Infiltrator Rainwater Harvesting System Installation Instructions

DECEMBER 2024

INFILTRATOR tanks

BEFORE YOU BEGIN

Infiltrator Water Technologies' tanks and Rainwater Management Solutions rainwater harvesting components must be installed according to state and/or local regulations and approvals, which supersede the manufacturers' installation instructions. If unsure of the installation requirements for a specific site, contact the health department or permitting authority. The Infiltrator Tank models referred to in this document include non-potable tanks IM-300, IM-540, IM-1060, CM-1060, IM-1250, and IM-1530; and potable tanks IM-550C, IM-1280C, IM-1760C.

Note: This document is intended to provide a general understanding of the steps required to complete a rainwater harvesting system installation. Instructions are deliberately cursory: always refer to specific product installation manuals for detailed instruction. Atypical sites may require steps to be completed in a different order or omitted all together. Contact Infiltrator for assistance if these general steps are incompatible with your site.

Rainwater Harvesting Installation

Scan QR code for supporting documents and installation guides.

MATERIALS AND EQUIPMENT NEEDED

- ☐ Infiltrator tank
- ☐ Access port lid(s)
- ☐ 10 screws per lid
- ☐ Tape measure
- ☐ Pipe, risers, etc.
- ☐ Socket wrench
- ☐ Bulkhead Fitting (if using lower inlet/outlet ports)
- ☐ Excavator
- ☐ Shovel/hand tools
- ☐ Level
- ☐ Appropriately sized hole saw
- ☐ Utility knife
- ☐ PVC pipe glue with primer
- ☐ Shielded Stainless Steel Rubber Couplings
- ☐ Bulkhead Fittings
- ☐ Appropriately sized hole saws (for gasket & bulkhead fitting connections)
- ☐ Weatherproof Ground Fault Circuit Interrupter (GFCI) Box and Cover
- ☐ Appropriate S&D, SDR 35, or PVC SCH 40 sizes & length
- ☐ 1" SCH 40 PVC pipe and fittings
- ☐ Thread sealant
- ☐ Essential RMS rainwater harvesting components (filters, smoothing inlet, overflow device, etc.)

INSTALLATION SITE SELECTION

1. Refer to Infiltrator IM- and CM-Series Septic Tank General Installation Instructions for detailed installation instructions of an Infiltrator potable or non-potable tank.
2. Do not install the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
3. The allowable soil cover depth is 6 to 48 inches (150 to 1,200 mm) depending on soil conditions and quality.
4. The tank shall not be installed where the subsurface water level outside the tank exceeds the height of the outlet pipe saddle.

SITE PREPARATION & CONSIDERATIONS

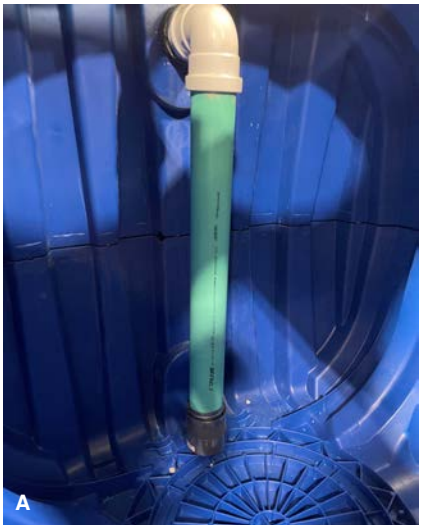
1. All downspouts intended to feed the rainwater harvesting system should be directed to the installation site by using appropriate downspout adapters, primer and glue, pipe and fittings. It is required that all lines are joined together using wye and tee fittings unless if the site requires otherwise.
2. Unless buoyancy control measures are required, the excavation width and length should be 18 to 36 inches (450 to 900 mm) larger than the tank on each side or sized as necessary to ensure proper backfill compaction. See Infiltrator Tank Buoyancy Control Guidance document for specific direction to determine when anti-buoyancy measures may be required.

Note: If the water level outside the tank exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. See Infiltrator Potable or IM- and CM- Series Tank General Installation Instruction documents for more details.

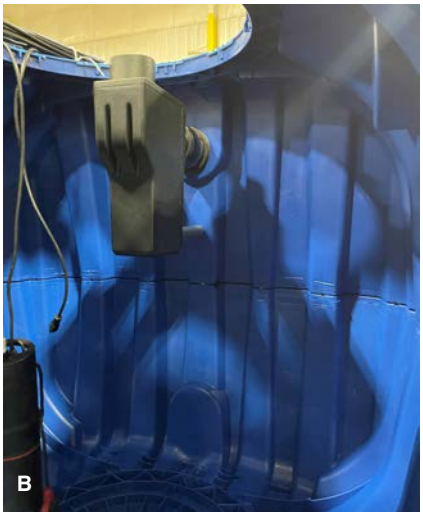
3. Apart from the IM-300, excavation depth shall account for the 55-inch (1,375 mm) tank height. The IM-300 height is 50.5 inches (1,283 mm). Account for 4 inches (100 mm) of bedding (if required) and cover depth. The excavation shall also account for the necessary elevation of the vortex filter and 0.25-inch (6.35mm) per foot slope required when connecting the filter to the tank.

TANK PREPARATION

1. Inspect the tank for damage before installation.
2. The tank inlet and/or outlet penetrations are not factory drilled. Drill 4-inch holes using a 5-inch hole saw on the drill points provided at each of the inlet and outlet ports. The inlet and outlet may be drilled on either the sides or ends of the tank, as required. Inlets and outlets may also be made through the tank at locations other than the designated inlet/outlet ports. Contact Infiltrator for assistance.
3. Install rubber grommets at the top inlet and/or outlet of tank. When using lower inlet and outlet ports, a bulkhead fitting is required. Space constraints at inlet and outlet ports can limit the size of the bulkhead fitting. Typically, 2 or 3" bulkhead fittings is the maximum allowable size that will fit. The designer or contractor should verify a specific bulkhead fit on the Infiltrator tank prior to installation.
4. The 4-inch inlet pipe should be pushed through the 4-inch inlet gasket installed on the tank. Use a 90-degree elbow to turn the 4-inch pipe downwards so that it extends to the bottom of the tank where it will fit into the 4-inch smoothing inlet (see Image A for guidance). Stub the pipe extending outside of the inlet 12-18 inches to allow it to be connected to the vortex filter pipe.


A

5. Use appropriate primer and solvent cement while connecting the pipes to the elbow fitting. The smoothing inlet shall not be glued to the pipe; instead, it will be held in place by the pipe as it rests on the bottom of the tank.
6. The multi-siphon overflow device should be positioned on the opposite end of the tank from the inlet to allow for the skimming action to have full effect on the water in the tank. The 4" overflow pipe should be pushed through the 4-inch tank gasket with at least 6-8 inches protruding from the gasket on the inside; the same pipe should be snubbed 12-18 inches outside of the tank (see Image B for guidance). This pipe will be connected to the vortex filters debris outlet pipe later in the installation.


B

Failure to comply with these installation instructions will invalidate the warranty. Contact Infiltrator Water Technologies'Technical Services Department for assistance at 1-800-221-4436.

7. The overflow device is mounted to the inside of the tank and secured to the 4" tank overflow pipe fitting with a 4-inch shielded stainless steel rubber coupling. The supplied support strut is inserted in the small dimple at the bottom of the device on the same side. The other end of the support strut rests against the inside of the tank. This strut is designed to support the weight of the unit when full of water (12.5 lbs).

Note: The tank overflow piping must be of equal or greater size than the rainwater inlet piping to ensure proper draining during overflow events. Most standard configurations use 4-inch pipe for both the inlet and overflow.

VORTEX FILTER INSTALLATION

1. The vortex filter must be installed plumb and level. It must be at an elevation in which the inlet to the vortex filter will have adequate fall to be gravity-feed, as well as adequate fall from the clean water outlet to the tank. A 0.25-inch per foot slope is recommended. See Vortex Filter Instruction Manual for detailed explanation on the proper installation of this product.

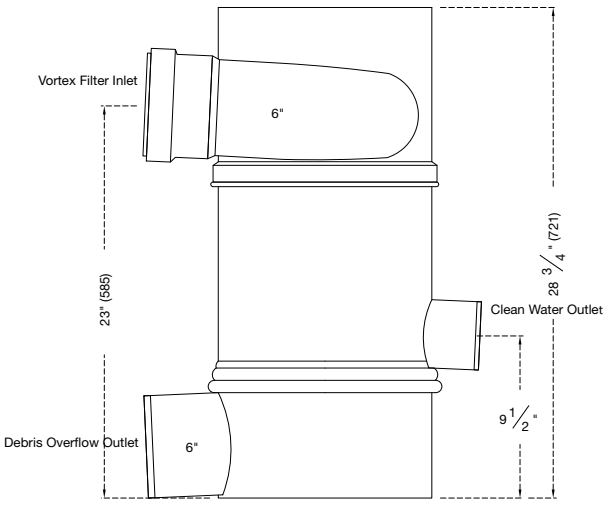
2. If installed underground in areas with a high-water table, it is recommended to bed gravel beneath and around filter to allow groundwater to drain away from unit. Once the filter is set and the inlet and outlet points have been positioned, it is recommended to seal around the swivel point of the unit. This will prevent groundwater from seeping in. A heavy, waterproof rubber tape is best for this application.

3. An extension tube can be installed to raise the inspection opening to be flush to grade, allowing for deeper burial of the vortex filter. Whenever applicable, the additional length of the extension should be accounted for during installation. When an extension tube is installed, it can be cut along the grooves to shorten it to the required length. The final ring (at the top) must be firmly bolted to the extension tube to provide secure support for the cover. The end of the extension tube with the molded collar is placed directly on the vortex filter housing and fastened securely by inserting the stainless-steel bolts supplied through the pre-drilled holes before the vortex filter is placed in the ground.

4. The vortex filter has three sections that swivel to assist with the alignment of plumbing connections. At least 20" of horizontal pipe is required before the inlet of the vortex filter for maximum efficiency. The following vertical distances between piping connections are required for proper installation of the Wisy WFF150 Vortex Filter (suitable for rooftop areas less than 5,500 square feet):

- Vertical distance between rainwater inlet pipe and filter drain/overflow pipe: 20"
- Vertical distance between rainwater inlet pipe and piping to storage tank: 12.5"

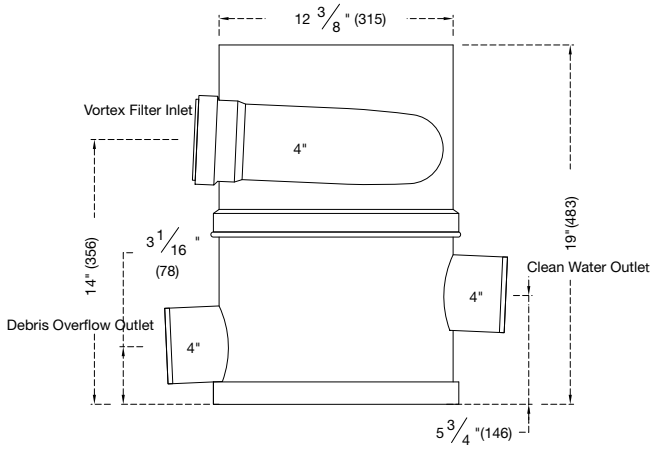
Figure 1: WisyWFF150 Vortex Rainwater Filter (5,500 square feet filter)



5. The following vertical distances between piping connections are required for proper installation of the Wisy WFF100 Vortex Filter (suitable for rooftop areas less than 2,100 square feet):

- Vertical distance between rainwater inlet pipe and filter drain/overflow pipe: 11"
- Vertical distance between rainwater inlet pipe and piping to storage tank: 8.5"

Figure 2: Wisy WFF100 Vortex Rainwater Filter (2,100 square feet filter)



6. Once the vortex filter is in place, insert the short piece of 6-inch pipe into the inlet (top connection). Be sure the pipe is fully inserted and pushed past the gasket to maintain a proper seal. For the WFF 150, use a 6-inch shielded stainless steel rubber coupling to attach the 6-inch filter inlet to the pipe. A second 6-inch shielded stainless steel rubber coupling will be used to connect 6-inch pipe to the 6-inch overflow outlet (bottom connection). This overflow pipe should be extended to the desired overflow location, preferably joined to the tank's overflow pipe in a subsequent step. A 4-inch shielded stainless steel rubber coupling will be used to connect 4-inch pipe to the clean water outlet (middle connection) to the inlet stubbed pipe. The WFF 100 will follow the same process as just described for the WFF 150 filter, but with all 4-inch shielded stainless steel rubber couplings.

TANK & RISER INSTALLATION

1. Refer to Infiltrator's IM-Series Potable Water Tank General Installation Instructions or, for non-potable tanks, Infiltrator's IM- and CM-Series Tank General Installation Instructions for detailed directions on excavation, installation, and backfilling the tank(s). Refer to Infiltrator IM and CM-Series Tank Riser Connection Guidance Document for EZsnap Risers document for direction on how to properly install the risers.

2. Each tank shall be vented if installing multiple tanks in series. Contact infiltrator for details. Tanks should be connected using 2-inch or 3-inch bulkhead fittings at the tank bottom saddles ports.

3. Using all four of the tank's integral lifting lugs, lower tank into excavation with the excavator and lifting straps.

4. Ensure tank is completely level and appropriately distanced from the vortex filter to allow for a 0.25-inch per foot drop to the inlet snubbed pipe. Glue the two pipes together. Pipe the debris overflow pipe from the vortex filter in the direction of the tanks overflow outlet pipe. Join these two outlet pipes together and run them to daylight.

5. Backfill the tank(s) as instructed in the aforementioned installation instruction documents.

PUMP & AIR VENT INSTALLATION

Pumps may be supported on a stable, level 16x16-inch (400x400-mm) platform positioned on the bottom of the tank. One 16x16-inch block or two 8x16-inch (200 -mm x 400-mm) side-by-side blocks may be used. Limit block height to account for pump height and liquid levels during pump cycles. Block(s) should be placed below an access opening and level upon the tank bottom. For two blocks, orient them perpendicular to ribs on the tank bottom.

Installation of other items such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the system plans and product manufacturer's instructions and compliant

with applicable state or local rules and regulations. Appurtenances shall be fastened to the tank riser system and not the tank body or access opening rim. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.

Note: Prefabricated pump vaults may be installed.

Note: Infiltrator Water Technologies is not responsible for components added to IM-Series Potable Water Tanks. The tank purchaser is solely responsible for ensuring that such added components are suitable for use in a potable water system

1. Consult manufacturer guidelines for detailed installation requirements. General installation tips are included below. It is very helpful to install the pump in a way that will facilitate removal for future service or replacement.
2. The pump discharge piping can exit the tank through a 1-inch bulkhead fitting or same sized rubber gasket. Schedule 40 PVC is ideal for plumbing the pump outlet line. It is recommended to plumb the pump discharge line with a union within reach of the access port.
3. It is recommended, but do not require, installing a Grundfos SBA Water Pump. This pump comes with a 45-foot cord and 3-prong plug. The plug must be plugged into a GFCI protected outlet or a GFCI outlet. It is recommended that a weatherproof GFCI and cover be mounted inside the tank riser, safely above the max water level, facing inward. This will facilitate pump removal for maintenance or replacement versus running the pump power cable out of the tank to an external outlet.
4. Ensure the circuit and breaker are appropriately sized and connected to the pump. The Grundfos SBA 3-45AW requires 120 volts and 9.5 amps. See provided manual for additional instructions. Once the pump is connected to a power source, ensure all excess wire is stored securely and is out of the way. Cable ties work very well for this purpose.
5. The Grundfos SBA pump is considered an “on-demand” pump. The pump has a float switch that will allow the pump to run when there is sufficient water in the tank to operate. If there is insufficient water available, the float will lower, and the pump will turn off to avoid running dry and damaging it. The pump also has a floating filter intake connected to a hose. The floating filter allows water to be drawn below the surface and above the bottom of the tank, thus avoiding floating or sinking sediment.

Note: Ensure both the float switch and floating filter intake are not obstructed and free to float up and down with the water level inside the tank. To ensure proper operation, point both away from the pump towards the center of the tank to prevent them resting on the sides of the tank.

6. To install air ventilation, begin by installing the threaded male end into the 2-inch bulkhead fitting and glue the remaining parts together using PVC primer and glue. Ensure that they form an “S” shape as shown in Figure 3.
7. The cap end with the vent holes must be above finished ground level and pointing down top prevent unwanted material from entering the tank. If necessary, the length of the longest center pipe can be increased (with additional schedule 40 PVC pipe, not provided) or decreased to adjust the height of the vent cap above the ground. This vent will allow air to enter and exit the tank as the water level rises and lower preventing a vacuum.

Figure 3: Vent Piping

INFILTRATOR WATER TECHNOLOGIES, LLC. ("INFILTRATOR") INFILTRATOR® POTABLE WATER TANK LIMITED WARRANTY
FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Infiltrator Potable Water Tank. A Potable Water Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Potable Water Tank.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Potable Water Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Potable Water Tank contrary to the installation instructions and disposing of chemicals or other materials contrary to normal Potable Water Tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of a Potable Water Tank should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of a Potable Water Tank.

INFILTRATOR IM-SERIES POTABLE WATER TANK LIMITED LIABILITY

The IM-Series Potable Water Tank is NSF/ANSI 61 certified. NSF/ANSI 61 establishes minimum health effects requirements for materials, components, products or systems that contact drinking water, drinking water treatment chemical, or both. This includes minimum health effects requirements for the chemical contaminants and impurities that are indirectly imparted to drinking water from products, components, and materials used in drinking water systems. NSF/ANSI 61 does not establish performance, taste and odor, or microbial growth support requirements for drinking water system products, components, or materials. The tank purchaser is solely responsible for ensuring that provisions are in place to meet applicable local, state, and federal water quality standards for a drinking water system that includes an IM-Series Potable Water Tank. Potable water systems that incorporate the IM-Series Potable Water Tank must be designed and installed by properly licensed professionals and regular water quality testing should be conducted for the system in accordance with applicable requirements. In addition, care should be taken to have the IM-Series Potable Water Tank thoroughly cleaned and disinfected prior to use and as necessary to maintain acceptable water quality during its service life. Infiltrator Water Technologies, LLC is not responsible for water quality produced by drinking water systems containing the IM-Series Potable Water Tank.

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water technologies

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