

Wet Floodproofing: Reducing Damage from Floods



The phrase “wet floodproofing” may sound like a contradiction, but it is the label used to refer to a collection of methods intended to reduce damage to a building when flooding occurs.

The difference between wet floodproofing and dry floodproofing is that dry floodproofing keeps the building interior dry by holding water outside the structure, while wet floodproofing lets water into the building but protects the structure, contents and building systems independently.

Cost and Considerations

Wet floodproofing often is the most practical method of reducing flood damage. Since it is not an “all or nothing” system – but instead is a set of improvements – wet floodproofing is flexible, can be done in stages and may be the least expensive floodproofing option.

Even small, inexpensive modifications in your choice of materials while remodeling or replacing a flooring can lead to large savings after a flood through reduced losses, easier cleanup and faster recovery.

If you cannot elevate your home or build reliable flood barriers (for structural, financial or other reasons), wet floodproofing and making the house watertight (dry floodproofing) are options.

Dry floodproofing exposes exterior walls of the structure to the unbalanced force of water on one side, while letting water into a structure allows pressure to equalize and reduces the potential for structural damage. When the strength of the exterior walls is in doubt (from inadequate construction, decay or termite damage), wet floodproofing is the safer option.

On the other hand, a wet floodproofed home is still subject to the ordeal and expense of flooding.

Before the flood, contents and furniture must be elevated or moved to avoid damage. And it may not be practical to make all parts of the building flood resistant.

After the flood, cleanup, decontamination and drying time still are needed, but to a lesser degree than typical homes.

Wet floodproofing your home will not reduce your flood insurance premiums or make it compliant with local flood damage prevention ordinances. (Certain agricultural and accessory structures are exempt from complying with elevation standards but must be wet floodproofed.) Financial assistance from the National Flood Insurance Fund for flood damage reduction generally cannot be used for wet floodproofing.

However, the Small Business Assistance Disaster Loan program can lend up to 20 percent over the amount of a repair loan for mitigation actions to reduce future damages. Some wet floodproofing activities, especially those involving elevation of systems, are eligible for financing in this way.

Maximizing Your Wet Floodproofing Investment

The best time to wet floodproof is during the restoration of your damaged home or when you remodel for any reason. Then the time and expense of the job can be more cost-effective because it serves both purposes of home improvement and wet floodproofing to reduce future losses.

If inside wallboard or paneling will be removed after flood damage, that is a good time to relocate the electrical outlets higher in the wall and to replace wet insulation with a type that does not hold water. Also consider different interior wall finishes that can withstand flooding or make restoration easier, such as removable wainscoting, extra wide baseboards or using decorative “chair rail”

molding to hide a horizontal gap in the wallboard (to prevent wicking up the wall).

When replacing appliances such as the washer, dryer, water heater or air conditioner, set the new ones on a raised platform. Flood recovery is easier when you have air conditioning, hot water and a high-and-dry, functioning washer.

Whenever you replace flooring or wall finishes, protect your investment by selecting materials that will be easier to clean and suffer less damage when they get wet. Consider materials that are suitable for wet environments. Keep in mind that adhesives, as well as the finish material and the substrate to which they are attached, should be flood resistant.

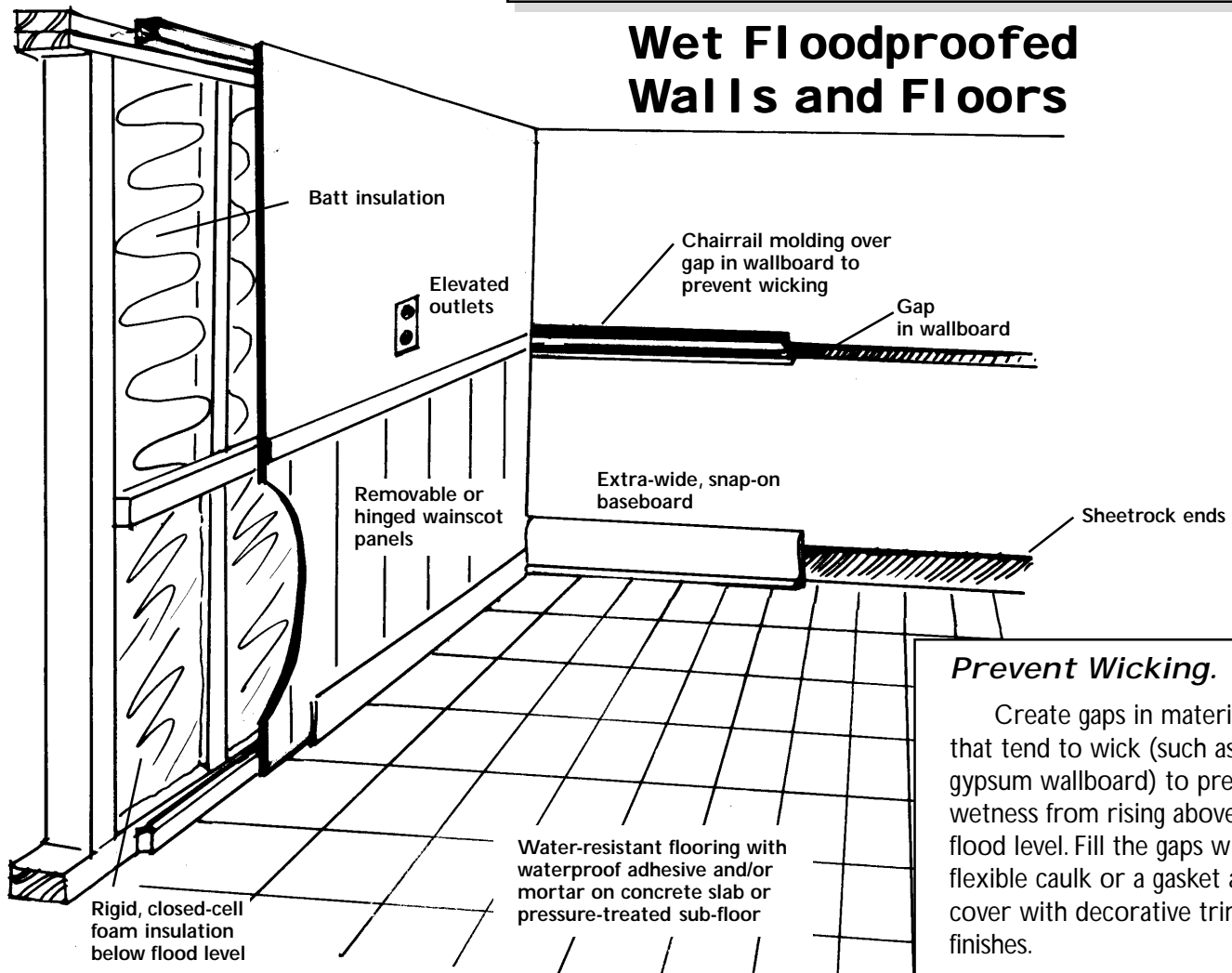
Wet Floodproofing Methods

Use Flood-resistant Materials.

Materials have differing abilities to resist flood damage. Flood-resistance classifications have been developed for flooring, wall and ceiling materials and the adhesives used to install them. These classifications are published by FEMA in FIA Technical Bulletin 2-93. Examples of residential materials which can be very attractive and flood resistant include: clay tile, stone or brick with water-proof mortar; solid vinyl flooring with chemical-set adhesives; stained concrete; terrazzo; decay-resistant or pressure-treated woods; and rigid, closed-cell foam insulation.

Create Flushable, Drainable Walls.

In wet floodproofing, floodwater should be able to flow into and drain out of walls and other cavities to prevent damage from water pressure. After flooding, there should be a way to drain, clean and dry these spaces easily to remove silt and contaminants and prevent the growth of harmful fungi and bacteria. Consider removable wide baseboards or wainscoting.



Prevent Wicking.

Create gaps in materials that tend to wick (such as gypsum wallboard) to prevent wetness from rising above the flood level. Fill the gaps with a flexible caulk or a gasket and cover with decorative trim or finishes.

Elevate Appliances and Utilities.

Items to elevate include your outside air-conditioner compressor, inside furnace or air-conditioning unit, washer and dryer (choose front-loaders if on platform), water heater, freezer and electrical outlets and switches. Also substitute cooktop and wall oven for free standing range or drop-in unit. An appliance can be elevated by placing it on a sturdy, flood-resistant platform or a strong shelf, which is securely attached to structural support that can withstand flooding. If wood is used, it should be solid, pressure-treated lumber.

Flood with Fresh Water as Floodwaters rise.

Cleanup will be easier if the floodwater inside the building is clean. If flooding is certain and soon – particularly where floodwaters are known to be heavily contaminated – flooding the structure with fresh water may be beneficial. However, be cautious. Flooding your home intentionally poses the risk of misjudgment of the flood hazard and raising a red flag of insurance fraud if floodwaters do not ultimately rise enough to enter your home.

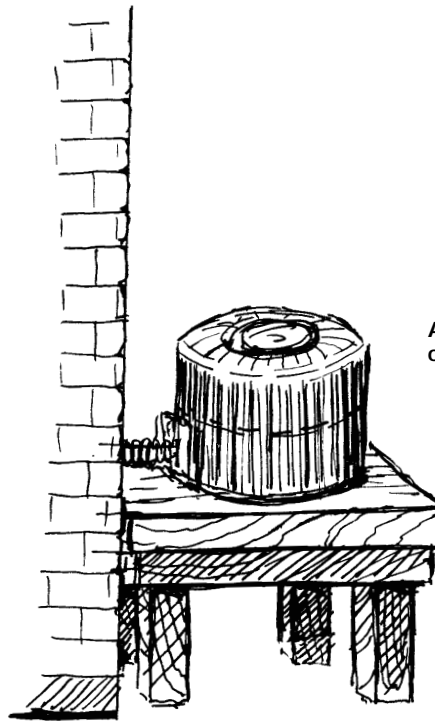
Install Barriers Around Appliances.

Build a mini-floodwall around appliances where shallow-depth flooding occurs often. Or set the washer and dryer on sturdy plastic sheeting or bags that can be raised during a flood threat.

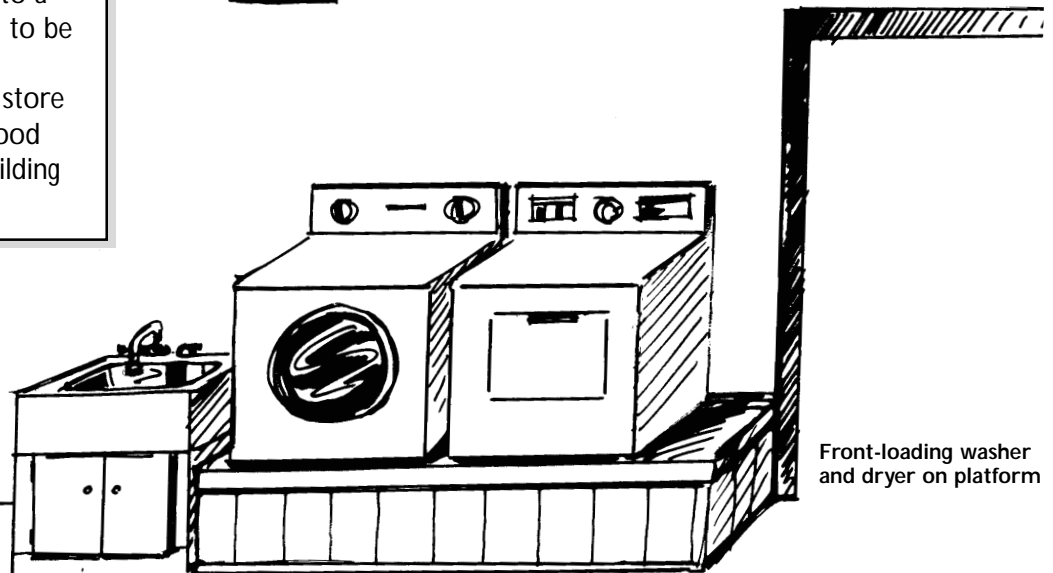
Add a Storage Building Above Flood Levels.

Relocate some appliances to a new building built high enough to be safe from flood damage. Keep enough space available in it to store valuable furnishings during a flood threat. Construction of the building may be subject to regulation.

Elevated air conditioner and appliances



Air-conditioning unit on platform



Metal or plastic base cabinet

Front-loading washer and dryer on platform

Cautions

- Activities that involve work on the electrical system, gas or air-conditioning compressor usually require the services of a licensed contractor. Check with the local permit official to find out about requirements in your area.

- Raising the electrical system above flood levels will protect it from water damage, but it won't make it safe to have service turned on while water is in the building.

- Even when a home is allowed to flood, sewage back-flow prevention is important to prevent the serious health hazards and more expensive cleanup procedures associated with that type of contamination. A back-flow valve should be installed.

- Since wet floodproofing does not keep the structure dry, cleanup still is very important. Even if you successfully stop sewage backup through your plumbing, there is a good chance water coming in from outside has some chemical and biological contaminants. Disinfection, cleansing and thorough drying are essential to remove contamination and to prevent growth of hazardous molds and decay.

Other fact sheets in this series discuss flood-protection techniques such as elevation, levees, floodwalls, dry floodproofing, pumps, valves and a number of emergency protection systems. Flood cleanup and recovery information also is available in printed form and through our website:

www.louisianafloods.org

Louisiana residents can obtain free copies of Extension Service publications and borrow Extension videos from any parish office of the Louisiana Cooperative Extension Service. The Extension Service is listed in the phone directory under parish government.

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Sources of Information:

FEMA

U.S. Army Corps of Engineers National Floodproofing Committee

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