



BS EN 12566-3

OPERATION AND MAINTENANCE
MANUAL FOR OXCRETE 9

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Foreword

Congratulations on your purchase of the OXCRETE 9 Sewage Treatment System.

Designed and manufactured by Viltra, this system embodies our commitment to reliability and efficiency.

We strongly recommend that you read this manual thoroughly to ensure compliance with all installation requirements and to gain a full understanding of the system's operating principles. This will help ensure optimal performance and long-term reliability.

Before carrying out any work on the treatment plant, it is essential to review the health and safety information provided.

List of Acronyms

BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
FOG	Fat, Oil and Grease
HDPE	High-Density Polyethylene
LED	Light Emitting Diode
PE	Population Equivalent
PP	Polypropylene
SABF	Submerged Aerated Biological Filter
SS	Suspended Solids
SWL	Safe Working Load
uPVC	Unplasticised Polyvinyl Chloride

NOTE: If you require any further information regarding the operation of the equipment, please contact our Customer Services Department +44 (0) 28 3083 5533.

Section 1 – Overview

Introduction

This manual has been created for owners and users of the OXCRETE system, a compact individual sewage treatment plant developed by Viltra. It provides a detailed overview of the system's operation and maintenance requirements.

In the OXCRETE system, sewage undergoes treatment through three distinct processes within a single tank. The first stage, known as **primary sedimentation**, takes place in the initial chamber, where solid particles settle. The second stage is a **biological treatment process**, relying on the activity of diverse microorganisms to break down organic matter. The third and final stage, **final sedimentation**, functions similarly to the first, allowing any remaining solids to settle before the treated effluent is discharged.

These combined processes ensure that the incoming wastewater is treated both physically and biologically, enabling the system to operate efficiently. The OXCRETE is designed to treat wastewater for a Population Equivalent (PE) of up to 9 people.

Important Notice

This manual must be read before operating the OXCRETE treatment system. It provides essential safety guidelines and best practices to ensure the system's longevity and reliable performance.

If you have any questions regarding this manual or the operation of the OXCRETE system, please contact a Viltra representative.

We recommend maintaining a **logbook** to record key information, including:

- **Maintenance activities**
- **Repairs and servicing**
- **Electrical issues (e.g., short circuits)**
- **Inspection measurements**

A sample logbook template is provided in **Appendix C** for reference.

Owners' Rights

Viltra retains ownership of the design and concept of this installation. This manual and any accompanying technical documentation are provided solely for the operation and maintenance of the system. No part of this manual may be reproduced or distributed without prior permission.

Warranty Terms and Conditions

The **electrical components** of the OXCRETE system, including the air blower, are covered by a **two-year warranty** from the date of purchase, provided that a service is carried out within the first year.

The **tank and its internal components** are covered by a **one-year warranty** from the date of purchase, subject to being installed and operated as per the manufacturer's guidelines.

If a fault occurs during the warranty period, a **Viltra representative must be contacted immediately**. Repairs should be carried out **exclusively by Viltra employees** unless prior written approval has been obtained.

The warranty covers the **replacement of faulty parts and equipment** but **does not include** travel or labour costs. If the system has been tampered with, Viltra reserves the right to determine whether the warranty remains valid.

If there is any uncertainty regarding **warranty coverage**, please contact a Viltra representative.

For any questions related to this manual, system operation, or maintenance, please consult a **Viltra representative**. All repairs or modifications must be performed by **qualified Viltra personnel**.

Section 2 - Field of Application

The OXCRETE system is designed for **residential applications** with a maximum capacity of **9 Population Equivalent (PE)**. This corresponds to a **maximum daily hydraulic load of 1,350 litres** and a **maximum daily Biochemical Oxygen Demand (BOD) load of 0.54 kg**.

Exceeding these limits may compromise the system's efficiency and performance.

Prohibited Items

To ensure the proper functioning and longevity of the treatment unit, the following **wastes must NOT be disposed of into the system**:

Solid Wastes

These materials **do not break down easily** and can cause blockages, reduce efficiency, and damage internal components such as but not limited to:

- Sanitary towels and tampons
- Nappies/diapers
- Non-biodegradable wipes and cloths
- Textiles and cotton wool products
- Waste food scraps
- Tea and coffee grounds
- Plasters (adhesive bandages)
- Condoms
- Kitty litter
- Hair and dental floss
- Cigarette butts

Chemical Wastes

Harsh chemicals can **disrupt the biological treatment process**, harm beneficial bacteria, and cause environmental damage such as, but not limited to:

- Motor oils and lubricants
- Fuels (petrol, diesel, kerosene, etc.)
- Paint, varnish, turpentine, and thinners
- Glue and adhesives
- Medicines and pharmaceuticals
- Photographic chemicals
- Insecticides, herbicides, and pesticides
- Waste containing heavy metals
- Excessive amounts of:
 - Ammonia
 - Chlorine
 - Disinfectants
 - Stain removers

Fats, Oils, and Grease (FOGs)

FOGs can **solidify and create blockages**, leading to system failure. Avoid disposing of:

- Cooking oils and fats
- Butter and margarine
- Grease from frying pans and kitchen appliances

Important Reminder

Proper waste disposal is **essential** for the efficient operation of the OXCRETE system. Misuse can lead to costly repairs and void the system's warranty. If in doubt, **consult a Viltra representative** for further guidance.

FOGs & Chemical Usage Guidelines

FOG (**Fats, Oils, and Grease**) concentrations **exceeding 100 mg/L** must not enter the OXCRETE treatment system. In applications where FOG levels are expected to exceed this threshold, a suitably sized **FOG separation device** should be installed to pre-treat the wastewater before it enters the OXCRETE unit. Under no circumstances should wastewater containing FOG concentrations above **100 mg/L** be discharged directly into the system.

Cleaning Products & System Performance

- All household cleaning products **must be biodegradable** and used in accordance with the manufacturer's recommended dilution rates.
- **Non-biodegradable cleaning agents** may contain toxic substances that can harm the microorganisms within the submerged biological filter, **compromising the treatment process**.
- If excessive amounts of biodegradable cleaning agents or any **non-biodegradable** substances enter the system, its performance **may be temporarily affected**.
- Depending on the level of disruption to the microbial balance, the system could take **several weeks to recover**, provided the use of the inhibiting substance is discontinued.

Additional Considerations

- **Do not exceed** the system's maximum designed load.
- **Surface water, stormwater, and rainwater** must not enter the treatment unit (as per local environmental regulations).
- **Large volumes of water** from swimming pools, Jacuzzis, or hot tubs must never be discharged into the treatment unit.
- The **operating temperature** within the OXCRETE system must be maintained **between 10°C and 40°C** to ensure optimal performance.

Section 3 - Health and Safety

In accordance with health and safety legislation, manufacturers are required to inform customers of the necessary safety precautions for the **installation, operation, maintenance, and servicing** of their products.

The following points must be observed:

1. **Hazard & Risk Assessment**
 - It is the responsibility of the contractor (client) installing the equipment to conduct a **hazard and risk assessment** related to the **unloading, installation, and maintenance** of the system.
2. **Safe Systems of Work & Competent Personnel**
 - The contractor (client) must ensure that **suitable and sufficient safe systems of work** are in place and that only **competent personnel** carry out the works safely.
3. **Use of Qualified Professionals**
 - The unloading, installation, and maintenance of the equipment must be performed by **qualified engineers, lifting operations-appointed persons, and electricians** to ensure all work is carried out **safely and correctly**.
4. **Confined Space Entry**
 - Certain **maintenance activities** may require **confined space entry**. It is the contractor's (client's) responsibility to **assess the hazards and risks** associated with confined spaces and implement **appropriate safety measures**, ensuring that only **competent personnel** perform such work.
5. **Manual Reference**
 - The relevant sections of this manual **must be read** before carrying out any work on the equipment.
6. **General Safety Precautions**
 - Standard **safety protocols** and **appropriate procedures** must always be followed to prevent accidents.

For **technical advice or product information**, please contact **Viltra** or your **local distributor**.

What is Sewage?

Sewage refers to wastewater, including raw sewage, sewage sludge, or waste from septic tanks. Raw sewage is primarily composed of water mixed with excrement, industrial effluent, and debris such as sanitary towels, condoms, and plastics. However, it is important to note that sewage entering treatment plants should only contain tissue paper and no other debris.

Working with Sewage

Excrement is a major source of harmful microorganisms, including bacteria, viruses, and parasites.

Health Risks Exposure to sewage or its by-products may lead to several illnesses, including:

- **Gastroenteritis**, marked by stomach cramps, diarrhoea, and vomiting.
- **Weil's Disease**, a flu-like illness with persistent headaches caused by rat urine. It can damage the liver, kidneys, and blood and can be fatal.
- **Hepatitis**, leading to liver inflammation and jaundice.
- **Occupational Asthma**, causing breathlessness, chest tightness, and wheezing, triggered by inhaling living or dead organisms.
- **Skin or Eye Infections**.
- Rarely, **Allergic Alveolitis**, which causes fever, breathlessness, dry cough, and aching muscles and joints.

How Microorganisms Enter the Body

Microorganisms can enter through:

- **Hand-to-mouth contact** during eating, drinking, smoking, or wiping the face with contaminated hands or gloves. This can also occur by licking splashes from the skin.
- **Skin contact**, particularly through cuts, scratches, or wounds, such as from discarded needles. Certain organisms can also enter through the eyes, nose, and mouth.
- **Inhalation** of dust, aerosol, or mist.

Protecting Workers from Health Risks

While microorganisms in sewage pose an inherent hazard, they cannot be fully eliminated. However, proper risk assessment is essential. This should not involve testing sewage for microorganisms, as they are constantly changing.

To reduce exposure:

- **Minimise Contact:** Use remote-controlled robotic cameras for sewer inspections, dry sludge before disposal, incinerate sludge, inject sewage into land rather than spreading it, or bypass sections of the sewer during reconstruction.

Additional Safety Measures to reduce the risk of infection:

- Provide adequate **instruction, training, and supervision** for employees and line management to ensure they understand the risks.
- Equip workers with **personal protective equipment (PPE)**, such as waterproof gloves, footwear, and eye and respiratory protection. Face visors are effective for protecting against splashes. Regularly inspect and maintain PPE.
- Ensure access to **welfare facilities**, including clean water, soap, nail brushes, disposable towels, and showers where heavy contamination is expected. In remote locations, portable welfare facilities should be available. Keep areas for clean and contaminated equipment separate from eating facilities.

If you experience any of the symptoms described after contact with sewage, consult a doctor immediately and inform them of the circumstances.

Safety Considerations

Sewage gases are both toxic and potentially explosive. **Do not enter** below-ground sections of the sewage treatment plant without taking the appropriate precautions. Before performing maintenance, **electrically isolate** the equipment at the fuse box connected to the blower power supply. Always limit the amount of time covers are left open. Place **temporary barriers and warning signs** around open covers or manways to ensure safety.

Section 4 - Plant Description

THIS MANUAL REFERS SPECIFICALLY TO TREATMENT PLANT MODEL: OXCRETE 9.

Provided the simple maintenance procedures outlined in this manual are followed, the treatment plant will deliver long-lasting and trouble-free operation.

Please pay particular attention to the Health and Safety section in this manual. It is vital that you read and understand these instructions before undertaking any work on the system.

The treatment plant has been designed to handle the volume and strength of sewage specified in the original quotation. To ensure the plant continues to operate efficiently, please observe the following points:

- DO NOT exceed the maximum design loading of the plant.
- DO NOT allow surface water to enter the system.
- DO NOT allow high-volume discharges, such as those from swimming pools or Jacuzzis, to enter the system.
- DO NOT allow large quantities of chemicals, such as water softener regenerants, disinfectants, strong acids or alkalis, oils and greases, pesticides, or photographic chemicals, to enter the system.
- DO NOT use chemical or biological emulsifiers in grease traps.

If you are in any doubt about a particular substance, please contact the Customer Service Department at VILTRA for further advice: +44 (0)28 3083 5533.

To maximise efficiency and minimise maintenance requirements and potential issues, the treatment plant contains **NO mechanical or moving parts.**

Section 5 - Scope of Supply

The OXCRETE system comprises the OXCRETE treatment unit itself and an enclosure containing an **air blower** with a mains power connection point, complete with 10m of airline and a **flashing alarm** as standard.

OXCRETE Unit

The OXCRETE Unit consists of a single tank that houses all the necessary components for the sewage treatment process.

Manufactured from precast concrete, the OXCRETE Unit is fully impervious to water and sewage. It has been designed and independently tested to ensure durability and a long service life. The tank is fitted with concrete manhole covers and a green polyethylene lid, which is bolted to the frame, providing access to all internal components.

The submerged filter beds are made of plastic filter media, which is packed into the tank. The media, constructed from polyethylene, provides a large surface area on which the bacteria needed for the purification process can thrive. This media is supported by an open mesh panel positioned above the tank base.

Air diffusers are placed beneath the media within the biological filtration zone. These diffusers are connected to the external air supply (air blower) via uPVC pipework.

The recirculation pipework is a uPVC pipe running from the bottom of the settled sludge in the final settlement zone to the top of the primary settlement zone. The pipework is equipped with a valve at the most accessible point, where 8mm tubing is inserted down the uPVC pipe, which is connected to the blower to enable the airlift to function.

(NOTE: On all models, a control tap in the 8mm airline ensures a balanced airflow between the airlift recirculation pipe and the diffuser in the biological filtration zone. The control jet is an integral part of the airlift hose connector, which is fitted to the bulkhead between the final treatment zone and the biological filtration zone.)

Air Blower Unit

The air blower, along with its associated electrical controls, is housed in a weatherproof enclosure (460mm Length, 370mm Wide, and 320mm Height). A Duct from the preferred location of the Air Blower Housing is to be connected to the air duct of the OXCRETE Unit.



The electrical controls include an isolator and a loss-of-air alarm, which is connected to an external beacon that provides a visual indication if the blower is not operational.

(NOTE: Viltra follows a policy of continuous product and process development and reserves the right to change specifications without prior notice.)

Section 6 - Operating Sequence

The OXCRETE treatment plant is designed to minimise its visual impact, ensuring the final installation maintains a discreet and aesthetically pleasing appearance. The system is built in compliance with the requirements of **BS 6297**, certified to **EN 12566 – Pt.3**, and adheres to **S.R. 66:2015** standards.

Specifically developed to treat domestic sewage and other biodegradable waste, the OXCRETE system offers a simple and compact design, consisting of three core stages:

- **Primary Sedimentation**
- **Biological Treatment via Submerged Aeration Filtration (SAF)**
- **Final Sedimentation**

The OXCRETE system relies on microorganisms that grow on the filter media's surface to break down the sewage. It is crucial that toxic chemicals, as outlined in the "Plant Description" (Section 4), do not enter the system as they could harm the microorganisms.

Raw sewage (influent) enters the OXCRETE unit and is first processed in the primary sedimentation zone, where larger solids (primary sludge) settle at the tank's bottom. These solids remain until the tank is de-sludged, as detailed in the Maintenance Schedule. The sewage, now free of larger solids, flows from the primary sedimentation zone into the biological treatment zone, passing beneath a scum-baffle.

Flow circulation within the biological treatment zone is driven by the hydraulic effect of the air-diffuser outlet. Sewage enters the biological treatment zone at a high level and is drawn down through the media, aerating the sewage in the process. This circulation ensures multiple passes through the media for effective treatment before the sewage reaches the final sedimentation zone.

In the final sedimentation zone, the treated sewage (effluent) undergoes clarification. Heavy solids (sludge) settle at the bottom of the chamber and are returned to the primary settlement zone via the recirculation pipework. The effluent, now fully treated and remaining at the higher level of the final sedimentation zone, is ready to be discharged into a watercourse or soakaway, as specified in the consent to discharge issued by the Environment Agency.

Section 7 - Plant Start-Up /Shutdown Procedure

Plant Start-up

1. Fill the plant with clean water until there is a discharge from the outlet.
2. Connect the airline from the blower unit to the receiving hose tail inside the treatment plant, ensuring all connections are airtight.
3. Check that the blower ventilation is not obstructed.
4. Turn on the main power supply to the blower unit.
5. Switch the isolator inside the blower housing to the "on" position, which will activate the blower.
6. Allow a minute or so for the pressure to build in the system, depending on the distance between the blower and the treatment plant.
7. Confirm that the submerged aeration filtration zone of the treatment plant is visibly bubbling.
8. Adjust the flow regulator thumbscrew on the airlift recirculation pipe to achieve a nearly constant flow. **Note: It may take up to a minute for flow rate adjustments to take effect. The ideal setting is where the flow becomes constant. If the flow rate is set too high, it will negatively impact the plant's performance.**
9. Fit the manhole cover and lock it if necessary.

The OXCRETE Unit is now operational. However, the treatment process relies on the growth of microorganisms on the filter media. The time required for these organisms to develop depends on the temperature and may take up to 12 weeks during winter. Until the biomass is fully established, the treatment process will not be complete. During this period, avoid allowing strong cleaning agents or bleaches to enter the system.

Plant Shutdown

Temporary interruptions to the flow will not harm the system, as the airlift will continue to recycle sewage. However, if the flow of sewage is interrupted for more than two months, follow this procedure:

1. Desludge the tank chambers following the instructions in Section 10 and de-sludge points highlighted in Appendix B section 2.
2. Refill the plant with clean water.
3. Fit the manhole cover and lock it if necessary.
4. Turn off the blower by switching the isolator to the "off" position.
5. Switch off the power supply to the blower enclosure.

Section 8 - Ventilating Your Sewage Treatment Plant

Proper ventilation at both the tank and the house is essential to prevent foul odours from lingering. Viltra recommends the following measures:

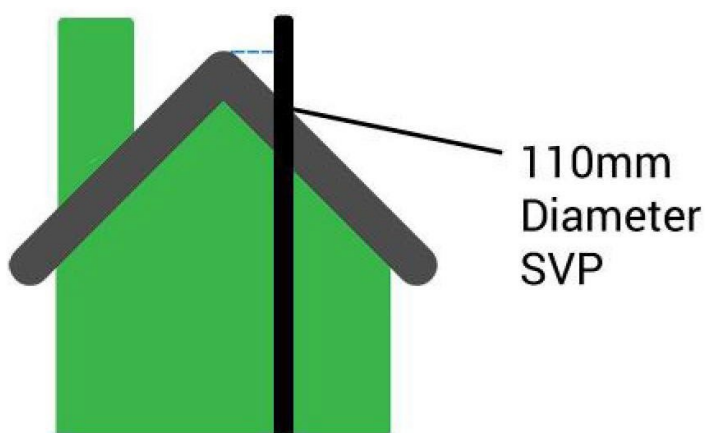
- Ensure vents are installed at both the inlet and outlet of the tank.
- All soil stacks should be positioned above the ridge of the roof.

It is important to have your tank de-sludged annually. Ratepayers are entitled to a free de-sludge each year with Northern Ireland Water, which can be arranged by contacting them at 03457 440088.

Please Note: The foul drain to the treatment plant MUST have a traditional open soil/vent pipe at the head of the drain run. Air admittance valves, tile or ridge vents are NOT acceptable.

Please note that the responsibility for ensuring adequate ventilation at both the tank and the house rests with the builder and plumber. While Viltra engineers are happy to provide advice on ventilation issues during the commissioning process, we do not send engineers to the site specifically for ventilation consultations.

Ventilation – Soil Stacks



VILTRA recommends that the soil vent pipe (SVP) clears the ridge line of the house

Section 9 – Installation

The following instructions/requirements are offered for guidance only.

It is important to note that the tank will float if submerged in water when empty. If high external water levels are anticipated, then a floatation check must be performed. Pending the result of this check, appropriate anti floatation measures may be required. These measures include adding additional soil overburden or casting a hoop of in-situ ballast concrete around the base of the tank.

Viltra can provide anti-floatation details if required.

The civil contractor (installer) is responsible for offloading and installing the system and ensuring the following:

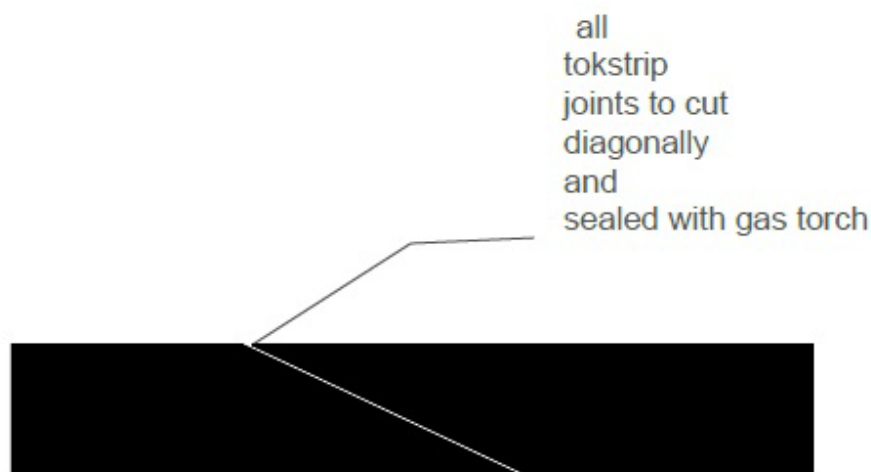
- Sufficient access is available for offloading the system.
- Appropriate crane size on-site for offloading system.
- Dry ground conditions on-site. (If there is any concern regarding the ground conditions, then it is recommended that a suitably qualified engineer is consulted before installation.)
- Backfilling material suitable for the ground conditions on-site.
- Water supply available on-site during installation.

Installation Procedure:

1. Excavation is to be dug by the civil contractor (installer), taking into consideration tank dimensions. (See OXCRETE 9 Installation Layout - Appendix B section 1)
2. Lay and level the base of the excavation. (See OXCRETE 9 Installation Layout - Appendix B section 1)
3. Install a bituminous seal on the tank before it is lifted into excavation. Ensure that the surface to be sealed is clean.

On the flat surface, roll the bituminous Tokstrip around the edge of the top of the tank until it meets. When it meets, cut the Tokstrip diagonally on the finishing roll and the start of the new roll. You must then seal this together by using a gas torch to melt the Tokstrip together.

When all tokstrip has been placed, you will need to go around the tank with the gas torch on each roll to ensure it has sealed to the tank. This is particularly important in wet weather.



4. Lift the tank into position (See OXCRETE 9 Lifting Details - Appendix B section 3)
5. Lift the lid into position (See OXCRETE 9 Lifting Details - Appendix B section 3)
6. Ensure correct orientation of the inlet and outlet pipework.
7. Have sufficient backfilling Material to backfill up around the system.
8. Backfill around the tanks, following the backfilling instructions seen at the end of this section. (Ensure the top of the tank is covered when backfilling)
9. Make all interconnecting pipework connections, ensuring a minimum pipe gradient.
10. Have an inspection chamber at the start of the inlet and outlet pipes. (See OXCRETE 9 Installation Layout - Appendix B section 1)
11. The air blower housing should be positioned on 'soft landscaping' and securely fixed while maintaining watertightness.
12. Ensure that all necessary safety precautions are taken to ensure safe working conditions for site personnel

Avoid vehicles driving over or on manhole covers.

Standard OXCRETE Sewage Treatment Systems come with pedestrian loading access covers (For use in pedestrian areas only). It is essential to prevent damage due to superimposed loads from vehicles or site traffic.

Electrical work should be carried out by a qualified, competent electrician, and all materials used/installed in an appropriate manner for the environment they are fitted in. See Section 8 for more details.

Excavation and Base Preparation

The depth of excavation should exceed the finished base level by a minimum of 200mm. The excavation should then be brought to level using crushed rock aggregate up to 150mm (40mm max. size), which must be compacted and levelled. Then 50mm of granular blinding is added on top of the crushed rock aggregate. (See Installation Layout - Appendix B section 1)

The sides of the excavation must be suitably battered to avoid the risk of collapse. To minimise the risks associated with deep, open excavations it is recommended that completion should be coordinated to coincide with the arrival of the tank. During placement, it is imperative that personnel do not stand beneath a suspended load.

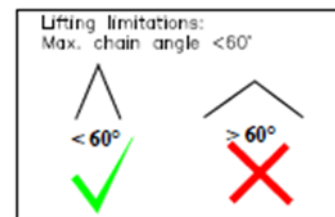
The safety of the excavation and the general works remains the responsibility of the civil contractor (installer).

Offloading

The civil contractor (installer) is responsible for offloading all items of equipment with due regard to the following:

- | | |
|--------|---|
| DO NOT | Lift the tank if it contains any water. |
| DO NOT | Subject the tank to sharp impacts. |
| DO | Check that all items delivered correspond with the Delivery note. |

The OXCRETE unit is provided with lifting eyes. These are not intended for the transportation of the units. The lifting hook should be connected to the tank lifting eyes by separate slings of equal length. Ensure that the slinging angle does not exceed 60 degrees at the hook in order to eliminate excessive compressive loads on the side of the unit.



(See OXCRETE 9 Lifting Details in Appendix B section 3)

Backfilling

Providing that there are dry ground conditions on-site, the following backfill may be used. **(If there is any concern regarding the Ground Conditions, then it is recommended that a suitably qualified Engineer is consulted before Installation and suitable Backfill is determined)**

The excavation may be backfilled using excavated material, provided that topsoil is not used below a depth of 150mm and the backfill is free of large stones and cobbles (Larger than 75mm approx.). Where excavated material is unsuitable for backfilling, crushed rock fill may be used (50mm maximum diameter).

Backfilling should be completed in horizontal layers not exceeding 500mm depth, lightly compacted on completion of each layer (Note: Excessively heavy compaction can damage the tank).

While backfilling, fill each tank with water, starting with the media bay section, ensuring that the progressive backfill and water levels are approximately equal (never exceed a difference of 200mm max). Never partly or wholly fill the tank with water before surrounding it in the backfill material.

The lid should be in place and sealed before backfilling begins to avoid unnecessary contamination.

Electrical Installation (Air Blower Housing)

In order to achieve a safe and cost-effective installation, it is not possible to state a specific installation configuration that would suit all sites. The selection of current protection devices must remain the responsibility of the installer. It is imperative that electrical installation of this equipment is entrusted to a fully qualified electrician.

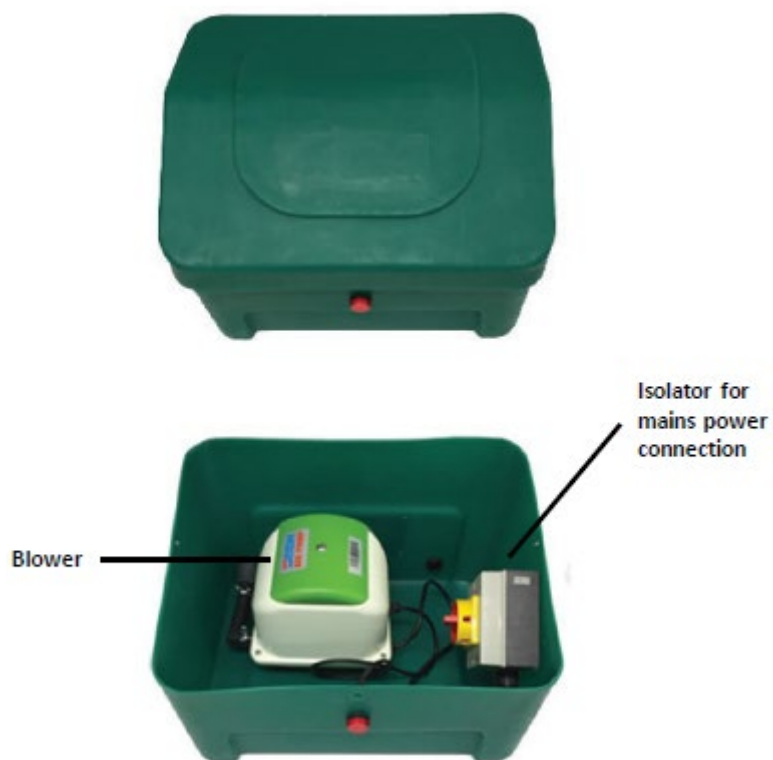
The air blower unit can be positioned wherever is most convenient (within 10 meters from the tank), bearing in mind the need to get a power supply to it and the airline from it to the treatment plant.

The air blower unit is supplied with 10 meters of airline as standard.

When installing the electrical supply to the OXCRETE Blower Housing, the following points should be considered:

The supply to the OXCRETE unit should be by means of a dedicated circuit with isolation and protection devices consistent with the requirements for fixed equipment and in accordance with the latest electrical regulations.

The power supply to the OXCRETE unit should be independent of all protection devices other than the supply authority's fuse and that provided specifically for the OXCRETE power supply. In particular, earth leakage devices provided for normal domestic protection must not form part of the supply circuit to the OXCRETE unit.



Section 10 – Maintenance

Owner's Responsibility

The owner of the sewage treatment plant is fully responsible for its operation and must ensure that the effluent quality complies with the Discharge Consent Standards set by the Environment Agency.

Please note that a service agreement does not transfer the responsibility for general maintenance, which must be carried out in accordance with the provided instructions.

The treatment plant owner is also responsible for the maintenance of soakaways and drains, and the emptying of primary tanks.

If the plant is not functioning properly, please refer to the Fault-Finding section (Section 16) of this manual or contact Viltru for assistance.

Maintenance Schedule

Weekly

1. Check the operation of the air blower. If the air blower has failed for any reason other than a mains power failure, the warning beacon will either remain on continuously or flash, depending on the model.

Monthly

In addition to the weekly checks, carry out the following:

1. Check the operation of the diffusers (ensure bubbles are rising in the biological treatment zone).
2. Inspect all chambers to ensure they are free from debris.
3. Verify that the blower ventilation is unobstructed.
4. Examine the biomass growth on the filter media. The biomass should appear light brown, not white or grey. The odour in the plant should be 'earthy'—there should be no noticeable 'rotten eggs' smell.
5. Inspect the final effluent. If it appears cloudy or contains a significant amount of suspended particles, the final sedimentation zone may need desludging.

Annually

In addition to the weekly and monthly checks, carry out the following:

1. Inspect the primary sedimentation zone using a probe. The top floating crust should not exceed 150mm in thickness. If required, arrange for desludging.
2. De-sludge the primary sedimentation zone, biological filtration zone, and final sedimentation zone every 12 months. This should be carried out by an experienced

local waste disposal tankering company. Some systems may need more frequent desludging depending on the loading and type of application.

3. Ensure the tanker suction hose is carefully lowered into the primary and final chambers to remove all settled sludge.
4. When desludging the biological treatment zone, carefully lower the suction hose into the opening where the air diffuser pipework is located. Ensure the hose reaches the very bottom of the tank to remove all settled sludge while being cautious not to damage the pipework.
5. After desludging each compartment, refill the unit with clean water using a hosepipe or by running multiple taps in the household(s).
6. Remove the air filter from the blower unit (remove the top cover to access the filter), clean it, and replace it.

Refer to the 'OXCRETE 9 Desludge Points' section in **Appendix B section 2** of this manual for a diagram illustrating the system's de-sludging points.

Additionally, please review the Plant Start-up Procedure in **Section 7** of this manual.

Section 11 – Troubleshooting

1. **STRONG ODOUR**

Cause	Remedy
1.1 Inadequate Ventilation	Refer to Ventilation guidelines, Section 8 .
1.2 Excessive build up of sludge and scum.	Check service intervals and contact Viltra. Possible De-sludge needed.

2. **THE BLOWER IS NOT RUNNING**

Cause	Remedy
2.1 Power cut.	If it is temporary, do nothing. When the power is restored, the system will restart automatically
1.2 Power supply RCD has tripped.	Switch off the power and reset the RCD, then switch it on, and the blower should restart automatically. If it doesn't, switch off the power supply and call an electrician. On the 3-phase supply, check the correct rotation.
1.3 Blower runs intermittently	Check for any obstructions in the airline, as overheating in the enclosure will cause the high-temperature trip to switch off the power until it is cool.

3. **AIR BUBBLES ARE NOT RISING FROM THE DIFFUSER**

Cause	Remedy
2.1 The blower is not running	Refer to fault condition 1.
2.2 The blower is not running	Check all valves open, and all air lines are not broken or leaking.
2.3 Bubbles in the system are not visible.	If none of the above remedies solve the issue, please contact Viltra.

4. **THERE IS NO RECIRCULATION FLOW FROM THE FINAL SETTLEMENT ZONE**

Cause	Remedy
3.1 Blower Fault	Refer to fault conditions 1 & 2.
3.2 Recirculation pipework is blocked	Contact Viltra.
3.3 The air control jet is blocked	Contact Viltra.

Section 12 – Technical Data

Model Number	OXCRETE 9
Max Daily Flow	1.35 m ³ /day
Total BOD Load	0.54 kg/day
Population Equivalent	9
Overall Depth (std)	1985mm
Length	2825mm
Inlet Invert (std)	480mm
Outlet Invert (std)	625mm
Cover Size	1615 x 675mm (Clear Opening)
Blower Rating	50W
Desludge Frequency* (Based on full load)	Annually
Inlet Connection	110mm
Outlet Connection	110mm
Weight (Empty)	Tank Weight: 2.6 Tonnes Lid Weight: 1.2 Tonnes

***De-sludge frequency assumes maximum application with full daily design loading.**

Section 13 - Servicing your Sewage Treatment Plant

The sewage treatment plant must undergo annual servicing and de-sludging. (The frequency of de-sludging may vary based on loadings.)

Please note:

Consult Viltra before performing a full de-sludge of the system (including all chambers).

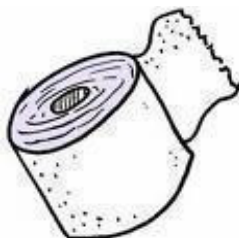
Additionally, under the Water (Northern Ireland) Order 1999 – Consent to Discharge, your consent approval stipulates that the consent holder must "enter into a contract with either the supplier of the sewage treatment works or another competent body to maintain the system's optimal performance at all times. Maintenance and service history documentation must be available for inspection by the department upon request."

A member of our service team will reach out to you to discuss setting up a service agreement, ensuring the continued efficient operation of your newly installed sewage treatment plant.

Section 14 - Prohibited Waste for the Sewage Treatment Plant

 Cotton Buds	 Baby Wipes	 Facial Wipes
 Cleansing Pads	 Toilet Roll Tube	 Medicines
 Cigarettes	 Plasters	 Nappies
 Tampons	 Tampon Applicator	 Sanitary Pads

The only product that should be put through the Treatment Plant is standard toilet roll.



Thicker toilet paper has the potential to cause problems within the sewage treatment plant, as often this paper is much harder to break up and may cause blockages.

Appendix A



Prüfinstitut für Abwassertechnik GmbH

TREATMENT PERFORMANCE RESULTS

Viltra
56 Damolly Road, Newry, Co. Down, BT34 1QR, Northern Ireland

EN 12566-3
Results corresponding to EN 12566-3 and S.R. 66
PIA-SR66-1802-1008.03, shared itt

OXTEC6
Submerged fixed film system in a 4-chambers from Viltra
(initial type test) in combination with PPR concrete tanks

Nominal organic daily load	0.30 kg/d		
Nominal hydraulic daily load	0.90 m ³ /d		
Treatment efficiency (nominal sequences)		Efficiency	Effluent
		COD	93.2 % 57 mg/l
		BOD ₅	97.0 % 10 mg/l
		NH ₄ -N	85.2 % 5.4 mg/l
		SS	97.0 % 12 mg/l
Number of desludging	Not more than once		
Electrical consumption	0.59 kWh/d		

Performance tested by:

PIA – Prüfinstitut für Abwassertechnik GmbH
(PIA GmbH)
Hergenthather Weg 30
52074 Aachen, Germany

This document replaces neither the declaration of performance nor the CE marking.


Notified Body
No.: 1735


Certified according to
ISO 9001:2008


DAKKS

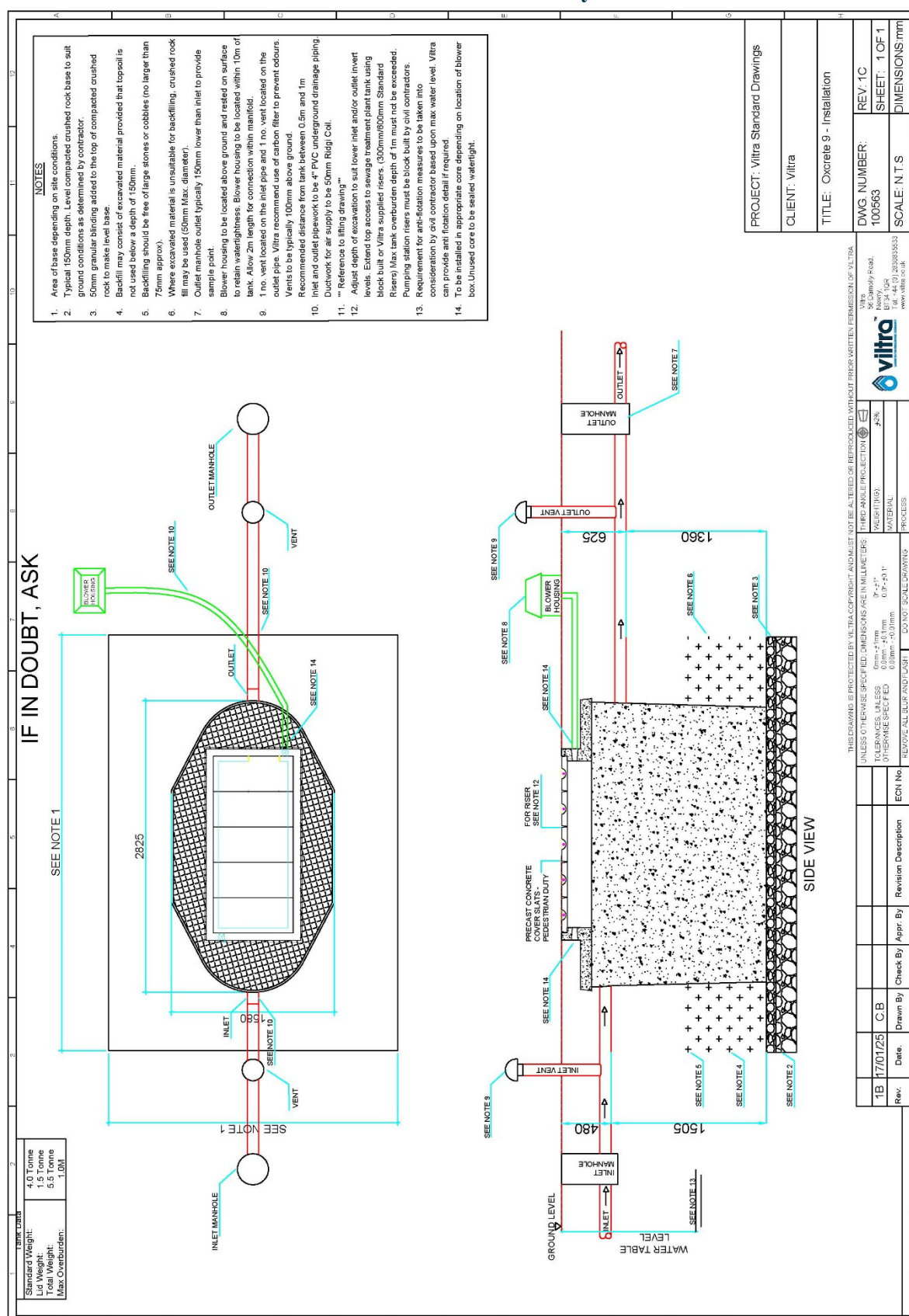

Deutscher
Akreditationsrat
D-PL/17112-03-08


Prüfinstitut für Abwassertechnik GmbH
Perfekt - tested - best
Martina Wemmer May 2019

9		PIA2012-WD/NC-1203-1017A	Pass Shared ITT conformity check according to S.R. 66:2015	Pass For wet ground conditions also, installation depth 1.25 m from inlet invert	PIA2016-DH-1601-1003.01
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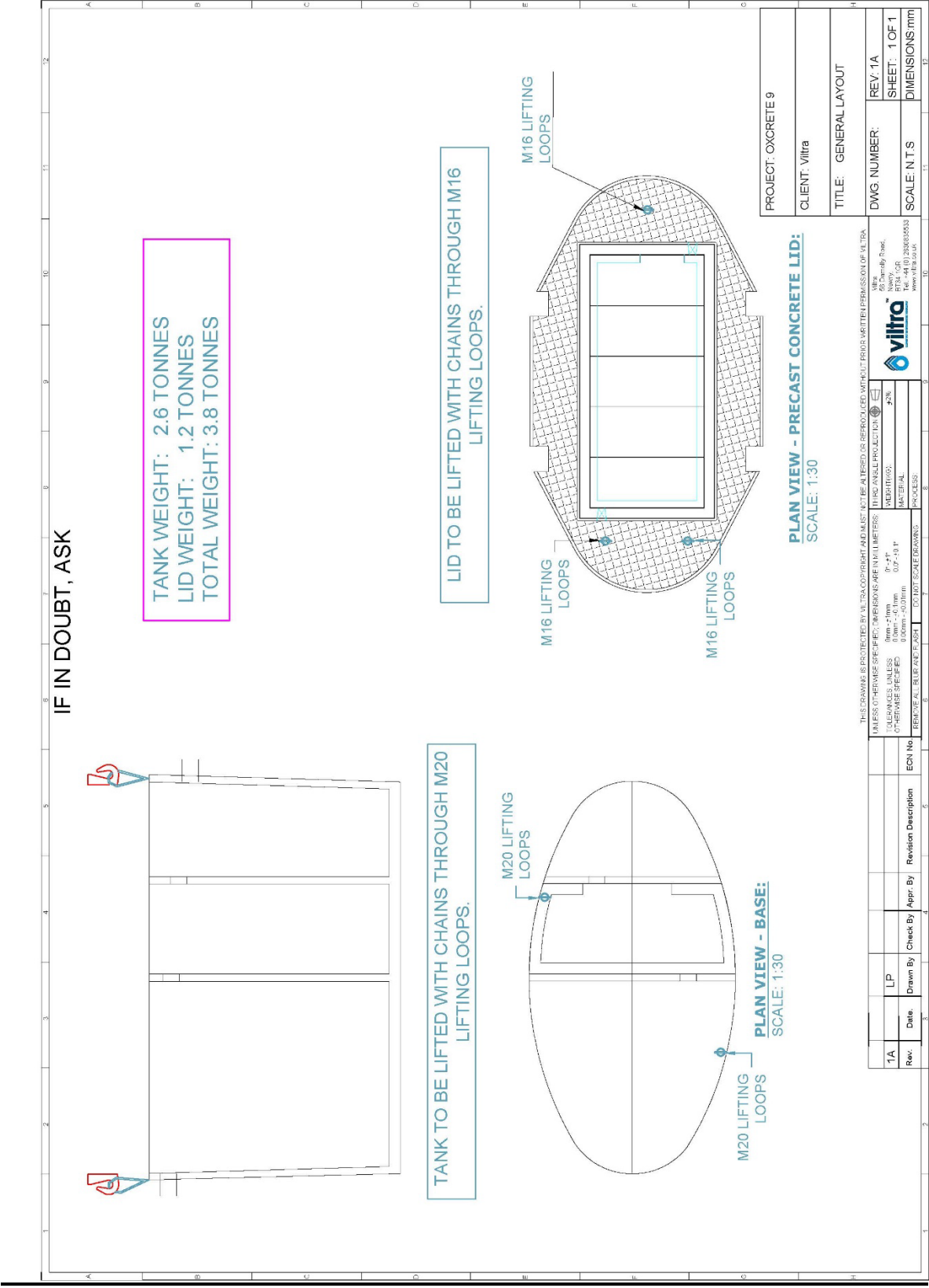
Section 1

OXCRETE 9 Installation Layout



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Section 3
OXCRETE 9 Lifting Details



Appendix C

Log Book

[illegible]

www.viltra.co.uk