

Ecoflo® Biofilter concrete STB-650BR – Vermont

Assembly guide for precasters

This guide contains the procedure to follow to assemble the Ecoflo® Biofilter STB-650BR. The assembly must be done by an authorized precaster. The assembly requires Premier Tech Aqua's components as well as the concrete shell (tank top and bottom part).

1. Steps for the fabrication of the tank bottom part for the Ecoflo® Biofilter concrete STB-650BR

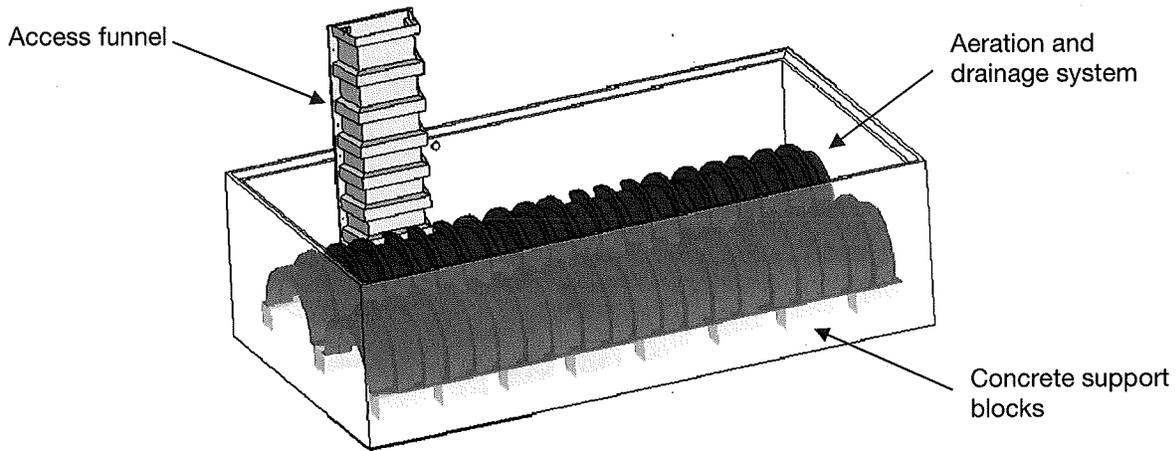


Figure 1

1.1 Verify that you have all the components as indicated in Table 1 and Figure 1.

Table 1 Components required for the tank bottom part assembly of the STB-650BR

Components	Quantity	Supplier
Reinforced steel as defined in step 1.2	1	Precaster
Polyethylene access funnel	1	Premier Tech
Polyethylene aeration and drainage system sections	4	Precaster
Pump outlet adapter (Coupling 2" Ø (Fipt x Fipt) PVC sch.-80)	1	Premier Tech
Butyl section of 1/2" x 1/2" x 70" or equivalent approved by Premier Tech	2	Precaster
Stainless steel concrete anchors (or equivalent approved by Premier Tech) 1/4" Ø x 2" long minimum	4	Precaster
Concrete support blocks (6" x 8" x 16")	24	Precaster
Concrete cement	1	Precaster
Pumping unit	1	Precaster
Pump piping unit (2" Ø PVC sch.-80)	1	Premier Tech

1.2 Prepare tank's reinforced steel as approved by local regulations for the existing tank.

1.3 Position the 2" diameter female adapter according to the technical drawing specifications.

The female adapter is cast in the tank's mold to be an integral part of the tank (in a horizontal position, not perpendicular to the wall).

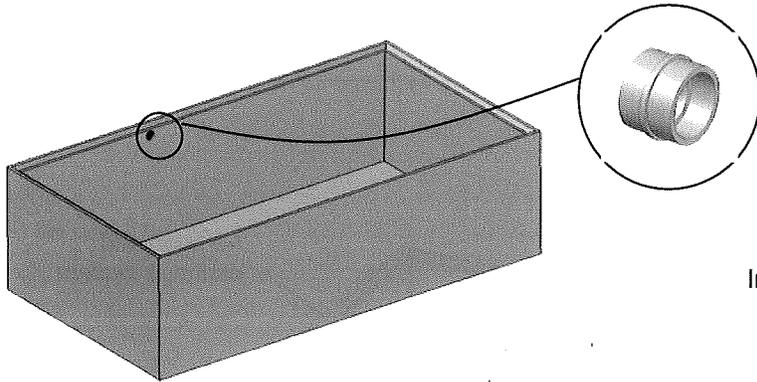


Figure 2

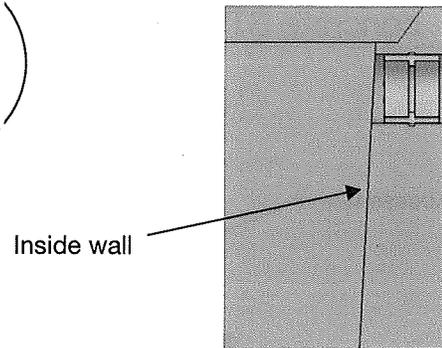


Figure 3

1.4 Pour concrete and complete the curing to obtain a waterproof tank to a water pressure of 3 psi and a strength bond of 5000 psi (28 days).

Important: Clean the bottom of the tank of all concrete particles or other matters.

1.5 Set the access funnel in place inside the tank bottom part as described on figure 4 and 5.

1.5.1 Apply the butyl seals (or equivalent approved by Premier Tech) on the back of the polyethylene part forming the access funnel up until you have reach the tank bottom part top.

1.5.2 Position the access funnel on the wall at the exact location as shown on Figure 4.

1.5.3 Tighten it with the two bottom stainless steel concrete anchors as described on Figure 5.

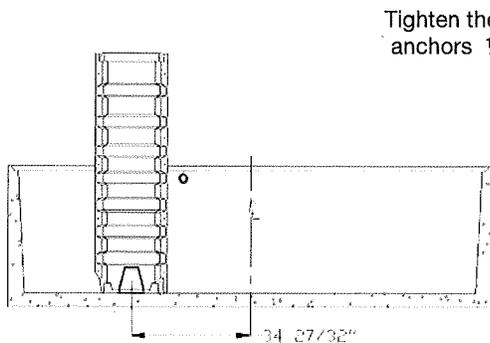


Figure 4

Tighten the 2 stainless steel concrete anchors $\frac{1}{4}$ " \varnothing x 2" .

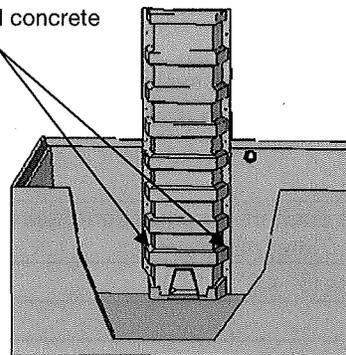


Figure 5

1.6 Install the concrete support blocks as illustrated on Figure 6.

Positioned the blocks in two rows making sure that a space of 1" has to be maintain between the blocks for the liquid to circulate. The blocks have to be glued with concrete cement to the concrete tank to prevent movement in the transportation.

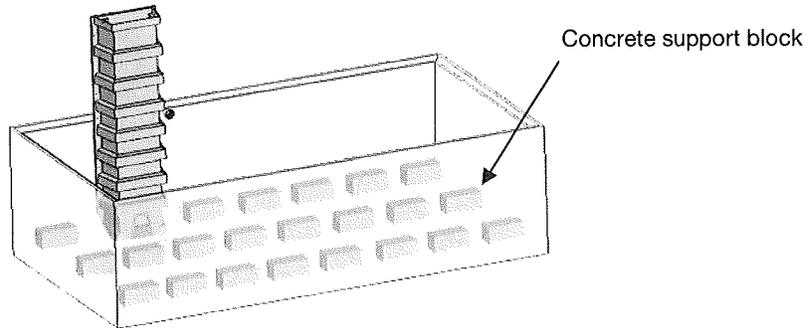


Figure 6

1.7 Install the aeration and drainage system inside the tank as illustrated on figures 7 and 8.

Begin by placing the cut-out chamber of the aeration and drainage system where the access funnel is. Continue by placing the others chambers of the aeration and drainage system making sure that both ends of the aeration and drainage system are 1/2" or less on both ends of the concrete walls.

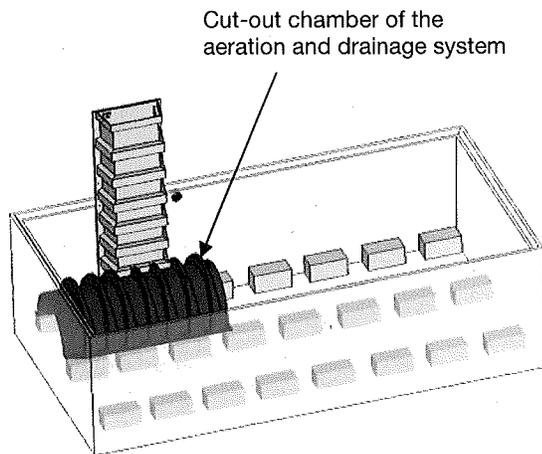


Figure 7

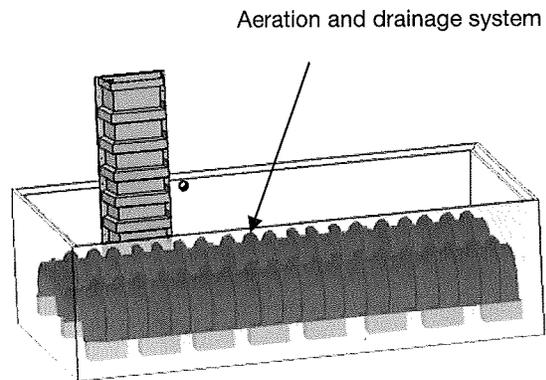


Figure 8

Note: Tank can be done without the concrete support block.

1.8 Install the float tree and the pump as described on Figure 9, 10.

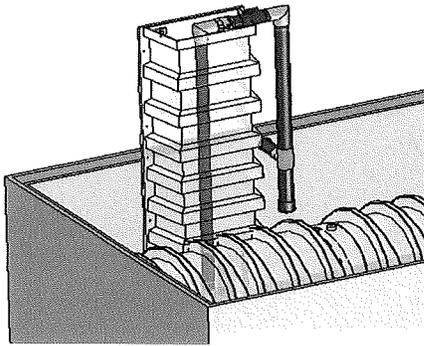
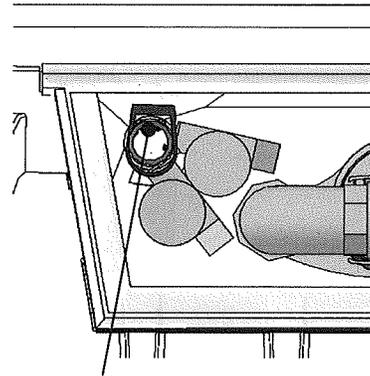


Figure 9



Direct the float tree towards this corner for installation

Figure 10

Insert the float tree in the access funnel and secure it with the clamp supplied for. To install the float tree properly, direct its bottom part toward the corner intended for this purpose and it will position itself by sliding down to the bottom of the funnel (see figure 9 and 10). For the pump, install the pump piping unit on the pump and glue the $\text{\O} 2''$ pipe to the female adapter cast in the tank (see figure 11-a). The relief hole on the end of the line must be in the crushed stone layer and not in the filtering media when the system is assembled.

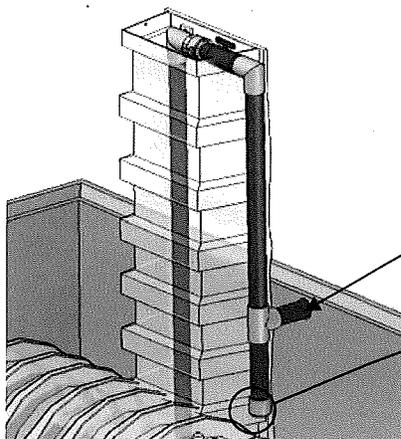


Figure 11-a

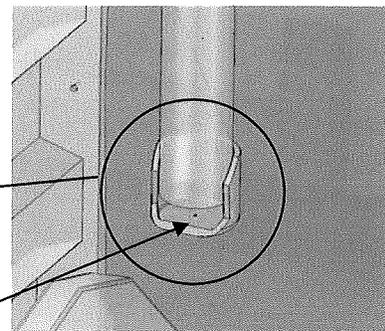


Figure 11-b

2. Steps for the fabrication of the tank top part for the Ecoflo® Biofilter concrete STB-650BR

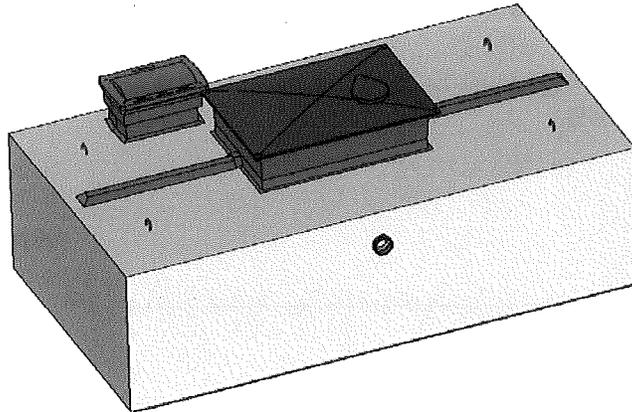


Figure 12

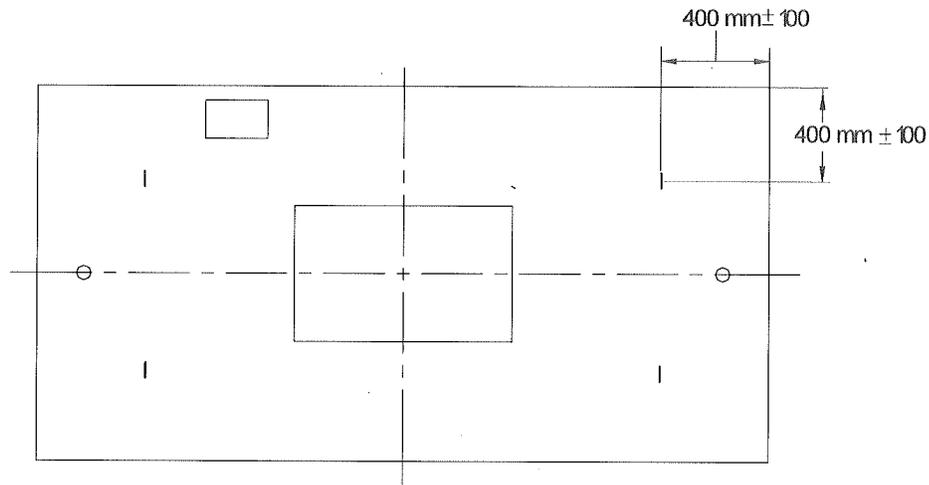
2.1 Verify that you have all the components as indicated in Table 2 and Figure 12.

Table 2 Components to assemble the tank top part

Components	Quantity	Supplier
Reinforced steel as defined in step 2.2	1	Precaster
Hoisting ring as defined in step 2.3	4	Precaster
Main access	1	Premier Tech
Secondary access	1	Premier Tech
Air duct	2	Premier Tech
Inlet adapter	1	Premier Tech
Main access insulating board (see Figure 23)	1	Premier Tech
Secondary access insulating board (see Figure 23)	1	Premier Tech
Owner's documentation	1	Premier Tech
Main access lid	1	Premier Tech
Secondary access lid	1	Premier Tech
Tinnerman ty-raps	8	Premier Tech
Stainless steel lag screw 3/8" Ø x 1 1/4"	8	Premier Tech
Stainless steel washer 3/8" Ø	8	Premier Tech
Alarm panel	1	Premier Tech
Junction box	1	Premier Tech
Serial number Data plate	2	Premier Tech
System Identification Label	1	Premier Tech
Support bracket	8	Premier Tech
Stainless steel concrete anchors (or equivalent approved by Premier Tech) 1/4" Ø x 2 " long minimum	32	Precaster
Stainless steel concrete anchors (or equivalent approved by Premier Tech) 1/4" Ø x 2 " long minimum	6	Precaster

- 2.2 Prepare the tank top part reinforcement steel as approved by local regulations for the existing tank.
- 2.3 Position the 4 hoisting rings in the tank's mold as approved by local regulations for the existing tank.

The positioning of the 4 hoisting rings must be made so they support an equal weight. The picture below is an example of hoisting ring positioning.



- 2.4 Position the inlet adapter in the tank as described on Figures 13 and 14.

The female adapter is cast in the tank's mold to be an integral part of the tank (in a horizontal position, not perpendicular to the wall).

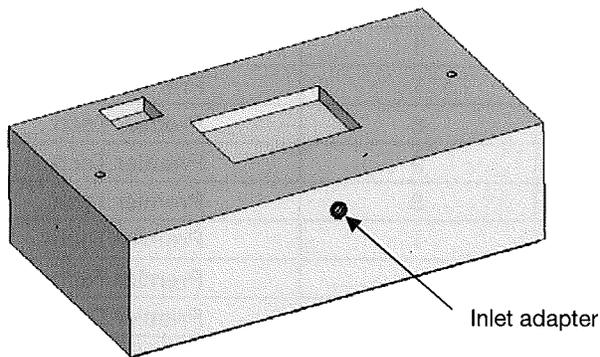


Figure 13

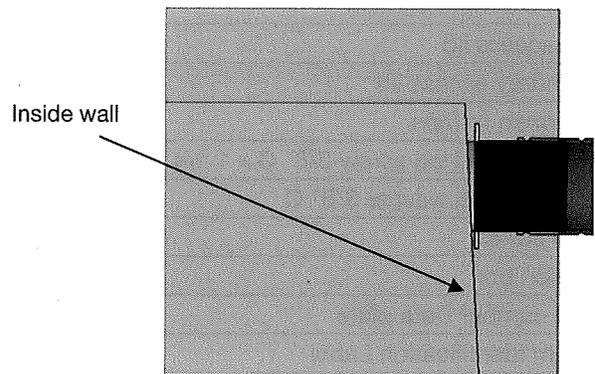


Figure 14

2.5 Stick a serial number data plate inside and outside the main access as shown on Figure 15 and 16. Also, stick a system identification label inside the main access just beside the serial number data plate.

Important: both stickers must be on the water inlet side

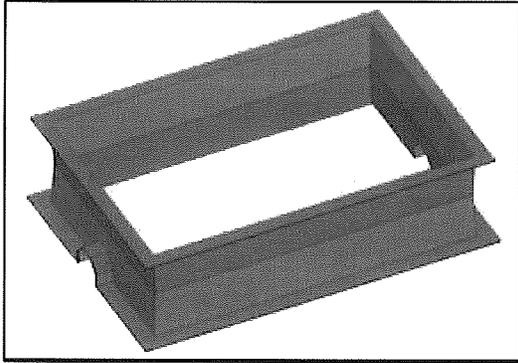


Figure 15

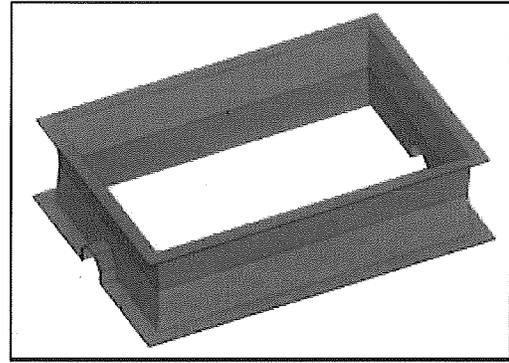


Figure 16

2.6 Place the parts on the tank top part so they are 1½" deep in concrete as described on Figures 15, 16 and 17.

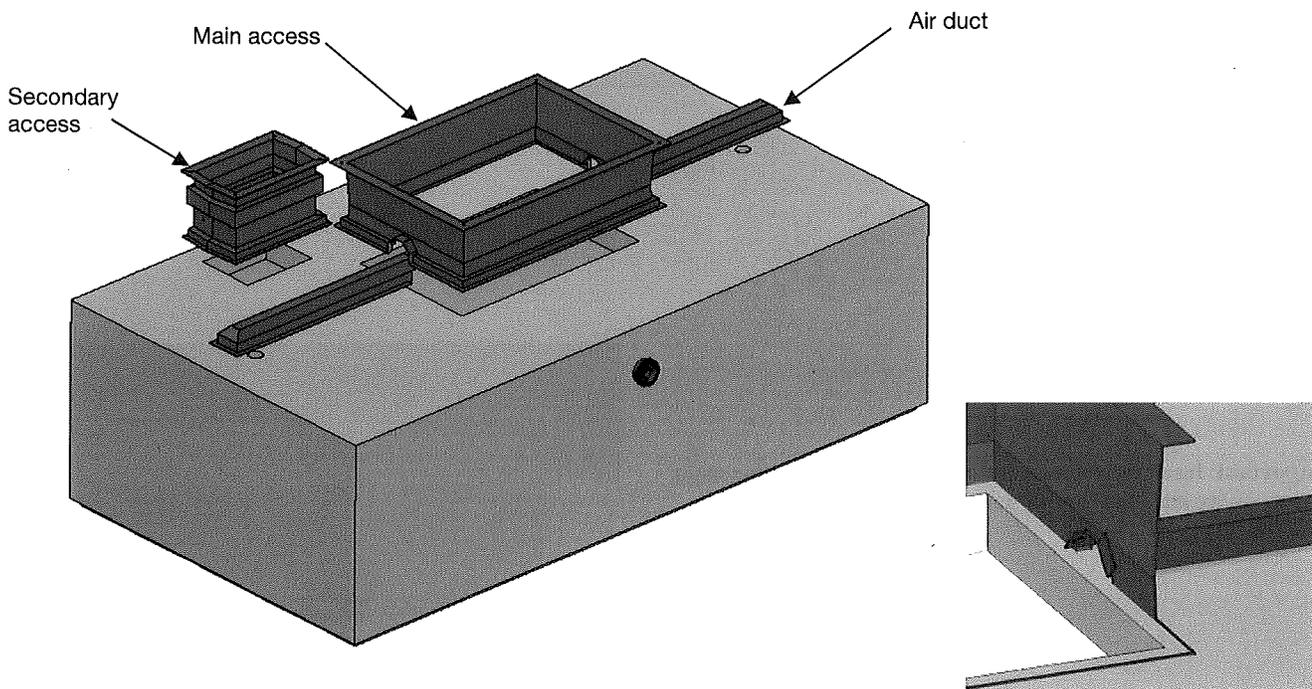


Figure 17

Important: Insert the folded edge of the air duct inside the main access cavity intended for this purpose.

Important: Put silicone between the air ducts and the main access (see figure 18).

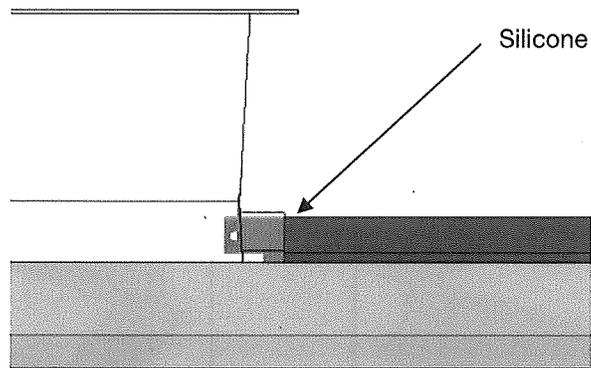


Figure 18

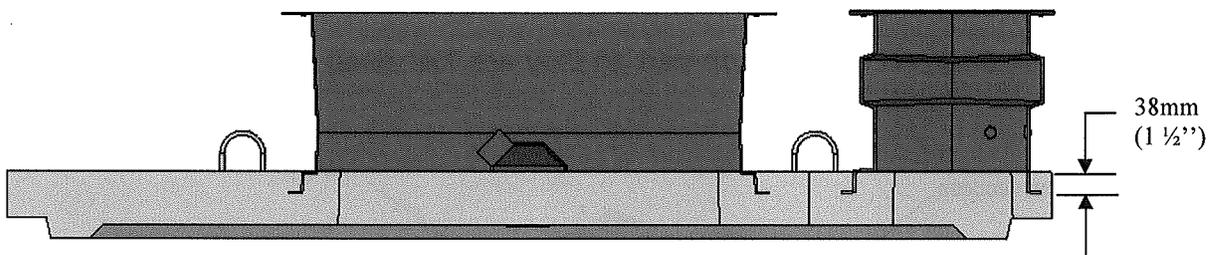


Figure 19

Important: Insert the folded edge of the air duct inside the main access cavity intended for this purpose.

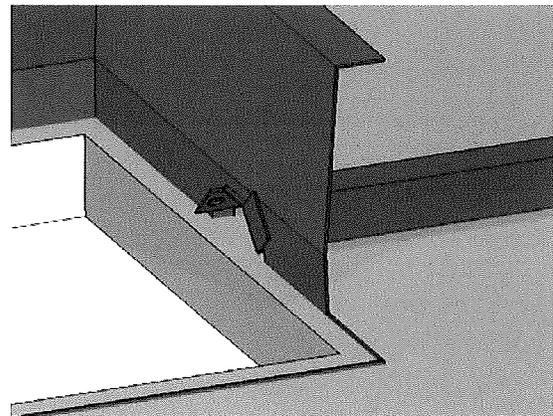


Figure 20

2.7 Pour concrete and complete the curing to obtain a strength bond of 5000 psi (28 days).

2.8 Fix the support brackets in the tank top part as described on Figure 21 and 22.

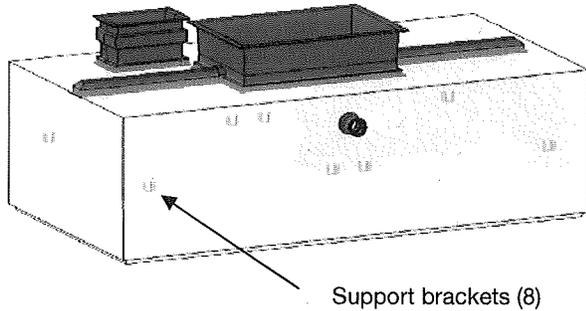


Figure 21

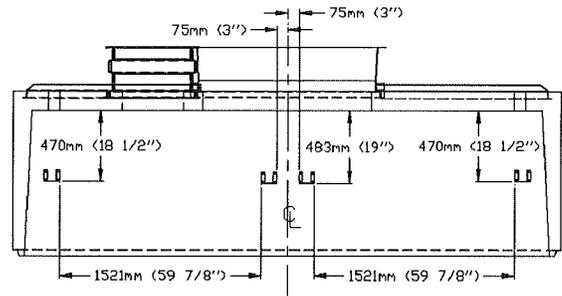


Figure 22

2.9 With a gabarit, pre-drill the six (6) holes maintaining the access funnel on the tank top part.

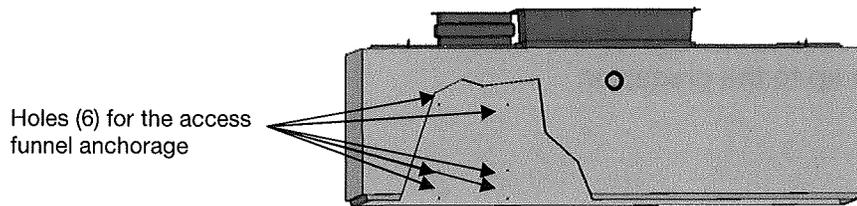


Figure 23

2.10 Set down the 2 insulating boards inside their respective access. The owner's documentation, the junction box and the alarm panel go in the secondary access as shown on figure 24.

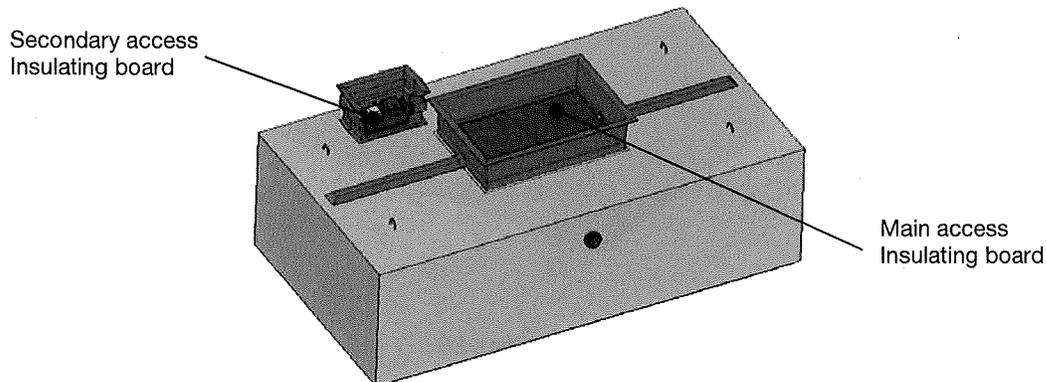


Figure 24

2.11 Secure the two access lids with bolts and washers supplied for as shown on Figure 25.

Secure the main and secondary access lids with bolts and washers supplied for.

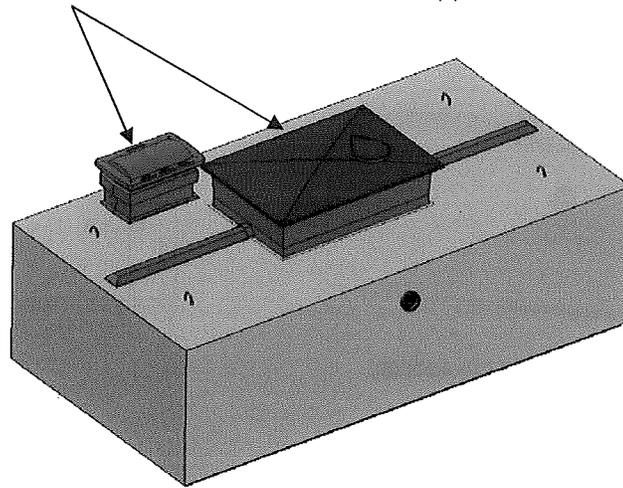


Figure 25

2.12 Add bench marks to correctly position the top tile on the concrete tank so the secondary access is on top of the access funnel (see figure 26). The kind of bench marks used is up to the precaster.

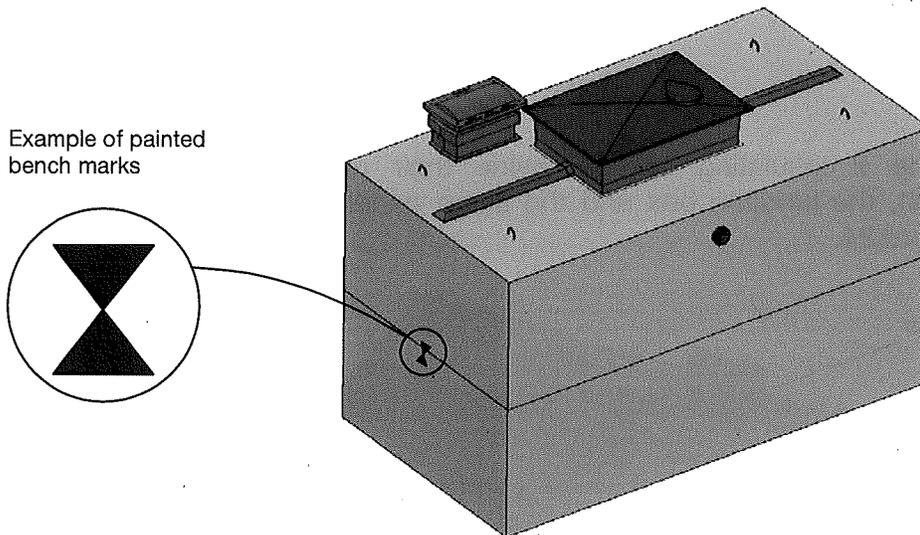


Figure 26

3. Final assembly of the Ecoflo® Biofilter concrete STB-650BR for delivery

3.1 Verify that you have all the components indicated in Table 3 and Figures 27.

Table 3 Components for the delivery of STB-650BR

Components	Quantity	Supplier
Tank bottom part as fabricated in step 1	1	Precaster
Tank top part as fabricated in step 2	1	Precaster
Central support plate	1	Premier Tech
Support rails	2	Premier Tech
Distribution plates	4	Premier Tech
Tipping-bucket	1	Premier Tech
4" Ø pipe for the wastewater inlet pipe	1	Premier Tech
¾" x ¾" butyl seals to bind the tank and the top tile together (or equivalent approved by Premier Tech)	45 ft	Precaster
Pallet of filtering media	1	Premier Tech

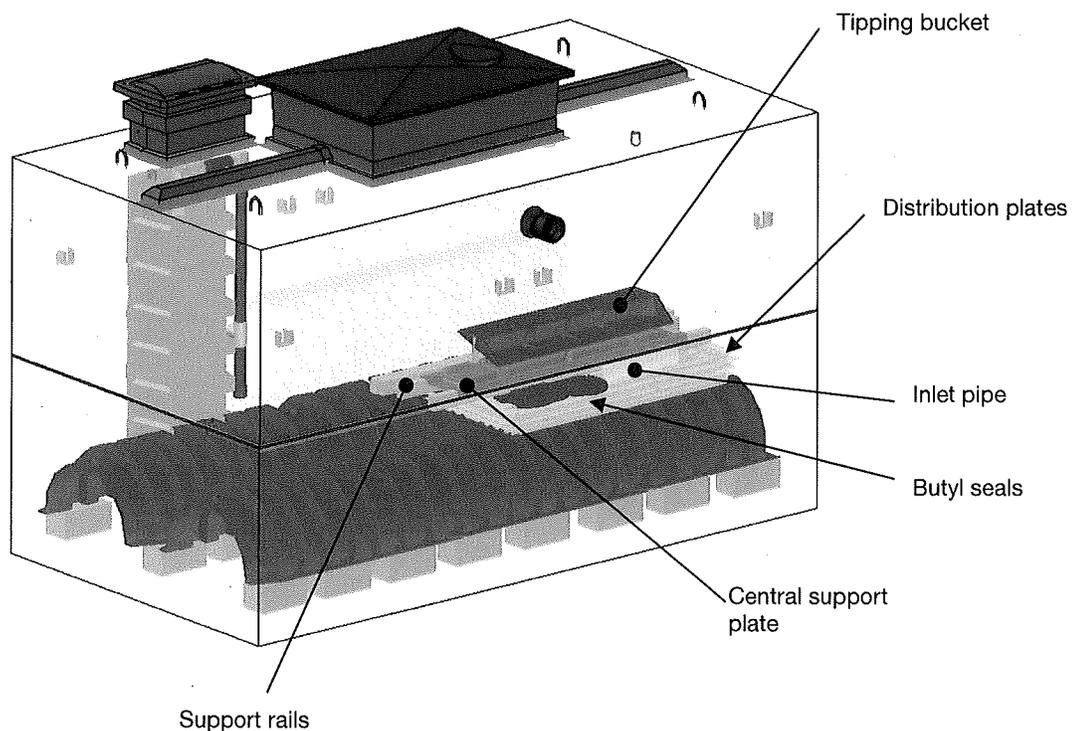


Figure 27

- 3.2 Put the components inside the concrete tank as illustrated on Figures 27.
- 3.3 Make sure that the filtering media is available for same time delivery than the concrete shell.
- 3.4 Have the shop quality control person verify the assembly before shipping.



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