Ecoflo® Coco Filter - Concrete unit

Installation Guide – CAN/USA

*This guide contains the information required to install a **Ecoflo® Coco Concrete.** The installation must be performed by a duly trained installer. A list of installers can be provided by contacting our customer service at **1 800 632-6356.***

IMPORTANT: The Ecoflo® Coco Concrete can be partly or completely assembled at the concrete manufacturer plant or assembled directly on site. Thus storage, transportation and handling requirements will differ depending on the product.

1. Ecoflo® Coco Concrete Unit Component Description

PLEASE CONSULT THE ILLUSTRATION ON FOLLOWING PAGE

A-Lids
- Access port for maintenance and inspection – main and secondary access (when applicable);
- Air intake from the main lid provides proper air flow through the system;
- Access openings secured with lag screws bolted assemblies.

B-Insulating boards
- Thermally insulate the system;
- Guides airflow into the shell's air ducts (main access);
- Seals the system for security.

C-D Main Access and Air ducts
- Conduit for air circulation from the main lid to the system;

E- Top Tile
- Allows connection of water and air pipes;
- Distributes air via its air ducts;

F-Tipping bucket
- Creates hydraulic events required to obtain proper distribution of the water on the distribution plates and promotes their self-cleaning.

G-Distribution plates
- Allow even distribution of the influent on the filtering media.

H-Support rails
- Support the other end of the distribution plates.

I-Filtering media
- Consists of a natural fibre-based filtering media;
- Promotes good biomass growth which is essential for biological wastewater treatment;
- Physically filters the solids contained in the influent;
- Maintains adequate humidity level required for biomass viability when there is no water going through the system for a certain amount of time.

J&M-Aeration and drainage system
- Takes the effluent from the collection area and directs it towards the discharge pipe;
- Promotes passive aeration of the filtering media

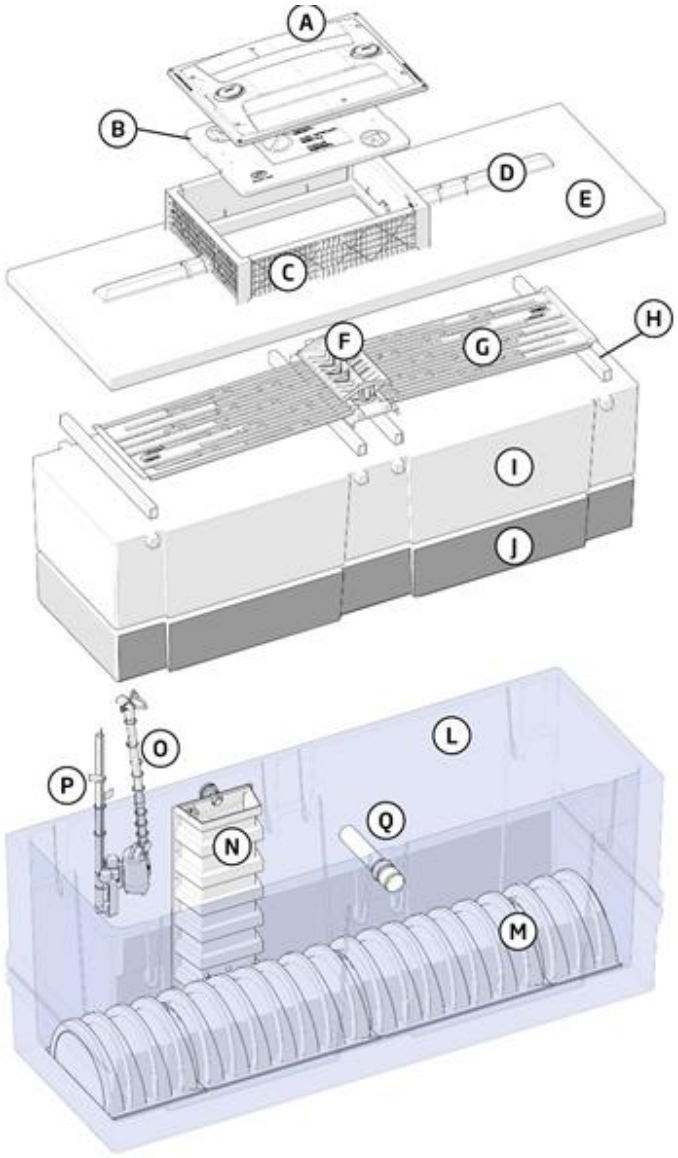
L-Shell (tank and top tile)
- Encloses the system's components;
- Collects the treated effluent.

M-Treated effluent collection area
- Layer of drainage media;
- Supports the filtering media;
- Allows proper drainage of the treated effluent;
- Promotes passive aeration of the filtering media

N-Pump vault
- Contains the pumping equipment;
- Allows air circulation between the top and the bottom of the filtering media;
- Allows access to the bottom of the system to collect samples of the treated effluent.

O&P-Pumping unit
- Includes a pump, a float tree, an ON/OFF float, an alarm float and an alarm box;
- Pumps the treated effluent towards an absorption area, watercourse, or a tertiary treatment system.

Plates support
- Supports the tipping bucket and one end of the distribution plates.



Exploded view of the Ecoflo® Coco Concrete unit

2. Installation of the Ecoflo® Coco Concrete Unit

IMPORTANT: The installer is responsible for all security measures applicable to all installation steps, including the use of a hard hat, gloves, boots, safety glasses, face mask, etc.

2.1 Installation sequence

Primary/septic tank and the final effluent disposal have a direct impact on the positioning of the other components composing the treatment train, thus a careful attention shall be given to these. Generally, when installing an Ecoflo® Coco Concrete unit, the components are installed according to the following sequence:

1- Primary/Septic Tank
2- Ecoflo® Coco Concrete unit
3- Final infiltration zone or final outlet pipe in the case of surface discharge (refer to local regulations)
4- Pipe and fitting connections

2.2 Excavation, foundation and installation of the system

Excavate an area large enough to clear at least 1 foot around the Ecoflo® Coco Concrete unit. Depending on the soil condition, it might be necessary to add a 150 mm (6") layer of gravel 0-20 mm Ø (0-3/4") that does not contain any vegetable matter, or a layer of clean crushed stone 20 mm Ø (0-¾") surrounded by a geotextile. Set the shell down making sure that it is levelled and that its entire floor is in contact with the foundation that has previously been compacted and levelled.

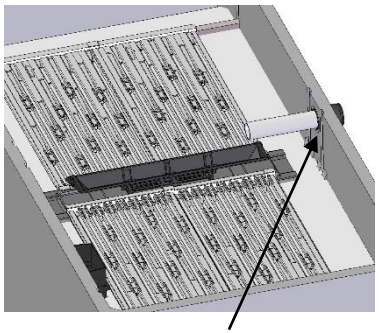
2.3 Initial backfill of the shell

Make sure the seasonal high groundwater table level is below the shell's inlet pipe at all times.

Backfill the shell up to 200 mm (8") under the inlet invert. When backfilling the shell, start by the two lateral sides and then backfill the two ends. It is important that the backfill material be deposited, not dumped, which is why we do not recommend using a bulldozer for this step. **The backfill material should be sandy, with little or no rocks or stones larger than 50 mm (2") in diameter.**

2.4 On site verifications

- Make sure the tipping bucket stays in place.
- Make sure that the interior part of the inlet pipe in the tank's water inlet are glued together.
- Be sure that the end of the inlet pipe is lower than the water inlet in order to have a good water flow coming inside the system. Check that the installation of the tipping bucket by tipping it from left to right to make sure nothing is blocking it.
- Also make sure that:
  - The distribution plates are properly installed;
  - The float tree and the pump are correctly positioned;



Inlet pipe (interior part)

2.5 Connecting the inlet and effluent pipes

General specifications:

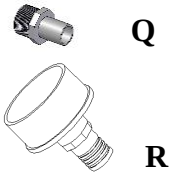
- All pipe connections to a wastewater treatment unit must be flexible and watertight;
- When cutting pipes, be sure to cut at right angle in order to maximize the surface to be glued and clean all the plastic residues inside and outside the pipes;
- Pipes and fittings must be dry and clean before applying glue;
- Apply a coat of PVC primer on the surfaces before gluing (inside the fitting connections and around the pipes);
- Use a standard PVC cement for connections;
- After applying glue, complete the connection rapidly. Keep a slight pressure on the connection for a few seconds;
- For threaded fitting connections, use Teflon® tape or equivalent;
- The soil under the pipes must be well compacted;
- Protect the pipes against freezing if the soil depth is not sufficient to offer a good protection;
- Make sure the soil is sufficiently compacted under all pipes.

2.5.1 Inlet pipe

Connect the inlet pipe from the primary/septic tank to the Ecoflo® Coco Concrete unit water inlet, making sure that the pipe runs downward along its length to the Ecoflo® Coco Concrete water inlet (minimum slope of 1%). The soil underneath the pipe must be well compacted. The Ecoflo® Coco Concrete unit is equipped with a standard flexible inlet adapter and is connected with a regular pipe clamp.

2.5.2 Effluent pipe

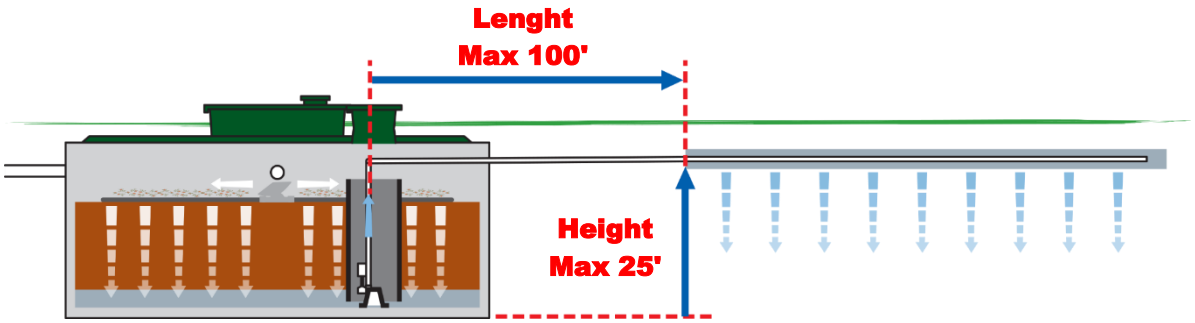
The Ecoflo® Coco Concrete effluent must be connected to the means of disposal (absorption area, watercourse or tertiary treatment system) of the treated effluent by a 38 mm Ø (1.5") flexible pipe that can support at least 700 kPa (100 PSI) of pressure and is compatible with the underground applications. A 38 mm Ø (1.5") crenated outlet coupling (**item Q**) connects this flexible pipe to the biofilter outlet. The other end of the pipe is connected to the polishing field using the supplied coupling (**Item R**). When the discharge is into a watercourse, precautionary measures against freezing must be taken



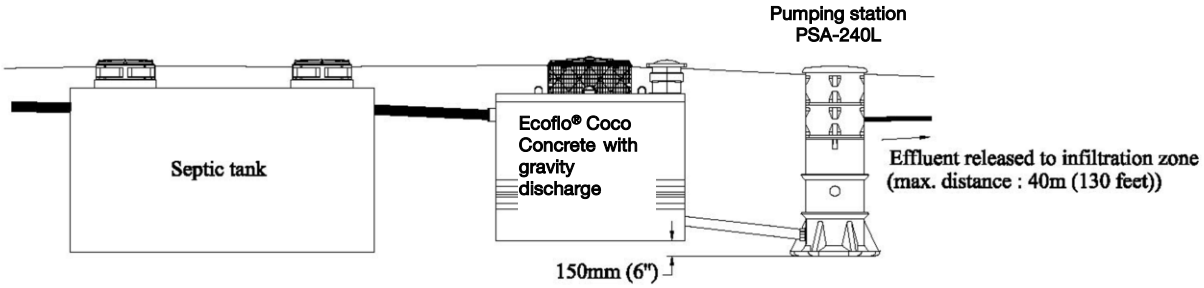
What you should know if you use PTA's pump:

- The **maximum length of the pressurized pipe** (flexible pipe) from the pump's outlet, **using a 38 mm (1½") Ø pipe,** is limited by the volume of water that returns to the Ecoflo® Coco Concrete once the pump has stopped running. The following table presents the different allowable pipe lengths:

Head	7.5 m (25')	6 m (20')	4.5 m (15')	3 m (10')	1.5 m (5')
Maximum length of the Ø 38 mm (1½") pipe	30 m (100')	30 m (100')	30 m (100')	30 m (100')	30 m (100')



- For a distance that goes **up to 40 m (130')**, a PSA-240L pumping station can be used. In such a case, a gravity discharge Ecoflo® Coco Concrete followed by a PSA-240L pumping station equipped with a 355 mm (14") riser, as illustrated below, must be used. The diameter of the pipe that goes from the PSA-240L to the absorption bed must be of 38 mm (1½"). The float in the pumping station does not have to be adjusted.

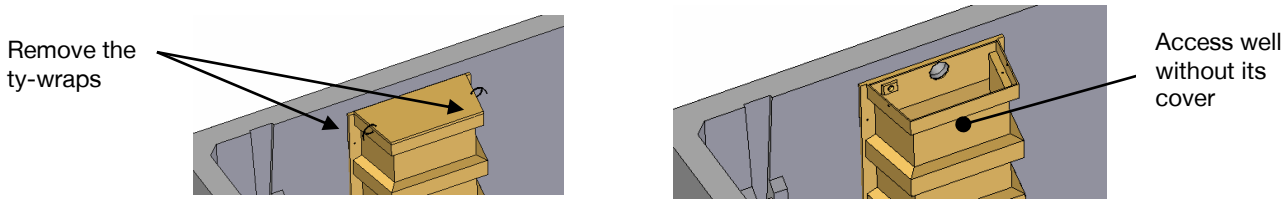


NOTE: The pipes must be positioned such that they can drain by gravity.

WARNING! The maximum seasonal groundwater table level must be at least 150 mm (6") below the shell's base. If the terrain layout it is such that surface run-off accumulation is possible, a drain pipe must be added to evacuate the excess water and prevent any risk of infiltration.

2.6 Opening of the access well

In models with gravity discharge, the main function of the access well is to allow air to flow between the top and the bottom of the system. In models with integrated pump, the access well is also used as a vault for the pumping unit. The cover of the access well is there to prevent gravel or particles of filtering media to fall into the access well during installation. **Therefore, once the filtering media has been put in, remove the cover (taking care not to let the ty-wraps fall inside the well) and do NOT put it back on.**



Models with gravity discharge illustrated

2.7 Final backfill of the system

Finish backfilling. It is important that the backfill material be deposited, not dumped, which is why we do not recommend using a bulldozer for this step. **The backfill material should be sandy with little or no rocks or stones larger than 50 mm (2") in diameter.** Allow space for plant cover and make sure that the lids are 50 mm (2") above the finished landscaping.

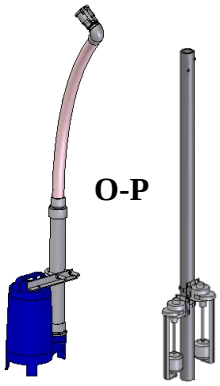
The usual burial depth is 300 mm (12"). If necessary, you may **ADD ONLY ONE (1) 20 cm (8") riser on the main access (STR-080). The maximal burial depth is 500 mm (20") over the top tile.**

Before the final backfilling, do not forget to connect the pump's power supply (see section 2.8 of this document).

2.8 Checking the pump and the electrical wiring (models with integrated pump)

Step 1 Pump verification

Make sure there is no debris (sand, stone, gravel, tie-wrap, electrical components, tape, etc.) in the access well when the electrical wiring is complete. Visually inspect the components inside the access well (pump, float tree, floats) to make sure they are properly installed and will work as they should.



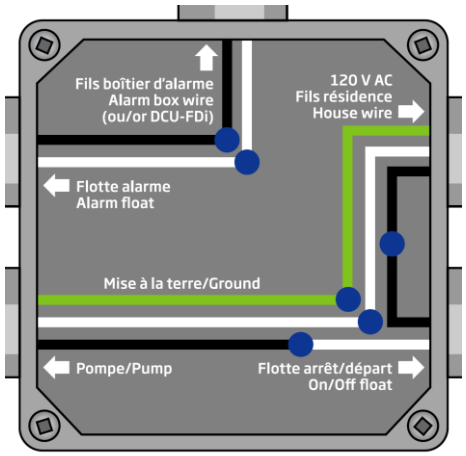
Step 2 Electrical wiring

The electrical wiring should be executed by a professional electrician. To wire the system to the residence, two (2) in-ground double strand supply cables are required. It is preferable to protect the wires with the appropriate piping before burying them. The wire rating must also be done by a professional electrician. One of the wires will be used for the power supply line while the other one will send the alarm float signal to the alarm box (**Item S**) or control panel (when required).

Waterproof electrical connectors (**Item T**) must be used to go through the secondary access. The wires must pass under the groove in the access. See the secondary access diagram below.

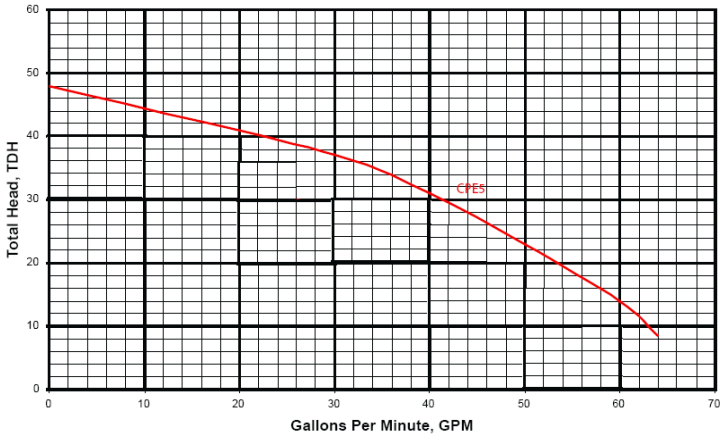
IF YOUR LOCAL ELECTRIC CODE ALLOWS IT make the appropriate electrical connections using the supplied parts (junction box (**Item U**), waterproof screw-thread wire connectors and electrical connectors (**Item T**)) located in the components box. First, remove the connector plugs from the float and pump wires by cutting 5 cm (2") from the end. Make 2 holes of 2 cm (13/16") in diameter in one side of the main access well to pass the connectors through to the other side. Insert the wiring into the system through the 2 holes. The junction box is located in the main access on the insulating board. Identify and insert the wires into the junction box as shown in the diagram below. Use waterproof screw-thread wire connectors for the connections to ensure the water does not affect the electrical circuit. Follow the diagram's colour code. As well, since the white wire of the On/Off float is connected to the pump's black wire (live wire), wrapping the white wire in black electrical tape is strongly recommended. Close the junction box. Pass the electrical wires from the pumping unit through the groove in the insulating board. Place the insulating board inside the access, install the junction box on top and close the lid.

NOTE: Use two (2) separate circuit-breakers, one for the electrical power of the pump and the other for the alarm box connection. Do not connect anything else on these circuit-breakers (for example: household appliance). They must be used for the pump and the alarm box only.



The pumping unit uses 0.30 kWh of power per day.

The figure on the right represents the performance curve of the pump supplied with the Ecoflo® Coco Concrete with integrated pump. Note that this curve was obtained with clear water; the pump might not perform as well with wastewater. If you have any questions about the interpretation of this curve, please do not hesitate to contact Premier Tech Aqua.



Pump characteristics:

- 0.5 HP
- 8.5 Amps
- 1 phase, 60 Hz, 115 V

2.9 System operation verification and warranty seals

After making sure the tipping bucket is fully operational and that the distribution plates are installed properly, install the insulating board inside the main access. Seal it shut by attaching the handle of the insulating board to the access of the **Ecoflo® Coco Concrete** using the two plastic fasteners. Finally, close the lid of the **Ecoflo® Coco Concrete.**

To see the video of the installation of a Concrete Ecoflo Coco Filter visit:
https://youtu.be/73uVAevQ3nw

Don't forget the inspection permit, where applicable.

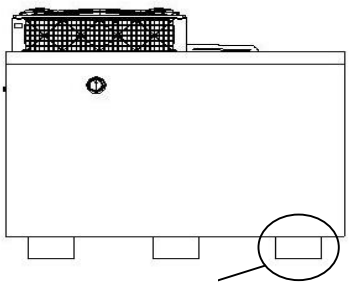
3. Storage

3.1 Components to be cast in concrete & components to assemble

- Store the pallets containing the internal components in a location that is sheltered from the weather; pallets containing components to be cast in the concrete tank can be stored outside.
- To prevent deterioration, the pallets containing the filtering media must be placed on well-drained soil.

3.2 Assembled Ecoflo® Coco Concrete Unit

- The assembled Ecoflo® Coco Concrete must rest on wood beams in order to not sit directly on the ground.
- Each assembled Ecoflo® Coco Concrete contains distribution plates, a tipping bucket, 1 or 2 support bar(s), a support plate, a pump and drainage vaults, an inlet pipe, a pump unit with a float tree, a pressure flow divider, a control panel and a bag containing the Owner's manual.



wooden beam

4. Handling and Shipping

4.1 Transportation of the unit from the manufacturer to the installation site

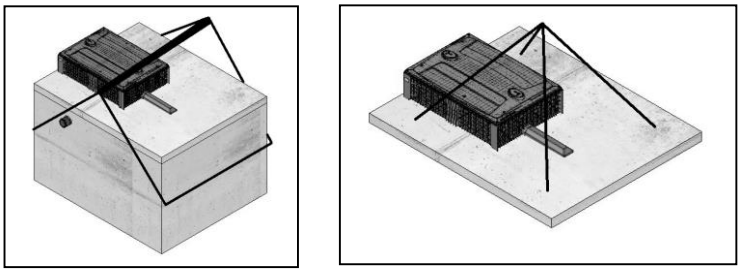
- Use a vehicle with enough space to load the unit without any part of it extending outside of the vehicle.
- The vehicle must have the capacity to unload the unit at the appropriate location on the installation site.
- Make sure the Ecoflo® Coco Concrete is properly tied down with appropriate straps.
- The transporter is responsible for any damage. He must also respect the regulations of the highway code and all traffic laws.

4.2 Handling

- The concrete tank and the top tile can be moved when they are assembled or still separate.
- Only one unit can be moved at a time.
- Use only lifting equipment with appropriate lifting capacity.
- Always keep the tank levelled when handling.
- Make sure no one is inside the tank while it is being handled.
- Apply appropriate security measures to ensure maximum safety.

4.2.1 Suggested handling method

- To handle the concrete tank and the top tile together, use the lifting grooves and attach chains to both ends of the tank (if possible).
- To handle the concrete tank and the top tile separately, you may use hoisting rings or the lifting grooves.
- If the tank and top tile are handled separately, make sure to place lid on a levelled surface to avoid damage.
- When using the anchor rings, make sure to use all 4 rings and chain sections of equal length.
- Avoid using handling methods that might damage the material.
- The on-site handler is responsible for any damage to the material caused by his handling of it.



Suggested handling methods for the Ecoflo® Coco Concrete unit

4.3 Load configuration

- **The load configuration depends on the type of vehicle used to transport the Ecoflo® Coco Concrete to the installation site.**
- Consult the Technical Data Sheet of the specific Ecoflo® Coco Concrete to be handled for the minimum surface area required for the vehicle so that the Ecoflo® Coco Concrete can fit inside without any part extending outside.

CHECK POINTS FOLLOWING INSTALLATION AND SYSTEM START-UP:

- ❑ Make sure the different installation steps described in section 2.1 to 2.5 above are duly completed prior to start-up. Start-up does not requires any other specific actions.
- ❑ NEVER open the lids or go inside the primary/septic tank or biofilter once the installation is complete.
- ❑ NEVER cover or bury the lids of your septic system with mulch, soil or a permanent structure. Always keep the lids accessible.
- ❑ Never install the Ecoflo® Coco Concrete unit infiltration area within 2 m (6.5') of a tree.
- ❑ It is possible to add an extension (riser) to the Ecoflo® Coco Concrete unit accesses. **The soil layer above the top tile must be 500 mm (20") thick maximum. Use the STR-080 extension kit. Use ONLY ONE (1) extension per access.**
- ❑ Make sure the maximum seasonal groundwater table level is below the shell's inlet pipe at all times (unless a drain has been installed).
- ❑ NEVER connect a drain pipe, roof gutter, sump pump or air conditioning drain to your septic system.
- ❑ NEVER empty the backwash of a spa or pool into your septic system
- ❑ NEVER empty wastewater of a recreational vehicle (camping trailer, caravan, etc.) into your septic system.
- ❑ If there is a delay in finishing the landscape after the initial installation of the system, place reference posts and protective fences to identify the location of the Ecoflo® Coco Concrete unit. This will prevent any circulation on the unit and help indicate the system's final level.
- ❑ NEVER use automatic toilet cleaners.
- ❑ NEVER let anything accumulate on top of your septic system (for example: compacted snow). The overload could damage the system.
- ❑ Never operate a vehicle or place objects weighing over 225 kg (500 lbs) within 5 m (16.5') of the lid. Pass on this information to all those who have access to your system (landscaper, snow blower, etc.).
- ❑ Households must be equipped with an air vent that is in proper working condition and complies with the applicable standards. Premier Tech Aqua strongly recommends using a 100 mm (4") Ø pipe.
- ❑ Hand over the package containing the Owner's Manual and the Maintenance Agreement to the customer.
- ❑ Remind the customer to fill out and sign the Maintenance Agreement. The customer must keep the white copy, give the yellow copy to the municipality, and send the pink copy to Premier Tech Aqua.

By respecting these guidelines, you are contributing to the proper operation of your wastewater treatment system. Failure to abide by these guidelines may, at Premier Tech Aqua's discretion, render the warranty invalid.

If you have any problems, questions or comments, do not hesitate to contact Premier Tech Aqua at 1 800 632-6356.

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