

Ecoflo[®] Peat Filter systems (Fiberglass)

Owner's manual – USA-NSF

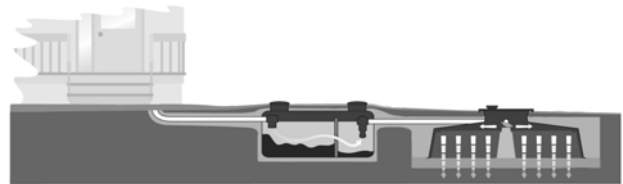
Congratulations on your purchase of an Ecoflo[®] Peat filter system. In choosing the Ecoflo[®] Peat filter system, you have wisely chosen to protect your health as well as the environment. This manual contains information on system operation and maintenance, guidelines for use and warranties for models ST-500/650(-1,-2,-3) et STB-500/650 (-1,2,3). For additional information, contact our customer service at 1 800 6 Ecoflo (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 fiberglass shell including a natural filtering media especially selected to treat residential wastewater. A polyethylene lid securely fastened limits the access to the system. Under that lid is located a security panel 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.

Inside the Ecoflo[®] Peat filter, a central support acts as a stand for the tipping bucket that split equally the influent on both sides of the central support. Four distribution plates (2 on each side of the central support) including holes are located over the filtering media and feed it uniformly with wastewater.

Operating principle

To be treated, the wastewater goes first into the septic tank where it is submitted to a primary treatment. Then it goes across the effluent filter to prevent solids discharge to the effluent before reaching the Ecoflo[®] Peat filter. Once inside the Ecoflo[®], the water is directed into the tipping bucket in order to be split equally on the distribution plates located on both sides of the central support. These plates include channels and orifices that distribute uniformly the effluent on the top of the filtering media. Then, wastewater trickles down into the filtering media where its organic content is consumed by the bacteria before entering the absorption bed located underneath or being collected to be discharged elsewhere (if possible into a watercourse or in an other leaching field)

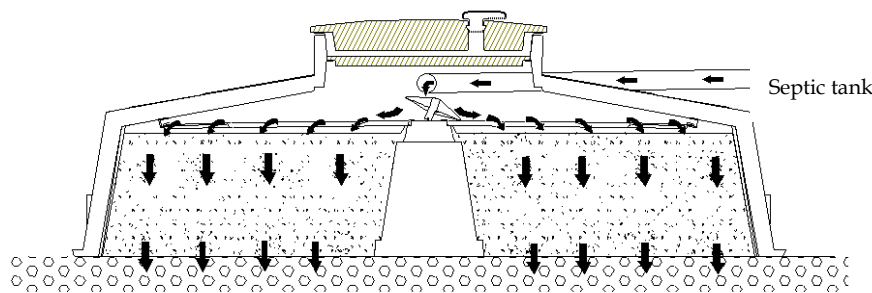


Figure 1 Water flow inside the Ecoflo[®] Peat filter

Model description

Capacity

The components of model the **Ecoflo® Peat filter systems** are described in the tables below.

Table 1 Ecoflo® Peat filter systems with opened bottom

Ecoflo® Peat filter system	Flow rate (gpd)	Septic tank capacity (gal)	Effluent filter model	Number of Ecoflo® Peat filter	
				Model 500	Model 650
ST-500-1	420	1000	EFT-080R	1	-
ST-650-1	600	1000	EFT-080R	-	1
ST-500-2	840	2000	EFT-080RH	2	-
ST-650-2	1200	2000	EFT-080RH	-	2
ST-650-3	1500	2500	EFT-080RH2	-	3

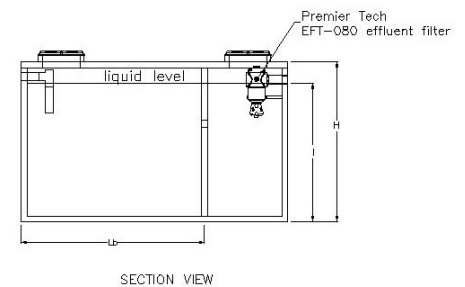
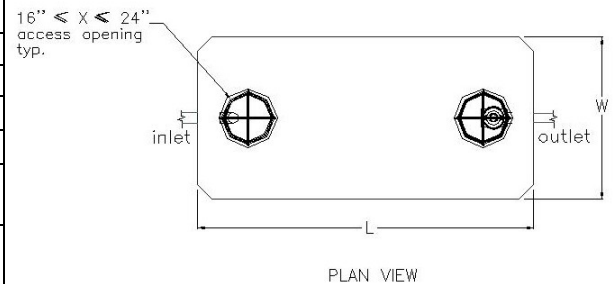
Table 2 Ecoflo® Peat filter systems with closed bottom

Ecoflo® Peat filter system	Flow rate (gpd)	Septic tank capacity (gal)	Effluent filter model	Number of Ecoflo® Peat filter	
				Model 500	Model 650
STB-500-1	420	1000	EFT-080R	1	-
STB-650-1	600	1000	EFT-080R	-	1
STB-500-2	840	2000	EFT-080RH	2	-
STB-650-2	1200	2000	EFT-080RH	-	2
STB-650-3	1500	2500	EFT-080RH2	-	3

Septic tank

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

Criteria ¹	Objectives		
Shape	Rectangular		
Length to width ratio ²	$1.4 \leq L/W \leq 2.8$		
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 ³		
	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 ⁴)	EFT-080R effluent filter	EFT-080RH effluent filter	EFT-080RH2 effluent filter



1: Based on CSA and/or BNQ criteria and/or on 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 Premier Tech 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 ≥ 3600 psi
- The thickness of walls, top and bottom are at least 3 inches;
- Tanks is reinforced to resist without structural cracking stresses caused during handling and installation;
- All reinforcement have a clear cover of at least 1 inch.

Polyethylene

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

Ecoflo[®] Peat filter

There are actually four different models of Ecoflo[®] Peat filter available.

Regarding the effluent discharge, there are two types of Ecoflo[®] Peat Filters. The first one has an opened bottom allowing the effluent disposal by infiltration directly underneath the filtering media. The second one includes an impermeable bottom able to collect and direct the treated effluent to a disposal field, a tertiary treatment or a direct discharge to a watercourse. These models are identified by two letters: ST (open bottom) and STB (collecting bottom).

There are also two sizes of Ecoflo[®] Peat filter that are currently available which are the ST(B)-500(1,2,3) and ST(B)-650(1,2,3). Both sizes have the same hydraulic loading rate. The ST(B)-500 series have a nominal filtering area of 49 ft² allowing a flow rate of 420 gal/d and the ST(B)-650 series have a nominal surface area of 70 ft² allowing a flow rate of 600 gal/d.

The quantity of Ecoflo[®] Peat filters per system is indicated by the numbers 1,2,3. All of these models include a shell made of fibreglass.

Guidelines for Use

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. It can also be used to treat wastewater from Commercial, Communal and Municipal project. 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.), you should always:

Avoid discharging 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).



Avoid :

- using an automatic toilet bowl cleaner
- using a garbage disposal or sewage pump (upstream of the septic tank)

And never:

- cover or bury all 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 or roof gutter to the system.

Note:

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

What You Should Know

Keep heavy weights off your septic installation

Never drive vehicles or place objects weighing over 500 lb. within 10' 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

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 in which 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, free of charge 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 years and annual maintenance for the following 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 failure sensing device of the tipping bucket. 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.

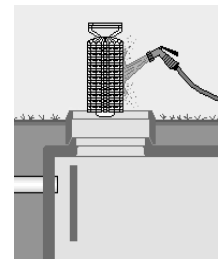
The filtering media should normally be replaced every eight (8) years at the most, depending on use and compliance with the above guidelines. The filter bed is easily pumped out with a regular sewage disposal truck. The replacement media must be installed by an authorized agent. Easy access to the lid 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 study.

Septic tank

Emptying your septic tank as instructed helps to keep 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 be pumped by measuring the scum or sludge layer. Consult your local regulations for prescribed inspection and pumping frequency.

Premier Tech EFT-080R (H/H2) effluent filter

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 should do this while holding the filter over the septic tank first compartment so that scum washes back into the tank.



PSA-240, PSA-240H, PSA-240L pumping station (if needed)

Bottom sludge in the PSA-240, PSA-240H or PSA-240L pumping station should be pumped at the same time as the septic tank, or as needed.

Visual and audio alarm Unit

The **Ecoflo® Peat filter system** is equipped with a high-water alarm float fixed to the effluent filter and another one is included in the Ecoflo® Peat filter. Both 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...

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.

Resurgence near the Ecoflo® Peat Filter

That situation rarely occurs. But it may happen if the soil is waterlogged, if there is excessive water consumption or if there is insufficient fill. 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 of the main access of the system by removing the plastic green lid. To access the system data plate in the Ecoflo® Peat filter main access, you have to unscrew the lag screws located at 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:



**Premier Tech
Environment**

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

☎ 1.800.632.6356 / 418.867.8883

☎ 418.862.6642

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Certificate of Warranty for Ecoflo® 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 purpose of this warranty, "Customer" shall mean the original owner of an Ecoflo® Peat filter system ST-500-1, ST-650-1, ST-500-2, ST-650-2, ST-650-3, STB-500-1, STB-650-1, STB-500-2, STB-650-2 or STB-650-3 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® Peat filter system"), and shall also mean, if and when applicable, any other person entitled to exercise, under the law or by virtue of section 8 of the present warranty, the rights granted to such original owner by virtue of this certificate of warranty.

2. Nature of the Warranty

Premier Tech warrants the components of its Ecoflo® Peat Filter as follow:

- Premier Tech warrants that the filter bed(s) of the Ecoflo® 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.
- Except as otherwise prescribed in the present certificate, Premier Tech warrants the performances of the fibreglass and other components of the Ecoflo® Peat filter system against any manufacturing defects for a period of ten (10) years starting on the date of installation.

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 in addition to the legal warranties or other Customer's rights in accordance with any applicable law, but does not alter them in any way.

This conventional warranty of Premier Tech is expressly limited to the text of this certificate and is valid if the installation of the Ecoflo® 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, Premier Tech shall be notified in writing immediately upon appearance of any indication of anomaly or irregularity in the Ecoflo® Peat filter system.

This notice must be given by mail or by facsimile to Premier Tech's head office: 1, Avenue Premier, Rivière-du-Loup, Québec, G5R 6C1, fax: (418) 862-6642.

On receipt of such notice, Premier Tech will examine the situation and, where the terms of this warranty apply, take appropriate corrective measures.

4. 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® installer, or any installation, modification, correction or addition not carried out by an Ecoflo® installer;
- (d) Any damage or problem arising from any installation, modification, correction or addition to the Ecoflo® Peat filter system carried out after installation of the Ecoflo® Peat Filter 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® 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 Ecoflo® Peat filter system has not been maintained by a person authorized by Premier Tech in accordance with the maintenance agreement;
- (h) Any damage or problem caused by the fault or action of the Customer 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 failed to notify Premier Tech of any change in the use of the property served by the Ecoflo® Peat filter system that alters 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

Certificate of Warranty for Ecoflo® Peat Filter system

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, unless having notified Premier Tech in accordance with the provisions of section 3 of this warranty and having given Premier Tech the opportunity to assess the situation.

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 limited to the replacement of any defective parts of the Ecoflo® Peat filter system and the related labour in accordance with sections 3 and 4.

7. Limitation of liability

Premier Tech may in no way be held liable for any other damage suffered/ claimed 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 if and only if the new owner confirms in writing to Premier Tech 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 Customer undertakes to hand over to the new owner or to the new owner's successors, the warranty certificate remitted to the Customer upon completion of the work, as well as the owner's manual and the maintenance and environmental monitoring program for the Ecoflo® Peat filter system.

In order for the provisions of the first paragraph of this Section 8 to apply, the new owner or his/ her successors must, within a reasonable time, complete one of the detachable parts of the warranty certificate and return it immediately to Premier Tech.

If the new owner or new owner's successors do not send such notice, this warranty shall no longer be in effect and shall be considered null and void.

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 makes a request to Premier Tech under this 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 for the cost of such inspection.

If the Ecoflo® Peat filter system is not performing as specified above, no charge shall be invoiced 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 Custome and Premier Tech, this warranty shall prevail.

11. Subsequent purchaser 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 : _____ Date : _____

Name of new owner: (print) _____

Language preference: english french

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