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Industry insights

Clarifying tornado shutter handing

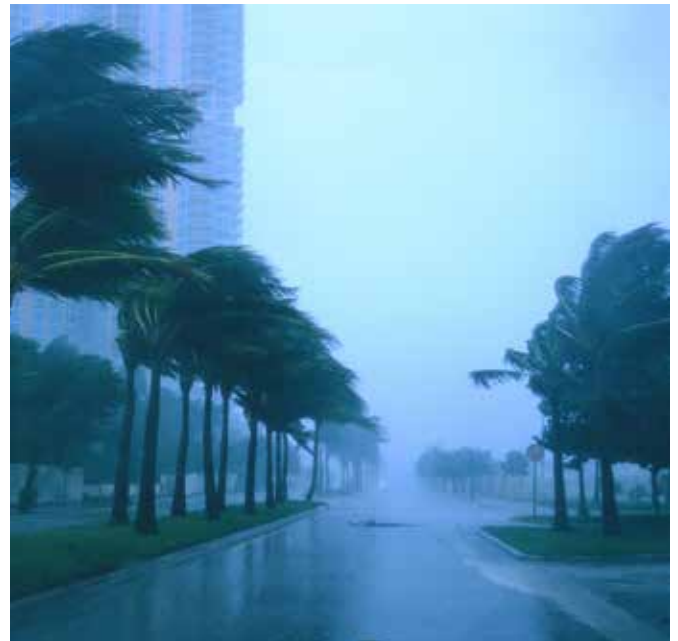
Since 2014, nearly 3,549 tornados have occurred across the United States, according to the National Oceanic Atmospheric Administration's National Weather Service. These storms claimed more than 100 lives and caused a tremendous amount of destruction along their paths.

More upsetting, in just the early weeks of 2017, nearly 20 deaths were blamed on tornados. It's an unfortunate reality, but tornado preparedness is essential in many areas concerned with severe weather.

These threats have led facilities to proactively protect their property—and those inside—with solutions like tornado shutters. When your client's safety is of top concern, you don't want any confusion getting in the way. Accuracy when specifying shutters, particularly with the handing, is critical. It might seem like an easy thing to understand, but Jon Miller, Allegion hollow metal specialist for the central region, has experienced handing issues with many shutter orders.

Tornado shutters are typically applied at a window or sidelight attached to a door. Architects design the area to let light in, but in the event of a tornado or hurricane, the shutters are closed to protect occupants from glass or projectiles. Multipoint locks for shutters are recommended as these secure the door at three points to result in an assembly that is exceptionally strong and can withstand tremendous abuse. When paired with an effective commercial tornado door specifically designed and tested with internal steel reinforcements, like the Steelcraft® Paladin, it can withstand the pressure and impact resulting from the most severe class of tornadoes.

To offer supreme safety, tornado-resistant doors must comply with the most stringent life safety testing standards developed by the International Code Council (ICC) and National Storm Shelter Association (NSSA). ICC-500–ICC/NSSA Standard for the Design and Construction of Storm Shelter is the general standard for the design, construction and testing of storm shelters. It includes test requirements that simulate a 250 mile-per-hour ground speed tornado, including the impact force of building materials propelled at 100 miles-per hour. (Architects can purchase the complete standard for further information.)



The International Building Code (IBC), which requires storm shelters to be constructed in accordance with ICC-500, approved new requirements in the 2015 edition that mandate certain types of buildings to take additional measures when it comes to tornado protection. Allegion Manager of Codes and Resources Lori Greene [explains these changes](#), which now require facilities in high-risk areas of the country to have storm shelters constructed.



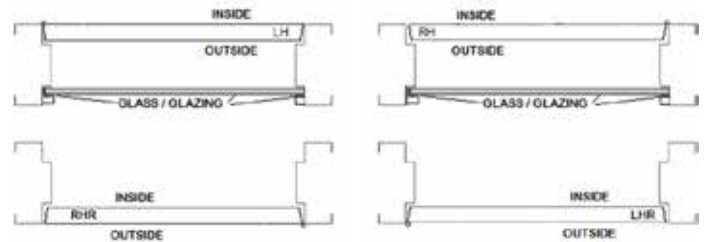
It's important to research products before specifying the project to ensure the tornado shutter doors will meet these standards and guarantee protection. The Steel Door Institute (SDI), developed to establish quality and performance standards for steel doors and frames, encourages architects to inquire about the testing process and understand the fine print before moving forward. For example, see how both a standard steel door and a tornado door hold up against ICC-500 testing requirements in [SDI's video](#).

Federal Emergency Management Agency (FEMA) also has [established guidelines for tornado protection](#).

Of course architects must follow ICC 500 standards and FEMA 320/361 guidelines when selecting tornado-resistant hardware, but correctly specifying that hardware is equally important—and where confusion may come into play with tornado shutters. In many cases an exit lock, such as Schlage's LM9325, is used. That means there is typically lever trim on only one side of the door activating multiple latch points.

Miller explains, if it is specified the way a door with an exit lock is normally handed, it doesn't work. For example, if the order is placed as a right hand reverse door with the trim on the push side, which is normal to exit the room, the handle will be on the wrong side of the door once the shutter is closed. When the shutters are closed, all three latches are immediately secured. Normally, rotating the handle retracts the latches. However, a lever that is on the push side of the door is now inaccessible against the glass of the window. It needs to be on the pull side.

"Handing should be ordered as straight-handed in most applications," said Ken Richied, Steelcraft project manager. He and his team began reviewing orders for shutters last year. He hopes the diagram below will help clear up the confusion.



Replacing the door can be costly so it is important to clarify the handing upfront. Miller advises architects to identify when they are specifying for a window shutter versus a door and make a note to pay attention to handing specs when working with a hardware specialist or the manufacturer. After all, nobody wants their clients to discover there is a functional issue when it comes time to use the shutters—with a severe storm or tornado approaching. A proactive approach guarantees the shutters are correct and in place prior to an emergency.

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About Allegion

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