



Insurance Institute for Business & Home Safety®

Rating the States Fundamentals

*An Assessment of Residential Building Code and Enforcement Systems
for Life Safety and Property Protection in Hurricane-Prone States*

Purpose of the Report

- Rating the States evaluates building codes in the 18 most hurricane-prone states located along the Gulf of Mexico and the Atlantic Coast from Texas to Maine.
- Using engineering expertise and regulatory analysis, a model was developed to measure the building regulatory systems that hurricane-prone states have in place to protect their citizens from weather-related and other types of losses.
- The report is not intended to reprimand or reward individual states; its purpose is to provide states with information and tools (engineering expertise, data collection and analysis) needed to identify where building code regulatory systems need improvement.
- The report goes beyond just evaluating state codes by offering a roadmap with specific details for states to follow as they seek to update and improve their code systems.

Key Findings

- No state achieved a perfect rating based on IBHS' 100-point scale, but several received high scores: Virginia (95 points), Florida (94 points), South Carolina (92 points), New Jersey (89 points), Connecticut (88 points), Rhode Island (87 points), North Carolina (84 points), Louisiana (82 points), Massachusetts (79 points) and Maryland (78 points).
- States in the top ratings tier have strong statewide residential building codes and regulatory processes for building officials, homebuilders and residential construction contractors.
- States receiving less than 70 points either have no mandatory statewide code or have not yet adopted the latest model residential codes: Georgia (69 points), New York (56 points), Maine (55 points), New Hampshire (48 points), Texas (36 points), Mississippi (28 points), Alabama (26 points) and Delaware (17 points).
- It is important to note, however, there are jurisdictions in the states with lower scores that have strong code adoption or enforcement programs, and many have made statewide improvements since the 2012 Rating the States Report.

Report Methodology

- A list of 47 objective questions was developed to assess the code and enforcement systems covered by the report. The questions are divided among three main elements:
 1. code adoption and enforcement;
 2. building official training and certification; and,
 3. licensing requirements for construction trades.
- Each question was assigned a value reflecting its relative importance in promoting life safety and reducing property losses, with the sum total of the values equaling 100.

- States received credit, or were awarded the value of a question when their answer is consistent with promoting life safety.
- Consequently, an individual state will receive a score from 0-100 based on the answers to the 47 questions used in the evaluation.

Why Statewide Building Codes are Important

- Residential building codes are minimum life safety standards used in the design, construction and maintenance of homes. The function of building codes is to increase the safety and integrity of homes to reduce deaths, injuries and property damage from a wide range of hazards.
- Statewide building codes provide consistent standards which create a uniform level of protection for new construction across an entire state. The absence of statewide codes often results in a patchwork of varying quality of construction that can change from city to city, neighborhood to neighborhood, or across arbitrary political boundaries or subdivisions.
- Uniform and up-to-date statewide codes promote a level and predictable playing field for designers, builders and suppliers. This is particularly important because it avoids potentially conflicting requirements within a
- single state. The construction industry can rely on one set of codes for planning, designing, purchasing and construction.
- Codes preserve the built environment and reduce the need for, and cost of, public and private disaster aid. Preserving the built environment also helps communities reduce their carbon footprint by avoiding the need to repair and rebuild structures following a disaster.
- Modern codes provide economies of scale in the production of building materials and construction of buildings. These uniform construction standards contribute to the durability of buildings and help maintain quality of life and property values.
- Homes that are built using stronger building codes should be less vulnerable to the effects of severe weather events, which should make property damage less likely and less intense. Less damage results in lower cost and/or fewer insurance claims and should ultimately improve the health of insurance systems in a particular state.

Model Building Codes and How They are Developed

- Model codes are developed through a consensus process that takes into account established scientific and engineering principles and the experience of leading technical experts, construction professionals, enforcement personnel and the construction products industries.
- The International Code Council (ICC), which was founded in 1994 with the purpose of streamlining the building regulatory system through a single family of model building codes, has developed the most widely adopted set of model codes to unify the U.S. building regulatory system.
- The ICC's model building codes are updated on a three-year cycle. The latest building and residential editions are the 2015 International Building Code® (IBC) and 2015 International Residential Code® (IRC). In addition, the National Fire

Protection Association (NFPA) is a major player in the development of codes. Their fire and electrical safety codes have been adopted by state and local jurisdictions, and are widely used throughout the United States.

- The states and/or local governments within the states adopt all or parts of the model codes into some form of statewide or municipal building regulation. IBHS strongly supports the adoption of the latest model codes at the statewide level without weakening amendments, as it provides the highest level of protection to property owners and communities.
- A list of the building codes in effect for each state is available on IBHS' website at www.disastersafety.org/building-codes.

How Building Codes are Enforced

- Building codes are generally enforced at the local level by building officials who ensure the locally adopted building codes are properly applied on construction projects. Good building codes have little value if they are not enforced. Independent studies of damage following Hurricane Andrew and the Northridge Earthquake revealed that lax code enforcement needlessly increased total damage.
- Local government plan reviewers and building inspectors are vital to the success of building codes being correctly implemented on construction sites and overall building safety. Unless these functions are adequately funded and staffed with qualified, trained, tested and certified personnel, the full value of building codes will not be realized.

The Costs and Benefits of Building Codes

- While there may be a modest cost increase in construction of homes built to modern codes, stronger codes are cost-effective in the long run. Cost/benefit studies have demonstrated strong, positive long-term benefits for homeowners when communities implement individual code provisions as well as adopt newer building codes with stronger wind provisions in hurricane-prone areas. A study conducted by Texas A&M University on Texas Department of Insurance hurricane-related building requirements found the benefits of adopting hurricane-related code provisions exceeded the costs by a factor of 4.5 to 7, depending on the size of the home.
- A study done by the Insurance Institute for Business & Home Safety (IBHS) following Hurricane Charley in 2004, found that modern building codes reduced the severity (cost) of losses by 42 percent and frequency (number) of losses by 60 percent.
- A 2005 study funded by the Federal Emergency Management Agency (FEMA) and conducted by the National Institute of Building Sciences' Multihazard Mitigation Council found that every dollar spent on mitigation saves society an average of four dollars.

Strong Building Codes and Insurance Incentives

- All of the states examined in this report face significant hurricane risk. Florida, which received the second highest score, is also the state that faces the highest risk of hurricane. While strong building codes help to manage this risk, they do not eliminate it.
- In addition, although building codes provide vital life safety protections, it is possible to incorporate stronger property protections when building a new home or when retrofitting an existing home (e.g., through IBHS' FORTIFIED Home™ program). In some states, current regulatory processes provide for insurance discounts for homes built to IBHS FORTIFIED standards.

Consumers Should Demand Stronger Building Codes

- Consumers deserve to have confidence the buildings in which they live, work, shop and play meet minimum life safety standards. Regulating the design, construction, and maintenance of buildings protects the health, safety and general welfare of a building's users. Consumers should demand their states enact and enforce strong building codes to protect their citizens.
- Just as auto safety improved when people demanded better cars after they were educated about which specific engineering tools and techniques could make passenger vehicles demonstrably safer, homeowners need to learn about how to improve the quality of home construction and demand stronger building codes.

Why Automatic Fire Sprinkler Provisions are Included in the Report

- The 2009 edition of the IRC requires the use of automatic residential fire sprinklers in new one- and two-family homes. However, many states have relied on misleading information about the cost of residential fire sprinklers and delayed or rejected the inclusion of these life and property-saving systems into building codes.
- There is ample data to support the inclusion of residential fire sprinklers in affordable housing. Given the proven life safety benefits of these systems, IBHS believes they should be part of the overall safety net provided by building codes.
- Although hurricanes are the major focus of this report, house fires kill approximately 3,000 people every year (and injure many more), which is more than all natural disasters combined. Automatic residential fire sprinklers can contain and may even extinguish a fire in less time than it would take a fire department to arrive on the scene.
- According to the National Fire Protection Association (NFPA), the risk of dying in a reported fire decreases by about 80 percent when sprinklers are in a home, and the average property loss is reduced by approximately 70 percent per fire.