



RESIDENTIAL TORNADO SAFE ROOM DOORS

Residential safe rooms are becoming more popular as families seek protection from violent tornadoes. Like any other room, safe rooms must be accessed through an opening or door. Just as the walls and roof of a safe room are designed and built to protect against extreme winds and wind-borne debris, so must the safe room door.

Not all doors are the same

Steel doors commonly used in residential and commercial construction cannot withstand the impact of the wind-borne debris, or “missiles,” that a tornado can propel, and their failure has resulted in serious injury and even death during tornadoes. There is a common misconception that a steel “storm door” with three locks and three hinges can provide tornado life-safety protection: it cannot. Only door assemblies designed and tested to resist tornadoes can provide life-safety protection for you and your family.

Consumers need to be sure the door they are buying is part of a tested tornado safe room door assembly, as some door suppliers offer non-tested “storm door” assemblies for use in safe rooms. Sometimes door suppliers market levels of safety with corresponding pricing (“good,” “better,” “best”). Such terminology can give consumers a false sense of security by leading them to believe that the less expensive doors provide an adequate level of tornado protection.

There is no substitute for a tested tornado safe room door assembly! The good news is these tested door assemblies are readily available today.

What is different about a tested safe room door versus a standard door?

For safe room doors to reliably provide life-safety protection during a tornado, they must be rigorously designed, constructed, and tested. The Federal Emergency

Don't wait until the storm hits!

When careful selection and installation of the safe room door assembly is overlooked, the safe room door opening can leave occupants at great risk of injury or death during tornadoes.

Owners of existing safe rooms are strongly advised to find out now if their safe room door meets FEMA life-safety criteria. For more information contact the Safe Room Helpline at Saferoom@fema.dhs.gov.

Management Agency (FEMA) does not certify products, but the manufacturers of safe room door assemblies must certify that their products have passed ICC® 500 testing to meet or exceed FEMA safe room criteria. ICC 500 is the *Standard for the Design and Construction of Storm Shelters* by the International Code Council / National Storm Shelter Association.

Successful certification of compliance is required to be demonstrated via labels that are attached to approved doors by third-party certification agencies such as UL (Underwriters Laboratories). Consumers should verify the door assembly's compliance with the most current versions of FEMA P-361 and ICC 500 for a tornado wind speed of 250 mph (information on each reference is provided at the end of this fact sheet). To verify the door's compliance, carefully check the door's certification label, which contains information on impact and design pressure performance (see Figure 1).

In addition to having passed required testing for tornado missile impact and pressure, the door assembly should be easily locked and unlocked so that access to and from the safe room is quick and easy.

Why is installing the complete tested door assembly in its entirety so important?

The door assembly includes the door, hardware (locks and hinges), frame, and attachment devices used to anchor the door frame to the surrounding safe room wall. Installation instructions should be specific to the actual safe room wall type (e.g., wood-frame, concrete masonry units) of the home or small business. The entire safe room door assembly must have passed the

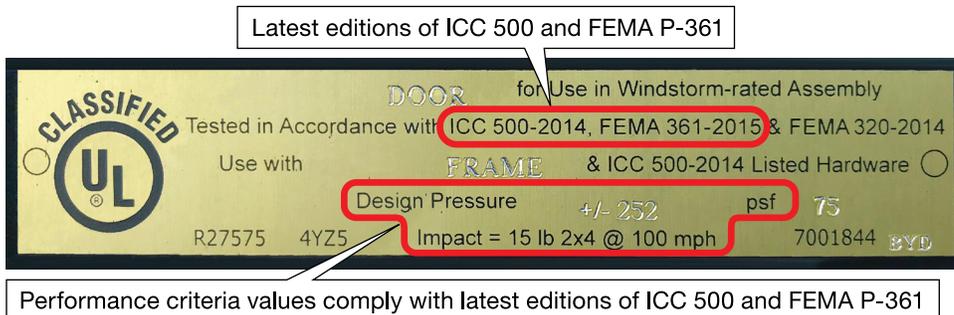


Figure 1: UL tornado safe room door label

required testing exactly as it is to be installed in the safe room to make sure it will withstand the required tornado wind pressures and debris impacts. Examples of doors that failed and passed safe room door testing are shown in Figure 2.

Some suppliers may offer the door and frame without the tested hardware; if substitutions are made, the door may fail during a tornado.



Figure 2: Examples of doors that failed or passed testing

FEMA does not endorse, approve, certify, or recommend any contractors, individuals, firms, or products. Contractors, individuals, or firms must not claim they are, or produce products that are, "FEMA approved" or "FEMA certified."

Where can I buy a tested safe room door?

Tested door assemblies are typically not available off the shelf in most home improvement stores, but can be purchased through commercial building product suppliers or safe room component suppliers. UL and Intertek maintain a list of safe room door assemblies that have passed ICC 500-14 testing for missile impacts and wind pressures. Refer to the "Where can I get more information?" section for more details.

What should I request when selecting my safe room door?

- A third-party certification label that shows the product passed ICC 500 testing to meet or exceed current FEMA safe room criteria
- Confirmation that the hardware supplied with your door is identical to the hardware used during testing

When it is time to install your safe room, make sure to contact your local building department for permitting and inspection guidelines.

What about community safe room doors?

Refer to FEMA's *Community Tornado Safe Room Doors: Installation and Maintenance Fact Sheet* (November 2018) for guidance regarding certification, installation, and maintenance of door assemblies for community tornado safe rooms. To provide reliable life-safety protection against extreme wind events, safe room door assemblies should be certified as compliant with ICC 500, installed as specified by the manufacturer, and regularly maintained by the safe room owner or operator.

Some information in the Community Safe Room Fact Sheet is pertinent to owners of residential safe rooms, specifically information related to maintenance.

Where can I get more information?

UL Online Certification Directory: <https://iq.ulprospector.com/info/>. After registering for a free account, log into 'UL Product iQ' directory and enter 'zhla' under 'Start your search' to find products that have passed ICC 500-14 testing. If prompted, select 'Windstorm-Rated Assemblies' (not 'keyword') when entering 'zhla.'

Intertek Online Certification Directory: https://bpdirectory.intertek.com/Pages/DLP_Search.aspx. Under 'Standard,' select 'ICC-500 (2014)' from the pull-down menu and click on 'Search' for a list of products that have passed ICC 500-14 testing.

A free copy of FEMA P-361, *Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms* (2015), can be downloaded or ordered from <https://www.fema.gov/fema-p-361-safe-rooms-tornadoes-and-hurricanes-guidance-community-and-residential-safe-rooms>.

A free copy of FEMA P-320, *Taking Shelter from the Storm: Building a Safe Room for Your Home or Small Business* (2014), can be downloaded or ordered from <https://www.fema.gov/safe-room-resources/fema-p-320-taking-shelter-storm-building-safe-room-your-home-or-small-business>.

A copy of ICC 500, *ICC/NSSA Standard for the Design and Construction of Storm Shelters* (2014), can be purchased and subsequently downloaded from <http://shop.iccsafe.org/standards/icc-standards/icc-500-2014-icc-nssa-standard-for-the-design-and-construction-of-storm-shelters.html>.

If you have additional questions pertaining to FEMA safe room guidance publications, please contact the Safe Room Helpline at Saferoom@fema.dhs.gov.

See our current releases and stay updated by visiting our website at <https://www.fema.gov/safe-rooms>.