Quick4 Chamber Systems in Ontario, Canada

The purpose of this product information sheet is to provide specific design and installation information pertinent for the use of Infiltrator Quick4 chambers in Ontario, Canada. Infiltrator products must be used in conjunction with the standards described in the Ontario, Canada XXXXXX and Infiltrator’s approval (www.XXXXXX). This document provides a brief description of the chamber and sizing specifications.

For more detailed design information, please contact Infiltrator Systems at 1-800-221-4436

www.infiltratorsystems.com
INTRODUCTION

Quick4 Chambers

The Quick4 Equalizer 24 LP and Quick4 Equalizer 24 HD chamber can be installed in an 18-inch wide trench. The Quick4 Equalizer 36 chamber fits in a 24-inch wide trench. The Quick4 Equalizer 36 StraightLock chamber is specifically designed for bed applications. All chambers offer advanced contouring capability with their Contour Swivel Connection™. The MultiPort™ Endcaps have high and low inlets allowing for maximum piping flexibility.

Quick4 Equalizer 24 Low Profile (LP) nominal chamber specifications

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<th>Size</th>
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Quick4 Equalizer 24 HD nominal chamber specifications

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Quick4 Equalizer 36 Straightlock nominal chamber specifications

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Quick4 Equalizer 36 nominal chamber specifications

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<td>Invert Height</td>
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PRODUCTS

Quick4 Equalizer 24 HD Chambers

TYPICAL SIDE AND END VIEWS
(not to scale)

MULTIPORT ENDCAP
(not to scale)

Quick4 Equalizer 24 Low Profile Chambers - Shallow Buried Trenches ONLY

TYPICAL SIDE AND END VIEWS
(not to scale)

MULTIPORT ENDCAP
(not to scale)
PRODUCTS

Quick4 Equalizer 36 Chambers

TYPICAL SIDE AND END VIEWS
(not to scale)

MULTIPORT ENDCAP
(not to scale)

Quick4 Equalizer 36 StraightLock Chambers

TYPICAL SIDE AND END VIEWS
(not to scale)

MULTIPORT ENDCAP
(not to scale)
## TABLE 1: QUICK4 EQUALIZER 24 CHAMBER SIZING

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**NOTES:**
1. Per section 8.7.3.1 (1)(b) of the Ontario Building Code, the total length of distribution piping shall not be less than 40 m for an absorption trench (Min. # of chambers required for a 40 m trench length = 33-Quick4 Equalizer 24 chambers).
2. Per section 8.7.3.1 (2) of the OBC, every leaching bed constructed by means of absorption trenches shall have a total length not less than determined by the formula \( L = \frac{QT}{200} \).

*To design a system with exact flow rates use the formula \( L = \frac{QT}{200} \). For example, a home with a flow rate of 1200 l/day and a design rate of 15 min/cm would need 68 chambers. (1200 l/day x 15 min/cm) divided by 200 = 90 m of trench required. 90 m divided by 1.22 m/chamber = 74 chambers.*
## INGROUND TRENCHES

**TABLE 2: QUICK4 EQUALIZER 36 CHAMBER SIZING**

<table>
<thead>
<tr>
<th>Design Formula</th>
<th>Design Rate min./cm (T)</th>
<th>2 1100 l/day* (Q)</th>
<th>3 1600 l/day* (Q)</th>
<th>4 2000 l/day* (Q)</th>
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**NOTES:**
1. No system shall be constructed with a length less than 40 meters (Minimum # of chambers required = 33 Quick4 Equalizer 36 chambers).
2. Every leaching bed constructed by means of absorption trenches shall have a total length not less than the value determined by the formula L = QT/200 (T<6 min/cm) OR L = QT/300 (T>6 min/cm). To design a system with exact flow rates use the formula L = QT/200 (if T = < 6 min/cm) OR L = QT/300 (if T = > 6 min/cm). For example, a home with a Flow Rate of 1200 l/day and a Design Rate of 15 min/cm would need 50 chambers. (1200 l/day(Q) x 15 min/cm(T) ÷ 200 = 90m of trench required. 90m ÷ 1.22 m/chamber = 74 chambers total). For limitations please see Note 1.
INGROUND TRENCHES

Chamber Configurations

Q4 EQUALIZER 24 TYPICAL CROSS SECTION
(not to scale)

Q4 EQUALIZER 24 TYPICAL PLAN VIEW
(not to scale)
INGROUND TRENCHES

Chamber Configurations

Q4 EQUALIZER 36 TYPICAL CROSS SECTION
FOR L=QT/200 SIZING
(not to scale)

Q4 EQUALIZER 36 TYPICAL PLAN VIEW
FOR L=QT/200 SIZING
(not to scale)
INGROUND TRENCHES

Chamber Configurations

Q4 EQUALIZER 36 TYPICAL CROSS SECTION
FOR L=QT/300 SIZING
(not to scale)

Q4 EQUALIZER 36 TYPICAL PLAN VIEW
FOR L=QT/300 SIZING
(not to scale)
Installation Instructions for Quick4 Pressurized Sand Mound Systems

Before You Begin

These installation instructions are for Quick4 Standard chambers in Pennsylvania. These chambers may only be installed according to state regulations and guidance.

Excavating and Preparing the Site

1. Stake out the location of all trenches and lines. Set the “elevations of the tank, pipe, and trench bottom in accordance with specifications.
2. Install sedimentation and erosion control measures. Temporary drainage swales/berms may be installed to protect the site during rainfall events.
3. Excavate and level 2-foot wide trenches with proper center-to-center separation. Verify that the trenches are approximately level and have been raked free of any soil smearing.

NOTE: Over excavate the trench width in areas where you are planning to contour.

Preparing the MultiPort Endcap

1. With a screwdriver or utility knife start the tear-out seal at the appropriate diameter for the inlet pipe. The seal allows for a tight fit for 3-inch, 4-inch SDR35, and 4-inch SCH40 pipe. Pipe to be sure it is level or has the prescribed slope.
2. Pull the tab on the tear-out seal to create an opening on the endcap.
3. Snap off the molded splash plate located on the bottom front of the endcap.
4. Install splash plate into the appropriate slots below the inlet to prevent trench bottom erosion.
5. Insert the inlet pipe or hub of fitting into the endcap at the beginning of the trench.

Materials and Equipment Needed

- Quick4 chambers
- Multiport endcaps
- Backhoe, excavator
- Laser, transit or level
- Shovel or rake
- Tape measure
- Utility knife
- Screwdriver

These guidelines for construction machinery must be followed during installation.

- Avoid direct contact with chambers when using construction equipment. Chambers require a 12-inch minimum of compacted** cover to support a wheel load rating of 16,000 lbs/axle or equivalent to an H-10 AASHTO load rating.
- Only drive across the trenches when necessary. Never drive down the length of the trenches.
- To avoid additional soil compaction, never drive heavy vehicles over the completed system.

**Compacted to a comparable level of native soil.
GENERAL INSTRUCTIONS

Installing the System

1. Check the header pipe to be sure it is level or has the prescribed slope.
2. Place the inlet end of the first chamber over the back edge of the endcap.
3. Lift and place the end of the next chamber onto the previous chamber by holding it at a 45-degree angle. Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower it to the ground to connect the chambers.

NOTE: When the chamber end is placed between the connector hook and locking pin at a 45-degree angle, the pin will be visible from the back side of the chamber.

NOTE: The connector hook serves as a guide to ensure proper connection and does not add structural integrity to the chamber joint. Broken hooks will not affect the structure or void warranty.
4. Swivel the chamber on the pin to the proper direction for the trench layout.

NOTE: The chamber allows for 15 degrees of swivel in either direction at each joint.
5. Where the system design requires straight runs, use the StraightLock Tabs to ensure straight connections. To activate the tabs, pop the tabs up with your thumb and lock into place.
6. Continue connecting the chambers until the trench is completed.
7. The last chamber in the trench requires an endcap. Lift the endcap at a 45-degree angle and insert the connector hook through the opening on the top of the endcap. Applying firm pressure, lower the endcap to the ground to snap it into place. Do not remove the tear-out seal.
8. With the system ready for inspection, shoot the trench for level grade at the beginning, midpoint and end of trench.
9. To backfill the chambers, fill the sidewall area by pulling soil from the sides of the trench. Continue backfilling the entire sidewall area, making sure the fill covers the louvers.
10. Proceed to the next trench and begin with Step 1.

Installing Optional Inspection Ports

1. With a hole saw drill the pre-marked area in the top of the chamber to create a 4-inch opening.
2. Set a cut piece of pipe of the appropriate length into the corresponding chamber’s inspection port sleeve.

NOTE: The sleeve will accommodate a 4-inch SCH40 pipe.
3. Use two screws to fasten pipe to the sleeve around the Inspection port.
4. Attach a threaded cap or cleanout assembly onto the protruding pipe at the appropriate height.
5. A small valve cover box may be used if inspection port is below the desired grade.

Covering the System

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

1. Backfill the trench by pushing fill material over the chambers with a backhoe. Keep a minimum of 12 inches of compacted cover over the chambers before driving over the system.

NOTE: Do not drive over system while backfilling in sand.

NOTE: For shallow cover applications, you must mound 12 inches of soil over the system before driving over it, and then grade it back to 6 inches upon completion.
2. It is best to mound several inches of soil over the finish grade to allow for settling. This also ensures that runoff water is diverted away from the system.
3. After the system is covered, the site should be seeded or sodded (per part 8 of the Ontario Building Code) 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 site location so they will not cross it with equipment or vehicles.
RAISED BEDS / SYSTEM SIZING

Required Fill Material

Select fill should be clean sand and gravel containing no organic material or deleterious substances. Fill shall meet Ontario Building Code specifications and the specific requirements of Infiltrator Systems of 8% or less silt particles passing the #200 sieve as stated in this manual. Refer to the following gradation specifications in the table below.

**TABLE 1: SIEVE SIZE**

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.5-mm (3/8-in.)</td>
<td>95 to 100</td>
</tr>
<tr>
<td>4.75-mm (No. 4)</td>
<td>85 to 100</td>
</tr>
<tr>
<td>2.36-mm (No. 8)</td>
<td>65 to 100</td>
</tr>
<tr>
<td>1.18-mm (No. 16)</td>
<td>40 to 85</td>
</tr>
<tr>
<td>600-µm (No. 30)</td>
<td>20 to 65</td>
</tr>
<tr>
<td>300-µm (No. 50)</td>
<td>5 to 40</td>
</tr>
<tr>
<td>150-µm (No. 100)</td>
<td>0 to 20</td>
</tr>
</tbody>
</table>

**TABLE 2: QUICK4 EQUALIZER 36 CHAMBER SIZING FOR RAISED BED WITH IMPORTED FILL**

<table>
<thead>
<tr>
<th>Design Rate min/cm (T)</th>
<th>Number of Bedrooms</th>
<th>2 (1100 l/day* (Q))</th>
<th>3 (1600 l/day* (Q))</th>
<th>4 (2000 l/day* (Q))</th>
<th>5 (2500 l/day* (Q))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trench Length (m)</td>
<td>Minimum # of Chambers</td>
<td>Trench Length (m)</td>
<td>Minimum # of Chambers</td>
<td>Trench Length (m)</td>
</tr>
<tr>
<td>L = QT/200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 40.00 33 40.00 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2 40.00 33 40.00 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 40.00 33 40.00 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 40.00 33 40.00 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 40.00 33 40.00 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 40.00 33 48.00 40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L = QT/300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 40.00 33 40.00 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8 40.00 33 42.67 35</td>
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<td>11 40.33 34 58.67 49</td>
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<tr>
<td>12 44.00 37 64.00 53</td>
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</tr>
<tr>
<td>14 51.33 43 74.67 62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 55.00 46 80.00 66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
1. No system shall be constructed with a length less than 40 meters.
2. Every leaching bed constructed by means of absorption trenches shall have a total length not less than the value determined by the formula L = QT/200 (T<6 min/cm) OR L = QT/300 (T>6 min/cm).
3. Select fill should be clean sand and gravel containing no organic material or deleterious substances. Fill shall meet Ontario Building Code specifications and the specific requirements of Infiltrator Systems of 8% or less silt particles passing the #200 sieve as stated in this manual.
RAISED BEDS

Chamber Configurations

Q4 EQUALIZER 24 TYPICAL CROSS SECTION
(not to scale)

Q4 EQUALIZER 24 TYPICAL PLAN VIEW
(not to scale)
RAISED BEDS

Chamber Configurations

Q4 EQUALIZER 36 TYPICAL CROSS SECTION
(not to scale)

Q4 EQUALIZER 36 TYPICAL PLAN VIEW
(not to scale)
RAISED BEDS

Special Instructions

Before You Begin

These instructions address the installation of Quick4 Equalizer 24 and Quick4 Equalizer 36 chambers in Raised Trench Beds with Imported Fill in Ontario. Infiltrator chambers must be used in conjunction with part 8 of the OBC, manufacturer's recommended installation procedures and the standards described in the Building Materials Evaluation Commission (BMEC) Authorization Reports (#01-01-253 for Q4 EQ36 and #99-01-229 for Q4 EQ24).

Preparing the Site

1. Review the site plans to determine all elevations and location of the leaching bed.
2. Stake out the location and area for the expanded contact area and mantel.
3. Set elevations of the tank, distribution box or piping and chamber drainfield.
4. Before placing specified sand fill, clear and grade area. Remove top soil and keep for final drainfield grading and dressing.
5. Before placing fill, scarify the bottom surface of the excavated area parallel with the contour of the land. Use a multiple share plow, chisel plow or a similar implement attached to lightweight equipment.
6. Calculate the number of sand lifts necessary. Lifts should range in depth from 300mm (12") to 600mm (24") based on quality of fill material.
7. Confirm that the sand that will be used meet the requirements of this manual (no more than 8% fines passing #200 sieve). A lab gradation report may be necessary if uncertain.

Preparing the Endcap

1. With a screwdriver or utility knife start the tear-out seal at the appropriate diameter for the inlet pipe. The seal allows for a tight fit for 3-inch, 4-inch SDR35, and 4-inch SCH40 pipe.
2. Pull the tab on the tear-out seal to create an opening on the endcap.
3. Snap off the molded splash plate located on the bottom front of the endcap.
4. Insert the inlet pipe into the endcap at the beginning of the trench. Extend the pipe into the endcap roughly 4 inches. (Screws optional.)

Placing the Specified Sand Fill

1. Place the specified sand fill on the edge of the site. Use a dozer or other track equipment to evenly spread the first lift of fill over required area.

NOTE: Do not drive work equipment on prepared sub-grade.
2. Stabilize sand fill without compacting by driving a track vehicle over entire area.
3. Place consecutive lifts following Steps 1 and 2 until desired elevation is achieved.
4. Once required vertical separation to trench bottom is obtained, rake level the area where the trenches will be placed on the sand fill. Chambers are to be installed without any prescribed slope.

NOTE: For Raised Beds in Imported Fill the on-center spacing for Infiltrator Chambers is 1.6 meters.

Materials and Equipment Needed

- Quick4 chambers
- Multiport endcaps
- PVC Pipe and Couplings
- Backhoe, excavator
- Laser, transit or level
- Small valve cover box
- Invert Adapter
- Shovel and rake
- Hole Saw
- Tape measure
- Utility knife
- Screwdriver or utility knife
- 4-inch Cap for Inspection Port

These guidelines for construction machinery must be followed during installation.

- Avoid direct contact with chambers when using construction equipment. Chambers require a 12-inch minimum of compacted cover to support a wheel load rating of 16,000 lbs/axle or equivalent to an H-10 AASHTO load rating.
- Only drive across the trenches when necessary. Never drive down the length of the trenches.
- To avoid additional soil compaction, never drive heavy vehicles over the completed system.
RAISED BEDS

Special Instructions

Installing the System
1. Check the header pipe to be sure it is level or has the prescribed slope.
2. Set the invert height at 150mm (6") as specified in the design from the bottom of the inlet.
3. Place the inlet end of the first chamber over the back edge of the endcap.
4. Lift and place the end of the next chamber onto the previous chamber by holding it at a 45-degree angle. Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower it to the ground to connect the chambers.
   **NOTE:** When the chamber end is placed between the connector hook and locking pin at a 45-degree angle, the pin will be visible from the back side of the chamber.
   **NOTE:** The connector hook serves as a guide to insure proper connection and does not add structural integrity to the chamber joint. Broken hooks will not affect the structure nor void the warranty.
5. Swivel the chamber on the pin to the proper direction for the trench layout.
   **NOTE:** The Quick4 Equalizer 36 and Quick4 Equalizer 24 Chambers allow 15 degrees of swivel in either direction at each joint.
6. Where the system design requires straight runs, use the StraightLock Tabs to ensure straight connections. To activate the tabs, pop the tabs up with your thumb and lock into place.
7. Continue connecting the chambers until the desired trench length is obtained.
   **NOTE:** As chambers are installed verify that they are moderately level using a 4 foot hand level or laser equipment on center area of each chamber installed. Chambers should be installed without any prescribed slope.
8. The last chamber in the trench requires an endcap. Lift the endcap at a 45-degree angle and insert the connector hook through the opening on the top of the endcap. Applying firm pressure, lower the endcap to the ground to snap it into place. Do not remove the tear-out seal.

Installing Header
1. Install the header assembly with the desired number of laterals required for each row of chambers. Install an inlet “T” as close to center as possible. It may be necessary to install a double header to ensure even distribution to all laterals if an odd number of rows have been installed.
   **NOTE:** It may help to keep the header level if it is constructed so that the lateral branches are short to keep the header close to the chamber endcaps.
   **NOTE:** It may be necessary or recommended to use a distribution box in place of a pipe header in some applications.
2. Pack sand or gravel around the header to secure the assembly and provide support of the header and make leveling easier.
   **NOTE:** An optional drywall screw can be used at the 12 o’clock position to secure the pipe to the endcap.
3. Ensure that header or d-box is installed with necessary support to ensure it remains level after system is backfilled.

Installing Recommended Footer Assembly
1. Measure and cut required number of 75mm (3") or 100mm (4") PVC sewer pipe to join the MultiPort Endcaps at the trench ends. Pipes should be cut to suitable length without the possibility of dislodging during backfill or settlement
2. Tear or cut out the lower tear-out seal in the side of the endcaps facing each other in each row.
3. Insert a piece of the precut PVC sewer pipe into each of the openings created in each endcap to form a fitting-free looped end.

**NOTE:** Use straight lengths of pipe with the MultiPort Endcap at the trench ends to create fitting free looped ends. See footer assembly instructions below.

9. Proceed to the next lateral and begin with Step 1.
Backfilling and Covering the System

Before backfilling, the system must be inspected by a building inspector, health unit officer or other inspection official as required by the Province of Ontario. System should be installed exactly as designed. Create an as-built drawing at this time for future records.

1. Ladle in backfill over chambers in each row by placing excavator on edge of bed area within reach of the middle rows. Carefully spread fill over dome of chamber ensuring that the chamber does not move out of place. Firm the sand fill between the chamber rows by walking it in. This important step assures correct structural support of the system.

**NOTE:** Pending local inspector's approval, this step may be performed before or after inspection. Be sure not to backfill the system any higher than the sidewall louvers prior to inspection.

2. Continue to ladle the sand fill into place until the entire system is covered and the chambers have 200 mm (8") of cover.

3. Create the required slope according to the OBC from the top of the backfilled drainfield. Use a light tracked vehicle or dozer to level and stabilize the backfilled chambers. Be certain to always work perpendicular to the chambers.

**NOTE:** Do not use backhoe or rubber tire equipment to level area.

**NOTE:** The OBC requires a total minimum of 300mm (12 inches) of cover over Infiltrator Chambers, including sand fill and topsoil. All septic systems raised above natural ground elevations require a 4:1 slope from the highest point of the bed to the outer toe (3:1 if slope is stabilized).

4. After system has been covered, 100-150mm (4–6-inches) of topsoil should be placed over entire system shortly after installation and be sure that the area is graded for proper drainage away from system. Seed or sod the site to prevent erosion.

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

Before You Begin
This section explains the recommended installation procedures for the installation of the distribution pipe in Quick4 Equalizer 36 chambers as required in condition 8.c of the BMEC authorization #01-01-253.

When the total trench length of 150 meters (500 feet) or more is required and the length of Infiltrator Quick4 Equalizer 36 chambers has been reduced as permitted in the authorization, a distribution pipe shall be installed in the chambers, according to the manufacturer’s recommendations and extended the total length of the trench. The effluent must be dosed to the leach field by pump or siphon to meet the requirements of 8.5.1.3.(1) of the Ontario Building Code (OBC).

The above condition is not a Manufacturer’s requirement but a requirement by the BMEC for Infiltrator Systems to achieve the current authorization 01-01-253 in sewage systems within the scope of part 8 of the Ontario Code. This application is only required when using the L=QT/300 sizing formula to achieve a length reduction.

Distribution piping is not recommended by Infiltrator Systems Inc. to be installed the length of Quick4 Equalizer 36 chambers in dosing applications.

NOTE: When the total trench length required is less than 150 meters but the system still requires dosing, a volume of effluent within the range of 3.5-5 liters per meter of Infiltrator chamber systems must be pumped within a 15 minute period to meet the requirements of 8.6.1.3(4) of the OBC.

Excavating and Preparing the Site
1. Review the site plans to determine all elevations and proper location of the leaching bed.
2. Stake out the location of all trenches and lines. Set the elevations of the tank, pipe and trench bottom in accordance with the design.
3. Excavate and level 600 mm (2-ft) wide trenches with the proper center-to-center separation. Verify that the trenches are moderately level and rake to ensure no soil smearing is left.
4. Ensure that you have the necessary amount of 3” PVC perforated sewer pipe, caps and zip-tie straps.

Preparing the Endcap
1. With a screwdriver or utility knife start the tear-out seal to accommodate the 75mm (3”) pipe. The upper hole will allow for the 75mm (3”) pipe to be suspended level when tied tight to the roof of the chamber. (See Installing the System for details)

NOTE: Make sure to always use the upper hole of the endcap. The lower hole is for footer assemblies or equalization headers.

2. Pull the tab on the tear-out seal to create an opening on the endcap.

NOTE: If desired a 3-1/4” hole saw and cordless drill can be used to make the hole in the endcap.

3. The molded splash plate will not be required for this application.

4. Insert the solid inlet pipe stub through the 75mm (3”) tear out opening in the endcap. Feed 75mm-100mm (3”-4”) of pipe through so that a new length of pipe can be connected inside the cap.

5. Connect by gluing a length of 3” PVC perforated pipe using the hub end to the inserted stub of solid pipe.

NOTE: Ensure that the holes in the perforated pipe are orientated in a downward position.
SPECIAL PROCEDURES

Installing the System

1. Construct the header with the required number of laterals and spacing with 75mm (3") or 100mm (4") solid PVC pipe.

**NOTE:** If 100mm (4") pipe is used for the header you will need to reduce to 75mm (3") at each lateral tee or elbow connection.

2. Set the invert height at 150mm (6") from the trench bottom to align with the endcap connection.

3. Place the inlet end of the first chamber over the back edge of the endcap.

4. At the connection end of the first chamber center the extended 75mm (3") PVC perforated pipe under the chamber and with one hand, lift the pipe to the roof of the chamber.

5. Using the provided holes in the end of the chamber feed the end of a 14"-16" long 120-pound nylon zip-tie through one of the holes. Bring the zip-tie around the pipe and back through the other hole in the chamber.

6. Synch the zip-tie tight tying the pipe firm to the roof of the chamber. Check to ensure that the holes are in the downward position.

7. Lift in place the end of the next chamber onto the previous chamber by holding it at a 90-degree angle. Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower it to the ground to connect the chamber.

**NOTE:** The connected chambers will clear the zip-tie and the tie will not obstruct the connection.

**NOTE:** When the chamber end is placed between the connector hook and locking pin at a 45-degree angle, the pin will be visible from the back of the chamber.

**NOTE:** Broken hooks will not affect structure nor void the warranty.

8. Continue gluing lengths of 75mm (3") PVC perforated pipe together until desired or designed trench length is achieved. Make sure to keep the holes facing the downward position.

9. Continue connecting chambers and tying the 75mm (3") PVC pipe to the top of each chamber as each chamber is put in place.

**NOTE:** It is recommended that a 120-pound zip-tie is used to support the pipe at every chamber joint.

**NOTE:** Only use “Nylon” 120-pound ties (1/4" width).

10. Terminate the 75mm (3") PVC perforated pipe at the last zip-tie connection of the chamber row and glue an approved PVC cap on the cut end of the pipe.

11. The last chamber in the trench requires an endcap. Lift the cap at a 45-degree angle and insert the connector hook through the opening on the top of the endcap. Apply firm pressure, lower the endcap to the ground to snap it into place. Do not remove the tear-out seals.

12. Proceed to the next lateral and begin with Step 3.
TYPICAL PLAN VIEW
(not to scale)

- Connect 3" perforated PVC pipe to 3" solid wall PVC pipe with approved coupler.
- 3" solid wall PVC pipe.
- Gravity flow from D-box/header manifold.

HANG 3" perforated PVC pipe to top of chamber with holes at 5, 6 & 7 O’clock.

TYPICAL CROSS SECTION
(not to scale)

- Connect 3" perforated PVC pipe to 3" solid wall PVC pipe with approved coupler.
- 3" solid wall PVC pipe.
- Gravity flow from D-box/header manifold.

DETAILS
(not to scale)

- Quick4 Equalizer 36.
- All weather plastic pipe strap 120 pounds (54 kg) tensile strength at every chamber connection.

Contact Infiltrator Systems Inc. 1-800-221-4436 for additional technical and product information.
### System Sizing

#### TABLE 1: Q4 EQ24 AND Q4EQ36 FILTER BED LENGTH CHART

<table>
<thead>
<tr>
<th>No. of Chambers in Row</th>
<th>Filter Medium Sand Length (including offsets)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4.7 m (15', 8&quot;)</td>
</tr>
<tr>
<td>4</td>
<td>5.9 m (19', 8&quot;)</td>
</tr>
<tr>
<td>5</td>
<td>7.1 m (23', 8&quot;)</td>
</tr>
<tr>
<td>6</td>
<td>8.3 m (27', 8&quot;)</td>
</tr>
<tr>
<td>7</td>
<td>9.5 m (31', 8&quot;)</td>
</tr>
<tr>
<td>8</td>
<td>10.7 m (35', 8&quot;)</td>
</tr>
<tr>
<td>9</td>
<td>11.9 m (39', 8&quot;)</td>
</tr>
<tr>
<td>10</td>
<td>13.1 m (43', 8&quot;)</td>
</tr>
</tbody>
</table>

**NOTE:** Measurements are outside shoulder to outside shoulder of filter medium sand.

#### TABLE 2: Q4 EQ24 HD FILTER BED WIDTH USING 0.6 METER O.C. SPACING

<table>
<thead>
<tr>
<th>No. of Rows</th>
<th>Filter Bed Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1.6 m (5', 4&quot;)</td>
</tr>
<tr>
<td>3</td>
<td>2.2 m (8', 4&quot;)</td>
</tr>
<tr>
<td>4</td>
<td>2.8 m (9', 4&quot;)</td>
</tr>
<tr>
<td>5</td>
<td>3.4 m (11', 4&quot;)</td>
</tr>
<tr>
<td>6</td>
<td>4.0 m (13', 4&quot;)</td>
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<tr>
<td>7</td>
<td>4.6 m (15', 4&quot;)</td>
</tr>
<tr>
<td>8</td>
<td>5.2 m (17', 4&quot;)</td>
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<tr>
<td>9</td>
<td>5.8 m (19', 4&quot;)</td>
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<tr>
<td>10</td>
<td>6.4 m (21', 4&quot;)</td>
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<tr>
<td>11</td>
<td>7.0 m (23', 4&quot;)</td>
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<tr>
<td>12</td>
<td>7.6 m (25', 4&quot;)</td>
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<tr>
<td>13</td>
<td>8.2 m (27', 4&quot;)</td>
</tr>
<tr>
<td>14</td>
<td>8.8 m (29', 4&quot;)</td>
</tr>
</tbody>
</table>

**NOTE:** Chamber center-on-center spacing.

#### TABLE 3: Q4 EQ36 FILTER BED WIDTH USING 0.8 METER O.C. SPACING

<table>
<thead>
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<th>No. of Rows</th>
<th>Filter Bed Width</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>1.9 m (6', 4&quot;)</td>
</tr>
<tr>
<td>3</td>
<td>2.7 m (9')</td>
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<tr>
<td>4</td>
<td>3.5 m (11', 8&quot;)</td>
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<tr>
<td>5</td>
<td>4.3 m (14', 4&quot;)</td>
</tr>
<tr>
<td>6</td>
<td>5.1 m (17&quot;)</td>
</tr>
<tr>
<td>7</td>
<td>5.9 m (19', 8&quot;)</td>
</tr>
<tr>
<td>8</td>
<td>6.7 m (22', 4&quot;)</td>
</tr>
<tr>
<td>9</td>
<td>7.5 m (25&quot;)</td>
</tr>
<tr>
<td>10</td>
<td>8.3 m (27', 8&quot;)</td>
</tr>
<tr>
<td>11</td>
<td>9.1 m (30', 4&quot;)</td>
</tr>
<tr>
<td>12</td>
<td>9.9 m (33&quot;)</td>
</tr>
<tr>
<td>13</td>
<td>10.7 m (35', 8&quot;)</td>
</tr>
<tr>
<td>14</td>
<td>11.5 m (38', 4&quot;)</td>
</tr>
</tbody>
</table>

**NOTE:** Quick4 Equalizer 24 HD Chambers
Minimum: 0.6 meters Maximum: 0.9 meters

**NOTE:** Quick4 Equalizer 36 Chambers
Minimum: 0.8 meters Maximum: 1.0 meters

Contact Infiltrator Systems Inc. 1-800-221-4436 for additional technical and product information.
FILTER BEDS

Chamber Configurations

TYPICAL CROSS SECTION
(not to scale)

TYPICAL PLAN VIEW
(not to scale)
FILTER BEDS

Installation Instructions

Before You Begin

These instructions address the installation of Quick4 Equalizer 36 and Quick4 Equalizer 24 chambers in Filter Beds in Ontario. Like conventional systems, the soil and site conditions must be approved prior to installation. Conduct a thorough site evaluation to determine the proper sizing and sitting of the systems before installation.

Excavating and Preparing the Site

1. Review the site plans to determine all elevations and location of the leaching bed.
2. Stake out the location and area for the expanded contact area and mantel.
3. Set elevations of the tank, distribution box or piping and chamber filter bed ensuring that you have the required 900 mm vertical separation to bedrock, water table or soil with a t-time >50 min/cm.
4. Clear and grade area removing top soil and keep for final Filter Bed grading and dressing.
5. Before placing fill, scarify the bottom surface of the excavated area parallel with the contour of the land. Use a multiple share plow, chisel plow or a similar implement attached to lightweight equipment.
6. Calculate the area for the mantle and expanded contact area if needed.
7. Ensure that the mantle is designed in the directions of the downward grade of the limiting soil layer.

Materials and Equipment Needed

- Quick4 chambers
- Multiport endcaps
- PVC Pipe and Couplings
- Laser, transit or level
- Invert Adapter*
- 2-inch Drywall Screws*
- Small Valve-Cover Box*
- Shovel or rake
- Tape measure
- Screwdriver or utility knife
- Screwdriver
- Screw Gun*
- Hole Saw
- 4-inch Cap for Inspection Port*

*Optional

These guidelines for construction machinery must be followed during installation.

- Avoid direct contact with chambers when using construction equipment. Chambers require a 12-inch minimum of compacted** cover to support a wheel load rating of 16,000 lbs/axle or equivalent to an H-10 AASHTO load rating.
- Only drive across the trenches when necessary. Never drive down the length of the trenches. If driving is necessary, use track vehicles only.
- To avoid additional soil compaction, never drive heavy vehicles over the completed system.

3. Evenly spread specified sand fill.

Placing the Specified Filter Sand

1. Place the sand fill on the edge of the site. Use a dozer or other track equipment to evenly spread the first 250 mm (10") lift of fill over required area.
2. Stabilize sand fill by driving a track vehicle over entire area.
3. Place approved filter media sand in area to meet the design square meter area required to a depth of 750mm.
4. Once required depth of filter sand is obtained, rake level area where the chambers will be placed on the Filter Sand. Chambers are to be installed “nominally level.”

Preparing the Endcap

1. With a screwdriver or utility knife start the tear-out seal at the appropriate diameter for the inlet pipe. The seal allows for a tight fit for 3-inch, 4-inch SDR35, and 4-inch SCH40 pipe.
2. Pull the tab on the tear-out seal to create an opening on the endcap.
3. Snap off the molded splash plate located on the bottom front of the endcap.
4. Insert the inlet pipe into the endcap at the beginning of the trench. Extend the pipe into the endcap roughly 4 inches. (Screws optional.)

Contact Infiltrator Systems Inc. 1-800-221-4436 for additional technical and product information.
FILTER BEDS

Installing the System

1. Check the header pipe to be sure it is level or has no prescribed slope.
2. Set the invert height at 150mm (6") as specified in the design from the bottom of the inlet.
3. Place the inlet end of the first chamber over the back edge of the endcap.
4. Lift and place the end of the next chamber onto the previous chamber by holding it at a 45-degree angle. Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower it to the ground to connect the chambers.

NOTE: When the chamber end is placed between the connector hook and locking pin at a 45-degree angle, the pin will be visible from the back side of the chamber.

NOTE: The connector hook serves as a guide to insure proper connection and does not add structural integrity to the chamber joint. Broken hooks will not affect the structure nor void the warranty.
5. Swivel the chamber on the pin to the proper direction for the trench layout.

NOTE: The Quick4 Equalizer 36 and Quick4 Equalizer 24 Chambers allow 15 degrees of swivel in either direction at each joint.
6. Continue connecting the chambers until the desired trench length is obtained.

NOTE: As chambers are installed verify that they are moderately level using a 4 foot hand level or laser equipment on center area of each chamber installed. Chambers should be installed without any prescribed slope.
7. The last chamber in each row requires an endcap. Lift the endcap at a 45-degree angle and insert the connector hook through the opening on the top of the endcap. Applying firm pressure, lower the endcap to the ground to snap it into place. Do not remove the tear-out seal.

NOTE: Use straight lengths of pipe with the MultiPort Endcap at the trench ends to create fitting free looped ends. See footer assembly instructions below.
9. Proceed to the next lateral and begin with Step 1.

Backfilling and Covering the System

Before backfilling, the system must be inspected by a building inspector, health officer or other official as required by Province of Ontario. Create an as-built drawing at this time for future records.

1. Ladle soil with a backhoe bucket or carefully dump soil on the dome of the chambers and spread in between.

NOTE: Pending local inspectors approval, this step may be performed before or after inspection. Be sure not to backfill the system any higher than the sidewalk louvers.
2. Backfill with additional filter medium sand (if there is any left) by ladling sand with backhoe bucket or loader over the dome of the chambers. Let sand spread between chamber rows to the top of the sidewall or to the bottom of the pipe invert as a minimum.
3. Use good clean sand fill to complete the backfilling to 150mm (6") from desired finished grade.
4. When placing final cover on the Filter Bed, backfill by broad-casting the cover material over Filter Bed with excavator. Be sure to cover chambers to 300mm (12") working perpendicular to chambers.
5. Grade the area for proper drainage and then seed or sod the area.

NOTE: In a filter bed the minimum sand area size is 10m2 and the maximum areas size is 50m2. The filter medium sand area is calculated with the following formulas:

\[ \begin{align*}
\text{for } Q < 3000 \text{ liters/day } & : A = \frac{Q}{75} \\
\text{for } Q > 3000 \text{ liters/day } & : A = \frac{Q}{50}
\end{align*} \]

Expanded contact area is calculated using \( A = \frac{QT}{850} \) of the underlying soil t-time.

LOADING RATES FOR FILL BASED ABSORPTION TRENCHES AND FILL BEDS

<table>
<thead>
<tr>
<th>Perculation Time (T) of Soil (min/cm)</th>
<th>Loading Rates (L/m²/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &lt; T ≤ 20</td>
<td>10</td>
</tr>
<tr>
<td>20 &lt; T ≤ 35</td>
<td>8</td>
</tr>
<tr>
<td>35 &lt; T ≤ 50</td>
<td>6</td>
</tr>
<tr>
<td>T &gt; 50</td>
<td>4</td>
</tr>
</tbody>
</table>

\[ \text{column 1} \]
**SHALLOW BURIED TRENCHES**

**TABLE 1: LENGTH OF SHALLOW BURIED TRENCHES**

<table>
<thead>
<tr>
<th>Design (peak) Sanitary Sewage Flow Liters/day (Q)</th>
<th>Quick4 Equalizer 24 Low Profile, Quick4 Equalizer 24, or Quick4 Equalizer 36 Chambers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Design Formula L = Q 75</td>
</tr>
<tr>
<td>2 Bedroom</td>
<td>1100</td>
</tr>
<tr>
<td>3 Bedroom</td>
<td>1600</td>
</tr>
<tr>
<td>4 Bedroom</td>
<td>2000</td>
</tr>
<tr>
<td>5 Bedroom</td>
<td>2500</td>
</tr>
</tbody>
</table>

* Minimum total trench length for shallow buried trenches

**NOTES:**
1. For additional flow for each additional bedroom over 5, add 500 liters per bedroom.
2. Refer to Part 8 of the Ontario building Code for additional flow calculations and tables.
SHALLOW BURIED TRENCHES

Chamber Configurations

TYPICAL PLAN VIEW
(not to scale)

NOTE: The PVC pipe, orifice diameter holes and pump will be specified by the designer, which may vary from job to job.

TYPICAL HANG PIPE END VIEW
(not to scale)

TYPICAL CLEANOUT EXTENSION DETAIL SIDE VIEW
(not to scale)
SHALLOW BURIED TRENCHES

Chamber Configurations

TYPICAL SHALLOW BURIED TRENCH CROSS SECTION
(not to scale)

TYPICAL SHALLOW BURIED TRENCH PLAN VIEW
(not to scale)
SHALLOW BURIED TRENCHES

Chamber Configurations

TYPICAL TOP VIEW
(not to scale)

TYPICAL CROSS SECTION
(not to scale)

TYPICAL DETAILS
(not to scale)
SHALLOW BURIED TRENCHES

Installation Instructions

Before You Begin
This section explains recommended installation procedures for Quick4 chambers in shallow buried trenches. All construction and materials must conform to the requirements of the Ontario Building Code, 2006 (OBC).

The use of Infiltrator Q4 Equalizer 24 LP chambers are approved under section 8.7.6.2.(4) and 8.7.6.2.(5) of the OBC as defined in section 1.1.3.2 Defined terms for chamber. The Q4 Equalizer 24 HD and Q4 Equalizer 36 are approved under their corresponding BMEC Authorizations reference in other areas of this manual.

NOTE: Shallow buried trench installations must be completed by person/persons qualified to do so.

NOTE: Upstream treatment unit must be installed according to the manufacturer’s instructions.

Materials and Equipment Needed
- Quick4 Equalizer 36 Chambers
- Multiport or LP endcaps
- Shovel and rake
- Backhoe, excavator
- Laser, transit or level
- Tape measure
- Screwdriver or utility knife
- Drill
- Hole saw

Excavating and Preparing the Site
1. Review the site plans to determine all elevations and proper location of the leaching baffle.
2. Stake out the location of all trenches and lines. Set the elevations of the tank, pipe and trench bottom in accordance with the design.
3. Excavate and level 600 mm (2-ft) wide trenches with the proper center-to-center separation. Verify that the trenches are moderately level and rake to ensure no soil smearing is left.
4. Ensure that you have the necessary amount of 3” PVC perforated sewer pipe, caps and zip-tie straps.

Installing Chambers and Endcaps
1. To allow pressure laterals to drain after each dose, drill a hole in the bottom of the pipe at the end of the pressure line. Place the snap-off splash plate or a paving block at the bottom of the trench to protect the infiltrative surface from erosion.
2. With a hole saw, drill out the appropriate diameter hole to accommodate the pressure lateral pipe.
3. Insert the pressure lateral pipe into the endcap’s drilled opening and slide it into the manifold pipe. Glue the pressure lateral pipe to the manifold pipe.
4. With the pressure lateral pipe through the endcap, place the inlet end of the first chamber over the back edge of the endcap.
5. Secure the pressure lateral pipe to the top of the first chamber with a plastic pipe strap at the outlet end of the unit. Slide the strap up through a slot in the chamber top, down through the other slot, and cinch the two ends around the pipe.

NOTE: The ISI Pipe Support Unit may also be used to hold and stabilize the pipe.
6. Lift and place the next chamber onto the previous one at a 90-degree angle. Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower it to the ground to engage the interlocks.
7. Secure the lateral pipe to the top of the next chamber once in place. Follow the same method in Step 5.
8. Continue interlocking chambers and securing the pipe until the trench is completed.
9. Before attaching the final endcap, remove the tongue of the connector hook on the last chamber with a pair of pliers.
10. Insert the pressure lateral pipe through the hole in the final endcap and slide the endcap towards the last chamber. Lift the endcap over the modified connector hook and push straight down to secure it to the chamber.

NOTE: If cleanout extensions are required, use a hole saw to cut a hole in the endcap at the proper elevation so that the lateral pipe can extend. For clean-out access, a 90-degree sweep elbow that extends to the soil’s surface can be attached to the lateral pipe.
11. If installing multiple rows of chambers, follow Steps 1-9 to lay the next row of chambers parallel to the first. Keep a minimum separation distance between each row of chambers as required by the permitting authority.
WARRANTY

Infiltrator Systems Inc., Standard Limited Warranty for Septic Products

(a) The structural integrity of each chamber and endcap manufactured by Infiltrator (collectively referred to as “Units”), when installed and operated in a 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.

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.

Infiltrator Systems recommends the use of septic tank filters and laundry filters with all onsite septic systems.