

# Ecoflo® Septic system

## Reference guide for the wastewater treatment professional



Quebec Certification



Certified  
to NSF/ANSI  
Standard 40

American Certification



European Certification



### Stable Performance under all Conditions

Suitable for primary or secondary residences. Highly reliable system, regardless of variations in water quality and living habits of occupants (seasonal activities, flow intensity and non-flowing periods). For a complete protection. **Odourless** system.

### Permanent and Definitive Solution

Compared to conventional systems, no excavation or relocation of the unit at the end of the cycle of the filtering media – internal components can be accessed through the lid at all times.

### No Energy

No energy or electro-mechanical device needed for the treatment.

**\$0\*/year**

\*Less than \$10/year  
for pumped effluent

### Compact and All-Purpose Installation

Requires up to 3 times less space than conventional systems – for optimal use of any property. Models available for sites with challenging conditions or confined areas – can be used for both new constructions and upgrades (partial or total).

# Ecoflo®

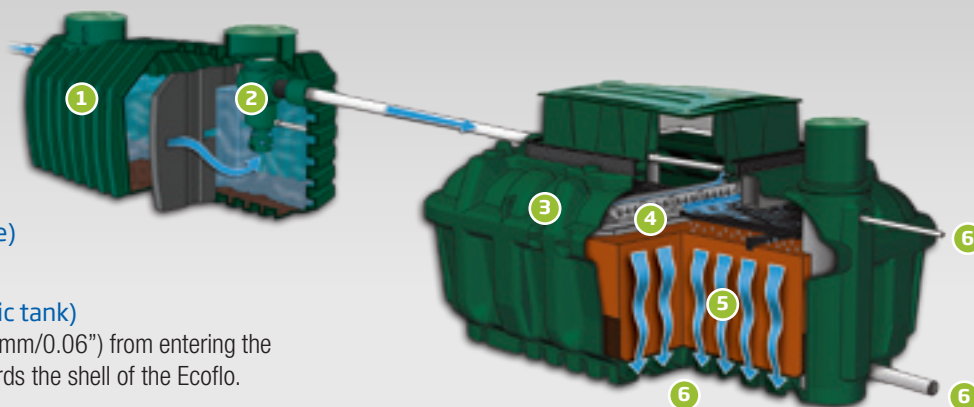
**A solution adapted to today's lifestyles**



Today's lifestyles have a major impact on a home's wastewater production (water and flow variations, intermittent use and zero-flow periods). The Ecoflo technology offers the best wastewater treatment performance and greatest stability under all conditions, thanks to its patented filtering media. This media retains water and preserves conditions specific to the biological treatment of domestic wastewater even after long periods of zero-flow. This ensures high-performances immediately after start-up and a trouble-free use of the system. The filter is a true physical barrier that protects the existing soil and absorption bed.

## Sustainable performance – zero-energy to treat wastewater

The Ecoflo is a passive system that uses a patented, natural and organic filter media to treat wastewater. No electricity is needed for the treatment.



### 1 Septic tank (plastic or concrete)

Clarifies wastewater by retaining solids.

### 2 Effluent filter (inside the septic tank)

Prevents coarse particles (larger than 1.6 mm/0.06") from entering the Ecoflo. Pre-treated waters then flow towards the shell of the Ecoflo.

### 3 Ecoflo® shell

The type of shell recommended is determined by the size, topography, nature, permeability and thickness of the natural soil of the property. Models available in polyethylene (plastic), concrete and fiberglass.

### 4 Tipping bucket and distribution plates

Uniformly distributes, with no energy, wastewaters to be treated on the entire surface of the filtering media. The water then percolates through the filter of the Ecoflo.

### 5 Filtering media

Made of organic and re-used natural material, this biological patented filter acts as a physical barrier that retains pollutants. Ensures the long-term protection of the receiving environment, the ground, meaning the environment and investment of the owners.

### 6 To infiltration area

99% treated, wastewaters finally infiltrate the ground through a gravel bed and layer of natural soil located under or near the Ecoflo.

## A promise kept

Our 20 years of Innovation, Research and Development have resulted in the design, marketing and continuous improvement of the best onsite wastewater treatment with regard to performance, flexibility and reliability

for homeowners, small communities and small businesses. We make this statement with confidence based on the various onsite controls we have implemented. Today, 75% of all installed filters last close to 15 years!

## The importance of third party field monitoring

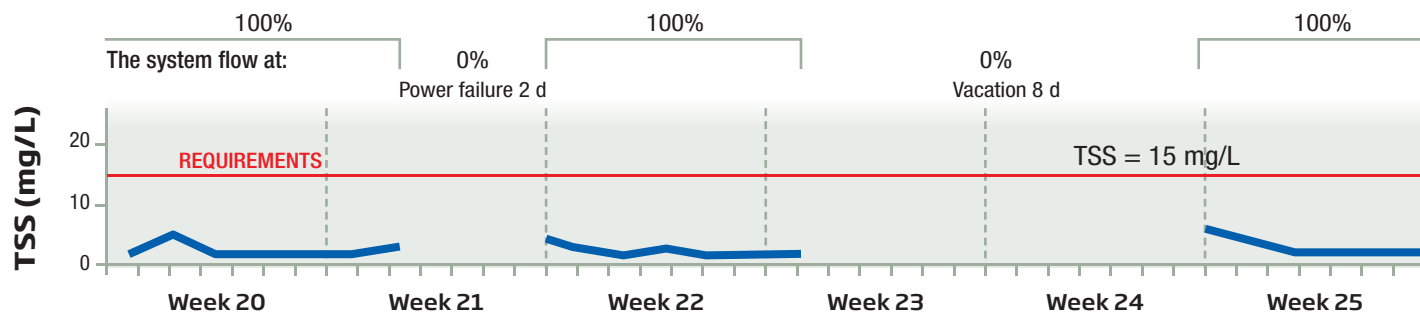
Extensively tested in both North America and Europe by third party entities over the years, the Ecoflo has proven to be the very best. These results provide clear evidence of its high performance and reliability under all

test conditions. Each time, the effluent quality exceeded standards. Our unique filtering media acts as a sponge, a feature essential to stable performances – whether in the field or on test platforms.

## Treatment performance obtained on BNQ and NSF test platforms

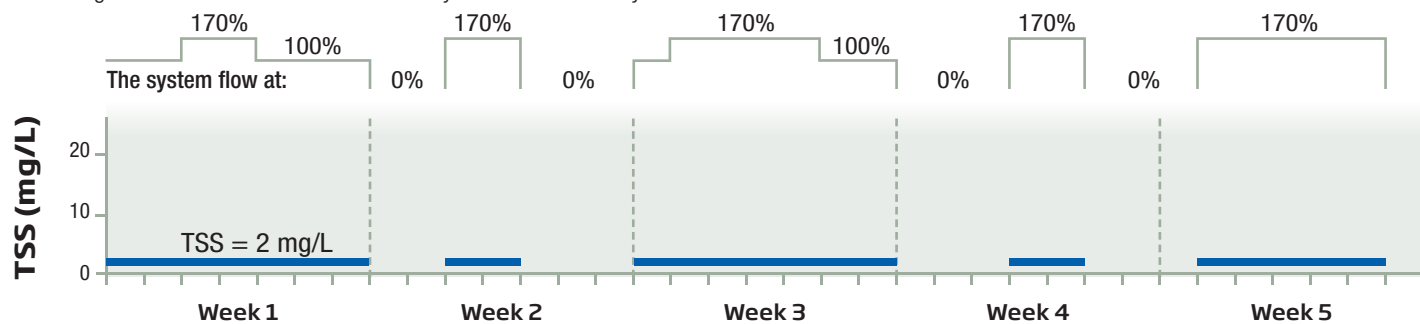
| Site | TSS    | CBOD <sub>5</sub> | FC               |
|------|--------|-------------------|------------------|
| BNQ  | 2 mg/L | 2 mg/L            | 1,250 CFU/100 mL |
| NSF  | 2 mg/L | 2 mg/L            | 978 CFU/100 mL   |

## Certification under NQ 3680-910 Standard - Results under stress conditions



## NSF testing platform performed to simulate peak flow and intermittent occupation (secondary home) – Additional testing

Ecoflo® has been tested on the NSF testing platform (after completion of a 26-week standard testing period) in particular stress test conditions simulating vacation house rentals or secondary homes used mainly on weekends.



\*Testing performed over a period of five weeks (13/03/2005 to 16/04/2005). As illustrated, the testing protocol included a high daily flow (170% x design flow) and simulated weekend peak flow conditions (2 or 3 days at zero-flow before 2 days at peak flow).

## Treatment performance after more than 500 days of testing!

| Site   | TSS    | CBOD <sub>5</sub> | FC               |
|--|--------|-------------------|------------------|
| BNQ annual audits <sup>1</sup>                       | 3 mg/L | 5 mg/L            | 627 CFU/100 mL   |
| St-Joseph-de-Kamouraska Municipality <sup>2</sup>    | 5 mg/L | 5 mg/L            | 9,950 CFU/100 mL |
| PTA's voluntary sampling program <sup>3</sup>        | 4 mg/L | 6 mg/L            | 1,296 CFU/100 mL |
| EPA demonstration study <sup>4</sup>                 | 4 mg/L | 5 mg/L            | 1,571 CFU/100 mL |
| North Carolina field monitoring program <sup>5</sup> | 6 mg/L | 4 mg/L            | 413 CFU/100 mL   |
| Virginia study <sup>6</sup>                          | 6 mg/L | 8 mg/L            | 1,029 CFU/100 mL |

1. Annual audits performed from 2006 to 2010 on 73 different sites according to NQ 3680-910 Standard in Quebec. Average of 73 results for TSS and BOD<sub>5</sub> and geometric averages of 33 results for fecal coliforms.

2. Ongoing follow-up started in November 2002 on 80 Ecoflo Biofilters in 5 clusters servicing 80 homes. Average results obtained over the 95 sampling days performed by the municipality (warm and cold conditions).

3. Premier Tech Aqua's voluntary sampling program performed from 1995 to 2006 on 140 different residential sites located in the United States, Ontario and Québec. Average of 244 results for TSS, 188 results for BOD<sub>5</sub> and geometric averages of 223 results for fecal coliforms.

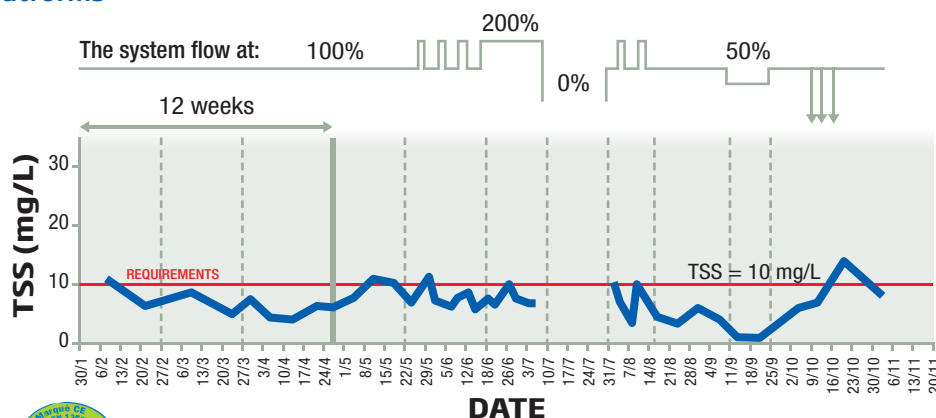
4. EPA demonstration study over a 3-year period (from 2005 to 2007) on one site located in Syracuse, New York. Average of 43 results for TSS and BOD<sub>5</sub> and geometric averages of 32 results for fecal coliforms.

5. Third party monitoring conducted by Pace Environmental and TetraTech Inc. on 30 different sites. Average of 30 results for TSS and BOD<sub>5</sub> and geometric averages of 90 results for fecal coliforms.

6. Third party study conducted in Virginia by Dr. A. Robert Rubin, P.E., Ph.D. on 20 sites over an 18-month period. Average of 337 results for TSS and BOD<sub>5</sub> and geometric averages of 308 results for fecal coliforms.

## Results obtained on European test platforms

New protocol simulating today's lifestyles (intermittent use, variable flow, zero-flow, overload, power or equipment failure). The Ecoflo proved to be stable under all test conditions. The system's best results were obtained during comparative tests performed in France and Germany. The system successfully passed all required EN Standard 12566-3 tests and is now authorized in France for all usage conditions, including intermittent use (ex: secondary home). **Note that other systems, including suspended or fixed growth aerobic treatment units, are not allowed in France for intermittent use.**





# Ecoflo®

## Polyethylene • Ready-to-install

### Ready-to-install

For a high-quality work

### Robust and lightweight

Easy to handle, even in small spaces

### Minimal final footprint

For full enjoyment of the property

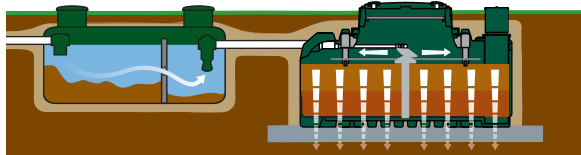
### Integrated pumping station

For a simplified installation

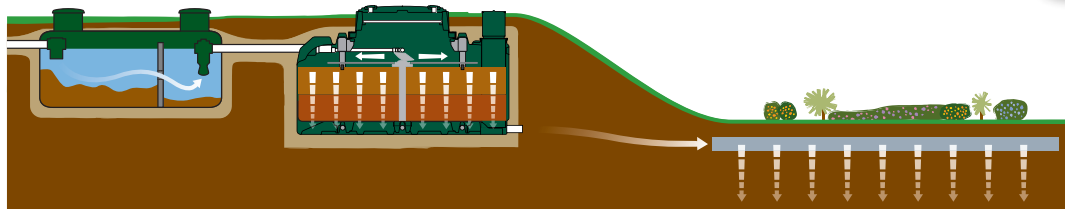


No riser allowed

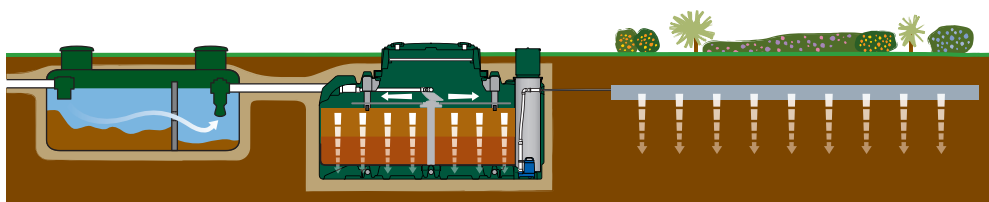
## Examples of Installations



Polyethylene Ecoflo® (ST-570/650/730P) – perforated bottom – infiltration discharge



Polyethylene Ecoflo® (STB-570/650/730P) – watertight bottom – gravity discharge



Polyethylene Ecoflo® (STB-570/650/730PR) – watertight bottom – integrated pump – pumped discharge

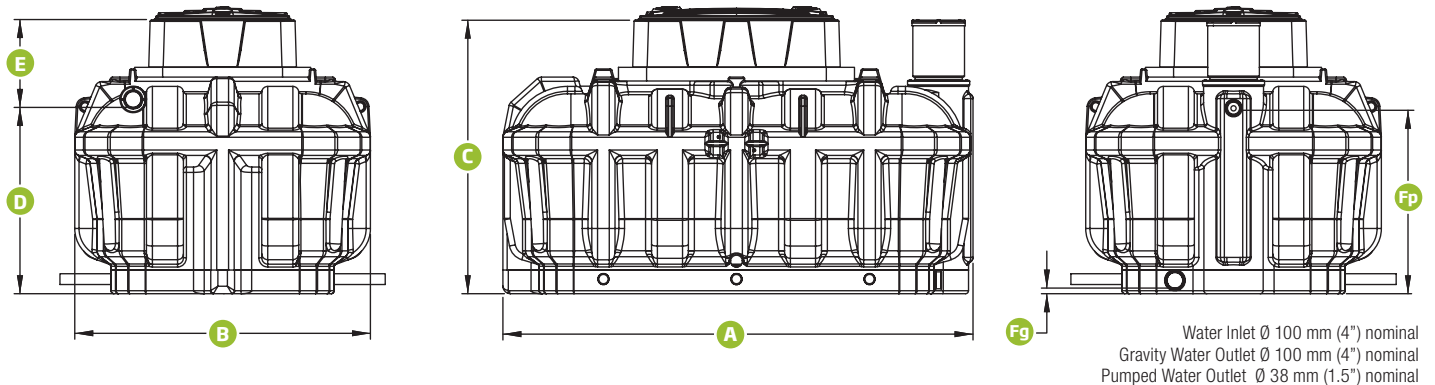
Images shown are indicative only;  
you must refer to the installation guide  
available on [ptzone.premiertechnaqua.com](http://ptzone.premiertechnaqua.com)



## Technical Data

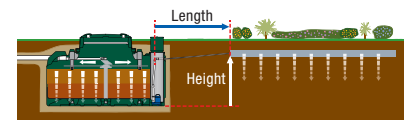
| MODELS  | ST-570P             | STB-570P            | STB-570PR           | ST-650P             | STB-650P            | STB-650PR           | ST-730P             | STB-730P            | STB-730PR           |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Hydraulic capacity  | 2,000 L/d           |                     |                     | 2,200 L/d           |                     |                     | 2,500 L/d           |                     |                     |
| Type of disposal  | infiltration        | gravity             | pumped**            | infiltration        | gravity             | pumped**            | infiltration        | gravity             | pumped**            |
| Type of bottom  | perforated          | watertight          |                     | perforated          | watertight          |                     | perforated          | watertight          |                     |
| Lenght (A)  | 3,180 mm (10' 5")   |                     |                     | 3,920 mm (12' 10")  |                     |                     | 4,200 mm (13' 9")   |                     |                     |
| Width (B)   | 2,000 mm (6' 7")    |                     |                     | 2,050 mm (6' 9")    |                     |                     | 2,050 mm (6' 9")    |                     |                     |
| Height (C)  | 1,800 mm (5' 11")   | 1,850 mm (6' 1")    |                     | 1,850 mm (6' 1")    |                     |                     | 1,850 mm (6' 1")    |                     |                     |
| Inlet height (D)  | 1,210 mm (4')       | 1,260 mm (4' 2")    |                     | 1,260 mm (4' 2")    |                     |                     | 1,260 mm (4' 2")    |                     |                     |
| Inlet height (E)  | 590 mm (1' 11")     |                     |                     | 580 mm (1' 11")     |                     |                     | 580 mm (1' 11")     |                     |                     |
| Outlet height (Fg et Fp)  | —                   | 38 mm (1 ½")        | 1,240 mm (4' 1")    | —                   | 38 mm (1 ½")        | 1,240 mm (4' 1")    | —                   | 38 mm (1 ½")        | 1,240 mm (4' 1")    |
| Weight* (including internal components and filtering media)             | 1,120 kg (2,460 lb) | 1,190 kg (2,620 lb) | 1,200 kg (2,640 lb) | 1,250 kg (2,760 lb) | 1,300 kg (2,870 lb) | 1,310 kg (2,890 lb) | 1,355 kg (2,990 lb) | 1,405 kg (3,100 lb) | 1,415 kg (3,120 lb) |
| Dosing volume   | —                   | —                   | 145 L               | —                   | —                   | 100 L               | —                   | —                   | 110 L               |
| Retention volume (between bottom of tank and under the filtering media) | —                   | —                   | 500 L               | —                   | —                   | 660 L               | —                   | —                   | 715 L               |

\*Weights indicated are approximate and not binding. For handling and lifting purposes only.



### \*\*Maximum Pumping Distance (all Ecoflo® models with pumped discharge)

|   |             |             |             |             |             |
|---|-------------|-------------|-------------|-------------|-------------|
| <b>Height</b>                           | 7.5 (25')   | 6 m (20')   | 4.5 m (15') | 3 m (10')   | 1.5 m (5')  |
| <b>Maximum length of the Ø1" pipe</b>   | —           | 18 m (60')  | 21 m (70')  | 24 m (80')  | 27 m (90')  |
| <b>Maximum length of the Ø 1½" pipe</b> | 30 m (100') | 30 m (100') | 30 m (100') | 30 m (100') | 30 m (100') |



# Ecoflo<sup>®</sup>

## Concrete

### Robust

Suitable for all soil types and site conditions

### Easy-to-install

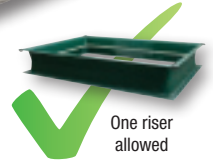
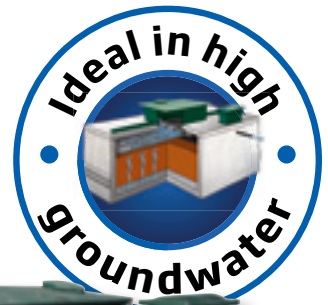
For a problem-free installation

### Local manufacturing

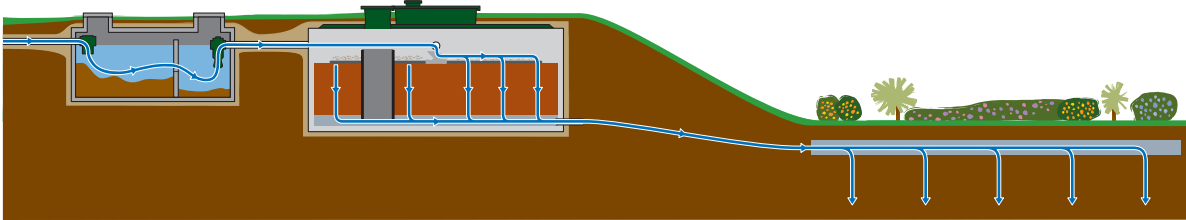
Creates local jobs and minimizes shipping costs

### All-in-one

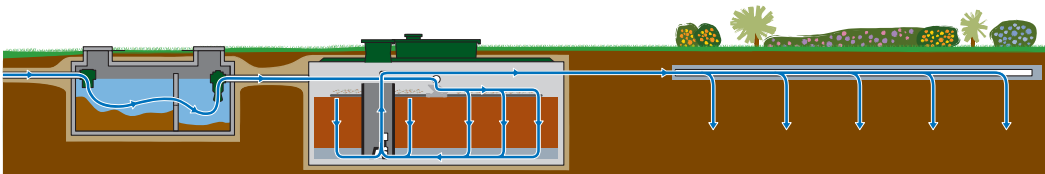
Secure treatment, 24-hour storage tank and integrated pumping station in a single unit



## Examples of Installations



Concrete Ecoflo<sup>®</sup> (STB-650B-H2+3) – gravity outlet – gravity discharge



Concrete Ecoflo<sup>®</sup> (STB-650BR-H2+3) – integrated pump – pumped discharge

Images shown are indicative only;  
you must refer to the installation guide  
available on [ptzone.premiertechnaqua.com](http://ptzone.premiertechnaqua.com)



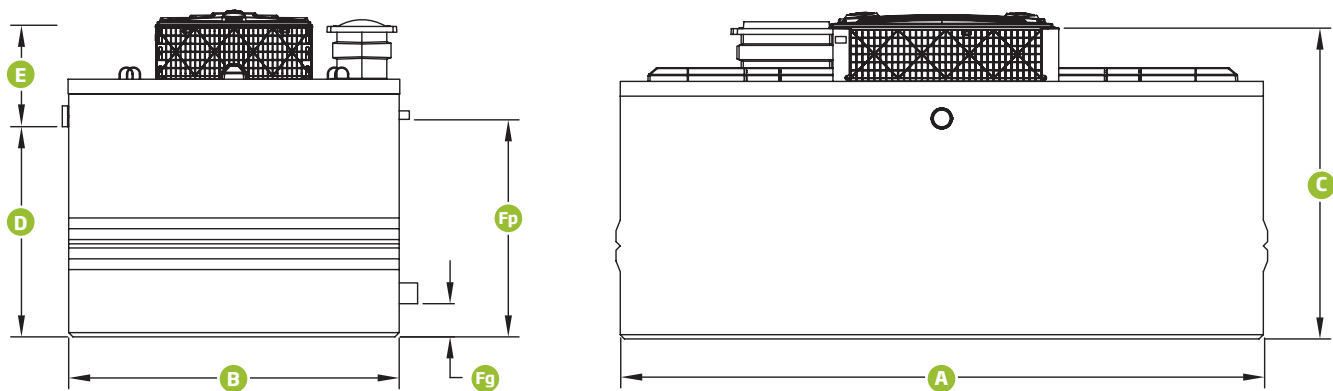


## Technical Data

| MODELS  | STB-650B-H2+3        | STB-650BR-H2+3       |
|---|----------------------|----------------------|
| Hydraulic capacity  | 2,200 L/d            | 2,200 L/d            |
| Type of disposal  | gravity              | pumped**             |
| Type of bottom  | watertight           | watertight           |
| Lenght (A)  | 3,837 mm (12' 7")    | 3,837 mm (12' 7")    |
| Width (B)   | 2,075 mm (6' 10")    | 2,075 mm (6' 10")    |
| Height (C)  | 2,107 mm (6' 11")    | 2,107 mm (6' 11")    |
| Inlet height (D)  | 1,510 mm (4' 11")    | 1,510 mm (4' 11")    |
| Inlet height (E)  | 600 mm (2')          | 600 mm (2')          |
| Outlet height (Fg et Fp)  | 150 mm (6")          | 1,510 mm (4' 11")    |
| Weight* (tank only)   | 6,486 kg (14,300 lb) | 6,496 kg (14,320 lb) |
| Weight* (tank and slab)   | 8,845 kg (19,500 lb) | 8,855 kg (19,520 lb) |
| Dosing volume (on demand)   | —                    | 120 to 550 L         |
| Retention volume<br>(between bottom of tank<br>and under the filtering media) | —                    | 1 980 L              |

\*Weights indicated are approximate and not binding. For handling and lifting purposes only.

Water Inlet Ø 100 mm (4") nominal  
Gravity Water Outlet Ø 100 mm (4") nominal  
Pumped Water Outlet Ø 38 mm (1.5") nominal



**\*\*Maximum Pumping Distance** (all Ecoflo® models with pumped discharge) – See page 3



# Ecoflo®

## Fiberglass

### Minimal final footprint

For full enjoyment of the property

### Lightweight and easy to handle

### On-site assembly

### Ideal in good soil conditions

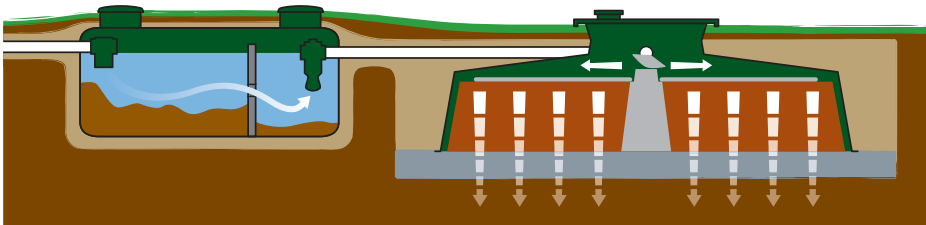
Ensures easy installation

### Recommended for remote locations

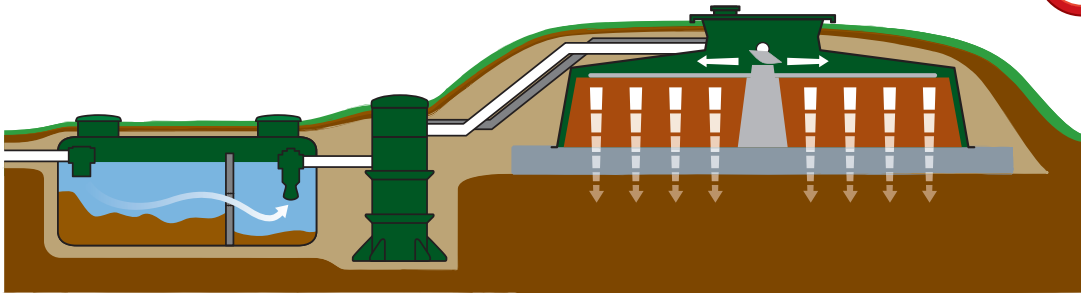


No riser allowed

## Examples of Installations



Fiberglass Ecoflo® (ST-500/650/750) – open bottom – infiltration discharge



Fiberglass Ecoflo® (ST-500/650/750) – open bottom, above ground – infiltration discharge



**Do not install  
in groundwater**

Images shown are indicative only;  
you must refer to the installation guide  
available on [ptzone.premiertechaqua.com](http://ptzone.premiertechaqua.com)



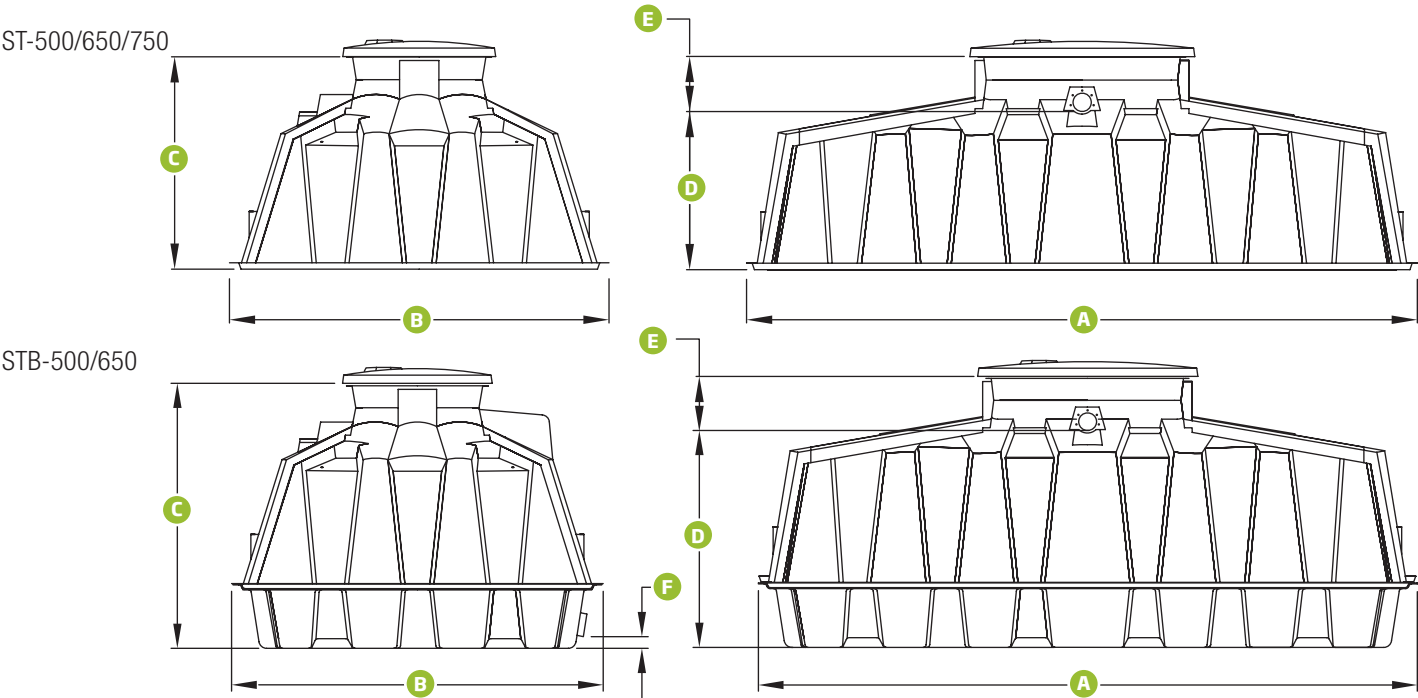


# Technical Data

| MODELS             | ST-500           | STB-500          | ST-650            | STB-650           | ST-750            |
|--------------------|------------------|------------------|-------------------|-------------------|-------------------|
| Hydraulic capacity | 1,500 L/d        | 1,500 L/d        | 2,200 L/d         | 2,200 L/d         | 2,600 L/d         |
| Type of disposal   | infiltration     | gravity          | infiltration      | gravity           | infiltration      |
| Type of bottom     | open             | watertight       | open              | watertight        | open              |
| Lenght (A)         | 3,345 mm (11')   | 3,359 mm (11')   | 4,175 mm (13' 8") | 4,189 mm (13' 9") | 4,675 mm (15' 4") |
| Width (B)          | 2,361 mm (7' 9") | 2,464 mm (8' 1") | 2,361 mm (7' 9")  | 2,464 mm (8' 1")  | 2,361 mm (7' 9")  |
| Height (C)         | 1,320 mm (4' 4") | 1,700 mm (5' 7") | 1,320 mm (4' 4")  | 1,700 mm (5' 7")  | 1,320 mm (4' 4")  |
| Inlet height (D)   | 970 mm (3' 2")   | 1,345 mm (4' 5") | 970 mm (3' 2")    | 1,345 mm (4' 5")  | 970 mm (3' 2")    |
| Inlet height (E)   | 350 mm (1' 2")   | 355 mm (1' 2")   | 350 mm (1' 2")    | 355 mm (1' 2")    | 350 mm (1' 2")    |
| Outlet height (F)  | —                | 100 mm (4")      | —                 | 100 mm (4")       | —                 |
| Weight*            | 105 kg (230 lb)  | 210 kg (460 lb)  | 125 kg (275 lb)   | 250 kg (550 lb)   | 145 kg (320 lb)   |

\*Weights indicated are approximate and not binding. For handling and lifting purposes only.

Water Inlet Ø 100 mm (4") nominal  
Gravity Water Outlet Ø 100 mm (4") nominal



# Interpretation of New BMEC Authorization Requirements

## Vertical Separation

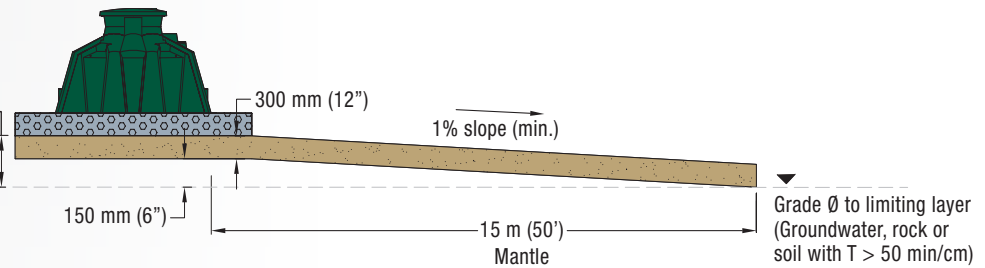
- $T < 6 \text{ min/cm}$  600 mm to groundwater **NO CHANGE**
- $6 \text{ min/cm} < T < 15 \text{ min/cm}$  No mantle required and 450 mm to limiting layer (groundwater, rock or soil with  $T > 50 \text{ min/cm}$ )

- $15 \text{ min/cm} < T < 50 \text{ min/cm}$

New requirement: 450 mm (18")  
under gravel bed layer

Vertical separation provided  
according to actual design  
with a 1% slope

**NO CHANGE**

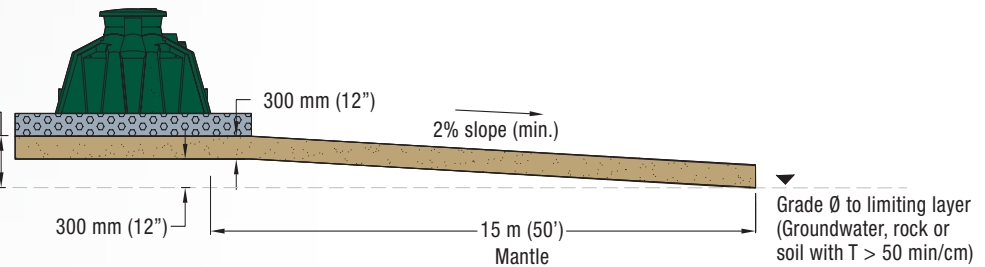


- $T > 50 \text{ min/cm}$

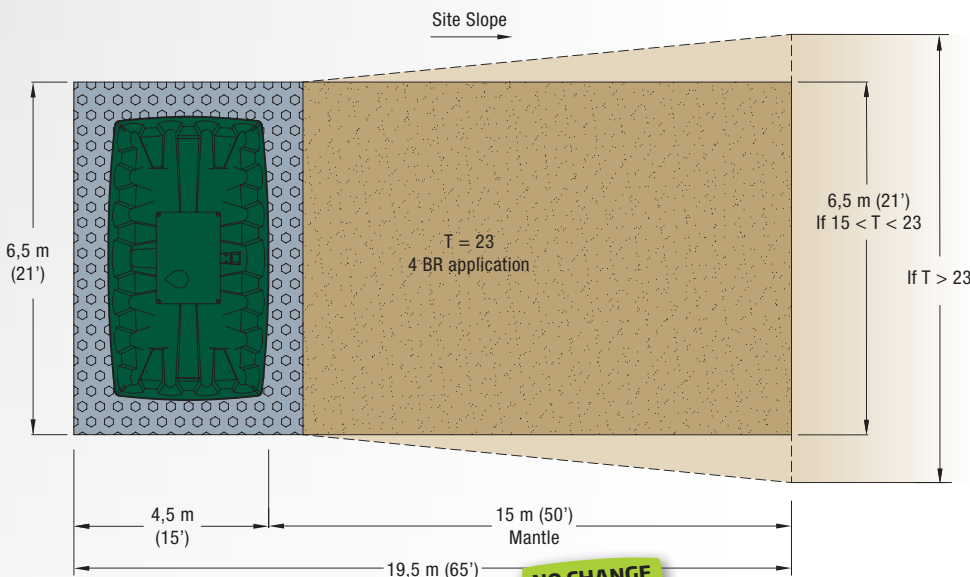
New requirement: 600 mm (24")  
under gravel bed layer

Vertical separation provided  
according to actual design  
with a 2% slope

**NO CHANGE**



## Area Bed



- $T \leq 15 \text{ min/cm}$   $A = QT/850$

**NO CHANGE**

- $T > 15 \text{ min/cm}$   $A = QT/400$

Where imported mantles are required, no longer assume  $T=50 \text{ min/cm}$  in all installations. To provide for optimum use of property space and efficient use of sand contact area, the actual percolation rate of the subgrade soils must be utilized.

- $T > 23 \text{ min/cm}$

For higher  $T$  time contact area can be flared out to the toe of the mantle to meet new design requirements.

# Septic Tanks

## Robust

Eliminates damage during installation or pumping operations

## All-Purpose

Compatible with all onsite systems  
Integrated effluent filter



Risers allowed  
36" (900 mm)  
maximum

| MODELS                 | PST-280   | PST-340              | PST-390                | PST-420                | PST-500                | PST-660                |
|------------------------|---|----------------------|------------------------|------------------------|------------------------|------------------------|
| Description            | Septic tank with effluent filter (basic model includes a Polylok™ PL-122 effluent filter) |                      |                        |                        |                        |                        |
| Total nominal capacity | 2,800 L (740 US gal)  | 3,400 L (900 US gal) | 3,900 L (1,030 US gal) | 4,300 L (1,140 US gal) | 5,000 L (1,320 US gal) | 6,650 L (1,760 US gal) |
| Liquid capacity        | 2,260 L (600 US gal)  | 3,000 L (800 US gal) | 3,300 L (880 US gal)   | 3,600 L (950 US gal)   | 4,300 L (1,140 US gal) | 5,800 L (1,530 US gal) |
| Weight*                | 170 kg (375 lb)   | 190 kg (419 lb)      | 205 kg (452 lb)        | 240 kg (529 lb)        | 265 kg (584 lb)        | 325 kg (717 lb)        |
| Certifications         | CSA   | CSA                  | CSA                    | CSA                    | CSA                    | CSA                    |

\*Weights indicated are approximate and not binding. For handling and lifting purposes only.

CSA Accredited according to the CAN/CSA-B66-05 standard

# Pumping Stations

## Preassembled

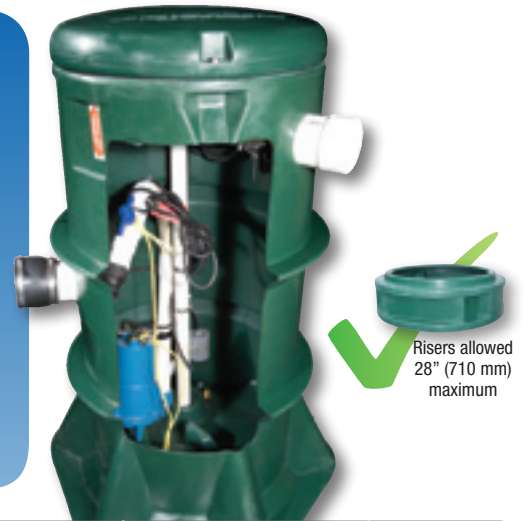
Ready to install

## Robust

Eliminates damage during installation or pumping operations

## Easy access

Internal components can be handled safely and easily



Risers allowed  
28" (710 mm)  
maximum

| MODELS | PSA-240**                           | PSA-240L                            | PSA-240H                                   | PSA-240NP                           | PSX-240 |
|--------|-------------------------------------|-------------------------------------|--|-------------------------------------|---------|
| Pump   | ABS, 0.3 HP, 120 V                  | ABS, 0.3 HP, 120 V                  | ABS, 0.4 HP, 120 V                         | —                                   | —       |
| Float  | On/off pump switch and alarm switch | On/off pump switch and alarm switch | Double on/off pump switch and alarm switch | On/off pump switch and alarm switch | —       |

**\*\*Maximum Pumping Distance** – for a 38 mm (1.5") diameter pipe

Maximum length: 48.75 m (160')

Maximum height: 7.6 m (25') from the base of the pumping station to the highest point





# Wastewater Treatment Services

## Prevention is maintenance!

A well-designed, properly installed and annually maintained septic system ensures the long-lasting performance of a wastewater treatment that performs in compliance with environmental standards. This translates into substantial savings in the future and better protects the user's investment and the environment.

## Ecoflo® Biofilter Yearly Inspection Program

Year after year, this program ensures the follow-up of every registered Ecoflo® system. Inspections on the system are conducted annually and for the entire life of the system. These annual verifications also ensure the validity of the warranty of the septic installation.

A well-trusted program available to:

### Users

A network of local partners carries out the annual maintenance visits. Thanks to a 15-point Annual Check Program, the information collected on each system is entered into a database – directly from where the system is installed.

### Commercial or community installations (islanding)

A team of certified technicians supervises each start-up and validates the proper functioning of various equipment (control panel, flow divider, pump, etc.) This team also offers an environmental follow-up for each Ecoflo® Biofilters and all equipment upstream and downstream from the system.

[pta-maintenance@premiertech.com](mailto:pta-maintenance@premiertech.com)



## IT'S ALL YOU NEED!

The toolbox of wastewater professionals

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