



Galvanized Steel Downspout Planter

FABRICATION GUIDE

The following summary is provided to detail the fabrication of a 100 gallon galvanized oval downspout planter for use in residential stormwater management. A list of tools required for construction, summary of materials needed, and the steps to build the planter are provided below.

Tool List

- Power Drill
- Utility knife
- Hole saw (2-3/8)
- Tape Measure
- Safety PPE
- Drill bits (3/8" or larger)
- Pipe wrench
- Jig saw (w/plastic cutting blade)
- Marker and pencil
- PVC hand saw

Material List

Material	Quantity	Cuts Required
stock tank	(1) 100 gallon	NA
2" sch40 PVC pipe	(1) 4' pipe	Cut to 16-inches in length
4" PVC drainage pipe	(1) 10' pipe	(6) 12" (for extra support, could install up to 8/DSP)
4" flat PVC caps	6	NA
PVC perforated 3/16" sheet	(1) sheet	(1) cut to fit inside tank
2" female trap adapter	(1)	NA
2" flush cleanout tee	(1)	NA
2" atrium overflow drain	(1)	NA
2" EPDM gasket	(2)	NA
3/4" hose bib ball valve	(1)	NA
sediment fabric	(2) 5' sections	(2)
spray foam can	(1)	NA
Teflon plumbing tape	(1)	NA
PVC primer and glue	(1)	NA
Oval head drilling screw	(12)	NA

** Stock tanks should be ordered well in advance in April/May when they are in demand

A heat gun can be used on the inside of the tank to remove the "Countyline" or branded sticker on the steel tank.

Fabrication Instructions

1. Lay perforated PVC sheet on flat surface and place tank bottom side down as a template on the sheet. Using a marker, transfer the template dimensions to the perforated sheet - trace the bottom of the tank. (Figure 1)



Figure 1. Marking sheet to cut

2. Cut approximately $\frac{1}{2}$ to $\frac{3}{4}$ inch (eyeball it!) inside the line using a jig saw with appropriate blade to reduce melting (designed for cutting plastic). Place perforated sheet to the side for use later. It is preferable to cut the perforated sheet a tad to small than to have the sheeting be too large, in order to avoid lots of annoying trimming.

3. Take 4" perforated PVC drainage pipe and cut 12" long sections (6 for 100 gallon tank). Then, using PVC glue, attach 4" cap on one side of each of the sections. First apply primer to both the inside of the cap and the end of the PVC pipe. Then apply glue to both the inside of the cap and the end of the PVC pipe. Hold cap onto PVC pipe for 5 seconds to make sure it bonds (Figure 2a).



Figure 2a. 4" pipes and caps

4. Begin to attach each 12" section of pipe with flat cap to the bottom of the perforated sheet using (2) $\frac{3}{4}$ " oval head stainless steel screws per pipe section (Figure 2b). Pipes should be placed in a similar pattern as shown in Figure 3. Recommended to use a cordless drill for this

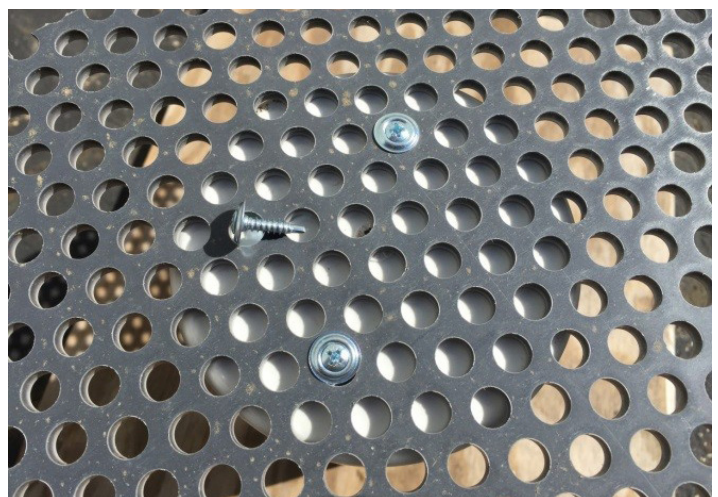


Figure 2b. Perforated sheet attached to pipe

PVC supports should be 1-2-inches from the corners to support the short lengths of the sheet. It's most important to support the outside edges.



Figure 3. Orientation of PVC support sections

5. Test fit perforated sheet inside stock tank making sure it sits approximately level. If areas are too tight, mark location then remove and trim with the jig saw.
6. Determine area where overflow pipe will be located (based on site conditions) and drill hole using 2 3/8" hole saw approximately 20 3/4" from the bottom of the tank to the midpoint of the hole (Note: Allow 1" gap between the top of the planter and inlet of atrium grate). Some adjustment may be required based on site conditions and tank dimensions. The tank hole should be drilled 1 and 5/8-inch above the lip of the second 'ring' on the tank from the top. The horizontal location can be eye balled in the center of the tank. Use a cordless drill slowly to drill the 3 hole.

7. Locate side of the tank where overflow will be plumbed and mark perforated sheet with 2" PVC pipe to extend through. Cut along marked line with jig saw or 2 3/8" hole saw and test pipe fitment. Eyeball this step!
8. Measure length of vertical 2" pipe needed for overflow subtracting 2" to allow pipe to float off the bottom of the tank. (should be ~16-inches)
9. Place all 2" plumbing for overflow into position for test fit. Perforate the 12" bottom portion of the PVC pipe extending through the perforated sheet with approximately 8 evenly spaced holes on 2 sides of the pipe. The hole size should be 3/8" or larger (Figure 4).



Figure 4. Overflow riser and through planter connection

10. Place EPDM gaskets on either side of the overflow pipe through the tank (Figure 5). Use a screwdriver to get the gasket on the PVC threads.



Figure 5a. Overflow riser installed with atrium grate



Figure 5b. Overflow riser installed with atrium grate

This piece cannot be overtightened!

11. Finally, glue joints once everything has been confirmed for fitment.

12. Fit hose bib ball valve into existing threaded bung for drainage. Use Teflon tape on ball valve threads prior to attachment. Ensure

fitting is tight and valve is on top. Set valve opening with 1/8" gap and removed valve handle and replace castle nut

A ball valve is better than a gate valve, but a gate valve will work too. Philadelphia Rain Check uses a valve with a removable handle to reduce the risk of 'user error' and permanently keep the drainage slightly open.

13. Finally, use spray foam to seal edges of perforated sheet to metal tank. For larger gaps, a buildup of foam may be required (Figure 6). Allow 8-10 hours to dry before moving and 24 hours before placing soil mixture.



Figure 6. Perforated sheet with spray foam installed