

Insurance Institute for Business & Home Safety's Building Code Resources

The Benefits of Statewide Building Codes



A Short History of Building Codes

Building codes have been around in some form for thousands of years. In 1772 B.C., the code of Hammurabi dictated that if a dwelling collapsed and caused the death of the owner, the builder would be put to death. The Roman Empire instituted building codes after fatal building collapses in 64 A.D., and a great fire that destroyed 15,000 buildings in 1666 led to the development of London's early building codes. In the United States, the great Chicago fire killed 250 people, destroyed 17,000 structures and left nearly 100,000 people homeless in 1871. Four years later, that city enacted a new building code and fire-prevention ordinance. As is often the case, building codes are the after-thought of a tragedy rather than a forethought of prevention. As cities grew and experienced their own disasters, building codes were developed based on individual experiences more than scientific knowledge. In 1905, the first nationally recognized U.S. building code was established by the National Board of Fire Underwriters. Much of this code regulated the type of building components that could be used in construction and did not allow for newly developed materials. Over the centuries, building codes have evolved from regulations stemming from tragic experiences to standards designed to prevent them.

Modern building codes reflect a movement towards requirements that are based on established scientific and engineering principles. This allows for the reliance on measurable performance rather than the rigid specification of materials and methods. Nevertheless, for some types of construction, modern building codes continue to use what are known as "prescriptive criteria" where materials and methods are spelled out in detail. These prescriptive criteria make it easier for builders and contractors to build simple buildings without having to rely on engineers and architects to specify all the details.

Benefits of Statewide Building Codes

The purpose of building codes is to increase the safety and integrity of structures, thereby reducing deaths, injuries and property damage.

Statewide building codes preserve the built environment, both residential and commercial, reduce public and private disaster aid, and maintain employment in local businesses and institutions that otherwise might be forced to close following a natural or manmade disaster. In addition, building codes promote a level and predictable playing field for designers, builders and suppliers. They offer a degree of comfort for buyers, who are reassured by the existence of minimum construction standards for

the safety and soundness of a building. Modern codes also allow for 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 community quality of life and property values.

State-by-State Variations in Building Codes Create Gaps in Protection

State standards for construction and code-related inspection and enforcement vary widely across the country. Some states have adopted statewide building codes applicable to virtually every type of structure (residential, commercial, industrial, municipal, schools, and hospitals), while others employ lesser degrees of regulation and code applicability -- or none at all. Where statewide codes exist, it is not uncommon to allow individual jurisdictions (e.g., cities of a particular class or counties) to deviate from the state standard, often resulting in a weakening of the model minimum code. Another disturbing practice is the tendency to broadly adopt commercial building codes statewide while excluding one-and two-family homes. In areas where no statewide code exists, such as Missouri, cities may choose to adopt building codes to govern both commercial and residential construction. The same may not be true of outlying suburban or rural areas where the bulk of new residential development is taking place. In these areas, the combination of concentrated residential construction and lack of codes (or code enforcement) may mean that new homes are being built and sold with little control over how these buildings will perform, especially in natural disasters.

IBHS strongly supports the statewide adoption of building codes and standards, strong local enforcement of the codes, and training and licensing of building officials, builders and contractors. IBHS has conducted a review of these elements of the building regulation system for the 18 coastal states with a hurricane risk and provides ratings for each state in its "Rating the States" report. The report and additional information is available at www.disastersafety.org/building_codes/rating-the-states_ibhs.



Why is it Important to Adopt a Code Without Weakening Amendments?

Statewide building codes -- and adequate enforcement of those codes -- play a vital role in public safety and loss prevention. In addition to saving lives and reducing property loss, codes based on nationally recognized models can reduce the need for public disaster aid; promote consistent guidelines for design professionals, suppliers and builders; create a minimum standard upon which consumers can rely; and increase the reliability of structures.

Model building codes may require amendments to meet the particular administrative needs and requirements of the governing community. However, to ensure that minimum safety and performance are met, substantive content addressing design, construction or performance standards within the model codes should not be weakened. Leading experts in the fields of science, engineering and building construction have developed the minimum standards to ensure safe and predictable building performance. When technical content in local codes deviates from the standard, it should be allowed only to strengthen, rather than relax, code provisions. While local governments and the building industry may voice objections to codes (often on the asserted basis of cost), homeowners, businesses, and communities clearly enjoy long-term benefits from effective building codes. Past experience shows that the costs of code enforcement may be reduced by approaches such as sharing building departments between several smaller municipalities or between a city and county.

Federal Government

The Federal Emergency Management Agency (FEMA) supports the adoption and enforcement, without amendments, of disaster-resistant building codes, which they regard as a cornerstone of effective mitigation. Such codes meet the minimum requirements of the National Flood Insurance Program (NFIP); are substantially equivalent for seismic design to the 2009 edition of the National Earthquake Hazard Reduction Program (NEHRP) Recommended Provisions for New Buildings and Other Structures published by FEMA; and reflect the current state-of-the-art engineering

Building Code Effectiveness Grading Schedule (BCEGS)

requirements for wind, such as those found in the 2010 edition of the ASCE 7 standard. Currently, the 2015 edition of the International Building and Residential Codes (I Codes) meets these criteria. Under the NEHRP, Executive Order (E.O.) 12699 requires that all new construction of federally-owned, leased, regulated, or assisted buildings must be designed and constructed using a building code that meets a specific criterion. This criterion states that federal agencies are permitted to use only those model building codes that have been determined to be substantially equivalent to a recognized seismic standard, which at this time is the 2009 edition of FEMA's NEHRP Recommended Provisions.

Communities that choose to use weakened amended versions of modern building codes may be impacted in several ways. For example, they may lose some flood insurance discounts. Federal guidelines that govern building, funding and other types of support surrounding construction require compliance with the intent of the codes without amendment.

The Safe Building Code Incentive Act is proposed Federal legislation that would incentivize states to adopt and enforce statewide building codes. The incentive would be additional Stafford Act funding for mitigation in the aftermath of a natural disaster, provided the state had adopted and was enforcing an up-to-date building code.

Enforcement is Critical

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.

Building codes are generally enforced at the local level. These departments are often funded by permit fees, which average less than one percent of construction costs. Plan reviewers and building inspectors are vital to the success of building codes. 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.

IBHS worked with the Insurance Services Office (ISO) in the development of a program where the enforcement capacity of a jurisdiction could be evaluated. ISO collects information related to personnel qualification and continuing education as well as number of inspections performed per day. This type of information, combined with local building codes, is used to determine a grade for that jurisdiction at the time of the evaluation. The grades range from 1 to 10 with the lower grade being more ideal. The jurisdictions are re-evaluated periodically, usually in 5-year intervals, and are re-assessed. Individual insurers can use BCEGS as the basis for policyholder credits, based on the performance of a jurisdiction and the building code being enforced.

Summary

Building codes are the minimal standards to which buildings are constructed throughout the country, and they are instituted to ensure the safety and health of building occupants. Experience has shown that properties built to meet the standards of strong building codes are more likely to survive the next natural hazard event than those built under weaker or no building codes. Stronger codes are more cost-effective in the long run, and to be effective they must be enforced by qualified personnel who are properly trained, to ensure that the approved standard is met for the minimal safety and performance of a building.

