

For more information about protecting your family and home from tornadoes and other windstorms such as hurricanes and nor'easters, check these other publications from the Institute for Business & Home Safety:

**IS YOUR HOME PROTECTED FROM HURRICANE DISASTER?**

A Homeowner's Guide to Hurricane (Windstorm) Retrofit

**HOLD ON TO YOUR ROOF**

Tips for holding your roof sheathing in place with adhesive.

Finally, review your homeowners insurance policy periodically with your insurance agent or company representative to make sure you have sufficient coverage to rebuild your life and home after a tornado. Report any property damage to your insurance agent or company representative immediately after a natural disaster and make temporary repairs to prevent further damage.

For information about filing an insurance claim after a natural disaster, contact:

**YOUR INSURANCE AGENT OR INSURANCE COMPANY**

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*An initiative of the insurance industry to reduce deaths, injuries, property damage, economic losses and human suffering caused by natural disasters.*

# PROTECT YOUR HOME AGAINST TORNADO DAMAGE



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**E**ven if you live outside "Tornado Alley," the area of the country that runs north from Texas through eastern Nebraska and northeast to Indiana, you are still vulnerable to tornadoes. Kansas, Oklahoma and Texas may see more of these unpredictable and dangerous storms than other states, but the rest of the country also gets its share of twisters.

You don't have to be blown away when nature lets loose. It's never too early to prepare and you can take several basic steps right now to protect your family and your home from disaster.

## FIRST THINGS FIRST

1. Structures built to meet or exceed current model building codes for high-wind regions have a much better chance of surviving violent windstorms. The Standard Building Code, promulgated by the Southern Building Code Congress International, Inc., is one source for guidance on fortifying your home against fierce winds. Although no home can withstand a direct hit from a severe tornado, good construction will help your home survive if it's to the side of the tornado's path.

2. When inspecting your home, pay particular attention to the windows, doors, roof, gables and connections (roof-to-wall, wall-to-foundation). Residences in inland areas are typically not built to withstand high wind forces, and weaknesses in these elements of your home make it more vulnerable to significant damage.

3. If you're handy with a hammer and saw, you can do much of the work yourself. Work involving your home's structure may require a building contractor, however, or even a registered design professional such as an architect or engineer.

## WHEN WORKING OUTSIDE

- Replace gravel/rock landscaping material with shredded bark.
- Keep trees and shrubbery trimmed. Cut weak branches and trees that could fall on your house.

## WHEN BUILDING OR REMODELING

**Windows:** If you are replacing your existing windows, install impact-resistant window systems, which have a much better chance of surviving a major windstorm. These window systems are commonly available in hurricane-prone areas. If you are unable to find them locally, you can order them from manufacturers or home improvement stores in coastal areas.

**Entry Doors:** Make certain your doors have at least three hinges and a dead bolt security lock with a bolt at least one inch long. Anchor door frames securely to wall framing.

**Patio Doors:** Sliding glass doors are more vulnerable to wind damage than most other doors. If you are replacing your patio doors or building a new home, consider installing impact-resistant door systems made of laminated glass, plastic glazing or a combination of plastic and glass.

**Garage Doors:** Because of their size and construction, garage doors are highly susceptible to wind damage. A qualified inspector can determine if both the door and the track system can resist high winds and, if necessary, replace them with a stronger system.

Garage doors more than eight feet wide are most vulnerable. Install permanent wood or metal stiffeners. Or contact the door manufacturer's technical staff for recommendations about temporary center supports you can attach and remove easily when severe weather threatens.

**Roofs:** If you are replacing your roof, take steps to ensure that both the new roof covering and the sheathing it attaches to will resist high winds. Your roofing contractor should:

- Remove old coverings down to the bare wood sheathing.
- Remove sheathing to confirm that rafters and trusses are securely connected to the walls.
- Replace damaged sheathing.
- Refasten existing sheathing according to the proper fastening schedule outlined in the current model building code for high-wind regions.
- Install a roof covering designed to resist high winds.
- Seal all roof sheathing joints with self-stick rubberized asphalt tape to provide a secondary moisture barrier.

If you want to give your roof sheathing added protection, but it's not time to reroof, glue the sheathing to the rafters and the trusses. Use an adhesive that conforms to Performance Specification AFG-01 developed by APA — The Engineered Wood Association, which you can find at any hardware store or home improvement center.

**Gables:** Brace the end wall of a gable roof properly to resist high winds. Check the current model building code for high-wind regions for appropriate guidance, or consult a qualified engineer or architect.

**Connections:** The points where the roof and the foundation meet the walls of your house are extremely important if your home is to resist high winds and the pressures they place on the entire structure.

- Anchor the roof to the walls with metal clips and straps (most easily added when you replace your roof).

- Make certain the walls are properly anchored to the foundation. A registered design professional can determine if these joints need retrofitting, and a qualified contractor can perform the work the design professional identifies.
- If your house has more than one story, make certain the upper story wall framing is firmly connected to the lower framing. The best time to do this is when you remodel.

## WHEN A TORNADO THREATENS

You can improve the odds of your home surviving high winds by taking these precautions, but you won't make it tornado-proof. Nor do these measures guarantee your safety. Take these additional steps to protect yourself and your family as fully as possible:

- Decide in advance where you will take shelter (a local community shelter, perhaps, or your own underground storm cellar or in-residence "safe" room). When a tornado approaches, go there immediately. If your home has no storm cellar or in-residence "safe" room and you have no time to get to a community shelter, head to the centermost part of your basement or home — away from windows and preferably under something sturdy like a workbench or staircase. The more walls between you and the outside, the better.
- Become familiar with your community's severe weather warning system and make certain every adult and teenager in your family knows what to do when a tornado "watch" or "warning" sounds. Learn about your workplace's disaster safety plans and similar measures at your children's schools or day care centers.

- Study your community's disaster preparedness plans and create a family plan in case you are able to move to a community shelter. Identify escape routes from your home and neighborhood and designate an emergency meeting place for your family to reunite if you become separated. Also establish a contact point to communicate with concerned relatives.
- Put together an emergency kit that includes a three-day supply of drinking water and food you don't have to refrigerate or cook; first aid supplies; a portable NOAA weather radio; a wrench and other basic tools; a flashlight; work gloves; emergency cooking equipment; portable lanterns; fresh batteries for each piece of equipment; clothing; blankets; baby items; prescription medications; extra car and house keys; extra eyeglasses; credit cards and cash; important documents, including insurance policies.
- Move anything in your yard that can become flying debris inside your house or garage before a storm strikes. Do this only if authorities have announced a tornado "watch," however. If authorities have announced a tornado "warning," leave it all alone.
- Don't open your windows. You won't save the house, as once thought, and you may actually make things worse by giving wind and rain a chance to get inside.
- Don't try to ride out a tornado in a manufactured home. Even manufactured homes with tie-downs overturn in these storms because they have light frames and offer winds a large surface area to push against. In addition, their exteriors are vulnerable to high winds and wind-borne debris.