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How To: Rain Barrels

Rain barrels are a great way to conserve water, are relatively inexpensive and easy to install. These easy to follow, illustrated instructions give you all you need to construct a rain barrel of your own. Either do it yourself or join us for one of our rain barrel workshops. Workshop details can be found by visiting us on the web at www.riverlink.org or by signing up for our newsletter (information@riverlink.org). RiverLink also sells predrilled barrels for \$15 and if you don't have the time to build your own, you can buy a completed barrel for \$60.

HOW MUCH WATER WILL YOUR RAIN BARREL COLLECT?

For every 1000 square feet of collection area, you can expect to collect 600 gallons of water for every inch of rain. The roof on an average home has about 1200 square feet of collection area. In Asheville, where the annual rainfall is about 47 inches, one could potentially collect **33,840 gallons** of rainwater per year!



RiverLink Rain Barrel Built at April 2011 Workshop

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Overview

Rain barrels are water storage units designed to collect water from impermeable surfaces like your roof. The most common type of rain barrel collects runoff from your roof by connecting to your gutter downspouts. The catchment is usually a 55 gallon barrel fitted with a spigot. The system is gravity fed so no pumps are necessary. This simple and effective design is what you will build following these easy four-step instructions.

To the right you will find a list of materials needed to complete your rain barrel. You'll begin the project by preparing the barrel. Next you'll install the overflow and then the spigot. Lastly, you'll attach the barrel to the downspout and you'll be ready to begin water collection.

At the conclusion of these instructions you will also find maintenance tips to help you care for your new rain barrel.

MATERIALS

For Barrel

- 55 gal. drum, plastic
- 3/4" spigot
- Fine mesh screen
- Downspout adaptor sized to fit your gutter downspout
- Corrugated plastic pipe, elbow sized to fit downspout adaptor
- PVC drill bit sized to fit corrugated plastic pipe
- Silicone caulking
- Pipe tape
- Power drill
- 1 1/8", 1 7/8" drill bits
- Metal cutters
- Cinder blocks

For Overflow Spout

(Choose *Rigid* or *Flexible* option)

Rigid

- PVC primer
- PVC cement
- 1.5" PVC adapter
- 1.5" PVC elbow

Flexible

- 1.5" nylon adapter
- 2 or 2.5" flexible tubing

Let's begin!





Step One: Prepare the Barrel

1. Thoroughly rinse the barrel to remove any potential contaminants.
2. Using the power drill and the PVC drill bit, drill a hole through the middle of the top of the barrel.

MATERIALS

For Barrel

- Plastic 55 gallon drum
- Power drill
- PVC drill bit sized to fit your gutter adapter (usually between 4 1/2" and 6")
- 1 7/8" drill bit
- 1 1/8" drill bit
- Cut-to-fit screen
- Silicone caulking



3. Next, drill a 1 7/8" hole in the left side of the barrel one inch from the top. Then, drill a 1 1/8" hole at the base of the front of the barrel for the spigot.



4. Remove any plastic shavings that may have fallen into the barrel.
5. Cut the screen to overlap the hole by about an inch and glue down tightly using silicone caulking or other appropriate glue. Allow glue to dry before first rain event.





Step Two: Install the Overflow

Before installing the overflow you need to chose whether you would like a flexible drain spout that you can use to direct overflow away from the barrel (**Option 1** below) or a rigid spout (**Option 2** on the next page) that drains overflow at the barrel.

MATERIALS

Flexible Overflow

- 1 1/2" nylon adapter
- 2" flexible tubing (length of your choosing)
- PVC primer
- PVC cement
- Pipe tape
- Silicone caulking
- Adjustable #16 clamp or zip-tie

Overflow Option 1: Flexible Spout

1. Tightly wrap the threaded end of the 1 1/2" nylon adapter with pipe tape and screw into 1 7/8" hole at the top left hand side of the barrel. Seal the joint with silicone caulking.



2. Firmly push the flexible tubing onto the adapter to attach. Slide the adjustable clamp or zip-tie into place and tighten.





Step Two: Install the Overflow

Overflow Option 2: Rigid Spout

1. Prime the inside of the female (unthreaded) end of the 1 1/2" adapter and the outside of the male (thinner) end of the elbow with the PVC primer.



MATERIALS

Rigid Overflow

- 1 1/2" PVC adapter
- 1 1/2" PVC elbow
- PVC primer
- PVC cement
- Pipe tape
- Silicone caulking

2. Glue the adapter and elbow together using PVC cement to create overflow spout.



3. Tightly wrap the threaded end of the adapter with pipe tape and screw overflow spout into 1 7/8" hole at the top left-hand side of the barrel. Point the spout downwards (and away from your foundation) and seal the joint with silicone caulking.





Step Three: Install the Spigot

1. Tightly wrap the threaded end of the spigot with pipe tape and screw into 1 1/8" hole at the bottom front of the barrel.

MATERIALS

Spigot

- 3/4" spigot
- Pipe tape
- Silicone caulking



2. Point the spout downwards and seal the joint with silicone caulking.





Step Four: Install Rain Barrel

Choosing Your Location

The rain barrel should be below the gutter downspout of your building and elevated off the ground enough to easily access the spigot. Note that the higher the barrel is off the ground, the greater your water pressure will be.

MATERIALS

Installation

- Downspout adaptor sized to fit your gutter downspout
- Corrugated plastic pipe, elbow sized to fit downspout adapter
- Cinder blocks
- Metal cutters

1. Clear your gutter of debris to avoid clogging your new rain barrel.
2. Elevate the barrel on the cinder blocks. Using the metal cutters, cut the gutter downspout 1-2 ft. above the top of the barrel. Make sure barrel is level so it won't slip off its foundation when its full.
3. Fit the downspout adapter securely onto the gutter downspout.



4. Insert the corrugated pipe into the hole at the top of the barrel.



5. Fit the downspout adapter securely together with the corrugated pipe. Your rain barrel is ready to start collection!





Caring For Your Rain Barrel

With the proper care rain barrels can last many years. Here are some tips to keep your rain barrel functioning properly.

RAIN BARREL CHECKLIST

DO

- Clear your gutters
- Periodically clean barrel and piping
- Check for leaks
- Keep screen securely attached
- Drain each winter

DO NOT

- Drink or water your pets from your rain barrel
- Allow young children to climb on your rain barrel

General Maintenance

Keep your gutters clean to ensure unobstructed flow to your rain barrel.

Mosquitoes are generally not a concern as long as your screen is secure, but as a precautionary measure use the water from your barrel often as mosquitoes favor stagnant water. Use of your water once every three days should be sufficient.

Scrub your barrel periodically to remove particulate buildup.

Inspect your rain barrel often for leaks, cracking and clogging. Repair as needed.

Drain the rain barrel during winter if freezing is a concern (see winterizing below).

Winterizing Your Rain Barrel

In winter, when freezing temperatures are a concern, you will need to discontinue use of your rain barrel to avoid cracking the barrel. Drain and clean, then plug the barrel or store upside down to keep dry. This is also a good time to unscrew and clean your spigot. Taking your rain barrel offline will require you to add additional piping to your gutter downspout to direct water away from your building.