tank. Excavate the minimum opening in the ground to receive the plant and pipe work to be used. This opening should be 250mm wider and deeper than the sewage plant in these ground conditions.

Place in position the mass concrete base, minimum thickness 250mm of CP 25Kn/mm<sup>2</sup> strength. Lower the pump chamber onto the damp concrete allowing the base to settle in, ensuring that the inlet and outlet pipes are correctly aligned. Fill the tanks evenly from both ends of each unit, or in multiple chambers through each turret evenly. With clean water to overcome the effect of buoyancy as you pour the concrete consolidating the concrete around the base of the plant. Place further mass concrete, as before, at least 250mm thick around the chambers to just below the top of the pipe connections. Consolidate the concrete, being careful not to damage the tank or tank inlet/outlet pipes. Where there are multiple tanks there must be a minimum of 450mm distance between the tanks this 450mm void must be filled with concrete during the pouring.

Do not under any circumstance use vibrating pokers. Use warning signs around the access turrets. Connect up the site pipe work to the inlet and outlet of the plant, and draw the cables and nylon diffuser tubing through the ducting from the pump/s diffuser and high level alarm if included. Ensure the sewage plant is fully ventilated connecting 110mm pipe to the air vent ports on the tank Finish off the surface at the required level, depending on the final ground cover required i.e. topsoil, tarmac, gravel etc. It is most important that once the sewage plant is in situ with all the inlet connections made, the drainage system should be flushed out, and all sand, debris etc. removed from the sewage plant.

**Where inverts are over 750mm in depth a full concrete surround should be undertaken. In wet conditions a full concrete surround and base must be undertaken.**



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\*\* For Uni:Gem installation ensure the septic tank is vented and the head of the soil run is not vented via an air admittance valve, to avoid odour escaping from the septic tank (when the solids are disturbed by incoming sewage from the dwelling) it may be advisable to fit a 100mm non-return valve between the septic tank (drainage pipe) and the Uni:Gem. Please ensure the Uni:Gem is vented with a 4" (110mm) pipe, the 4" air port is predrilled in the top of the Uni:Gem.

## **Marsh External Compressor Housing Installation Guide**

The Marsh external compressor housing is supplied with the shallow sewage treatment plants and with plants fitted with a pumped outlet as standard. The external compressor housing can also be supplied with a tank as a non cost option at time of order.

The external compressor housing is made of GRP and comes complete with electrical connections and hose to connect to the sewage treatment plant. The compressor housing can be sited up to 4 meters from the sewage treatment plant (longer distances can be catered for at an extra cost).

Site the housing on a hard level surface ideally a small concrete base or hardcore. Make sure the housing base is level and that there is no movement as a vibration noise may occur once the compressor is activated. Run the mains electric feed cable in a duct to the compressor housing from the source to be connected to the electrical connections in the housing. The air hose should be fed through a duct to the plant and is attached with a jubilee clip to the air hose tail visible on the turret adjacent to the cover and frame. The hose is then fed up through the bottom of the housing and connected to the compressor with a jubilee clip.

Make sure the compressor housing is accessible for servicing and has a clear air flow around it.

## **Non vehicle loading**

The plants are designed for a minimum cover of 600mm of backfill or 300mm plus 100mm reinforced concrete slab. **Vehicle Loading – Car Axle Weight 10 Tonne Maximum.**

For vehicle loading the tanks must have a minimum cover of 750mm of backfill plus a minimum 200mm reinforced concrete slab designed to take the maximum load without such loadings being transferred to the tank itself for this application a structural engineer must be consulted.

## **The electrical installation of the unit. All 230v. Single Phase.**

**Standard Gravity system with Air blower:** These will conform to European Standards.

All electrical work to be carried out by a qualified electrician, the work must be carried out strictly to the manufacturer's instructions and to the relevant national rules for electrical installations. A 230V, 16 Amp, water proof plug and socket connector will be supplied with this unit.

The customers' minimum responsibility shall consist in the provision of:

A single run of 1.5mm (or greater than 1.5mm dependent on distance) two core + earth –

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two conductors plus earth conductor – steel wire armoured (SWA) cable from the customers distribution cabinet to the tank unit socket.

Cable protection via 10 amp MCB protected by residual current detector (RCD), rated 230V, AC and tripping current 0.03amps. The cable armour must be properly bonded to the main earth at the premises.

A control panel with alarm is available at an additional cost . Please refer to the manufacturer for further details. Once commissioned, do not disconnect the air pump. It is imperative that it is running 24 hours a day.

## **Systems with High Level Alarm and / or Pumped Outlet**

All the electrical work must be carried out by a fully qualified electrician using suitable materials for the application. Electrical work must be a 230V, 16Amp, waterproof IP plug and socket connector will be supplied with this unit for the compressor and a separate IP plug and socket will be supplied for the pump and or high level alarm These will conform to European Standards.

The customers' minimum responsibility shall consist in the provision of:

A single run of 1.5mm<sup>2</sup> three core + earth – five conductors plus earth conductor – steel wire armoured (SWA) cable from the customers distribution cabinet to the tank unit socket.

Cable protection 10 amp MCB protected by residual current detector (RCD), rated 230V, AC and tripping current 0.03amps.

The cable armour must be properly bonded to the main earth at the premises.

A control panel with alarm is available. Please refer to the manufacturer for further details.

Leave the compressor running. It is imperative that it is running 24 hours a day, every day.

Note: The steel wired armoured cable is to be routed through 25mm glands in the pump chamber, then to be terminated to the junction box.

## **Connections:**

One core from 3 to 3, Neutral core from 4 to 4. One core from 5 to 5, One core from 6 to 6. Earth core from PE Terminal to PE Terminal.

## **Electricians System Start Up:**

Once the electrical connection has been put in place between the plant and the fuse board in the house, the system is now operational. If the system is running correctly, a slight "hum" will be heard from the air blower and there will be air bubbles coming up from the bottom of the middle chamber, rising to the surface.

## **Further alarm options, for high water level or compressor power loss.**

We are pleased to be able to offer our customers, the protection and peace of mind of an alarm system, specifically designed to protect your home. Various alarm systems, to a variety of different standards & specifications are available. Please consult with Marsh Industries, in order to get an alarm system that will suit your requirements. Phone alarms are also available as an optional extra.



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## Marsh Septic Tank Installation

Select a suitable location for the septic tank. This will normally be at ground level allowing a natural fall from the property into the septic tank. Check that no other structure or special access is required over the selected location. Check that there are no electrical cables or services under the selected location.

In normal to good ground conditions the septic tank requires a 150mm concrete base and a 150mm concrete surround. In suitable conditions pea shingle surround can be used though we advocate a concrete surround as best practice. The opening should be 150mm deeper and 150mm wider than the dimensions of the septic tank. The sides of the excavation should be suitably battered to stop the sides of the excavation collapsing. Once the 150mm base is laid and gone off the septic tank can be lowered into the excavation and sited on the concrete base.

The septic tank can then be partially filled to just below the halfway point in the tank (do not overfill as the tank is unsupported at this stage). Once this is done the tank is ready to have the concrete back fill laid. This should be done in gradual stages evenly around the entire tank. Vibrating rammers must not be used when laying the concrete surround. Bring the concrete up to just under the incoming pipework. Peashingle can then be used to finish off the installation to ground level.

In wet ground conditions a polyethylene membrane must be fitted between a 250mm hardcore base and the concrete. A dewatering pump must be used to keep the excavation clear of the any groundwater. The surround of the tank should also be 250mm and should be to the top of the tank so that it is encased to protect it from the adverse conditions. The excavation needs to be 250mm deeper and wider than the dimensions of the septic tank. Again fill septic tank to just under half full (do not overfill as the tank is unsupported at this stage). Lay the concrete again in even heaves evenly around the tank. Vibrating rammers must not be used during the backfill progress.

**Failure to follow these guidelines will affect the product warranty and any claims made under the warranty terms offered by Marsh Industries Ltd.**

**Where inverts are over 750mm in depth a full concrete surround should be undertaken. In wet conditions a full concrete surround and base must be undertaken.**

**Drainage filed design and percolation test procedure**

## **Buildings Regs 1.31 – 1.44 Water Treatment Systems and Cesspools Ground conditions**

1.31 Well drained and well aerated subsoils are usually brown, yellow or reddish in colour. Examples of subsoils with good percolation characteristics are sand, gravel, chalk, sandy loam and clay loam. It is important that the percolation characteristics are suitable in both summer and winter conditions. Poorly drained or saturated subsoils are often grey or blue in colour. Brown and grey mottling usually indicates periodic saturation. Examples of subsoils with poor percolation characteristics are sandy clay, silty clay and clay.



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1.32 A Preliminary assessment should be carried out including consultation with the Environment Agency and local authority to determine the suitability of the site. The natural vegetation on the site should also give an indication of its suitability for a drainage field.

1.33 A Trial hole should be dug to determine the position of the standing ground water table. The trial hole should be a minimum of 1m<sup>2</sup> in area and 2m deep, or a minimum of 1.5m below the invert of the proposed drainage field pipework. The ground water table should not rise to within 1m of the invert level of the proposed effluent distribution pipes. If the test is carried out in summer, the likely winter groundwater levels should be considered. A percolation test should then be carried out to assess the further suitability of proposed area.

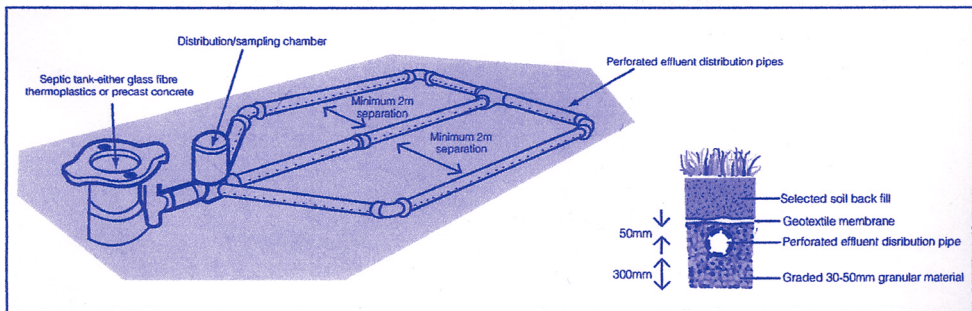
1.34 Percolation test method – A hole 300mm square should be excavated to a depth 300mm below the proposed invert level of the effluent distribution pipe. Where deep drains are necessary the hole should conform to this shape at the bottom, but may be enlarged above the 300mm level to enable safe excavation to be carried out. Where deep excavations are necessary a modified test procedure may be adopted using a 300mm earth auger. Bore the test hole vertically the appropriate depth taking care to remove all loose debris.

1.35 Fill the 300mm square section of the hole to a depth of at least 300mm with water and allow it to seep away overnight.

1.36 Next day refill the test section with water to a depth of at least 300mm and observe the time in seconds for the water to seep away from 75% full to 25% full level (i.e. a depth of 150mm). Divide this time by 150mm. The answer gives the average time in seconds ( $V_p$ ) required for the water to drop 1mm.

1.37 The test should be carried out at least three times with at least two trial holes. The average figure from the tests should be taken. The test should not be carried out during abnormal weather conditions such as heavy rain, severe front or drought.

**Diagram 1 Drainage field**





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1.38 Drainage field disposal should only be used when percolation test indicate average values of  $V_p$  of between 12 and 100 and the preliminary site assessment report and trial hole tests have been favourable. This minimum value ensures that untreated effluent cannot percolate too rapidly into ground water. Where  $V_p$  is outside these limits effective treatment is unlikely to take place in a drainage field. However, provided that an alternative form of secondary treatment is provided to treat the effluent from the septic tanks, it may still be possible to discharge the treated effluent to a soakaway.

## Design and construction

1.39 Drainage fields or mounds (see Diagrams 1 and 3) should be designed and constructed to ensure aerobic contact between the liquid effluent and the subsoil.

1.40 Drainage fields should be constructed using perforated pipe, laid in trenches of a uniform gradient which should be not steeper than 1/200.

1.41 Pipes should be laid on a 30mm layer of clean shingle or broken stone graded between 20mm and 50mm.

1.42 Trenches should be filled to a level 50mm above the pipe and covered with a layer of geotextile to prevent the entry of silt. The remainder of the trench can be filled with soil; the distribution pipes should be laid at a minimum depth of 500mm below the surface.

Drainage trenches should be from 300mm to 900mm wide with areas of undisturbed ground 2m wide being maintained between parallel trenches (see Diagram 1).

1.43 An inspection chamber should be installed between the septic tank and the drainage field.

1.44 Drainage fields should be set out as a continuous loop fed from the inspection chamber (see Diagram 1). To calculate the floor area of the drainage field ( $A_t$  in  $m^2$ ), the following formula should be used:

$$A_t = p \times V_p \times 0.25$$

where  $p$  is the number of persons served by the tank,  $V_p$  is the percolation value (secs/mm) obtained as described in paragraphs 1.34-1.38.

## Marsh De-sludge Details For All Marsh Sewage Plants & Gems

*Please read all these details before undertaking servicing or de-sludging.*

**Servicing of all sewage plants should be undertaken by a qualified service engineer.**

NOTE: The air pump/compressors and electric power must never be turned off. It is imperative that it is left running 24 hours a day, every day to ensure a constant supply of oxygen to the bacteria in the second chamber.

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The sewage plant will require de-sludging and maintenance as designed;

**6-50PE - Yearly or as required**

**Septic Tanks - Yearly**

The desludging of the plant is the responsibility of the site owner. De-sludging should be carried out according to the size of the plant and dependent on usage. It is the site owner's responsibility to provide access for the vacuum tanker, to de-sludge the plant. Never vehicles drive over the system. Keep at least 4 metres away from the covers on the plant.

1. Remove the de-sludging access cover by undoing the nuts. The de-sludging cover can now be removed.

## De-sludging

De-sludging is to be carried out by others, not the Manufacturer of the Marsh Sewage treatment plant. De-sludging should normally be carried out by a vacuum sludge tanker. Never drive over the treatment system as it is only designed for "Man weight". When a sludge tanker is to be used and access is poor, the tank should be de-sludged before the onset of winter. Licensed tankers are available commercially and the service is also provided by some local authorities. This sludge should be disposed of in accordance with local authority instructions or in a manner which will not cause pollution.

The sludge in the primary chamber(s) should not be removed completely, but approximately 75mm should be kept in the bottom of the tank to re-seed the new sludge, which will be formed when the tank is put into use again. On every alternative de-sludge "dead humus" scum should be removed from the final settlement tank(s). Ensure the Tee pieces in all chambers are clear.

Care must be taken not to damage the treatment plant with the hose of the vacuum tanker. Replace the de-sludging access cover and screws.

## Notes:

- The access cover should never be left off while the unit is unattended
- De-sludging should never be carried out alone
- The Sewage treatment plant should be clearly marked and vacuum tanker should never come closer than the depth of the excavation for the system unless the appropriate precautions have been taken. Contact the manufacturer for the correct precautions.
- The continued performance of the plant will depend on regular maintenance and cleaning. It is the homeowner's responsibility to de-sludge the unit and keep the vents clear.
- Regular maintenance of the unit and percolation area is very important for the satisfactory performance of the system.



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The depth of sludge can be checked using the following technique:

- Use a pole that can touch the bottom of the tank and wrap the bottom 1.4m with a white rag.
- Lower the pole to the bottom of the tank and hold for several minutes to allow the sludge layer to penetrate the rag.
- Remove the pole and note the sludge line, which will be darker than the coloration caused by the liquid waste.

The percolation area should be inspected regularly.

Note: Signs of ponding indicate blockage or insufficient permeability.

## Inspection General.

The inlet manhole should be inspected and any solid matter which may clog the inlet tee pipe should be removed. The cause of any blockage should be investigated. Only qualified personnel should carry out this. The inlet and outlet tee-pipes should be inspected and rodded so that scum does not collect and that the vertical leg is not obstructed.

## Safety Precautions.

There is potential danger when de-sludging and therefore should never be done alone.

Never enter a tank unless a safety line is attached to the person entering the tank and a second person is above ground to help if the entrant is overcome by gasses or foul air.

Personnel entering the tank must have suitable breathing equipment and be fully trained in man entry techniques.

Naked flames should not be used in the vicinity of the tank due to the danger of explosion.

The manhole covers should never be left off an unattended tank. Disused or abandoned tanks should be demolished, filled in or sealed so that accidental entry is impossible.

As safety and security are of vital importance in sewage treatment systems, the following aspects are critical:

- Protective clothing/gloves/breathing apparatus, should be worn at all times. Always remove contaminated clothing and protective equipment after working with sewage treatment systems.
- Wash hands and face prior to eating, drinking or smoking.
- Adequate first aid boxes should be present.
- When working with machinery/electrical equipment, proximity of water should be noted. All tools and electrical equipment should be kept dry.
- A second person should be present when carrying out non-routine maintenance.
- The distribution box should be designed (& constructed by the builder) to facilitate sampling and inspection without placing personnel at risk.
- Only qualified personnel should carry out electrical repairs.
- Great care should be taken when handling sludge.
- Always lock the cover of the system.



## **Maintenance of the percolation area.**

The percolation area should be inspected periodically and any signs of malfunctioning noted. This will show itself by obvious signs of blockage of the distribution box, or by ponding or smells or pollution in the surrounding area. In this event expert advice should be sought or use should be made of the reserve percolation area.

Servicing should be undertaken annually for treatment plants up to 50PE. British Water hold a list of qualified service engineers and compaies.

## **Terms and Conditions.**

- The manufacturers instructions outlined in this handbook must be followed at all times. A service contract does not remove this responsibility from the customer / homeowner.
- Under this agreement, Marsh Industries Limited will deliver a pre-commissioned system.
- It is important that the unit is operated under the conditions for which it is designed. Any variation in these conditions could lead to the unit not performing to its full potential and the discharge may not meet the required standards. This will also make any agreement between the company and the customer null and void.
- Marsh Industries Limited shall not be liable for any damage or loss, including consequential loss, caused by the failure of any plumbing equipment or failure caused by the inclusion of gross solids, (e.g. – disposable diapers or sanitary towels etc) in the waste water treatment unit.
- The end user of the wastewater treatment system is entirely responsible for the operation of the unit and for ensuring that the quality of the effluent does not breach the discharge standards.
- Soak ways, drains and the emptying of primary tanks remain the responsibility of the client and damage to the installation due to the influx of surface water or the backing up of soak ways or drains is not covered by this service agreement
- To ensure the continuance of the systems performance, the user has to take certain precautions including the following:
  - The design loading of the plant should not be exceeded.
  - High volume discharges such, as those from swimming pools and Jacuzzi's must never enter the system.
  - Surface water must not enter the system.
  - Do not allow large quantities of chemicals to enter the system including:
    - ~ Water softener regenerate.
    - ~ Disinfectants.
    - ~ Strong Acids and Alkalis.
    - ~ Oil or Grease.
    - ~ Pesticides.
    - ~ Photographic Chemicals, etc.



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- If the system has been sized by others, Marsh Industries Limited will supply a system to these specification and not its own specifications. In this case, the responsibility lies with others, in relation to the maximum flow / litres per day, the system capacity and retention times.
- If Marsh Industries Limited sizes the system, and a greater load is placed on the system, by the addition of extra houses, bedrooms in the houses, schools, crèche etc or by any other means, Marsh Industries Limited is not responsible for the system in terms of overloading or the quality of the effluent as the retention times may be compromised.
- This is clarified in this as a selected text above. If desludging is required it should be done as soon as possible. Systems that are not de-sludged will overload and cease to work. In this case, others will be required to de-sludge and clean the system and components may require replacing especially if the system goes septic. The cost of these parts and the labour required, including specialist safety equipment is excluded from this servicing contract.
- If the electrical connection ceases to the air blower in the system, the system will not function correctly. It is imperative that a continuous air supply, via the air blower, enters the system in order for the system to function correctly. If this is interrupted for prolonged periods the system may go septic. A system that is neglected in this respect may require new components, media etc and cleaning if it goes septic. The cost of these components and labour is excluded from all servicing contracts.
- The discharge to the ground is also a critical part of the operation of the system. Correctly constructed distribution chambers and distribution drains / polishing filters are necessary as part of the treatment process. Marsh Industries Limited will aid in the design of these, however the construction is the responsibility of others. Incorrectly constructed drains or polishing filters could result in poor treatment of effluent and Marsh Industries Limited holds no responsibility in this regard.

## Note:

In accordance with Marsh Industries Limited normal policy of product development, this specification is subject to change without notice. Marsh Industries Limited believes that the information contained in this handbook is accurate and is printed for informational purposes only. No warrants, express or implied, are contained therein, nor does any legal liability attach to Marsh Industries Limited, for any reason whatsoever. September 9th 2005.

# Marsh Sewage Treatment





# Marsh Sewage Treatment

## UK Market Leaders in Off Mains Drainage



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