



# FEMA 320 - Taking Shelter From the Storm: Building a Safe Room For Your Home or Small Business

## Third Edition

- Why is the term "safe room" being used instead of "shelter"?
- What is new in the third edition?



Having a safe room in your home or small business can help provide "near-absolute protection" for you and your family or your employees from injury or death caused by the dangerous forces of extreme winds. Near-absolute protection means that, based on our current knowledge of tornadoes and hurricanes, there is a very high probability that the occupants of a safe room built according to this guidance will avoid injury or death. A safe room can also relieve some of the anxiety created by the threat of an incoming tornado or hurricane. Our knowledge of tornadoes and hurricanes and their effects is based on substantial meteorological records as well as extensive investigation of damage to buildings from extreme winds. All information contained in this publication is applicable to safe rooms for use in homes as well as in small businesses.

This publication will help you decide how best to provide near-absolute protection for yourself, your family, or employees and answers many questions concerning safe rooms. It includes the results of research that has been underway for more than 30 years, by Texas Tech University's Wind Science and Engineering (WISE; formerly known as the Wind Engineering Research Center or WERC) and other wind engineering research facilities, on the effects of extreme winds on buildings. **Download the entire FEMA 320 document.**

FEMA 320 also provides safe room designs that will show you and your builder/contractor how to construct a safe room for your home or small business. Design options include safe rooms located in the basement, in the garage, or in an interior room of a new home or small business building. Other options also provide guidance on how to construct an exterior safe room, either buried underground or attached to the existing building, or how to modify an existing home or small business building to add a safe room inside. These safe rooms are designed to provide near-absolute protection for you, your family, or employees from the extreme winds expected during tornadoes and hurricanes and from flying debris that tornadoes and hurricanes usually generate. **Download the safe room construction plans and specifications.**

The safe room designs presented in this publication meet or exceed all tornado and hurricane design criteria of the ICC-500 for both the tornado and hurricane hazards.

## Why is the term "safe room" being used instead of "shelter"?

The terms "safe room" and "shelter" have been used, for the most part, interchangeably in past publications. Typically the difference in usage was limited to differentiating between residential applications called "safe rooms" and larger projects called "community shelters." The release of the ICC-500 standard, as well as other national, state, and local protection initiatives, identified a need to distinguish shelters that meet the FEMA criteria for near-absolute protection and those that do not. Although both the FEMA and ICC criteria are designed to provide life-safety protection for safe rooms and shelters that meet these criteria, only the FEMA criteria provides near-absolute protection from extreme wind events. To help clarify the difference between safe rooms design to FEMA 320 and 361 guidance, the term "safe room" applies to all shelters, buildings, or spaces designed to the FEMA criteria (whether for individuals, residences, small businesses, schools, or communities). This allows for the buildings, shelters, or spaces designed to the ICC-500 standard to be called shelters. All safe room criteria in the FEMA publications meet or exceed the shelter requirements of the ICC-500. **Download FEMA 361.**

A residential safe room is designed to protect families or small groups of people (up to 16) while a community safe room is defined as a shelter designed and constructed to protect a larger group of people from a natural hazard event. This publication will refer to all shelters constructed to meet the FEMA criteria (whether for individuals, residences, small businesses, schools, or communities) as safe rooms.

The ICC-500 provides the minimum design and construction requirements for extreme-wind storm shelters and is expected to be incorporated (by reference) into the 2009 International Building Code (IBC) and International Residential Code (IRC). It is important that those involved in the design, construction, and maintenance of storm shelters be knowledgeable of both FEMA guidance and ICC standards that pertain to sheltering from extreme winds.

## What is new in the third edition?

The latest edition of FEMA 320 includes many updates and modifications of recommended designs for residential safe rooms and further expand their applicability to small businesses and public facilities intending to shelter 16 persons or less. The designs comply with the new criteria that has been presented in the updated FEMA 361 and the newly released consensus standard (ICC-500). Updates to FEMA 320 also include:

- New hazard occurrence maps
- Revised discussions on hazards, protection from hazards, and the use of safe rooms
- New consumer guide section
- New success stories section
- Revised safe rooms plans with expanded sizes

You can view and download FEMA 320 from the FEMA Library, or order a hard copy or CD-ROM from the FEMA Distribution Center. To order this or other publications please call 1-800-480-2520 or fax 1-240-699-0525 Monday through Friday 8 a.m. – 5 p.m. EST. You may also email your request to FEMA-Publications-Warehouse@dhs.gov. Please provide the title, item number, short number, and quantity of each publication, along with your name, address, zip code, and daytime telephone number.

