Windstorm solutions for hurricanes and tornadoes

Every spring, the country braces for Mother Nature and the havoc she unleashes with major windstorms. At one time, only coastal states like Florida seemed to be affected. But in recent years, the destruction has veered beyond Florida, requiring many states to seek shelter from the storm.

Consider this:
- From 2010-2012, there were more than 3,900 tornadoes, resulting in 667 deaths in the U.S.
- Between 2010 and 2011, 31 hurricanes or tropical storms caused more than 387 deaths and $33 billion in damages.
- Practically every state is at risk for tornadoes or hurricanes.

It all starts with code
When it comes to windstorm solutions, it’s all code-driven. The door, lock and hardware you put on an opening are determined by hurricane or tornado codes. The challenge comes with knowing which codes apply.

“Windstorm solutions can be tricky because codes can vary by state—and even county,” explains Lori Greene, AHC/CDC, CCPR, FDAI, FDHI, manager of codes and resources at Allegion.

Additional requirements may also apply to certain types of buildings for enhanced hurricane protection.

“Schools and hospitals, for example, may have additional hurricane code requirements in certain regions,” says Steven King, AHC, a specification writer with Allegion.

Greene says the new requirements will be adopted on a state-by-state basis, so it’s important to check what your state requires. Regardless of whether your state adopts them, she advocates compliance with the new requirements because they reflect best practices nationwide.

Types of buildings
In hurricane regions, many types of buildings are required to have windstorm solutions, including (but not limited to) schools, healthcare facilities, commercial buildings, retail locations and community storm shelters.
In tornado regions, typically schools and community shelters are subject to windstorm shelter requirements. Shelters, however, may be built in a variety of buildings, which are specified by type in the 2015 IBC.

**Types of applications**
The type of application may also drive the final solution, according to Casey Cohorst, CSI, CDT, LEED GA, a specification consultant with Allegion.

“Like any other door solution, windstorm solutions have unique requirements based on the application,” says Cohorst. “What is done for an exterior door may be different than a door for a classroom wing or gymnasium used as a shelter. What you need may vary by building, or even door by door.”

**Integrating access control**
Openings equipped with windstorm solutions can still have access control. However, because of the unique windstorm assembly, there are special considerations.

“We can definitely provide access control for a hurricane or tornado door, and there are a couple ways to do that,” says King. “Because an electric strike can’t be used on these openings, we generally recommend an electronic lock.”

Electrifying a Von Duprin® panic device is another way to add access control to an opening.

**Proven to perform**
The last consideration for choosing a windstorm solution is performance testing. Allegion simulates wind speed and potential projectile impact to measure how its products hold up—individually and as an assembly, which includes doors, frames, locks, hinges, etc.

- **Hurricane:** Tested to resist windborne debris impact loads, and cyclic and static wind pressures, as prescribed by the Florida Building Code
- **Tornado:** Tested to the most stringent FEMA 361/FEMA 320/ICC 500 requirements

**Contact an Allegion spec writer** (or call 877-929-4350) today to learn how our windstorm solutions are designed to meet any hurricane and tornado code.

Learn more about Allegion’s windstorm solutions online or by downloading our Windstorm Solutions Brochure.
Below are the main codes and standards that apply to windstorm solutions.

<table>
<thead>
<tr>
<th>ICC 500 Storm</th>
<th>FEMA 320 and FEMA 361</th>
<th>Florida Building Code</th>
<th>Miami-Dade County certification</th>
<th>Other state certifications</th>
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</thead>
<tbody>
<tr>
<td>Shelter and hurricane resistance standards</td>
<td>Community storm shelter standards</td>
<td>Statewide hurricane resistance requirements and test protocols (Products tested and approved for use)</td>
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<tr>
<td>• General testing standard for community and residential storm shelters for tornadoes</td>
<td>• Outlines guidelines for tornado-resistant structures</td>
<td>• Specifically written to protect occupants and structures from hurricanes</td>
<td>• First area to certify products for hurricane resistance</td>
<td>• Some states, such as Texas, have adopted their own standard</td>
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<tr>
<td>• Tested at the highest level and able to withstand 250 mph sustained winds, 15-lb projectile impact at 100 mph</td>
<td>• FEMA 320 pertains to residential safe rooms (occupancy &lt;16 people)</td>
<td>• Varying standards of FBC exist, based on the type of building</td>
<td>• Based on the Florida Building Code’s High Velocity Hurricane Zone (HVHZ) requirements</td>
<td>• Other states mirror the Florida Code</td>
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<tr>
<td>• More info: <a href="http://www.iccsafe.org">www.iccsafe.org</a></td>
<td>• FEMA 361 is for community storm shelters (occupancy ≥ 16 people)</td>
<td>• New K-12 schools and colleges required to provide Enhanced Hurricane Protection Areas (shelters designed to hold hundreds of people and constructed to more stringent standards)</td>
<td></td>
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<tr>
<td></td>
<td>• More info: <a href="http://www.FEMA.gov">www.FEMA.gov</a></td>
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**About Allegion**

Allegion (NYSE: ALLE) creates peace of mind by pioneering safety and security.

As a $2 billion provider of security solutions for homes and businesses, Allegion employs more than 8,000 people and sells products in more than 120 countries across the world. Allegion comprises more than 25 global brands, including strategic brands CISA®, Interflex®, LCN®, Schlage® and Von Duprin®. For more, visit [www.allegion.com](http://www.allegion.com).