

# Prepare for the Worst. Hope for the Best.

*How to better protect your home from disasters*



## Fortifying a Structure from the Inside Out

Fortifying the outside of a structure to keep rain, wind and water from getting inside is essential to avoiding big-ticket damage or costly repairs.

It's equally important to protect the inside. Repair costs can add up quickly here as well. However, an investment up front can save a lot of time, work and money later if disaster should strike.

Here are some ideas to better protect a structure from the inside out:

### Floors:

- ◆ Consider foregoing wall-to-wall carpeting. Instead, use one or more rugs or carpet remnants for a floor covering. Smaller pieces can be rolled up and stored on an upper floor in a heavy rain event.
- ◆ Completely dry subflooring before laying new flooring.
- ◆ Do not use laminate flooring on top of concrete – predominantly in a basement – where the floor could retain moisture or get wet.

### Drains:

- ◆ Install a sewer backflow valve to temporarily block drain pipes and prevent sewage from backing up into the house.
- ◆ Install a sump pump in the basement floor to help keep groundwater from entering a structure. Sump pumps are used to remove water from basements and other low areas. Consider choosing a model with a battery backup so that it continues to work if the power goes out.

### Electrical System:

- ◆ Raise wiring and electrical components – panel boxes, switches, outlets – at least 1 foot above the Base Flood Elevation (BFE). For those who are not in a designated floodplain, consider raising these components an extra foot above the level required by building codes. For help in determining the BFE and/or to which heights these components can be raised, check with local building officials.
- ◆ Choose wire rated for underground use if it has to run into areas that could get wet.
- ◆ Ensure that all junctions are in approved junction boxes.



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### Electrical System (con't):

- ◆ Upgrade all outlets to a style that includes Ground Fault Interrupters.
- ◆ Raise electric baseboard heaters above the BFE.
- ◆ Hire a licensed electrician for all wiring projects. Be sure that the work is properly permitted and approved by the local building department.

### Appliances:

- ◆ Elevate appliances such as water heaters, furnaces, washers and dryers. When possible, move them from a basement or lower level to an upper floor. Otherwise, relocate appliances on a masonry or pressure-treated lumber base that's at least 1 foot above the BFE (or at least 6 inches tall if there is no BFE). Make sure washers and dryers will not vibrate off the platform during use. Hire a licensed contractor when plumbing or electrical changes are needed.

### Interior Walls:

- ◆ Wash and disinfect studs and sills if the drywall and insulation have been removed. **Give the studs and sills plenty of time to dry** before hanging new drywall. Use a moisture meter to be doubly sure.
- ◆ Cut drywall so that it is 1/2 to 1 inch off the floor, especially in basements. Concrete floors commonly absorb ground moisture – particularly in winter months. That moisture can wick up the wallboard if it's touching the floor, allowing mold to grow out of sight within the walls. Hide the gap with wooden or vinyl baseboard.
- ◆ If greenboard or other moisture-resistant drywall got wet, replace it. These materials can present the same health hazards as regular drywall when soaked with floodwaters.

For more information on disaster rebuilding techniques and ideas, go online at [www.fema.gov](http://www.fema.gov) and click on the "Recover and Rebuild" link at the top of the page.



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