FORTIFIED

A program of the Insurance Institute for Business & Home Safety

vs. Conventional Construction

In September 2010, the Insurance Institute for Business & Home Safety (IBHS) conducted a full-scale beta test at its multi-peril Research Center in South Carolina as part of the laboratory commissioning process. For the beta test of IBHS' ability to realistically recreate a variety of windstorms, two identical looking, 1,300 square foot, two-story homes were placed side by side in the test chamber and subjected to sustained wind and gusts which peaked at 96 mph. One test house was built using conventional construction standards common in the Midwestern U.S., and the other house will be built to IBHS' code-plus FORTIFIED for Safer Living® superior construction standards as they would apply in that same area of the country. The houses were built off of blueprints/plans for a real FORTIFIED home in Bloomington, Ill.

The FORTIFIED for Safer Living® is a code-plus new construction program helps homeowners and homebuilders build stronger, safer homes from the ground up. From earthquakes and hurricanes to severe winter weather and wildfires, the program's standards are designed to increase a home's resistance to whatever natural hazards threaten the area where the house is located.

Standard Building Code Home

IBHS FORTIFIED for Safer Living® Home

After the beta test was completed, IBHS brought in professional property claims adjusters from two insurance companies to estimate the amount of damage each house suffered. These individuals were all very experienced, well-trained catastrophe claims adjusters.

SC Farm Bureau: $5691.73
State Farm: $6,913.50

SC Farm Bureau: $743.12
State Farm: $2,975.14

Of particular note is the MAGNITUDE of the difference between the cost to repair the FORTIFIED for Safer Living® home and the conventionally constructed house. The South Carolina Farm Bureau loss estimate for the conventional house is nearly eight times the loss estimate for the FORTIFIED house. The State Farm estimate for the conventionally constructed house was more than two times the loss estimate for the FORTIFIED house. This puts the average of the two loss estimates at roughly five to one. Had these houses been fully finished on the interior and furnished, the damage ratio would be much, much higher for the conventionally constructed house.

Variations between insurance claims adjusting functions are not unusual. Each company looks at losses through their own data systems and other lenses. However, one theme is very clear – the superior construction standard used for the FORTIFIED for Safer Living® home prevented thousands of dollars in damage that was suffered by the conventionally built home.

In addition to IBHS Research Center testing, FORTIFIED houses have been severely tested in the real world. When Hurricane Ike's eye wall crashed into the Bolivar Peninsula in Texas in 2008, 13 FORTIFIED homes were standing directly in its path. One of the goals of the Fortified program is to assure that homes and businesses built to Fortified standards perform much better than neighboring structures when a major natural catastrophe occurs. In the case of Hurricane Ike, 10 of 13 FORTIFIED-designated homes remained standing with minimal damage, while all other homes in the surrounding area were totally destroyed. This clearly is a successful outcome.

The three FORTIFIED houses that did not survive Ike actually were destroyed by the impact of debris from traditionally built homes knocked off their foundations by storm surge. This illustrates another key point about superior construction: it is great for individual homeowners, but performs most effectively when an entire community meets the same, high standard.

FORTIFIED for Safer Living®
vs. Conventional Construction

Insurance Institute for Business & Home Safety

IBHS Research Center

Home built to conventional Midwest construction standards (L) and home built to IBHS FORTIFIED for Safer Living® standards (R) in IBHS Research Center test chamber.

The specimen houses featured in the October 2010 thunderstorm demonstration test essentially replicated an actual home built in central Illinois. One copy of the Bloomington house was built using conventional construction techniques common in that part of the country, while the other was built to the IBHS FORTIFIED for Safer Living® standards designed for Midwestern construction.

To make the FORTIFIED house more resilient to the types of severe weather events prevalent in central Illinois (e.g., thunderstorms, tornadoes, and winter storms), it has the following features, which the conventionally constructed home does not:

- Straps that tie the roof to the walls, the top floor walls to the bottom floor walls, and the bottom floor walls to the foundation;
- High wind-rated siding;
- High wind-rated roof covering;
- A front door that opens out instead of in;
- 8d ring shank nails, instead of staples to significantly strengthen the connection of roof and wall structural members;
- A sealed roof deck; and,
- 5/8-inch plywood roof decking, instead of ½-inch decking.

The Insurance Institute for Business & Home Safety (IBHS) mission is to conduct objective, scientific research to identify and promote effective actions that strengthen homes, businesses, and communities against natural disasters and other causes of loss. Please visit our web site at www.DisasterSafety.org.

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