

Sizing Pond and Pond Equipment

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1. Sizing Your Pond

Knowing the amount of gallons your pond holds is critical to properly caring for it. The number of gallons your pond holds will let you know how many fish you can have and tell you what size pump and filter you need. All pond products gauge their doses by gallons. So, knowing how many gallons you have will ensure you are giving your pond what it needs in the correct amounts.

How do I figure out how many gallons I have?

First measure your pond's length, width and depth. Ponds are usually not perfect squares or rectangles. Do your best at averaging all of these measurements.

Second multiply length x width x depth.

Third multiply the above number by 7.48. This will give you gallons.

Example: A pond has a length of 12 feet and a width that is a littler harder to figure out. One side is 4 feet wide and the other is 8 feet wide. It appears that they are both about the same length. We will average those two widths: $4 \text{ feet} + 8 \text{ feet} = 12 / 2 = 6 \text{ feet}$. Now we have a length and an average width. The depth on one size of the pond is 36 inches and the other end is 24 inches. Using the same format as width we would find out that our depth is 30 inches on average which we divide by 12 to get feet. $30 \text{ in} / 12 \text{ in} = 2.5 \text{ feet}$

Length x width x depth x 7.48 = gallons

$12\text{ft} \times 6\text{ft} \times 2.5\text{ft} = 180 \text{ cubic ft}$

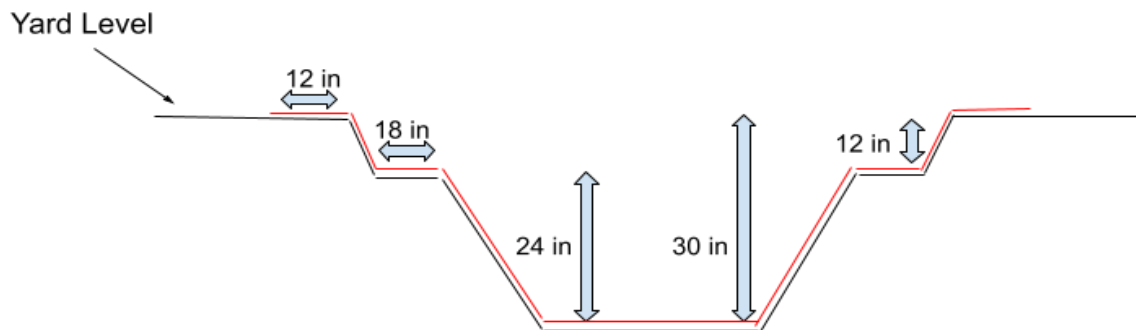
$180 \text{ cubic feet} \times 7.48 = 1346 \text{ gallons}$

2. Sizing Liner

Buying a liner is one of the biggest purchases you will have when creating a pond. It is critical that you size it properly. **Always** remember it is better to have too much than too little.

The image below represents a cross-section of a pond we would dig. The 18in horizontal arrow represents a minimum shelf width. This is for setting stone on for construction, pond plants for looks and for you, a pond owner, to use as a step in. The 24in vertical arrow represents a distance between the shelf/step and the very bottom of the pond. The 30in arrow represents the overall depth from the yard height down to the very bottom. The vertical 12in arrow represents the depth of the top shelf.

Ponds can be shaped however you'd like. Sometimes additional shelves are added at varying depths for steps or for different plants that like different depths of water.



Please Note: Your pond may not look like this and it doesn't have to! This is simply a reference for you to look at and see how a liner should be measured.

Also Note: This cross-section shows one length of the pond. You need to measure both directions, length and width. If you are installing a waterfall, measure as pictured and run the tape measure up your mound of soil and add some extra.

Everywhere you see a red line, you need to measure. The red lines that run on top of the area that says yard indicate the extra liner we recommend you get. We like to measure the basin as pictured and then add **at least** an additional 1 foot to each side of the pond to ensure we have enough.

3. Sizing Pumps

Sizing a pump or pumps for your pond doesn't have to be as tricky as it is made out to be. It is important to know how many gallons your pond is before you start sizing your pump. Check part 1 of this document to size your pond.

Rule 1. Pond pumps are typically measured in gallons per hour (gph). Your pump should have a gph rating of at least 50% of the volume of your pond.

Example: If you have a pond that is 4800 gallons, you should **not** get a pump that pushes any less than 2400 gph.

Rule 2. You need to match your pump size to the size of your drop stone(s). Drop stones are the rocks that water falls over. Your waterfall typically has a main drop stone at its origin. A pond can also have multiple drop stones. We are focusing on the first or the only drop stone for your pond. First, measure the total width of your drop stone(s) and keep your measurement(s) in inches. Now multiply this number by 120. This number will tell you how many gallons per hour are needed to have a ribbon of water fill the entire drop stone(s).

Example: If you have a pond with a single drop stone that measures 20 inches wide. You will take your 20in and multiply by 120gph to get a total of 2400 gph. **If** you do not want a full ribbon of water and you are looking for more of a trickling waterfall, you can downsize your pump to allow less water to come over the waterfall.

Keep in Mind: Rule 2 trumps Rule 1. This means if you need a 2400 gph pump from Rule 1, but your drop stone(s) requires 3600 gph from Rule 2, then get the larger of the two numbers.

Keep in Mind: Just because a pump says it pushes a certain amount of gallons per hour does not mean that is what it will do in your case. Head pressure will cause the pump to slow down. Head pressure is the resistance caused by the distance your pump has to move the water. Most pumps have a chart on their box to make sure you are sizing it correctly. A 2400 gph pump with 6 feet of head pressure will only push around 1500 gph.

4. Sizing Filters

Sizing a filter for your pond is the easiest one to figure out! Every manufactured filter, whether it be a pressure filter or a spill box, has a maximum flow rating on it. **Keep in mind:** It is **always** better to oversize your filter. This allows for more bacteria colonization, more gook collection and leaves you room to house more fish.

Rule 1: Filters may overflow and cause leaks in your pond if the filter is too small. Even if it doesn't leak, an undersized filter can flow too quickly and cause less than adequate filtration.

Example: If your pump is providing 2400 gallons per hour, but your filter can only withstand 1800 gallons per hour, you either need to get a larger filter or a smaller pump to make the two match more closely.

Rule 2: Your pump can be undersized compared to your filter without an issue. The opposite, as described in Rule 1, can or will be an issue.

Rule 3: We would like to reiterate this **very important** point. Oversizing your filter is always a good idea. This will allow your pond to grow and create less maintenance on your end. Instead of cleaning your filter regularly, you may only need to clean once a year! If your fish breed and you have some new babies that you do not want to part with, having a larger filter will create a cleaner environment for your fish. This will allow you to keep more of your finned friends.

Having a larger filter than “needed” is ALWAYS a good move!

5. Sizing UV Lights

UV lights are often referred to as “easy buttons” for water clarity. We recommend not running UV lights 24/7. However, they can clear up water in a matter of hours to days.

Sizing UV's is as easy as looking at the box and reading the sizing charts. UV's are inline units. This means that water is flowing through them. They can only handle so much water volume.

Example: If a UV light says it can handle 2400 gallons per hour. Do **not** run any more water than that through the UV light.

