

CONSTRUCTION AND MATERIAL INNOVATIONS

Modern manufactured homes take advantage of emerging building technology that balances quality with cost by increasing construction efficiency in ways that is only possible with off-site homebuilding.

Indoor Construction: Being built entirely in climate-controlled facilities allows MH to avoid weather-related damage and mold infestation during construction.^[9]

Built on Steel: All MH are built on a solid steel frame that runs the entire length of the home. This frame creates a ‘continuous load path’ that more efficiently anchors the roof to the walls and the walls to the floor.^[10]

Roofing Techniques: Modern MH feature a seal around the roof’s foundation layer to prevent wind and rain damage and use more nails placed closer together for a firmer hold. Indoor building facilities give trade workers more angles to access the roof compared to on-site construction.^[11]

RESOURCES

[1] **Department of Housing and Urban Development:** *Federal Hud Code § 3280.305*

[2] **National Institute of Standards and Technology:** <https://www.nist.gov/image/windzonemapjpg>

[3] **University of Nebraska:** <https://experts.nebraska.edu/en/publications/hurricane-survivability-for-underrepresented-populations-living-i>

[4] **National Hurricane Center:** <https://www.nhc.noaa.gov/pdf/SSHWS-Marshall.pdf>

[5] **New York Times:** <https://www.nytimes.com/2017/09/14/us/mobile-homes-florida-irma.html>

[6] **Red Cross:** <https://www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/hurricane.html#Before>

[7] **Energy.gov:** <https://basc.pnnl.gov/resource-guides/porches-carports-and-deck-attachments>

[8] **FEMA:** https://www.fema.gov/sites/default/files/2020-08/fema_p85.pdf

[9] **ManufacturedHomes.com:** <https://www.manufacturedhomes.com/blog/green-benefits-manufactured-home-building-process/>

[10] **Energy.gov:** <https://basc.pnnl.gov/resource-guides/continuous-load-path-provided-connections-roof-through-wall-foundation>

[11] **Energy.gov:** <https://basc.pnnl.gov/information/hurricanes-and-high-winds-overview>



FEDERAL WIND ZONE STANDARDS

Modern manufactured homes are built to meet the Department of Housing and Urban Development's robust wind resistance standards, ensuring they stay safe in high winds.

All manufactured homes are produced to one of these three wind zone standards, being required by federal codes to withstand the following sustained wind speeds:

Zone I: up to 70 mph winds.^[1]

Zone II: up to 100 mph winds.^[1]

Zone III: up to 110 mph winds.^[1]

These building codes are enforced by federal inspectors who work in the facility to oversee the production of manufactured homes being built.

In South Carolina, all manufactured homes in Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, Jasper, and Williamsburg counties are built to Wind Zone II standards.^[2]

PERFORMANCE IN RECENT YEARS

Manufactured homes have proven their resilience in recent notable weather disasters:

University of Nebraska Study: A study by NU analyzed after-action reports from four hurricanes in the 2004 storm season. In towns where storms made landfall, no MH built after the 1994 wind safety standards were destroyed.^[3]

Hurricane Katrina (2005): Despite the severity of the storm with winds of 75 mph and gusts of nearly 115 mph, it was reported that there was no significant damage to any MH built after 1994.^[4]

Hurricane Ike (2008): In Texas, near Galveston Bay, MH withstood the high winds, with mostly minor damages to attached structures (see *next pane*).^[5]

Hurricane Irma (2017): With more stringent building codes in effect, most MH residents of Naples, FL where the storm touched land reported only a few strips of siding or shingles missing.^[6]

YOUR ROLE AS A HOMEOWNER

Manufactured homes are built to stringent federal codes for storm safety. As such, the biggest threat to safety is any point where the home meets something that is not up to code.

Installation: The home must be installed correctly to withstand high winds. Be sure that your home is installed by a professional licensed by the South Carolina Manufactured Housing Board.

anchors and Tiedowns: Owners should inspect the solid metal straps every two years to ensure that they remain tight. These can be simply re-tightened with a wrench.^[7]

Attached Structures: The primary risk to the storm safety of modern MH is non-code-compliant structures like decks or carports. These can behave like kites in strong winds, detaching and pulling away parts of the home they're connected to. Owners should be sure that any attached structure is built to the appropriate code.^[8]