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Homes Built to Stricter Standards Fared Better in Storm

By [Laura Kusisto](#) | Sep 18, 2017



Mark Wilson/Getty Images

When Hurricane Wilma pummeled Florida in 2005, it nearly ripped the roof from Stephany and Michael Carr's house in Naples, which was built before a 2002 building code took effect statewide.

After the storm, the couple retrofitted their house to comply with the new code. They added a standing seam metal roof with continuous panels connected by strong fasteners. And they invested in hurricane impact-resistant windows and doors.

The upgraded home withstood Hurricane Irma without issue.

“It looks like a bomb destroyed our trees and yard,” said Ms. Carr, a 58-year-old lawyer. “Tree branches bounced off of our roof. But the house is fine.”

Ms. Carr credits the more-stringent building code with saving her home and their lives. “For anyone who doubts these codes, I invite them to sit in a pre-code structure in a Category 3 storm or higher,” she said.

As homeowners in Florida begin to take stock of the damage from Irma, one pattern is beginning to emerge: homes that were built to the stricter building codes seem to have fared better.

“The feedback we’re hearing is positive,” said Rusty Payton, chief executive of the Florida Home Builders Association. “We’re all interested and there will be a deep dive. It appears that it did its job.”

Bill Wheat, executive vice president and chief financial officer at home-building giant [D.R. Horton](#) Inc., said his company’s early assessments “indicate that the more recent building standards post-Andrew over the last 20 years have held up relatively well.”

The evidence so far is preliminary. Insurance companies, home builders, city and county officials and local resiliency experts say they are still conducting assessments of how homes and commercial buildings built to different standards held up during Irma. Homes in the Florida Keys, for example, tend to be older and were the most badly damaged areas from the storm, but until a few days ago the Keys were inaccessible to researchers.

Julie Rochman, chief executive of the Insurance Institute for Business and Home Safety, a research organization backed by insurers, said it is too early to say definitively what role the building code played in minimizing destruction during Irma. But she said early feedback from a research team that put in place instrumentation throughout southern Florida during the storm is encouraging.

One of the team’s meteorologists who toured some of the affected areas was “very pleasantly surprised,” Ms. Rochman said. “It looks like the building codes have proved themselves, that the new construction has done well.”

Leslie Chapman-Henderson, president and chief executive of the Federal Alliance for Safe Homes, said she has noticed the roofs of older homes look like checkerboards with shingles missing. Flying shingles are a larger concern because they can hit people and property and cause additional damage.

Research led by Kevin Simmons, a professor at Austin College, looking at insured-loss data from 2001 to 2010 found that the building code reduced windstorm losses by up to 72% and that there were \$6 in losses saved for every \$1 of additional construction costs. The paper is expected to be published shortly in the Land Economics journal.

Tom Lykos, a local builder in the Naples area, said his two-story house, which was finished in 2003 and meets the new more stringent standards, came away with nary a scratch from Irma.

Mr. Lykos, who is about 5 miles from the water, said at one point the wind was enough to topple a large oak tree outside his door.

“I know stuff was bouncing off the house and my house suffered no damage whatsoever. The newer construction really stood up to the winds,” he said.

Others were less lucky, he said. A client of Mr. Lykos whose home was built in the 1990s to less stringent standards sustained severe damage both from wind and flooding, though Mr. Lykos said the home is also closer to the ocean. He said many older homes took on several inches of water but newer homes, which are built further above sea level, didn't.

Florida has one of the strongest building codes in the country. Passed statewide in 2002 after Miami-Dade County beefed up regulations in the wake of Hurricane Andrew in 1992, the new rules required newly built homes to have stronger fasteners that prevent their roofs from blowing off, nails instead of staples and impact-resistant windows in certain areas, which manufacturers sometimes check by firing pieces of plywood out of cannons at them.

Philippe Houdard, a resident of Miami's Brickell financial district who rode out Irma in his 16th-floor condo in a tower built after the new code took effect, said he felt secure throughout the storm.

“At no point were the windows rattling,” he said. “I didn't feel vulnerable.”

The downside to the new code is cost. Builders estimate that regulatory compliance can add as much as 45% to the price of a home in some parts of Florida, compared with about 25% nationally.

Florida passed a bill this spring that gives the Florida Building Commission flexibility to evaluate whether or not to make code changes to keep up with technological advancement and removed a requirement that it adopt International Code Council standards every three years.

Critics say it will gradually weaken the standards that just helped protect swaths of the state from a hurricane.

Mr. Payton of the Florida Home Builders Association said the change would simplify bureaucracy and help save home buyers money, but added that, “We don't want to build houses that blow down.”

The change was opposed by Craig Fugate, the head of the Federal Emergency Management Agency during the Obama administration, who said that 25 years after Hurricane Andrew, the state had forgotten lessons learned and was once again letting building-code standards lapse.

“The longer you go between hurricanes the more people forget how bad it was and start thinking maybe it was an off year and we can start saving a lot of money if we don't build to these codes,” he said.