# **Ecofo** Septic System

# Reference guide for the wastewater treatment professional



American Certification

BNQ Certified

Quebec 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. Odorless 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-mechan

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



# 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).



# North America

# Ecofio® 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.



Clarifies wastewater by retaining solids.

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

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

#### Ecoflo<sup>®</sup> 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.

# 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!

#### **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 longterm 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.

# 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	CBOD₅	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<sup>®</sup> 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	CBOD₅	FC
BNQ annual audits <sup>1</sup>	3 mg/L	4 mg/L	284 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 2011 on 73 different sites according to NQ 3680-910 Standard in Quebec. Average of 73 results for TSS and  $BOD_{\rm g}$  and geometric averages of 46 results for fecal coliforms.

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.

 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>g</sub> and geometric averages of 32 results for fecal coliforms.
 Third party monitoring conducted by Pace Environmental and TetraTech Inc. on 30 different sites. Average of

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

6 on 140 different residential
 7 S, 188 results for BOD<sub>5</sub> and
 8 C. 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.

# **Ecofio**<sup>®</sup> Polyethylene • Ready to use

**Ready to use** 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**



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





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



Ecoflo® Polyethylene (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.premiertechaqua.com







# **Technical Data**

MODELS	ST-570P	STB-570P	STB-570PR	ST-650P	STB-650P	STB-650PR	ST-730P	STB-730P	STB-730PR
Type of disposal	infiltration	gravity	pumped**	infiltration	gravity	pumped**	infiltration	gravity	pumped**
Type of bottom	perforated	wate	rtight	perforated	wate	rtight	perforated	wate	rtight
Lenght (A)		11' 1" (3,375 mm	)	1	2' 8" (3,850 mm	1)	13' 7" (4,140 mm)		
Width (B)		6' 7" (2,000 mm	)		6' 9" (2,050 mm)	)		6' 9" (2,050 mm)	)
Height (C)	6' 1" (1,850 mm)			6' 1" (1,850 mm)			6' 1" (1,850 mm)		
Inlet height (D)	4' 2" (1,260 mm)			4' 2" (1,260 mm)			4' 2" (1,260 mm)		
Inlet height (E)	1' 11" (590 mm)			1' 11" (580 mm)			1' 11" (580 mm)		
Outlet height (Fg et Fp)	—	1 <sup>1</sup> /2" (38 mm)	4' 1" (1,240 mm)	—	1 <sup>1</sup> /2" (38 mm)	4' 1" (1,240 mm)	-	1 <sup>1</sup> /2" (38 mm)	4' 1" (1,240 mm)
Weight* (including internal components and filtering media)	2,460 lb (1,120 kg)	2,620 lb (1,190 kg)	2,640 lb (1,200 kg)	2,760 lb (1,250 kg)	2,870 lb (1,300 kg)	2,890 lb (1,310 kg)	2,990 lb (1,355 kg)	3,100 lb (1,405 kg)	3,120 lb (1,415 kg)
Dosing volume	—	—	38 US gal (145 L)	—	—	44 US gal (165 L)	—	-	48 US gal (180 L)
Retention volume (between bottom of tank and under the filtering media)	_	—	130 US gal (500 L)	—	—	175 US gal (660 L)	—	—	190 US gal (715 L)

 $\ensuremath{^{\star}}\xspace$  Weights indicated are approximate and not binding. For handling and lifting purposes only.







Water Inlet Ø 4" (100 mm) nominal Gravity Water Outlet Ø 4" (100 mm) nominal Pumped Water Outlet Ø 1" (25 mm) nominal

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

Height	25' (7.5 m)	20' (6 m)	15' (4,5 m)	10' (3 m)	5' (1,5 m)
Maximum length of the Ø 1" pipe	25' (7.5 m)	60' (18 m)	70' (21 m)	80' (24 m)	90' (27 m)
Maximum length of the Ø 1½" pipe	100' (30 m)				







Type of disposal				
ST	Open or perforated bottom (infiltration discharge)			
STB	Watertight bottom (gravity or pumped effluent)			
Type of sh	ell			
No mention	Fiberglass - infiltration discharge			
В	Concrete - gravity discharge			
BR	Concrete - pumped effluent			
Р	Polyethylene - infiltration or gravity discharge			
PR	Polyethylene - pumped effluent			

# Ecofio® 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

Integrated pumping station Reduces work during installation

# **Examples of Installations**



Ecoflo® Concrete (STB-650B-H1/H2/H3) - gravity outlet - gravity discharge



Ecoflo® Concrete (STB-650BR-H1/H2/H3) - integrated pump - pumped discharge



Ecoflo<sup>®</sup> Concrete (STB-650B-H1/H2/H3) – gravity outlet – gravity discharge to a watercourse (when permitted by local regulation)

Images shown are indicative only; you must refer to the installation guide available on ptzone.premiertechaqua.com







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One riser ki allowed

## **Technical Data**

MODELS	STB-650B-H1	STB-650BR-H1	STB-650B-H2	STB-650BR-H2	STB-650B-H3	STB-650BR-H3
Type of disposal	gravity	pumped**	gravity	pumped**	gravity	pumped**
Type of bottom	watertight	watertight	watertight	watertight	watertight	watertight
Lenght (A)	12' 7" (3,835 mm)	12' 8" (3,860 mm)	12' 8" (3,860 mm)			
Width (B)	6' 10" (2,075 mm)	6' 11" (2,100 mm)	6' 11" (2,100 mm)			
Height (C)	6' 1" (1,850 mm)	6' 1" (1,850 mm)	6' 8" (2,035 mm)	6' 8" (2,035 mm)	7' 8" (2,330 mm)	7' 8" (2,330 mm)
Inlet height (D)	4' 1" (1,245 mm)	4' 1" (1,245 mm)	4' 8" (1,425 mm)	4' 8" (1,425 mm)	5' 8" (1,725 mm)	5' 8" (1,725 mm)
Inlet height (E)	2' (600 mm)	2' (600 mm)	2' (600 mm)	2' (600 mm)	2' (600 mm)	2' (600 mm)
Outlet height (Fg et Fp)	6" (150 mm)	4' 5" (1,335 mm)	6" (150 mm)	4' 11" (1 493 mm)	6" (150 mm)	5' 10" (1,790 mm)
Weight* (tank only)	11,500 lb (5,220 kg)	11,520 lb (5,230 kg)	13,500 lb (6,125 kg)	13,520 lb (6,135 kg)	16,000 lb (7,260 kg)	16,020 lb (7,270 kg)
Weight* (tank and slab)	16,700 lb (7,575 kg)	16,720 lb (7,585 kg)	18,700 lb (8,485 kg)	18,720 lb (8,495 kg)	21,200 lb (9,620 kg)	21,220 lb (9,630 kg)
Dosing volume	—	30 US gal (120 L)	—	up to 220 US gal (830 L)	—	up to 250 US gal (945 L)
Retention volume (between bottom of tank and under the filtering media)	_	160 US gal (600 L)	_	435 US gal (1,645 L)	_	900 US gal (3,405 L)

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

Water Inlet Ø 4" (100 mm) nominal Gravity Water Outlet Ø 4" (100 mm) nominal Pumped Water Outlet Ø 1.5" (38 mm) nominal Ø 1" (25 mm) nominal for BC





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





Type of disposal					
Open or perforated bettem (infiltration discharge)					
open of periorated bottom (initiation discharge)					
Watertight bottom (gravity or pumped effluent)					
ell					
Fiberglass - infiltration discharge					
Concrete - gravity discharge					
Concrete - pumped effluent					
Polyethylene - infiltration or gravity discharge					
Polyethylene - pumped effluent					

# **Ecofio**<sup>®</sup> 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** 

# Examples of Installations



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



ost company



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

Images shown are indicative only; you must refer to the installation guide available on ptzone.premiertechaqua.com





# **Technical Data**

MODELS	ST-500	STB-500	ST-650	STB-650	ST-750
Type of disposal	infiltration	gravity	infiltration	gravity	infiltration
Type of bottom	open	watertight	open	watertight	open
Lenght (A)	11' (3,345 mm)	11' (3,345 mm)	13' 8" (4,175 mm)	13' 9" (4,189 mm)	15' 4" (4,675 mm)
Width (B)	7' 9" (2,361 mm)	8' 1" (2,465 mm)	7' 9" (2,361 mm)	8' 1" (2,465 mm)	7' 9" (2,361 mm)
Height (C)	4' 4" (1,320 mm)	5' 7" (1,700 mm)	4' 4" (1,320 mm)	5' 7" (1,700 mm)	4' 4" (1,320 mm)
Inlet height (D)	3' 2" (970 mm)	4' 5" (1,345 mm)	3' 2" (970 mm)	4' 5" (1,345 mm)	3' 2" (970 mm)
Inlet height (E)	1' 2" (350 mm)	1' 2" (355 mm)	1' 2" (350 mm)	1' 2" (355 mm)	1' 2" (350 mm)
Outlet height (F)	—	4" (100 mm)	—	4" (100 mm)	—
Weight*	230 lb (105 kg)	460 lb (210 kg)	275 lb (125 kg)	550 lb (250 kg)	320 lb (145 kg)

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

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







Type of di	sposal
ST	Open or perforated bottom (infiltration discharge)
STB	Watertight bottom (gravity or pumped effluent)
Type of sh	ell
No mention	Fiberglass - infiltration discharge
В	Concrete - gravity discharge
BR	Concrete - pumped effluent
Р	Polyethylene - infiltration or gravity discharge
PR	Polyethylene - pumped effluent

# **Tertiary Disinfection** Treatment • 2 Solutions

#### Performances of the FDi Filter and the DiUV Self-Cleaning Unit

Site	BNQ
TSS	2 mg/L1
CBOD₅	2 mg/L <sup>1</sup>
FC	10 CFU/100 mL <sup>2</sup>

1 Average of 120 results for TSS and CBOD5 <sup>2</sup> Geometric averages of 415 results for fecal coliforms



Treatment station: Ecoflo and FDi disinfection filter – drained effluent



Treatment station: Ecoflo and DiUV Self-Cleaning unit - drained effluent



### Low Energy Consumption

#### No Maintenance\*

\*Requires no annual inspections, as per provincial regulation.



**Advanced and Reliable** Effluent meets government regulations at all times due to the Self-Cleaning feature

# **Cost-Effective**

Reliability

and Durability

Peace of Mind

No drinking water analysis required

#### Compact

Small footprint for greater enjoyment of the property

### **Quality Control**

Preassembled unit for a quality installation

Ø Outlet

4" (100 mm)

#### **Conventional UV System vs. DiUV Self-Cleaning Quartz Sleeve** Water UV Lamp Stainless Steel Rotating Wiper Blade Quartz Sleeve Ø Inlet UV Lamp 1" (25 mm) Lamp Water Stainless Steel Pipe 2 Elliptical UV Reflectors 19<sup>3</sup>/4" 500 mm • 2 lamps • 1 lamp Gradual deposit build-up • 6 cleanings per day 26 1/4" on quartz sleeve (no deposit build-up) . (665 mm)

#### Drinking water analysis required No drinking water analysis required



# **Septic Tanks**

#### Robust

Eliminates damage during installation or pumping operations

#### **All-Purpose**

Compatible with all onsite systems Integrated effluent filter



MODELS	PST-280	PST-340	PST-390	PST-420	PST-500	PST-660
Description		Septic tank with ef	fluent filter (basic mode	l includes a Polylok™ Pl	-122 effluent filter)	
Total nominal capacity	740 US gal (2,800 L)	900 US gal (3,400 L)	1,030 US gal (3,900 L)	1,140 US gal (4,300 L)	1,270 US gal (4,800 L)	1,760 US gal (6,650 L)
Liquid capacity	600 US gal (2,260 L)	800 US gal (3,000 L)	880 US gal (3,300 L)	950 US gal (3,600 L)	1,080 US gal (4,100 L)	1,530 US gal (5,800 L)
Weight*	375 lb (170 kg)	419 lb (190 kg)	452 lb (205 kg)	529 lb (240 kg)	584 lb (265 kg)	717 lb (325 kg)
Certifications	<b>SP</b> -			<b>S</b> ₽°	SP.	SP.

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

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

# **Pumping Stations**

#### Preassembled Ready-to-use

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### Robust

Eliminates damage during installation or pumping operations

#### **Easy access**

Internal components can be handled safely and easily



MODELS	PSA-240**	PSA-240L	PSA-240H	PSA-240NP	PSX-240
Pump	120 V	120 V	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 1.5" (38 mm) diameter pipe

Maximum length: 160' (48.75 m)

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





## The Strength of Premier Tech Aqua

For more than 90 years, Premier Tech has been building its know-how and reputation on the diversity and technological expertise of its 2,500 team members located all around the world. As one of Premier Tech's business units for over 20 years, Premier Tech Aqua (PTA) has become an international leader in the field of onsite and decentralized wastewater treatment technologies for the residential, commercial, community, and industrial sectors. With over 60,000 installations, each coupled with a rigorous inspection, maintenance and documented follow-up program performed by a large network of partners, PTA is undoubtedly one of the leaders in its industry. Active in North America, Europe and Asia, PTA is proud of the quality, performance, and reliability of its solution offering.

- Over 60,000 installations
- Over 110,000 peripheral products sold
- Over 1,000 municipal, commercial, community, institutional and industrial installations
- Documented system traceability, inspection, maintenance, and follow-up
- More than 2,500 partners
- Team of 25 experts entirely dedicated to IR&D
- Presence in North America, Europe and Asia
- Treatment performance surpassing regulatory requirements



# **PROFESSIONAL ZONE**

Up-to-date technical documentation **Register!** 



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