

# Ecoflo® Peat Filter systems (Concrete)

Owner's manual – USA-NSF

*Congratulations on your purchase of an Ecoflo® Peat filter system. In choosing the Ecoflo® Peat filter system from Premier Tech Environment (PTE), you have wisely chosen to protect your health as well as the environment. This manual contains information on system operation and maintenance, guidelines for use and warranties for models STB-650B (without integrated pump) or BR (with integrated pump), H1, H2, or H3 (different heights), -1,-2, or -3,(quantity of Peat Filters) A or NA (assembled or not assembled) certified under the NSF Standard 40. For additional information, contact our customer service at 1 800 6Ecoflo (800 632-6356).*

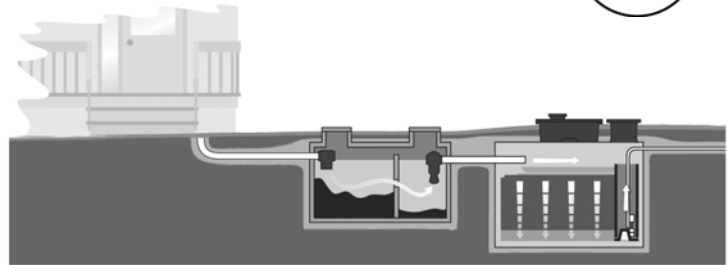
## System description and Operating principle

The Ecoflo® Peat filter system is a wastewater treatment system designed to treat domestic wastewater. Your complete Ecoflo® Peat filter system includes a septic tank, an effluent filter, one or more Peat Filters and, depending on the type of installation, a pumping station and a flow divider.



### System description

The Ecoflo® Peat Filter is made of a concrete shell enclosing a natural filtering media composed of two specific layers (bottom and top layers) especially selected to treat residential wastewater. Two polyethylene lids securely fastened limits the accesses to the system. Under the main and secondary access lids is located an insulating board that deflects the incoming air into 2 aeration channel to feed the filtering media. That lid also insulates the inside parts of the system.



The Ecoflo® Peat filter system has been tested and listed under standard 40. Each model of Ecoflo® Peat filter described here meets Class I requirements as per ANSI/NSF standard 40.

### Operating principle

To be treated, the wastewater goes first into the septic tank where it is submitted to a primary treatment. Then it goes through the effluent filter, to prevent solids discharge to the effluent, and in the flow regulator to restrain the flow rate reaching the Ecoflo® Peat Filter. Once inside the Ecoflo®, the water is directed into the tipping bucket in order to be split equally over the distribution plates located on both sides of the central support plate. These plates include channels with orifices to distribute the effluent evenly on top of the filtering media. Afterwards, wastewater trickles down into the filtering media where its organic content is consumed by bacteria. The treated effluent is collected in the gravel bed and evacuated by gravity (STB-650B series) or with an integrated pump (STB-650BR series).

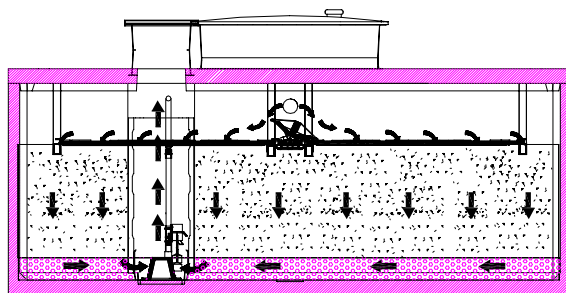


Figure 1 Water flow diagram  
(STB-650BR series with integrated pump)

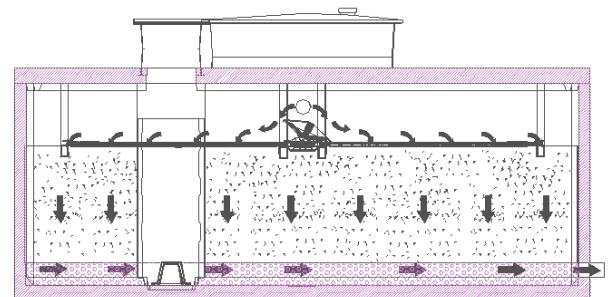


Figure 2 Water flow diagram  
(STB-650B series with gravity discharge)

Please take note that for models STB-650BR-H2/H3 series-A/NA the diagram differ slightly regarding the aeration and drainage system but the same operating principle applies.

# Model description

## Ecoflo® Peat filter

There are actually eight (8) different models of **Ecoflo® Peat filter with concrete tank** available. In the Table 1 below, you will find the complete nomenclature of the system.

**Table 1**

<b>Ecoflo® Peat Filter Concrete - Systems description</b>	
STB-650B	Gravity effluent discharge (depending on site condition)*
STB-650BR	Subsurface Pressurize (pump) effluent discharge (depending on site condition)
H1, H2, H3	Height of the system (refer to Tables in the Installation Guide for details)
A	System assembly done at the plant (crushed stone and filtering media installed)
NA	System assembly completed on site
1,2,3	Quantity of Ecoflo® Peat Filters

\*Important: Gravity effluent discharge is available only in the STB-650B-H1-A/NA configuration.

Regarding the effluent discharge, there are two types of Ecoflo® Peat Filters (STB-650B and STB-650BR). The first one has an effluent discharged by gravity to a pumping station, a disposal field, a tertiary treatment or directly to a watercourse. The second one has a pump station included in the system that directs the treated effluent to a disposal field, a tertiary treatment or a direct discharge to a watercourse.

There are also 3 heights of Ecoflo® Peat filter available depending on the local regulation. Models are H1, H2 and H3. They all have the same hydraulic loading rate, a nominal surface area of 70 ft<sup>2</sup> allowing a flow rate of 600 gal/d. Models H2 and H3 have a longer retention time capacity to adapt to local regulations.

Also, there are two different types of assembly of the systems. The letter **A** stands for a completely assembled system shipped to the customer for installation with crushed stone and filtering media already inside the Ecoflo® Peat filter, leaving only the distribution components installation and the in-ground installation. The letters **NA** stand for a system shipped without the crushed stone and the filtering media inside the Ecoflo® Peat filter. These components are set in place on site.

The quantity of Ecoflo® Peat filters per system is indicated by the numbers 1,2,3.

## Capacity

The models and components of the **Ecoflo® Peat filter systems** are described in the Tables below.

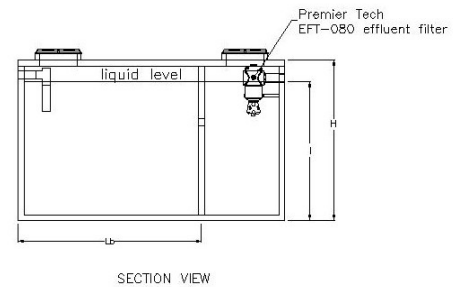
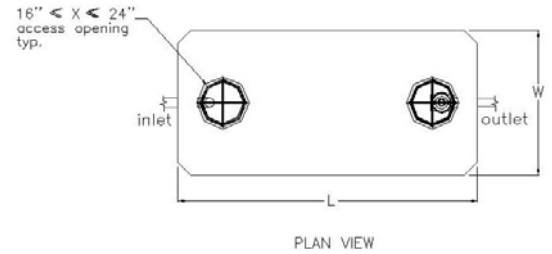
**Table 2 Ecoflo® Peat filter systems**

<b>Ecoflo® Peat filter system</b>	<b>Flow rate (gpd)</b>	<b>Septic tank capacity (gal)</b>	<b>Effluent filter model</b>	<b>Number of Ecoflo® Peat filter</b>
STB-650B/BR-H1/H2/H3-A/NA-1	600	1000	EFT-080R	1
STB-650B/BR- H1/H2/H3-A/NA-2	1200	2000	EFT-080RH	2
STB-650B/BR- H1/H2/H3-A/NA-3	1500	2500	EFT-080RH2	3

**Table 3 Septic tank**

The septic tank included in your Ecoflo® Peat filter system respects the following specifications.

Criteria <sup>1</sup>	Objectives		
Shape	Rectangular		
Length to width ratio <sup>2</sup>	$1.4 \leq L/W \leq 2.8$		
Liquid level	$l \geq 36''$		
Air space over liquid level	$a \geq 7''$		
Access over inlet and outlet	$16'' \leq x \leq 24''$ (circular or rectangular)		
Internal baffle location from the inlet side ( $\pm 5\%$ )	$0.5 \leq L_b/L \leq 0.7$		
Invert of the opening(s) in internal baffle (from the bottom of the tank)	$\geq 20''$		
Inlet device	Baffle, tee or elbow <sup>3</sup>		
	1000 gal	2000 gal	2500 gal
Length (L)	$95'' \leq L \leq 130''$	$135'' \leq L \leq 165''$	$135'' \leq L \leq 165''$
Width (W)	$47'' \leq W \leq 72''$	$62'' \leq W \leq 87''$	$62'' \leq W \leq 87''$
Height (total) (H)	$47'' \leq H \leq 75''$	$60'' \leq H \leq 85''$	$70'' \leq H \leq 95''$
Liquid level (l)	$36'' \leq l \leq 60''$	$45'' \leq l \leq 65''$	$60'' \leq l \leq 80''$
Outlet device ( Could be inside or outside the septic tank <sup>4</sup> )	EFT-080R effluent filter	EFT-080RH effluent filter	EFT-080RH2 effluent filter



1: Based on CSA and/or BNQ criteria and/or state regulation.

2: Based on external dimensions.

3: Minimum diameter of 4 inches for tee and elbow.

4: If the effluent filter is located in a separate container (such as PTE's TLF-240) after the septic tank, it could be the same type of device as specified for the inlet.

**Tank material**

The tank material must be made of concrete or polyethylene and respect the specifications described hereunder:

**Concrete**

- 28 days minimum compressive strength  $\geq 4600$  psi;
- The thickness of walls, top and bottom are at least 3 inches;
- Tank is reinforced to resist without structural cracking stresses caused during handling and installation;
- All reinforcements have a clear cover of at least 1 inch.

**Polyethylene**

- Polyethylene comply with ASTM Standard D 1248, Class B (requiring an ultraviolet stabilizer) or Class C (requiring a minimum of 1% carbon black);
- Stress crack resistance  $\geq 150h$  when measured in accordance with ASTM Standard D 1693;
- The thickness of walls, top, bottom and lids is at least  $3/16$  inch.

**Quality control program**

Septic tanks are subjected to a quality control program by the manufacturer. It consists of controlling:

- raw material in terms of specifications described above;
- wall thickness;
- watertightness;
- septic tank assembly.

## Guidelines for Use

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The Ecoflo® Peat Filter is a biofiltration system designed to treat domestic wastewater from a residential house. It is installed downstream of the septic tank equipped with an effluent filter and a flow regulator. It can also be used to treat wastewater from commercial, communal and municipal projects. Please refer to the Commercial Design Guide for more information.

**To ensure optimum treatment efficiency and operation of any septic installation (Ecoflo® Peat filter, leach field, etc.):**

**Do not discharge any of the following substances into the sewer:**

- water softener backwash
- oil and grease (engine oil, cooking oil, etc.)
- wax and resins
- paint and solvents
- petroleum products
- pesticides of any kind
- any kind of septic tank additive
- toxic substances
- anything not easily biodegradable (e.g. coffee beans, cigarette butts, sanitary napkins, tampons, condoms).



**AND NEVER:**

- **cover or bury the access lids of the Ecoflo® Peat filter system**
- **plant trees within 10' of the Ecoflo® Peat filter**
- **open or enter the Ecoflo® Peat filter system without prior authorization**
- **connect a drainage pipe, roof gutter or sump pump to the septic system.**
- **using an automatic toilet bowl cleaner**
- **using a garbage disposal or sewage pump (upstream of the septic tank)**

**Note:**

There is **no special** action required if the system is to be used intermittently or if extended periods of non-use are anticipated

### **Keep heavy weights off your septic installation**

Never drive vehicles or place objects weighing over 500 lbs within 6' of the lid. If you are planning to do some landscaping or any other type of work, **make sure you advise those involved** so they do not damage your septic system.

**Do not shovel or blow snow so that it accumulates on top of the septic system.** The overload could cause damage. Mark/indicate the location of system components.

### **Concerning your home**

Your home must be equipped with a working air vent, and plumbing must conform to the local building Code. Any change in the use or function of your home, or any modification to your **Ecoflo® Peat filter system** must be authorized by the local authorities, and **Premier Tech Environment** must be informed. The warranty for the **Ecoflo® Peat filter system** will be void if this condition has not been fully respected.

# Maintenance

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## Ecoflo® Peat Filter

The owner of a biofiltration system **shall follow the manufacturer's recommendations respecting maintenance of the system**. For that purpose, he must at all times have a valid contract with the manufacturer or its representative, and **a copy of the contract must be filed with the local authorities** where the system is located.

Because maintenance is essential to the proper functioning of the **Ecoflo® Peat Filter**, it comes with a **maintenance agreement** binding **Premier Tech Environment** to service the Ecoflo® Peat Filter for a limited period of time following its installation (please see maintenance agreement for more details). Every **Ecoflo® Peat filter system** sold has to be serviced annually for the duration of its useful life.

**Bi-annual maintenance** for the first two (2) years and annual maintenance for the following six (6) years (5 annual services) are carried out by **Premier Tech Environment** or an authorized agent. This service includes a visual inspection of all components to ensure the system is functioning properly and an effluent quality inspection consisting of a visual assessment for color turbidity and an olfactory assessment for odor. It also includes the raking of the filtering media on an annual basis and the cleaning of the tipping bucket failure sensing device. You will be given a maintenance record after each inspection, which you shall keep with this manual in a safe place. If a problem is observed during the inspection that cannot be remedied at the time of the inspection, the maintenance record will include an estimated date of correction.



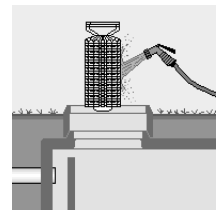
**The filtering media should normally be replaced** every eight (8) years at the most, depending on use and compliance with the above guidelines. The filtering media is easily pumped out with a regular sewage disposal truck. The replacement media must be installed by an authorized agent. Easy access to the lids is essential for maintenance purposes. If the peat filter is still in good conditions, it is possible to extend the initial maintenance agreement on a case by case basis.

## Septic tank

Emptying your septic tank as instructed helps keeping your septic system in proper working order. We recommend that you keep proof of pumping (invoice) with this owner's manual so as to keep a record of complete system maintenance. The pumping standards of the septic tank prescribed by local authorities must be respected. For main residences, the septic tank should be inspected yearly. It should be pumped out (first and second compartments) at least every 2 years or when a maximum depth of sludge of 20 inches is reached in the first compartment, whichever comes first. However, when a by-law governing the pumping of septic tanks has been adopted by a municipality or county, a septic tank may need to be pumped out after measuring the scum or sludge layer. Consult your local regulations for prescribed inspection and pumping frequency.

## PTE's effluent filter EFT-080R (H/H2)

We recommend an inspection of the filter once a year. Cleaning of the effluent filter should be done each time the septic tank is pumped. However, the frequency of maintenance will depend on wastewater flow, regulation requirement and the type of establishment. Pull the cartridge out of its container and gently hose it off to remove any scum. You must do this while holding the filter over the septic tank first compartment so that scum washes back into the tank.



## Visual and audio alarm Unit

The **Ecoflo® Peat filter system** is equipped with a high-water level alarm float fixed to the effluent filter and another one is included in the Ecoflo® Peat filter. A third alarm float is located in the pumping station of the STB-650BR series only. All floats are connected to an alarm panel. This panel must be installed inside the residence so the alarm can be heard as soon as it comes on. The operation of this unit is described below.

If water reaches an unusually high level, the visual and audio alarm comes on. To turn it off, push the "SILENCE" button. It is important to note that this will not solve the problem. If this situation happens, call a service representative right away. You can test the alarm system to make sure it is operating properly by pushing the "TEST" button; the visual and audio signals should come on.



# What to do in case of...

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## **Flooding**

Certain sites are prone to flooding or phreatic rise, which can cause malfunctioning of the Peat Filter or any other septic system. If this happens, contact **Premier Tech Environment**.

## **Backflow**

Backflow rarely occurs in homes. It is generally caused by the septic tank. If it happens, the visual and audio alarms will come on. Your septic system installer or septic tank pumper can usually tell you what to do.

## **Odors**

The positioning of the air vent, as well as other factors unrelated to the Peat Filter, can prevent proper dispersion of septic gases and lead to odors. If this happens, contact **Premier Tech Environment** for solutions.

To obtain information such as serial number, system capacity, system classification or service, you should refer to the system data plate located on the alarm panel or inside the main access. To access the system data plate in the Ecoflo<sup>®</sup> Peat Filter main access, you have to unscrew the lag screws located at the corner of the lid. Do not remove the blue insulating board located inside the main access which sealed the Peat Filter with Premier Tech ty-raps.

**For any problem, broken or missing part,  
contact our customer service at 1-800 632-6356**

For further information or comment, please contact our customer service:



1, avenue Premier, Rivière-du-Loup (Québec) G5R 6C1 CANADA

☎ 1 800 632-6356 / 418 867-8883

☎ 418 862-6642

@ PTE@PREMIERTECH.COM

WWW.PTEENV.COM

The content of this guide is based upon the latest information available at the time of printing and is aimed at providing a general introduction to Premier Tech's products. No warranty or representation is hereby made by Premier Tech as to the accuracy of said information. Premier Tech is continually updating and improving its products and reserves the right to amend, discontinue, alter or change specifications and prices without prior notice.

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# Certificate of Warranty for Ecoflo<sup>®</sup> Peat filter system

## 1. Preamble

Premier Tech Technologies Ltd. (hereinafter referred to as "Premier Tech") is proud to provide its customers with an exclusive wastewater treatment system guaranteed by an innovative warranty.

For the purposes of this warranty, "Customer" shall mean the person who has acquired (hereinafter called "Initial Purchaser") an Ecoflo<sup>®</sup> Peat filter system STB-650B-H1-A-1, STB-650B-H1-A-2, STB-650B-H1-A-3, STB-650B-H1-NA-1, STB-650B-H1-NA-2, STB-650B-H1-NA-3, STB-650BR-H1-A-1, STB-650BR-H1-A-2, STB-650BR-H1-A-3, STB-650BR-H1-NA-1, STB-650BR-H1-NA-2, STB-650BR-H1-NA-3, STB-650BR-H2-A-1, STB-650BR-H2-A-2, STB-650BR-H2-A-3, STB-650BR-H2-NA-1, STB-650BR-H2-NA-2, STB-650BR-H2-NA-3, STB-650BR-H3-A-1, STB-650BR-H3-A-2, STB-650BR-H3-A-3, STB-650BR-H3-NA-1, STB-650BR-H3-NA-2, STB-650BR-H3-NA-3, certified by NSF, which may be composed, depending on the type of system, of a EFT-080R, EFT-080RH or EFT-080RH2 effluent filter and a septic tank (the whole system being hereinafter referred to as "Ecoflo<sup>®</sup> Peat filter system"), as well as any Subsequent Purchaser (hereinafter called "Subsequent Purchaser(s)"), according to the dispositions of paragraph 8 of this present warranty. "Successor(s)" shall mean any other person entitled to exercise Customer's rights under the law.

## 2. Nature of the Warranty

Premier Tech warrants the components of its Ecoflo<sup>®</sup> Peat filter system as follow:

- Premier Tech warrants that the filter bed(s) of the Ecoflo<sup>®</sup> Peat filter system will function properly for a period of eight (8) years starting on the date of its installation.
- Premier Tech warrants its EFT-080R, EFT-080RH and EFT-080RH2 effluent filter (parts) against manufacturing defects for a period of two (2) years from the date of its installation.
- Premier Tech warrants its septic tank PST-500 (parts) against manufacturing defects for a period of fifteen (15) years from the date of its installation.
- Premier Tech warrants any other type and model of septic tank against any manufacturing defects for a period of two (2) years from the date of its installation, provided that such septic tank complies with Premier Tech's specifications (SPEC), as detailed in the owner's manual.
- Premier Tech also warrants the concrete components and other components of the Ecoflo<sup>®</sup> Peat filter system, except the pump included in models STB-650BR, against any manufacturing defects for a period of ten (10) years starting on the date of purchase by the Initial Purchaser. The pump included in models STB-650BR is guaranteed for two (2) years, parts and labor, starting on the date of purchase by the Initial Purchaser.

The date of installation shall be the date written on the maintenance agreement.

This warranty of effectiveness, sound manufacture and durability is given by Premier Tech to the Customer in addition to the legal warranty or other Customer's rights in accordance with any applicable law, but does not alter them in any way and is a conventional warranty applicable under the terms and conditions of this warranty certificate.

This conventional warranty of Premier Tech is expressly limited to the text of this certificate and is valid if the installation of the Ecoflo<sup>®</sup> Peat filter system has been made in accordance with applicable regulations and with the manufacturer's recommendations.

## 3. Notice

For this warranty to be valid, the Customer must notify Premier Tech in writing immediately upon the appearance of any indication of an anomaly or irregularity in the Ecoflo<sup>®</sup> Peat filter system.

Such notice must be given by mail to Premier Tech's head office at 1, avenue Premier, Rivière-du-Loup, Québec, G5R 6C1, CANADA or by facsimile at (418)-862-6642.

Upon receipt of this notice, Premier Tech will examine the situation and, if necessary, take appropriate corrective measures in accordance with the terms of the present warranty.

## 4. General Exclusions

The following damages or problems are excluded from the warranty:

- (a) Any damage or problem caused by a fortuitous event or "force majeure", such as, without limiting the generality of the foregoing, earthquake, flood, hurricane, landslide, explosion or dynamiting;
- (b) Any damage or problem caused by the fault or act of a third party;
- (c) Any damage or problem arising from a defective installation carried out by an Ecoflo<sup>®</sup> installer, or any installation, modification, correction or addition not carried out by an Ecoflo<sup>®</sup> installer;
- (d) Any damage or problem arising from any installation, modification, correction or addition to the Ecoflo<sup>®</sup> Peat filter system carried out after installation of the Ecoflo<sup>®</sup> Peat Filter system without Premier Tech's prior written approval;
- (e) Any damage or problem caused by the use of a septic tank which does not comply with any applicable regulations and/or with Premier Tech's specifications (SPEC), as detailed in the owner's manual;
- (f) Any damage or problem, if it is demonstrated that the Ecoflo<sup>®</sup> Peat filter system was not used in accordance with the instructions guidelines contained in the owner's manual;
- (g) Any damage or problem, if the maintenance of the Ecoflo<sup>®</sup> Peat filter system has not been executed by a person authorized by Premier Tech in accordance with the maintenance agreement;

# Certificate of Warranty for Ecoflo® Peat filter system

- (h) Any damage or problem caused by the fault or action of the Customer or the Customer's Successors including, without limiting the generality of the foregoing, refusal to allow access to the system for maintenance;
- (i) Any damage or problem, if it is found that the Customer has modified or changed the use of the property served by the Ecoflo® Peat filter system resulting in the alteration of the nature or quality of wastewater being treated and/or that constitutes a violation of the applicable regulations;
- (j) Any damage or problem caused during the works performed in order to access to the Ecoflo® Peat filter system, including, without limiting the generality of the foregoing, excavation, snow-removal or demolition.
- (k) Any damage or problem arisen from site and/or soil prior condition not reported or not properly reported to Premier Tech by the Customer or the person performing the site investigation.

## 5. Particular Exclusions

It is further expressly understood that the Customer may not carry out or cause to be carried out any repair or verification of the Ecoflo® Peat filter system sold, or attempt to carry out any work whatsoever to apply any corrective measures whatsoever to said work, before notifying Premier Tech in accordance with the provisions of section 3 of this warranty and before Premier Tech has visited the site to verify the situation, within reasonable time following receipt of said notice.

If the Customer carries out or causes to be carried out repairs, or attempts to repair or to apply corrective measures of any kind whatsoever to the Ecoflo® Peat filter system sold, without prior authorization from Premier Tech, this warranty shall be considered null and void and Premier Tech shall be considered completely discharged from any and all of its obligations under this warranty.

## 6. Indemnities and Damages

Premier Tech's liability and obligations under this warranty shall be in any event limited to the replacement of the filtering media and/or of one or several components of the Ecoflo® Peat filter system as well as the supply of the required labour, if applicable, in accordance with sections 3 and 4.

## 7. Limitation of liability

Premier Tech may in no way be held liable for any other damage sustained by the Customer. Premier Tech's compensation or indemnification obligation shall be limited to the provisions of section 6 of this warranty.

## 8. Transfer of Ownership

In the event of transfer of ownership, sale, assignment or disposition in any other way of Customer's property to a third party, this warranty shall continue to apply only if the Subsequent Purchaser or its Successor confirms, by transmitting to Premier Tech the attached "Notice of Warranty Transfer", within a reasonable delay, that he/she is the new owner of the property, he/she understands and is aware of the content of this warranty certificate and accepts its terms and conditions.

The person proceeding to the transfer of the property, sale, assignment or any other type of disposition, undertakes to hand over to the Subsequent Purchaser or its Successor, the warranty certificate remitted upon completion of the work, as well as the owner's manual and, when applicable, the maintenance and environmental monitoring program for the Ecoflo® Peat filter system.

Default to respect the conditions of the present Section 8 may cause, at Premier Tech's discretion, abandonment or rejection of the present warranty.

## 9. Inspection

The Customer shall allow Premier Tech or its duly authorized representative to carry out all necessary monitoring and inspection as required for implementation of this warranty.

If the Customer or the Customer's Successor requests he execution of the present warranty and that it is found after inspection and verification that the Ecoflo® Peat filter system is performing in accordance with the standards and specifications of Premier Tech, a minimum charge of one hundred fifty U.S.dollars (\$ 150.00 US) plus direct expenses shall be paid by the Customer and/or the Customer's Successors for the cost of such inspection. Otherwise, no charge shall be billed by Premier Tech.

## 10. Priority of the Certificate of Warranty

This warranty supersedes any contract or understanding, written or verbal, entered into between the Customer and Premier Tech.

In case of contradiction between this warranty and any other documents and/or contracts entered into between the Customer and Premier Tech, this warranty shall prevail.

## 11. Subsequent Purchasers and Successors

Subject to the provisions of this warranty and of section 8 in particular, this warranty shall continue to apply to the Subsequent Purchasers and Customer's Successors and shall continue to have full effect until the end of the agreed warranty period provided for in section 2 of this certificate.



**Notice of Warranty Transfer**

Name of the previous Owner : \_\_\_\_\_

I, the undersigned \_\_\_\_\_ hereby declare that I have acquired the property located at

\_\_\_\_\_ *number street* \_\_\_\_\_ *City* \_\_\_\_\_ *Province*

\_\_\_\_\_ *Postal code* \_\_\_\_\_ *( )* \_\_\_\_\_ *Phone number*

I have read and I understand the warranty provided by Premier Tech Technologies Ltd for the Ecoflo® Biofilter. I wish to benefit from this warranty for the remaining period, if any, and from the date of the transfer of ownership, that is \_\_\_\_\_; I accept to be bound by this warranty and by any and all of the clauses, undertakings and conditions set forth therein; I have had the opportunity to examine the Ecoflo® Biofilter and declare myself satisfied with it at the time of this transfer. I ask Premier Tech Technologies Ltd to take note of this transfer of ownership.

Signature of new owner: \_\_\_\_\_ Date : \_\_\_\_\_

Name of new owner: (print) \_\_\_\_\_

New owner's E-mail address: \_\_\_\_\_  
(if available)