

# PORTLAND ROCK & LANDSCAPE SUPPLY

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## Basics of Building a Dry Stack Stone Wall

### Materials Needed:

Shovels  
Wheelbarrow  
Rock Hammer or  
Small Sledge Hammer  
Chisel  
Perforated Drain Pipe  
String Line and/or Level  
Gloves  
Safety Goggles



### Before You Begin:

- 1) Calculate the approximate total square footage of your wall. This will be the length (linear feet) of your wall multiplied by the height of the wall. Remember to account for differences in height if the wall is to be built on a slope.
- 2) Once the total square footage is known, you can choose the type of stone you'd like to use and estimate how much you should order based on the total area of your planned wall. Several different types of stone are used in dry stack walls. Stone that is flat on the top and bottom or generally more blocky in shape will often be easier and faster to build with than more rough hewn wall rock types.
- 3) Gravel for backfill and wall foundation is also very important. The base runs the entire length and will require gravel at a depth of 4"-8" and wide enough to accommodate the largest stones in the wall. Backfill should be approximately 2"-6" of gravel and will be needed for the full length and height of the wall. Based on your total square footage and the type of stone you choose for the wall (to determine depth), you can calculate how much gravel you will need for your wall. For the foundation, multiply the width of the wall, by the length, by the depth of the footing (in feet). Divide by 27 for total cubic yards needed. For the backfill, multiply the height of the wall, by the length, by the depth of the backfill. Divide by 27 for total cubic yards needed.
- 4) Gather your materials and tools and get ready to build your wall!

## Installation:

- 1) Check local building codes for restrictions and always call appropriate utility companies before digging.
- 2) If you are building a wall against a hill or embankment, excavate the embankment so that it will give you enough room to stack the stone and allow for a crushed gravel backfill of several inches behind the wall. If drainage is poor, you may want to increase the angle of the wall into the embankment.
- 3) Dig a trench about 4" – 8" deep along the length of the wall. It should be wide enough to accommodate the largest stones in the wall. Fill the trench with gravel and compact firmly. This will serve as a solid footing for your wall and will help support it.
- 4) Lay the first course of stone on top of the gravel base. It is very important to ensure that the base stones are securely laid and do not move easily. You may want to use larger stones to start with, as they will help create a more secure base. The stability of the whole wall relies heavily on the first layer of stones that are set.
- 5) Lay the remainder of the courses so the inside of the wall will lean into the embankment at least two inches for every foot of height. Also, every few feet, add a longer stone that protrudes farther than normal behind the wall. This is called a "dead-man" stone and will add strength and stability to the wall. Backfill with gravel as you go. Keep the stones as tight-fitting as possible and use a rock hammer and/or chisel to chip or shape stones as needed. "Breaking" the joints (avoiding long horizontal and vertical lines) will also increase the stability of the wall.
- 6) If you are in area with poor drainage or heavy runoff, install a drainage system on the backside of the wall near the bottom layers of stone. (It is generally best to start in the middle and slope the drains towards the ends of the wall. However, on smaller or shorter walls, it may work best to slope it down from one end to the other.) After setting the first couple of layers of stone, lay a 2' – 3' wide strip of heavy duty (water permeable) filter cloth behind the wall. Spread a layer of drain rock over it and then install a perforated drain pipe. Cover the drain pipe with another 3" – 5" of drain rock and then fold the remaining filter cloth over it and cover with gravel. Continue to build the wall as normal.
- 7) Cap the wall. You can either finish the final course of the wall by using the same stone and bringing it up to a level finish, or you can use a different type or shape of stone to set it apart. Use a level or string line to check for accuracy. Fill the last couple of inches of backfill with topsoil.

