

StormFilter System Installation Guide — Cast in Place



There are several different configurations of the StormFilter™ system. (Precast vault, cast in place vault, panel vault, manhole and catch basin.)

The following is a general guideline for Cast in Place Systems. Please consult with a CONTECH Stormwater Solutions Inc representative for additional information on each specific configuration.

Once the product has been ordered, a CONTECH purchasing agent will inform you of the projected completion and delivery date of the product(s).



Tools Needed

- Roto Hammer
- 3/8" SS Concrete Anchor
- 3/8" & 1/2" roto bit

(Any metal hardware used inside the vault must be stainless steel or aluminum)

- 1/2" SS Concrete Anchor
- Hammer
- Crowbar
- Wrenches or Sockets
- Tape Measure
- Elastomeric Sealant (Sikaflex 1A) in some cases fast drying grout may be substituted.
- PVC Cement (as specified)
- 4 ft. level

Cast-in-Place Vault Construction

The Vault will be constructed using supplied engineering drawings as specified. It will be the contractors responsibility to construct the vault as per the drawings and specifications. Once the vault is completed the flow kit will be ready to be installed.

StormFilter Installation

Parts used

- 2" 1/4 turn connectors.
- Restrictor Discs
- 48" Energy dissipator (quantity will vary based on vault width)
- 2 per dissipator – 1 1/4" X 3/8 " Stainless Steel Threaded Bolt & Washer or
- 2 per dissipator — 2 1/2 X 3/8" Stainless Steel Concrete Anchor
- Oatey - Special, milky clear, ABS Cement (#30923)

Storm Filter Installation Procedure

Foundation Preparation

- Prepare the subgrade in accordance with the project specification and any available geotechnical report prepared for the project.
- Follow the project plans for the foundation's dimensions and elevations. Pour the foundation in accordance with the specifications and details. Once the floor of the vault has been constructed the flow kit can be installed.

Manifold Installation

In most precast vaults, the flowkit will be cast into the floor at the precaster and will not be seen. For Cast-in-Place system the contractor is responsible for installation of the flow kit. **Please schedule a CONTECH representative to meet at the site the day of the installation for tech support.**

Install the under-drain manifold on the filter bay section of the foundation. See the site specific installation drawing for specific layout, the spacing and locations are critical. (See Fig. 1&2)

Mark the location of the wall between the filter bay and the outlet bay. Layout the manifold sections that penetrate under this wall, they should be flush with far side of wall. **It is imperative to have the measurements checked before the final concrete pour.** All flow kits are to be centered on the vault sub floor making sure the outlet pipes will extend through the outlet baffle wall into the outlet bay.

Lay out and attach additional sections with ABS cement (contractor supplied). Bolt all sections down to the foundation with concrete wedge anchors (contractor supplied). (See Fig. 4)

Ensure all openings into the manifold are sealed with protective tape. Build a form for the flowkit pour. DO NOT move the strut that is connected to the piping. All the connector ports have been pre-measured for proper alignment of the StormFilters when installed. If movement occurs, please contact your CONTECH representative for assistance. Verify 21" filter spacing is maintained over the joint between first sections and additional sections (See Fig. 3). All joints must be tight enough to keep out concrete until it hardens, use additional sealant if necessary. Verify the manifold is fully constructed and matches the layout in the provided installation drawing before moving on. The flow kit MUST be attached to the sub floor using concrete anchors fastening three across and a minimum of every 5 feet down the length (See Fig. 4). The flow kit is buoyant and will float and/or move if not properly secured. The measurement from the outside of any connector port should be at a minimum of 10" from any wall or any structure inside the vault.

Pour the concrete to be level with the protective caps on the connector ports. The final surface will be smooth and the connector ports flush with the finished floor.

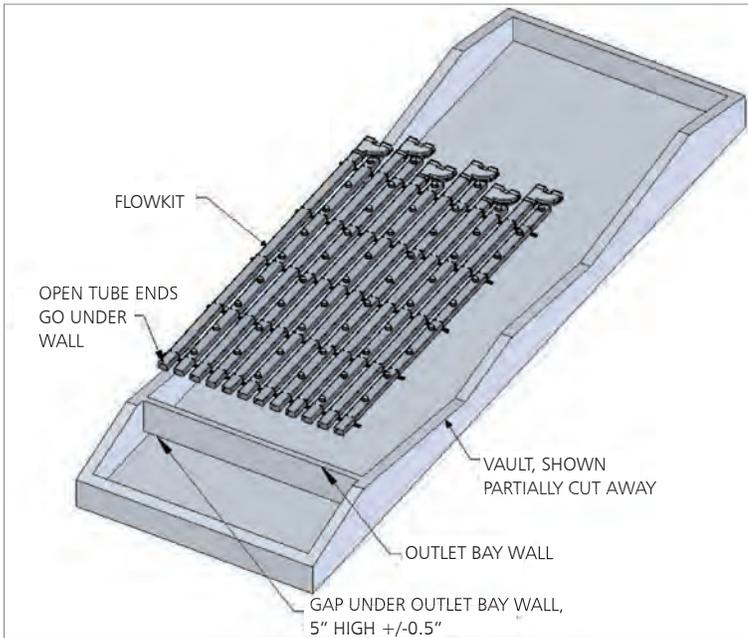


Figure 1

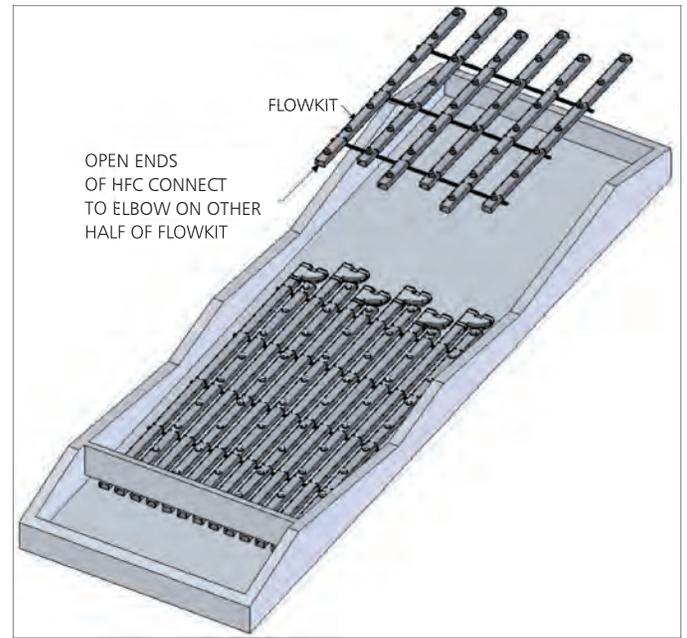


Figure 2

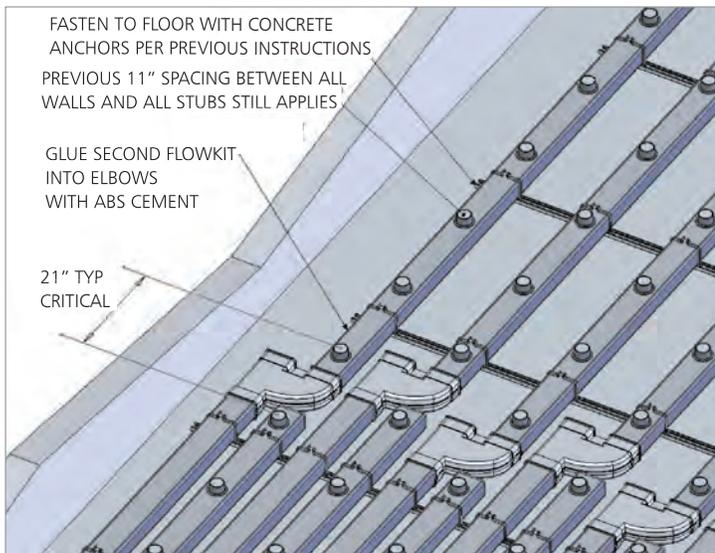


Figure 3

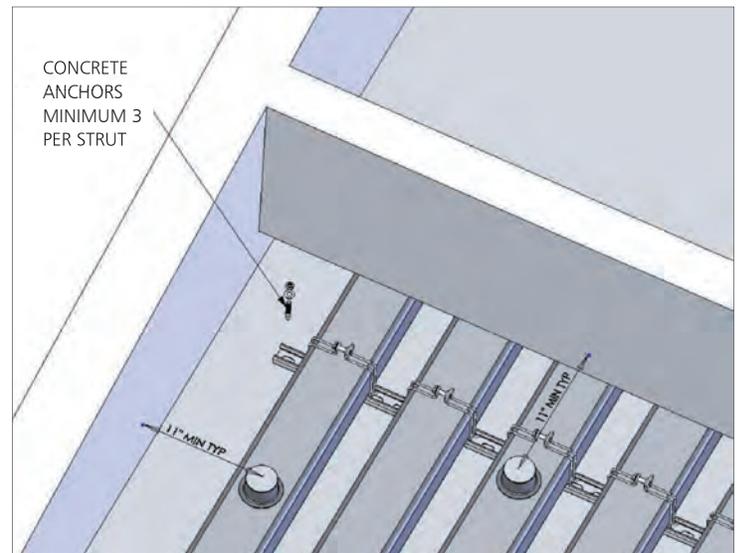


Figure 4

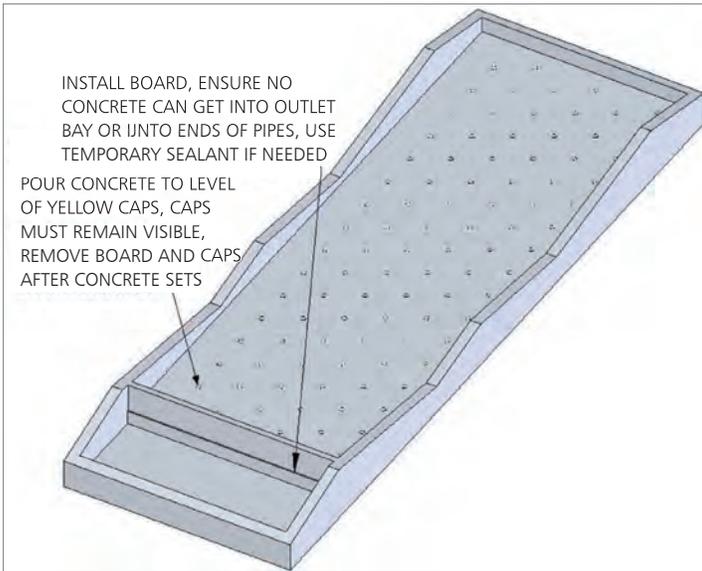


Figure 5

Pour baffle walls according to drawings. The outlet end of the flow kit piping will be visible on the downstream outlet side of the baffle wall. Contractor to grout all joints between internal baffle walls and vault structure, if required.

Flow Spreader

A flow spreader will be attached to the upstream side of each baffle wall using 3/8" SS (Stainless Steel) concrete anchors, see also Contech installation detail #484. On the Inlet baffle wall the flow spreader will be positioned so the three down turned tubes will be in the inlet bay and attached so the top of the flow spreader will match up with the top of the baffle wall.



Use eight SS anchors to attach. Then seal with an elastomeric sealant.

On the upstream side of the outlet baffle wall, the flow spreader will be positioned so the three down turned tubes will be in the cartridge bay and attached and sealed in the same manner.

Internal Components

Flow Spreaders: Flow spreader frames shall be installed within 3/8-inch of dimensions shown on plans.

Energy Dissipators: Energy dissipators shall be bolted to concrete walls as shown on plans using three 3/8-16 UNC x 2-1/2" hex nut sleeve anchors provided by the contractor.

Restrictor Disc

Install cartridge stubs in all openings in floor with ABS cement.

Each connector port must have a restrictor disc inserted into it before the cartridge threaded or slip connector is glued in place (Ref Drawing #460). It is imperative to verify the restrictor discs are properly installed prior to cementing in the connectors.

Filter Connectors

Flow	Operating Head	Restrictor Disk Color	Abbreviation
5	12"	Blue	BLU
7.5	18"	Blue	BLU
10	12"	Grey	GRY
11.25	27"	Pink	PNK
15	18"	Black	BLK
22.5	27"	Gold	GLD
*7.5	120"	Purple	PRP
*11.25	72"	Almond	AMD
*22.5	72"	Pink	PNK



Connector Types

Threaded Connector (old style)

After the restrictor disc is inserted into the connector port, the threaded connector is glued into the connector port so that less than 1/4" of the connector is exposed beneath the threaded portion. Use Rain or Shine Medium Blue PVC cement (or equivalent). **Do Not Use Clear PVC Cement.** Once the connector is in place, center a cartridge over the connector and thread clockwise until secure. Be careful not to cross thread the cartridge onto the connector. If cross threading occurs, back off until you feel the threads match up. The cartridge must be snug, but do not over tighten.

Slip Connector (old style)

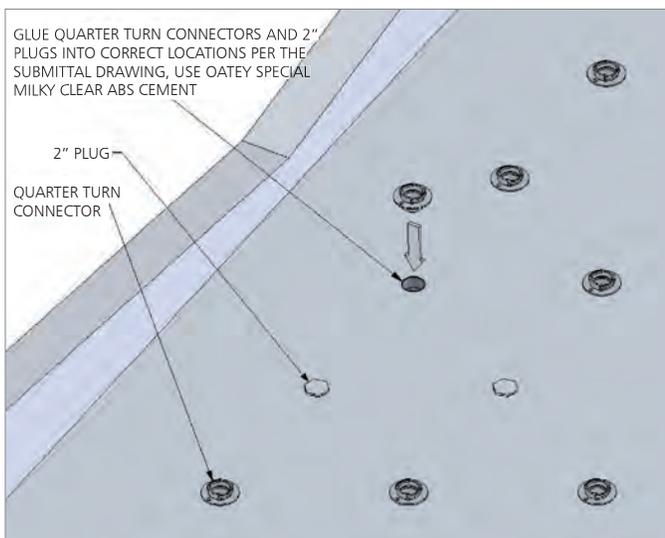
After the restrictor disc is installed, the slip connector is slid into the connector port. **The slip connector is NOT glued.** Position the cartridge over the center of the connector and slip into place.

1/4 Turn Connector

Remove yellow cap plugs. Replace with a 1/4 turn connector – or – PVC plugs. After the restrictor disc is inserted into the connector port, the 1/4 turn connector is glued into the connector port. If the connector port is PVC, which would be white or dark grey in color, then use Oatey ABS to PVC Transition Cement to cement in 1/4 turn connector. If connector port is ABS, which would be black in color, then use Oatey ABS Cement to cement in 1/4 turn connector. The connector should be inserted completely so the bottom of the connector flange is flush with the finished floor. Once the connector is in place, center the cartridge over the connector until the cartridge drops down onto the connector and then turn cartridge clockwise approximately 1/4 turn until cartridge is securely in place.

2" PVC Plug

The 2" PVC Plugs are slid into any open connector ports after all cartridges have been installed. Do Not glue the plug. Each cartridge port must have a cartridge installed or be plugged for the system to operate correctly. Check the main and ventilator cap of each cartridge and tighten as necessary. Do not over tighten



Filter Cartridge placement

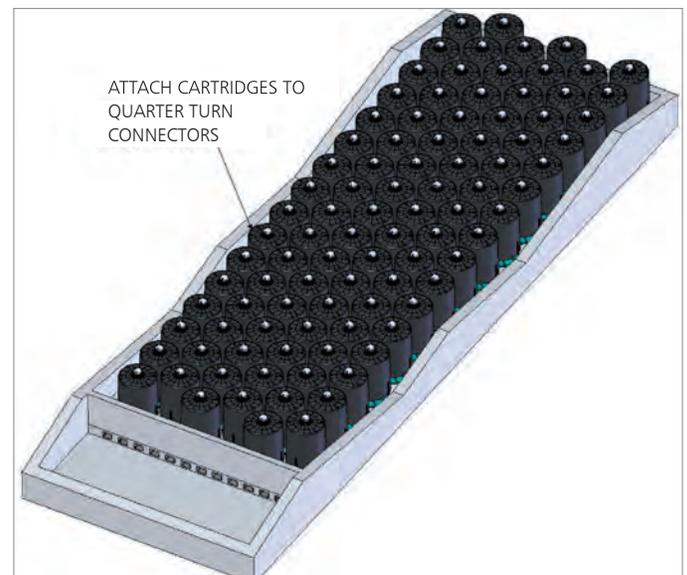
1. Filter Cartridges With CSF Media and Slip Connector

Fittings: Tape shall be cleanly and completely removed from manifold fitting openings. Spool pieces (slip fittings) shall be inserted without glue into all manifold fittings to be equipped with a filter cartridge. Filter cartridges shall be placed over the spool pieces to contact the vault floor. Plugs shall be inserted without glue in all manifold fittings not equipped with a filter cartridge.

2. Filter Cartridges with Threaded Connector Fittings: Tape shall be cleanly and completely removed from manifold fitting openings. Threaded connectors shall be glued and inserted into all manifold fittings to be equipped with a filter cartridge. Filter cartridges shall be threaded onto the connectors until they contact the vault floor. Plugs shall be inserted without glue in all manifold fittings not equipped with a filter cartridge.

3. Filter Cartridges with 1/4-Turn Connector Fittings: Tape shall be cleanly and completely removed from manifold fitting openings. 1/4-turn connects shall be glued and inserted into all manifold fittings to be equipped with a filter cartridge. Filter cartridges shall be turned onto the connector until they reach the hard stop on the connector – approximately 1/4 revolution. Plugs shall be inserted without glue in all manifold fittings not equipped with a filter cartridge.

Refer to the approved submittals drawings for correct filter placement. If the drawings are not available, start from the outside walls and work your way in being careful each filter will fit into the opening. If there is a ladder to mount, make sure to leave room for the bottom mounting point. In some cases the bottom rung of the ladder will have to be removed to fit the filter. If you are not sure, please contact your CONTECH representative for assistance.



Installing the Ladder:

If a ladder is needed, it will be shipped to the jobsite with the vault. The length of the ladder is determined by the final drawing. Should the ladder need to be modified (shortened), please contact a CONTECH representative for instruction. If a longer ladder is needed, please contact CONTECH for a replacement.

The ladder comes complete with all mounting hardware.

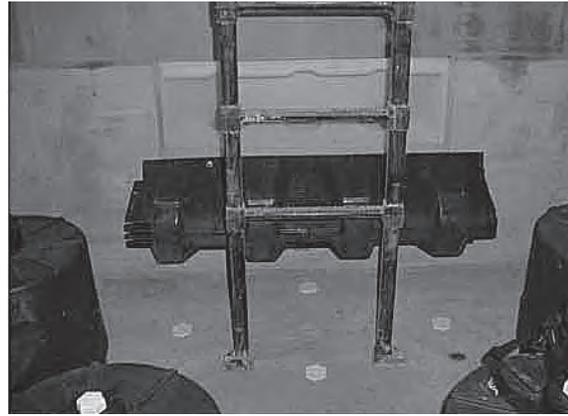
4 – ½" x3" SS concrete anchors

2 – Top mounting brackets

2 – Support brackets (used for long ladders only)

Unscrew mounting clamp from the top bracket. Slide clamp over ladder rung and re-attach to bracket. Attach top mounting brackets using 2 - ½" SS concrete anchors as close to the top of the riser ring or vault top as possible.

Attach ladder legs to floor using 2 - ½" SS concrete anchors.



If you have any questions or concerns, please call our office toll free at 800-548-4667 to speak to a CONTECH Stormwater Solutions Inc representative

Pre-Construction Checklist — Cast-in-Place

CONTECH Primary Contact: _____

Phone: _____

Contractor Primary Contact: _____

Phone: _____

Project Site Address: _____

- Review site accessibility (double drop/low riding/spotting)
- Expected number of truckloads _____
- Expected number of installation days _____
- Flow Kit Installation _____
 - Flow Kit 2nd Pour
- Unloading units/parts
- Attached or detached endwalls and hardware _____
- Internal sealing required Y N
 - Internal sealing material specifications
- Grouting materials and procedure
- Cartridge Installation
- Backfill procedures - in situ or imported fill _____
 - Even backfill lifts
 - 95% compaction
- Construction traffic loading
- Pipe and riser connection details
- Contractor labor expectations
- Safety considerations

Notes: _____



800.338.1122

contechstormwater.com

Support

- Drawings and specifications are available at contechstormwater.com.
- Site-specific design support is available from CONTECH Stormwater Design Engineers.

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