



Emergency Board Up

Protecting Windows, Doors, & Garage Doors with Plywood Shutters



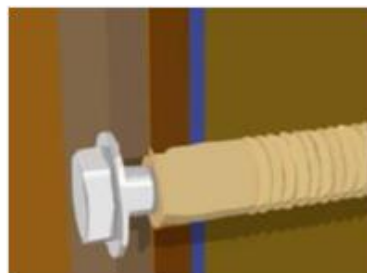
If your home is not protected by impact-resistant windows and doors, wind- or impact-resistant garage doors, or tested and approved shutters, you can build temporary emergency panels to protect your home in a hurricane.

Assemble Your Tools and Hardware

What you will need for this project:

- Tape measurer
- Circular saw
- Drills and drill bits
- Hammer
- Wrench
- Work gloves
- Eye protection
- Bolts
- Wood or masonry anchors
- Nuts and large washers

Note: Different bolts will be needed for wood-frame versus masonry homes. Use lag screws and plastic coated permanent anchors on wood-frame homes. Use expansion bolts and galvanized permanent expansion anchors on masonry structures.



Plan the Project

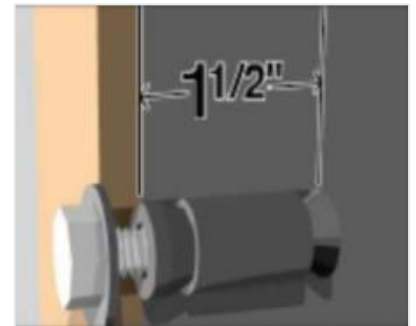
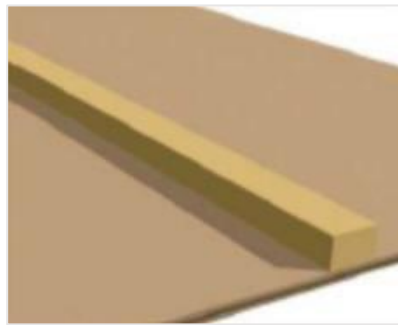
- Count and measure each window and door on your home that has glass.
 - Don't forget French doors, sliding glass doors, skylights, or older garage doors that are not wind- or impact- resistant.
 - Include roof and gable end vents or any opening large enough to allow wind to enter your home if damaged.
- Measure each opening horizontally inside the exterior trim and vertically from the sill to the bottom of the top trim.
- Add 8 inches to both the height and width to provide a 4-inch overlap on all sides.
 - When measuring windows with extended sills, measure from the top of the sill to the top of the window and add 4 inches instead of 8.
- Calculate how many plywood sheets you will need. They are typically 4 feet by 8 feet. Purchase exterior grade (CDX) plywood that is 5/8-inch or greater.



Board Up

- Drill holes in the same diameter as the bolts or screws, 2 inches in from the edges of the plywood at each corner and at 12-inch intervals around the panel.
- Hold the plywood firmly in place over the opening to mark where to drill mounting holes.
 - If the windowsill is flush to the wall, secure the plywood on all four sides.
 - If the windowsill extends out at the bottom, secure the plywood on the top and sides.
- Secure plywood sheets with lag screws or expansion bolts depending on your building materials.

- Wood-frame house: For windows 3 feet by 4 feet or smaller, use 1/4-inch lag screws and plastic coated permanent anchors. For larger windows, use 3/8-inch lag screws that penetrate the wall and frame surrounding the window at least 2½ inches. Lag screws should penetrate the wall and frame surrounding the window at least 1 ¾ inches.
- Masonry house: For windows 3 feet by 4 feet or smaller, use 1/4-inch expansion bolts and galvanized permanent expansion anchors. For larger windows, use 3/8-inch expansion bolts that penetrate the wall at least 1½ inches. Expansion bolts should penetrate the wall at least 1 ½ inches.
- Join plywood sheets for larger openings.
 - For windows and doors (including garage doors) that are larger than a sheet of plywood, join the panels with 2-inch by 4-inch (2x4) bracing along the entire seam.
 - Attach the 2x4s to the outside of the plywood panel with 10 gauge, 2 inch-long, galvanized screws (exterior deck screws) spaced every 4 inches.
 - Use the widest side of the 2x4 to run the length of the entire seam.



Finish Up

- Once you board up, number and label each panel with the name of the opening for ease of installation the next time a storm is approaching.
- Store the panels, washers, and nuts together in a location protected from the weather.
- Consider waterproofing the panels with paint or a sealant.