Scientists simulate hurricane-force winds in the lab (w/ Video)

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A conventionally constructed home begins to break apart as a fortified home stands fast during a test of home construction materials at the Institue for Business and Home Safety in Richburg, S.C., Tuesday.

Researchers used more than 100 giant fans to create hurricane-force winds in an experiment Tuesday that crumpled an ordinary home within minutes but left a better-built home standing at its side.

Authorities said the experiment conducted in the cavernous Insurance Center for Building Safety illustrated the superiority of fortified building materials against materials and methods used in conventional home-building.

"This is an opportunity to create demand for better construction," said Tim Reinhold, the center's chief engineer. The Richburg facility was built by insurance companies in a bid to find ways to reduce damages

and losses from natural disasters.

The conventional home took minutes to collapse in 96-mph winds similar to those of a Category 2 hurricane; once the house began to shake, the end came seconds later. Reinhold said the stronger house cost about $5,000 more to build but suffered only cosmetic damage in the same winds.

Reinhold said builders normally won't use higher-end materials unless those are required by building codes or requested by homeowners. He hopes the images of one house left standing while another lay in ruins is persuasive.

The giant fans simulated the wind profile of three actual storms with gusts up to 100 mph or higher. Both houses remained standing after two tests of less than 10 minutes each, so researchers opened the front door on each house and the conventional house collapsed in less than 10 minutes.

"You saw how quickly it went once it started to go," said Julie Rochman, president of the Institute for Business and Home Safety. "The bottom line question you have to ask yourself is which house would you rather be living in?"

"We want to build better going forward," Rochman added, noting metal straps in the stronger house secured the building on its foundation — and the roof atop the walls.

The conventional house in the test was built to the standard required in the Midwest. Houses in coastal areas would typically have more reinforced construction, Reinhold said.

Even with its front door open and the wind buffeting all its walls and the

roof, the fortified house had no structural damage, researchers said.

In contrast, the conventional house suffered significant damage to its roof, siding and a window in the first two storm simulations. Even if the conventional house wasn't completely blown away, it would have needed significant repairs, experts said.