

SANDBAG STORE LLC

How to Build a Sandbag Wall

A step-by-step guide to planning and construction

Revision 2

4/15/2014

Sandbag Berm Instructions

Are you building a sandbag berm for blocking water? A few minutes of planning just might save you hours of work. Use this guide to properly construct your berm.

1. Preparation

Inspect the site.

- 1.1 First, remove any debris where the berm is to be built. Try to avoid sharp turns and uneven ground. If purchasing sand, consider a level place near the center of the berm for your sand pile. Filling your sandbags close to the berm will reduce fatigue.
- 1.2 Measure the length in feet of the berm – record here: _____
- 1.3 Measure height required – record here: _____
- 1.4 Use the table to estimate the number of bags required: _____

Height of wall	Bags/10 feet
1 foot	50
2 feet	100
3 feet	210
4 feet	360
5 feet	550

- 1.5 If fill material is not readily available on-site, you will need to buy sand. Expect to use about 40lbs of fill material in each bag. Multiply your number of sandbags (above) by 40lbs to get total amount of material required.

Record amount of sand required here: _____

2. Gather Materials

You will need the following:

- Sandbags
- Sand
- Water Barrier Film / Plastic Sheeting
- Gloves
- Safety Glasses
- Shovel(s)
- Drinking Water
- First Aid Kit

3. Construct the Berm

3.1 Sandbag Water Barrier Film Placement

Lay out water barrier film along the length of the berm on the ground. You will be building the wall on top of the barrier film, then wrapping the film around the water side of the berm. **Be sure to leave at least half of the barrier film loose on the water side of the berm for step 3.6.**

3.2 Sandbag Filling

The construction of a sandbag wall can be accomplished with as little as two to three people. The sandbag filling team should first ensure their own safety by wearing protective gloves and eyewear.

One person should hold the bag open with it resting on the ground. Fold the top of the bag over slightly, creating a collar to firmly grip on to.

Another person should carefully shovel sand into the sandbag. If the shoveler is moving too quickly, sand can spill, causing the procedure to actually take longer, as more shovelfuls will be required.

A sandbag should not be filled to the top. In fact, they should only be filled to just over one-half of their capacity. Over filling the sandbag will make it too heavy to manipulate and will significantly weaken the berm. With properly filled sandbags, the sand can be stamped down to the proper molding for the wall itself, creating a better seal.

If you have a third person assisting, that person can stack or stockpile the filled sandbags. It would be ideal if the team rotated positions, so as not to cause muscle fatigue from performing the same act over and over.

Please consider, in advance, the time it takes to build sandbags. You can expect to fill sandbags at a rate of 20 per hour per person.



Tip: Try to put equal amounts of sand into each bag to make uniform building blocks.

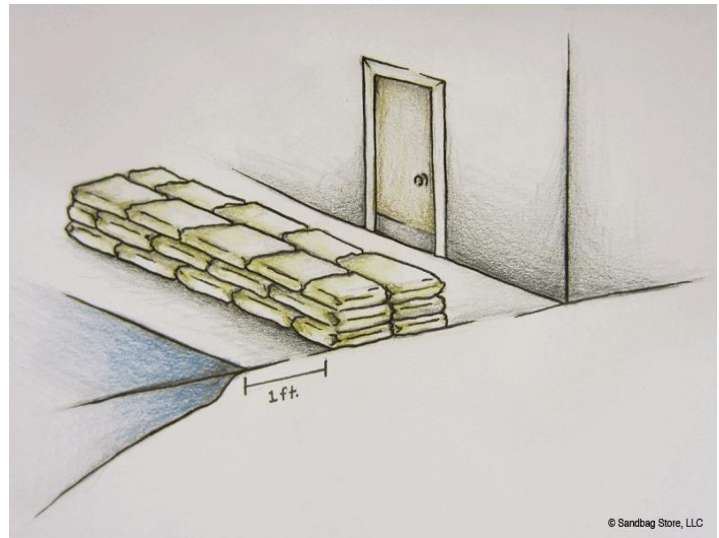
3.3 Bag Placement

If building a wall away from a building to prevent flood waters from a nearby river or levee, start at the downstream end of the sandbag operation about one foot landward from the river or levee's edge and continue upstream. The wall should be built parallel to the flow of water.

Low areas should be placed first, before placing bags the full length of the wall.

The first row of sandbags should be placed tightly against one another. The unfilled top of the bag should be folded under the bag when placing them. After each row, you should tramp down the wall, by walking along the layer, to form a tight seal and to prevent slippage.

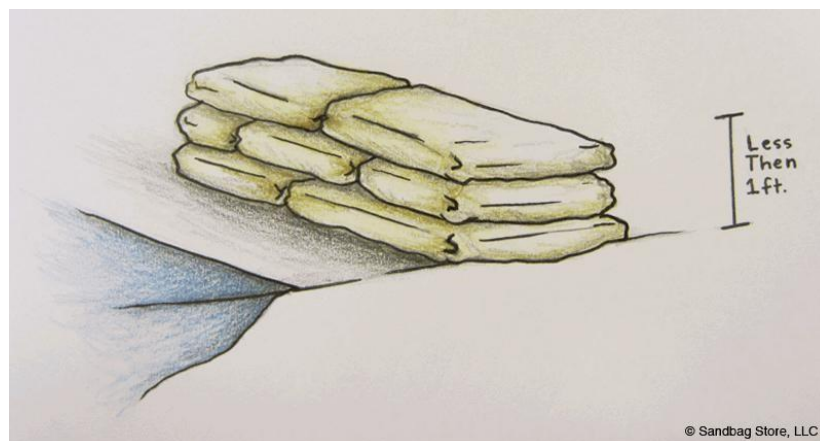
For each row, stagger the sandbags offset by one half a bag's length on top of the bottom layer (similar to the way bricks are layered), to prevent one continuous joint.



3.4 SINGLE STACK PLACEMENT – FOR BERMS ONE FOOT TALL OR LESS.

If there is not a danger from large waves of water, rushing water from a river or levee, or large floating debris such as trees, then a single stack placement is very effective. Layout a single row of sandbags along the length of the berm, then start a second row directly above the first.

It is not recommended to build a single stack placement wall higher than one foot (or three layers high). If you require a higher wall, then consider a pyramid placement wall (section 3.5)



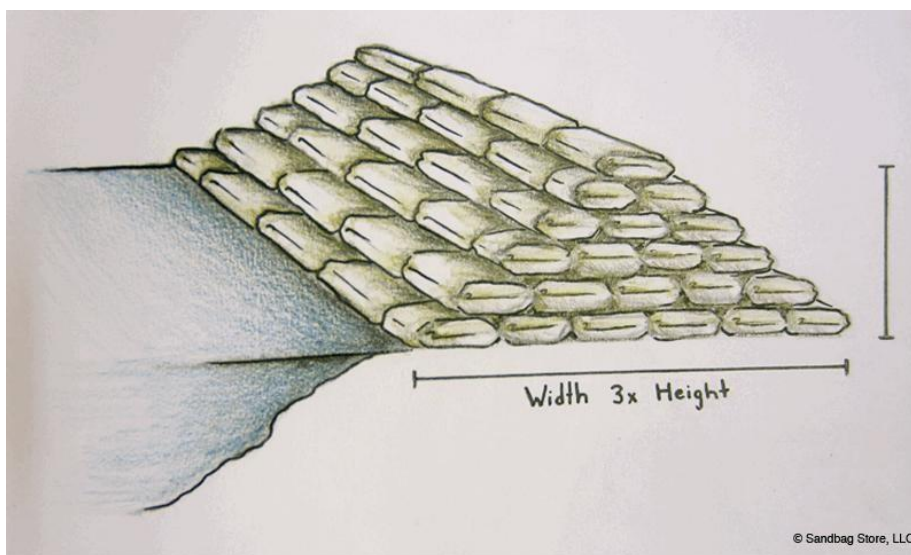
3.5 Pyramid Placement – For Berms Taller than One Foot

The pyramid placement is used when you need to increase the height of sandbag protection greater than one foot off the ground.

Place the sandbags to form a pyramid with the base being three times as wide as it is high. On the first, third and fifth layers, place the bags crosswise (header course). On the second, fourth and sixth layer, the sandbags should be placed lengthwise (stretcher course).

Use this rule of thumb in determining dimensions of the pyramid:

- 1 bag in length equals about 1 foot.
- 3 bags in width equals about 2 ½ feet.
- 3 bags in height equals about 1 foot.



3.6 Barrier Film Water Proofing

The final step is to water-proof your wall using the water barrier film sticking out from beneath the berm (step 3.1). Wrap the remaining barrier film around the water side of the berm and secure along the top with a row of sandbags.

This completes our step-by-step guide to sandbag berm construction. With the proper product, planning and placement, a sandbag wall has been and will continue to be one of the most effective and efficient ways to protect your property during a flood.

For further information, and for a great place to buy sandbags, please visit us online: www.sandbagstore.com or drop us a line at (800) 550-1235.