



Choosing the Right Safe Room for You

#TornadoStrong



Did you know that you and your family can have near-absolute protection from tornadoes in a FEMA safe room or an ICC 500 certified storm shelter?

These small, typically above-ground structures are proven to withstand extreme winds, even EF-4 or EF-5 tornadoes.

FEMA safe rooms for one- and two-family residences can be designed and constructed using the drawings and criteria in FEMA P-320. Certified storm shelters are fabricated or built with tested and approved methods to meet the ICC 500 standard. Doors and door systems are critical components, and rigorous testing ensures that doors provide resistance from wind pressure and deadly windborne debris.

A tornado safe room can not only save your life, but it may make your home more valuable too. According to FEMA, a safe room can increase your home's selling price by approximately 3.5%. Site-built and prefabricated safe rooms range in price from as low as \$3,000 to \$9,500 depending on size and height.

Compare Your Options

1. Cast-in-Place Concrete



- These rooms are built with removable forms and assembled onsite. Once the forms are placed, the rebar is set inside the formwork, then filled with concrete.
- The panels are removed after the concrete hardens.
- The walls and ceilings are formed at once to create a strong, secure structure.
- When you add this type of shelter to an existing home, it is usually added to the exterior.
- The panels can be fitted with liners to create concrete exterior surfaces that look like siding, brick, or stone.
- This room can be built virtually anywhere in a new house.

2. Insulating Concrete Forms (ICFs)



- These rooms are created using foam blocks that contain steel reinforcement, fitted together, and then filled with concrete. The foam is a permanent part of the room and provides insulation to the building.
- The ceiling is constructed with ICFs creating a continuous, steel-reinforced concrete structure.
- The forms can be used in new or existing construction.
- Interior and exterior finish options include drywall, sheetrock, or siding nailed to the foam.
- ICFs can be used to build a stand-alone safe room or an entire house.

3. Concrete Masonry



- Concrete masonry safe rooms are common in new construction and can be built in one to two days.
- Individual concrete blocks are set in place; rebar is placed for strength and durability; and the cells are fully grouted.
- Reinforcement comes out of the foundation, centered in grouted cells, and is carried to the top.
- Two rows of steel at the top of the wall hold the assembly together.
- Bathrooms, walk-in closets, and basement storage rooms commonly serve as locations for these safe rooms in new construction. Exterior applications are often in a garage, detached garage, or storage building.
- This method offers a variety of texture and finish options.

4. Precast Concrete



- This room is formed off-site and delivered to a house for installation.
- It can be used virtually anywhere in a new house.
- It is usually added to the exterior when added to an existing home.
- The room is anchored using steel angles (L brackets) and bolts.
- Precast concrete can be used to build an entire house, and it can be finished in a variety of colors and textures using form liners. Exterior textures can be customized to look like siding, brick, or stone.

5. Prefabricated Above-Ground Steel Safe Room



- Prefabricated safe rooms must meet the ICC 500 standard and are available in smaller sizes than the safe rooms constructed using FEMA P-320.
- These rooms typically cost less than site-built safe rooms.
- Installation costs for prefabricated safe rooms vary depending on the delivery distance as well as any necessary foundation or geotechnical work required to ensure installation on a sturdy foundation.
- Prefabricated safe rooms can be ordered online or in-store at home improvement retailers.

6. Wood Frame and Steel Sheathing



- The wood frame construction method uses wood framing, covered by steel sheets and two layers of plywood. Hurricane ties are used to connect the roof to the studs, and another hurricane tie is added at the bottom with an anchor bolt to hold everything down.
- This type of safe room can be built in less than one day.
- This room can be used as an addition to an existing home after verifying that the foundation is adequate. It can also be included in new construction in a variety of room options, such as a closet, storage space, or stand-alone garage structure.
- Sheetrock, textures, and paint can be used to customize finishes and room colors.
- A wood frame safe room is most affordable when constructed as part of a new home as the cost of additional materials is primarily the door assembly, steel, and extra plywood.

Whether you build a safe room onsite or install a prefabricated shelter, consider the safety of its location. Safe rooms are designed to protect you and your family from extreme winds, but they cannot protect you from flooding. That is why they should never be built or placed in areas expected to flood during hurricanes, thunderstorms, or other severe weather events.

Contact your local emergency management, floodplain management, or building official if you don't know whether your home is in a storm surge area, high flood risk zone, or any area likely to flood.

For more information and technical details regarding safe rooms and storm shelters, see [FEMA P-320](#) and [ICC 500](#).