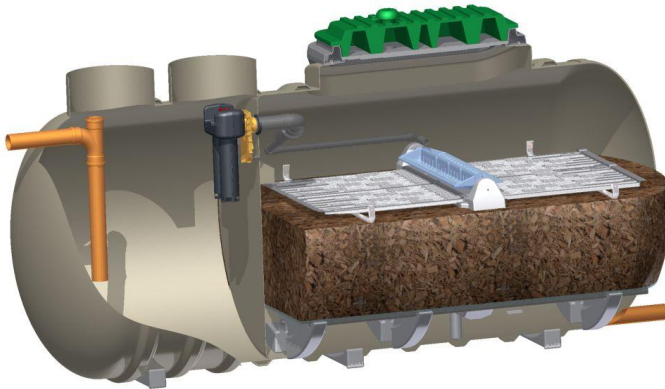


Installation, Operation and Maintenance Manual

For

Clereflo Eco Zero Energy Package Sewage Treatment Plants

Standard Discharge consent:
20BOD/30SS/20NH3-N



Unit Installed (please tick):

ECO01 ECO02 ECO03 ECO04

Note to the End-user:

Householders are guided to read the sections in the **yellow boxes** on pages 2 and pages 26 to 31.

Mallow, Co. Cork
Tel: 022 31200

Ballyhaunis, Co. Mayo
Tel: 094 9630226

Mountrath, Co. Laois
Tel: 057 8732279

Naas, Co. Kildare
Tel: 045 843614

Email: info@epswater.ie Web: www.epswater.ie

Regulations & your responsibilities

A package sewage treatment plant is an essential component of the home or workplace. It provides safe and hygienic wastewater treatment and disposal to make sure your family and colleagues have a pleasant place to live and work and that the local community and environment are protected. You must treat your package sewage treatment plant with the respect it deserves and make sure it is operated and maintained properly so it can continue to provide outstanding performance.

Building Regulations

- 1.0 Notices are required to be displayed in the household stating that the plant is connected to a private sewage treatment plant. Notices in toilets and bathrooms would also inform guests.
- 2.0 Planning and building control departments of your local council should be informed of the work being undertaken.

What responsibilities do I have?

- 3.0 Users of a packaged treatment plant have a responsibility under the terms of the Groundwater Protection Scheme to ensure that the plant meets the standards set by the Environment Agency. The plant is designed to ensure that the final effluent discharged back into the water table (Ground Water) or watercourse meets these requirements. Once your plant is commissioned and operating efficiently, the Environment Agency may sample the discharge from the plant to check it meets the agreed standards. The Environment Agency also has the right to alter the consent standard. **It is essential to regularly maintain and service the plant to make sure it is running efficiently.** You can do a lot to ensure you get the best out of your plant. This manual offers a simple and practical guide to help you do just that.
- 4.0 The plant must be emptied of sludge as required by the operating instructions, ensuring that the tankering company used is licensed as required to dispose of the waste. **All documentation relating to the sludge disposal should be kept with the servicing records.**
- 5.0 **The plant must be serviced in accordance with this Operation and maintenance manual. An appropriate service provider must carry out the annual service.** The consent holder must keep records of all services undertaken.
- 6.0 **When a house is sold, evidence that the treatment plant has been properly installed and maintained will be required.**



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Introduction

This Installation, Operation and Maintenance (O&M) manual includes descriptive literature, specifications and drawings relating to the principal equipment incorporated in the unit. It is the responsibility of the installer and operator to read and fully understand these instructions before installing, commissioning or operating the plant. In the unlikely event of problems occurring with your plant you may either refer to this manual, your equipment supplier or directly to EPS.

The plant comprises two treatment stages; a primary settlement stage and a combined aerobic biological treatment / solids removal zone. The design combines the benefits of a well-proven treatment process with our engineering expertise to produce a high quality system, which is robust and reliable. The plant will provide long and trouble free operation, providing the simple maintenance procedures described out in this manual are regularly carried out.

Your attention is drawn to the 'Health and Safety' section at the beginning of this manual. It is IMPERATIVE that you read these instructions BEFORE working on the plant.

The plant has been designed to treat the volume and strength of sewage specified in the original quotation. Please note the following points:

- The maximum design loadings must not be exceeded (see original quotation and order acknowledgement for details).
- The plant is designed for gravity feed and should not be pumped to.
- Surface water, from roofs etc, must not enter the plant and or sewerage system.
- High volume discharges from swimming pools or Jacuzzi's must not enter the plant.
- Large quantities of chemicals such as water softener regenerant, disinfectants, strong acids or alkalis, oil and grease, pesticides or photographic chemicals must not enter the system.
- Do not use chemical or biological emulsifiers in grease traps.
- Do not dispose of nappies, baby wipes, sanitary towels, incontinence pads or similar materials via the toilet.
- Do not dispose of medicines down the toilet or sink
- Waste disposal units should not be used unless accounted for within the original specification

If you have any doubt about a particular substance, please contact EPS.

Health and Safety

*(Important - Please Read This **Before Starting Any Work on the Plant.**)*

Safety, Health and Welfare at Work Act 2005

Safety, Health and Welfare at Work (Construction) Regulations 2006

Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No.299 of 2007)

These Acts requires manufacturers to advise their customers on the safety and the handling precautions to be observed when installing, operating, maintaining and servicing their products.

The user's attention is therefore drawn to the following:

1. The appropriate sections of this manual must be read before working on the equipment.
2. Suitably trained or qualified personnel must carry out installation and servicing.
3. Normal safety precautions must be taken and appropriate procedures observed to avoid accidents

Refer to EPS or your local supplier for technical advice or product information.

Health

It is the customer's responsibility to ensure that all necessary protective clothing/equipment is available.

Leptospirosis - what is Leptospirosis and are you at risk?

Two types of Leptospirosis infection affect people in Ireland.

1. Weil's Disease - this is a serious and sometimes fatal infection that is transmitted to humans by contact with soil, water or sewage contaminated with urine from infected rats.
2. Hardjo-type Leptospirosis - this is transmitted from cattle to humans.

What are the symptoms? → Both diseases start with a flu-like illness with a persistent and severe headache, muscle pains and vomiting. Jaundice appears about the fourth day of the illness.

How might I catch it? → The bacteria can enter the body via cuts and scratches and through the lining of the mouth and throat or through the eyes.



How can I prevent it? → After having worked in contact with sewage or anything contaminated with sewage, wash your hands and forearms thoroughly with soap and water. If your clothes, boots or tools are contaminated with sewage, wash thoroughly after handling them.

- **Take immediate** action to wash thoroughly any cut, scratch or abrasion of the skin as soon as possible. Apply antiseptic to the wound, cover with cotton wool or gauze, and protect with a waterproof plaster.
- **DO NOT** handle food, drink or smoking materials without first washing your hands.

If you contract the symptoms described above after coming into contact with sewage, report it to your doctor immediately and advise him/her of the circumstances.

Safety

Sewage gases are potentially hazardous. **DO NOT** enter the unit or any sump.

DO NOT leave the plant cover open for any longer than is necessary. Temporary barriers and warning signs should be erected around any open covers or manways as appropriate.

Owner's responsibilities

The owner of the Sewage Treatment Plant is entirely responsible for plant operation and ensuring that the effluent quality does not breach the Discharge Consent Standards.

The offloading of the treatment plant and the correct installation is the responsibility of the owner. We would strongly recommend that a contractor that understands sewage and drainage systems should install the plant.

The chosen method of discharge remains with the client, in consultation with the environment agency. Responsibility for the design, installation and maintenance of the system remains with the client. EPS accepts no liability for any damage or loss, including consequential loss, caused by the failure of any equipment supplied.

Process and Plant Description

Overview

The Clereflo ECO range of zero energy treatment plants comprise of a single GRP tank. Within the tank there are two treatment stages: primary settlement and biological treatment / filtration. The flow through the plant is by gravity.

Primary Settlement Stage

The incoming wastewater is received in the primary settlement zone. The purpose of this zone is to remove the majority of the settleable material and to retain floating matter thus reducing the biological load to be treated and avoiding clogging of the coco filter media. Primary treatment is an essential step in treatment process. Raw wastewater contains high concentrations of solids and/or floating matter that are not easily biodegradable, such as oil and grease. If this matter reaches the treatment system, its lifespan and potentially treatment efficiency will be greatly reduced.

Biological Treatment / Filtration Stage

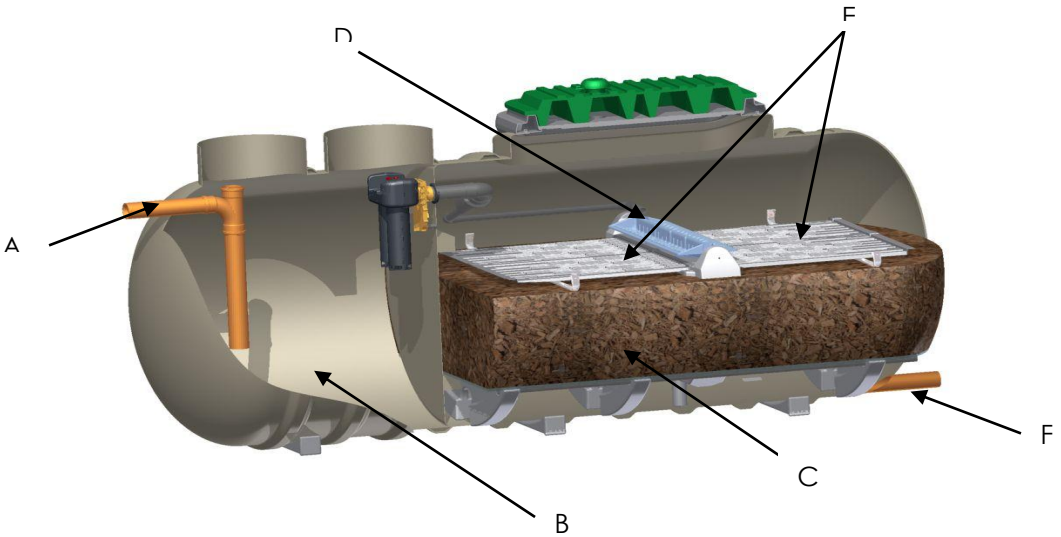
Flow from the primary zone passes forward into the biological treatment / filtration section. In this section, transformed coco husk residues provide a highly stable and open textured filter material.

The primary settled effluent flows into a tipping plate mechanism that alternatively transfers flow onto two number distribution plates. These plates evenly spread the effluent over the surface of the coco filter media. The effluent then trickles downwards through the natural coco filter media.

The combination of the extremely high surface area and open structure of the coco media promotes the growth of bacteria and micro organisms which treat the wastewater. The nature of the coco media retains and degrades the pollutants to an extremely low level leading to a fully treated effluent being discharged from the base of the plant.

The air required for the treatment process is introduced into the plant through a patented natural ventilation system meaning that no forced air ventilation is required. Therefore no energy is required for the treatment process. Air enters the system through the air ducts on the lid of the primary access. The fittings in the filter section of the plant allow the air to circulate between the top and the bottom of the filter media. Air circulates through the system by convection from the soil vent stack on the connected building(s) (or via a separate vent) through the inlet pipe and the primary settlement chamber.

The Clereflo Eco's operating principle allows the system to be used continuously or intermittently without requiring any special precautions or having any impact on the quality of the treatment.



- A) Inlet, flow from the house (s)
- B) Primary Chamber
- C) Biofilter Chamber
- D) Tipping Plate Mechanism
- E) Distribution Plates
- F) Effluent exiting the plant

How the components function:

Access Covers:

- Protect the accesses to the plant
- Allow access to the inside of the system and to the components
- Provides air for the filter media (through the air intakes in the access to the biological treatment / filtration stage)
- Inspection and desludging of the primary zone

Tank Shell:

- Contains the system components
- Allows connection of inlet and outlet pipes
- Circulates air through the air ducts

Central Support & Support Rails:

- Supports the tipping plate mechanism and distribution plates

Tipping Plate Mechanism & Distribution Plates:

- Evenly distributes the wastewater on both sides of the filter media
- Creates the hydraulic events (flush) required for proper distribution of the wastewater on the distribution plates and promotes self cleaning
- Allows the even distribution of the influent on the surface of the filter media

Filter Media:

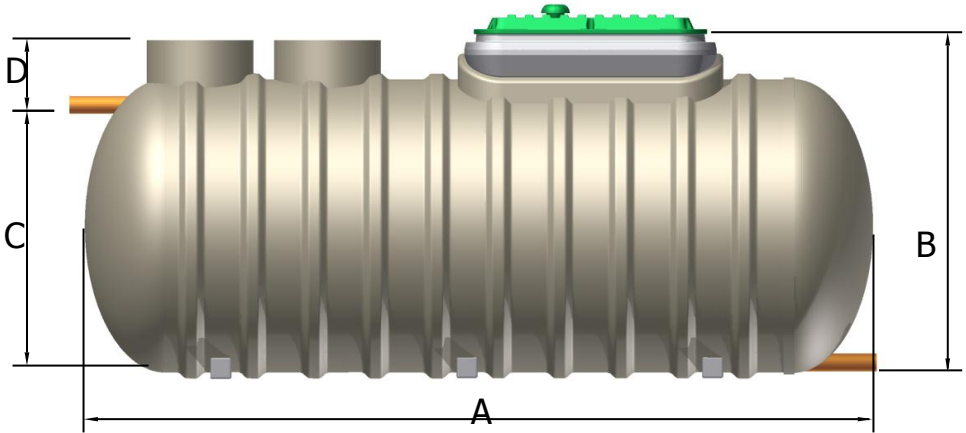
- Consists of a natural coco fibre based filter media
- Acts as a support for the bacteria and micro organisms that treat the wastewater
- Physically filters the solids contained in the influent
- Ensures adequate humidity required for biomass viability when there is no incoming wastewater

Collection zone for the treated effluent:



Clerflo Eco O&M Issue A May 11

- Ensures draining of the treated effluent
- Ensures air circulation under the filter media



Clereflo ECO	ECO01	ECO02	ECO03	ECO04
Tank Diameter (mm)	1800	1800	1800	1800
Inlet / Outlet Pipe Diameter (mm)	110	110	110	110
Overall Length (mm) A	4500	5825	6940	8055
Overall Height to ground (mm) B	2090	2090	2090	2090
Standard Inlet Invert (mm) C	1610	1610	1610	1610
Standard Inlet Invert depth (mm) D	450	450	450	450

Installation Guide

IMPORTANT! PLEASE READ HEALTH AND SAFETY INSTRUCTIONS BEFORE ATTEMPTING ANY WORK.

The following instructions are offered as guidance only. For site-specific installation requirements the owner should seek consultation with a suitably experienced / qualified installation contractor.

Further general information can be found at www.EPA.ie:

- *Code of Practice – Guide to the Installation of Small Wastewater Treatment Systems*
- *Code of Practice – A Guide for Users of Small Wastewater Treatment Systems*
- *Code of Practice – Guide to the Desludging of Small Wastewater Treatment Systems*

Materials

It is strongly recommended that concrete and / or granular backfill materials are not ordered until the treatment plant is on site. EPS will not accept any level of liability for losses incurred by the unlikely event of a late delivery of the treatment plant.

Offloading

- The contractor is responsible for offloading the tank and any accessories.
- **Do not** lift the tank if it contains any water.
- Lift the tank using webbing lifting straps – do not use chains, cables or wire ropes in contact with the tank.
- Maintain control over the tank when lifting by use of guide ropes. **Do not** allow the tank to impact against other objects.
- The tank will not have its centre of gravity at the centre of the tank. Therefore, the lifting straps need to be arranged to ensure the tank is stable during lifting.
- Move tanks only by lifting and setting, do not drag or roll. Do not drop or roll tanks from the delivery vehicle.
- If the tank is stored on site prior to installation, it must be upright on a flat and level ground where it cannot be punctured or otherwise damaged. Chock with tyres or other cushioning material to prevent moving, and tie down if high winds are expected.

Pre-Installation Inspection

- Tanks should be subject to a visual inspection prior to installation. Check for: fractures to the shell or ribs; delaminations; scratches or abrasions deeper than 1.5mm; stress cracks or star crazing.
- Any damage should be notified to the delivery driver and to EPS.
- Do not undertake any unauthorised repairs, as this will invalidate the tank warranty.

Supplied items

The usual extent of supply is:

- (i) Treatment plant ready for installation.
- (ii) Operation and Maintenance Manual – this document.

See your delivery note for full details of items ordered.

Loadings

If the tank must not be installed in an area where traffic or other superimposed loadings can be applied.

Ventilation

Before installing the tank, care has to be given on how to provide adequate ventilation across the plant. As each site is different we can offer the following advice as guidance only (see BS8301, and Building Regulations Section H for further details). Ensure that an existing vent stack is in place or is supplied to the building discharging to the treatment plant.

the type and position of vents, as well as other factors unrelated to the Clereflo Eco treatment plant, can prevent gases from dispersing properly and lead to odours

As the Clereflo Eco treatment plant is an aerobic type of treatment system, it requires air to function properly. Under all conditions the discharge pipe from the plant, weather to a watercourse or a drainage field, must remain unflooded i.e. an unrestricted outflow. If the water level in the plant backs up to the level of the media the performance and lifespan of the media will be affected.

General Installation Guidelines

Installation procedures must be in accordance with the Safety, Health and Welfare at Work Act 2005, Safety, Health and Welfare at Work (Construction) Regulations 2006, Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No.299 of 2007), and other relevant legislation. Your procedures should also follow good building practice.

*This procedure is issued **as a guide only**. EPS accept no liability for incorrectly installed units. If the customer has any concerns then a suitably qualified installation contractor who has full access to all site conditions should be consulted.*

During installation it is important to check that the treatment plant remains level across all planes. The performance of a mis-aligned unit may be affected.

- 1 The installer must determine the existence, or otherwise, of a water table taking into account the conditions at the time. Excavate to the tank dimensions allowing a minimum clearance of 250mm between the tank and the sides of the excavation. The inlet/outlet invert levels and the tank dimensions will determine the depth of the excavation. The base of the unit should sit on a firm levelled surface. This may mean creating a concrete base even when granular backfill is to be used. ***Important – the base should be level across all planes.*** Care should be taken not to dig too deep a hole.
- 2 If the installer is confident that the water table will not create a floatation issue during any part of the year, then for the back fill material granular material can be used (see following detailed instructions from granular backfill). ***Important – check that the treatment plant is level across all planes during installation.*** If in doubt then assume a water table will be present and the plant should be installed with concrete backfill (see following detailed instructions for concrete backfill).
- 3 The inlet and outlet connections **MUST** be blanked during installation.

Gravel Backfill Installation

Note: Only to be used where the water table will be below the level of the tank base under all conditions and at all times of the year. Failure to do so may lead to tank floatation and complete failure of the installation.

Primary Backfill Specification

- Primary Backfill material should be free-flowing granular material and can be:-
 - Pea Gravel

Naturally rounded aggregate with particle size not less than 3 mm and not greater than 18 mm, compacted to a relative density of >70%.

Pea gravel shall be clean and free flowing, free from large rocks, dirt, sand, roots, organic materials or debris.

Upon screening analysis the backfill material shall have no more than 5% by weight passing a 2.38 mm sieve.
 - Crushed Stone or Processed Stone

Crushed stone /gravel or processed stone with particle size not less than 3 mm and not greater than 12 mm, compacted to a relative density of >40%. Dry density must be at least 1,500kg/m³.

The material shall be clean and free flowing, free from large rocks, dirt, sand, roots, organic materials or debris.

The material should be washed or screened to remove fine particles.

Upon screening analysis the backfill material shall have no more than 5% by weight passing a 2.38 mm sieve.

Use of other than specified backfill /bedding materials will void the tank warranty.

- All backfill material shall be free of ice and snow at time of installation. Backfill material shall not, during placement, be frozen or contain lumps of frozen material.

Primary Backfill Installation

- Tanks must be installed with Primary Backfill only within the region immediately surrounding the tanks.
- The tank bedding depth, using primary backfill, i.e. directly below the tank, must be a minimum of 250 mm below the tank to natural ground / concrete base if used. **The tank must not rest directly on natural ground / a concrete base.**
- The Primary Backfill must extend a minimum of 250mm outward from the tank sides and ends.
- Compaction should be by lightweight rollers or vibratory plate compactor.
- The use of geotextile barrier fabrics surrounding the Primary Backfill material is considered good installation practice.

Installation Procedure

- Place primary backfill bedding material as described in preceding information. Ensure material is clean and contains no oversize material.
- Lift tank into position and align as required for connecting pipework.
- Commence backfilling, with primary backfill material, in layers of approximately 250 mm, Continue backfilling, with primary backfill material, evenly around the tank to at least 250mm above the tank top.

Concrete Backfill Installation

Concrete Specification

- The specification for the concrete mix to surround the tank should be selected by the tank installer taking into account the site conditions and application requirements.
- For a typical application in good ground conditions, with non aggressive soils, a concrete with a 28 day compressive strength of 20 to 30N/mm² with a 25 to 50mm slump, complying with the relevant EN, is generally suitable. For non typical applications, aggressive soils or structural applications specialist advice should be obtained.

Vibration

- The design of the tank assumes minimal compaction of the surrounding concrete. Where necessary, this may be extended to include light internal vibration.

Impact of Concrete on Discharge

- The effects of concrete discharge impact are considerable. Under no circumstances should concrete be discharged directly onto the tank.

Control of Groundwater

- The tank must not be subjected to buoyant forces during installation, taking account of ground water levels and surface water run-off, and their accumulation in the tank excavation.

Installation Procedure

- Maintain a completely dry excavation until the final pour of concrete has set. Failure to do this may result in voids beneath the tank.
- Place the concrete in the base of the excavation to form a level and smooth base, with a thickness of 250mm, onto which the tank can be placed. The base concrete thickness should be in accordance with the information provided above.
- Place the tank onto the concrete base, while the concrete is still wet. Connect the pipework to the tank, ensuring correct alignment.

- Fill the primary settlement chamber with clean water. Commence backfilling evenly around the tank with concrete ensuring there are no voids, particularly at the bottom of the tank shell. Evenly backfill with concrete around the tank in 300mm layers.



Start-up and Commissioning

The unit **MUST** be commissioned before sewage is allowed to enter the system.

Ensure there is no dirt or materials in the primary settlement stage.

Ensure the primary settlement stage is filled with clean water and there is a discharge from the outlet.

This is best done by using a hosepipe in the inlet manhole or by running several taps in the connected household(s).

Checked by.....

Signature.....

Date.....

The Treatment Plant is now operational. However, the process relies on the growth of microorganisms in the Biological Zone. The time taken for these naturally occurring organisms to develop is dependant on temperature and is typically 8 - 10 weeks. However this may be up to six months in winter. When the biology has 'matured' in this way, the treatment process will be completely established. During this time, do not allow any strong cleaning agents or bleaches to enter the system.



WARRANTY

Your Clereflo Eco treatment plant is supplied with a 2 year tank, media and associated equipment Parts and Workmanship guarantee.

This warranty is dependant upon the plant being installed, operated and maintained in accordance with this Installation, Operation and Maintenance manual.

Failure to comply with the above Terms and Conditions will invalidate the warranty.

Proof of correct installation and plant maintenance (servicing) will be required in the event of any warranty claim.

EPS accepts no liability for any damage or loss, including consequential loss, caused by the failure of any equipment supplied.



Maintenance Schedule

Annual maintenance is important to the proper functioning of your Clerflo Eco treatment plant. Therefore, your plant must be serviced annually. Proper system maintenance helps maximise the life and performance of the treatment plant. It also gives the owner peace of mind knowing that the system is operating properly

During this annual maintenance visit, all system components are inspected thoroughly to make sure they are functioning properly and the surface of the filtering media is raked to promote maximum oxygenation and eliminate build-up. The primary section of the plant may be desludged as part of the annual inspection.

The expected life of the coco media is ten (10) years. However, it is depending on usage and compliance to the guidelines in this Operation and Maintenance Manual. Excessive or improper use, for example, putting toxic substances in the sewage treatment system, directing surface water (from roofs etc) to the plant, insufficient primary stage desludging will reduce the efficiency the plant. This can then result in the filtering media having to be replaced earlier than it should.

At the end of its approximate ten (10) years of useful life, the filter media needs to be analysed by an approved service provider. Depending on the state of the media it may not have to be replaced and can be used for additional year(s). However, the filter media must be replaced before the system's purification capacity begins to deteriorate. The filter media is easily removed and new filter media installed by an approved service provider.

Weekly Inspections

- Check the final effluent discharging from the unit at the sample point. If it is cloudy or contains suspended particles contact your maintenance provider.

Annual service

EPS recommend that a suitably approved and qualified service company carry out the annual service.

- Obtain a sample of the final effluent to check that the plant is operating correctly. This may require introducing a small flow into the treatment unit to obtain the sample. **It is important that this procedure is carried out before anything else.**
- If the system discharges into a watercourse such as a stream or ditch then check the vicinity for any visible signs of pollution.
- If the system discharges into a drainage field then clarify as far as possible that the effluent from the plant is soaking into the ground.
- visual inspection of all components and a verification of the operation and maintenance of the filter media.
- Ensure that all the lids and covers are correctly secured before leaving site.



Emptying the primary settlement section of sludge (de-sludge)

The procedure is as follows:

- A) Remove the access cover above the primary settlement section of the plant.
- B) The hose removing the sludge should be gently lowered into the plant.
- C) The liquid should then be removed from the tank.
- D) It is recommended that the primary settlement section be filled as soon as possible with water or sewage from the serving properties.

Appendix A: Clereflo Eco Specification

Product Reference	Max Flow per Day	Max Load per Day	
		BOD g	NH3 g
	litres		
ECO01	900	277	44
ECO02	1,200	369	59
ECO03	1,500	462	73
ECO04	1,800	554	88

Tank

Material Specification:	Glass Reinforced Polyester Resin.
Colour:	Natural resin

Appendix B: Clereflo Eco Specification

Symptom	Cause	Action
Strong Odour	<p>Excess chemicals in the plant</p> <p>Excessive laundry use</p> <p>Drains inadequately venting</p> <p>Effluent Discharge pipe from the plant flooded</p>	<p>See appendix C</p> <p>See appendix C</p> <p>Check that a high level vent is fitted to the house and is working correctly</p> <p>Investigate and rectify cause</p>
Poor final effluent	<p>Check the operation of the tipping plate mechanism</p> <p>Primary settlement stage full of sludge – solids carry over</p>	<p>Check and repair any faulty parts</p> <p>Desludge primary settlement zone</p>

Appendix C: Household practices: Do & Don'ts

Introduction

When we take a bath, put the washing machine on or flush the toilet few of us stop to consider what happens to the wastewater (sewage). It simply goes down the drain or waste pipe and is no longer our concern. But if your drains lead to a packaged treatment plant, particularly one using a biological treatment system, then it's worth paying some attention to what happens next...

If you don't you could easily end up with a treatment plant which is not working efficiently and eventually run the risk of polluting your local environment and even facing possible prosecution as a result.

What is sewage?

Sewage is made up of not just the organic waste from toilets but also the chemicals and waste water from everyday activities such as washing, cleaning, cooking and washing clothes and dishes. The sewage from bathrooms, kitchens and toilets collects in a series of drains that feed to a sewer. In most households or commercial premises the sewage flows away through a series of sewers and is treated at a large-scale sewage treatment works. However, for houses and premises in remote or isolated locations where no mains drainage is available, other options such as cesspools, septic tanks and treatment plants (i.e. EPS Clereflo Eco) are used.



Do's and Don'ts

Do:

Weekly Inspections

- Check the final effluent discharging from the unit at the sample point. If it is cloudy or contains suspended particles contact your maintenance provider.

Think before you put **anything** down the sink, toilet or drains

Tell your guests/visitors/staff that you have a specialist sewage treatment plant and tell them how they can avoid harming it

Read the label and use the **manufacturers' recommended doses** for all household cleaning products

Use cleaning products little and often so the plant isn't overloaded

Spread your clothes washing throughout the week

Stick to the same washing, dishwasher powders and other cleaning products - the bacteria in the plant will work more efficiently with products they are used to

Use liquid cleaners for clothes washing and for dishwashers, use sparingly.

Don't:

Spring clean and use large amounts of cleaners and chemicals in one day

Have a "washing day" - spread your washing throughout the week

Use household bleach and other strong chemicals indiscriminately

Keep changing your brands of household cleaners and washing powders

Tip bottles of medicine, mouth wash etc. down the toilet

Put sanitary towels, tampons, disposable nappies, baby wipes, cotton wool, incontinence pads etc. down the toilet

Over flush the toilet unnecessarily - use a water-saving flush if it's fitted

Pour fat or grease from cooking down the sink or drains

Change the oil in your chip pan and pour it down the sink

Use your waste disposal unit like a rubbish bin - use it sparingly

Pour garden chemicals or car engine oil down the drains

Laundry detergents

Firstly you need to find out the level of hardness of your local water (see section on water softeners). Once you know how hard or soft your water is you can read the label on your laundry detergent and decide how much to use. The aim is to minimise the amount of detergent you use to limit its impact on the treatment plant whilst ensuring you get the best results from your wash.

- It is recommended that you use washing liquids in an in-machine ball dispenser, rather than powders. You get the best results from having the liquid in the heart of the wash; a liquid is already in suspension and therefore "gets to work" quicker and it reduces the amount of product left in the washing machine dispenser or lost on its journey to the drum.
- For normal "coloured" washes try to use a washing product without added bleach. For white washes add a separate bleach (such as the one produced by Ecover).
- Read the label and stick to the dosage recommended for the level of hardness of your water and to match the level of dirtiness of your washing. This is particularly important if you are using "concentrated" or "compact" liquids or powders because it is easy for your hand to slip and for you to use far too much.
- Try to ensure you have a full load each time or use an energy-saving "half load" programme if you have one. Don't be tempted to overload as this will not produce a good wash and could damage your machine in the longer term. A correctly loaded machine should have enough space for you to put your hand in to place the liquid ball on top of the washing.
- Normal wash temperatures, with the occasional very hot or "boil" wash, are not a problem for the treatment plant. However, it is not a good idea to do regular very hot washes as this could raise the plant temperature and affect the bacterial process.
- Your washing machine produces the largest quantity of waste water your treatment plant has to deal with. Don't have a "wash day" as this could produce too much water for the plant to handle in one go. Try to spread your washing throughout the week.

Dishwasher products

Your dishwasher cleaner is probably the most "aggressive" cleaning product in your household. It needs to be to make greasy plates sparkling and "squeaky" clean as the advertisers promise. **It is therefore all the more important that you stick carefully to the manufacturers' recommended**

dosage. It is recommended that you use a liquid, rather than powder or tablet cleaners as these are understood to be more efficient.

Most dishwashers use salt as a water softener - try to ensure the salt dispenser is always topped up because soft water increases the efficiency of the cleaning product and enables you to use only the minimum dosage of cleaner.

Dishwasher manufacturers recommend that you **do not rinse** your washing up under the hot tap before putting it in the dishwasher. Although this is a traditionally common practice dishwashers and their cleaning products are now so effective that this is unnecessary - you are merely wasting energy and hot water.

• Other cleaning products

It is most important that you always follow the manufacturers' recommended dosage on all household-cleaning products. Read the label - don't be tempted to use guesswork. Try to avoid using large amounts of cleaning products in one go. If you follow the recommended dosage and use only small quantities on a regular basis they should not have any adverse effect on the treatment plant. However, a day's spring-cleaning using massive amounts of household cleaners and disinfectants indiscriminately will affect the efficiency of the plant and destroy some of the bacteria. If the bacteria are harmed or killed they will eventually re colonise the plant, but in the meantime your plant would not be operating at peak effectiveness - depending on the amount of chemicals used.

• Water softeners

To reduce the quantity of laundry detergents you use you need to find out how hard your water is. **You can phone your local water company** (see Yellow Pages). They will be able to tell you where your water comes on the hardness scale.

The hardness of water is determined by the amount of calcium and other minerals it contains. Hard water is rich in calcium, which reduces the effectiveness of soap and detergents. There is a scale of water hardness in Ireland: 0 - 5° very soft, 5 -10° soft, 10 -15° medium hard, over 15° hard. In line with EU recommendations, all fabric-washing products now carry advice on how much to use according to these levels of water hardness. Once you have identified where your water fits on the



scale you can work out exactly how much detergent to use. If in doubt you could phone the manufacturer for advice - most offer a customer-care phone service.

- **Commercial Water Softeners**

Water softeners that involve a “salt” regeneration process can be very harmful to biological treatment systems. As the softener regenerates a very concentrated salt solution is used. This will be toxic to the micro-organisms in your biological sewage treatment plant. Domestic water softeners for single household should not present a problem. Please contact EPS if in doubt.

- **Waste disposal units**

These do not inhibit the micro-organisms, but, depending on use, they can present the treatment plant with considerable extra load. It is much better to compost your vegetables peelings etc.-its cheaper and more environmentally friendly

- **Harmful substances**

The following list consists of commonly known process inhibitors, it is not an exhaustive list. Under no circumstances should these enter the treatment plant:

Jeyes Fluid; medicines; cooking oil or melted fat e.g. from a grill tray or chip pan; motor oils or other car products; garden chemicals such as weed killers or fertilisers; DIY products such as paints, white spirit, paint thinners and other solvents, glue, antifreeze, dairy waste.

Just think before you dispose of any chemicals into the system - if in doubt always dispose of it elsewhere.



Appendix D: Quick Installation Guide

Do:

Read this O&M Manual including appendices for full details

Keep this manual together with any drawings that were issued and any other communication (order acknowledge, quotation, etc)

Take care when offloading the unit – tank and or external / internal pipe & equipment could be damaged!

Ensure adequate ventilation – the treatment plant is part of the foul drainage system and requires venting (see section “Installation Instructions“)

Don't:

Install any Clereflo Eco units deeper than the supplied access turrets (i.e. do **not** extend the turrets)



Appendix E: Maintenance records

Plant Commissioning

Date	Commissioning Company	Notes

1st Plant Service

Date	Servicing Company	Notes

2nd Plant Service

Date	Servicing Company	Notes

3rd Plant Service

Date	Servicing Company	Notes



4th Plant Service

Date	Servicing Company	Notes

5th Plant Service

Date	Servicing Company	Notes

6th Plant Service

Date	Servicing Company	Notes

7th Plant Service

Date	Servicing Company	Notes