

# Flood Wraps and Temporary Shields



## Using Plastic Sheeting to Keep Flood Water Out

Plastic sheeting is a versatile flood barrier. Using plastic sheeting in a sandbag levee improves the levee's performance significantly.

Dry floodproofing seals a building permanently so water will not enter; plastic sheeting can be used against the outside walls to provide similar temporary protection. The plastic can be supported on structures built out from the building, so landscaping around the building is not displaced and the building does not feel the force of water on its walls.

It is necessary to block doors, windows, small drains and other openings and to prevent sewer backup when you make a temporary flood barrier with plastic sheeting.

## Considerations

When plastic is supported on the building, the wall is subjected to the unbalanced force of water on one side. Properly constructed walls in good condition should be able to withstand the pressure of 3 feet of water, but buildings poorly constructed or suffering from decay or termite damage may not.

Depending on the duration of flooding and the ease with which water flows through the soil, the slab may be exposed to buoyant (upward) force. In a flooded building, this is balanced by the weight of water above the slab, but when flood water is excluded, the unbalanced buoyant force may cause damage. Wrapping is most suited to areas with clay soils, where floods are short in duration and where flood levels are below 3 feet.

Using a temporary wrap avoids any moisture problems that may be associated with permanent coatings, film and other dry floodproofing materials.

Buildings on piers or pilings are more difficult to wrap than buildings on slabs. Plastic supported on barriers other than the wall can be used to protect such buildings.

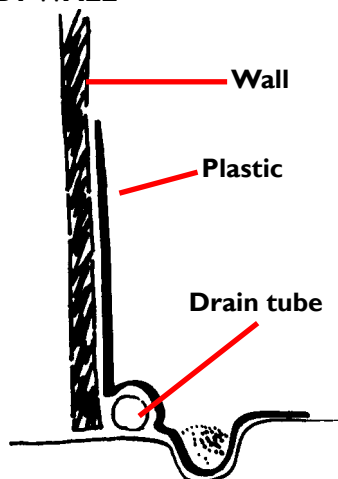
The principal materials required to wrap a slab-on-grade building are 6-mil polyethylene, plywood and some 2x4 lumber, and sump pump(s). Cost increases significantly if you hold the plastic away from the building on a temporary structure and even more if you have to pay for labor.

You can make a support system out of wood, aluminum, steel or other material. It must be strong enough and anchored well enough to withstand the force of the floodwater. Consult an engineer and confirm the adequacy of the design and materials you plan to use.

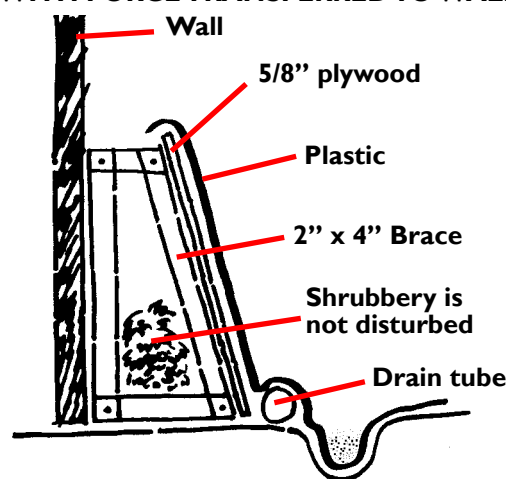
Commercially constructed barrier systems with heavyweight plastic and a steel support framework come in heights ranging from 3 feet to 10 feet. For homes, something in the 3-foot range would be appropriate and safe. Find manufacturers on the Internet to get quotes, knowing what length of barrier you need. Some systems can be rented for a fee that includes installation and post-flood removal.

## Ways to Support Plastic Sheeting

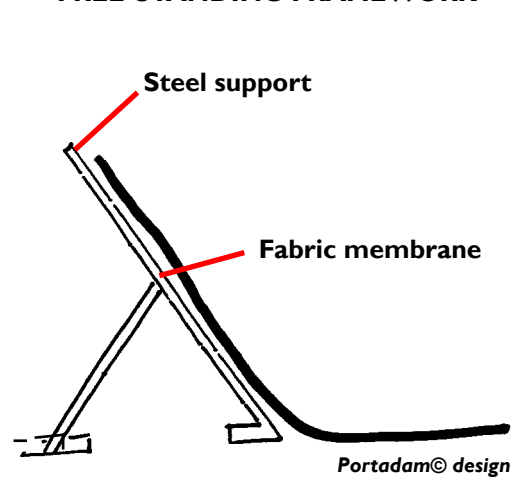
PLASTIC SUPPORTED BY WALL



PLASTIC SUPPORTED BY PLYWOOD WITH FORCE TRANSFERRED TO WALL

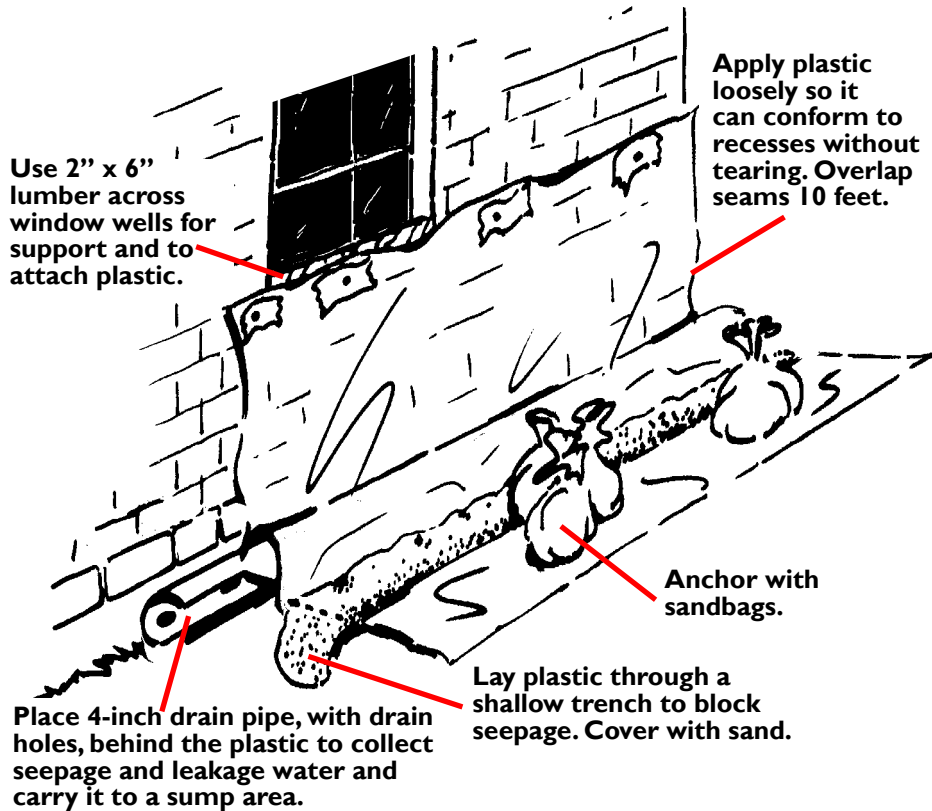


PLASTIC SUPPORTED ON FREE-STANDING FRAMEWORK



Portadam© design

# Building Wrapped with Polyethylene Sheeting



**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](http://LSUAgCenter.com/Rebuilding).

These publications were developed with support from the Federal Emergency Management Agency through Hazard Mitigation Grant Program funds. They have been revised with support from the U.S. Department of Agriculture's National Institute of Food and Agriculture under special project numbers 96-ESNP-1-5219 and 2011-41210-30487.



[www.LSUAgCenter.com](http://www.LSUAgCenter.com)

**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

Pub. 2769 (Online only) 3/12 Rev.

The LSU AgCenter is a statewide campus of the LSU System and provides equal opportunities in programs and employment.

## Tips for Constructing Barriers with Plastic Sheeting

- Do not attempt to construct do-it-yourself temporary barriers to withstand water depths greater than 3 feet.
- Prevent tears in the plastic by reinforcing it with duct tape wherever nails penetrate or the plastic will rub on sharp objects.
- Use heavier plastic when floating debris may strike unprotected film.
- Practice installing your wrap or barrier system, including closures for windows, doors and other openings.
- Install valves in sewer lines to prevent back-flow. (Refer to fact sheets on panels, pumps and back-flow protection in this series.)
- Have one or more sump areas and pump(s) to discharge water that leaks or seeps in. If your temporary barrier stands away from the building, remember to consider rain falling inside the barrier when estimating your pumping requirements.
- Have an evacuation plan. Structural failure or over-topping can result in sudden and forceful entry of floodwater. Plan in advance when you will abandon a flood fight and save your life.