

INSTALLING THE PROPER DOOR FOR YOUR REGION

IBHS expert offers answers to your questions

By Vicki Jones, Editor

Editor's note:

In this Q&A, Mary Uher, the director of Fortified Field Services for IBHS, explains the importance of designing products to strengthen homes and commercial buildings against high winds, hail, hurricanes, and tornadoes. She also stresses the crucial role garage door products play in protecting homes — something all door manufacturers and installers should know more about.

What does IBHS (Insurance Institute for Business and Home Safety) do?

IBHS is an independent 501(c)(3) nonprofit scientific research and communications organization. We study damage caused by severe weather and wildfires and test real-world solutions at our one-of-a-kind Research Center.

Based on our research, we make building code recommendations, offer preparedness guides for home and business owners, and administer two designation programs: Fortified and Wildfire Prepared Home.

Why is IBHS important to the garage door industry?

Garage doors are a critical part of the home and are typically the largest opening in a building envelope. Post-storm studies show that when garage doors fail, the risk of structural damage increases significantly.

So, with the support of industry leaders like DASMA, we've spent considerable time studying the causes of garage door failures and ways to reduce the risk. That research can influence building codes and beyond-code benchmarks required or incentivized by government agencies and/or insurance carriers.

When a disaster strikes, is the garage door the key to damage control?

IBHS researchers have identified the roof and garage door(s) as two areas of homes particularly vulnerable to storms and most important to strengthen. These two home improvements top IBHS's Hurricane Ready guidance.

Garage door failure is often the first step to more extensive structural damage. It allows storm winds and pressure to enter a building, which often leads to the progressive failure of the roof and/or adjacent walls. However, if a door remains relatively intact during a severe weather event, then it can help reduce the likelihood of damage snowballing.

In fact, one study that examined damage caused by Hurricane Ike (2008), the Joplin tornado (2011), and the Moore tornado (2013) found that less than 10% of damaged homes with an intact garage door suffered structural damage to the roof.

IBHS research clearly suggests that having a garage door with an appropriate wind rating for its location can help prevent damage to the rest of the home during a severe weather event.



The IBHS Research Center in Richburg, S.C.



Tests at the IBHS Research Center show cascading damage that can result from garage door failure.



A high wind demonstration at the IBHS Research Center shows the importance of a continuous load path, a Fortified Gold designation requirement.

What does “resilient” home construction mean?

IBHS believes a resilient home is built or retrofitted to better withstand the conditions it faces — including severe weather. That reduces the risk of storm damage, limits the damage that does occur, and gives homeowners the best chance of being able to return home after a storm.

How “resilient” should a home be?

Every family deserves to live in a home strong enough to survive the conditions it will face — including severe weather. Coastal areas often threatened by hurricanes need a different level of protection than inland areas that see derechos or tornadoes, while hail-prone areas require an extra level of resilience.

What U.S. regions are most in need of “resilient” construction?

Every region needs resilient construction, but what that entails differs from region to region. Hurricane shutters, for instance, are a great way to protect glazed openings from a hurricane, but homeowners with structures threatened by tornadoes do not have ample time to install



After Hurricane Sally (2020), this home with a Fortified Roof suffered no damage while neighbors on each side needed extensive repairs.



Built to the Fortified Gold standard by Habitat for Humanity, this home was undamaged by Hurricane Michael (2018).



Owners of this Fortified Gold home on Grand Isle, L.A., were able to return home the day after Hurricane Ian (2022) destroyed hundreds of homes in the community.

them for these shutters to be an effective defense from flying debris.

Another consideration is whether building codes alone are sufficient for homeowners to reach their resiliency goals. IBHS’s “Rating the States” report scores the eighteen states along the Gulf and Atlantic coasts on a 100-point scale for code implementation and training as well as contractor licensing.

In the fifth and most recent edition of this report, there was a 73-point difference between top-ranked Virginia and lowest-ranked Delaware, which highlights the need for homeowners in many states to use voluntary construction standards like Fortified to ensure their homes are ready for a storm.

With the increase in severe weather events, are more states implementing additional and/or stricter building code requirements?

As severe weather grows in frequency and intensity, we are seeing more interest in resilient construction. However, since 2008, no state analyzed in the “Rating the States” report has adopted a new residential code and enacted uniform statewide enforcement of that code. In the absence of statewide codes, local jurisdictions must fill the gap.

This patchwork of code adoption leads to even greater inconsistencies in construction and leaves some communities far more vulnerable to extreme weather than others.

Staying up to date on your local building requirements and recognizing what specific weather-related events affect your region is critical.

You mentioned IBHS analyzes the building code environment of coastal states. What factors are you looking at, specifically?

We update our “Rating the States” report every three years to coincide with the building code cycle. We examine four main areas:

- The current statewide residential building code (and whether one exists at all).
- The processes in place to ensure uniform code application without amendments that weaken it.
- State and local enforcement programs.
- Licensing and education of building officials, contractors, and subcontractors.

What does “Fortified” mean?

Based on decades of IBHS research, Fortified is a voluntary resilient construction program that goes beyond typical building codes to provide better protection against severe weather. At the program’s core is the Fortified standard, which lists construction requirements that strengthen a home.

The standard offers three levels of protection (Roof, Silver, and Gold) and is available for free at www.fortifiedhome.org. To earn a Fortified designation, the requirements of the standard must be met and documented by a certified Fortified evaluator.

What is the difference between a traditional garage door and one that meets the Fortified standard?

The goal of Fortified is to reduce the risk of storm damage; in particular, we want to eliminate cascading damage. Because garage doors are a common failure point in high-wind events that often lead to more extensive damage, they are a major focus of Fortified Silver.

To meet the standard, garage doors must be designed for a minimum wind speed of 130 mph and Exposure C. Because this is stricter than

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building codes in many areas, the availability of qualifying doors is a challenge in many inland markets.

In hurricane-prone areas, the standard also requires impact protection for garage doors that feature glazing.

How many residential homes in the U.S. have received Fortified designations?

So far, more than 65,000 homes. Alabama, Louisiana, and North Carolina are leading the way, but the program is growing in both coastal and inland areas by nearly 2,000 homes per month with designations issued to homes in 28 states.

In September 2020, Hurricane Sally made landfall in Gulf Shores, Ala., and nearly 17,000 Fortified homes were threatened. Approximately 95% of those structures had little or no damage. A study by NC State looked at claims data for five earlier hurricanes and found that homeowners with a Fortified designation were 34% less likely to file a claim. If they did have a claim it was on average 22% smaller.

What are the levels of durability and how are they determined?

Fortified has geographically appropriate standards for both high-wind (inland) and hurricane (coastal) locations. The program offers three levels of durability: Roof, Silver, and Gold; each level builds on the previous one.

Can you explain the “Roof” level?

IBHS studies show that up to 90% of all post-catastrophe claims include damage to the roof that often lead to significant interior damage. Fortified Roof uses a three-pronged approach to reduce that risk:

1. Nail it down—By attaching the roof decking with ring-shank nails in an enhanced pattern we can double the wind pressure uplift it can withstand, which helps to keep the roof on.

2. Seal it up (keep the water out)—Sealing the gaps between the roof decking dramatically lowers the risk of water intrusion. In fact, IBHS studies show that for every inch of rain the equivalent of nine bathtubs of water can pour through the gaps of an unsealed roof deck—sealing the deck reduces this by 95%.

Preventing water intrusion can save time, aggravation, and money. In another study, IBHS compared the damage to two sides of a duplex (one with a Fortified Roof and one with a traditional code-compliant roof). The side with the sealed roof deck only experienced roof cover damage while the side with the unsealed roof deck had extensive interior damage that more than tripled the cost of the repairs.



Sealing the roof deck is a key requirement for Fortified Roof and can reduce water intrusion by as much as 95%.

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3. Lock it out (keep the wind out) — Securing the roof edges with a fully adhered starter strip and sturdier edge metal installed above the underlayment with an enhanced nailing pattern protects one of the most vulnerable parts of a roof.

What is the “Silver” level of durability?

The research we have conducted at IBHS shows internal pressure plus external pressure often equals catastrophic structure failure. While we can't stop Mother Nature from exerting external pressures, we can take steps to minimize its effect while also eliminating internal pressure. Fortified Silver aims to do this by focusing on the following:

- 1. Windows and entry and garage doors
- 2. Porches and attached structures
- 3. Gable end-bracing (where applicable)



For maximum protection from severe weather, Fortified Gold requires a continuous load path.

I see that garage doors are included in Fortified Silver. What does that mean to the garage door industry?

We're seeing interest in the Fortified program growing into inland areas. Fortified discounts and grants will soon be available in states like Kentucky, Minnesota, and Oklahoma. As a result, we expect more demand for wind-rated garage doors in areas where they currently have very limited availability. Frankly, we'd love to see them become the norm for homes built in areas where tornadoes and derechos are prevalent.

What is the “Gold” level?

On top of the requirements of Roof and Silver, Fortified Gold also requires an engineered continuous load path. Tying the roof to the walls, upper stories to lower stories, and walls to the foundation provides a continuous load path that gives buildings their best chance to resist extreme wind forces.

How does someone get a Fortified Home?

The Fortified standard is available for free on our website and any contractor can use it to guide the construction or retrofitting of a home. In addition, more than 65,000 homeowners have elected to obtain a Fortified designation, which is often required for financial incentives like insurance discounts, mitigation grants, or tax credits. To earn a designation, a certified Fortified evaluator must provide IBHS with specific documentation showing the standard has been met.

What types of dwellings qualify for the Fortified program?

Single-family detached homes, certain HUD manufactured homes, and townhouses. Homes on dry-stacked block foundations are not eligible.

How can a garage door professional learn more?

Information about the Fortified standard and how to become a certified Fortified contractor is available at www.fortifiedhome.org. ■

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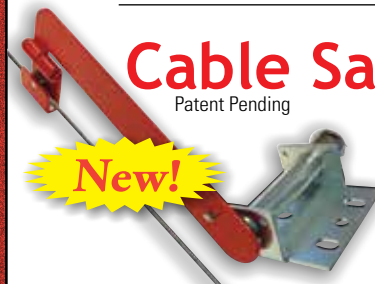
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