



What is a Building Code?

A building code is a document containing standardized requirements for the design and construction of most types of buildings.

Codes regulate building construction and building use in order to protect the health, safety and welfare of the occupants. Codes address all aspects of construction including structural integrity, fire resistance, safe exits, lighting, electrical, energy conservation, plumbing, sanitary facilities, ventilation, seismic design and correct use of construction materials.

Building codes classify structures by use and apply different standards to each classification. For example, schools and office buildings are in separate occupancy categories with different performance requirements.

What Model Building Codes serve the United States?

Model Building Codes are published by private organizations whose voting members traditionally are government jurisdictions. Very few communities compose their own unique set of regulations. Most adopt all or part of one of the three Model Codes:

- The Building Officials Code Administrators International, Inc. (BOCA)
- The International Conference of Building Officials (ICBO)
- The Southern Building Code Congress International, Inc. (SBCCI)

In 1994 the three model code organizations established the International Code Council. In April 2000 the ICC issued the first set of

comprehensive and coordinated codes for the built environment known as the International Code Series (IBC). As a result the three model code organizations are no longer producing their respective codes.

How are codes adopted?

Constitutionally, states have jurisdiction over the regulation of construction. Currently 41 states mandate a model code or state code to cover all buildings, relying mostly on local enforcement and administration. Usually county and local governments adopt a model building code by ordinance.

Can communities have different versions of the same code?

State and local governments usually adopt an entire model building code, generally with minor revisions. While it is estimated that 95% of all cities and towns are covered by building codes, far fewer adopt only a portion of a code such as plumbing, fire, electrical. These local governments have either adopted a model building code or are covered by a statewide building code. Model building codes save governments the time and cost of writing an original code and result in more uniform code regulation across the U.S. Local governments sometimes view the seismic sections of the model codes as optional, adopted at local discretion. Seventeen states have established statewide building codes that prohibit local amendment without state approval.

Where do seismic requirements originate?

The earliest seismic design provisions in the U.S. were introduced in the appendix to the 1927 *Uniform Building Code*, the first edition of the UBC. By the 1950s, some California municipalities had adopted additional seismic-resistant design and material specifications. The 1949 edition of the UBC contained

Early in the 1970s the National Science Foundation (NSF) funded a report evaluating existing earthquake-resistant design provisions. Drawing on this report, the Federal Emergency Management Agency (FEMA) in 1985 released the National Earthquake Hazards Reduction Program (NEHRP) *Recommended Provisions for the Development of Seismic Regulations for New Buildings*. Since 1992 all Model Codes have included seismic design components. The 2000 I Codes are consistent with the 1997 NEHRP Provisions.

How have seismic code requirements for the Central U.S. changed?

Within the 7-state region that makes up the New Madrid and Wabash Valley Seismic Zones, code coverage varies. Arkansas, Indiana, Kentucky, and Tennessee have comprehensive statewide building codes that include seismic components.

The remaining states, Illinois, Mississippi and Missouri have codes that regulate some aspects of buildings. Of these only Missouri has a seismic design requirement. However, many large cities within these states have adopted recent model codes that include seismic requirements.

Do seismic provisions inhibit economic growth?

Building codes have not hurt the economies of the 41 states that have them, nor have they hurt the 95% of all U.S. cities and towns that have some form of codes adopted. Seismic design adds only a few percent to the cost of a new building. With a seismic code, residents will know that the community is on its way to seismic safety. The code will reduce long-term liability costs. Also a good code may ultimately improve the community's insurance rating. A seismic code is not an admission of community weakness, but rather a sign of community strength. Codes do

not drive business from communities. In the words of one building official “I’ve never heard of an industry not coming to town because of seismic requirements.”

Want to get involved in your community’s code adoption process?

If you are a local building official, or a citizen or professional concerned about seismic safety, you may wonder how you can improve your local government’s seismic design requirements. Can you take effective action, regardless of state requirements? The answer in most cases is “yes”. But first you need to do your homework. Your first step should be to find out all you can about the current state-level regulations. This will govern your options for action. If you find your jurisdiction lacks an adequate code you will need to convince your community to initiate a building code. Typically, the building code ordinance is drafted, reviewed legally, proposed and debated through public hearings, and voted on and adopted by the municipality. To ensure that your community has the very latest standards you must be sure to:

- Adopt one of the model codes.
- Adopt the most recent version of the code.
- Establish a process for periodic updating of the code.
- Do not delete or modify the seismic provisions.

Once adopted it is assigned to an agency or department for implementation and enforcement. For help get FEMA publication 313 *Promoting the Adoption and Enforcement of Seismic Building Codes-A Guidebook for State Earthquake and Mitigation Managers* which can be obtained from the FEMA Publications office.

Emerging Issues

In August 2001 the National Fire Protection Association issued a draft building code, NFPA 5000, with a final issue scheduled for 2002. The NFPA, like the I Codes will use the NEHRP Provisions as the basis for their

seismic requirements.

Final Thought

We should not assume we live and work in buildings designed to withstand the forces of nature—we should demand it.

Where can you get further information?

ICC

5205 Leesburg Pike, Suite 1201
Falls Church, VA 22041
(703) 931-4533
www.intlcode.org

BOCA

4051 West Flossmoor Road
Country Club Hills, IL 60478-5795
(800) 214-4321
www.bocai.org

ICBO

5360 S. Workman Mill Road
Whittier, CA 90601
(800) 284-4406
www.icbo.org

SBCCI

900 Montclair Road
Birmingham, AL 35213
(205) 591-1853
www.sbcci.org

NFPA

1 Batterymarch Park
Quincy, MA 02269
(800) 344-3555
www.nfpa.org

IBHS

1408 North Westshore Blvd, Ste 208
Tampa, FL 33607
(813) 286-3400
www.ibhs.org

BSSC

1201 L Street, NW, Suite 400
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(202) 289-7800
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Central US Earthquake Consortium

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