

Installation Instructions for Residential Intermittent Sand Filters



INFILTRATOR®
systems inc.

Before You Begin

This document provides installation instructions for residential intermittent sand filters constructed from Infiltrator chambers. Check state and local regulations for proper sizing and design criteria.

Note: These instructions are also valid for commercial and recirculating sand filters.

Soil and site conditions must be approved prior to installation. Conduct a thorough site evaluation to determine the proper sizing and siting of the system before installation.

At no time during the construction process should construction traffic be allowed over the system. The size of a residential sand filter will easily allow for an excavator to reach out over the system to place material.

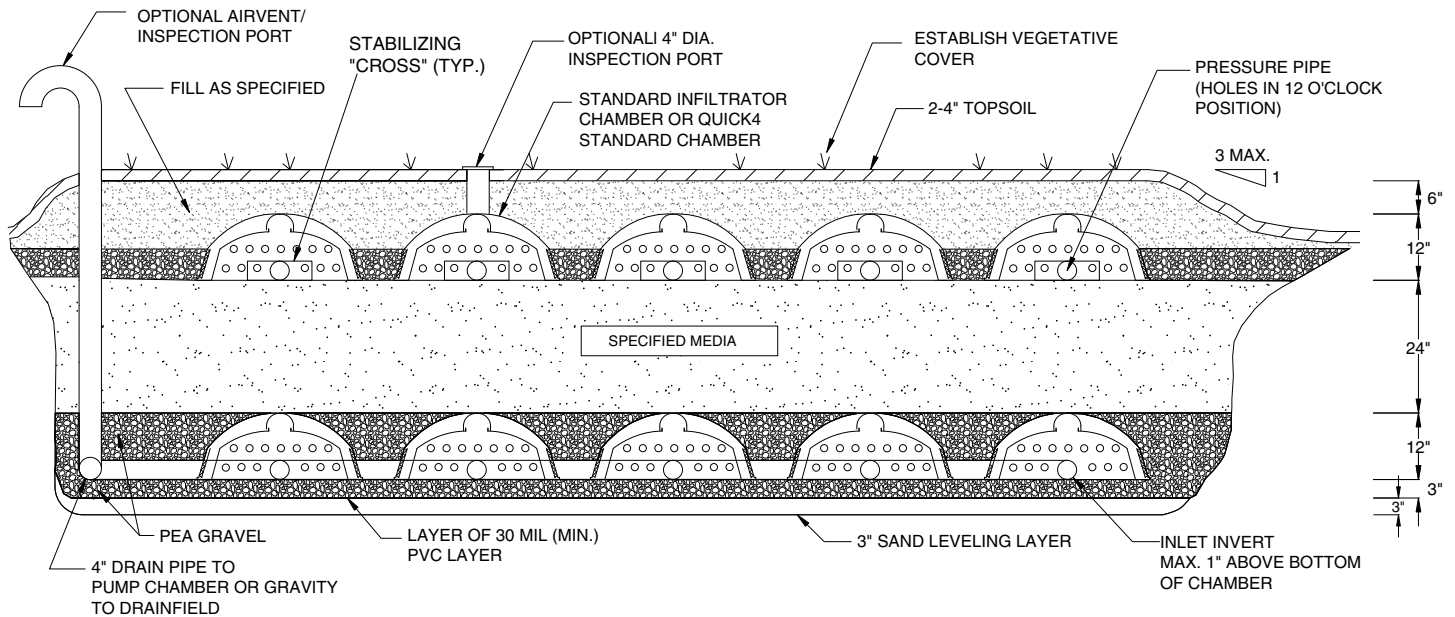
Note: A "residential system" is defined as a single family residence.

Materials and Equipment Needed

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| <ul style="list-style-type: none"> ☒ Infiltrator Chambers ☒ End Plates ☒ 2 x 4 Frame (Constructed of Plywood) ☒ Sand Filter Liner ☒ Pea Gravel ☒ Filter Media Per State and/or Local Regulations ☒ PVC and Couplings (4-inch in Diameter) ☒ 4-inch Cap for Inspection Port ☒ Pressure Lateral Pipe | <ul style="list-style-type: none"> ☒ Backhoe/Bulldozer ☒ Laser, Transit or Level ☒ Garden Hose and Rake ☒ Hole Saw and Router Bit ☒ Tape Measure ☒ 2-inch Drywall Screws ☒ Glue and Primer |
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SAND FILTER DESIGN

(not to scale)



Excavating and Preparing the Site

1. Prepare and excavate the area for the sand filter. If required, build a containment vessel per state regulations or per design.



2. Place two to three inches of sand in the bottom of the sand filter pit. Grade the sand with a rake.

3. Lay the sand filter liner on top of the sand, making sure that it is smooth, straight, and clean of debris.



4. Place three inches of pea gravel on top of the liner to insure that the chambers do not puncture the liner (use washed stone as required by state regulations).

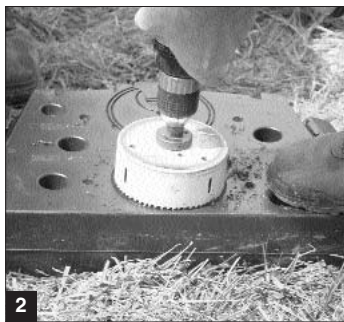
5. Distribute the pea gravel evenly. Check to assure that finish grade is level. Place a wet well (pump chamber) as required by state regulations or per design.

Note: As the sand filter is filled with various media, be sure to backfill the outside of the forms to the same elevation to prevent the forms from collapsing.

Installing Bottom Layer of Chambers

1. Pre-construct the chambers before placing them into the bottom of the sand filter pit. Determine the number of chambers and end plates needed.

2. With a hole saw, drill the appropriately-sized holes in the end plates for the 4-inch PVC outlet pipe



3. Attach the end plate to the inlet end of the chamber by lining up the locking hubs with the corresponding chamber end. Apply firm pressure to lock the hubs in place on one side of the chamber and then the other.

Note: The end plate is clearly marked "INLET SIDE TOWARD CHAMBER".

4. Attach closed end plate on the outlet end of the last chamber in each row following instructions in Step 3.

5. Check the header pipe to be sure that it is level.

6. Set the inlet invert at a maximum of one inch above the bottom of the sand filter.

7. Place the first chamber with the closed end plate at the beginning of the row and check to be sure that it is level.



8. Lift and place the end of the next chamber onto the previous one at a 45-degree angle. Line up the notches on the center end of the chamber and lower it to the ground to engage the interlocks.

9. Continue interlocking the chambers until the row is completed.

10. Continue installing the rows of chambers. As the chambers are installed, check to be sure that they are level.

Covering Bottom Layer of Chambers

1. Once the chambers are in place, fill the bed with pea gravel up to the top of the chambers. Be sure to fill the perimeter of the pit before filling the center.

2. Place two feet of specified filter sand over the chambers. Maintain equal density of the sand throughout the bed per code or design (vibratory plate compactor, water settling, etc.).



3. Make sure that sand is placed securely around the wet well to prevent effluent from short circuiting by migrating directly to the bottom of the sand filter pit.

Note: Optional air venting of the bottom row of chambers will provide more oxygen at the sand interface and may increase the efficiency of the sand filter.

Installing Top Layer of Chambers

1. Once the sand is in place, the pressure pipe can be installed with the orifices facing up in the 12 o'clock position.

2. When laying pipe on the bottom of the sand, use a cross to ensure that the pipe is secure. The cross should extend out a minimum of 4 inches on each side.



Note: The pressure pipe may also be suspended from the top of the chambers with pipe hangers. Refer to Infiltrator's Pressure Distribution Installation Instructions for more information.

3. With a hole saw, cut openings in the end plates for the pressure lateral pipe, clean-outs, and inspection ports.

4. Insert the pressure lateral pipe into the hole in the end plate and slide it into the manifold pipe. Prime and glue the pressure lateral pipe to the manifold pipe.

Note: Many jurisdictions require a wet-run pressure check. This may be done prior to chamber installation with the pipe lying on the sand.

5. With the pressure lateral pipe through the end plate, attach the end plate to the chamber by lining up the locking hubs with the corresponding chamber end. Apply firm pressure to lock the hubs in place on one side of the chamber, then the other.

6. Lift and place the end of the next chamber onto the previous one at a 45-degree angle. Line up the notches on the center end of the chamber and lower it to the ground to engage the interlocks.

7. Continue interlocking chambers until row is completed.

8. Attach the end plate to the last chamber in the row. If a cleanout extension is required, cut a hole in the end plate using a hole saw at the proper elevation through which the lateral pipe will extend. A 90-degree elbow "turn-up" will then be added to the lateral pipe so that it extends up to the surface for access.

9. Lay the next row of chambers in the filter liner parallel to the first, following Steps 1-8 above.



Note: When installing Infiltrator chambers in an intermittent sand filter, it may be necessary to cut chambers to fit around the wet well. Make sure to cut between domed sections and never cut directly across the middle of chamber louvers.

Refer to Infiltrator's Instructions for Cutting Chambers to Accommodate Site Constraints or call 1-800-221-4436 for more information.

10. After the top layer of chambers has been installed, place pea gravel between chamber rows up to the top of the chamber louvers prior to covering the system.

Installing the Inspection Ports on Top Layer of Chambers

1. Using a hole saw, cut an opening in the pre-marked area located in the center top of the chamber. The hole saw should match the size and type of pipe being installed.

2. Make sure the pipe is stable and secured to the chamber to prevent it from moving or being pulled out of the sand filter.

3. Glue a 6-inch long piece of 4-inch PVC pipe into pipe coupling.

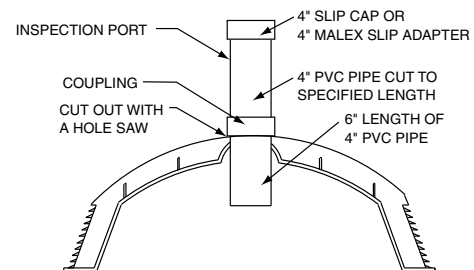
4. Insert the 6-inch piece of pipe into the opening at the top of the chamber so the coupling sits on top of the chamber.

5. Attach a cap or threaded cleanout assembly onto the protruding pipe.

6. A small meter or valve box may be used if the inspection port is desired below grade.

Note: Installing inspection ports before placing the top row of chambers will facilitate installation.

INSPECTION PORT DETAIL



Covering the System

Before backfilling, the system must be inspected by a health officer or official as required by state and local codes. Create an as-built drawing at this time for future records.

1. Cover the bed with sand, loamy soil, or as specified by design, state, or local codes. **Do not use clay material.**

Note: No machinery is allowed on chambers in sand filters.

2. Once the sand filter is covered, the site should be seeded or sodded to prevent erosion.

Note: If the system is for new home construction, it is important to leave marking stakes along the boundary of the system. This will notify contractors of the system location so they will not cross it with equipment or vehicles.

Infiltrator Systems, Inc. Limited Warranty

(a) The structural integrity of each chamber and end plate manufactured by Infiltrator (collectively referred to as "Units"), when installed and operated in a new, residential leachfield of an onsite septic system in accordance with Infiltrator's installation instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date upon which a septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required for the septic system by applicable law, the one (1) year warranty period will begin upon the date that installation of the septic system commences. In order to exercise its warranty rights, Holder must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for those Units determined by Infiltrator to be defective and covered by this Limited Warranty. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b) THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

(c) The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper siting, improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty. Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change this Limited Warranty in any manner whatsoever, or to extend this Limited Warranty. No warranty applies to any party other than the original Holder.

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The above represents the standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units 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 Units.

For specific information on bed, mound, serial, pressure-dosed, or sandy-soils installations, call Infiltrator Systems Inc. at 1-800-221-4436.



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