Using Sandbags for Flood Protection

Sandbags can be used to fill gaps in a permanent protection system, to raise an existing levee or to build a complete emergency levee.

Sandbags alone, when filled and stacked properly, can hold back floodwater, but they are most effective when used with polyethylene (plastic) sheeting.

The bags may be burlap or plastic. Plastic bags can be reused; burlap bags tend to rot after use.

Considerations

Sandbags are inexpensive and are often provided by a community government free of charge. Filling, carrying and stacking them is hard, time-consuming work. When planning a levee, floodwall or other protection system that involves last-minute activity, think about how much time you have to get ready for the water. Some people have two days; some only two hours.

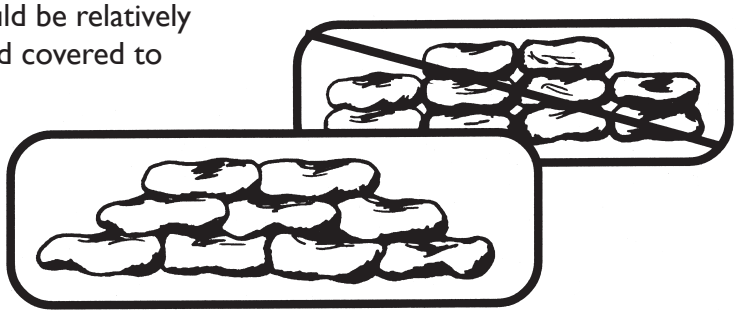
If you plan to rely on sandbags, stockpile sand on your property. It should be relatively free of gravel and covered to protect it from animals and erosion. If you're depending on the community for sand and sandbags, take your own shovel when you go to the distribution site.

Filling

Fill the bags one-half to two-thirds full. The bag, when filled, should lie fairly flat. Over-filled bags are firm and don't nestle into one another; tight bags make for a leaky sandbag wall. Tying is not necessary.

Stacking

Stack sandbags so the seams between bags are staggered. Tuck the top of each bag under so the bag is sealed by its own weight.



Sandbagging Tips

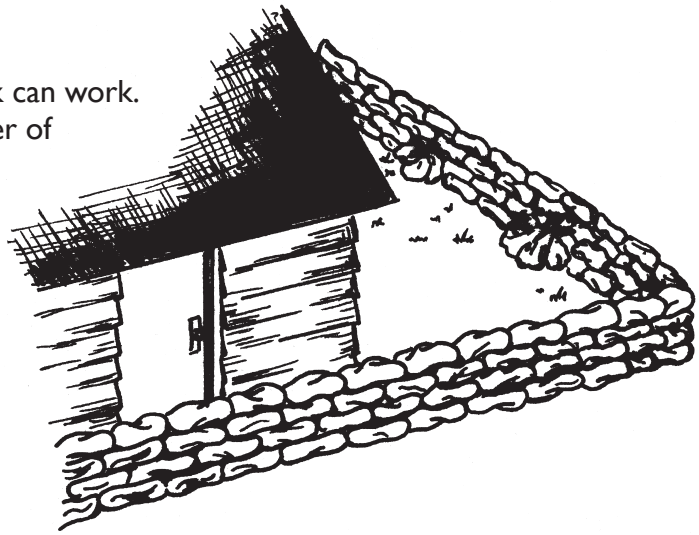
- Be sure you can install the system in the amount of time you have to prepare for a flood.
- Keep the necessary materials on hand (sand, sandbags, a shovel, stakes, polyethylene sheeting, caulking).
- Polyethylene sheeting will improve the performance of any sandbag barrier.
- When trying to close an opening in a brick floodwall, stuff the grooves with caulking. Cotton caulking, like that used in wooden shipbuilding, will be fairly easy to remove after the flood.
- A permanent or temporary floodwall or levee is not a complete protection system. You must take additional steps to prevent back-flow of floodwater through plumbing.
- Even good systems leak; water seeps in underground; rain may fall inside your barrier. Have a pump to remove this water.
- Before each flood season, have a practice run: find the materials; test the pumps.
- Have an evacuation plan. Decide in advance when you will abandon a flood fight and save your life.

Short Sandbag Walls

For walls four bags high or less, a simple vertical stack can work. Bolster the wall on the dry side every 5 feet with a cluster of bags or by providing other support. You may use the building to support a short vertical stack.

Vertical stacks are also used to block doorways.

Caulking weep holes on brick veneer buildings can slow the passage of water into a building, but water will pass through the brick itself unless it has been sealed or the building has been wrapped. Blocking doors and weep holes is not a reliable flood protection method.

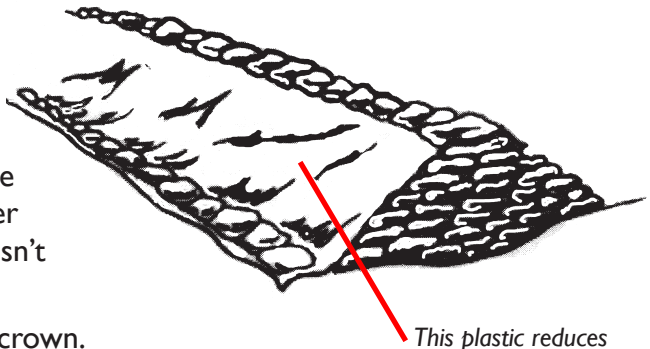


Sandbag Levees

Where you need protection from water deeper than 2 feet, the stack of sandbags should look more like a levee.

To incorporate plastic sheeting into the stack, first lay the sheet along the ground where the outside edge of the sandbag levee will be. It should be 6 mils or heavier, and three times as wide as the intended height of the levee. As you add bags, bring the sheeting up between them in stair-step fashion. This allows the sandbags to protect the plastic from floating debris.

You can add plastic sheeting to the face of a sandbag levee instead of weaving it between the bags (see diagram). In either case, don't stretch the plastic; it should be slack wherever it isn't completely supported by the bags.



This plastic reduces water seepage but is more vulnerable to damage from floating debris. Weaving plastic sheeting into the sandbag levee is better.

Add height to the levee by adding bags to the inside and crown.

A bonding trench will help the levee resist sliding.

When used with sandbags to block an opening, plastic sheeting should overlap the permanent structure at least 2 feet on each end. Continue the sandbagging a couple of feet beyond the opening in front of a permanent wall or levee to get a good seal.

Pat Skinner, Extension Specialist
(Disaster Recovery and Mitigation)

David Bankston, Ph.D., Professor
(Engineering)

Claudette Reichel, Ed.D., Professor
(Extension Housing Specialist)

Gene Baker, P.E., Associate Vice Chancellor-Retired
(Engineering)

This publication is part of a series of fact sheets and videos about permanent and temporary methods for preventing flood damage. The complete series can be found on the Web in a broader collection of articles on "Preventing Flood Damage" at *LSUAgCenter.com/Rebuilding*.

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Louisiana State University Agricultural Center
William B. Richardson, Chancellor
Louisiana Agricultural Experiment Station
John S. Russin, Vice Chancellor and Director
Louisiana Cooperative Extension Service
Paul D. Coreil, Vice Chancellor and Director

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