

Aerated Wastewater Treatment Plant



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Dear Customer,

Thank you for choosing the Hynds Lifestyle wastewater treatment system. Please read this Owner's Manual carefully before using the Lifestyle system and keep it for future reference.

The information contained in this manual is subject to change without notice. Please contact Hynds Wastewater to request the latest manual.

QUICK START GUIDE

Essential Information For Homeowners

Follow these 7 easy steps to make sure your system stays in top condition:

1. The system will take 3-4 weeks to settle.
2. Only wastewater should enter the system. See page 9 for a list of incompatible substances.
3. Cater for only your household so the system is not overloaded. Over-catering examples:
Excessive laundry: Regularly washing the rugby team's jerseys.
Excessive cooking and baking: Making food for a local café or community group.
4. Service the system every 6 months by a trained service technician. See page 11 for maintenance requirements. Wastewater treatment systems are hazardous. Do not attempt to service or modify the system.
5. If you go on holiday, the system will automatically go into Holiday Mode; see page 9.
6. Use environmentally friendly cleaning products or make your own. For some natural cleaning solutions, see page 12.
7. Take 5 minutes to read through this manual to understand your system thoroughly.

Frequently Asked Questions

Should a wastewater treatment system smell?

No. If it is operating correctly, the system should not have an offensive odour. If there is an offensive odour, call your Service Technician.

What can I put down the drain?

Wastewater from the toilet, basins/sinks, shower/bath, washing machine, dishwasher. See page 10 for a list of Dos and Don'ts for each area in your house.

How does a wastewater treatment system work?

The wastewater goes through many steps, such as settling, filtration, and biological digestion. This removes contaminants and produces clean water safe for disposal. See page 7.

What if this is my holiday home or I'm away often?

The system will go into Holiday mode after 48 hours of no activity. See page 9.

How often do I need to pump out my system?

Your service technician will advise you when the system needs pumping out. Typically this is every 2-3 years. See page 11.

1. Safety Precautions

Please read the Owner's Manual and Safety Precautions before owning the system.

Wastewater treatment units are hazardous. A trained service technician must perform all maintenance and repair work. Any work carried out by an unauthorised organisation or person may void the warranty.

Hynds recommends the system is on a service contract with a trained service technician.

When reading this Manual, please pay special attention to the following signs:

 **WARNING:** A warning label highlights a hazard or unsafe practice which could result in severe injury or death.

 **CAUTION:** A caution label highlights a hazard or unsafe practice which could result in injury or product/property damage.

⚠ WARNING

Electrical Safety

- Before handling any part of the sewage treatment plant, making contact with the water or working on or near any of the electrified equipment, make sure that the power to the tank is switched off at the isolation switch at the tank, or the mains in the house.

Fall Prevention

- Ensure access covers are securely closed to prevent children/animals/public from entering the tank.
- During routine maintenance and servicing, be aware the tank lid may have been removed and there is a risk of falls. Stay clear of the tanks during servicing and maintenance.
- If access covers or any other damage is identified, report the damage to Service Technician.

Hazardous Gases & Confined Spaces

- Never enter a wastewater tank. Toxic gases in the septic tank can kill in minutes. Personnel required to enter and carry out maintenance work in the unit must comply with AS/NZS2865:2001 and New Zealand regulations.
- Ensure there are no naked flames, smoking or other ignition sources (e.g., tools) around the wastewater tank and vents.

⚠ CAUTION

Prevent physical loading of the tank

- Ensure vehicles do not drive or park in the area around the system. Heavy vehicles can deform the ground and damage the tank, especially on soft ground.
- Heavy vehicles must be >4m from the tank.
- If the system has been installed with heavy-duty risers and a trafficable ballast, it can withstand vehicle loads up to 3.5T.

Health risk

- Avoid contact with wastewater and treated wastewater. Wash and disinfect any parts of the body or tools that have come in contact with wastewater.
- Do not use treated water for human consumption, livestock watering or irrigating edible crops.

Access Cover Lids

- Keep your tank manholes locked or heavy enough to avoid children from opening them. Make sure the access covers are securely closed during operation.

2. Overview

2.1 Oxyfix® Systems

The Oxyfix® systems provide advanced secondary treatment for domestic wastewater applications. This system achieves higher performance compared to other similar technologies.

Eloy Water in Belgium has designed high-performing Oxyfix® systems for all domestic applications.

The tank uses Submerged Aerated Fixed Film (SAFF) Technology, which produces clear and odourless liquid suitable for irrigating landscaped gardens, bushes or trees. The innovative technology in Oxyfix® results in higher treatment performance than standard SAFF technology.

The Oxyfix can and is designed to blend into the landscaped environment. The Oxyfix® has a specially formulated concrete tank reinforced with steel fibre, making it lighter and stronger than similar concrete products.

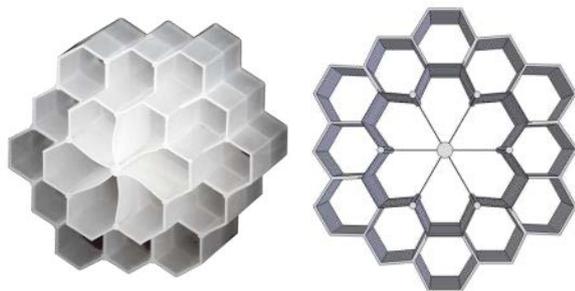
The system is suited to service single-family homes with variable influent values and flow rates and has low running costs. The system needs to be maintained by a Hynds-trained local service technician.

2.2 Oxybee® Media

The Oxyfix® contains the innovative Oxybee® filtration system.

Oxybee® is a biocarrier specifically designed by Eloy Water. The Oxybee® was inspired by nature, and it is a honeycomb-shaped media with a high surface area (200m²/m³) and void ratio, which allows successful biofilm development without clogging.

Oxybee® is made from recycled plastic (PP, PE), which means it is light, durable and has a long service life. The Oxybee® media is contained in randomly packed 90L bags.



Oxybee® Media

2.3 Installation

The installation of an Oxyfix® System is completed by a Hynds-trained Installer. Installation of the treatment system and irrigation field is typically completed within one day.



Installation

2.4 Performance

The Oxyfix® Systems are designed to exceed New Zealand Standards for wastewater disposal.

2.5 Operation and Maintenance

Maintenance of all septic and wastewater treatment systems is necessary to maintain their performance. Your local trained service technician can offer a service contract to ensure ongoing optimum system performance.

6-monthly services are required to comply with council regulations and ensure the system maintains optimal performance. Failure to maintain the system will result in the warranty being void.

If your contracted service technician is unavailable, they will offer an alternative trained Service Technician, as per the Service Contract.

3. Treatment Process

3.1 Oxyfix® 1.8 System



Oxyfix 1.8

- Primary Treatment Chamber
- Biological Reactor Chamber, with Oxybee® media
- Air Diffusers
- Clarification Chamber
- Sludge recirculation
- To irrigation tank and pump station

Primary Treatment Chamber 1

The primary treatment chamber separates the solids from the incoming water, and naturally occurring anaerobic organisms break down the organic matter.

Scum floats to the surface of this chamber and reduces odours by trapping the naturally forming gaseous Hydrogen Sulfide. Overloading, peak surging or domestic chemicals can disrupt the scum layer.

Solids settle at the bottom and build up until the system requires desludging or pumping out.

Biological Reactor Chamber 2 3

Water from the primary treatment chamber travels into the aeration chamber, entering at the bottom of the chamber. The chamber is 75% filled with Oxybee® media, which provides a large bacterial growth surface area (specific surface area of 200 m²/m³). The Oxybee® is made from recycled polyethylene and polypropylene.

The water is aerated using an electric blower and a fine air bubble diffuser. The oxygen-rich environment allows aerobic bacteria to thrive on the Oxybee® media as they rapidly digest organic matter. Microorganisms quickly grow and form a thin layer over the entire Oxybee® surface, and this bacterial layer is known as biofilm.

Clarification Chamber 4 5

The liquid enters the clarification chamber from the biological reactor chamber, where any remaining fine suspended solids settle at the bottom of the clarifier.

The clarifier is shaped with a settling cone that concentrates the sludge at the bottom of the compartment. The sludge is then re-circulated back to the primary treatment chamber via an airlift pump for re-treatment.

Irrigation Tank Pump Station 6

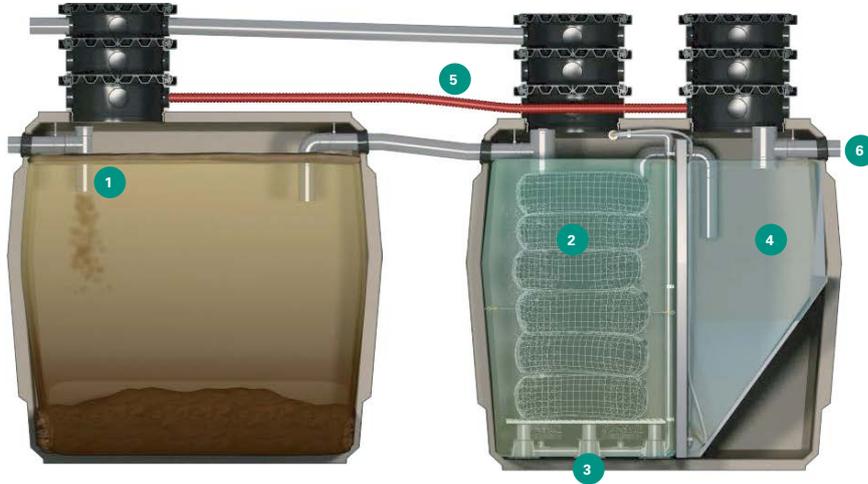
A locally supplied irrigation tank and pump station downstream from the Oxyfix® tank. Treated water is gravity-fed into the irrigation tank. A float activates a submersible pump, which passes through an irrigation filter before feeding the disposal fields.

The irrigation tank can hold 24-hour emergency storage if required.

It is possible to add tertiary disinfection treatment. Contact Hynds Wastewater if you require further information on disinfection systems.

3.2 Oxyfix® 3.0 system

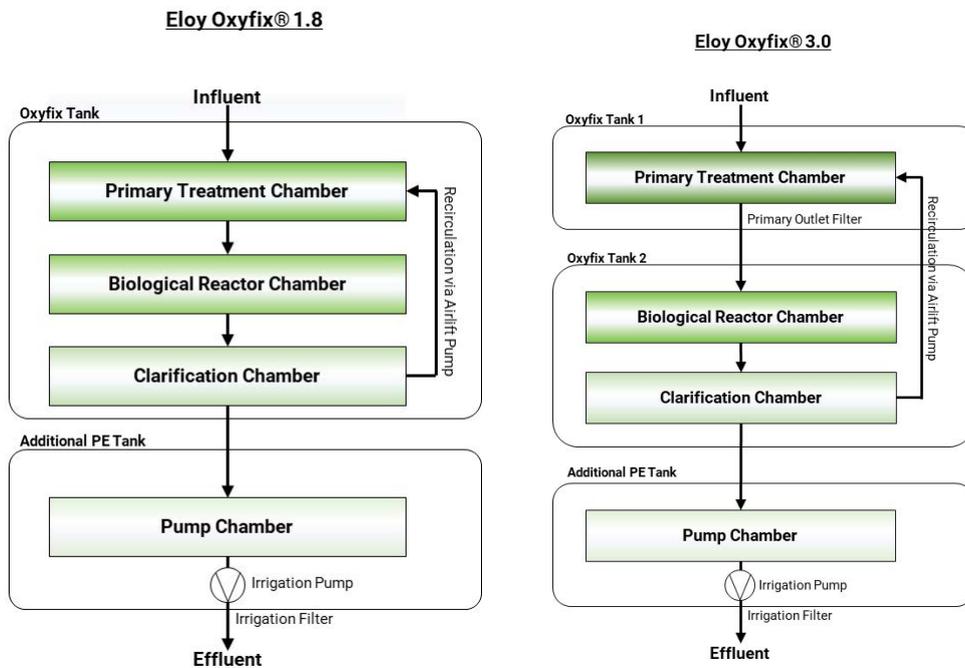
The Oxyfix® 3.0 System comprises two tanks with the same treatment process as the Oxyfix® 1.8. The two tanks allow the system to handle larger volumes and loads.



Oxyfix 3.0

1. Primary Treatment Chamber
2. Biological Reactor Chamber, with Oxybee® media
3. Air Diffusers
4. Clarification Chamber
5. Sludge recirculation
6. To irrigation tank and pump station

3.3 Treatment Flow



4. Caring For Your System

4.1 Owner's Responsibilities

This system is designed for domestic-grade wastewater treatment only. A foul odour is a direct consequence of incorrect use. This section covers good practices to keep your system running optimally.

Servicing

- Ensure the system is serviced by a trained service technician every 6 months.

Influent (Incoming Wastewater)

- Only wastewater enters the system.
- Incompatible Substances must not enter the system; see Section 4.3.
- Ensure rainwater does not enter the system.
- All house gullies are installed to regulation height to prevent groundwater ingress.
- Backflush from a swimming pool must not be connected to the system.
- Downpipes must not be connected to the system.

Overloading

- Ensure the number of occupants does not exceed the system's capacity.
- Ensure the use of multiple appliances does not cause peak surging.

4.2 Holiday mode

Do not switch off the power to the system even if you are going on holiday. Contact your service technician if the system will not be used for extended periods.

The controller will automatically enter holiday mode if the irrigation pump has not discharged for 48 hours.

When returning from a holiday, the controller will automatically detect the system being used and revert to normal operating mode.

After a long period of no function, the system requires a service to ensure filters and pipework are clean and operational.

4.3 Incompatible Chemicals & Substances

Do not allow incompatible substances into the wastewater treatment system. This includes disposal via the kitchen sink, laundry and toilet.

Below is a list of chemicals that are considered harmful to the system:

- Water >75°C
- Excess Milk
- Harsh or excessive cleaning products such as bleaches, disinfectants, whiteners, or spot removers
- Coffee Grounds
- Food scraps (including Insinkerator)
- Fatty or oily substances
- Antibiotics or medicines
- Dressings, Plasters
- Paper towels
- Sanitary towels, Nappies, Baby wipes
- Fibres, cloths
- Cigarette stubs
- Paints
- Acids
- Dyes
- Pesticides, herbicides
- Solvents
- Industrial oils, lubricants, thinners, spirits
- Paints, Thinners, Paint Strippers
- Motor Oil, Petrol, Antifreeze, Break Fluid and Other Automotive Fluids
- Contents from a chemical toilet
- Rainwater or stormwater, including downpipes
- Backflush from a swimming pool

4.4 Other Helpful Hints

- Complete your laundry over several periods during the week to prevent surge loading.
- Use the correct measure of cleaning product.
- Use a compost bin for food scraps.
- Put toxic items in the above list in an appropriate disposal facility.
- Buy environmentally friendly labelled products such as Eco Store from your supermarket.
- If the tank takes a while to settle, purchase live bacteria Septic Tank Starter from Eco Store.

4.5 Owner's Dos and Don'ts

	DO	DON'T
General	<ul style="list-style-type: none"> ✓ Keep daily water usage under the system's limits. ✓ Ensure the number of occupants does not exceed the system's capacity. ✓ Maintain your system by a trained Hynds Service Technician. ✓ Use the correct measure of cleaning products. ✓ Read the Owner's Manual. 	<ul style="list-style-type: none"> ✗ Ever switch the power off on your system. ✗ Use bleach, caustic or chemical-based cleaning agents & detergents. ✗ Dispose of foreign objects into your system. ✗ Dispose of incompatible substances into your system. ✗ Run multiple appliances, which can cause a peak surge.
Kitchen	<ul style="list-style-type: none"> ✓ Use liquid washing detergents. ✓ Use sink Strainers. ✓ Use natural cleaning products. 	<ul style="list-style-type: none"> ✗ Install a sink macerator / InSinkErator. ✗ Pour fats/oils/grease down the drain. ✗ Pour milk/alcohol/yoghurt down the drain.
Laundry	<ul style="list-style-type: none"> ✓ Spread washing over 7 days. Keep the number of loads to 1-3 per day. ✓ Use concentrated liquid detergents. ✓ Soak stained garments in a bucket & dispose of contents in the garden. 	<ul style="list-style-type: none"> ✗ Use powder detergents (with phosphorus and sodium). ✗ Use whiteners, bleach or commercial-grade cleaners. ✗ Pour hairdressing products down the drain.
Bathroom	<ul style="list-style-type: none"> ✓ Shorten shower times. ✓ Use potassium-based liquid soaps. ✓ Use natural beauty products. 	<ul style="list-style-type: none"> ✗ Fill & drain the bath multiple times per day. ✗ Use antibacterial products. ✗ Use disinfectant to clean tiles & screens.
Toilet	<ul style="list-style-type: none"> ✓ Minimise toilet paper usage. ✓ Provide a small bin for sanitary items. ✓ Use natural cleaning products. 	<ul style="list-style-type: none"> ✗ Use scented toilet paper. ✗ Flush sanitary items, condoms or nappies. ✗ Flush antibacterial wipes. ✗ Use toilet block cleaners (cistern & bowl).



5. Maintaining Your System

5.1 Owner's Responsibilities

The plant runs automatically and requires no special knowledge from the owner/user.

The owner is responsible for ensuring:

- The system always remains ON.
- The system is on a Service Agreement with a trained service technician and is serviced every 6 months.
- The system is desludged when required. The technician will measure the sludge depth at each service and advise when desludging is needed. The system requires desludging when the primary chamber's sludge level is 50% capacity, or the scum level is >200mm.

5.2 Regular Servicing & Maintenance

The system requires a service **EVERY 6 MONTHS** by a trained service technician to optimise the performance and to maintain its warranty.



CAUTION

If the 6-monthly service is neglected, or desludging advice from your service technician is disregarded, the warranty will immediately be void.

During maintenance, the green lids will need to be removed. The owner must ensure access to the lids is not restricted due to excessive landscaping.

Only the manufacturer or a trained technician may perform maintenance and repair work (except filter cleaning) on the treatment system.

A service contract should be made with a trained service technician. Any work carried out by an unauthorised person or organisation may void the system's warranties.

The general servicing will include, but is not limited to:

- Check the general condition of the wastewater treatment and irrigation systems.
- Take wastewater sample(s) to visually assess water quality.
- Check the general working condition of the electrical equipment.
- Clean all inlet/outlet pipes for each chamber.

- Measure sludge and scum levels in the primary treatment chamber.
- Check the aeration and ventilation pipework.
- Check the air diffusers and the air feed pipe.
- Inspect the air blower and service as required.
- Check the airlift pump is working properly.
- Clean the irrigation pump and irrigation filter.
On completion of the service, a service report is completed and sent to the homeowner and the respective council(s) if required.

5.3 Irrigation Area & Disposal

The irrigation pump will pump out the treated wastewater onto the irrigation field on your land.

Specific requirements and laws exist for the disposal/reuse of treated wastewater. The disposal area and irrigation system must be designed and installed by qualified professionals and in accordance with NZ and local council requirements.

5.4 Controller & Alarms

The Oxyfix® Systems has an IP-rated controller and alarm system that alerts the homeowner to any service requirements or potential problems. The controller is designed to assist in identifying power, pump or air faults.

If a fault does occur, an alarm will audibly and visually activate on the alarm plate located on the turret above the tank or inside the owner's home.

If the fault is not easily identified or rectified:

Call your Hynds trained service technician. In the event of a pump failure, there is 24 hours of emergency storage for the fault to be remediated.

Power outage

In the unlikely event of a long-duration power outage or other reason that has stopped blower operations, the microorganisms may be deprived of oxygen. The microorganisms enter a dormant state and will regenerate when oxygen becomes available again.

6. Natural Alternative Cleaning Solutions

Wastewater Treatment Systems rely on bacterial growth to treat all wastewater that leaves the home. It is the homeowner's responsibility to ensure all products used do not have a negative effect on the treatment system's performance.

It is easy and simple to create your own cleaning solutions using some basic ingredients:

- ✓ White Vinegar
- ✓ Bi-Carb Soda
- ✓ Soda Crystals
- ✓ Lemon Juice
- ✓ Baking Powder

Note: Certain essential oils are strong antibacterial agents, especially tea tree oil and eucalyptus oil. Please prevent placing concentrated amounts of these oils down your drain.

1. Stain Remover

Lemon Juice
Sunlight
Soda Crystals

Instructions:

- Apply Lemon Juice to stain
- Sit the garment in the sun for 1 hour.
- Rub with soda crystals and wash as usual.

2. Window and Mirror Cleaner

1 part White Vinegar
1 part Water

Instructions:

- Mix in a spray bottle.
- Apply to glass and rub dry with newspaper.

3. Grout Cleaner

Baking Powder
Lemon Juice

Instructions:

- Mix to form a paste.
- Apply the paste to Grout.
- Scrub with a toothbrush.

4. Floor Cleaner

1 part Boiling Water
1 part White Vinegar

Instructions:

- Mix in a bucket.
- Use a mop or suitable cloth to apply
- Air dry

5. Drain Cleaner

Kettle of Boiling Water
Soda Crystals

Instructions:

- Once a month, pour boiling water over soda crystals and into the drain.

Note: Soda Crystals are made from limestone that undergoes heating to form these crystals.

6. Toilet Deodoriser

Bi-Carb Soda

Instructions:

- Once a week, add to the toilet bowl.
- Allow to sit for 2 minutes. Flush.

7. Toilet Bowl Cleaner

1/4 cup Bi-carb Soda
1 cup White Vinegar
1 drop Orange Essential Oil

Instructions:

- Mix all ingredients in a bowl.
- Apply the mixture to the toilet bowl and scrub with a toilet brush.
- Allow to sit for 2 minutes before flushing the toilet.

8. Toilet Seat & Cistern Cleaner

White vinegar

Instructions:

- Wipe over with a cloth soaked in white vinegar.

7. Warranty Statement

The quality waste water treatment product you have purchased from Hynds Waste Water is covered under this comprehensive warranty as outlined in the following document and shall be read in conjunction with Hynds Terms and Conditions of Sale.

1. THE ENVELOPE (TANK)

Unless otherwise agreed in writing by duly authorised persons the structural integrity of the concrete tank shall be WARRANTED for a period of 10 years, commencing from the date of delivery; and all other components (parts only) of 2 years commencing from the date of delivery.

2. THE TREATMENT AND PERFORMANCE

The treatment and performance of the product (as defined in the user's guide supplied with the product) are guaranteed, provided that the terms and conditions set out in this document are complied with.

3. FOREWARD

Hynds Waste Water (hereinafter referred to as "HWW") manufacture and distribute products intended for the treatment of waste water. The purpose of this document is to inform the owner, or installer about

the warranty relating to HWW products. The warranty shall cover all waste water treatment products manufactured or distributed by HWW (hereinafter referred to as the "Product").

Products shall consist of an external envelope in concrete or in polyester and internal components can be accompanied by accessories such as but not limited to sockets, pump, raiser, lids and control panels. In this Agreement or other documents the term "End User Owner" shall be further defined as including or referring to any Purchaser or Customer of Hynds.

4. WARRANTY

HWW warrants to the owner that the product is designed to treat wastewater in compliance with the regulatory requirements in force at the time it is purchased in a new and unused condition.

Notwithstanding anything contained in this Warranty the liability of either Party to the other including the end user owner shall not in aggregate exceed the invoice price of the Goods in respect of which the liability occurs.

The different warranties shall apply from the purchase date by the end user owner of the product, provided that, pursuant to installation, users and operating instructions, the product:

- was correctly sized with consideration to hydraulic and organic loading as specified by the Customers engineer, approved designer or regulatory authority; and
- was correctly installed, connected and commissioned in strict accordance with the manufacturers and local authority requirements by an approved and certified contractor, the Customers engineer, approved designer or regulatory authority; and
- is operated consistently within the parameters of which it was designed; and
- the Product receives regular servicing in accordance with the manufacturers and local authority requirements by an approved and certified contractor.

5. EXCLUSION FROM WARRANTY

The following types of damage including but not limited to shall be excluded and therefore void any warranty:

- 5.1 Any damage resulting from poor handling, transport (by a third party engaged by the customer directly) or storage defect. More generally, any damage caused by a third party that was not authorized directly by the manufacturer or distributor.
- 5.2 Any damage resulting from a modification of the product without having consulted the manufacturer or distributor beforehand (and having received either Parties written consent) about the modifications made to the product by any individual, company, agent or person.
- 5.3 Any damage resulting from an installation that does not comply with the requirements specified in HWW's installation guide (supplied with the product or

available upon request at the following address: hwwsupport@hynds.co.nz) or those required by the local regulatory authority.

5.4 All damage resulting from a sizing error of the product, in particular with regard to the hydraulic and organic Load of wastewater intended for the product and to the legislation in force at the time the product was installed. The term "Load" shall refer to water, liquids, any elements sent inside the product to be stored or processed therein.

5.5 Any damage resulting from a change of the use of the product leading to a modification of the Load (flow rate and/or nature of wastewater) intended for the product.

5.6 Any damage caused by using the product in a way not compliant with the requirements set out by HWW in the user's instructions for the product (supplied with each product and available upon request at hwwsupport@hynds.co.nz).

5.7 Any damage caused by failing to observe the maintenance or operating instructions for the product as defined by HWW and as contained in the operating instructions for the product or any other document supplied with the product. Instructions are supplied with the product or are available on demand at hwwsupport@hynds.co.nz. The manufacturer reserves the right to review and update the instructions from time to time and it shall be the Customers responsibility to remained informed.

5.8 At the sole discretion of Hynds, any damage resulting from incorrect, incomplete and/or inadequate installation of the product essential to the correct functioning of the product.

5.9 Any damage resulting from a technical intervention on the installation by any individual, company or person who is not approved/certified (by the manufacturer or local regulatory authority), or does not have the correct equipment and knowledge to intervene on the product and its accessories. More generally, any modification or alteration of the product without the prior, written consent of HWW shall cancel the warranty granted by HWW and release the latter from its obligations without limitation.

5.10 Any damage resulting from elements such as the conditions of placement, conditions of installation, nature of the soil type, nature of the water to be treated or other similar external source that in the sole discretion of HWW is communicated inadequately, or with unreasonable delay or not at all to the installer and directly HWW by the end user owner, individual or company authorized by the latter or to whom said task was entrusted.

5.11 Any damage caused directly or indirectly, deliberate or accidental resulting from negligence, tort or unforeseeable circumstances of the installer, the end user owner, individual or company authorized by the latter. For the purposes of clarity this shall by extension also include force majeure, such as earthquake, storm, flooding, volcanic eruption, and as may be further defined.

6. IMITATION AND IMPLEMENTATION OF THE WARRANTY

If the product should malfunction and provided that the terms and conditions of the warranty are complied with, HWW shall proceed or nominate an agent to review as soon as practically possible the repair(s) required in accordance with the degree of malfunction and assessment by HWW, or at the sole discretion of HWW the replacement of the product or component(s) of the product as may be required.

Under no circumstances may HWW be held liable for damages of any kind including liquidated damages, direct or indirect, resulting from incorrect or unsafe use of the product. The end user owner is responsible for the daily supervision of the product, within the limits of their competencies, the latter must inform HWW immediately and without unreasonable delay (defined as not more than 5 business days) upon detecting a defect or malfunction of the product. Notification must be in writing to hwwsupport@hynds.co.nz.

Any call on the warranty must be made in writing, if possible using the appropriate form (documented entitled "Claim Card" likewise available upon request at hwwsupport@hynds.co.nz), sent to hwwsupport@hynds.co.nz.

If, after inspection, it turns out that the damage or defect ascertained by the end user owner, who has informed HWW, does not comply with the terms and conditions of warranty, and where the HWW cannot be held liable, HWW reserves the right to invoice all expenses incurred including but not limited to travel or time & material operations to the end user owner or individual, company or person(s) who has engaged HWW or their nominated repair agent for services.

Branches Nationwide Support Office & Technical Services 0800 93 7473

Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds product or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hynds unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.